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**GENERAL STATISTICS OFFICE OF VIETNAM (GSO)
UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)
UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION (UNIDO)**

FINAL REPORT

PROJECT DG/VIE/97/051

Implementation

of

the National Industrial Statistics Programme

Vienna
August 2000

The report has been produced without formal editing.

Preface

The industrial statistics report for Viet Nam, prepared under project DG/VIE/97/051, shows, for the first time, a comprehensive set of industrial statistics collected and processed in line with international conventions and demonstrates a successful transition from the previously used Material Production system (MPS) to the System of National Accounts (SNA).

Although the report is limited to the 17 most industrialized provinces of Viet Nam, it covers approximately 80% of all industrial activity in Viet Nam. Originally, the project was intended to cover the six major provinces only, however, with additional government resources and the enthusiastic work of all staff, the General Statistical Office (GSO) in Hanoi and the Provincial Statistical Offices (PSO) clearly showed their readiness to adopt internationally used statistical methods by extending the project by a further 11 provinces to the total of 17 provinces now covered.

The project was funded by UNDP and executed jointly by the General Statistical Office in Hanoi and the United Nations Industrial Development Organization (UNIDO).

Acknowledgements

The General Statistical Office in Hanoi under the leadership of Director General, Mr. Le Van Toan and Deputy Directors General, Mr. Le Manh Hung and Mr. Nguyen Van Tien, set up a project team, comprising Mr. Vu Van Tuan, Director, Department of Industrial Statistics, acting as National Project Director, Mr. Pham Quang Duc, Deputy Director, Department of Industrial Statistics, acting as National Project Manager, Mr. Pham Dinh Thuy acting as Project Secretary and Mr. Le Dinh Ky, acting as Project Interpreter. This project team was responsible for the national execution part of the project.

International technical assistance was provided by the project manager, Ms. Barbara Riezky of the Statistics and Information Networks Branch (SIN) of the Investment Promotion and Institutional Capacity Building Division (IPC) of UNIDO and two international experts, Mr. Shyam Upadhaya and Mr. Oliver Rueling. The co-ordination between the GSO team, UNDP and the international UNIDO team was undertaken by the staff of UNIDO, Hanoi.

Throughout the life of the project, full support to the implementation was provided by the staff of the Growth and Governance Unit of the UNDP Office in Hanoi.

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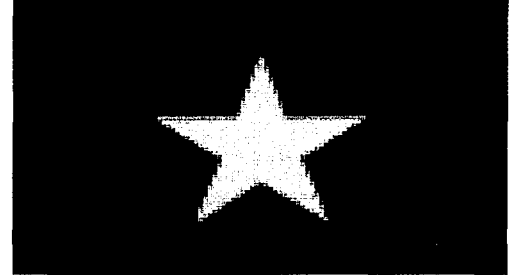
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Country Information



Vietnam in brief

Location:

South East Asia,
 Land boundaries:
 Total: 4,639 km
 Border countries:
 Cambodia 1,228 km, China 1,281 km,
 Laos 2,130 km

Area:

Total: 329,560 sq km
 Land: 325,360 sq km
 Water: 4,200 sq km
 Coastline: 3,444 km (excludes islands)

Population:

77.3 million (1999)
 Population growth: 1.4% (1999)
 Sex ratio at birth: 1.06
 Total fertility rate: 2.41

Economy:

GDP (est. '98 at current prices)
 361 468 billion Dong
 Real GDP growth rate: 4.0%
 GDP per capita (PPP): US\$ 1770
 GDP composition:
Agriculture: 25.7%
Industry: 32.2%
Services: 42.1%

Main export commodities:
 Crude oil, marine products, rice

Imports:
 Machinery and equipment, petroleum
 products, steel

External debt: US\$ 7.3 Billion

1. Introduction

Before the Asian financial crisis the Vietnamese economy was one of the fastest growing economies in the Asia and Pacific region. The average annual growth rate of GDP for the period 1990-1995 was around 8% while the growth rate for the population in this period was below 2.0%. Even at the time of the Asian financial crisis, Vietnam maintained a positive growth of the economy. The real GDP growth rate in 1999 was estimated at 4.0%.

Economic liberalization and the market orientation policy of the government have fundamentally changed the nature and structure of the Vietnamese economy. The industrial sectors produce about 27% of GDP and industrial production grew annually by 13% during the last 5 years.

In recent years the Vietnamese economy was diversified in terms of type of ownership and investment origin. Several joint venture firms are in operation and the private sector is emerging in different kinds of economic activities. The free entrepreneurship policy has allowed the creation of a large number of small-scale establishments and household economic units with the result that almost half of the industrial production now comes from the non-state sectors. These economic changes have demanded a new information structure, since previously all industrial inquiries concentrated on state-owned establishments which until recently dominated industrial production. The increasing economic ties of Vietnam with other countries have also made it necessary that the statistics of Vietnam be internationally comparable.

1.1 UNIDO assistance in Vietnam

UNIDO has extended important technical assistance to Vietnam in its endeavour of industrial development. A total of 70 projects with a value of over \$US30 million have been completed since 1980 and 16 further projects with a value of \$US 6 million are at present ongoing. Major projects during the last few years include:

- Assistance to private small and medium industrial enterprises
- Medium term industry and trade strategy
- Training programme for women entrepreneurs in the food-processing industry
- Industrial strategy for Vietnam
- Viet Nam national cleaner production centre
- Environmental management and industrial pollution reduction in a number of provinces in Vietnam

1.2 The National Industrial Statistics Programme (NISP) Project

Earlier the statistical system of Vietnam was based on the Material Production System (MPS). Like in other countries with a transitional economy UNIDO extended technical assistance to Vietnam in the conversion of their national statistical system to international standards. UNIDO made use of its experience in similar projects implemented in other countries with a transitional economy such as Mongolia, Moldova, Cambodia and now in Lao PDR.

The main source of primary data at the start of the project was the collection of reports from around 2000 state owned enterprises. A data collection system for the non-state sector, which comprised the joint venture industries and cooperatives and private business units, was not fully functional. At the same time the demand for data on the private sector was very high as the users inside and outside the government wanted to watch the behaviour and progress of the emerging sector.

Originally, under the framework of project DP/VIE/94/019 "Industrial Strategy for Vietnam" the industrial statistics system at the General Statistical Office (GSO) in Hanoi was brought into line with internationally used statistical methods through training of key staff and the introduction of the NISP system. Globalisation required to adopt international statistical conventions and the experience gained during the implementation of this pilot phase led the Government of Vietnam and more particularly the GSO to recognise the importance of using international conventions in their industrial statistics system. With the financial assistance of UNDP, UNIDO prepared the current project DG/VIE/97/051 which became operational in May 1998. The project's focus was on introducing an internationally compatible industrial statistics system in the six most industrialised provinces of Viet Nam and to ensure that the Provincial Statistical Offices (PSO) were equipped to collect, store and process industrial statistics in accordance with an international statistical system. This NISP project established a unified statistical system for all types of establishments irrespective of types of ownership and level of administrative control.

Statistical methods of data collection were implemented for large and small establishments. Two industrial surveys, one for medium and large scale and one for small scale establishments were undertaken during the project period.

In recent years, the GSO has initiated different activities for the conversion of their official statistics based on the Material Production System (MPS) into the System of National Accounts (SNA). An international standard of industrial classification; revision-3 (ISIC) has been introduced and a number of SNA indicators are now used in the regular data collection.

The project also installed data processing facilities in the GSO and in the six PSOs of the most industrialised provinces of the country. GSO computer facilities were significantly enhanced during the project period. Before the first UNIDO project started there was only one PC in the Industrial Statistics Department for 18 statisticians including the Director and two Deputy Directors. The Industrial

Department had to depend on the computer centre even for the simplest computing work. During the course of the project a total of 22 computers and 7 printers were installed. Local area networks (LAN) were established for a total of 60 computers in the GSO, PSO Hanoi and PSO Ho Chi Minh City. The NISP software was installed on 25 PCs and a total of 34 staff members of the GSO and the six PSOs were successfully trained in its use.

Training in statistical methods and data processing constituted a major part of the project. Apart from on-the-job training in industrial statistics operations which was undertaken practically during all missions of the international expert, formal training workshops were held as follows:

Three workshops on industrial statistics which took place in July 1998 (43 participants of whom 19 were female), in April 1999 (40 participants of whom 9 were female) and in October 1999 (46 participants of whom 8 were female).

During the installations of the NISP software in the six PSOs operator training was given to the staff concerned and a formal workshop was held in July 1999 also for senior staff (28 participants of whom 9 were female). Furthermore systems administrator training was carried out and a qualified systems administrator (staff member from the GSO Hanoi) held a training course for other systems administrators in April 2000 under the guidance of an international expert.

Two study tours with 5 participants each were undertaken to visit the National Statistical Offices in the Republic of Korea (November/December 1998) and the Peoples Republic of China (July/August 1999) and both were considered as very informative and useful for the participants.

In order to get hands-on experience in the work of National Statistical Offices outside Viet Nam, 2 fellowships were arranged in Malaysia from March to May 1999 and two further fellowships will be undertaken in October/November 2000.

In line with the terms of the project two training courses were undertaken by national experts. The first one was held in Hanoi from 7 to 12 December 1998 with 55 participants, including 31 females, from the northern PSOs and the second one in Ho Chi Minh City from 29 November to 3 December 1999 was attended by 45 staff members, including 18 females, from the southern PSOs.

As a further contribution to the success of the project the GSO undertook to extend, from their own resources, the geographical coverage from the six provinces covered by the project (Hanoi, Ho Chi Minh City, Da Nang, Dong Nai, Haiphong and Ba-Ria Vung Tau) to a further 11 provinces, viz. Thanh Hoa, Quang Ninh, Ha Tay, Thai Nguyen, Nam Dinh, Phu To, Binh Dinh, Khanh Hoa, Binh Duong, Can Tho and Kien Giang.

UNIDO supplied the NISP software for the additional 11 provinces free of charge and training in these provinces was accomplished by staff, mainly from the GSO in Hanoi, who had been trained as trainers within the UNIDO project.

The total coverage of the present industrial statistics system has thus been extended to cover almost 80% of gross output in the country and 73.2% of all industrial employment.

1.3 Report on the Industrial survey 1999

The Survey of Industrial Establishments was conducted by the General Statistics Office of Vietnam (GSO) in 1999 under the NISP Project jointly executed by UNIDO and the GSO with UNDP financing. The survey was an important attempt to bring the national statistical system in line with international standards. During the course of the survey more than 100 statistical staff members of the central and provincial statistical offices (PSO) were trained in statistical methods and procedures as recommended by the United Nations. Although, the project covered the six most industrialised provinces of Vietnam, project activities were carried out beyond this limit. The training courses on statistical methods were attended by participants from almost all provinces, while the coverage of the survey was extended to 17 provinces by the efforts of the GSO. Several training programmes were also organised in the operational methods of the NISP software.

A brief report with the first statistical abstracts was produced for office use in March 2000. The first report included data for only 6 provinces. The present report covers results from all 17 provinces. The statistical tables presented in the appendices are mostly summary tables as are generally requested by users. More specific information can be obtained from the database established in the Industrial Department of the General Statistics Office.

The Industrial Survey 1999 has some limitations described in § 2.7. Users are recommended to take these limitations into account while using the figures given in the statistical tables of the report.

The report has been prepared from the results of the Industrial Survey 1999, which consisted of two data sets. The first data set includes the six provinces covered by the project.

These data for six provinces were entered in the Provincial Statistical Offices (PSO) and transferred to the GSO. UNIDO consultants prepared the output formats and procedures for data processing and produced the report for six provinces. The second data set was prepared by GSO staff members. As the data entry for 11 provinces was made later, GSO staff processed data for these provinces using the same format and procedures used for the six provinces. The main indicators by data set and the contribution of all surveyed provinces to the national total are given below.

Table 1. 1:
Summary Indicators of Surveyed Provinces as Compared to National Total

Indicators	Vietnam total ¹	Six project covered provinces ²	GSO extended 11 provinces ³	Total 17 surveyed provinces	Surveyed provinces to national total (in %)
Mining and quarrying					
Number of establishments	331	59	124	183	55.29
Number of persons engaged	141179	12402	103015	115418	81.75
Gross output (billion VND)	20672	15846	4653	20500	99.17
Manufacturing					
Number of establishments	9179	3077	1485	4562	49.70
Number of persons engaged	1190495	658923	236780	895703	75.24
Gross output (billion VND)	148907	98878	25809	124687	83.73
Electricity, gas and water					
Number of establishments	86	9	13	22	25.68
Number of persons engaged	60263	5802	2039	7841	13.01
Gross output (billion VND)	14701	1923	164	2087	14.20
Total Industry					
Number of establishments	9596	3145	1622	4767	49.68
Number of persons engaged	1391937	677127	341835	1018962	73.20
Gross output (billion VND)	184280	116647	30627	147274	79.92

1.4 Changes in methodology

The methodology applied in the survey was new for Vietnam not only in the substance of the statistical indicators in use but also with respect to the operational scheme. International practice of data collection from industrial establishments is based on efforts to make the questionnaire form as close as possible to the business accounts. For example, the questionnaire does not ask for the figure on output or value added, because these terms are not used in business accounts. Instead, information is collected on components of these indicators such as sales, receipts from different kinds of services, opening and closing stocks etc. Then these data are consolidated in the office to calculate the required indicators. Such an approach, as applied in this survey, not only broadened the perception of statistical staff about industrial surveys but also extended the coverage of major indicators. For instance, gross output, the value that reflects the total amount of goods and services produced by industrial establishments was higher than the earlier GSO estimates in selected provinces despite the fact that the surveyed number of establishments is less than in GSO records. In Table 1.2, results of industrial surveys are compared to GSO estimates for the six surveyed provinces. The difference between the GSO data and Industrial Survey results as far as Gross Output is concerned, can be attributed to the fact that the following output items were not included in the previously used methods of data aggregation:

- ¹ Data provided by GSO Industrial Department from its regular sources
- ² Survey results of six provinces processed by UNIDO consultants
- ³ Survey results of additional 11 provinces provided by GSO

Receipts from the sale of electricity generated by establishments;
Receipts from goods sold in the same conditions as purchased
less the purchase value of goods for resale.

The survey results emphasise the urgency of revising the survey questionnaire nation wide.

Table 1.2: Comparison of NISP Survey results with GSO data

Provinces	GSO data			Industrial Survey Results		
	Number of establishments	Number of person engaged	Gross output (Billion VND)	Number of establishments	Number of person engaged	Gross output (Billion VND)
1 Hanoi	842	129895	14953	782	131,730	15975
2 HCM City	1373	346723	58568	1336	334,951	49507
3 Haiphong	347	67553	6526	312	61,153	5553
4 Da Nang	187	28803	2350	140	25,310	2278
5 Dong Nai	471	99718	14423	478	106,354	25094
6 Vung Tau	97	20173	17478	97	17,629	18240
Total	3317	692865	114300	3145	677127	116647

Another important aspect of this survey was the implementation of a full programme of industrial statistics. In the current practice of Vietnam, the industrial survey⁴ questionnaire excludes employment, material cost and capital formation related items. From these data it would not be possible to analyse the production data in relation to material costs as well as to the factors of production: labour and capital. The Industrial Survey 1999 has brought all major indicators of industrial statistics together and even made an attempt to include the latest issues on environmental questions into industrial statistics. Having applied the same method for establishments of different types of ownership, the data are now comparable to each other.

New methods were applied also for data dissemination. Currently the publication of industrial statistics is very limited in Vietnam. The Statistical Yearbook of Vietnam in its chapter on industrial statistics publishes only the number of establishments and value of output. In this survey, data are consolidated, tabulated and produced for all indicators in the same report. Similarly, the database created in the GSO has integrated the information originating from the different provinces. Now the GSO can provide the information for any province without any inquiry with the PSO. A set of widely used output tables is attached to the database, for which reports can be generated at any time within a few minutes. These tables can be provided in print or machine-readable format or via Internet installed in the GSO Industrial Department.

⁴ The discussion here is about two different industrial surveys. As the coverage of the survey conducted under the NISP project was limited to selected provinces, GSO is collecting data from two parallel surveys: one using international methods described by this report and another using its conventional methods.

1.5 Estimates for small establishments

A new approach was also applied to the survey of small establishments. A separate survey design with a shorter questionnaire was prepared for smaller establishments, i.e. those with less than 5 persons engaged. The survey covered 60687 units of six provinces, out of which 95% were engaged in manufacturing activities. Although large in numbers, the contribution of smaller establishments to the total industrial output was just above 5%. However, their contribution to total employment was substantial, namely 22.8%. The main figures collected for small establishments are compared below to those of the large ones for the six surveyed provinces.

Table 1. 3: Number of persons engaged and gross output in six provinces, 1998

Type of activities	Number of persons engaged				Gross output (million VND)			
	Large ⁵	Small	Total	Share of small to total	Large	Small	Total	Share of small to total
Mining and quarrying	12402	8770 ⁶	21172	41.42	15846	109	15956	0.69
Manufacturing	658923	191700	850623	22.54	98878	6523	105401	6.19
Electricity, gas and water	5802	9	5811	0.15	1923	1	1924	0.03
Industry total	677127	200479	877606	22.84	116647	6633	123281	5.38

In contrast to large ones, small establishments are homogeneous in size and their relative variables can be used for a few years ahead in order to project estimates. For example, the fact that small establishments contribute around 5% to total industrial output is very unlikely to change drastically within a short period.

Similarly, the average number of persons engaged in smaller units was 3.3 per unit, which is also unlikely to change drastically within a short time. Therefore, when the number of small establishments in operation is available, the number of persons engaged can be estimated in a straightforward manner. This means that it would not be necessary to conduct a survey of small establishments in the same size and programme as undertaken currently. This is an important consideration since the survey of small establishments is very time- and resource-consuming. However, it would be necessary to monitor the number of units in the sampled areas in order to estimate the growth in the total number of units in the country.

⁵ - Distinction of large and small is made solely for statistical purpose. Establishments with 5 and more persons engaged are considered as large and rest as small.

⁶ - Large number of persons engaged in small establishments mainly relates to the quarrying activities from the surface.

2. Survey Methodology

The industrial survey 1999 was an experiment to apply the internationally accepted methods of industrial statistics in Vietnam. The survey did not intend to produce statistics at the national level as the coverage of the survey was confined from the very beginning of the project only to six provinces and was later extended to 17 provinces from the GSO contribution. However, the survey actually implemented all required statistical methods and procedures to establish a new system of collection, processing and dissemination of industrial data.

2.1 Objective of the survey

The main objective of the survey was to introduce the international standard of industrial statistics in Vietnam. The survey focused on strengthening the technical capabilities of the GSO in conducting industrial statistical operations which aimed to:

produce reliable and internationally comparable industrial statistics required for development planning and policy making;

- create a new national system of industrial statistics based on the system of national accounts (SNA);
- establish a fully computerised industrial data system supported with NISP facilities of storage, processing and dissemination of data as per user's requirement;
- introduce a cost effective method of data collection in view of the rapid growth of the number of industrial establishments.

In the course of implementing new statistical methods, the GSO was assisted in the preparation of new survey materials such as, questionnaires, manuals, tabulation format etc. These materials were prepared on the basis of and with reference to the *International Recommendation of Industrial Statistics*⁷, *World Programme of Industrial Statistics*⁸, *System of National Accounts*⁹ and other materials published by the United Nations.

Training the statistical and computer staff of the GSO and its field organisations was another vital programme conducted to meet the objectives of the survey. During the project period close to 130 statistical staff members, both from the central and provincial statistical offices (PSO) were trained in statistical methods and procedures used in a survey. Project activities, although designed to cover only the six most industrialised provinces of Vietnam, became broader in scope.

⁷ United Nations: International Recommendations for Industrial Statistics, Series M, No.48, Rev. 1

⁸ United Nations: Recommendations for the 1983 World Program of Industrial Statistics, Series M No 71.

⁹ Eurostat, IMF OECD, UN and World Bank: System of National Accounts, 1993.

Statistical training courses were attended by staff from almost all provinces. Several training sessions were also held in the operation of the NISP software, as well as to train staff members as trainers.

Although limited in terms of the number of provinces covered, the survey results represent the most significant part of industry of Vietnam. The survey results provide a reliable and internationally comparable data set for the most industrialised provinces of Vietnam, such as Hanoi, Ho Chi Minh and Dong Nai. In total, the surveyed provinces contribute almost 80% to total industrial gross output.

2.2 Scope and coverage of the survey

For the purpose of industrial statistics inquiries, the industrial sector, according to *International Recommendations of Industrial Statistics*, comprises all establishments located within the territorial boundaries of the reporting country that are primarily engaged in mining, manufacturing and the production and distribution of electricity, gas and water (tabulation categories C, D and E of ISIC rev-3). Coverage of industrial statistics is confined to these activities, which are defined as follows.

C. Mining and quarrying

Mining and quarrying are used in a broad sense encompassing extraction of minerals occurring naturally as solids, such as coal and ores, liquids, such as crude petroleum, or gases, such as natural gas. Underground or surface mining, well operation, and all supplemental activities aimed at preparing the crude materials for marketing, done generally near or at the mine site, such as milling, dressing and beneficiating, are classified here.

D. Manufacturing

Manufacturing is defined as the physical or chemical transformation of materials or components into new products, whether the work is performed by power-driven machines or by hand, whether it is done in a factory or in the worker's home, and whether the products are sold at wholesale or retail.

Assembly of the component parts of manufactured products is considered manufacturing, except in cases where the activity is appropriately classified in any class of division 45 (Construction). Also included is the recycling of waste materials.

E. Electricity, gas and water supply

This category combines three utility sectors namely electricity, gas and water supply. Electricity includes generation, collection, transmission and distribution of electric energy for sale to households, industrial and commercial users. Electricity production may be hydraulic, conventional, thermal, nuclear, solar, tidal etc. in origin. Included are electric power plants, which sell a significant amount of electricity to others.

The gas supply includes manufacture of gaseous fuels, production of gas by carbonation of coal or by mixing manufactured gas with natural gas or petroleum or other gases and distribution of gaseous fuels through a system of mains to household, industrial, commercial or other users. Transportation of gaseous fuels by pipeline on a fee or contract basis is excluded.

Also included in this category is production class includes production, collection and distribution of steam and hot water for heating, power and other purposes. The water supply includes collection, purification and distribution of water to household, industrial, commercial or other users.

In the pre-project period data collection methods, in accordance with the statistical practice of Vietnam, largely depended on the type of ownership of establishments. The Industrial Survey 1999, however, was aimed to set up uniformity in data collection methods. The survey covered all establishments engaged in the above-mentioned industrial activities irrespective of the type of ownership, legal organisation and level of administration control (central government or local government). A cut-off point of 5 and more persons engaged was designed to separate smaller establishments, which required an entirely different statistical approach to data collection. No establishment with less than 5 persons engaged was reported in the state and the joint venture sectors. Hence, the Industrial Survey 1999 covered:

- all state run industrial establishments;
- all industrial establishments operated as joint venture;
- all private industrial establishments with 5 or more persons engaged.

As mentioned earlier geographical coverage of the project was limited to the six most industrialised provinces for which the survey was executed. According to the programme of the GSO, aimed to fully convert the national statistical system to international standards by the year 2000, the coverage of the survey was extended by 11 more provinces listed below.

The project covered Provinces	GSO extension
1. Hanoi	1. Thanh Hoa
2. Ho Chi Minh	2. Quang Ninh
3. Haiphong	3. Ha Tau
4. Da Nang	4. Thai Nguen
5. Dong Nai	5. Nam Dinh
6. Ba Ria-Vung Tau	6. Phu Tho
	7. Binh Dinh
	8. Khanh Hoa
	9. Bing Duong
	10. Can Tho
	11. Kien Giang

2.3 The frame

The GSO has the responsibility to submit the annual reports on industrial statistics to the government. There is a government-approved report format, which is given to the PSOs to distribute to and collect from industrial establishments. For this purpose, GSO and its field offices maintain a fairly updated register of establishments. Annual reports are compulsory for the state-run establishments, so the list was readily available. In case of joint venture industries, a complete enumeration of these units was conducted very recently. From these sources the PSOs and field offices compiled a comprehensive list of state and joint venture industries. Results of the Economic Census 1995 provided the basic information for non-state establishments. Each establishment record contained at least the address of the establishment and the ISIC rev.3 code of the main activities. These records were updated from time to time and a list of all eligible establishments was prepared for each province and used for the survey.

2.4 Questionnaire

A questionnaire was designed to cover all data items required to meet the needs of the local agents and the basic industrial statistics programme recommended by the United Nations. The information collected satisfies the needs of national accounts, government and business users and researchers. According to the priority set for UNDP funded projects additional items were included to yield gender related statistics and some indicators on environmental statistics.

The questionnaire was drafted by the UNIDO expert and finalised by GSO, incorporating some changes relevant to national requirements.

2.5 Data collection

Data were collected at the establishment level. The establishment was considered as an eligible statistical unit if the main activity reported falls within the scope of the survey. Data were collected for the whole range of activities of the reporting unit. Establishments with a significant amount of non-industrial allied activity supplied additional data for such allied activities in a summary table included in the questionnaire.

Questionnaires were distributed and collected by a team of trained enumerators and supervisors. Local PSOs organised the meetings with the representatives of major establishments to explain the purpose of the survey and content of the questionnaire. While collecting forms, survey staff checked the data consistency on the spot.

The number of establishments in the GSO record for the six provinces used for the frame was 3,317. Out of this number 3,186 establishments were identified and surveyed. The difference of 131 units comes from the closure, merge or shift to other types of activities of establishments. Some establishments had no operation in the reference period so could not supply any information. Such establishments

are excluded from the tables. Similarly, four establishments with extremely negative figures were excluded. After these exclusions, the actual number of establishments is reduced to 3,145 in the six surveyed provinces.

2.6 Data processing

UNIDO's special software for industrial statistics NISP in Windows was installed in the GSO and in the six project-covered PSOs. Through the joint efforts of UNIDO's Systems Analyst and GSO staff, the software was translated into the Vietnamese language and customized according to the survey questionnaire. The customized version of the software was also installed in the six PSOs. Data from these provinces were entered in the PSO offices and then transmitted to the GSO. In the case of the additional 11 provinces, however, data entry was made in the GSO, because the NISP project did not cover these provinces and computer facilities and trained manpower required for this task were not available in these PSOs.

Survey results have been edited, processed and stored in a data system installed in the Industrial Department of the GSO. A number of output tables have been set up in the system for the most widely used indicators by different classification categories. More tables can be made available on users' demand. The system can also produce the directory of industrial establishments for the provinces covered by the survey. The system is now being operated by trained personnel of the GSO.

2.7 Limitations of the survey

The industrial survey 1999 has its limitations, which need to be taken into consideration when using its results.

First of all, this was not a nation wide survey and its coverage was limited to 17 provinces. On the one hand this coverage of the most industrialised provinces ensured an almost 80% representation of industry in terms of output, but on the other hand coverage of only highly industrialised areas might have overestimated the several relative figures produced in this report. For instance, the average size of an establishment by persons engaged was found to be 214 persons per establishment, which is quite high for a developing country. A likely explanation for this would be the fact that the survey covered only those provinces where large establishments are dominant. Secondary sources have indicated the average number of persons engaged per establishment in the country as a whole to be less than 150.

This was the first serious statistical operation of this size conducted according to international standards of industrial statistics. The GSO and its field offices have not gained sufficient experience yet in using the new methodology, nor do they yet have the statistical experience. Although the GSO and the PSOs in the areas covered by the project made sufficient efforts to control the errors during data collection, there were still many cases of inconsistencies. These inconsistencies stem from a lack of experience of staff in the classification of activities, using ISIC

codes, as well as insufficient understanding of all terms and concepts applied in the new methodology.

There are also conflicting interpretations of internationally used terms in the different government departments of Vietnam. For example, according to SNA-93 payment for copyright, patent and trademark (like payment for the use of any other assets owned by others) is considered as a cost of non-industrial services. However the Ministry of Finance of Vietnam and the GSO National Account Department have given instructions to include these items in depreciation.

Similarly, business travel is considered in SNA-93 as a part of intermediate consumption, while private travel is final consumption. In Vietnam, payment to employees for business travel is partly included in the compensation of employees. There are some other differences, which could have affected the consistency of results, although most of the staff members involved in the survey were aware of these differences.

Despite these limitations, the survey results constitute a comprehensive data set for the provinces covered and can be widely used for planning and policy making, for economic research and business decisions. This is the only data set currently available in Vietnam according to international standards. As these provinces contribute 80% of total industrial output, the survey has been a serious attempt in building up a new statistical system in Vietnam. The GSO will analyse the problems and difficulties encountered in this first survey in order to improve the quality and reliability of future statistical operations of this kind.

3. Major findings of the survey

3.1 Number and structure of industrial establishments

The total number of establishments in the surveyed 17 provinces was 4,767, out of which 183 were engaged in mining and quarrying, 4,562 in manufacturing and 22 in electricity, gas and water supply. The manufacturing sector contributed almost 70% of the total value added, while the share of mining and quarrying and electricity, gas and water supply was 27% and 3% respectively.

The largest manufacturing sub-sector was the food and beverage industry with more than a 20% share of total output. However, the leather industry was found to be the most labour intensive activity where almost 17% of total employment was reported. Among other major manufacturing sectors were tobacco, textile and wearing apparel. Similarly, a significant contribution to industrial production was reported from the chemical industry and the manufacture of non-metallic mineral products which produce construction materials such as cement, bricks and tiles. The distribution of industry by ISIC for major indicators is given below.

Table 3.1: Percentage Distribution of Major indicators by ISIC

ISIC	Number of establishments	Number of persons engaged	Gross addition to fixed assets	Gross Output	Total value added
C Mining and quarrying	3.84	11.33	15.02	13.92	27.09
D Manufacturing	95.70	87.90	83.56	84.66	69.51
15 Food products and beverages	20.03	10.76	16.94	20.26	16.31
16 Manufacture of tobacco products	0.31	0.92	0.29	3.40	4.75
17 Manufacture of textiles	4.28	9.26	10.22	6.03	5.76
18 Manufacture of wearing apparel	7.59	13.67	1.99	3.40	4.43
19 Manufacture leather products	2.98	16.84	8.78	5.80	4.98
20 Manufacture of wood and of products	5.20	2.24	0.49	0.94	0.77
21 Paper and paper products	4.05	2.34	2.42	2.38	1.47
22 Publishing and printing	3.21	1.59	1.36	2.08	1.96
23 Coke and refined petroleum products	0.13	0.05	0.14	0.47	0.25
24 Chemicals and chemical products	4.91	3.52	5.22	6.99	4.80
25 Rubber and plastics products	5.50	3.04	8.76	3.11	2.51
26 Non-metallic mineral products	12.84	6.27	4.20	6.56	7.08
27 Manufacture of basic metals	1.53	2.53	3.33	4.13	2.09
28 Fabricated metal products	5.48	2.05	3.52	2.26	1.63
29 Machinery and equipment n.e.c.	3.34	2.49	1.97	1.80	1.66
30 Office, accounting and comp. machinery	0.06	0.26	3.93	3.32	0.51
31 Electrical machinery and apparatus n.e.c.	2.06	2.12	3.70	2.21	1.82
32 Radio, TV and communication equipment	1.47	1.27	1.69	3.77	2.42
33 Medical, optical instruments; watches, clocks	0.55	0.32	0.45	0.29	0.26
34 Motor vehicles, trailers and semi-trailers	1.93	0.86	0.69	1.21	1.24
35 Manufacture of other transport equipment	2.79	2.04	1.65	2.75	1.62
36 Furniture; manufacturing n.e.c.	5.43	3.50	1.82	1.51	1.19
37 Recycling	0.04	0.00	0.00	0.00	0.00
E Electricity, gas and water supply	0.46	0.77	1.42	1.42	3.40
Industry total	100.00	100.00	100.00	100.00	100.00

A broad classification of low-, medium- and high technology has been used to show the structure of the manufacturing industry in Vietnam in comparison to some selected countries of the ASEAN.

The definitions used are as follows:

Low-technology industries:

Food products, beverages, tobacco, textiles, wearing apparel, leather and leather products, wood and wood products, paper and paper products, publishing and printing.

Medium-technology industries:

Coke and refined petroleum products, rubber and plastics, non-metallic minerals, basic metals and fabricated metal products.

High-technology industries:

Chemicals and chemical products, all machinery and equipment, scientific instruments, transport equipment.

Based on the share of value-added of these categories in total value-added, the following structure was obtained.

Table 3.2: Distribution of value-added according to technology groups

Level of Technology	COUNTRY					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	Viet Nam
Low-technology	47.7	24.3	45.2	10.5	42.7	58.7
Medium-technology	22.6	24.6	25.7	16.5	26.5	20.7
High-technology	29.7	51.1	29.1	73.0	30.8	20.6
Total	100.0	100.0	100.0	100.0	100.0	100.0

With the exception of Singapore and Malaysia, all countries shown have the highest share in low-technology industries. Since low-technology industries are predominantly agro-based industries, they rely on agricultural production as input resources. High-technology manufacturing is particularly investment intensive and offers few employment opportunities, however, requires better skilled staff.

Low-technology generally implies high labour-intensity and using the same classification for the shares of employment, this is borne out by Table 3.3 below:

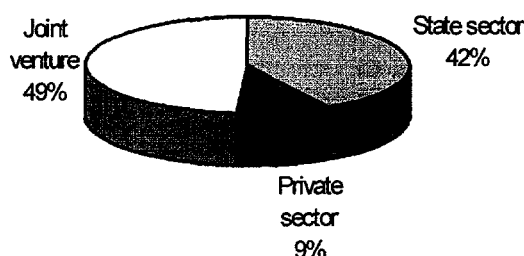
Table 3.3: Distribution of employment according to technology groups

Level of Technology	COUNTRY					
	Indonesia	Malaysia	Philippines	Singapore	Thailand	Viet Nam
Low-technology	64.9	30.4	53.5	14.1	66.2	65.5
Medium-technology	22.1	27.6	22.1	21.3	21.8	19.8
High-technology	13.0	42.0	24.4	64.6	12.0	14.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

In all countries shown the share of employment in low-technology industries is higher than the share of value-added. High-technology industries on the other hand are less labour-intensive and in all cases the share of employment lies below the contribution made by value-added.

Survey results have shown a large number of private sector industries emerging in Vietnam. Out of 4,767 establishments covered in the survey 2,956 i.e. almost two-thirds of the establishments belonged to the non-state sector.

However, the private sector was found to be still small in Vietnam in terms of its contribution to total industrial output. According to the survey results, the private sector of the surveyed area contributed less than 10% to total output against 42% of the state sector and 49% of joint venture industries.

Fig 1. Distribution of Gross Output by Type of Ownership of Establishments

In terms of size and contribution to total output the state sector remains dominant. The state sector employs more than half of total industrial employees and produce about 42% of total output. The number of persons engaged per establishment was almost 500 in contrast to 84 persons in the private sector and 320 in joint venture industries.

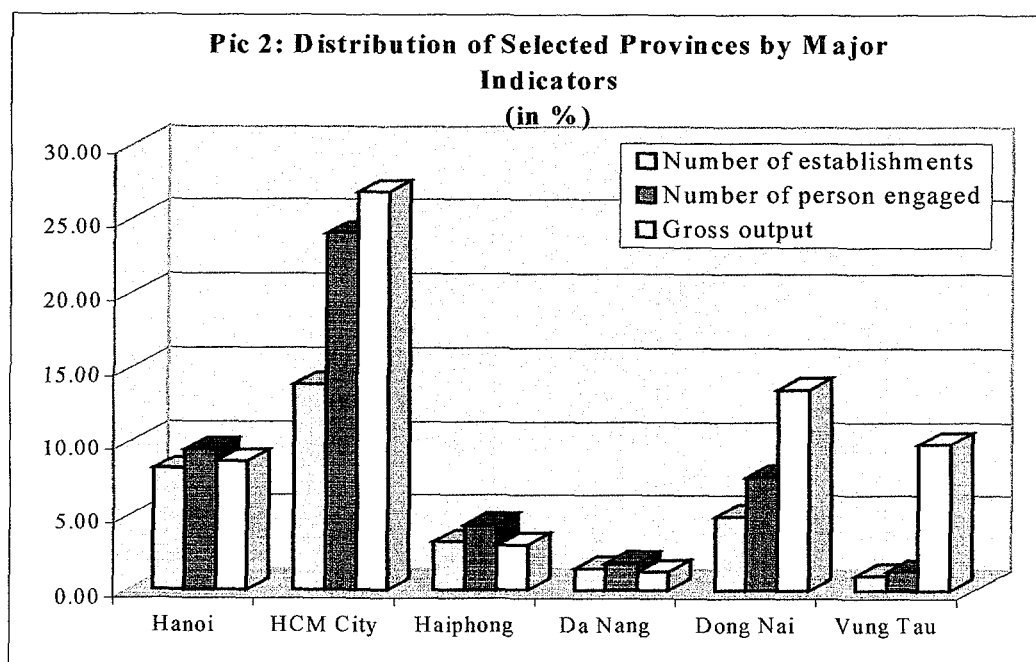
One important observation made from the survey results was that the share of joint venture industries was very high in fixed capital investment in the reference period. Only in the surveyed provinces joint venture industries invested more than 10 trillion VND, i.e. almost 1 billion US\$ contributing about 70% of total gross fixed capital formation of all industrial sectors. Compared to its size the private sector also made a significant contribution of about 10% to gross fixed capital formation. The state sector accounted for little more than 20%. This shows a faster expansion of the private sector and joint venture industries compared to

those run by the state. The distribution of establishments by type of ownership is presented below.

Table 3.4: Major Indicators of Industrial Establishments by Type of Ownership

Indicators		State sector	Private sector	Joint venture	Total
Number of establishments	Total	1084	2956	727	4767
	In %	22.7	62.0	15.3	100.0
Number of persons engaged	Total	537306	249352	232304	1018962
	In %	52.7	24.5	22.8	100.0
Gross fixed capital formation (billion VND)	Total	3304	1435	10776	15515
	In %	21.3	9.2	69.5	100.0
Gross output (billion VND)	Total	61456	13878	71940	147274
	In %	41.7	9.4	48.8	100.0

The geographical distribution of industries in Vietnam was reported to have a greater concentration in the three southern provinces of Ho Chi Minh City (formerly known as Saigon), Dong Nai and Ba Ria-Vung Tau. These three provinces produce half of the total industrial output of the country and employ one-third of industrial workers. This lower share in employment and higher contribution to output also shows a better labour productivity rate in this area. From the northern provinces, a significant contribution was reported from the capital Hanoi and the coastal province of Haiphong. The following chart better illustrates the position of selected provinces by different indicators in national total.



3.2 Employment characteristics

The total number of persons engaged in the surveyed 17 provinces was reported as 1.019 million, out of which 1.014 million were hired employees and 5,000 were working proprietors and unpaid family workers. The manufacturing sector employed 88% of all persons engaged in the industrial sectors with the total number of 896,000 persons. The number of persons engaged in mining and quarrying and electricity, gas and water supply was 115,000 and 8,000 respectively. However, the average number of persons engaged per establishment was higher in the mining industry.

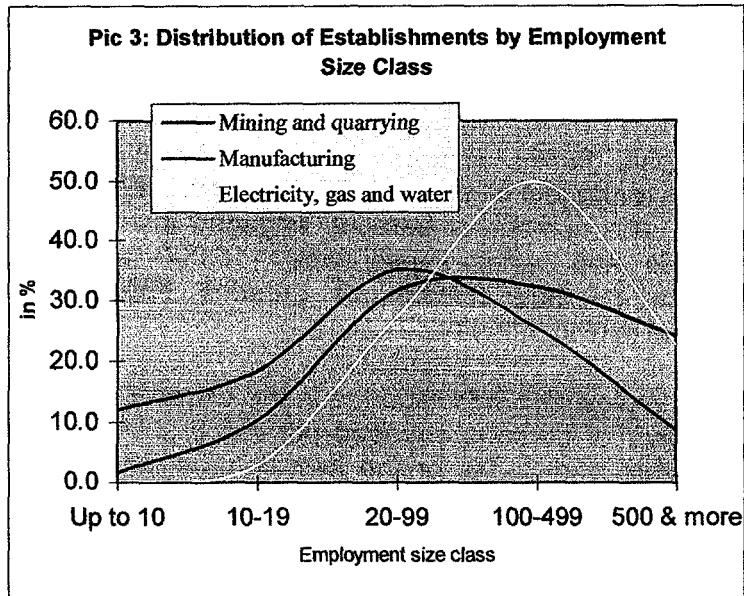
The largest concentration of employment was reported in the extraction of crude petroleum. The average number of persons engaged per establishment in this industry was 5,600 for the state and 3,200 for the joint venture industry. The mining industry employed 630 persons per establishment on average, whereas this number was only 196 persons for the manufacturing sector. Electricity, gas and water supply employed 356 persons per unit.

The largest number of persons engaged was reported in state owned industries, 537,000 persons. The joint venture industries employed 232,000 and the private sector 249,000 persons. The average number of persons engaged per establishment in all sectors was 214 persons. The average number of persons engaged by industry and by type of ownership of establishments is given below.

Table 3. 5: Average number of persons engaged per establishment by industry

	State	Private	Joint venture	Industry average
Mining	1071	284	1136	630
Manufacturing	455	77	314	196
Electricity	389	0	33	356
Industry average	496	84	320	214

Within the manufacturing sectors, the leather industry was reported to have the highest number of persons engaged per establishment. There were 142 establishments engaged in the manufacture of leather goods, which also includes the manufacture of footwear, where 172,000 persons were employed, i.e. more than 1200 persons per establishment. Other sectors of higher than average employment were the manufacture of tobacco products, textile and wearing apparel and basic metal industry.



In general, most of the industries fell into the employment size interval of 100 to 499 persons. More than half of the mining industries, one third of the manufacturing and two thirds of the utility industries reported to have more than 100 persons engaged.

The chart (Pic.3) clearly shows the rightward skewed distribution indicating more establishments with higher employment figures. There were no

establishments reported in the sector of electricity, gas and water supply in the employment size class of below 10 persons engaged. Manufacturing establishments were more evenly distributed by employment size, whereas in mining and quarrying most of the establishments were quite big by employment size.

While analysing employment data by functional categories it was found that production workers comprise more than 85% of employees in industrial establishments. About 10% of employees were classified as administrative workers and a little less than 5% were technicians. Production workers had an even greater share in the mining and quarrying industry - almost 90%. The share of administrative workers was quite large in the electricity, gas and water supply. In this sector more than 18% of employees belonged to this category against 7% in mining and quarrying and 10% in manufacturing.

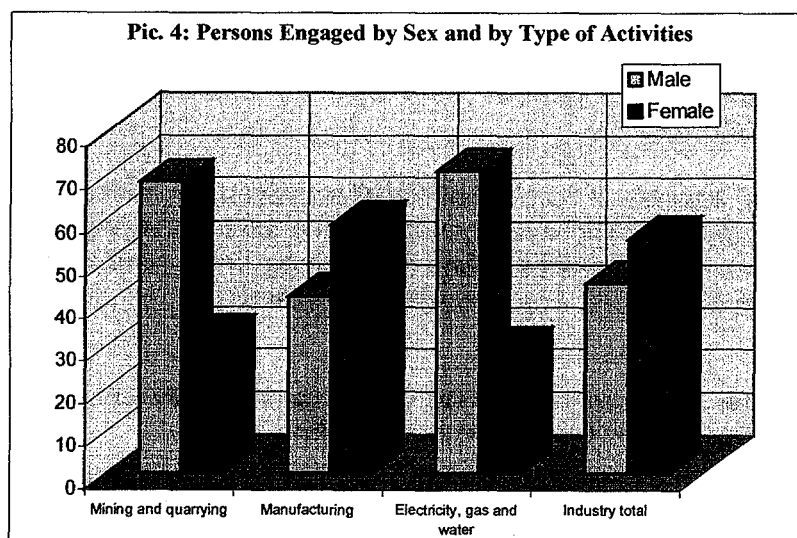
3.2.1 Gender structure

The Industrial Survey 1999 also aimed to produce basic gender related data pertaining to employment in industrial establishments. Out of a total number of 1.019 million persons engaged in industrial establishments of the surveyed area, 561,000 were female and 458,000 male workers. The number of female workers comprised 55.1% of the total of persons engaged in industrial establishments.

A very high rate of female employment was observed in three labour intensive industries: manufacture of textiles 69.3%, wearing apparel 81.5% and leather industries, including production of all types of footwear, 79.5%. These three sectors contributed 40% of total employment. The higher rate of female employment in most of the labour intensive industries also explains the larger number of female workers in industry total.

Table 3.6 Number of Persons Engaged by ISIC and by Sex

ISIC	Number of persons engaged			Unpaid workers			Employees		
	Total	Female	In % to total	Total	Female	In % to total	Total	Female	In % to total
C Mining and quarrying	115418	36801	31.88	132	24	18.18	115286	36777	31.90
10 Mining of coal and lignite	57565	14707	25.55	0	0	0.00	57565	14707	25.55
11 Crude petroleum and natural gas	17528	3677	20.98	0	0	0.00	17528	3677	20.98
13 Mining of metal ores	587	139	23.68	2	1	50.00	585	138	23.59
14 Other mining and quarrying	39738	18278	46.00	130	23	17.69	39608	18255	46.09
D Manufacturing	895703	522401	58.32	4511	1611	35.71	891192	520790	58.44
15 Food products and beverages	109633	57240	52.21	1303	452	34.69	108330	56788	52.42
16 Manufacture of tobacco products	9373	4988	53.22	0	0	0.00	9373	4988	53.22
17 Manufacture of textiles	94318	65348	69.28	113	43	38.05	94205	65305	69.32
18 Manufacture of wearing apparel	139243	113475	81.49	247	103	41.70	138996	113372	81.56
19 Manufacture leather products	171591	136378	79.48	102	25	24.51	171489	136353	79.51
20 Manufacture of wood and of products	22777	10214	44.84	710	372	52.39	22067	9842	44.60
21 Paper and paper products	23796	9936	41.75	139	37	26.62	23657	9899	41.84
22 Publishing and printing	16209	6492	40.05	23	8	34.78	16186	6484	40.06
23 Coke and refined petroleum products	491	117	23.83	7	1	14.29	484	116	23.97
24 Chemicals and chemical products	35830	15547	43.39	124	28	22.58	35706	15519	43.46
25 Rubber and plastics products	30941	13606	43.97	189	62	32.80	30752	13544	44.04
26 Non-metallic mineral products	63855	23126	36.22	820	304	37.07	63035	22822	36.21
27 Manufacture of basic metals	25729	6728	26.15	29	5	17.24	25700	6723	26.16
28 Fabricated metal products	20929	6218	29.71	133	31	23.31	20796	6187	29.75
29 Machinery and equipment n.e.c.	25360	6440	25.39	88	22	25.00	25272	6418	25.40
30 Office and computing machinery	2681	1646	61.40	0	0	0.00	2681	1646	61.40
31 Electrical machinery and apparatus	21556	9969	46.25	36	3	8.33	21520	9966	46.31
32 Radio, TV and communication equipment	12932	6558	50.71	26	10	38.46	12906	6548	50.74
33 Med. And optical instruments, watches	3243	1179	36.36	9	0	0.00	3234	1179	36.46
34 Motor vehicles, trailers and semi-trailers	8780	1720	19.59	84	10	11.90	8696	1710	19.66
35 Manufacture of other transport equipment	20776	4796	23.08	64	13	20.31	20712	4783	23.09
36 Furniture; manufacturing n.e.c.	35613	20678	58.06	265	82	30.94	35348	20596	58.27
37 Recycling	47	2	4.26	0	0	0.00	47	2	4.26
E Electricity, gas and water supply	7841	2290	29.21	0	0	0.00	7841	2290	29.21
40 Electricity, gas, steam and hot water supply	809	159	19.65	0	0	0.00	809	159	19.65
41 Collection and distribution of water	7032	2131	30.30	0	0	0.00	7032	2131	30.30
Industry total	1018962	561492	55.10	4643	1635	35.21	1014319	559857	55.20



When analysed by main types of activities, the number of female workers was higher in the manufacturing sector compared to male workers, but lower in mining and quarrying and electricity, gas and water supply. A lower number of female workers was observed in such activities as mining of metal ores, petroleum refineries, production of motor vehicles and machineries.

Usually, participation of female workers is lower in heavy industries and higher in light industries, which was also true in the case of Vietnam. However, survey results have shown that in Vietnam, involvement of women in industry was remarkably high. Women's participation in industries was also observed by functional categories. Most of the working women in industry were production workers. In the manufacturing sector more than 60% of production workers were women. However, the number of female employees among technicians and administrative staff was less. The number of female workers by functional categories for the main types of activities is given below.

Table 3.7 Number of female employees by functional categories

ISIC	Production workers			Technicians			Administration workers		
	Total	Female	In% to total	Total	Female	In% to total	Total	Female	In% to total
Mining and quarrying	102794	33534	32.62	4098	789	19.25	8394	2454	29.24
Manufacturing	758385	466168	61.47	45435	16277	35.82	87372	38345	43.89
Electricity, gas and water supply	5785	1423	24.60	608	145	23.85	1448	722	49.86
Industry total	866964	501125	57.80	50141	17211	34.33	97214	41521	42.71

A higher number of female technicians, compared to their male counterparts, was reported in two manufacturing sectors: manufacture of wearing apparel and leather products. The number of female technicians in the manufacture of wearing apparel was 3,614 as against 2,589 male technicians.

3.2.2 Compensations of employees and average wages

In the surveyed area, industrial establishments paid in total 12836 billion VND to employees in different forms of compensation. Naturally the main component was wages and salaries, which comprised 86.8% of total payment. Bonus, gratuities and other benefits had a share of 3.2% in total payment. The remaining 10% constituted indirect benefit of employees paid by their employers to social security, pension funds etc.

The average wages and salaries of employees for all surveyed provinces was 11 million VND per annum in 1998. The average wages and salaries varied by type of activities and by sex of employees. Male employees were paid more on average than females in all sectors. The average wages and salaries per annum are given below.

Table 3.8 : Average wages and salaries per annum by sex and by type of activities (in million VND)

Type of activities	Male	Female	All employees
Mining and quarrying	14.45	6.85	12.02
Manufacturing	12.63	9.48	10.79
Electricity, gas and water	19.38	16.17	18.44
Industry average	13.02	9.34	11.00

The highest rate of average wages and salaries was reported in petroleum refineries, where employees were paid 36 million per annum. Similarly, the average wage rate was higher in the electricity sector - 32 million VND. However, industries of wood products paid only 7 million VND, which was the lowest rate observed. Average wage rates did not vary much in other sectors.

When data were compared by type of ownership, average wages and salaries were found to be highest in joint venture industries at 18 million VND per annum. The wage rate in the private sector was less than half of that, just 7 million VND. The state run industries paid 10.8 million VND per annum.

3.3 Output and input structure of industrial establishments

The total value of gross output of all industrial sectors was 147274 billion VND. The manufacturing sector contributed 85% of total industrial output as compared to 14% for mining and quarrying and 1% for electricity, gas and water supply. The main component of gross output was the sale of goods, which comprised 92% of gross output. Receipts from services contributed around 6% and the sale of electricity and work on own account and others contributed 2% to the total.

Sale of goods comprised almost 99% of gross output in tobacco products, basic metal industry, fabricated metal products and communication equipment. However, receipts from services were quite high in the manufacture of wearing apparel (42.5%), publishing and printing and reproduction of recorded media (41.5%) and production of medical and optical instruments, watches and clocks (18.6%).

Stock of finished and semi-finished goods and goods for resale increased by 1221 billion VND during the reference year of 1998.

A higher value of gross output per establishment was observed in crude petroleum mining, manufacture of tobacco products, computing machinery and production of electricity. These sectors also produced a higher value added per person engaged.

The total intermediate consumption of industrial establishments in the surveyed area was 98941 billion VND. The main part of the cost naturally was the value of materials and supplies purchased, which comprised 78% of total intermediate consumption. Among others, fuel and electricity comprised about 6% and cost of services 14%. Imported materials and supplies comprised 40% of the total cost of goods and services for industrial establishments. The share of imported materials was highest in the manufacture of footwear, radio and television production and manufacture of transport equipment and motor vehicles.

Intermediate consumption comprised 67% of gross output. This is a relatively high cost of production, which has an inverse impact on the value added/output ratio. Thus the value added output ratio on average for all sectors was 33%. This ratio was slightly higher (34.3%) for the joint venture sector, but far lower (26.8%) in the private sector. The value added output ratio for the manufacturing sector was about 27%, which is lower when compared to a few other countries in the ASEAN region.

ASEAN Countries	Value added output ratio (in%)
Cambodia	38.1
Indonesia	38.3
Philippines	39.1
Thailand	40.2
Vietnam	26.9

The reason for the low ratio of value added to gross output of the manufacturing sector is mainly attributed to the fact that:

- Some major manufacturing branches in Vietnam, such as the manufacture of wearing apparel, leather products, automobiles, motor cycles, electronic products and accounting machinery, predominantly assemble from imported materials and components, thus their intermediate consumption was in the range of 75 - 78%.
- The technologies used in these manufacturing branches are often outdated, leading to waste of material, fuel and energy and resulting often in products of not of high quality standards.
- Many firms, particularly in the joint venture and private sectors, have only recently come into operation. In their start-up phase, they have not yet reached their planned production capacity, resulting in operating losses.

3.4 Fixed assets and gross fixed capital formation

In total 16797 billion VND was spent on acquisition of fixed assets in 1998. At the same time fixed assets worth 1281.6 billion VND were disposed of due to the sale or loss resulting in a gross addition of fixed assets 15515.4 billion VND, otherwise defined as gross fixed capital formation. The value of depreciation of fixed assets was 10605 billion VND. The overall rate of depreciation for all industrial sectors was reported as 11,0%, while the depreciation rate for manufacturing was 10.5%.

Purchase of new assets (including all imported assets) comprised 91% of the total acquisition of fixed assets. Other acquisitions were made through purchase of used assets (5%), capital repair (2%) and from own production (2%). Petroleum mining, food products, textile industry and rubber and plastic products made most of the new purchase of fixed assets in the reference period.

The total value of fixed assets at the end of 1998 was 95456.6 billion VND. Machinery and equipment had the highest share in fixed assets except in electricity, gas and water supply where wire and pipelines are included in transport equipment. The composition of fixed assets by type of activities is given below.

Table 3.9 Composition of Fixed Assets by Type of Activities

Type of activities	Land	Buildings and structures	Machinery and equipment	Transport equipment	Furniture and others	Total
Mining	0.3	9.2	71.2	7.5	11.8	100.0
Manufacturing	5.3	28.2	53.5	3.3	9.7	100.0
Electricity, gas and water	3.4	9.7	6.0	80.9	0.0	100.0
Industry average	4.1	23.2	56.3	6.6	9.9	100.0

3.5 Indicators for national accounts

One of the main tasks of industrial statistics is to measure the contribution of the industrial sectors to the national economy. For this purpose, a number of variables are calculated to reflect the share of activities covered in macroeconomic indicators. These figures are to be supplied for compilation of national accounts. Figures compiled from the survey results are illustrated in Table 3.10.

Table 3.10: National Account Indicators by Type of Activities

Indicators	Unit	Mining and quarrying	Manufacturing	Electricity, gas and water
Number of persons engaged		115.4	895.7	7.8
Out of which	'000'			
Number of employees		115.2	891.2	7.8
Compensation of employees	Billion VND	1547.5	11128.6	159.6
Gross output at producer's prices		20499.6	124687.1	2087.4
Intermediate consumption		7406.3	91088.6	446.4
Value added at producer's prices	Billion VND	13093.3	33598.5	1641.0
<i>Indirect taxes</i>		3396.1	7420.6	194.6
<i>Subsidies</i>		1.0	163.6	2.7
Value added at basic prices		9698.2	26341.5	1449.1
Gross fixed capital formation		2330.4	12964.8	220.2
Change in stock	Billion VND	639.6	2358.8	26.2

3.6 Environment related data

Viet Nam is one of the few countries where the collection of environmental data has been attempted as part of the overall industrial inquiry. The results are shown in Tables 15 to 19 of the Appendix.

In general, a distinction is made between those branches of manufacturing which cause a higher rate of pollution and, those with a medium and lower rate.

Paper and paper products, coke and refined petroleum products, non-metallic mineral products and the manufacture of basic metals are in the group of higher polluting industries. In Vietnam 884 or 19.4% of all establishments fall into this category.

The majority of establishments, 2531 companies, (55%) can be classified as belonging to the medium polluting group which encompasses food and beverages, textiles, leather products, publishing and printing, chemicals and chemical products, fabricated metal products, electrical machinery, transport equipment and furniture manufacturing.

The remaining manufacturing branches are considered as less polluting.

Overall about 21% of all establishments have waste treatment facilities and this rate is only marginally higher (22%) for those establishments, falling into the higher polluting branches, while 24% of those establishments considered as medium polluting industries have waste treatment facilities. In those manufacturing branches where pollution is considered as lower, about 14% of the establishments have waste treatment facilities.

The classification into higher, medium and lower polluting industries, although very broad in itself, is confirmed by the reported volumes of waste generated. Although just less than 20% of all establishments fall into the higher polluting category, these establishments produce 48.5% of all waste water, 61% of all gas waste and 44.4% of all solid waste. The corresponding figures for the lower polluting industries are 2%, 1% and 2.8% respectively.

The figures on investment of industrial establishments in Environment Protection Measures show that 59% of all investment was made in the medium polluting industries and 23% in the higher polluting industries, in both cases the share of investment is higher than the share based on the number of establishments.

The planned investment for 1999 in current monetary terms points to an increase in the investment on environment protection measures for the medium polluting and to a maintenance of present levels in the higher polluting industries. However, these figures need to be confirmed by actual investment expenditure during the next industrial inquiry.

4. Future direction of industrial statistics in Vietnam

The implementation of the National Industrial Statistics Programme in Vietnam has been an important step towards the establishment of a new statistical system in Vietnam. Upon completion of this project, GSO will be equipped with sufficient knowledge of internationally used statistical methods and data processing facilities. In order to sustain the achievement of the project and to further improve the statistical system of the country it is highly recommended that the GSO carry out the following activities.

Central business register: The results of the industrial survey 1999 and the NISP registry format installed in the data system of the GSO provide an excellent opportunity to make a good start for the business register. The NISP project still envisages staff training on this subject. The training will focus on issues related to the company register and establishment register. A further statistical programme will deal with establishment as well as enterprise related data, for which a well updated central business register, covering all companies and establishments (as a kind-of-activity or local unit of an enterprise), will be vitally important.

National survey: Once such a register is created, a survey as now completed, will have to be repeated covering all provinces. It is also imperative to establish a new cut-off point for the main survey at 10 persons engaged. Experience with the present survey has shown that the list frame could not sufficiently cover the smaller establishments with less than 10 persons engaged. Any resistance to a cut-off point at 10 persons will negatively affect the quality of future survey results.

Sample surveys: For a country of the size of Vietnam the use of sampling methods for annual and quarterly surveys is the most efficient and reliable way of collecting data. As the number of establishment grows every year, sampling techniques are more rational than ever. Sampling methods with special consideration for establishment surveys were explained to GSO staff and written materials were provided during this survey. One of the important future directions of industrial statistics in Vietnam would be a wide use of sampling methods in statistical surveys.

Quarterly/monthly survey and production index: Statistical methodology suggested and implemented under the current project relates to annual data. A new approach has become equally necessary for more-frequent-than-annual inquiries. The main outcome of the quarterly or monthly surveys is the production index and producer's price index. A special survey should be designed for this purpose making an appropriate selection of establishments (by ISIC) and products (by CPC).

Organisational changes: It was often felt during this project that tasks of different departments of the GSO are yet to be defined in the changing context of statistical activities. Some departments are duplicating the activities and some activities are not assigned to any department. For instance, the central business register does

not fall to the responsibility of any department, whereas there are some department activities (consolidation, integration) which are clearly outdated in the age of automatic data processing.

There is also the urgent need for coordination of different departments, as they are sending conflicting instructions to field offices regarding statistical methods and calculation procedures of different indicators. A further improvement in the statistical system requires an efficient organisation of collecting, processing, disseminating and analysing statistical data.

5. Appendices

5.1 Glossary of terms

1. **Industrial activities:** For the purpose of industrial statistics, industrial activities cover mining, manufacturing and electricity, gas and water supply as defined in International Standard of Industrial Classification of All Economic Activities (ISIC, rev 3).
2. **Establishment:** An establishment is defined as an economic unit, which engages under a single ownership or control in one, or predominantly one kind of economic activity at a single physical location. The survey has covered establishments engaged in mining, manufacturing and electricity, gas and water.
3. **Statistical unit:** The statistical unit is an entity for which required items of data are compiled. The statistical unit for this survey was an establishment engaged in industrial activities.
4. **Number of persons engaged:** The number of persons engaged includes all persons who work in or for the establishment excluding persons who do work in their own home on materials provided by the establishment (home workers).

The number of persons engaged includes working proprietors, active business partners and unpaid family workers. Working proprietors and active business partners are those who are actively engaged in the work of the establishment without regular wages and salaries, for at least one third of the normal working time.

Employees: The number of employees equals the number of persons engaged less working proprietors, active business partners and unpaid family workers. Category 'employees' includes all paid workers of an establishment. Total number of the paid employees comprises all workers and apprentices if they receive wages and/or salaries. Persons working away from the establishment (except home-workers) when paid by and under the control of the establishment - for example, sales representatives, maintenance and repair personnel etc. are also included under the respective category depending upon the nature of work done by them.

5. **Compensation of employees:** The compensation paid to employees comprise two items, namely, wages and salaries and employer's contribution to social security, pension funds etc. The term 'Wages and salaries' includes all remuneration payable in cash and/or kind more or less regularly for each pay-period to all paid employees and consists of:

Basic wages/salaries, basic wages and salaries for leave periods and paid holidays,
 payment for overtime;
 dearness, compensatory, house-rent and other allowances;
 regular bonuses, such as production bonus, incentive bonus, commissions etc.

The contribution to social security, pension funds, etc. covers all payments made by the employer on behalf of his employees which form part of employees' income but not of wages and salaries. Included are employers' contributions to social security systems, insurance premiums on hospital and medical plans, private pension plans, life insurance premiums etc.

6. Sale and receipts for services: This item includes

sale of all goods from own production of the establishment,
 sale of goods made by others from materials supplied by the establishment;
 sale of scrap and by-products;
 transfer to other establishments of same enterprise (in case of multi-establishment enterprise).

Goods produced for own consumption are also included. Valuation of goods shipped is made at the establishment price including all duties and taxes imposed on products when they leave the factory. Valuation of goods of own-consumption and transfers is made as though sold. For practical reasons, book value of establishments can be accepted. Data should be collected in quantity and value term at least for the most important products of establishments.

Receipts for industrial services include all types of receipts for work done for others or for services of an industrial nature, which include:

- receipts for contract or commission work done for other establishments on their materials;
- receipts for repair and maintenance work done for other establishments;
- receipts for goods sold in the same condition as purchased.

Receipts for non-industrial services include all types receipts for services of non-industrial nature rendered to other establishments. It includes receipts for land, building, machinery and equipment given in lease or rented out, storage facilities and transport services provided to others, receipts for copyrights, patents, trademarks etc.

7. Purchases of goods and services: Purchases of goods include:

- fuels and electricity
- raw materials, including fuels used as raw materials;

- chemicals and other auxiliary materials;
- packing materials, containers, etc;
- other consumable stores including spare parts and components for repair and maintenance of machinery and equipment if their working life is less than one year.

Cost of industrial services includes all payments during the accounting year made by the establishment for different kind of industrial services received from others. These payments consists of:

- cost of contract and commission work done by others on materials supplied by the establishment (including payments made to home-workers);
- cost of repair and maintenance of fixed assets done by others including the cost of materials supplied by them for repairing;
- cost of goods sold in the same condition as purchased (to be reported at purchase value).

Cost of non-industrial services includes all payments for lease, rent, advertising, accounting, insurance, communication, legal, auditing and similar services. This item also includes the cost of transportation of finished goods, water, payments for license, copyright, patent, trademark etc.

8. Value of stocks: This item comprise the value of all materials and supplies, fuels, finished and semi-finished products and goods for resale, held by, or under the control of, the establishment (at the establishment itself or in ancillary or other warehouses).

9. Fixed assets: Fixed assets include land, building, machinery and equipment, transport equipment, furniture and others (laboratory, library etc.). Assets owned by establishment but rented out in the reference period are included. Similarly, hired assets are excluded but full value of assets taken on hire-purchase system (whether fully paid or not) excluding interest element are included. Fixed assets acquired from others are valued at the full cost incurred, i.e. at the delivered price plus the cost of installation, including any necessary fees and taxes but excluding financing costs. Fixed assets produced by the establishment for its own are valued at cost of all work plus overhead costs allocable to this work. Value of fixed assets sold, discarded or otherwise disposed of during the accounting year is recorded in its book value.

10. Indirect taxes and subsidies: Indirect taxes are charged to materials and supplies as well as to final products of an establishment. Indirect taxes charged to materials and supplies are included in the cost of materials purchased. Indirect taxes reported in this survey are those charged to final products of the establishment. So, sale tax, excise and other indirect taxes charged to final product of the establishment are included. Subsidies are inverse to taxes, paid by government to establishments in the form of direct payment, rebate and import discounts.

11. Components of the principle indicators

Principle indicators presented in output tables are composed of several data items. Such indicators like the number of persons engaged, total amount of wages and salaries are directly transcribed from the questionnaire and explained above. However, some other indicators are compiled from several data items. Composition of these indicators is shown below.

Gross output and intermediate consumption

Output components	Input components
Value of sale	Cost of materials and supplies purchased
<i>Plus</i> Value of electricity sold	<i>plus</i> Cost of fuels and electricity purchased
<i>Plus</i> Receipts for contract and commission work done for others in their own materials	<i>plus</i> Cost of contract and commission work
<i>Plus</i> Receipts for repair and maintenance	<i>plus</i> Cost of repair and maintenance
<i>Plus</i> Goods sold in the same condition as purchased	<i>less</i> Change in stock of materials and supplies and fuel
<i>Less</i> Cost of goods to be sold in the same condition as purchased	<i>plus</i> Cost of non-industrial services
<i>plus</i> Value of work done on own account	
<i>plus</i> Change in stock of finished goods, work on progress and goods for re-sale	
<i>Plus</i> Receipts for non-industrial services	
<i>Equals</i> Gross output	<i>Equals</i> Intermediate consumption

$$\text{Total value added} = \text{Gross output} - \text{Intermediate consumption}$$

Gross fixed capital formation

Components of the fixed capital formation	
	New assets purchased/acquired
<i>plus</i>	Old assets purchased/acquired
<i>plus</i>	Value of capital repair done
<i>plus</i>	Value of work done on own account
<i>equals</i>	Total acquisition during the year
<i>less</i>	sale or/and loss of fixed assets
<i>equals</i>	Gross fixed capital formation

5.2 Statistical Tables

Table 1: Principal Indicators of Industrial Statistics by ISIC, 1998*All Establishments*

ISIC	Number of establishments	Number of persons engaged	Number of employees	Compensation of employees	Gross addition to fixed assets	Change in stock	Gross Output	Intermediate consumption	Total value added
	Number			Value in million VND					
C Mining and quarrying	183	115418	115286	1547478	2330427	639602	20499608	7406307	13093301
10 Mining of coal and lignite; extraction of peat	26	57565	57565	695873	370911	324362	3621390	2589700	1031690
11 Extraction of crude petroleum and natural gas	4	17528	17528	668699	1813290	311960	15710050	4148860	11561190
13 Mining of metal ores	6	587	585	7673	2488	-5283	67536	42711	24825
14 Other mining and quarrying	147	39738	39608	175233	143738	8563	1100632	625036	475596
D Manufacturing	4562	895703	891192	11128639	12964775	2358804	124687135	91088647	33598488
15 Food products and beverages	955	109633	108330	1472355	2627612	674038	29836530	21951576	7884954
16 Manufacture of tobacco products	15	9373	9373	181948	45323	331631	5010780	2715864	2294916
17 Manufacture of textiles	204	94318	94205	951004	1585568	483070	8876221	6091807	2784414
18 Manufacture of wearing apparel	362	139243	138996	1424367	308334	66379	5000247	2857623	2142624
19 Manufacture leather products	142	171591	171489	1959788	1362678	210551	8542417	6135740	2406677
20 Manufacture of wood and of products	248	22777	22067	168456	76534	50912	1390423	1018242	372181
21 Paper and paper products	193	23796	23657	262592	375407	108060	3502458	2789972	712486
22 Publishing and printing	153	16209	16186	281172	211379	92216	3058624	2112997	945627
23 Coke and refined petroleum products	6	491	484	19902	21570	-1846	694940	574752	120188
24 Chemicals and chemical products	234	35830	35706	701010	809520	179802	10287530	7968021	2319509
25 Rubber and plastics products	262	30941	30752	418394	1358533	79308	4577394	3364271	1213123
26 Non-metallic mineral products	612	63855	63035	791161	652405	36866	9662744	6238605	3424139
27 Manufacture of basic metals	73	25729	25700	324840	515926	-230757	6076034	5063680	1012354
28 Fabricated metal products	261	20929	20796	349611	545442	-74168	3330363	2544817	785546
29 Machinery and equipment n.e.c.	159	25360	25272	293674	305629	8096	2656864	1855332	801532
30 Office, accounting and computing machinery	3	2681	2681	37758	609623	-68797	4894243	4648883	245360
31 Electrical machinery and apparatus nec.	98	21556	21520	376354	574612	-10565	3257240	2379506	877734
32 Radio, TV and communication equipment	70	12932	12906	251409	262264	208397	5547309	4376625	1170684
33 Medical and optical instruments, watches, clocks	26	3243	3234	62150	70147	11834	430284	305825	124459
34 Motor vehicles, trailers and semi-trailers	92	8780	8696	145055	106699	-28141	1780741	1180325	600416
35 Manufacture of other transport equipment	133	20776	20712	306368	256530	114772	4046198	3262543	783655
36 Manufacture of furniture; manufacturing n.e.c.	259	35613	35348	348948	283040	117159	2225282	1650101	575181
37 Recycling	2	47	47	323	0	-13	2269	1540	729
E Electricity, gas and water supply	22	7841	7841	159554	220195	26235	2087415	446413	1641002
40 Electricity, gas, steam and hot water supply	5	809	809	30807	17046	4438	1359235	84906	1274329
41 Collection, purification and distribution of water	17	7032	7032	128747	203149	21797	728180	361507	366673
Industry total	4767	1018962	1014319	12835671	15515397	3024641	147274158	98941367	48332791

Table 2: Principle Indicators of Industrial Statistics by ISIC
Government sector

ISIC	Number of establishments	Number of persons engaged	Number of employees	Compensation of employees	Gross addition to fixed assets	Change in stock	Gross Output	Intermediate consumption	Total value added
	Number			Value in million VND					
C Mining and quarrying	74	79272	79272	921190	447854	339301	4988715	3410591	1578124
10 Mining of coal and lignite; extraction of peat	21	57252	57252	691773	322881	323672	3610244	2579674	1030570
11 Extraction of crude petroleum and natural gas	2	11109	11109	109615	40663	14278	450826	283191	167635
13 Mining of metal ores	3	261	261	2740	1333	581	32236	25642	6594
14 Other mining and quarrying	48	10650	10650	117062	82977	770	895409	522084	373325
D Manufacturing	990	450259	450151	5373553	2645037	825087	54410949	37558639	16852310
15 Food products and beverages	148	61740	61673	774285	450762	303496	14546680	10323397	4223283
16 Manufacture of tobacco products	12	8584	8584	174068	42635	333027	4933635	2649905	2283730
17 Manufacture of textiles	54	65409	65409	642591	249327	180235	4421394	3129454	1291940
18 Manufacture of wearing apparel	63	63014	63014	665418	100541	17093	1710560	742163	968397
19 Manufacture leather products	31	44250	44250	360705	74968	-15895	1492168	933278	558890
20 Manufacture of wood and of products	31	7704	7704	59899	30190	-4666	432309	296619	135690
21 Paper and paper products	32	12685	12685	162634	135417	32732	2051282	1594740	456542
22 Publishing and printing	119	15281	15281	267388	189307	88292	2970581	2051168	919413
24 Chemicals and chemical products	68	24348	24346	381851	169935	-15627	5222660	4081514	1141146
25 Rubber and plastics products	41	14388	14365	229062	173967	19188	2182373	1502729	679644
26 Non-metallic mineral products	114	40215	40203	492610	393811	-103455	6054434	4051933	2002501
27 Manufacture of basic metals	14	22019	22019	256624	127000	11807	2477990	2020727	457263
28 Fabricated metal products	49	9982	9982	161994	99116	-20636	796881	534859	262022
29 Machinery and equipment n.e.c.	66	19615	19615	187721	112724	-25769	1142889	807485	335404
31 Electrical machinery and apparatus nec.	22	12130	12130	219396	106180	5715	1553864	1096746	457118
32 Radio, TV and communication equipment	22	4728	4728	70653	36836	48664	835429	605164	230265
33 Medical and optical instruments, watches, clocks	6	1791	1791	21146	13683	923	98382	64809	33573
34 Motor vehicles, trailers and semi-trailers	26	4974	4974	54319	34262	-28805	324509	227512	96997
35 Manufacture of other transport equipment	56	14296	14292	160735	86795	-26977	974235	709116	265119
36 Manufacture of furniture; manufacturing n.e.c.	16	3106	3106	30454	17581	25745	188694	135321	53373
E Electricity, gas and water supply	20	7775	7775	153617	211282	25875	2057020	427509	1629511
40 Electricity, gas, steam and hot water supply	3	743	743	24870	8133	4078	1328840	66002	1262838
41 Collection, purification and distribution of water	17	7032	7032	128747	203149	21797	728180	361507	366673
Industry total	1084	537306	537198	6448360	3304173	1190263	61456684	41396739	20059945

Table 3: Principle Indicators of Industrial Statistics by ISIC
Private sector

ISIC	Number of establishments	Number of persons engaged	Number of employees	Compensation of employees	Gross addition to fixed assets	Change in stock	Gross Output	Intermediate consumption	Total value added
	Number			Value in million VND					
C Mining and quarrying	103	29329	29197	60575	61820	1038	209842	103366	106476
10 Mining of coal and lignite; extraction of peat	4	89	89	347	0	-50	611	230	381
13 Mining of metal ores	2	254	252	3198	1075	-4001	11679	6119	5560
14 Other mining and quarrying	97	28986	28856	57030	60745	5089	197552	97017	100535
D Manufacturing	2853	220023	216037	1712737	1373716	138188	13667885	10189115	3478770
15 Food products and beverages	723	29373	28177	194294	245417	47771	3556252	2942244	614008
16 Manufacture of tobacco products	1	9	9	48	0	332	848	721	127
17 Manufacture of textiles	99	10885	10790	71248	130016	30404	599105	393887	205218
18 Manufacture of wearing apparel	224	43402	43191	344890	86107	5989	933002	452166	480836
19 Manufacture leather products	63	50122	50062	376104	212998	9689	1266595	793067	473528
20 Manufacture of wood and of products	204	13035	12329	75774	19629	25721	561753	417156	144597
21 Paper and paper products	144	8202	8079	58842	53877	17420	847343	717141	130202
22 Publishing and printing	28	635	614	5722	20045	3628	54768	36615	18153
23 Coke and refined petroleum products	2	100	99	1232	1545	-1261	162133	135694	26439
24 Chemicals and chemical products	110	5587	5499	78283	37725	2498	1059613	809603	250010
25 Rubber and plastics products	166	8283	8136	69718	185172	-21610	1088655	851691	236964
26 Non-metallic mineral products	467	17939	17160	127701	149525	31491	747689	506215	241474
27 Manufacture of basic metals	41	1362	1343	10119	20780	-4187	164563	139172	25391
28 Fabricated metal products	147	5062	4982	43429	86037	-23393	589339	487741	101598
29 Machinery and equipment n.e.c.	66	3105	3029	44748	46429	-16143	542247	397448	144799
31 Electrical machinery and apparatus nec.	43	2139	2111	21202	4284	-1895	375974	300228	75746
32 Radio, TV and communication equipment	18	736	716	8880	4252	-4099	113274	77223	36051
33 Medical and optical instruments, watches, clocks	9	282	278	2299	1269	-403	24345	19632	4713
34 Motor vehicles, trailers and semi-trailers	51	1609	1549	11230	2903	658	85851	64992	20859
35 Manufacture of other transport equipment	55	2210	2166	40818	4691	2998	206555	162573	43982
36 Furniture; other manufacturing n.e.c.	190	15899	15671	125833	61015	32593	685712	482366	203346
37 Recycling	2	47	47	323	0	-13	2269	1540	729
Industry total	2956	249352	245234	1773312	1435536	139226	13877727	10292481	3585246

Table 4: Principle Indicators of Industrial Statistics by ISIC
Joint venture sector

ISIC	Number of establishments	Number of persons engaged	Number of employees	Compensation of employees	Gross addition to fixed assets	Change in stock	Gross Output	Intermediate consumption	Total value added
	Number			Value in million VND					
C Mining and quarrying	6	6817	6817	565713	1820753	299263	15301047	3892351	11408696
10 Mining of coal and lignite; extraction of peat	1	224	224	3,753	48,030	740	10,535	9,796	739
11 Extraction of crude petroleum and natural gas	2	6,419	6,419	559,084	1,772,627	297,682	15,259,220	3,865,670	11,393,550
13 Mining of metal ores	1	72	72	1,735	80	-1,863	23,621	10,950	12,671
14 Other mining and quarrying	2	102	102	1,141	16	2,704	7,671	5,935	1,736
D Manufacturing	719	225421	225004	4042349	8946022	1395529	56608305	43340892	13267413
15 Food products and beverages	84	18,520	18,480	503,776	1,931,433	322,771	11,733,602	8,685,934	3,047,668
16 Manufacture of tobacco products	2	780	780	7,832	2,688	-1,728	76,297	65,238	11,059
17 Manufacture of textiles	51	18,024	18,006	237,165	1,206,225	272,431	3,855,722	2,568,466	1,287,256
18 Manufacture of wearing apparel	75	32,827	32,791	414,059	121,686	43,297	2,356,685	1,663,294	693,391
19 Manufacture leather products	48	77,219	77,177	1,222,979	1,074,712	216,757	5,783,654	4,409,395	1,374,259
20 Manufacture of wood and of products	13	2,038	2,034	32,783	26,715	29,857	396,361	304,467	91,894
21 Paper and paper products	17	2,909	2,893	41,116	186,113	57,908	603,833	478,091	125,742
22 Publishing and printing	6	293	291	8,062	2,027	296	33,275	25,214	8,061
23 Coke and refined petroleum products	4	391	385	18,670	20,025	-585	532,807	439,058	93,749
24 Chemicals and chemical products	56	5,895	5,861	240,876	601,860	192,931	4,005,257	3,076,904	928,353
25 Rubber and plastics products	55	8,270	8,251	119,614	999,394	81,730	1,306,366	1,009,851	296,515
26 Non-metallic mineral products	31	5,701	5,672	170,850	109,069	108,830	2,860,621	1,680,457	1,180,164
27 Manufacture of basic metals	18	2,348	2,338	58,097	368,146	-238,377	3,433,481	2,903,781	529,700
28 Fabricated metal products	65	5,885	5,832	144,188	360,289	-30,139	1,944,143	1,522,217	421,926
29 Machinery and equipment n.e.c.	27	2,640	2,628	61,205	146,476	50,008	971,728	650,399	321,329
30 Office, accounting and computing machinery	3	2,681	2,681	37,758	609,623	-68,797	4,894,243	4,648,883	245,360
31 Electrical machinery and apparatus nec.	33	7,287	7,279	135,756	464,148	-14,385	1,327,402	982,532	344,870
32 Radio, television and communication equipment	30	7,468	7,462	171,876	221,176	163,832	4,598,606	3,694,238	904,368
33 Med. and optical instruments, watches, clocks	11	1,170	1,165	38,705	55,195	11,314	307,557	221,384	86,173
34 Motor vehicles, trailers and semi-trailers	15	2,197	2,173	79,506	69,534	6	1,370,381	887,821	482,560
35 Manufacture of other transport equipment	22	4,270	4,254	104,815	165,044	138,751	2,865,408	2,390,854	474,554
36 Manufacture of furniture; manufacturing n.e.c.	53	16,608	16,571	192,661	204,444	58,821	1,350,876	1,032,414	318,462
E Electricity, gas and water supply	2	66	66	5937	8913	360	30395	18904	11491
40 Electricity, gas, steam and hot water supply	2	66	66	5,937	8,913	360	30,395	18,904	11,491
Industry total	727	232304	231887	4613999	10775688	1695152	71939747	47252147	24687600

Table 5: Number of Establishments by ISIC and by Employment Size Class

ISIC	Number of persons engaged						Total
	Up to 10	10-19	20-49	50-99	100-499	500 & more	
C Mining and quarrying	3	19	30	28	59	44	183
10 Mining of coal and lignite; extraction of peat	0	3	0	1	3	19	26
11 Extraction of crude petroleum and natural gas	0	0	0	1	0	3	4
13 Mining of metal ores	0	0	1	3	2	0	6
14 Other mining and quarrying	3	16	29	23	54	22	147
D Manufacturing	555	844	964	641	1162	396	4562
15 Food products and beverages	272	223	168	80	164	48	955
16 Manufacture of tobacco products	1	0	0	0	7	7	15
17 Manufacture of textiles	11	20	34	29	63	47	204
18 Manufacture of wearing apparel	9	22	39	45	165	82	362
19 Manufacture leather products	4	8	5	7	41	77	142
20 Manufacture of wood and of products	35	50	62	48	43	10	248
21 Paper and paper products	10	26	67	41	40	9	193
22 Publishing and printing	8	20	28	39	56	2	153
23 Coke and refined petroleum products	0	1	2	1	2	0	6
24 Chemicals and chemical products	24	28	56	39	72	15	234
25 Rubber and plastics products	12	53	78	43	66	10	262
26 Non-metallic mineral products	61	198	148	66	117	22	612
27 Manufacture of basic metals	7	13	21	7	21	4	73
28 Fabricated metal products	33	45	75	50	53	5	261
29 Machinery and equipment n.e.c.	11	22	34	26	55	11	159
30 Office, accounting and computing machinery	0	0	1	0	1	1	3
31 Electrical machinery and apparatus nec.	8	7	25	19	26	13	98
32 Radio, television and communication equipment	2	8	11	14	27	8	70
33 Med. and optical instruments, watches and clocks	2	5	7	3	8	1	26
34 Motor vehicles, trailers and semi-trailers	2	23	28	10	26	3	92
35 Manufacture of other transport equipment	12	17	25	30	43	6	133
36 Manufacture of furniture; manufacturing n.e.c.	30	55	49	44	66	15	259
37 Recycling	1	0	1	0	0	0	2
E Electricity, gas and water supply	0	0	3	3	11	5	22
40 Electricity, gas, steam and hot water supply	0	0	3	1	0	1	5
41 Collection, purification and distribution of water	0	0	0	2	11	4	17
Industry total	558	863	997	672	1232	445	4767

Table 6: Number of Persons Engaged by ISIC and by Sex

ISIC	Total	Number of persons engaged		Total	Unpaid workers		Total	Employees	
		Male	Female		Male	Female		Male	Female
C Mining and quarrying	115418	78617	36801	132	108	24	115286	78509	36777
10 Mining of coal and lignite; extraction of peat	57565	42858	14707	0	0	0	57565	42858	14707
11 Extraction of crude petroleum and natural gas	17528	13851	3677	0	0	0	17528	13851	3677
13 Mining of metal ores	587	448	139	2	1	1	585	447	138
14 Other mining and quarrying	39738	21460	18278	130	107	23	39608	21353	18255
D Manufacturing	895703	373302	522401	4511	2900	1611	891192	370402	520790
15 Food products and beverages	109633	52393	57240	1303	851	452	108330	51542	56788
16 Manufacture of tobacco products	9373	4385	4988	0	0	0	9373	4385	4988
17 Manufacture of textiles	94318	28970	65348	113	70	43	94205	28900	65305
18 Manufacture of wearing apparel	139243	25768	113475	247	144	103	138996	25624	113372
19 Manufacture leather products	171591	35213	136378	102	77	25	171489	35136	136353
20 Manufacture of wood and of products	22777	12563	10214	710	338	372	22067	12225	9842
21 Paper and paper products	23796	13860	9936	139	102	37	23657	13758	9899
22 Publishing and printing	16209	9717	6492	23	15	8	16186	9702	6484
23 Coke and refined petroleum products	491	374	117	7	6	1	484	368	116
24 Chemicals and chemical products	35830	20283	15547	124	96	28	35706	20187	15519
25 Rubber and plastics products	30941	17335	13606	189	127	62	30752	17208	13544
26 Non-metallic mineral products	63855	40729	23126	820	516	304	63035	40213	22822
27 Manufacture of basic metals	25729	19001	6728	29	24	5	25700	18977	6723
28 Fabricated metal products	20929	14711	6218	133	102	31	20796	14609	6187
29 Machinery and equipment n.e.c.	25360	18920	6440	88	66	22	25272	18854	6418
30 Office, accounting and computing machinery	2681	1035	1646	0	0	0	2681	1035	1646
31 Electrical machinery and apparatus nec.	21556	11587	9969	36	33	3	21520	11554	9966
32 Radio, television and communication equipment	12932	6374	6558	26	16	10	12906	6358	6548
33 Medical and optical instruments, watches and clocks	3243	2064	1179	9	9	0	3234	2055	1179
34 Motor vehicles, trailers and semi-trailers	8780	7060	1720	84	74	10	8696	6986	1710
35 Manufacture of other transport equipment	20776	15980	4796	64	51	13	20712	15929	4783
36 Manufacture of furniture; manufacturing n.e.c.	35613	14935	20678	265	183	82	35348	14752	20596
37 Recycling	47	45	2	0	0	0	47	45	2
E Electricity, gas and water supply	7841	5551	2290	0	0	0	7841	5551	2290
40 Electricity, gas, steam and hot water supply	809	650	159	0	0	0	809	650	159
41 Collection, purification and distribution of water	7032	4901	2131	0	0	0	7032	4901	2131
Industry total	1018962	457470	561492	4643	3008	1635	1014319	454462	559857

Table 7: Number of Employees by Functional categories, by ISIC and by Sex

ISIC	Total	Number of employees		Total	Production workers		Total	Technicians		Total	Admin workers	
		Male	Female		Male	Female		Male	Female		Male	Female
C Mining and quarrying	115286	78509	36777	102794	69260	33534	4098	3309	789	8394	5940	2454
10 Mining of coal and lignite; extraction of peat	57565	42858	14707	50014	37240	12774	2277	1848	429	5274	3770	1504
11 Extraction of crude petroleum and natural gas	17528	13851	3677	15591	12454	3137	934	681	253	1003	716	287
13 Mining of metal ores	585	447	138	476	354	122	31	31	0	78	62	16
14 Other mining and quarrying	39608	21353	18255	36713	19212	17501	856	749	107	2039	1392	647
D Manufacturing	891192	370402	520790	758385	292217	466168	45435	29158	16277	87372	49027	38345
15 Food products and beverages	108330	51542	56788	88467	39118	49349	6287	4240	2047	13576	8184	5392
16 Manufacture of tobacco products	9373	4385	4988	7994	3520	4474	504	335	169	875	530	345
17 Manufacture of textiles	94205	28900	65305	84505	23969	60536	3692	2006	1686	6008	2925	3083
18 Manufacture of wearing apparel	138996	25624	113372	122961	18658	104303	6203	2589	3614	9832	4377	5455
19 Manufacture leather products	171489	35136	136353	158215	28541	129674	5179	2339	2840	8095	4256	3839
20 Manufacture of wood and of products	22067	12225	9842	18917	10166	8751	922	725	197	2228	1334	894
21 Paper and paper products	23657	13758	9899	19336	10972	8364	1588	1185	403	2733	1601	1132
22 Publishing and printing	16186	9702	6484	11679	7102	4577	1089	744	345	3418	1856	1562
23 Coke and refined petroleum products	484	368	116	149	137	12	32	23	9	303	208	95
24 Chemicals and chemical products	35706	20187	15519	26125	14860	11265	2891	1741	1150	6690	3586	3104
25 Rubber and plastics products	30752	17208	13544	24904	13424	11480	1852	1535	317	3996	2249	1747
26 Non-metallic mineral products	63035	40213	22822	53473	33762	19711	3088	2488	600	6474	3963	2511
27 Manufacture of basic metals	25700	18977	6723	21989	16727	5262	1623	1107	516	2088	1143	945
28 Fabricated metal products	20796	14609	6187	16348	11532	4816	1338	1169	169	3110	1908	1202
29 Machinery and equipment n.e.c.	25272	18854	6418	18773	14273	4500	2317	1943	374	4182	2638	1544
30 Office, accounting and computing machinery	2681	1035	1646	2139	804	1335	433	201	232	109	30	79
31 Electrical machinery and apparatus nec.	21520	11554	9966	17062	8827	8235	1710	1130	580	2748	1597	1151
32 Radio, television and communication equipment	12906	6358	6548	9635	4251	5384	989	715	274	2282	1392	890
33 Medical and optical instruments, watches and clocks	3234	2055	1179	2527	1603	924	225	144	81	482	308	174
34 Motor vehicles, trailers and semi-trailers	8696	6986	1710	6117	5191	926	714	607	107	1865	1188	677
35 Manufacture of other transport equipment	20712	15929	4783	15675	12477	3198	1352	1154	198	3685	2298	1387
36 Manufacture of furniture; manufacturing n.e.c.	35348	14752	20596	31353	12261	19092	1407	1038	369	2588	1453	1135
37 Recycling	47	45	2	42	42	0	0	0	0	5	3	2
E Electricity, gas and water supply	7841	5551	2290	5785	4362	1423	608	463	145	1448	726	722
40 Electricity, gas, steam and hot water supply	809	650	159	439	395	44	50	42	8	320	213	107
41 Collection, purification and distribution of water	7032	4901	2131	5346	3967	1379	558	421	137	1128	513	615
Industry total	1014319	454462	559857	866964	365839	501125	50141	32930	17211	97214	55693	41521

Table 8: Composition of Compensation of Employees by ISIC, Millions VND

ISIC	Wages and salaries	Bonus, gratuities and other benefits	Employer's contribution to social security	Total compensation of employees
C Mining and quarrying	1386239	20217	141022	1547478
10 Mining of coal and lignite; extraction of peat	630265	17289	48319	695873
11 Extraction of crude petroleum and natural gas	584954	0	83745	668699
13 Mining of metal ores	6996	330	347	7673
14 Other mining and quarrying	164024	2598	8611	175233
D Manufacturing	9614177	382312	1132150	11128639
15 Food products and beverages	1326975	50820	94560	1472355
16 Manufacture of tobacco products	167459	6397	8092	181948
17 Manufacture of textiles	865833	22832	62339	951004
18 Manufacture of wearing apparel	1287779	53703	82885	1424367
19 Manufacture leather products	1389253	50682	519853	1959788
20 Manufacture of wood and of products	154465	6457	7534	168456
21 Paper and paper products	245115	2464	15013	262592
22 Publishing and printing	253081	15904	12187	281172
23 Coke and refined petroleum products	17753	959	1190	19902
24 Chemicals and chemical products	626446	27787	46777	701010
25 Rubber and plastics products	381563	14022	22809	418394
26 Non-metallic mineral products	717680	17364	56117	791161
27 Manufacture of basic metals	294090	3882	26868	324840
28 Fabricated metal products	315108	11800	22703	349611
29 Machinery and equipment n.e.c.	257899	12781	22994	293674
30 Office, accounting and computing machinery	31963	0	5795	37758
31 Electrical machinery and apparatus nec.	318534	32876	24944	376354
32 Radio, television and communication equipment	212452	17634	21323	251409
33 Medical and optical instruments, watches and clocks	54595	1370	6185	62150
34 Motor vehicles, trailers and semi-trailers	123346	9632	12077	145055
35 Manufacture of other transport equipment	255750	11030	39588	306368
36 Manufacture of furniture; manufacturing n.e.c.	316723	11908	20317	348948
37 Recycling	315	8	0	323
E Electricity, gas and water supply	144619	7560	7375	159554
40 Electricity, gas, steam and hot water supply	25986	3683	1138	30807
41 Collection, purification and distribution of water	118633	3877	6237	128747
Industry total	11145035	410089	1280547	12835671

Table 9: Compensation of Employees by Sex and by ISIC, Millions VND

ISIC	Total	Wages and salaries		Total	Bonus, gratuities and other benefits		Total	Employer's contribution to social security		Total	Total compensation of employees	
		Male	Female		Male	Female		Male	Female		Male	Female
C Mining and quarrying	1386239	1134413	251828	20217	15484	4753	141022	118756	22266	1547478	1268633	278845
10 Mining of coal and lignite; extraction of peat	630265	492195	138070	17289	13480	3809	48319	36644	11675	695873	542319	153554
11 Extraction of crude petroleum and natural gas	584954	523211	61743	0	0	0	83745	75330	8415	668699	598541	70158
13 Mining of metal ores	6996	5430	1566	330	328	2	347	285	62	7673	6043	1630
14 Other mining and quarrying	164024	113577	50447	2598	1656	942	8611	6497	2114	175233	121730	53503
D Manufacturing	9614177	4676380	4937797	382312	191807	190505	1132150	776408	355742	11128639	6644595	5484044
15 Food products and beverages	1326975	772821	554154	50820	30828	19992	94560	56228	38332	1472355	859877	612478
16 Manufacture of tobacco products	167459	84803	82656	6397	2838	3559	8092	4147	3945	181948	91788	90160
17 Manufacture of textiles	865833	282558	583275	22832	7368	15464	62339	20197	42142	951004	310123	640881
18 Manufacture of wearing apparel	1287779	254568	1033211	53703	9495	44208	82885	16006	66879	1424367	280069	1144298
19 Manufacture leather products	1389253	305590	1083663	50682	9598	41084	519853	438525	81328	1959788	753713	1208075
20 Manufacture of wood and of products	154465	92634	61831	6457	4551	1906	7534	4822	2712	168456	102007	66449
21 Paper and paper products	245115	153191	91924	2464	1527	937	15013	9419	5594	262592	164137	98455
22 Publishing and printing	253081	156119	96962	15904	9670	6234	12187	7090	5097	281172	172879	108293
23 Coke and refined petroleum products	17753	13583	4170	959	597	362	1190	915	275	19902	15095	4807
24 Chemicals and chemical products	626446	366262	260184	27787	16096	11691	46777	26900	19877	701010	409258	291752
25 Rubber and plastics products	381563	233326	148237	14022	9158	4864	22809	13412	9397	418394	255896	162498
26 Non-metallic mineral products	717680	517767	199913	17364	11592	5772	56117	40534	15583	791161	569893	221268
27 Manufacture of basic metals	294090	231027	63063	3882	3487	395	26868	19846	7022	324840	254360	70480
28 Fabricated metal products	315108	206442	108666	11800	9739	2061	22703	16640	6063	349611	232821	116790
29 Machinery and equipment n.e.c.	257899	202614	55285	12781	10045	2736	22994	17793	5201	293674	230452	63222
30 Office, accounting and computing machinery	31963	14948	17015	0	0	0	5795	2732	3063	37758	17680	20078
31 Electrical machinery and apparatus nec.	318534	187217	131317	32876	24542	8334	24944	14530	10414	376354	226289	150065
32 Radio, television and communication equipment	212452	116570	95882	17634	9896	7738	21323	11316	10007	251409	137782	113627
33 Med and optical instruments, watches and clocks	54595	35804	18791	1370	588	782	6185	3809	2376	62150	40201	21949
34 Motor vehicles, trailers and semi-trailers	123346	102317	21029	9632	8213	1419	12077	9651	2426	145055	120181	24874
35 Manufacture of other transport equipment	255750	200142	55608	11030	8697	2333	39588	34358	5230	306368	243197	63171
36 Manufacture of furniture; manufacturing n.e.c.	316723	145774	170949	11908	3275	8633	20317	7538	12779	348948	156587	192361
37 Recycling	315	303	12	8	7	1	0	0	0	323	310	13
E Electricity, gas and water supply	144619	107599	37020	7560	5536	2024	7375	5287	2088	159554	118422	41132
40 Electricity, gas, steam and hot water supply	25986	21781	4205	3683	2783	900	1138	943	195	30807	25507	5300
41 Collection, purification and distribution of water	118633	85818	32815	3877	2753	1124	6237	4344	1893	128747	92915	35832
Industry total	11145035	5918392	5226643	410089	212807	197282	1280547	900451	380096	12835671	7031650	5804021

Table 10: Components of Intermediate Consumption of Establishments by ISIC Millions VND

ISIC	Value of purchased:			Change in stock of materials and fuel	Cost of industrial services	Cost of non-industrial services	Intermediate consumption
	Materials and supplies	Fuel	Electricity				
C Mining and quarrying	4710471	325081	171990	-141157	463567	1876355	7406307
10 Mining of coal and lignite; extraction of peat	1438224	200687	93064	-15909	130773	742861	2589700
11 Extraction of crude petroleum and natural gas	3030951	67446	54941	-121273	241613	875182	4148860
13 Mining of metal ores	28078	3027	1348	-1690	1491	10457	42711
14 Other mining and quarrying	213218	53921	22637	-2285	89690	247855	625036
D Manufacturing	74522166	2530317	3482881	-1632347	2057551	10128079	91088647
15 Food products and beverages	18409670	483530	600985	-294302	184698	2566995	21951576
16 Manufacture of tobacco products	2874452	13091	29754	-299839	11963	86443	2715864
17 Manufacture of textiles	4929607	236789	511134	-217008	127206	504079	6091807
18 Manufacture of wearing apparel	1926085	32334	122183	-59101	262238	573884	2857623
19 Manufacture leather products	4905377	75084	160063	-75729	214218	856727	6135740
20 Manufacture of wood and of products	835415	13827	32569	-29300	69601	96130	1018242
21 Paper and paper products	2336735	158453	156710	-139243	105260	172057	2789972
22 Publishing and printing	1591903	6799	32626	-90931	400681	171919	2112997
23 Coke and refined petroleum products	418958	773	2394	14660	286	137681	574752
24 Chemicals and chemical products	6427193	114071	204688	-47264	144525	1124808	7968021
25 Rubber and plastics products	2862774	58257	176111	-77092	48541	295680	3364271
26 Non-metallic mineral products	3529253	985506	610307	-77176	123068	1067647	6238605
27 Manufacture of basic metals	4060934	171841	400405	144482	21448	264570	5063680
28 Fabricated metal products	2111156	37886	73469	-15890	69863	268333	2544817
29 Machinery and equipment n.e.c.	1499139	24179	74207	-53390	57208	253989	1855332
30 Office, accounting and computing machinery	4565508	11755	6691	8542	20904	35483	4648883
31 Electrical machinery and apparatus nec.	2028640	38085	63917	-40161	44644	244381	2379506
32 Radio, television and communication equipment	3823972	10958	86756	-46009	18012	482936	4376625
33 Med and optical instruments, watches, clocks	225146	2499	15794	-11865	1205	73046	305825
34 Motor vehicles, trailers and semi-trailers	860546	11845	26666	22148	32993	226127	1180325
35 Manufacture of other transport equipment	2872141	22872	40155	-168611	66483	429503	3262543
36 Manufacture of furniture; manufacturing n.e.c.	1426600	19839	55157	-79284	32506	195283	1650101
37 Recycling	962	44	140	16	0	378	1540
E Electricity, gas and water supply	154897	11947	160699	-29844	74996	73718	446413
40 Electricity, gas, steam and hot water supply	12475	8982	2521	-5054	47703	18279	84906
41 Collection, purification and distribution of water	142422	2965	158178	-24790	27293	55439	361507
Industry total	79387534	2867345	3815570	-1803348	2596114	12078152	98941367

Table 10-A: Value of goods and services purchased from abroad by ISIC Millions VND

ISIC	Materials and supplies	Goods for resale	Industrial services	Non-industrial services	Total purchases ¹ from abroad	Change in stock of imported goods
C Mining and quarrying	2556611	44485	76800	157	2678053	141863
10 Mining of coal and lignite; extraction of peat	143787	0	0	0	143787	3539
11 Extraction of crude petroleum and natural gas	2401260	0	76800	0	2478060	138832
13 Mining of metal ores	2916	0	0	0	2916	13
14 Other mining and quarrying	8648	44485	0	157	53290	-521
D Manufacturing	35775036	725137	54334	166074	36720581	771087
15 Food products and beverages	6041993	116903	12570	51914	6223380	59531
16 Manufacture of tobacco products	1466028	0	0	761	1466789	116462
17 Manufacture of textiles	3523926	31405	21441	5956	3582728	196069
18 Manufacture of wearing apparel	1334082	11088	349	8199	1353718	18006
19 Manufacture leather products	4254385	2650	0	1805	4258840	38022
20 Manufacture of wood and of products	178602	48727	374	2039	229742	8507
21 Paper and paper products	1092938	29069	423	837	1123267	110279
22 Publishing and printing	339212	0	235	45	339492	-2552
23 Coke and refined petroleum products	327668	0	0	6554	334222	-13883
24 Chemicals and chemical products	2721014	136871	2870	10825	2871580	111302
25 Rubber and plastics products	1809839	39084	1715	1419	1852057	49404
26 Non-metallic mineral products	1050504	14131	150	25941	1090726	-5551
27 Manufacture of basic metals	2505187	7	5439	0	2510633	-80927
28 Fabricated metal products	1092209	5383	122	11481	1109195	22050
29 Machinery and equipment n.e.c.	661750	11427	758	7562	681497	35887
30 Office, accounting and computing machinery	3124	0	0	0	3124	769
31 Electrical machinery and apparatus nec.	1301064	2023	168	149	1303404	16085
32 Radio, television and communication equipment	2852518	34184	2744	6044	2895490	66270
33 Medical and optical instruments, watches and clocks	169081	5448	99	2972	177600	8573
34 Motor vehicles, trailers and semi-trailers	621703	527	0	5720	627950	-42917
35 Manufacture of other transport equipment	1812313	226195	4750	15737	2058995	25931
36 Manufacture of furniture; manufacturing n.e.c.	615869	10015	127	114	626125	33772
37 Recycling	27	0	0	0	27	-2
E Electricity, gas and water supply	29372	0	0	1	29373	1757
40 Electricity, gas, steam and hot water supply	2608	0	0	0	2608	1340
41 Collection, purification and distribution of water	26764	0	0	1	26765	417
Industry total	38361019	769622	131134	166232	39428007	914707

Table 11: Components of Gross Output of Establishments by ISIC Millions VND

ISIC	Value of total sale	Electricity sold to others	Change in stock	Receipts from industrial services	Receipts from non-industrial services	Value of fixed assets produced on own account	Gross output
C Mining and quarrying	19585054	12098	498445	228971	134115	40925	20499608
10 Mining of coal and lignite; extraction of peat	3201604	8741	308453	6621	56665	39306	3621390
11 Extraction of crude petroleum and natural gas	15356877	3046	190687	151243	8197	0	15710050
13 Mining of metal ores	73415	0	-6973	901	5	188	67536
14 Other mining and quarrying	953158	311	6278	70206	69248	1431	1100632
D Manufacturing	114822223	50770	726457	7803478	1032214	251993	124687135
15 Food products and beverages	28743791	4058	379736	425777	273905	9263	29836530
16 Manufacture of tobacco products	4944145	116	31792	24230	8563	1934	5010780
17 Manufacture of textiles	8130686	4559	266062	398714	46548	29652	8876221
18 Manufacture of wearing apparel	2812609	299	7278	2125624	48016	6421	5000247
19 Manufacture leather products	7437762	232	134822	934879	32398	2324	8542417
20 Manufacture of wood and of products	1202339	767	21612	131949	28720	5036	1390423
21 Paper and paper products	3450831	7246	-31183	63099	8778	3687	3502458
22 Publishing and printing	1748955	101	1285	1268626	39643	14	3058624
23 Coke and refined petroleum products	680584	0	12814	1326	216	0	694940
24 Chemicals and chemical products	9629078	2142	132538	446267	60957	16548	10287530
25 Rubber and plastics products	4362417	734	2216	181655	24932	5440	4577394
26 Non-metallic mineral products	9196709	16789	-40310	278948	143560	67048	9662744
27 Manufacture of basic metals	6057202	2268	-86275	60776	14682	27381	6076034
28 Fabricated metal products	3208174	1032	-90058	111609	50115	49491	3330363
29 Machinery and equipment n.e.c.	2276161	5426	-45294	356521	53729	10321	2656864
30 Office, accounting and computing machinery	4950117	0	-60255	4381	0	0	4894243
31 Electrical machinery and apparatus nec.	3076278	2083	-50726	157861	71407	337	3257240
32 Radio, television and communication equipment	5182841	73	162388	164273	37484	250	5547309
33 Med and optical instruments, watches and clocks	349937	0	-31	80143	235	0	430284
34 Motor vehicles, trailers and semi-trailers	1598914	984	-5993	141997	39314	5525	1780741
35 Manufacture of other transport equipment	3737153	1525	-53839	326931	29816	4612	4046198
36 Manufacture of furniture; manufacturing n.e.c.	2043363	336	37875	117803	19196	6709	2225282
37 Recycling	2177	0	3	89	0	0	2269
E Electricity, gas and water supply	1846133	74	-3609	64011	153242	27564	2087415
40 Electricity, gas, steam and hot water supply	1217204	31	-616	10854	131762	0	1359235
41 Collection, purification and distribution of water	628929	43	-2993	53157	21480	27564	728180
Industry total	136253410	62942	1221293	8096460	1319571	320482	147274158

Table 12: Fixed Assets of Establishments at the End of the Year by ISIC Millions VND

ISIC	Land	Buildings and structures	Machinery and equipment	Transport equipment	Furniture and others	Total
C Mining and quarrying	76848	2084519	16132400	1693642	2671055	22658464
10 Mining of coal and lignite; extraction of peat	47906	421801	302898	284310	135199	1192114
11 Extraction of crude petroleum and natural gas	3646	1531857	15490945	1326600	2470132	20823180
13 Mining of metal ores	0	3667	9036	1857	6572	21132
14 Other mining and quarrying	25296	127194	329521	80875	59152	622038
D Manufacturing	3772550	19998940	37961175	2346762	6856280	70935707
15 Food products and beverages	785831	3684540	8394027	630879	2322893	15818170
16 Manufacture of tobacco products	23643	215351	352414	25079	34272	650759
17 Manufacture of textiles	75417	1700502	4859392	98684	268503	7002498
18 Manufacture of wearing apparel	202922	1116172	1284498	81248	171097	2855937
19 Manufacture leather products	212723	1753798	2232667	85453	1036516	5321157
20 Manufacture of wood and of products	134442	205660	273753	28415	54396	696666
21 Paper and paper products	76477	480114	1331502	122653	96863	2107609
22 Publishing and printing	8262	169451	646029	39781	29633	893156
23 Coke and refined petroleum products	106035	80227	135491	10201	15123	347077
24 Chemicals and chemical products	130034	993877	1498986	163650	347123	3133670
25 Rubber and plastics products	118137	732671	2181232	64217	199075	3295332
26 Non-metallic mineral products	652903	2722747	4577392	287080	577911	8818033
27 Manufacture of basic metals	151082	830033	1913499	70897	309420	3274931
28 Fabricated metal products	306620	874650	1569419	90453	151866	2993008
29 Machinery and equipment n.e.c.	36975	600691	797568	58349	144780	1638363
30 Office, accounting and computing machinery	7966	487631	513846	2255	29237	1040935
31 Electrical machinery and apparatus nec.	99196	809557	963029	79715	287111	2238608
32 Radio, television and communication equipment	309007	925167	2052584	38759	164568	3490085
33 Med. and optical instruments, watches, clocks	11342	195554	288685	10504	43333	549418
34 Motor vehicles, trailers and semi-trailers	173104	617108	909362	62740	156573	1918887
35 Manufacture of other transport equipment	51650	418191	656178	255256	276728	1658003
36 Manufacture of furniture; manufacturing n.e.c.	97977	385028	529053	40422	139130	1191610
37 Recycling	805	220	569	72	129	1795
E Electricity, gas and water supply	564	237747	237980	328055	2058109	2862455
40 Electricity, gas, steam and hot water supply	37350	76888	9602	1997417	0	2121257
41 Collection, purification and distribution of water	200397	161092	318453	60692	564	741198
Industry total	3849962	22321206	54331555	4368459	11585444	96456626

Table 13: Gross Fixed Capital Formation to the Fixed Assets by ISIC Millions VND

ISIC	Addition during the year				Sale and loss of fixed assets	Gross fixed capital formation	Depreciation
	New assets	Used assets	Capital repair	Produced on own account			
C Mining and quarrying	2625170	72309	37483	40925	445460	2330427	2608442
10 Mining of coal and lignite; extraction of peat	333923	57150	6772	39306	66240	370911	193817
11 Extraction of crude petroleum and natural gas	2164833	0	17957	0	369500	1813290	2330326
13 Mining of metal ores	1718	800	0	188	218	2488	4089
14 Other mining and quarrying	124696	14359	12754	1431	9502	143738	80210
D Manufacturing	12529870	731345	270547	251993	818980	12964775	7426390
15 Food products and beverages	2523071	120537	95039	9263	120298	2627612	1561786
16 Manufacture of tobacco products	41547	2749	1014	1934	1921	45323	83463
17 Manufacture of textiles	1392060	182974	20785	29652	39903	1585568	728135
18 Manufacture of wearing apparel	330616	32302	7277	6421	68282	308334	362510
19 Manufacture leather products	1380592	13871	11079	2324	45188	1362678	571356
20 Manufacture of wood and of products	71005	1646	17712	5036	18865	76534	100793
21 Paper and paper products	368370	23178	2840	3687	22668	375407	166336
22 Publishing and printing	195658	32360	3325	14	19978	211379	226137
23 Coke and refined petroleum products	25401	1102	0	0	4933	21570	29845
24 Chemicals and chemical products	782788	42572	4495	16548	36883	809520	373107
25 Rubber and plastics products	1381740	43986	9211	5440	81844	1358533	338106
26 Non-metallic mineral products	719332	29675	13353	67048	177003	652405	980109
27 Manufacture of basic metals	491573	33564	1097	27381	37689	515926	314737
28 Fabricated metal products	430300	75313	3620	49491	13282	545442	262995
29 Machinery and equipment n.e.c.	245907	51846	14660	10321	17105	305629	132537
30 Office, accounting and computing machinery	611268	0	0	0	1645	609623	118107
31 Electrical machinery and apparatus nec.	577907	8355	8811	337	20798	574612	193287
32 Radio, television and communication equipment	277502	2493	13308	250	31289	262264	400709
33 Med and optical instruments, watches, clocks	72577	1197	940	0	4567	70147	51820
34 Motor vehicles, trailers and semi-trailers	125461	871	1359	5525	26517	106699	138323
35 Manufacture of other transport equipment	239585	7980	27754	4612	23401	256530	177336
36 Manufacture of furniture; manufacturing n.e.c.	245610	22774	12868	6709	4921	283040	114761
37 Recycling	0	0	0	0	0	0	95
E Electricity, gas and water supply	143720	54533	11576	27564	17198	220195	569929
40 Electricity, gas, steam and hot water supply	17104	0	0	0	58	17046	487594
41 Collection, purification and distribution of water	126616	54533	11576	27564	17140	203149	82335
Industry total	15298760	858187	319606	320482	1281638	15515397	10604761

Table 14: Total Value Added and Its Components by ISIC Millions VND

ISIC	Total value added	Out of which:				
		Compensation of employees	Depreciation	Indirect taxes	Subsidies	Operating surplus ¹
C Mining and quarrying	13093301	1547478	2608442	3396165	1015	5542231
10 Mining of coal and lignite; extraction of peat	1031690	695873	193817	85058	0	56942
11 Extraction of crude petroleum and natural gas	11561190	668699	2330326	3251755	101	5310511
13 Mining of metal ores	24825	7673	4089	2869	53	10247
14 Other mining and quarrying	475596	175233	80210	56483	861	164531
D Manufacturing	33598488	11128639	7426390	7420609	163581	7786431
15 Food products and beverages	7884954	1472355	1561786	3116739	14701	1748775
16 Manufacture of tobacco products	2294916	181948	83463	1910864	0	118641
17 Manufacture of textiles	2784414	951004	728135	181940	10902	934237
18 Manufacture of wearing apparel	2142624	1424367	362510	50453	2700	307994
19 Manufacture leather products	2406677	1959788	571356	47039	537	-170969
20 Manufacture of wood and of products	372181	168456	100793	47884	457	55505
21 Paper and paper products	712486	262592	166336	72720	10	210848
22 Publishing and printing	945627	281172	226137	75346	1016	363988
23 Coke and refined petroleum products	120188	19902	29845	27158	0	43283
24 Chemicals and chemical products	2319509	701010	373107	271876	8557	982073
25 Rubber and plastics products	1213123	418394	338106	150047	902	307478
26 Non-metallic mineral products	3424139	791161	980109	658004	116782	1111647
27 Manufacture of basic metals	1012354	324840	314737	136667	1627	237737
28 Fabricated metal products	785546	349611	262995	78264	208	94884
29 Machinery and equipment n.e.c.	801532	293674	132537	125060	2070	252331
30 Office, accounting and computing machinery	245360	37758	118107	100	0	89395
31 Electrical machinery and apparatus nec.	877734	376354	193287	101596	184	206681
32 Radio, television and communication equipment	1170684	251409	400709	166118	1388	353836
33 Med. and optical instruments, watches and clocks	124459	62150	51820	10751	500	238
34 Motor vehicles, trailers and semi-trailers	600416	145055	138323	60297	1	256742
35 Manufacture of other transport equipment	783655	306368	177336	98656	481	201776
36 Manufacture of furniture; manufacturing n.e.c.	575181	348948	114761	32967	558	79063
37 Recycling	729	323	95	63	0	248
E Electricity, gas and water supply	1641002	159554	569929	194594	2684	719609
40 Electricity, gas, steam and hot water supply	1274329	30807	487594	166902	2061	591087
41 Collection, purification and distribution of water	366673	128747	82335	27692	623	128522
Industry total	48332791	12835671	10604761	11011368	167280	14048271

¹ - calculated as residual

Table 15: Number of Industrial Establishments by Source of Water Used and by ISIC

ISIC	Total	Tap water	Well water	Other sources
C Mining and quarrying	183	39	74	92
10 Mining of coal and lignite; extraction of peat	26	12	7	14
11 Extraction of crude petroleum and natural gas	4	3	1	2
13 Mining of metal ores	6	0	4	2
14 Other mining and quarrying	147	24	62	74
D Manufacturing	4562	1998	2308	636
15 Food products and beverages	955	290	435	313
16 Manufacture of tobacco products	15	10	5	1
17 Manufacture of textiles	204	88	114	22
18 Manufacture of wearing apparel	362	211	167	10
19 Manufacture leather products	142	67	82	8
20 Manufacture of wood and of products	248	65	161	32
21 Paper and paper products	193	91	98	24
22 Publishing and printing	153	132	29	5
23 Coke and refined petroleum products	6	3	3	0
24 Chemicals and chemical products	234	141	106	9
25 Rubber and plastics products	262	139	151	7
26 Non-metallic mineral products	612	84	441	124
27 Manufacture of basic metals	73	28	42	7
28 Fabricated metal products	261	150	123	11
29 Machinery and equipment n.e.c.	159	102	61	10
30 Office, accounting and computing machinery	3	3	0	0
31 Electrical machinery and apparatus nec.	98	63	43	6
32 Radio, television and communication equipment	70	53	21	0
33 Med. And optical instruments, watches and clocks	26	23	5	0
34 Motor vehicles, trailers and semi-trailers	92	50	43	4
35 Manufacture of other transport equipment	133	76	37	30
36 Manufacture of furniture; manufacturing n.e.c.	259	128	141	12
37 Recycling	2	1	0	1
E Electricity, gas and water supply	22	7	9	9
40 Electricity, gas, steam and hot water supply	5	3	2	0
41 Collection, purification and distribution of water	17	4	7	9
Industry total	4767	2044	2391	737

Table 16: Waste Treatment Facilities (WTF) in Industrial Establishments

ISIC	Total	Out of which:		
		With WTF	Without WTF	WTF not needed
C Mining and quarrying	183	19	65	99
10 Mining of coal and lignite; extraction of peat	26	3	13	10
11 Extraction of crude petroleum and natural gas	4	1	3	0
13 Mining of metal ores	6	1	3	2
14 Other mining and quarrying	147	14	46	87
D Manufacturing	4562	968	1527	2067
15 Food products and beverages	955	261	477	217
16 Manufacture of tobacco products	15	7	4	4
17 Manufacture of textiles	204	64	49	91
18 Manufacture of wearing apparel	362	27	72	263
19 Manufacture leather products	142	31	41	70
20 Manufacture of wood and of products	248	50	77	121
21 Paper and paper products	193	55	46	92
22 Publishing and printing	153	7	48	98
23 Coke and refined petroleum products	6	6	0	0
24 Chemicals and chemical products	234	82	64	88
25 Rubber and plastics products	262	42	76	144
26 Non-metallic mineral products	612	108	216	288
27 Manufacture of basic metals	73	27	26	20
28 Fabricated metal products	261	60	76	125
29 Machinery and equipment n.e.c.	159	20	50	89
30 Office, accounting and computing machinery	3	1	0	2
31 Electrical machinery and apparatus nec.	98	20	24	54
32 Radio, television and communication equipment	70	9	11	50
33 Medical and optical instruments, watches and clocks	26	3	5	18
34 Motor vehicles, trailers and semi-trailers	92	14	32	46
35 Manufacture of other transport equipment	133	18	61	54
36 Manufacture of furniture; manufacturing n.e.c.	259	56	70	133
37 Recycling	2	0	2	0
E Electricity, gas and water supply	22	2	9	11
40 Electricity, gas, steam and hot water supply	5	1	1	3
41 Collection, purification and distribution of water	17	1	8	8
Industry total	4767	989	1601	2177

Table 17: Quantity of Waste Produced Daily by Industrial Establishments by ISIC

ISIC	Quantity of waste by type		
	Water (m3)	Gas (m3)	Solid (Ton)
C Mining and quarrying	34227.50	1731.00	68369.75
10 Mining of coal and lignite; extraction of peat	33940.00	7.00	58160.12
11 Extraction of crude petroleum and natural gas	0.00	0.00	10010.00
13 Mining of metal ores	20.00	0.00	0.00
14 Other mining and quarrying	267.50	1724.00	199.63
D Manufacturing	868842.26	2139297.39	35599.37
15 Food products and beverages	356826.00	559054.50	6886.50
16 Manufacture of tobacco products	440.00	74.00	10.94
17 Manufacture of textiles	41853.10	156394.00	5341.92
18 Manufacture of wearing apparel	4950.60	36.00	28.61
19 Manufacture leather products	3866.10	610.30	390.18
20 Manufacture of wood and of products	334.03	5077.31	208.38
21 Paper and paper products	152792.30	71186.17	414.74
22 Publishing and printing	5816.00	122.00	102.84
23 Coke and refined petroleum products	106.00	2.00	0.14
24 Chemicals and chemical products	11786.45	84266.89	5258.70
25 Rubber and plastics products	4023.20	796.83	153.76
26 Non-metallic mineral products	10494.71	816001.70	12720.93
27 Manufacture of basic metals	258372.50	416569.10	2685.11
28 Fabricated metal products	3214.29	4669.00	448.04
29 Machinery and equipment n.e.c.	1484.20	16309.30	564.81
30 Office, accounting and computing machinery	1500.00	147.00	4.80
31 Electrical machinery and apparatus nec.	965.26	423.20	21.46
32 Radio, TV and communication equipment	4561.60	12.03	15.77
33 Med and optical instruments, watches, clocks	57.50	0.00	10.10
34 Motor vehicles, trailers and semi-trailers	634.80	5070.54	11.98
35 Manufacture of other transport equipment	1520.80	948.02	54.18
36 Manufacture of furniture; manufacturing n.e.c.	3137.82	1527.50	265.48
37 Recycling	105.00	0.00	0.00
E Electricity, gas and water supply	200.00	0.00	4.00
40 Electricity, gas, steam and hot water supply	0.00	0.00	0.00
41 Collection, purification and distribution of water	200.00	0.00	4.00
Industry total	903269.76	2141028.39	103973.12

Table 18: Number of Industrial Establishments by Method of Waste Management Applied

Methods of waste management	Type of waste		
	Water	Gas	Solid
1 Recycling	69	5	127
2 Filtration	315	143	32
3 Chemical treatment	182	20	15
4 Land filling	118	2	47
5 By company itself near by production site	108	12	540
6 Handed to others for disposal	41	2	60
7 Other methods	281	93	180
Total	1114	277	1001

**Table 19: Investment and Operation Cost of Industrial Establishments
on Environment Protection Measures by ISIC**

ISIC	Investment		Operation cost	
	1998	Estimates for 1999	1998	Estimates for 1999
C Mining and quarrying	38499	33284	2212	1491
10 Mining of coal and lignite; extraction of peat	18863	15274	1793	1150
11 Extraction of crude petroleum and natural gas	19292	17511	0	0
13 Mining of metal ores	100	150	0	0
14 Other mining and quarrying	244	349	419	341
D Manufacturing	71793	380686	568397	423316
15 Food products and beverages	20055	24664	259863	201323
16 Manufacture of tobacco products	404	356	2018	7373
17 Manufacture of textiles	9823	11311	43294	10033
18 Manufacture of wearing apparel	859	1286	4190	1148
19 Manufacture leather products	3507	3369	3777	3829
20 Manufacture of wood and of products	553	629	503	458
21 Paper and paper products	5796	6306	66425	5863
22 Publishing and printing	1976	1983	80	85
23 Coke and refined petroleum products	80	110	67	11
24 Chemicals and chemical products	2768	4095	19780	139276
25 Rubber and plastics products	591	301272	11463	5232
26 Non-metallic mineral products	9618	9904	87161	28617
27 Manufacture of basic metals	1182	1383	40180	6592
28 Fabricated metal products	1909	1991	2085	1492
29 Machinery and equipment n.e.c.	552	775	203	489
30 Office, accounting and computing machinery	0	0	0	0
31 Electrical machinery and apparatus nec.	576	3285	13269	6078
32 Radio, television and communication equipment	9671	5932	10042	700
33 Med. and optical instruments, watches and clocks	130	208	75	15
34 Motor vehicles, trailers and semi-trailers	841	789	2879	3
35 Manufacture of other transport equipment	550	454	614	3610
36 Manufacture of furniture; manufacturing n.e.c.	352	584	429	1089
37 Recycling	0	0	0	0
E Electricity, gas and water supply	0	0	0	0
40 Electricity, gas, steam and hot water supply	0	0	0	0
41 Collection, purification and distribution of water	0	0	0	0
Industry total	110292	413970	570609	424807

5.3 Questionnaire

GENERAL STATISTICS OFFICE
SURVEY OF INDUSTRIAL ESTABLISHMENTS
1 JULY 1999

(ISSUED BY DECREE NO. 156/1999 QD/TCTK ON 22 APRIL 1999
 OF THE DIRECTOR GENERAL OF THE GENERAL STATISTICS OFFICE)

I. Identification												
1.1-Name of the Establishment: - In Vietnamese:												
- In English:												
1.2- Registration number of the Establishment:												
1.3- Address of the main office:												
Commune:												
District:												
Province (City):												
Tel. No:			Area Code			Local No.						
of contact person												
Extension No.												
Area Code Local No.												
Fax No:												
1.4- Address of the production place:												
Commune:												
District:												
Province (City):												
1.5- Full name of the Director:												
Sex:			Male				Female					
<i>Education level:</i>												
- Doctor, Assistant Doctor, Master											1	
- University, College graduate											2	
- Vocational school											3	
- Technical worker											4	
- Others											5	
1.6- Year of starting operation:						1	9					

2. Economic activity		ISIC Code:			
2.1- Main industrial activity:					
2.2- Allied activities outside of the Industrial activities (own account):					
-					
-					
-					

3. Is the establishment operated under a multi-establishment enterprise ?					
3.1- Yes		How may levels dose it has ?			
<i>(Please list the name of the first level establishments in to appendix A)</i>					
3.2- No					

4. Type of ownership			
4.1 Domestic investment sector			
- Central Government		1	
What ministry does control it ?			
- Local Government		2	
- Cooperatives and partnership		3	
- National private		4	
- Limited Company		5	
- Joint stock Company that has state's investment		6	
- Joint stock Company that hasn't state's investment		7	
4.2 Joint venture sector			
- 100% foreign investment		8	
- State establishments with foreign partner		9	
- Non State establishments with foreign partner		10	
- Contracted bussiness cooperation		11	

5. Number of persons engaged in 1998 (Employee)

Items	Code	Total	Of which:	
			Male	Female
A	B	1	2	3
Total (510 + 520)	50			
+ <i>Employees</i>	510			
- Production workers	511			
- Technicians	512			
- Administrative workers	513			
+ <i>Unpaid workers</i>	520			
- Working proprietors and active business partners	521			
- Unpaid family workers	522			

6. Compensation of employees in 1998

Unit: Million dong

	Code	Total	Of which:	
			Male	Female
A	B	1	2	3
Total	60			
- Wages and salaries of employees	61			
- Other bonus, gratuities,... considered as salaries	62			
- Employers' contribution to social security, pension funds, etc.	63			

7. Cost of fuel and electricity purchased in 1998

	Code	Quantity	Value
		(Kwh)	(Mill.dong)
A	B	1	2
- Total cost of fuels purchased	71		
- Electricity purchased	72		
- Electricity generated for own consumption	73		
- Electricity sold to others	74		

8. Cost of materials and supplies purchased in 1998

Order	Materials	Unit	Quantity		Value (Mill. dong)	
			Total	Of which: Imported	Total	Of which: Imported
A	B	C	1	2	3	4
	Total					
1						
2						
3						
4						
5						
6						
7	Others					

9. Cost of industrial services in 1998,

Unit: Million dong

Description	Code	Value	
		Total	Of which: paid to abroad
A	B	1	2
Total cost of industrial services	90		
Cost of contract and commission work done by others	91		
Cost of repair and maintenance done by others	92		
Cost of goods sold as purchased	93		

10. Cost of non-industrial services in 1998

Unit: Million dong

Description	Code	Value	
		Total	Of which: paid to abroad
A	B	1	2
Total cost of non-industrial services	10		
Payments for hire of plant, machinery and equipment	1001		
Payments for hire of land and buildings	1002		
Water and cleaning costs	1003		
Transportation	1004		
Insurance	1005		
Postage, telephones, fax, etc.	1006		
Commission paid to agents	1007		
Legal and auditing fees	1008		
Advertisement	1009		
Royalty and fees paid for patent, trademark, copyrights etc.	1010		
Newspapers, journals and stationery	1011		
Other costs of non-industrial services	1012		

11. Quantity and value of shipments in 1998

Unit: Million dong

Order	Products	Code of products	Unit of quantity	Quantity		Value	
				Total	Of which: Exported	Total	Of which: Exported
A	B	C	D	1	2	3	4
	<i>Total</i>						
	Other products						

12. Receipts for industrial services in 1998

Unit: Million dong

Description	Code	Value	
		Total	Of which: From abroad
A	B	1	2
<i>Total receipts for industrial services</i>	12		
Receipts for contract & commission work done for others	1210		
Receipts for repair and maintenance for others	1220		
Receipts for goods sold as purchased	1230		
<i>Of which: - Sale of materials</i>	1231		
<i>- Sale of fuel</i>	1232		

13. Receipts from non-industrial services in 1998

Unit: Million dong

Description	Code	Value	
		Total	Of which: From abroad
A	B	1	2
<i>Total receipts for non-industrial services</i>	13		
Receipts form rental and lease of buildings, machinery, equipment to others	131		
Receipts form rental of storage facilities provided to others	132		
Receipts from rental of transport services rendered to others	133		
Receipts from patent, trademark, copyright etc to others.	134		
Receipts from legal and auditing services	135		
Receipts from other non-industrial services	136		

16. Value of net fixed assets in 1998

63

Unit : Million dong

	Code	Land and Land improvement	Buildings and structures	Machinery and equipment	Transport equipment	Furniture and others	Total
A	B	1	2	3	4	5	6
At the beginning of the year	160						
New assets purchased	161						
Used assets acquired	162						
(Of which:Costs for installation, .	163						
Capital repair done	164						
Fixed assets done by own accou	165						
Sale of fixed assets	166						
Loss of fixed assets	167						
Depreciation	168						
At the end of year	169						

17. Capital

Unit: Million dong

	Code	1998	
		At the beginning of year	At the end of year
A	B	1	2
<i>Total of Capital</i>	17		
- Passive Debt	171		
- Owner Capital	172		

18. Indirect taxes and subsidies in 1998

Unit: Million dong

Items	Code	Value
A	B	1
-Production Tax(VAT,special consumption tax,natural resources tax, excise tax, exported tax and other indirect taxes charged to production and sold products)	181	
- Subsidies received	182	
- Rebate and import discounts	183	

19- Water source, and environmental management and technology

19.1- Water source

- Tap-water 1
- Well water 2
- Others (river, lake, ...) 3

19.2- Environmental management and technology

Dose enterprise have treatment facilities for waste?

Yes No No need

Name of waste	19.3 - Quantity of waste 01 day/ night			19.4 - Environmental management and technologies (Please tick x at the suitable cells)						
	Unit	Eliminated Quantity	Treated Quantity	Recycle	Using filter	Using chemical	Landfill	Close to the company	Handed over to a company to dispose	Others
A	B	1	2	1	2	3	4	5	6	7
Waste water	m3									
Waste gas	m3									
Waste solid	Tone									

19.5 Investment and operation costs for environmental protection technologies

Unit: Million VNDong

Items	1998	Estimated for 199
1. Investment costs for environmental protection technologies		
2. Costs for environmental protection operation		

19.6 Other information

- Does the enterprise know about cleaner production (CP) industrial pollution prevention (IPP) concepts? Yes No
- Does the enterprise have an environmental licence? Yes No
- Does the enterprise have an environmental agreement? Yes No
- Does the enterprise have an environmental impact asses Yes No

20. Summary of main industrial and allied activities in 1998

Unit: Million dong

		Main Industrial activity	Allied activities (own account)	
			Please specify:	
			Name of allied activity I :	Name of allied activity II :
A	B	1	2	3
<i>ISIC Code</i>				
<i>Number of persons engaged</i>	2010			
<i>Total revenue:</i>	2020			
- Sale from own production	2021			
- Receipts from services	2022			
- Work done by own account	2023			
- Other revenue	2024			
<i>Total expenditure:</i>	2030			
- Wages, salaries and other bonus, gratuties,etc considered as salaries.	2031			
- Employers' contribution to social security, pension funds, etc.	2032			
- Cost of materials and supplies	2033			
- Cost of fuel and electricity	2034			
- Cost of services	2035			
<i>Net fixed assets</i>	2040			
- At begining of the year	2041			
- At the end of the year	2042			

*Name of respondent:**Date:**Name of the Director
(signature and stamp)*

APPENDIX B
MAIN INFORMATION ON CAPITAL INVESTMENT
AND CAPITAL SHARE IMPLEMENTATION
OF THE JOINT VENTURE ENTERPRISES

Name of Enterprise:	- In Vietnamese :				
	- In English:				
Year of licence issued		1	9		
Year of implimenting project		1	9		
Year of starting operation		1	9		

1- Investment capital in licence

Unit: 1000 USD

A	Code B	At 31 Dec. 1998 I
Total investment capital in licence	21	
- Legal capital	211	
+ Vietnam partners	2111	
+ Foreign partners	2112	
- Loan capital	212	

2- Investment capital performance

Unit: 1000 USD

A	Mã số B	Performance in 1998 I	Cumulative up to the end 1998 2
2.1 Total Legal capital		22	
- From Vietnam side		221	
+ In cash		2211	
+ In values of resources		2212	
+ In values of land, water, sea contributed		2213	
+ In values of equipment, workshop building, ...		2214	
+ Others		2215	
- From foreign side		222	
+ In cash		2221	
+ In values of equipment		2222	
+ Others		2223	
2.2- Loan capital		23	
- Balance at the begining of the year		231	
- Balance at the end of the year		232	