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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

INDUSTRIAL DEVELOPMENT REVIEW SERIES

MONGOLIA

Restructuring for a market economy

V.93 88397

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The views and comments contained in this study do not necessarily reflect those of the Government of Mongolia nor do they officially commit UNIDO to any particular course of action.

PREFACE

This Industrial Development Review of Mongolia is part of a non-sales series aimed at strengthening the "country focus" of UNIDO activities. Within the framework of the work programme of the Regional and Country Studies Branch of UNIDO, which monitors the international industrialization process, the Reviews provide a survey and analysis of each country's industrial development achievements. The Reviews are intended to provide a service to those within UNIDO and other international agencies concerned with industrial policy, planning, project development and implementation, and to be a ready source of information for governments, investors, industrialists, entrepreneurs, policy-makers, international organizations, aid agencies, academics, and research institutes.

The Reviews have two separate but interrelated objectives: they are designed to facilitate and promote the activities of UNIDO, as well as to serve as an informative and analytical document for the international industrial community. The analyses contained in the Reviews are intended to support the technical assistance programming for industry by providing industry specific analysis which may serve as an input to programming activities and as a basis for informed discussions. The Reviews are also designed to accommodate the needs of a wide readership in the international community associated with industry, finance, trade, business, research and government, laying the groundwork for undertaking in-depth analyses of specific aspects of industrial development trends, policies and strategies.

This Review comprises five Chapters. Chapter I presents an overview of the economy of Mongolia. Chapter II analyses policy issues and the institutional framework for industrial development. The structure and performance of the manufacturing sector are analysed in Chapter III, with particular reference to growth and structural change, employment, productivity, ownership, location and trade. Chapter IV examines the performance and prospects of key industrial branches. Chapter V presents up-to-date information on resources for industrial development. Data on macroeconomic and industrial trends are presented in Annex A, and Foreign Investment Law and Tax Law are presented in Annex B and Annex C, respectively.

This Review was prepared in cooperation with Dr. Nicholas Middleton, UNIDO consultant, on the basis of information available as at June 1993.

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References to dollars ($) are to United States dollars, unless otherwise stated.

Dates divided by a slash (1991/92) indicate a fiscal year or a crop year. *Dates* divided by a hyphen (1991-1992) indicate the full period, including the beginning and the end years.

In Tables:

Totals may not add precisely because of rounding.
Three dots (...) indicate that data are not available or not separately reported.
A dash (-) indicates that data are not applicable.

The following *abbreviations* are used in this publication:

CES	Central Energy System
CMEA	Council for Mutual Economic Assistance
GDP	Gross domestic product
GNP	Gross National Product
IMF	International Monetary Fund
NMP	Net material product
T	Tugrik
MVA	Manufacturing value added
TR	Transferable Roubles
UNDP	United Nations Development Programme
UNIDO	United Nations Industrial Development Organization
UNSNA	United Nations System of National Accounts
USSR	Union of Soviet Socialist Republics

BASIC INDICATORS

BASIC INDICATORS I: THE ECONOMY

GDP (1991) (constant 1986 prices) : T 8,580.2 million

Population (1991) : 2.1 million
Growth rate (1979-89) : 2.5 per cent per annum

Labour force (1990) : 965,400

Composition of GDP (per cent) :

	1985	1990
Agriculture	18.8	20.2
Industry	32.8	33.8
Construction	5.7	5.7
Transport	13.8	11.3
Communications	1.7	1.9
Trade and catering	9.1	9.1
Other material sphere	1.6	1.4
Non-material services	16.6	16.5

Retail price index (1980=100) :

1985	1986	1987	1988	1989	1990	1991	1992
103.1	102.1	102.1	102.1	102.1	102.1	155.9	347.2 a/

Exchange rate (Tugrik equivalents to $1) :

1986	1987	1988	1989	1990	1991	1992
3.18	2.89	2.89	3.0	4.67	40.0	40.0 b/

a/ End June.
b/ End July.

BASIC INDICATORS II: RAW MATERIAL RESOURCES

Food crops (Thousand tonnes, 1991)	:	Wheat (538), Sunflower seed (132), Potatoes (98), Barley (48), Oats (7)
Livestock (Thousand head, 1990)	:	Sheep (15,083), Goats (5,126), Cattle (2,849), Horses (2,262), Camels (538)
Mining, precious metals (output not available)	:	Gold, silver, uranium
Mining, others (Thousand tonnes, 1991)	:	Coal (7,009), Copper concentrate[a] (360), Fluorspar (251), Lime (76), Molybdenum concentrate[a] (3) Tin[b] (1)
Electricity production (Million KWh, 1991)	:	3,229

a/ 1990.
b/ 1988.

BASIC INDICATORS III: FOREIGN TRADE AND BALANCE OF PAYMENTS

Exports

Total value (1991)	:	\$297.4 million
Principal exports (T million, 1991)	:	Copper concentrate (161), Meat (31), Cashmere (20), Fluorspar concentrate (13), Sawn timber (12)
Main destinations (per cent, 1991)	:	Former USSR (68), People's Republic of China (15), Japan (3), Germany (3)

Imports

Total value (1991)	:	\$327.3 million
Principal imports (T million, 1990)	:	Machines, equipment and transport (855); Fuel, raw materials and metals (747); Industrial consumer goods (595)
Main origins (per cent, 1991)	:	Former USSR (66), Austria (5), People's Republic of China (5), Germany (3), Former Czechoslovakia (3)

		1986	1987	1988	1989	1990
Current account (\$ million)	:	-1,061	-991	-1,033	-1,231	-644

Gross international reserves (July 1991)	:	\$112.9 million
External debt total (1991)	:	TR 10,446 million
Debt service ratio (1990)	:	13.4 per cent

BASIC INDICATORS IV: INTER-COUNTRY COMPARISON OF SELECTED INDICATORS

Indicator	Unit	Mongolia	China People's Republic of	Viet Nam	Lao People's Democratic Republic of	Korea Republic of
I. Demographic indicators						
Population (mid-1990)	Million	2.1	1,134	66	4.1	42.8
Population growth (1980-1990)	Per cent	2.8	1.4	2.1	2.7	1.1
Area	Thousand square m	1,565	9,561	330	237	99
Life expectancy (1990)	Years	63	70	67	49	71
II. Economic indicators						
GDP (1990)	$ million	2,240[a/]	364,900	2,611	870	236,400
GNP per capita (1990)	$	...	370	...	200	5,400
GDP growth rate (1980-1990)	Per cent per annum	2.9[b/]	9.5	4.7[c/]	...	9.7
Agriculture (1990)	Per cent of GDP	17	27	39[d/]	...	9
Industry (1990)	Per cent of GDP	34	42	26[d/]	...	45
Manufacturing (1990)	Per cent of GDP	...	38	...	...	31
Services (1990)	Per cent of GDP	49	31	20[d/]	...	46
Exports of goods (1990)	Per cent of GDP	23	18	...	10	32
Gross domestic investment (1990)	Per cent of GDP	30	39	...	12	37

Source: World Bank, *World Development Report 1992*.

a/ Calculated at official exchange rate of Tugrik 4.67 per dollar.
b/ 1987-1990.
c/ 1983-1989. UNIDO estimate.
d/ 1988 percentage of gross material product (84.7 per cent of GDP).

SUMMARY

Mongolia has experienced marked and abrupt changes in its political and economic status in the 1990s. After seventy years of rule by a one-party government over a centrally-planned economy, the country now has a multi-party democratic system and is moving towards a market economy. This transition followed liberalization in the former USSR, traditionally Mongolia's mentor, major aid donor and principal trading partner, in the late 1980s, events which eventually led to the collapse of the former USSR and the breakup of the CMEA. This chain of events has had other subsequent severe repercussions for the Mongolian economy during its transition, plunging it into a major crisis. Financial aid from the former USSR, which averaged 30 per cent of GDP during the 1980s, was abruptly terminated, and foreign trade fell by half. GDP fell, for the first time in many years, by 2.1 per cent in 1990, followed by a 16.5 per cent decline in 1991, and the Mongolian people were faced with some completely new economic realities. Inflation, previously negligible in the tightly controlled central planning period, reached 52 per cent in 1991, and unemployment levels reached 8.4 per cent of the labour force which had formerly been guaranteed work by the government.

Industry, which contributed one-third of national income in 1990, was built up by CMEA donors from the 1960s with an emphasis on capital intensive heavy industries. About half of all industrial investment during the 1980s was put into electricity generation, based on domestic coal resources; refining of imported petroleum; and non-ferrous metals, with copper dominating. The joint Soviet-Mongolian project to exploit copper and molybdenum at Erdenet in the north generates about 40 per cent of export revenues. Most of this output is now bartered for Russian fuel imports, although the "dollarization" of this trade has led to a 21 per cent decline in the value of copper relative to petroleum.

Manufacturing operations, largely based on the processing of domestic agricultural raw materials, are concentrated in a few relatively large enterprises which are located primarily in three urban areas. The wool and textiles sub-sector, which doubled its output during the 1980s, is the most important source of export earnings although revenues have suffered in recent years due to the poor international prices for products such as cashmere and economic decline in major markets. Overall, Mongolia's industrial exports, which are dominantly in the form of raw materials or partially finished products, have suffered from the collapse of the CMEA trading bloc. This has forced producers to look for new customers, but enterprise management, unfamiliar with the workings of the free market, are further hampered by shortages of raw materials, outdated and substandard physical assets, a lack of spare parts, inadequate infrastructure, and output which is generally below world standards. Problems common to all industrial enterprises in the 1990s' economic crisis, such as the lack of imported inputs and energy shortages, have led to declines in industrial production across the board.

Mongolia's agricultural sector, the source of inputs to many manufacturing enterprises, employs nearly 40 per cent of the total labour force and is by far the most important employer in the countryside, home to more than half the population of 2.1 million. Agriculture accounts for 44 per cent of exports, mostly from the livestock sector, which comprises a national herd of 26 million animals, and contributes 70 per cent of agricultural value added. Crop production, contributing [illegible] per cent of agricultural value added, is based largely on cereal cultivation, which was expanded in the 1960s with a 'virgin lands' scheme. Agricultural output, variable under normal economic circumstances due to harsh, changeable weather conditions, has also suffered during the current crisis as imported inputs such as fodder, fertilizers spare parts and fuel have been in short supply.

Privatization has proceeded apace since 1990. Virtually all the agricultural sector is now in private hands, along with most small enterprises, and the transfer of medium and large scale enterprises to the private sector is ongoing. The successful operation of newly privatized enterprises is being hampered by a number of constraints. There is a lack of familiarity, at all levels, with the workings of the market economy and the rights and responsibilities of private companies. In practice, many former state enterprises continue with the same management and are still treated

as extensions of the government, receiving output targets and preferential treatment in areas such as credit availability. Certain aspects of the former centrally-planned regime, such as the state order system, with government prices significantly below market prices, and the practice of centralizing exports through state trading operations, with obligations to surrender a portion of foreign exchange earned, are acting as disincentives to those managers and workers who do have entrepreneurial flair.

Agriculture is expected to lead the economic recovery initially, although a resumption of the pre-1990s annual growth rates of around 5 per cent will depend to a large extent upon true liberalization of prices. Industrial output, which is expected to remain below capacity in the short term as spare parts, raw materials and energy remain short, should be improved in the medium term as aid flows and export earnings rise. However, many sectors require substantial restructuring, with the break up of many of the larger plants and the establishment of more small and medium scale enterprises. The continued importance of mining depends on the continuation of the barter agreement with Russia and the successful search for new export markets. Recovery and growth in all areas of the economy will be dependent upon improvements in transportation infrastructure. Investment over the next few years will continue to be at the bare minimum, as domestic savings and foreign exchange remain very scarce, and control of the money supply, with consequences for inflation, will be an important factor determining the success and pace of recovery. Mongolia's position in world trade calls for improvements in the country's sub-standard transport and communication systems. The reliance upon imported inputs will continue, and Mongolia's ability to pay for these will depend upon the successful penetration of new markets for its exports.

I. THE ECONOMY OF MONGOLIA

A. RECENT ECONOMIC TRENDS

The 1990s have been marked by abrupt changes in Mongolia's economic and political situation. After seven decades during which Mongolia was a centrally-planned economy very closely linked to the former Soviet Union (USSR), Mongolia has a democratically elected multi-party government which is introducing a market-oriented economy. The reforms being introduced by the government cover the entire spectrum of economic policies, but the break up of the former Soviet Union and the collapse of the Council for Mutual Economic Assistance (CMEA) system have meant that these reforms are taking place in a climate of severe economic collapse.

For most of its modern history since independence in 1921, Mongolia's economics and politics have been extremely closely tied to, and to a large extent directed from, the former Soviet Union. During this period the country has been transformed from a rural, essentially nomadic, economy to one with a large industrial sector producing mainly semi-processed raw materials. Industrialization was financed through large loans and investments from the former Soviet Union, particularly in the early 1980s, with the annual aid during that period totalling in the region of $600 million. In the latter half of the 1970s the former Soviet Union provided an estimated 11 per cent of Mongolian GNP. During the 1980s over 85 per cent of foreign trade was with the former Soviet Union, and the annual trade deficit, which amounted to 25 per cent of GNP, was almost entirely financed by the former Soviet Union.

The situation began to change in the mid-1980s, and some economic reforms were initiated from 1986. The increasing pace of "Perestroika" and "Glasnost" in the former Soviet Union gave birth to a vociferous reformist movement in Mongolia, culminating in the country's first ever multi-party democratic elections in July 1990, after popular demonstrations and the resignation of the Politburo in March of that year. Economically, the government is committed to a rapid transformation from a centrally-planned regime to a market system, with a comprehensive programme of reforms, including privatization, price liberalization and the establishment of new institutions for macroeconomic management. Key milestones in this process include:

a. a new foreign investment law offering tax incentives to foreign companies, full repatriation of profits and a guarantee against asset sequestration;
b. price liberalization, allowing everything except eighteen essential items, which are still rationed at fixed prices, to be bought at a free price while subsidies are being phased out;
c. freeing of trade restrictions, eliminating the monopoly of state enterprises, and allowing domestic businesses to operate without government authorization and import-export licenses;
d. a tough monetary policy where the central bank curbs credit growth by issuing treasury bills and bonds rather than loans credits to control budget deficits;
e. tough budgets for state enterprises, meaning that losses will no longer be covered automatically;
f. the ongoing privatization of 70 per cent of state assets;

g. a new two-tier banking system with the Mongol Bank and eight new commercial banks, plus the facility for foreign banks to apply for branch offices;
h. a single floating exchange rate allowing all individuals and private firms freely to exchange tugrik for convertible currency, while the government's preferential dollar exchange rate for barter trade was abandoned in April 1992;
i. new tax laws to cater for the new private companies.

The difficulties inherent in such a wide-ranging economic transformation, estimated on the basis of experience in eastern Europe to account for a fall in GDP by 5 per cent to 10 per cent in 1991, have been exacerbated by two serious external shocks. Firstly, due to economic difficulties of its own, the former Soviet Union abruptly ended its financial and technical assistance to Mongolia on 1 January 1991, except for completion of ongoing turnkey projects. Secondly, the collapse of the CMEA system in 1991 has seriously disrupted Mongolia's external trade. As a consequence, annual trade and budgetary finance from the former Soviet Union stopped, trade with the former Soviet Union fell by 50 per cent, supplies of essential commodities such as fertilizers, petroleum and spare parts became increasingly irregular, and the former Soviet technicians withdrew from Mongolian enterprises and factories.

The economic collapse caused by these external shocks is severe. Financing aid, almost entirely from the former Soviet Union, averaged 30 per cent of GDP during the 1980s, according to government data, falling to 25 per cent of GDP in 1990, before the termination in 1991. This inflow of net foreign receipts took the form of trade loans (8 per cent of GDP in 1990), financing of turnkey projects (10 per cent of GDP), and financing of equipment purchases (7 per cent of GDP). The total curtailment of this aid has meant that most investment projects have stopped, many essential parts and equipment for key industries are now unavailable, and imports of consumer goods have declined sharply.

The collapse of the CMEA trade regime has seen a serious deterioration in terms of trade with the former Soviet Union as relative import and export prices have been revised to reflect their dollar values. The price of copper, Mongolia's principal export, fell by 21 per cent relative to the price of petroleum, the principal import. Projections from trade volumes during the first six months of 1991 indicate that the purchasing power of Mongolian exports, in terms of petroleum products, has declined by $72 million per year (equivalent to 6.6 per cent of GDP).

The lack of trade credits and the shortage of convertible currency among former CMEA member states has resulted in a collapse in the volume of trade, both with the former Soviet Union, still the major trading partner, and other trading partners. A 55 per cent decline in exports was recorded in 1991, and a 65 per cent decline in imports. The remaining trade is dominated by copper exports and petroleum product imports, very largely accounted for by a barter deal with Russia.

Declining trade has resulted in severe shortages of parts, raw materials and technical assistance needed to operate all areas of industry, leading to substantial declines in production, averaging 20 per cent in 1991. For the first half of 1992 industrial production fell by 24 per cent compared to the same period in 1991.

Triggered by these factors, the Mongolian economy suffered a sharp decline in real income in 1991, the scale of which has only been rivalled by the decline experienced in Western countries during the great depression or as a result of wartime destruction. The decline in real incomes is estimated to be equivalent to 40 per cent to 50 per cent of GDP, or in the range of $450 million to $550 million. These figures are based on conservative estimates of the value of the former Soviet financing. As a proportion of total domestic expenditures (GDP plus net foreign financing), the decline is to the tune of 30 per cent to 35 per cent.

GDP fell, for the first time in many years, by 2.1 per cent in 1990, followed by a 16.5 per cent decline in 1991 (see Table 1.1). The economic slowdown has created unemployment and inflation, phenomena which were unheard of in Mongolia before the 1990s. Unemployment stood at 8.4

per cent of the labour force in 1991 and reached an estimated 12 per cent in mid-1992. Inflation was 52 per cent in 1991.

Table I.1. Growth of Net Material Product (NMP) and Gross Domestic Product (GDP)[1/] at constant (1986) prices, 1987-1991
(Percentage)

	1987	1988	1989	1990	1991
NMP	3.4	4.2	9.7	0.1	...
Industry	2.8	3.7	11.4	0.7	-20.1
Agriculture	-6.4	2.4	13.8	-0.8	...
Construction	19.1	11.8	9.6	-14.6	...
Other	6.6	4.2	6.6	-16.0	...
GDP	4.5	5.1	4.2	-2.1	-16.5

Source: Mongolian authorities.

1/ See notes to Chapter I.

As Mongolia has pursued its reintegration with the international community it has attracted growing interest from multilateral and bilateral donors since 1991. Pledges totalling $229 million in the form of soft loans, cash grants and aid-in-kind had been made by October 1991, with the larger part scheduled for disbursement in 1992. This aid has helped to relieve the government's critical position. Disbursed aid in 1991 was used for purchase of equipment for small-scale enterprises (7.4 per cent), import of spare parts and other goods (77.8 per cent) and for balance of payments support (14.8 per cent). The proportion for 1992 disbursement is expected to be similar, with a slightly higher proportion for balance of payment support. By far the largest single donor is Japan, who pledged 27 per cent of the $229 million.

Government estimates for financial requirements in the 1992-1993 period are $836 million. Foreign aid funds accounting for $83.5 million were scheduled for delivery in 1992, and export sales primarily of copper and minerals to Russia were expected to reach $300 million in 1992. This leaves a shortfall of $450 million, which may be revised downwards after negotiations with the World Bank and IMF (Mongolia became a member of the World Bank Group in February 1991).

The economic crisis has already had political implications for Mongolia's fledgling democracy. The country's second parliamentary elections in June 1992 returned the supposedly ex-communist Mongolian People's Revolutionary Party to a landslide victory. More help will be needed to see the country overcome this immediate severe economic crisis associated with economic transition.

B. ECONOMIC STRUCTURE

Although the Mongolian economy has experienced considerable industrialization, particularly in recent decades, the agricultural sector remains the backbone of the economy, with its 20 per cent share of GDP (see Table I.2). Animal husbandry and crop cultivation are the major activities, which employ 93 per cent of the rural population and 39 per cent of the total labour force. Livestock production accounts for 70 per cent of agricultural value added and crop cultivation 30 per cent. Agriculture accounts for 44 per cent of total exports, most of which are livestock products. The sector also has important linkages with the rest of the economy, providing inputs into many processing industries such as leather and shoe manufacture, wool processing, milk production and bread making.

Table 1.2. Composition of gross domestic product at current factor cost, 1985-1990
(Percentage)

	1985	1986	1987	1988	1989	1990
GDP at factor cost	100.0	100.0	100.0	100.0	100.0	100.0
of which:						
Agriculture	18.8	21.8	19.5	19.4	20.4	20.2
Industry	32.8	32.8	33.5	33.0	34.1	33.8
Construction	5.7	6.2	6.8	7.2	7.0	5.7
Transport	13.8	13.5	13.1	12.7	11.6	11.3
Communications	1.7	1.7	1.7	1.8	1.8	1.9
Trade and catering	9.1	5.3	5.6	7.1	7.1	9.1
Other material sphere	1.6	1.8	1.7	1.5	1.6	1.4
Non-material sphere	16.6	17.0	17.1	17.4	16.4	16.5

Source: World Bank estimates.

Agricultural production is subject to the vagaries of the Mongolian climate which is characterized by very low winter temperatures, a short growing season and low, erratic precipitation totals. Production, therefore, is marked by significant year-on-year variations, and after an impressive annual average growth rate of 7.1 per cent for gross agricultural output in the 1981-1985 period, the rate sank to 0.7 per cent in 1986-1990.

The current economic crisis has hit the agricultural sector hard. Production and imports of most food items fell in 1991 due to inflexible pricing policies, the lack of spare parts, fertilizers and other inputs, and a sharp drop in demand. Other chronic problems have hampered productivity, including inadequate fodder production which has resulted in heavy winter livestock losses and an over-reliance on imported fodder, poor veterinary services, a shortage of veterinary medicines and overgrazing in some areas. A privatization programme for the sector, which was begun in 1985, is now virtually complete, with more than 60 per cent of livestock in private hands and the former 70 state farms being broken down into 280 private companies.

Mongolia's industrial sector accounts for about one-third of national income and employs around a fifth of the country's employed labour force. Industrial value added rose gradually to 34 per cent of GDP in 1990 from 29 per cent in 1980, reflecting increased investments in electricity generation, mining, forestry products, construction materials, metallurgy and machinery. Half of Mongolia's gross industrial output in 1989 was accounted for by heavy industry, while light industries, such as leather, textiles, carpet manufacturing and shoes, accounted for 25 per cent and food industries 20 per cent.

Until the 1990s industrial development took the form of investing in capital-intensive state enterprises, which are heavily dependent upon imported inputs and operate with outdated technology. At the end of 1990, there were some 400 large state enterprises, most operating at a loss. The private manufacturing sector has only recently started and in mid-1992 accounted for just 5.1 per cent of industrial output.

Gross industrial output grew significantly throughout the 1980s, averaging about 9 per cent per annum during the first half of the decade, and 5 per cent thereafter. But as in the agricultural sector the early 1990s have seen stagnation and decline across all areas of Mongolian industry. In 1991 total industrial output dropped by 20 per cent as lack of spare parts, of inputs and of continued investment hit hard.

The mining sector accounts for 40 per cent of export revenues, most of which is for copper. The joint Soviet-Mongolian initiative to exploit copper and molybdenum at Erdenet in the north is one of the most important recent developments in the Mongolian economy. The project required the construction of a new branch line to the trans-Mongolian railway which went into operation in 1975, with the ore concentrator coming on-line at the end of 1978. Despite this significant venture, the mining sector has had limited development to date, but geological surveys suggest it has an important future as a source of foreign exchange. Potential resources include copper, fluorspar, gold, silver, coal, uranium, and nickel, but development of the sector is dependent upon further exploration and will require substantial investment due to the poor infrastructure, particularly roads and rail services.

Transport accounted for 11 per cent of GDP in 1990 and employed about 51,000 people. The sector is characterized by an inadequate infrastructure, which will be a serious impediment to economic growth and development, hindering the flow of production inputs and output distribution. This will be a serious restraint to the development of the domestic market and a challenging obstacle to potential private investment after the present crisis, which has hit the sector hard. Contracted fuel deliveries worth $60 million were due to be delivered to Mongolia from the Russian Federation in the first half of 1992, but a shortage of foreign exchange meant that only 23 per cent of this supply was met, severely reducing activity in road, rail and air transportation.

Social services have been given high priority in the past and notable achievements have been made despite the fact that Mongolia's population of 2.1 million is spread over a vast area. A well-developed health service infrastructure exists, and Mongolia compares well to other Asian nations in terms of life expectancy (63 years) and hospital beds per 10,000 population (121). Mongolia has high levels of maternal morbidity and mortality, however, due to the previous national policy of encouraging population growth, combined with the very limited availability of contraception which has led to the development of a cycle of multiple births with little control over birth spacing. Deliveries of imported drugs and preparations have been affected by the current economic situation. Imports which were valued at about $20 million a year in recent years, fell by just over half in 1991. The free provision of health care is being replaced by a system of health insurance and user fees.

Education's large slice of the state budget, 25 per cent in 1990, is partly due to the fact that board and lodging expenses for children of nomadic families are paid for. The education system is characterized by very high adult literacy (97 per cent), high enrolment ratios and compulsory free education, but a narrow focus of technical, vocational and tertiary curricula. The system has produced a relatively well-educated labour force, of which 19 per cent has completed secondary education and 16 per cent have received some form of higher education. The government has decided to replace the Cyrillic script, used since the 1940s, with the traditional Mongolian script by 1994.

Although Mongolia's population is small at 2.1 million, its rapid annual growth rate of 2.5 per cent, and its youthful structure (44 per cent are below the age of 16) will put increasing strains on social services and on the economy in the near future. The labour force participation rate is relatively high due to the government's former commitment to provide jobs for all, the high level of education, and the prominent level of women's involvement. But past development emphases on capital-intensive industries, plus the widespread land-intensive herding sector means that the economy's ability to absorb the growing labour force is rather limited.

Reform and belt-tightening in the public sector will make up a major part of the solution to the current economic crisis. Mongolia has long run a substantial budget deficit, which averaged about 16 per cent of GDP in the second half of the 1980s (see Table 1.3). Until 1988 these budgetary deficits were financed entirely by the former Soviet Union through concessional loans, while in 1989 and 1990, the former Soviet aid covered 90 per cent and 80 per cent of the financing respectively. The total cessation of the former Soviet aid at the beginning of 1991, combined with the slowdown in economic activity and the introduction of fiscal reforms has meant rapid major changes in public finances. The abrupt decline in trade with CMEA countries, particularly the former Soviet Union, meant that trade-based taxes, which traditionally contributed one-third of budget revenues, fell by fifty per cent in the first half of 1991. Revenue from corporate income taxes and turnover taxes also declined, while new revenue instruments are understandably taking time to become fully operational. As a result, government revenue fell from an average of 47.5

per cent of GDP in the period 1986-1990 to 40.2 per cent in 1991. Although cuts were made in several areas of expenditure including construction, public management and the scientific, cultural and health sectors, further cuts have been hard to make, since current expenditures averaged about 78 per cent of the total during 1980-1990. About 50 per cent of the current expenditures were in subsidies and transfers to households and non-profit organizations, and while this element of the budget is being restructured to fall in line with the market economy, such cuts have to be carefully phased in, particularly in such difficult times. Overall, government expenditure fell from a high 64 per cent of GDP in 1986-1990 to 59.2 per cent in 1991, but the deficit climbed to 19 per cent of GDP in 1991.

Table 1.3. Summary of state budget, 1980-1991

	1980	1986	1987	1988	1989	1990	1991
(Million tugrik)							
Total revenue	3,452.6	4,331.3	4,511.3	4,650.6	5,211.3	5,334.0	6,065.1
Tax	3,125.3	3,911.4	4,052.3	4,204.2	4,715.4	4,411.0	...
Non-tax	327.3	419.9	459.0	446.4	495.9	923.0	...
Total expenditure	3,988.6	5,977.2	6,330.6	6,660.9	7,012.3	6,744.6	8,929.3
Current	3,337.0	4,845.9	5,038.0	5,146.1	5,382.8	5,468.5	...
Capital	651.6	1,131.4	1,292.6	1,514.8	1,629.5	1,276.1	...
Fixed capital	...	461.8	446.3	416.8	441.8	412.5	...
Capital transfers	...	669.6	846.3	1,098.0	1,187.7	863.6	...
Overall deficit	-536.0	-1,645.9	-1,819.3	-2,010.3	-1,801.0	-1,410.6	-2,864.2
(Percentage of GDP)							
Total revenue	51.1	46.5	46.5	45.1	48.6	51.0	40.2
Tax	46.3	42.0	41.8	40.8	44.0	42.1	...
Non-tax	4.8	2.5	4.7	4.3	4.6	8.9	...
Total expenditure	59.0	64.2	65.2	64.7	65.3	64.4	59.2
Current	49.4	52.0	51.9	50.0	50.2	52.3	...
Capital	9.6	12.2	13.3	14.7	15.2	12.2	...
Fixed capital	...	5.0	4.6	4.0	4.1	3.9	...
Capital transfers	...	7.2	8.7	10.7	11.1	8.3	...
Overall deficit	-7.9	-17.7	-18.8	-19.5	-16.8	-13.5	-19.0

Source: Ministry of Finance

Throughout 1991 this deficit was financed by money creation, until some limited balance of payments support was forthcoming from western multilateral and bilateral donors towards the end of the year. During the first five months of 1991 base money increased at an annual rate of 127 per cent, and during April and May base money expanded at an annual rate of 211 per cent. In consequence, the value of the tugrik on the parallel market depreciated by 100 per cent in the middle six months of 1991, and the economy is rapidly becoming dollarized. Fixed prices have been maintained by the state for most essential commodities, but severe shortages have resulted from the decline in supply due to lower imports and production in combination with the rapid growth of money. Rationing was introduced in January 1991.

Restraint of the runaway growth in the money supply is one of the immediate priorities for the restructured banking sector. Prior to the 1990s, Mongolia operated a monobanking system, with both central and commercial banking functions carried out by the State Bank with about 400 branches. The Mongol Bank is being reorganized to reflect the structure and role of central banks in other market oriented economies now that legislation has been passed to permit a two-tier banking system, and already eight commercial banks have been formed. Mechanisms to control credit growth are being introduced by the Mongol Bank.

Foreign trade is another area of the economy undergoing major transformation. Merchandise exports and imports accounted for about 22 per cent and 50 per cent of GDP respectively at the end of the 1980s. Mongolia's foreign trade, long run at a chronic deficit, is characterized by a very limited range of export products destined for a limited range of markets, and a limited number of suppliers of imports. Two categories of goods, minerals (very largely copper and fluorite) and other non-food raw materials (mainly cashmere, wool, camel hair and hides) accounted for more than 70 per cent of total export earnings in 1989, with copper concentrate alone earning 50 per cent. The former Soviet Union was the major trading partner, accounting for 78 per cent of trade turnover in 1990. The collapse of trade with the former Soviet Union, combined with declining prices for some of the major exports, such as copper and cashmere, have been a primary cause of the current economic crisis. In the short term there is a clear need to find new markets for exports. The scale of this task is formidable given Mongolia's remoteness, poor transport infrastructure and inexperience in basic marketing skills, but some success at diversifying the customer profile has been achieved in the 1990s with exports to the Federal Republic of Germany, Japan and particularly the People's Republic of China increasing rapidly, be it from a low base level.

External assistance is clearly going to play a vital role both in helping Mongolia through the current economic crisis and in future development as a market economy. Financial assistance since 1991 has been largely aimed at the emergency and balance of payments support, although the delivery rate has been low (25 per cent in 1991), amid transportation problems, poor coordination by the government and worries over its implementation capacity. Technical assistance to strengthen public and private organizations in the long term has risen sharply starting from 1991. UNDP highlight three high-priority sectors: livestock and agriculture, which has a high growth potential; management, particularly economic management; and energy, which has great potential for foreign investment. However, there is still concern in the external sector over the status of Mongolia's large debt outstanding to the former Soviet Union, which stood at 10.5 billion transferable roubles at the end of June 1991 and is still the subject for negotiations over repayment, servicing and appropriate exchange rates.

C. OVERVIEW OF THE MANUFACTURING SECTOR

Early development of the manufacturing sector dates back to the 1920s and 1930s with the country's first substantial industrial installation coming into operation in Ulaanbaatar in 1934. The Choybalsan (as it was then known) industrial combine comprised of tanneries, a wool scouring mill, and cloth factories powered by its own power station, and produced a range of goods including footwear, worsted, blankets, felt, leather coats and soap. Individual plants were added to Mongolia's industrial landscape subsequently, until the 1960s marked the full-scale industrialization of the country, which followed the completion in the 1950s of the trans-Mongolian railway. Virtually all new plants were financed and built by the former Soviet Union or east European countries. Ulaanbaatar's early pre-eminence as the main industrial centre has been built upon, while the northern city of Darhan has grown to become Mongolia's second city and industrial centre. The development of copper mining at Erdenet in the 1970s has produced Mongolia's third most important industrial centre.

Manufacturing is heavily concentrated in these three locations and in a small number of enterprises, with many branches operating as monopsonistic buyers. Nearly half of all employees working in industry are in Ulaanbaatar, and when workers in the cities of Darhan and Erdenet are added, the proportion of the total industrial labour force is 63 per cent. The textile industry, which accounts for 16 per cent of industrial value added, comprises just 15 main enterprises, a not untypical degree of concentration. Such a concentrated structure is a disadvantage for industries processing inputs which are widely available throughout the country and serving domestic markets, such as livestock products and construction materials.

Capital investment has traditionally been steady, but the rising capital-output ratio has not been marked by increased productivity. The heavy investment in capital intensive technology during the 1970s and 1980s has not been used efficiently, and the reliance on imported turnkey projects has handicapped the development of a domestic engineering capability. Since the onset of the economic crisis in the 1990s, investment has fallen significantly, with further concentration in the energy and mining sectors, to the detriment of manufacturing. A lack of domestic credit, and difficulties of access for private companies further exacerbates the situation. In the long term, even with a return to normal levels of investment, Mongolia is likely to remain heavily dependent upon imported machinery, equipment and spare parts since the small size of the home market will prevent domestic industries from achieving the necessary economies of scale.

Manufacturing accounted for 67.5 per cent of industrial value added in 1991, with the food industry by far the greatest contributor, accounting for 28 per cent of industrial value added (see Table 1.4). Other than meat, all production in the food sector is for the domestic market, and overall, exports represent only a small portion of industrial output. The textile and garments branch, which grew rapidly during the 1980s, more than doubling gross output, is the leading source of foreign exchange in the manufacturing sector. Exports from this branch are dominated by cashmere wool and garments.

Table 1.4. Composition of industrial value added, 1991
(Percentage)

	Per cent value added
All industry	**100**
Electrical power	10
Fuel	5
Non-ferrous metals	16
Engineering and metal working	7
Chemicals	1
Construction materials	4
Timber and wood-working	3
Glass, china and pottery	0.5
Textiles	16
Clothing	5
Leather, fur and shoes	13
Printing	1
Food	28
Others	4
All industry at current prices (Thousand tugrik)	**5,880**

Source: State Statistical Office.

All branches of manufacturing industry face the same range of problems in the post-centrally planned era: shortages of raw materials; lack of spare parts; outdated and often inefficient capital assets; output below international standards; and inadequate infrastructure. These problems have contributed to the significant decline in output experienced in virtually all areas of manufacturing in the 1990s, and production at some enterprises has stopped. While privatization and the adoption of a market economy heralds a shake-up of the manufacturing sector, experience to date has been marred by the problems outlined above plus a range of other constraints which stem from measures taken to combat the current economic crisis and the continuing dominance of the state for new foreign markets as traditional CMEA customers have faded. A lack of experience in the workings of a market economy and the rights and responsibilities of private companies is also proving to be a hindrance to the successful realignment of manufacturing enterprises.

Fig. I.A. Growth of gross domestic product (GDP) and industrial output, 1987-1991

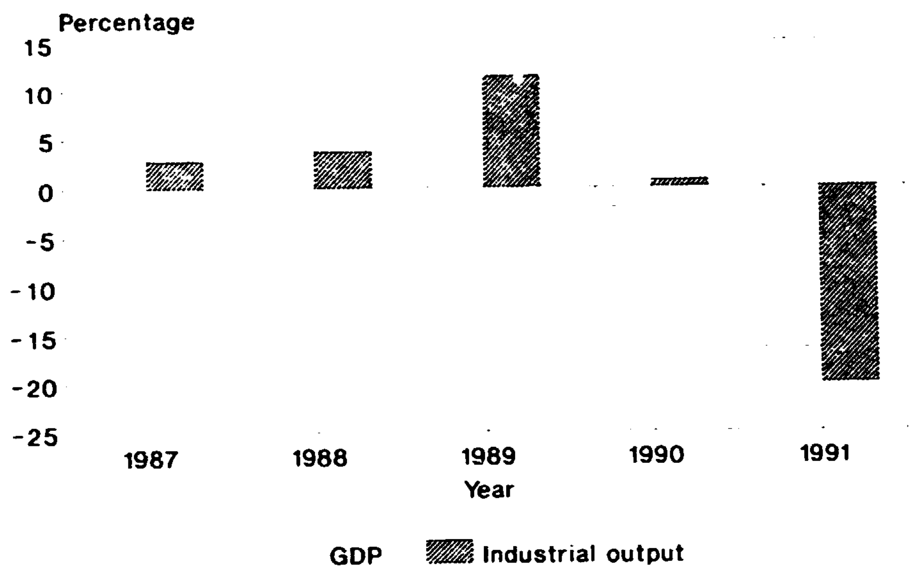
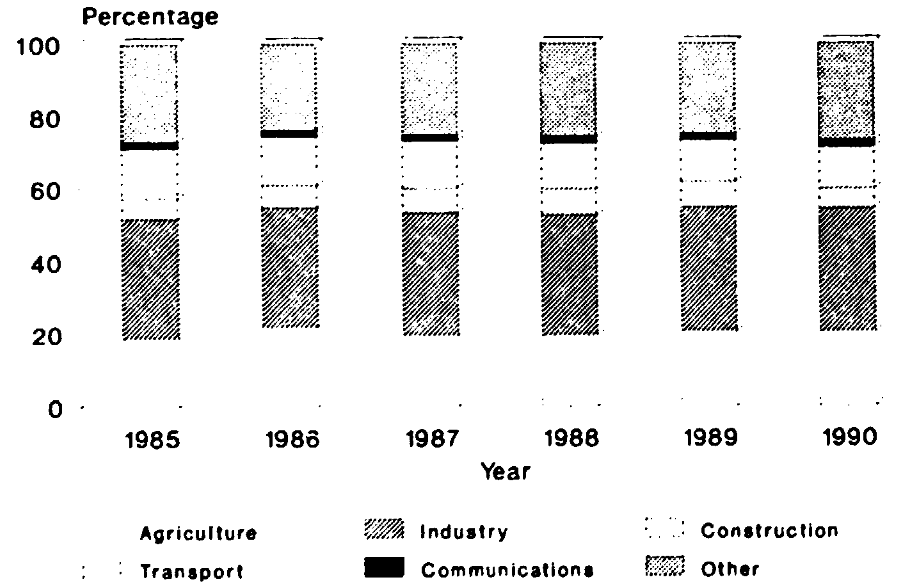


Fig. I.B. Structure of GDP by sector of origin, 1985-1990



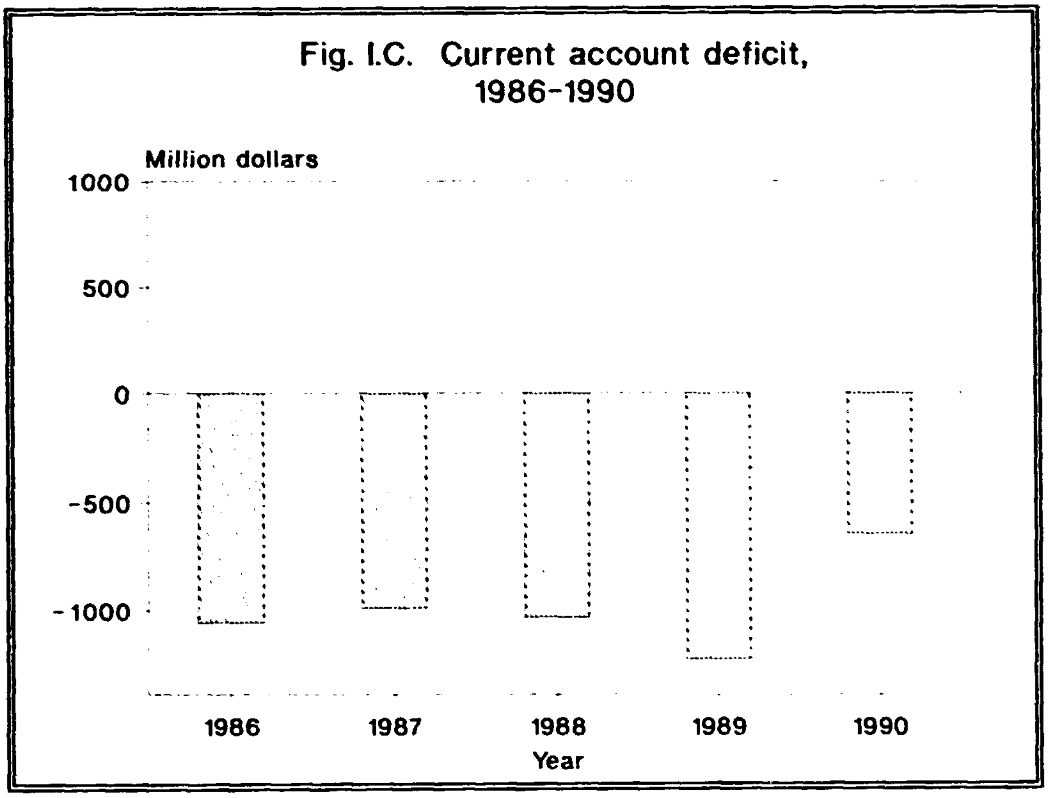


Fig. I.C. Current account deficit, 1986-1990
Million dollars
1000
500
0
-500
-1000
1986
1987
1988
1989
1990
Year

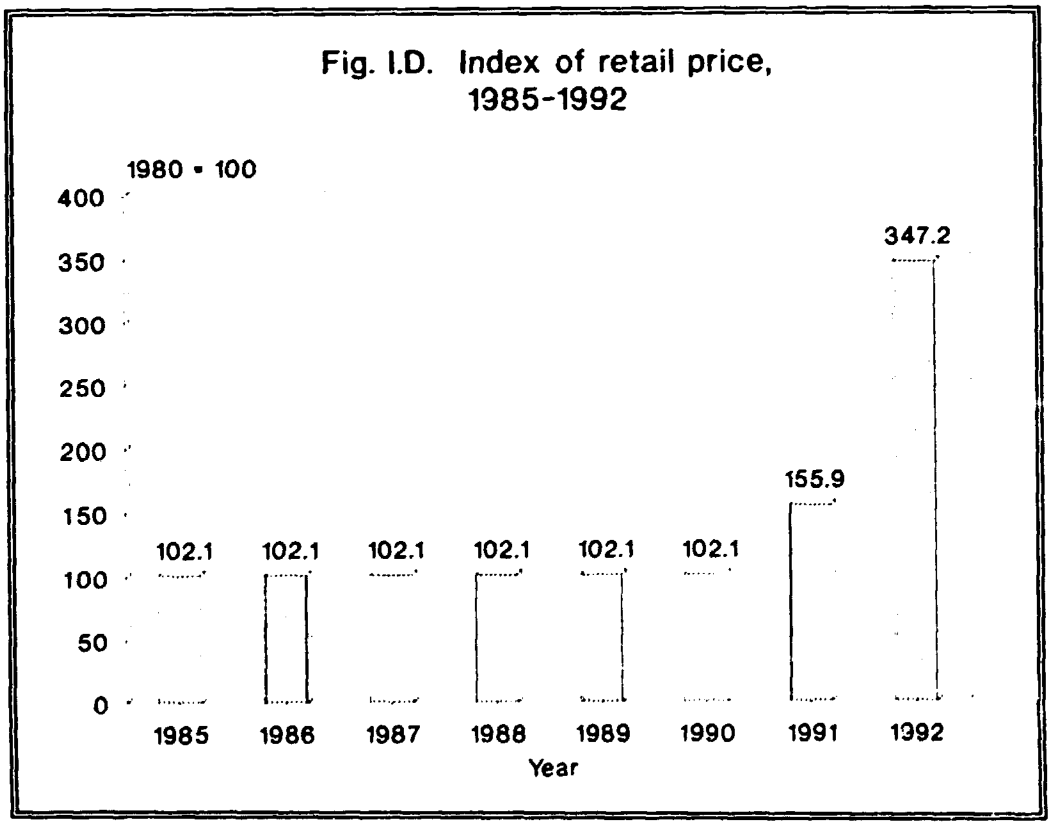


Fig. I.D. Index of retail price, 1985-1992
1980 = 100
400
350
300
250
200
150
100
50
0
102.1
102.1
102.1
102.1
102.1
102.1
155.9
347.2
1985
1986
1987
1988
1989
1990
1991
1992
Year

Fig. I.E. Exchange rate, 1986-1992

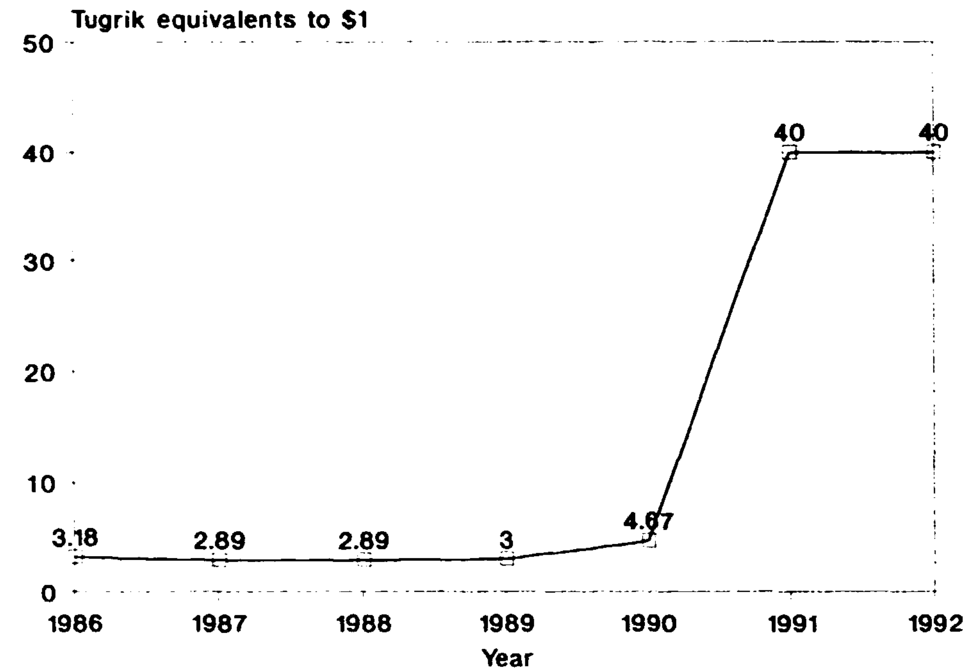
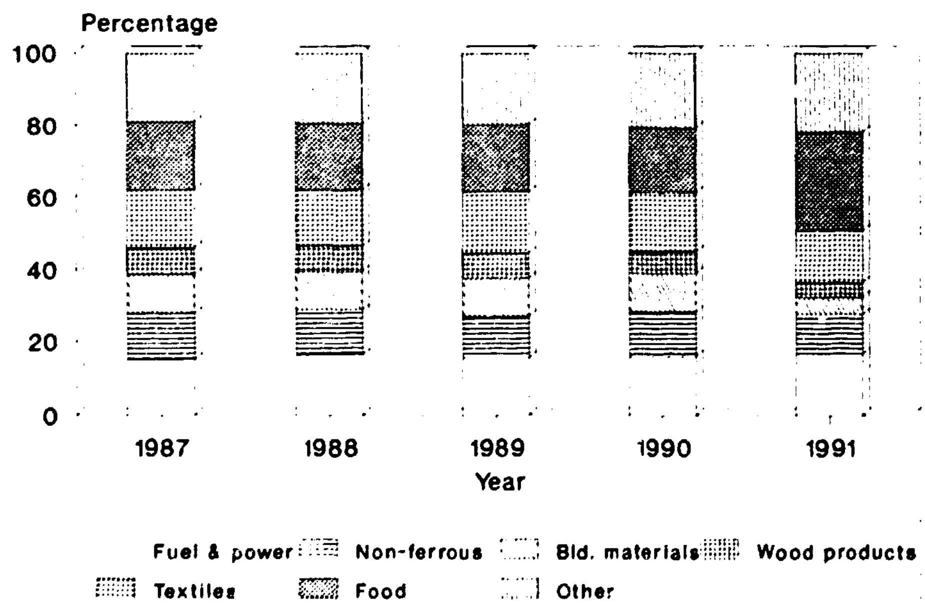


Fig. I.F. Composition of industrial value added, 1987-1991



NOTES TO CHAPTER I

1/ Mongolia's national accounts statistics have been compiled using the material balances approach to estimate Net Material Product (NMP), which has been converted to GDP according to the United Nations System of National Accounts (UNSNA). Caution needs to be exercised over the derived GDP figures, however, for the following reasons: a) since NMP fails to take into account the impact of value added by non-material services and the depreciation of capital stock, these items are estimated and may be subject to a considerable margin of error; b) growth may have been overestimated in past official data as the previous regime sought to show Mongolia as a developed and industrialized country; c) valuation problems arise due to 'estimates at current prices' not always using prices actually paid by end-users and the lack of price indexes to arrive at constant price estimates of GDP; and d) the difficulties of arriving at appropriate exchange rates for converting GDP estimates in tugriks to dollars.

II. POLICY ISSUES AND INSTITUTIONAL FRAMEWORK FOR INDUSTRIAL DEVELOPMENT

A. CURRENT POLICY ISSUES AND INITIATIVES

Prices

Until the end of 1990, Mongolia's price structure was prescribed by a rigid system of price controls and distribution through state channels, designed to provide cheap basic necessities and to contain final consumption, so generating large funding levels for capital intensive industrial projects. Hence, energy prices were low, food and housing were subsidized, social services were free, capital goods cheap, and consumer goods very expensive. Housing rents, including heating, were about 20 per cent of an average wage, and the price differentials on imported consumer goods, which accounted for about half the total supply, amounted to an estimated equivalent tariff of 250 per cent.

Although significant steps have been made in the direction of price liberalization, starting in January 1991 and continuing with government resolutions in 1992 to remove all price controls, except for bread and flour, there remain a number of inter-related state mechanisms which distort prices to varying degrees. Most of these mechanisms centre around the state order system. The continuation of this system, a hangover from the days of central planning, is designed to maintain domestic supplies for the ration system and domestic manufacturing industries, and to generate foreign exchange or its barter equivalent, through centralized exports, in order to pay for centralized imports of rationed goods and essential goods such as spare parts and fuel.

The importance of the state order system for the distribution of agricultural produce is indicated (see Table II.1), which shows that state procurement for 1992 exceeded 1991 production in most products. A major problem is the fact that the government pays below market prices for production bought through the state order system. Many suppliers continue to rely on government for transport and other essential services, so that they have no option but to accept the prices offered. But the disincentives of poor prices for the producers are indicated by the affect on amounts actually procured, which show a marked decline for the first half of 1992 over the first half of 1991 for most products, resulting in widespread shortages. Some of this fall can be put down to declines in production, which are partly due to shortages of inputs, but are also a function of the below-market government prices themselves. Shortages of agricultural produce affect the processing industries as well as the consumer.

State procurement also figures largely in the sale and distribution of manufactured products, particularly those destined for export. All major manufacturing enterprises are still issued with explicit orders by the state prescribing the proportion of output which is to be exported and, of this, the proportion to be exported centrally. Table II.2 gives an indication of the extent to which the state order system pre-determines the distribution of exported production in a selection of major enterprises.

Table II.1. Planned state procurement, 1992, and production, 1991

Product	1992 planned procurement	1991 production	1992 procurement as percentage of 1991 procurement (first half)
Live animals (thousand tonnes)	173.9	166.8	64
Pork (thousand tonnes)	4.0	3.8	16
Horse (thousand heads)	45.3	28.9	...
Milk (million litres)	49.5	104.7	65
Butter (thousand tonnes)	3.0	3.1	...
Poultry (tonnes)	279	275	41
Eggs (million pieces)	33	26	106
Grain (thousand tonnes)	555	595	...
Potatoes (thousand tonnes)	70.5	96.5	...
Other vegetables (thousand tonnes)	80	22.7	...
Wool (thousand tonnes)			
Sheep's wool	17.3	18.7	57
Camel wool	2.2	2.3	97
Cashmere	1.5	1.5	90
Skins (thousand pieces)			
Camel	35.5	23.0	50
Horse	191	88.2	32
Cow	554.8	364.6	39
Sheep	4,786.2	2,975.5	56
Goat	1,237.8	935.8	64

Source: Consultations with Boston Consulting Group. State Statistical Office.

Government prices paid for centralized manufacturing exports are artificially low, since they are calculated at the official exchange rate. This makes exportation unattractive and reduces the competitiveness of exported products, as higher dollar prices will be required to justify rising costs. At present, supplies for the state trading organizations are ensured through regulating the issue of export licenses, with applicants sometimes asked to prove that they have fulfilled their state quota before their application is considered. A further disincentive to export is manifest in the foreign exchange surrender system, which requires all state enterprises and majority state-controlled enterprises (hence including many 'privatized' enterprises) to surrender from 40 per cent to 80 per cent of foreign exchange earnings, depending on the product, to the state at the official exchange rate. This ruling applies to both exports channelled through centralized state control and direct exports.

Prices of goods imported centrally, which are also calculated on the official exchange rate, also result in distortions in the domestic economy. Domestic prices are often significantly less than world market levels, encouraging inefficient usage. This applies particularly to goods imported for the ration system. Domestic rationed goods, procured by the state, also lead to price distortions because the state price is often below domestic market prices. The result has been the growth of a parallel market (see Table II.3), further exacerbating shortages.

At present industrial development and individual enterprise initiatives are constrained by this inter-related set of state imposed mechanisms, the existence of which reflects both the pace of change from the planned approach to a full market economy and the special needs of the economic crisis. But only with the abolition of the state order system, the elimination of rationing for all but the absolute social necessities, the phasing out of the foreign exchange surrender system and the adoption of a market exchange rate can industry begin to evolve in a true free market climate.

Table II.2. State planning control in selected exporting enterprises, 1992

Enterprise	Planned exports as per cent of output	Total planned export value (Million dollars)	Centralized export allocation (Percentage)
Erdenet copper	100	220.0	55
Mongol/sovtsvet metal corporation	100	27.3	70
Mongol/czechoslovak metal corporation	100	1.0	70
Coal corporation	2.4	2.6	80
Gobi	100	27.6	80
Arisimpex			
Leather garment factory	87	14.6	50
Fur factory	56	3.1	50
Sheepskin factory	57	11.3	50
Noosimpex			
Wool knitwear factory	23	0.5	40
Spinning factory	11	1.3	0
Textiles factory	70	5.4	40
Carpet factory	68	19.5	40
Meat plant	100	6.1	0

Source: Consultation with Boston Consulting Group, State Statistical Office.

Table II.3. List of rationed products, July 1992

Item	Amount per person	Amount per family	Period	Fixed unit price (Tugrik)	Parallel market price (Tugrik)
Meat					
beef or mutton	2.7 kilogram	...	per month	28	80
Flour	3.2 kilogram	...	per month	4.2	20
Rice	0.3 kilogram	...	per month	18	80
Sugar	0.2-0.5 kilogram	...	per month	20	130-140
Vodka	...	1-2 bottle	per month	80	600
Bread	...	1-2 pieces	per 2 days	3	...
Matches	...	10 pieces	per month	2	4
Vegetable oil	...	1 litre	per month	66	258
Soap	...	2 pieces	per month	14	45
Tobacco	...	1 parcel	per quarter	110	250
Milk powder	...	0.1 kilogram	per month	84	...
Plate tea	...	1 pieces	per quarter	110	400

Source: State Statistical Office, personal interviews.

Foreign exchange

Foreign exchange is currently in extremely short supply in Mongolia. Many enterprises have no access to foreign exchange, and thus are forced to indulge in unproductive international trading to generate hard currency capital. Further, the acute absolute shortage is highlighted by the fact that even those enterprises with foreign exchange deposits in the State Bank International are often unable to draw on them, and are routinely required to put up still more hard currency before being allowed to do so. The lack of confidence in the banking system, with regard to foreign exchange access, has led to some international trading organizations depositing foreign exchange in overseas accounts, adding to the shortage. The amounts involved are hard to quantify because although possession of such accounts is not illegal, depositors are wary about disclosing their existence for fear of possible future penalization.

Foreign investment

Mongolia's turn towards countries outside the former CMEA for investment has been facilitated by the enactment of a foreign investment law, which has already produced more than 120 joint ventures and a handful of wholly foreign-owned companies. The attractions of foreign investment for Mongolia are obvious: an inflow of foreign exchange; new technology and training; and future export earnings. Attraction of more foreign interest in Mongolia will depend upon a number of improvements, particularly in the legal framework, infrastructural facilities, and administration and promotion.

The foreign investment law, which came into effect on 1 May 1990, in the early days of reform, is now widely regarded as being inadequate, and a draft for a replacement was in circulation in mid-1992. The continuing evolution of the legal and regulatory framework governing foreign investments is causing some potential foreign investors to hold back until currently unclear and contradictory regulations are resolved. The new law is still deficient in a number of respects: its list of industries in which foreign investment is prohibited is vague and in some places contradictory; the governance of joint venture companies and wholly foreign-owned enterprises is subject to contradictory rules; the incentives offered to foreign investors are unclear and contradictory; and a number of typically covered legal issues, such as questions of labour and procedures for terminating, liquidating or dissolving joint-venture companies, are not covered.

Mongolia's inadequate physical infrastructure, in areas such as transport, energy and communication, is another source of concern for potential foreign investors, as are the underdeveloped service and financial sectors. The proposal to establish a development zone for foreign and joint venture companies would go some way to dispelling these problems.

Administration and promotion is an area that also needs immediate attention. The establishment of a 'one-stop' agency for foreign investors, where all necessary permits can be obtained as well as information on potential domestic partners, would considerably improve Mongolia's ability to attract foreign investment in what is a very competitive market place.

One considerable advantage which Mongolia has over other prospective bidders for foreign capital, in an area appropriate for development, is in Mongolia's access to European, United States and Japanese markets for textiles and garments. At present Mongolia has no quotas for exports of these products and is therefore an attractive destination for the establishment of factories financed by entrepreneurs from other Asian producers where export quotas are full. If a new Multi-Fibre Agreement continues with a quota system, Mongolia can continue to exploit its competitive advantage in this respect by negotiating a maximum level, above their current capacity and then offer quota allocations to foreign investors willing to establish joint ventures or greenfield sites.

Privatization

The privatization of state-owned assets and enterprises, one of the linchpins of economic reform, is expected to achieve a rapid transformation of the Mongolian economy. The first phases, involving privatization of between 4,000 and 5,000 agricultural units and about 1,600 small businesses, are largely complete, and the final phase, the privatization of some 450 medium to large-scale enterprises, is in progress. By August 1992, 70 of these larger enterprises had transferred from public to private ownership.

The state has maintained some degree of ownership in about one third of privatized enterprises, with shareholdings ranging from 20 per cent to 51 per cent. The aim of this continued involvement in areas such as speciality products (e.g., alcoholic beverages), food (e.g., bread and confectionery), and construction materials (e.g., bricks), is to continue managing the supply and prices of these key products. The government intends to liquidate its interest in these enterprises. By the end of August 1992, the shareholdings of the State, employees, and other private shareholders in privatized medium- and large-scale enterprises were approximately 23 per cent, 8 per cent and 69 per cent, respectively.

Although much progress has been made on paper in the privatization programme, it is clear that in practice many newly privatized, former state-run enterprises have changed little. Incumbent management usually remains, for lack of alternatives, and both these managers and their employees, who are inexperienced in the workings of the market economy and the rights and responsibilities of private companies, have little idea of what to do next. Hence former practices and management strategies remain unchanged, with many newly privatized enterprises continuing to behave and be treated as extensions of the government. Government directives are still received and carried out in many areas that should now be self-determined, while favoured treatment is still provided by government in areas that should now be competitively operated, such as the cost and availability of credit, and access to export licenses and foreign exchange.

Many of these problems of the newly privatized enterprises are not surprising given the lack of familiarity at all levels with the operation of the market economy and the continued state intervention in the economy, both as a hangover from central planning days and as a known mechanism for dealing with the current economic crisis. Difficulties inherent in the poorly timed sequencing of related reforms will be eased with the phasing out of practices such as the state order system, but confusion stemming from inexperience is a more intransigent problem which will need government efforts to dispel. A move towards more effective management of enterprises could be made by revising corporate law to require companies to have a board of directors, accountable to shareholders, with the authority to appoint and direct management. A similar structure should be put in place in state-owned enterprises in the run-up to privatization. Meanwhile, other needs of the new private sector will also have to be addressed by government. These include efforts to ensure that companies are not excluded from available credit, and to help with new and unfamiliar tasks such as bookkeeping, technology acquisition, environment and health and safety. At the same time, the government needs to devise and implement policies on competition and the possible abuses of monopolies, particularly important in the Mongolian economy where traditionally many products have been the concern of a single or small number of enterprises.

Public sector management

Management of those enterprises which remain in public ownership will have to be modified and improved in accordance with the workings of the market. Appropriate governance is essential both from the fiscal viewpoint and because these enterprises are responsible for essential inputs into the private sector. To date, however, the future workings of public sector enterprises seems to have been given little thought. Particular consideration needs to be given to several areas. These include adjustment of tariffs and user charges to achieve full cost recovery; appropriate structures for preventing administrative interference in the day-to-day running of enterprises; appropriate ways in which government can exercise its ownership functions, such as through boards of directors or holding companies; and methods to ensure that the poorer sections of society continue to have access to public services.

Export promotion

Mongolian exports are critically important in earning foreign exchange for the economy. According to a recent report commissioned by the Asian Development Bank[1] since export growth offers a greater potential impact on the Mongolian economy than import substitution, encouragement and facilitation of export industries should be a clear government priority.

With the collapse of the CMEA trading bloc and the economic difficulties being faced by Mongolia's traditional trading partners, Mongolia is looking to find new customers and exploit new markets. However, industrialists have little experience of marketing since the former monopolistic international trade system was handled by five state-owned foreign trade organizations. Two of these organizations dealt with exports: Mongolimpex, which was responsible for trade with the countries in the convertible currency area, formerly about 5 per cent of total trade; and Mongolexport which handled all exports to the CMEA countries. The expertise of these former state organizations should be carefully cultivated, perhaps by transforming their roles in advisory and promotional directions. They, or alternative government institutions, could also help in the field of information provision, since access to knowledge of markets, agents and potential customers is severely limited in Mongolia. Meanwhile, an effective set of policies needs to be designed to help exporting industries in their difficult task.

Fiscal relief is one area that might be addressed. At present neither labour nor depreciation are subject to tax relief, a situation which effectively raises producer costs relative to world competitors. A more lenient tax code for export or export-oriented enterprises, either allowing full deductibility of expenses on export products or tax credits for specific export related activities, would improve their competitiveness on world markets.

Credit is another issue which must be addressed. The current bias of commercial banks against private enterprises, both in terms of access and interest rates charged, is an unacceptable burden on fledgling exporting enterprises and would need to cease.

Import duty relief on machinery, spare parts and raw materials, allowing preferential access to resources, is a further tool which could be used to improve export industries' competitiveness. Elimination of duties, currently at 15 per cent for customs, plus a 10 per cent surcharge, for re-exported raw materials and/or export producing equipment, could be achieved by tax exemption or rebates.

Technology and maintenance

In virtually all areas of the manufacturing sector, Mongolia has imported equipment and technology on a turn-key basis, and continues to be heavily reliant upon imports for spare parts, now a considerable drain on foreign exchange reserves. Domestic capability to upgrade or fine-tune machinery is very limited. Plants have been designed in other CMEA countries and Mongolian engineers have usually played a secondary role in their establishment, with little opportunity for Mongolian technicians to develop the requisite skills. Maintenance capacity is likewise limited, being confined to a small number of repair shops, just one each for all enterprises in the leather processing and wool processing sectors, for example. The government has a technology modernization programme, which gives priority to several industrial sectors: export products based on domestic raw materials; mining; construction materials; chemical industries using domestic resources, such as phosphatic fertilizers; copper products; and other metal products. The sources of these improved technologies will continue to be external, since the small size of the domestic market will not allow domestic industries to achieve the necessary economies of scale, but further government incentives are needed to allow manufacturing enterprises to import new equipment. However, new technologies alone will not answer all the questions hanging over Mongolian production. New management and worker practices and the ability to operate and maintain new machinery must be implemented at the same time. The government recognizes the need to completely reorient the technical and vocational training system to meet new needs, and fresh skill development programmes are currently being developed by the ministries of labour and education.

B. THE INSTITUTIONAL FRAMEWORK FOR INDUSTRIAL DEVELOPMENT

The policy framework

Prior to the adoption of a market system, Five-Year Plans were drawn up by the Council of Ministers, primarily through the Ministry of Finance and the State Committee for Social and Economic Developments. These included plans for the development of particular branches of the national economy produced by the relevant ministries and central departments. Plans for the development of towns and provinces were passed down to be implemented under the control of local bodies, which in turn instructed individual enterprises on their prescribed production and financial plans and targets. Centralized state bodies allocated foreign exchange and other scarce resources on the basis of sectoral budgets, and organized procurement, distribution and marketing, both domestic and overseas.

Dismantling of the structures of the planned economy has proceeded apace, but although the principles of the new market system have been announced, as yet few are operational. While some state-owned enterprises have been privatized, for example, their management remains the same, and they have little idea of how to work in the new system. Indeed, managers are often constrained in any new efforts they do make by practices and mechanisms which are yet to change, such as the state procurement system. Hence, although on the face of it many aspects of the planned economy have gone, in practice the old ideas and mentality are proving more difficult to change. At the same time as this dramatic transition is being implemented, the economy is having to survive the traumatic external shocks imposed upon it by the collapse of the former USSR and the CMEA trading bloc.

Residual aspects of the old system, together with new interventions designed to alleviate the present severe shortages and economic collapse, have combined to create an extensive and inter-related web of allocation and price distortions in the economy. These distortions, which are institutionalized through a network of state-organized procedures and methodologies, need to be untangled before a climate conducive to appropriate industrial development can be achieved. The structural constraints to the proper functioning of the market system include the state order system, the system for centralizing exports, export licensing, foreign exchange earning surrender requirements, the ration system, price controls and subsidised energy prices. These closely related limitations are all, in turn, associated with the overvalued exchange rate and the lack of internal convertibility.

Currently, the clear need for Mongolia to encourage small- and medium-scale industrial enterprises is hampered by several critical constraints:

(a) Most small-scale manufacturers are severely lacking in the appropriate experience and training necessary to establish themselves properly.

(b) Bank financing is either not available or discriminatory against private sector companies, which are charged much higher interest rates than competing public enterprises.

(c) Most small companies must first import equipment and raw materials before production can start for either domestic or export markets, but foreign exchange is unavailable to them.

As a consequence, most new enterprises which have been established in the manufacturing sector are forced to engage in small scale trading simply to survive and generate enough hard currency to set up production. While not belittling the importance of trading *per se* is not a bad thing, this state of affairs reflects the lack of attention and investment needed to develop the industrial sector.

While the government is aware of many of the difficulties facing industrial development, current concerns over the economic crisis and the needs of other key economic sectors are over-riding the development of a comprehensive policy for industrial development. The government's reform programme presented at the donor consultation meeting in Ulaanbaatar in October 1991, included programmes for nine key sectors. Among these were energy and mining, but specific reference to manufacturing industry was included only within the employment and privatization package. Apparently, the only initiative specifically designed to aid industrial development stems from the identification of small-scale enterprises as a sector of high growth potential and thus high employment generation. To encourage and promote this sector, a Coordinating Council on Development of Small Enterprises, Trade and Services has been established under the chairmanship of the Vice-Minister of Labour, and a Centre for Small Enterprise Promotion created in the Ministry of Labour.

The immediate government priorities must be to facilitate the growth and development of industry by dismantling the structural and institutional constraints outlined above. Further to these, there are a number of other areas in which government direct action is necessary. These include help and training with accounting and financial reporting, creation and promotion of vocational training courses, establishment and monitoring of hygiene standards, and establishment and enforcement of industrial standards to raise quality and help to secure export markets. While rejection of the old central planning system has been emphatic, there is still a need for institutional direction of macroeconomic and development policies. This need has become increasingly clear in recent times as ministries which are no longer directed from above have in some cases ventured out in different directions without adequate inter-ministerial communication. A key area in need of improvement and modification of practices in this respect is the public sector investment programme. Project appraisals made by the Ministry of National Development, established after the abolition in 1990 of the State Committee for Social and Economic Development, will need to be modified to fit the new structure of the economy. Current methods concentrate on meeting output targets and on payback periods, paying scant attention to economic benefits and to cost minimization. As time progresses, the Ministry of National Development will have to develop its capability to form medium and long term development strategies for the economy which will clarify the direction in which industrial development will proceed.

Financial institutions

Mongolia's financial services sector is highly underdeveloped. Although the state banking monopoly has been broken, the new commercial banking sector is having trouble adapting to the new market-oriented approach. Most of the new commercial banks are controlled by state-owned enterprises, and their practices clearly operate in favour of the state sector. The current system of interest rates is biased towards state-owned enterprises, which receive cheaper credit than private enterprises. In one major bank, mid-1992 interest rates for public enterprises were 12 per cent while those for private companies ranged from 24 to 28 per cent. Indeed, the system allows state-owned enterprises to borrow funds and make these funds work for them by depositing the money at the same bank. Public enterprises accounted for more than three quarters of outstanding commercial credit from banks in mid-1992. The current ownership structure of banks, combined with the small number of inexperienced personnel dealing with credit evaluation, together make the present allocation of capital ineffective.

Another fundamental problem in the banking sector is the lack of credit available in the system. Total personal savings are equivalent to about $5 million, less than the government's fiscal deficit. About 10 per cent of the deficit was financed by a government domestic bond issue in 1991, totalling about T 201 million. Most of the rest of personal savings are deposited in the banking system, but the insignificant amount cannot finance any serious investment. Since real interest rates are negative, there is little incentive for personal savings. Some state enterprises are generating savings and have begun to pay back debts, but losses at other state enterprises are believed to more than offset these profits, leaving the state sector as a net drain on capital.

NOTES TO CHAPTER II

1/ The Boston Consulting Group, *Reconstruction and development of the industrial sector of the Republic of Mongolia*, Draft Report, 17 August 1992.

III. STRUCTURE AND PERFORMANCE OF THE INDUSTRIAL SECTOR

A. GROWTH AND STRUCTURAL CHANGE

Early development of the manufacturing sector dates back to the 1920s and 1930s which was the first identifiable stage of Mongolia's post-revolutionary economic development, characterized by limited material and industrial manpower resources. Hence the light and food industry developed gradually, by processing livestock produce, concentrated in the main market and labour reserve: Ulaanbaatar. The country's first substantial industrial installation came into operation in the capital city in 1934. The Choybalsan (as it was then known) industrial combine comprised tanneries, a wool scouring mill and cloth factories powered by its own power station, and produced a range of goods including footwear, worsted, blankets, felt, leather coats and soap. Ulaanbaatar also became the centre for coal mining and electricity generation during this early period.

The economy diversified during the period 1940-1960, into the fields of ore-mining, metalworking, timber-processing and further consumer goods production. Ulaanbaatar's position as the country's industrial hub was re-enforced by the Soviet-financed rebuilding and upgrading of the industrial combine, establishing specialized plants for tanning, sheepskin coat manufacture, shoemaking, wool-washing and worsted cloth and felt manufacturing. In 1960, 56 per cent of Mongolia's gross industrial product was produced in the capital city.

The 1960s marked the full-scale industrialization of the country, with a trend towards decentralization as new industrial and mining centres were developed and aimak (provincial) centres set up their own flour mills and food-processing factories. This followed the completion in 1955 of the trans-Mongolian railway line from the border with the former USSR to the border with the People's Republic of China, in a decade in which an economic cooperation agreement with China saw Chinese labourers improving basic infrastructure such as housing, roads and bridges. Mongolia's relations with the People's Republic of China waned during the 1960s, but a new era and intensification of external influences on economic development was heralded with Mongolia's entry into the CMEA in 1962. Despite Mongolia's nominal independence, virtually all new plants in the three decades until 1990 were financed and/or built by the former USSR or East European countries.

In the 1960s in Ulaanbaatar the former German Democratic Republic built two meat-packing plants, a woodworking combine was built by Poland, and Hungary constructed a clothing factory. The northern city of Darhan was fitted out with a cement works built by the former Czechoslovakia, and Bulgarian labour was brought in to build a meat-packing plant in Choybalsan. A house-building combine, a wool scouring mill and a spinning mill were among the aid projects completed in Darhan by the former USSR in the late 1970s, and the emerging industrial city was further developed by Poland (with a glue factory and two distilleries), Hungary (a clothing factory and a flour mill), the former Czechoslovakia (a tannery) and Romania (a combine producing furniture and cardboard).

Some diversification of industry took place in the 1980s, with the list of traditional products being added to buy new goods of export quality. These include carpets, knitwear, school uniforms, leather and sheepskin coats and cashmere sweaters. A large new cement and lime complex, a joint Soviet-Mongol project, was constructed at Hotol, between Darhan and Erdenet, in the mid-1980s. It now produces the country's total needs for these products and cement has become a major export.

Dividing the industrial sector between heavy industries, producing capital or producer goods, known as "Group A" industries in the socialist terminology used until recently in Mongolia, and light industries producing consumer goods ("Group B" industries), the relative contributions to gross industrial output have changed little over the last decade. Group A industries accounted for 56.3 per cent of output in 1990, and Group B industries 43.7 per cent. Table III.1 shows that the food industry accounted for the largest branch contribution (18.2 per cent), followed by electrical and thermal energy (12.3 per cent), non-ferrous metals (12.2 per cent) and textiles (11.5 per cent). By 1991, when the economic crisis had taken hold, food's contribution to output had risen to 27.4 per cent, since it was one of only two branches that grew in 1991 (see below), the contribution of the other, the leather, fur and shoe industry, increased from 10.6 per cent in 1990 to 13.9 per cent in 1991. Building materials, which contributed 10.8 per cent in 1990, fell to 4.8 per cent in 1991, as output in the sector declined significantly (see Table III.2).

Table III.1. Branch composition of gross industrial product, 1987-1991
(Percentage)

	1987	1988	1989	1990	1991
Total industry	**100**	**100**	**100**	**100**	**100**
Electric and thermal energy	11.2	12.0	11.7	12.3	13.0
Fuel	3.9	4.2	3.8	3.6	3.5
Engineering and metal working	3.7	3.7	3.6	3.2	1.7
Non-ferrous metal	12.6	12.3	11.4	12.2	10.8
Building materials	10.8	10.9	10.6	10.8	4.8
Wood processing	7.3	7.0	6.9	6.0	4.1
Textiles	11.4	10.9	12.0	11.5	9.8
Clothing	4.6	4.5	4.9	4.7	4.6
Leather, fur, shoes	9.5	9.5	9.6	10.6	13.9
Printing	0.9	0.9	0.9	0.8	0.8
Glass, faience	0.4	0.4	0.4	0.4	0.3
Food	19.0	18.7	18.8	18.2	27.4
Chemical	3.6	4.1	4.1	4.2	2.0

Source: State Statistical Office.

Industrial development prior to democratization and the thrust towards a market economy occurred through investment in state enterprises laid down by annual plans and targets. Budgetary funds and credits were provided by the government, bolstered by financial and technical assistance from the CMEA countries, particularly the former USSR, while domestic prices and tariffs were fixed. Through this central planning system, government subsidized output from some enterprises, while for others prices were cost plus, with the margin providing state revenue. By the end of 1990, there were more than 400 large public enterprises, most of them operating at a loss.

The annual average growth in gross industrial output was rapid in the 1970s (averaging 9.5 per cent) and first half of the 1980s (8.4 per cent), but slowed to 3.6 per cent in the period 1986-1990 (see Table III.3). Some of the largest recent increases in output were seen in textiles, energy, and building materials, all of which recorded annual growth rates in excess of 10 per cent in the 1981-1985 period. The non-ferrous metal industry enjoyed the highest annual growth rate during this period (19.1 per cent), after the Erdenet combine producing copper and molybdenum came into operation at the end of 1978. Through the latter half of the 1980s the non-ferrous metal industry accounted for 12.5 per cent of gross industrial output on average, up from 4.2 per cent in 1970.

Table III.2. Output of selected categories of industrial products, 1987-1991

	1987	1988	1989	1990	1991
Electricity (million KWh)	3,348.7	3,544.1	3,568.3	3,347.9	3,228.6
Coal (thousand tonnes)	7,765.3	8,605.8	8,044.5	7,157.0	7,009.3
Fluor spar (thousand tonnes)	543.7	522.7	578.2	455.9	250.8
Bricks (million pieces)	169.8	180.6	172.8	151.1	107.7
Cement (thousand tonnes)	541.4	502.1	512.6	440.8	226.8
Lime (thousand tonnes)	114.1	122.2	95.0	103.0	76.1
Installed metal constructions (thousand cubic metres)	154.7	156.6	165.1	166.8	75.4
Plywood (thousand cubic metres)	4.8	5.8	4.9	3.4	1.9
Cardboard (tonnes)	1,210.0	943.7	1,026.6	819.4	968.0
Sawn wood (thousand cubic metres)	580.5	540.7	553.1	509.0	270.4
Scoured wool (thousand tonnes)	10.4	9.6	10.1	9.7	7.2
Carpet (thousand square metres)	1,809.4	1,813.8	2,128.1	1,971.2	1,400.2
Knitted goods (thousand pieces)	3,163.8	3,942.2	4,110.5	4,248.6	2,808.7
Felt (thousand metres)	630.4	631.1	849.7	745.0	583.2
Felt boots (thousand pairs)	469.1	486.2	592.3	588.5	444.2
Over coats (thousand pieces)	99.4	101.7	89.7	108.7	51.4
Suits (thousand pairs)	168.6	152.0	182.6	201.8	30.2
Hides large (thousand tonnes)	0.9	0.9	1.0	1.0	0.8
Leather footwear (thousand pairs)	3,517.3	3,920.6	4,140.0	4,222.5	4,085.9
Leather coats (thousand pieces)	49.5	31.4	41.6	35.7	29.7
Sheepskin coats (thousand pieces)	161.2	181.6	180.2	138.1	111.5
Meat and meat products (thousand tonnes)	54.7	62.0	61.7	57.8	49.6
Sausages (tonnes)	4,782.1	5,284.7	5,824.3	5,686.7	5,825.4
Flour (thousand tonnes)	193.7	196.4	199.7	189.8	174.4
Bakery goods (thousand tonnes)	68.7	69.9	66.7	63.3	63.2
Confectionery (thousand tonnes)	37.2	41.8	45.7	41.7	33.6
Milk and dairy products (million litres)	55.6	59.0	62.0	59.6	50.4
Mixed fodder (thousand tonnes)	156.4	177.4	212.2	119.1	102.1
Household soap (thousand tonnes)	3.7	2.5	3.3	2.6	0.7
Toilet soap (million pieces)	5.4	6.8	10.3	10.2	5.3
Publications (million signatures)	363.3	382.2	376.6	312.8	174.6

Source: State Statistical Office.

The economic slowdown in the late 1980s, which has become a crisis in the early 1990s, has had a predictable impact on industry as spare parts, raw materials and technical assistance became short and markets collapsed. Gross industrial output declined by 20.1 per cent in 1991 and output for the first half of 1992 showed a further decline of 21.7 per cent over the first half of 1991 as production at many plants has slowed or stopped (see Table III.3). All but two of the 13 branches recognized by the State Statistical Office recorded declines in production in 1991. The largest fall was in the building material industry (64.3 per cent) as construction all but ceased in Mongolia, but disastrous declines in output were also felt in the chemical industry (61.5 per cent), engineering and metal-working (57.8 per cent), wood processing (46.2 per cent) and textiles (32.0 per cent). The sharp fall in output continued in the first half of 1992, with declines in output relative to the first half of 1991 recorded across the board, with the exception of non-ferrous metals which held production constant, although for 1991 as a whole output declined by 29.2 per cent.

The recent growth in certain manufacturing branches is reflected in the change in the structure of manufacturing value added over the 1980-1990 period (see Table III.4). Through the first half of the 1980s, food processing dominated, which together with leather processing and wood products, accounted for 65.1 per cent of total manufacturing value added in 1980. The vigorous growth of textiles, and less vigourous growth of non-metallic mineral products, increased the share of these branches to more than 10 per cent by 1990.

Table III.3. Annual average increase of gross industrial product by branch, 1971-1992 (Percentage)

	1971-1975	1976-1980	1981-1985	1986-1990	1990 1991	1991-1992[a/]
Total industry	**10.8**	**8.25**	**8.35**	**3.55**	**-20.01**	**-21.7**
Electric and thermal energy	12.75	10.75	11.05	5.95	-15.8	-7.8
Fuel	8.80	10.01	9.30	3.00	-22.7	-12.2
Engineering and metal working	12.20	7.01	26.90	0.90	-57.8	0.1
Non-ferrous metal	14.00	101.05	15.90	1.50	-29.02	-1.9
Building materials	13.01	8.08	19.45	11.00	-64.3	-48.6
Wood processing	9.45	7.05	10.15	-2.05	-46.2	-54.2
Textiles	12.45	5.75	16.65	2.95	-32.0	-23.6
Clothing	16.70	10.15	4.55	2.25	-22.1	-89.2
Leather, fur, shoes	6.55	6.09	-2.60	5.15	4.4	-37.7
Printing	9.05	7.65	1.05	3.85	-19.8	-60.7
Glass, faience	14.70	0.35	23.95	3.85	-34.1	-28.4
Food	11.00	2.90	1.25	1.30	20.0	-22.5
Chemical	23.05	11.8	18.45	8.90	-61.5	-16.2

Source: State Statistical Office.

a/ First half.

Table III.4. Structure of manufacturing value added by industrial branch, 1980-1990, selected years (Percentage shares)

Branch	1980	1985	1990
Food, beverages and tobacco	43.0	41.7	27.5
Textiles	6.6	10.9	16.4
Wearing apparel other than fur and footwear	8.0	7.2	7.5
Leather, footwear and fur wearing apparel	11.2	9.7	16.2
Wood products	10.9	10.5	7.9
Printing	3.4	3.1	2.0
Industrial and non-industrial chemicals	5.3	4.2	6.3
Pottery, china and glass	0.3	0.6	0.8
Non-metallic mineral products	6.4	7.0	10.5
Metal products, machinery and equipment	4.9	5.1	5.0

Source: UNIDO Regional and Country Studies Database.

B. OWNERSHIP, SIZE, DISTRIBUTION AND PRODUCTIVITY

Until the recent changes all industrial enterprises were state-owned, with some joint ventures with CMEA countries, five of which, most in the minerals sector, have continued (see section C below). Initial encouragement of private enterprise came in 1988 with the promotion of private sector cooperatives under the new Law on Cooperatives, and has spread with the promulgation of the company law, bankruptcy law, consumer protection law and anti-monopoly law in 1991. Private cooperatives numbered 180 by the end of 1988, employing 3,500 people, and had increased to nearly 3,000 in 1991, employing more than 20,000 (excluding livestock cooperatives). More than 4,000 other private firms have been set up since the reforms began, employing some 32,000 people. Most of these companies are involved in services and the production of light consumer goods for domestic markets. In 1991, a total of 56,000 people were employed in the private sector (including 4,000 self-employed), making up 8.6 per cent of the total number of employees. In mid-1992, private manufacturing enterprises accounted for 5.1 per cent of industrial output.

The government's privatization programme is one of the cornerstones of the economic reform package, and aims to be completed by 1994. The programme is being carried out using a voucher system similar to that used in Poland, former Czechoslovakia and Romania, with a stock exchange established in 1991 which is initially acting to facilitate the privatization process by distributing shares and will eventually concentrate solely on a traditional share trading function. Each citizen is issued with two vouchers, a blue voucher worth 7,000 tugrik to be used for purchasing big assets, and a green voucher containing three 1,000 tugrik tickets for the purchase of small assets. This voucher scheme covers the majority of the 1,600 small enterprises and the 340 big enterprises that are being completely privatized, as well as 364 firms to be partially privatized. The book value of the big enterprises is put at 10.8 billion tugriks, and the small enterprises at 5.6 billion tugriks. Agricultural assets and livestock, valued at 3.8 billion tugriks are also covered by the green vouchers, making a total value of assets to be privatized of 20.2 billion tugriks, approximately equivalent to the total value of vouchers issued. The state will maintain ownership of enterprises in mining, energy, rail and air transport, communications and water supply, which although small in number are large in terms of assets. By the end of July 1992, 175 enterprises were listed on the Ulaanbaatar stock exchange. Of these, 50 had been wholly privatized, about 30 of which were industrial enterprises.

Table III.5. Size distribution of manufacturing enterprises, 1991

Number of actual workers	0-49	50-99	100-199	200-499	>500-	Total of enterprises	Output (Thousand tugriks)	Total number of employees
Metal working	5	4	9	3	0	21	233,375	2,673
Chemicals	1	2	2	1	1	7	267,421	3,401
Construction materials	0	4	9	7	3	23	350,750	6,870
Wood processing	6	9	4	11	4	34	309,903	9,053
Glass	1	0	1	1	0	3	35,118	525
Wool and wool garments	0	2	1	4	9	16	675,381	8,631
Clothing	1	1	2	7	2	13	163,013	4,274
Leather	2	1	2	6	5	16	647,036	8,919
Printing	26	4	3	0	0	33	57,884	1,323
Food	3	5	20	11	8	47	1,447,603	13,096
Other	1	4	3	1	0	9	101,301	1,205
Private	0	1	3	8	9	21	216,413	9,860
Total	**46**	**37**	**59**	**60**	**41**	**243**	**4,505,198**	**69,830**

Source: Ministry of Trade and Industry, and consultations with Boston Consulting Group.

Table III.6. Size distribution and productivity of manufacturing enterprises, 1991

Size (Number of employees)	Number of enterprises	Output (Thousand tugriks)	Total (Number of employees)	Productivity (Tugriks/ employee)
Metal working				
<50	5	28,211	177	159,384
50-99	4	11,836	302	39,192
100-199	9	132,334	1,275	103,791
200-499	3	60,994	919	66,370
>500	0	0	0	0
Subtotal	**21**	**233,375**	**2,673**	**87,308**
Chemicals				
<50	1	173	38	4,547
50-99	2	4,290	115	37,302
100-199	2	30,203	237	127,439
200-499	1	20,156	384	52,489
>500	1	212,600	2,627	80,929
Subtotal	**7**	**267,421**	**3,401**	**78,630**
Construction materials				
<50	0	0	0	0
50-99	4	5,193	311	16,698
100-199	9	58,102	1,435	40,489
200-499	7	114,227	2,027	56,353
>500	3	173,228	3,097	55,934
Subtotal	**23**	**350,750**	**6,870**	**51,055**
Wood processing				
<50	6	11,997	254	47,232
50-99	9	17,581	648	27,132
100-199	4	10,411	563	18,493
200-499	11	155,124	4,092	37,909
>500	4	114,789	3,496	32,834
Subtotal	**34**	**309,903**	**9,053**	**34,232**
Glass and fibre glass				
<50	1	2,993	40	74,835
50-99	0	0	0	0
100-199	1	5,140	182	28,239
200-499	1	26,985	303	89,058
>500	0	0	0	0
Subtotal	**3**	**35,118**	**525**	**66,891**
Wool and wool garments				
<50	0	0	0	0
50-99	2	3,305	131	25,231
100-199	1	6,352	124	51,223
200-499	4	70,693	1,411	50,101
>500	9	595,032	6,965	85,432
Subtotal	**16**	**675,381**	**8,631**	**78,251**
Clothing (Sewing)				
<50	1	1,094	21	52,086
50-99	1	2,137	88	24,288
100-199	2	9,970	355	28,085
200-499	7	104,780	2,358	44,436
>500	2	45,032	1,452	31,014
Subtotal	**13**	**163,013**	**4,274**	**38,141**
Leather				
<50	2	4,544	60	75,735
50-99	1	704	90	7,822
100-199	2	19,177	316	60,688
200-499	6	238,441	1,777	134,182
>500	5	384,169	6,676	57,545
Subtotal	**16**	**647,036**	**8,919**	**72,546**

(continued)

Table III.6. (continued)

Size (Number of employees)	Number of enterprises	Output (Thousand tugriks)	Total (Number of employees)	Productivity (Tugriks/ employee)
Printing				
<50	26	23,891	676	35,342
50-99	4	15,662	283	55,343
100-199	3	18,331	364	50,359
200-499	0	0	0	0
>500	0	0	0	0
Subtotal	**33**	**57,884**	**1,323**	**43,752**
Food				
<50	3	5,798	106	54,702
50-99	5	23,485	427	55,000
100-199	20	200,037	2,877	69,530
200-499	11	527,036	3,489	151,057
>500	8	691,247	6,197	111,545
Subtotal	**47**	**1,447,603**	**13,096**	**110,538**
Others				
<50	1	734	30	24,473
50-99	4	18,465	286	64,564
100-199	3	78,503	496	158,272
200-499	1	3,598	393	9,156
>500	0	0	0	0
Subtotal	**9**	**101,301**	**1,205**	**84,067**
Cooperatives/ Private Co's				
<50	0	0	0	0
50-99	1	2,570	91	28,236
100-199	3	23,772	529	44,937
200-499	8	76,437	2,777	27,525
>500	9	113,635	6,463	17,582
Subtotal	**21**	**216,413**	**9,860**	**21,949**

Source: Computed from Ministry of Trade and Industry Data.

Some of the difficulties being faced by the privatization programme and newly privatized companies include the pace with which related reforms are keeping up with the programme, the issue of the outstanding debts of firms to be privatized, the macroeconomic effects given the number of firms operating at a loss, and the lack of accountancy and auditing skills in the country.

Mongolia's manufacturing industry is characterized by a predominance of large enterprises (see Table III.5). In Hong Kong and Taiwan Province, two successful market-based areas, enterprises employing less than 100 employees contribute about half of industrial output, while in Mongolia such small enterprises account for less than 15 per cent. For some economic activities such high concentration of production is beneficial, but experience from other developing countries suggests that this is by no means applicable to all activities. As Table III.6 indicates, some branches show significantly better productivity in smaller enterprises.

In the wool and woollen garments branch, for example, 81 per cent of enterprises employ 200 people or more, and these 13 enterprises employ 98 per cent of employees in the sector and produce 98 per cent of the output (see Table III.7). Productivity in the larger enterprises is greater, the output per employee in the enterprises employing more than 500 being more than three times the productivity in the smallest enterprises with less than 50 employees (see Table III.6). In leather goods, where 69 per cent of enterprises employ 200 people or more, accounting for 95 per cent of all employees and 96 per cent of output, economies of scale are not so clear cut. Productivity in enterprises employing 200-499 workers is 77 per cent greater than in the smallest enterprises, but these smallest enterprises have better productivity than the largest enterprises

Table III.7. Manufacturing industry size distribution output and employees, 1991 (Percentage)

Size (Number of employees)	Number of enterprises	Output	Employees
Metal working			
<50	24	12	7
50-99	19	5	11
100-199	43	57	48
200-499	14	26	34
>500	0	0	0
Subtotal	**100**	**100**	**100**
Chemicals			
<50	14	0	1
50-99	29	2	3
100-199	29	11	7
200-499	14	8	11
>500	14	80	77
Subtotal	**100**	**100**	**100**
Construction materials			
<50	0	0	0
50-99	17	1	5
100-199	39	17	21
200-499	30	33	30
>500	13	49	45
Subtotal	**100**	**100**	**100**
Wood processing			
<50	18	4	3
50-99	26	6	7
100-199	12	3	6
200-499	32	50	45
>500	12	37	39
Subtotal	**100**	**100**	**100**
Glass and fibre glass			
<50	33	9	8
50-99	0	0	0
100-199	33	15	35
200-499	33	77	58
>500	0	0	0
Subtotal	**100**	**100**	**100**
Wool and wool garments			
<50	0	0	0
50-99	13	0	2
100-199	6	1	1
200-499	25	10	16
>500	56	88	81
Subtotal	**100**	**100**	**100**
Clothing (Sewing)			
<50	8	1	0
50-99	8	1	2
100-199	15	6	8
200-499	54	64	55
>500	15	28	34
Subtotal	**100**	**100**	**100**

(continued)

Table III.7. (continued)

Size (Number of employees)	Number of enterprises	Output	Employees
Leather			
<50	13	1	1
50-99	6	0	1
100-199	13	3	4
200-499	38	37	20
>500	31	59	75
Subtotal	**100**	**100**	**100**
Printing			
<50	79	41	51
50-99	12	27	21
100-199	9	32	28
200-499	0	0	0
>500	0	0	0
Subtotal	**100**	**100**	**100**
Food			
<50	6	0	1
50-99	11	2	3
100-199	43	14	22
200-499	23	36	27
>500	17	48	47
Subtotal	**100**	**100**	**100**
Others			
<50	11	1	2
50-99	44	18	24
100-199	33	77	41
200-499	11	4	33
>500	0	0	0
Subtotal	**100**	**100**	**100**

Source: Computed from Ministry of Trade and Industry Data.

(employing more than 500 workers) and those employing 100-199 workers. Some branches of the leather goods sector are concentrated in very few enterprises. Hides are processed in a single pre-treatment facility feeding just three major tanneries, which supply most of Mongolia's output of hides. Virtually all of the nation's shoes are produced in one huge Ulaanbaatar factory which has a capacity of 3 to 4 million pairs a year.

In the clothing sector, where 69 per cent of enterprises employ 200 or more workers, accounting for 89 per cent of all employees and 92 per cent of output, the economies of scale are reversed. Highest productivity is achieved in the smallest enterprises, as is the case in the wood processing and metal-working industries, which have more even size distributions. The poor productivity of larger enterprises is at least in part due to past policies which guaranteed employment for all and thus led to over-manning in many industries. Many of the larger manufacturing industries would benefit from being broken up into self-sustaining units of enterprise based on either process or product division. The clothing sector is a prime candidate in this respect: companies with less than 100 employees dominate garment output in most countries.

C. INVESTMENT

The impending economic crisis meant that investment in the industrial sector was severely reduced in 1990, by 34 per cent over 1989 levels, and the apparently high 1991 level is debased by the fall in the value of the tugrik. Heavy industry has long been the chief beneficiary of industrial investment (see Table III.8), with energy, petroleum refining and non-ferrous metals receiving 49 per cent of total industrial investment in 1989. The key role of these industries in the economy during the crisis of 1990-1991 is indicated by the rise in their share of investment to 60 per cent in 1990 and 78 per cent in 1991.

Investment will continue to be limited to the bare minimum in the coming few years, with continued emphasis on these essential sectors, as savings and foreign exchange remain scarce. But efficiency gains from the economic reform programme should generate growth with only low levels of investment of the order of 14 per cent of GDP according to World Bank estimates. This level contrasts the very high rates of investment that characterized the 1980s, when several major highly capital-intensive projects in the mining, power and transportation sectors were carried out to increase copper production and processing. In 1986, investment was 66.5 per cent of GDP, declining to about 45 per cent in 1987 and remaining at this level in 1988 and 1989. The main source of revenue for investment in the medium term is expected to be from external sources.

The encouragement of foreign investment was put on a firm footing with the promulgation of a new Foreign Investment Law in 1990. This includes provisions for unrestricted repatriation of capital and remittance of profits and dividends. By the end of the first half of 1992, licenses had been issued to 149 enterprises, with promised investment from 22 countries totalling $32.6 million (see Table III.9). Mongolia's immediate neighbours headed the list of foreign investors, with Russian Federation participating in 72 joint ventures with investments totalling $14.4 million, followed by the People's Republic of China (31 ventures), although in terms of value of investments, the United States is second behind Russian Federation with a promised $6.6 million. Thirty four enterprises had started activities by mid-1992, most in commodities such as cashmere, camel hair (wool), horse hair, meat, and mining, with some in services and trade. To date all such ventures involve Mongolian inputs, although in 1992 some interest was being shown in the assembly/processing mode so popular in other Asian countries. One new venture in Ulaanbaatar, for example, involves a woollen garments factory wholly using external inputs to take advantage of the fact that Mongolia has no quotas with importing countries for clothing products under the Multi Fibre Agreement. In addition to these new joint ventures, five existing enterprises, started with foreign capital during the days of central planning, continue to operate. They include the Erdenet mining operation, and the Ulaanbaatar railway company, both joint Russian Federation ventures.

The government is considering the establishment of development zones to stimulate further projects, and there would appear to be a good argument for establishing a single location specifically geared to export enterprises, with coordinated transport, energy and water supplies. Strengthening of the administration dealing with direct foreign investment and selective promotion are areas which need special attention. A single agency which will deal with all necessary permissions and help to identify local partners would greatly facilitate potential foreign investment, while selective promotion is also needed, targeting appropriate investors for Mongolian exports, given the country's real and perceived remoteness. In the short term, at least, foreign involvement is likely to follow the recent pattern, with most attention being paid to enterprises which add value to Mongolia's natural resources, especially in animal products.

Table III.8. **Investment in industry by subsector, 1977-1990**
(Million tugrik)

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Generation of electric energy and heating	328.2	188.0	110.7	81.2	412.6	616.0	761.2	686.2	588.7	588.4	391.6	169.4	382.0	376.1
Petroleum refineries	97.2	202.9	240.9	207.0	274.7	332.8	295.8	219.1	104.7	212.8	188.7	196.4	110.3	153.9
Engineering	96.4	142.8	224.2	207.0	...	...	...	...	104.7	212.8	...	...	110.3	...
Nonferrous metals	611.9	783.5	135.6	168.2	76.7	376.7	55.4	84.6	115.5	143.1	105.1	214.8	235.6	87.6
Metal working	88.3	48.9	25.5	58.2	15.1	11.2	6.1	14.3	28.9	25.0	26.0	22.2	33.0	37.0
Chemicals	1.3	67.3	1.8	29.4	84.0	180.7	172.1	192.4	168.2	258.2	250.7	97.6	48.1	44.5
Building materials	181.8	133.1	79.5	381.6	525.3	162.1	106.7	190.2	283.7	262.1	212.7	226.9	214.4	151.2
Wood processing	46.6	105.4	56.6	56.6	83.1	65.4	74.8	63.7	58.0	110.2	121.5	41.6	43.2	0.3
Textiles	19.9	86.8	175.4	167.6	164.3	86.7	38.0	27.2	23.9	69.5	77.5	122.6	112.3	13.2
Glass	...	...	...	3.3	9.0	1.7	...	...	...	0.7	0.1	1.5	0.5	...
Clothing	1.2	0.1	1.6	...	...	2.4	3.3	2.9	1.0	2.6	7.5	17.5	25.0	...
Leather, fur	29.3	32.3	45.5	31.6	58.3	29.7	24.0	41.5	43.9	55.6	0.3	45.5	10.1	...
Printing	0.3	1.5	0.9	0.3	...	...	...	...	1.7	3.5	1.3	3.3	10.4	0.8
Food	14.3	16.6	22.3	29.5	57.2	144.5	191.0	104.5	109.9	117.5	16.8	101.4	136.1	71.1
Other	2.7	23.1	11.1	40.6	6.9	7.6	...	...	...	...	...	...	...	5.4
Total	**1,519.4**	**1,832.3**	**1,131.6**	**1,462.1**	**1,767.2**	**2,017.5**	**1,728.4**	**1,626.6**	**1,632.8**	**2,062.0**	**1,400.8**	**1,260.7**	**1,471.3**	**936.1**

Source: State Statistical Office

Table III.9. Status of foreign investment by country up to 1 July 1992

Country	Number of economic units	Share of foreign investors (Dollars)
Russian Federation[a]	72	14,350,910
China, People's Republic of	31	3,107,950
Japan	7	373,900
Hong Kong	10	3,953,700
United States of America	2	6,620,000
Czechoslovakia	2	103,600
Taiwan Province of China	2	389,400
Germany[b]	2	299,100
Switzerland	1	1,390,000
Republic of Korea	1	268,450
Singapore	1	25,000
Viet Nam	1	50,000
Romania	1	410,000
Georgia	1	250,000
Kazakhstan	2	62,000
Hungary	2	11,340
Canada	2	550,000
United Kingdom	1	21,600
Macao	1	89,000
Uruguay	1	56,000
Belarus	1	56,000
Austria	1	7,500
Total	**149**	**32,599,450**

Source: State Privatization Committee.
a/ Former USSR.
b/ Former Federal Republic of Germany and German Democratic Republic.

D. EMPLOYMENT

Industry is a major employer in Mongolia. In 1991, when the total employed labour force stood at 688,100, industry employed 21 per cent, representing 145,300 people. Of these, about 70,000 were employed in manufacturing (see Table III.10). The distribution of employment between branches has been severely disrupted by the recent economic situation. Jobs in the engineering and

Table III.10. Number of employees by branch, 1987-1991 (Thousand)

	1987	1988	1989	1990	1991
Total industry	**100.7**	**107.3**	**107.3**	**105.9**	**112.3**
Electric and thermal energy	8.2	9.8	8.4	15.6	21.8
Fuel	4.1	4.3	4.1	4.3	4.6
Engineering and metal working	6.8	6.4	6.6	3.8	3.5
Non-ferrous metals	5.0	4.7	4.9	4.8	4.8
Building materials	11.8	12.2	12.2	9.2	9.1
Wood processing	11.1	10.2	10.1	17.4	15.4
Textiles	8.2	8.0	8.3	9.0	8.2
Clothing	13.0	12.6	10.1	12.6	13.7
Leather, fur, shoes	9.2	9.7	9.3	7.2	8.6
Printing	1.9	2.0	1.3	1.7	1.2
Glass, faience	0.5	0.5	0.6	0.7	0.7
Food	17.5	14.0	14.2	14.4	15.9

Source: State Statistical Office.

metal-working industry fell by almost half from 1989 to 1990, and were slightly reduced again in 1991. Employment in the building materials industry also fell from 1989 to 1990, by 24 per cent. Employment in the wood processing industry increased by 58 per cent from 1989 to 1990, to fall by 12 per cent the following year. Some of the declines in manufacturing employment are likely to be a function of over-manned state industries shedding labour, in addition to enterprises slowing and in some cases stopping production due to shortages of energy, spare parts and other inputs, and the collapse of trade. Some proportion of workers laid off from state enterprises have been and will continue to be absorbed into the private sector, employment data for which are not currently available.

There are grave concerns over the future for many light industries, since in 1991 and 1992 many exporting enterprises, particularly in textiles, carpets, food products and clothing, were continuing to produce goods but were unable to sell their production. Hence final goods inventories are rising, and unless these manufacturing industries are able to reorient their production towards domestic and international markets, they will be forced to cease operations, with consequent severe impacts on job opportunities. There is also concern over the effect on the job market of privatization and the streamlining of formerly inefficient state enterprises, as well as the inability of the economy to absorb the natural growth in the labour supply of a rapidly growing young population. Labour-intensive industries, such as light industry and the retail sector, have been constrained by the former emphasis on capital-intensive heavy industry. The social effects of these trends will be severe in a country brought up on a policy of guaranteed employment. Unemployment, standing at 8.4 per cent in 1991, had risen to approximately 12 per cent in mid-1992, with a rate in Ulaanbaatar approximately double the national figure.

E. IMPORTS AND EXPORTS OF MANUFACTURES

Mongolia's foreign trade situation is in a state of transition as former CMEA markets and supplies, formerly the source of 95 per cent of Mongolia's trade, have collapsed. The task of generating new trade partners is hampered by a lack of foreign exchange and the shortage of experienced personnel. Some incentives for further trade diversification have been obtained by Most Favoured Nation status treaties being signed with Japan, United States and the Republic of Korea and a cooperative agreement with the European Community.

Mongolia's exports are dominated by mineral and livestock raw materials with minimal processing. Prior to the current economic crisis, fuel, minerals and metals (mainly copper and fluorite), and raw materials for the food and other industries (mainly cashmere, wool, camel hair and hides, and meat) accounted for 71 per cent of exports in 1988 (see Table III.11). Manufactures, which averaged 25-30 per cent of all exports through the 1980s, is dominated by textiles and clothing. This branch registered a fall in its proportion of total manufactured exports, from 85 per cent in 1986 to 62 per cent in 1990, as a result of economic recession in its European markets, mild winters and a fall in the international price of high-quality goods such as cashmere. The prospects for diversification of traditional exports are limited in the short term. There is a projected continuation in the excess supply of copper on the world market, and in the weak demand for cashmere, while Mongolia's meat products are of a low quality. Meanwhile, Mongolia's serious transportation problems will continue to hinder diversification prospects. Capital goods, and fuel, minerals and metals have long dominated Mongolia's import inventory, accounting for 64 per cent of a total import bill of TR 746.1 million in 1988 (see Table III.12). Manufactures made up 82 per cent of imports in 1989 and 91 per cent in 1990. Manufactured imports are dominated by machinery and equipment, accounting for 38 per cent in 1990, and textiles and clothing, 27 per cent in 1990. Mongolia's integration with the economy of the former USSR, making it heavily reliant on imports of former Soviet equipment, spare parts and critical inputs has produced an abnormally high import/GDP ratio, which stood at 52 per cent in 1988/89. This compares unfavourably with import/GDP ratios for broadly similar market and socialist economies, which average about 30 per cent for Paraguay, Papua New Guinea, Romania, Bulgaria and Vietnam.

Table III.11. Composition of exports by end-use, 1980-1990
(Millions of transferable roubles)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Total	269.9	314.0	376.4	408.6	453.9	461.7	479.8	481.0	495.2	483.4	442.7
CMEA	260.4	303.7	363.6	396.7	426.6	436.0	451.1	451.1	455.8	436.7	402.5
Non-CMEA	9.5	10.3	12.8	11.9	27.3	25.7	28.1	29.9	39.4	46.7	40.2
Capital goods	0.7	0.7	0.5	0.7	0.7	0.7	0.2	0.1	0.5	0.1	...
CMEA	0.7	0.7	0.5	0.7	0.7	0.7	0.2	0.1	0.5	0.1	...
Non-CMEA	...	...	...	...	...	...	...	...	...	...	...
Fuel, minerals and metals	71.3	107.9	147.0	160.2	187.4	195.0	192.4	189.3	206.5	206.7	213.0
CMEA	71.1	107.6	146.6	159.5	187.0	194.1	191.3	188.2	205.2	206.7	208.5
Non-CMEA	0.2	0.3	0.4	0.7	0.4	0.9	1.1	1.1	1.3	...	4.5
Chemical fertilizers and rubber	...	...	...	0.0	...	0.1	...	...	0.3	...	2.6
CMEA	...	...	...	0.0	...	0.1	...	...	0.3	...	0.6
Non-CMEA	...	...	...	...	...	...	...	...	...	...	2.0
Building materials and elements	1.1	1.6	1.9	3.4	4.6	3.0	19.2	21.9	17.0	19.5	17.1
CMEA	1.1	1.6	1.9	3.4	4.6	3.0	17.6	21.9	17.0	19.5	17.1
Non-CMEA	...	...	...	...	...	...	1.6	...	...	...	...
Animals (live)	...	...	...	0.4	...	...	...	...	...	...	...
CMEA	...	...	...	0.4	...	...	...	...	...	...	...
Non-CMEA	...	...	...	...	...	...	...	...	...	...	...
Raw materials for food industry	36.3	30.0	31.3	34.8	39.3	28.3	45.1	36.7	39.9	31.4	23.4
CMEA	36.3	30.0	31.1	34.6	38.5	27.7	44.0	35.2	39.2	30.6	22.9
Non-CMEA	...	...	0.2	0.2	0.8	0.6	1.1	1.5	0.7	0.8	0.5
Other raw materials	83.4	86.3	99.7	104.5	107.2	113.5	96.3	106.0	113.0	99.1	68.6
CMEA	74.6	77.4	88.2	94.8	82.3	90.9	78.1	84.6	80.3	58.8	48.0
Non-CMEA	8.8	8.9	11.5	9.7	24.9	22.6	18.2	21.4	32.7	40.3	20.6
Food	51.4	53.5	49.5	49.5	52.1	43.4	52.6	51.0	40.1	42.1	29.2
CMEA	51.3	53.0	49.3	49.3	52.1	43.2	47.7	47.4	38.2	40.3	27.7
Non-CMEA	0.1	0.5	0.2	0.2	...	0.2	4.9	3.6	1.9	1.8	1.5
Other consumer goods	25.7	34.0	46.5	55.1	62.6	77.7	74.0	76.0	77.9	84.5	88.8
CMEA	25.3	33.4	46.0	54.0	61.4	76.3	72.8	73.7	75.1	80.7	77.7
Non-CMEA	0.4	0.6	0.5	1.1	1.2	1.4	1.2	2.3	2.8	3.8	11.1

Source: State Statistical Office.

Table III.12. Composition of imports by end-use, 1980-1990
(Millions of transferable robles)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Total	**367.0**	**471.5**	**529.9**	**621.9**	**653.4**	**734.0**	**763.6**	**740.1**	**746.1**	**645.4**	**619.0**
CMEA	355.4	459.3	514.4	605.7	636.6	715.4	738.7	707.7	713.7	597.1	542.6
Non-CMEA	11.6	12.2	15.5	16.2	16.8	18.6	24.9	32.4	32.4	48.3	76.4
Capital goods	121.4	164.7	187.7	221.0	223.4	266.1	275.7	238.6	225.5	191.3	192.4
CMEA	117.9	162.3	184.7	216.7	220.0	261.7	270.2	232.1	218.4	179.9	172.2
Non-CMEA	3.5	2.4	3.0	4.3	3.4	4.4	5.5	6.5	7.1	11.4	20.2
Fuel, minerals and metals	88.3	115.2	152.2	183.7	195.5	210.5	216.5	227.8	250.0	176.4	168.2
CMEA	88.3	115.2	152.2	183.6	195.5	210.5	216.5	227.8	250.0	176.4	168.2
Non-CMEA	...	...	...	0.1	...	...	...	...	...	...	...
Chemical fertilizers and rubber	23.1	23.7	30.2	28.2	36.7	43.1	41.5	45.4	41.7	40.4	32.5
CMEA	22.3	21.9	28.0	25.7	34.5	41.3	39.3	43.5	39.6	36.0	25.0
Non-CMEA	0.8	1.8	2.2	2.5	2.2	1.8	2.2	1.9	2.1	4.4	7.5
Building materials and elements	6.8	7.8	7.4	6.9	10.1	10.6	9.7	14.4	10.7	14.8	11.9
CMEA	6.8	7.8	7.4	6.9	9.8	10.5	9.6	13.2	8.8	13.0	7.3
Non-CMEA	...	...	...	...	0.3	0.1	0.1	1.2	1.9	1.8	4.6
Animals (live)	...	...	...	...	...	...	0.5	0.8	1.4	0.6	0.1
CMEA	...	...	...	...	...	...	0.5	0.8	1.4	0.6	0.1
Non-CMEA	...	...	...	...	...	...	...	...	...	...	...
Raw materials for food industry	10.6	23.1	9.6	10.1	7.7	10.5	7.9	9.9	0.7	5.3	1.6
CMEA	10.6	23.1	9.6	10.1	7.7	10.5	7.9	8.9	0.7	5.3	0.8
Non-CMEA	...	...	...	...	...	...	...	1.0	...	...	0.8
Other raw materials	8.8	9.5	10.7	11.8	15.0	20.7	17.9	18.8	24.8	25.9	23.7
CMEA	8.7	9.3	10.1	11.6	12.4	17.0	13.5	16.2	19.1	18.1	16.0
Non-CMEA	0.1	0.2	0.6	0.2	2.6	3.7	4.4	2.6	5.7	7.8	7.7
Food	31.0	35.8	38.7	42.5	42.0	46.0	48.3	48.0	53.5	49.4	54.7
CMEA	30.1	35.0	36.8	40.6	39.5	43.7	44.4	43.4	49.6	45.0	47.0
Non-CMEA	0.9	0.8	1.9	1.9	2.5	2.3	3.9	4.6	3.9	4.4	7.7
Other consumer goods	77.0	91.7	93.4	117.7	123.0	126.5	145.6	136.4	137.8	141.3	133.9
CMEA	70.7	84.7	85.6	110.5	117.2	120.2	136.8	121.8	126.1	122.8	106.0
Non-CMEA	6.3	7.0	7.8	7.2	5.8	6.3	8.8	14.6	11.7	18.5	27.9

Sources: State Statistical Office and the World Bank.

The Mongolian economy's close dependence on that of the former USSR has also resulted in high import dependency, the per cent ratio of imports to total domestic supply, in certain sectors such as food. Import dependence for milk products is 55 per cent, vegetables and fruits 75 per cent, eggs 50 per cent, sugar 100 per cent and vegetable oil 100 per cent. A greater proportion of milk products and eggs could be provided domestically, and to a lesser extent vegetables and fruit, while the production of sugar from irrigated beet is actively being investigated.

F. REGIONAL DISTRIBUTION

Mongolia is typical of many developing countries in its characteristic of primacy, in which a heavy concentration of population, infrastructure, labour and markets are all found in a single city. Ulaanbaatar, situated at the hub of the country's domestic and international transport network, contains a quarter of the country's population and nearly half of Mongolia's industrial labour force. When the workers in the cities of Darhan and Erdenet the two other main cities and industrial centres, are added, the proportion of the total industrial labour force in these three centres reaches 63 per cent (see Table III.13). Ulaanbaatar and Darhan account for most of Mongolia's production of electric power, capital materials such as cement, bricks and wall panels, and consumer goods, including food, drink, leather goods, china, sweets, and soap. Manufacturing industry is also heavily concentrated in a small number of enterprises, most of which are in the three main cities. The textile industry, for example, which accounts for 16 per cent of industrial value added, comprises just 15 main enterprises, and the leather, fur and shoe industry (13 per cent of industrial value added) comprises 16 enterprises.

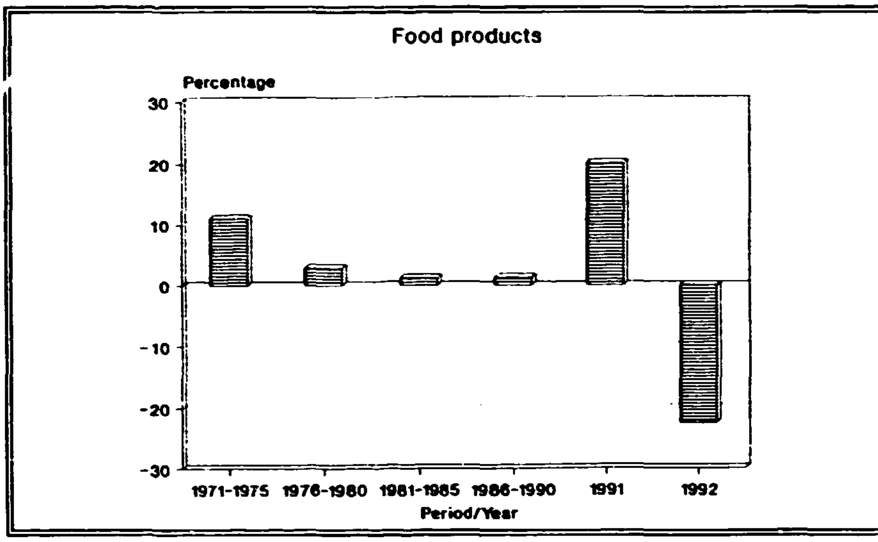
Such concentration is understandable given Mongolia's sparse, scattered population and problems of transport, but for industries processing inputs which are widely available throughout the country and serving domestic markets, such as livestock products and construction materials, this structure is a disadvantage. Small new processing industries in the countryside, serving local and domestic markets would be desirable and could have a high growth potential and therefore attract private investment.

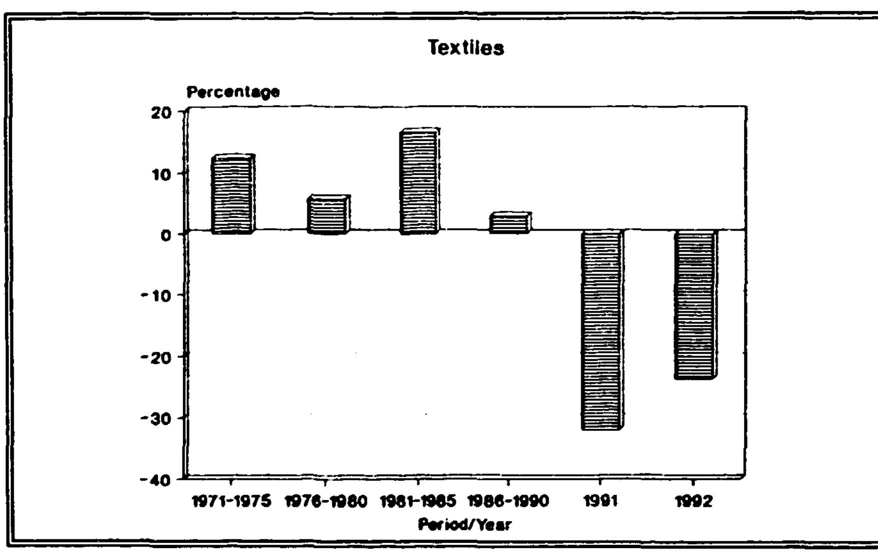
Table III.13. Number of employees engaged in industry by aimak and city, 1991

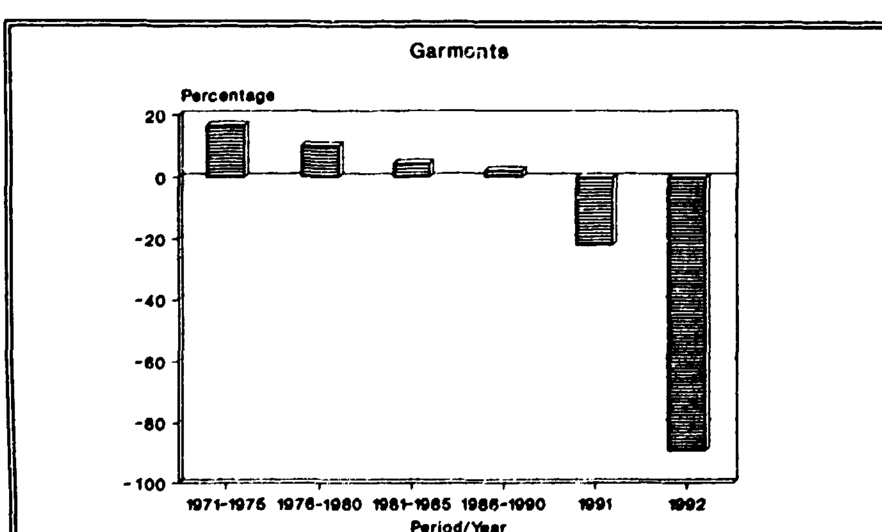
Aimak	
Arhangay	1,463
Bayan-Olgiy	2,309
Bayanhongor	1,388
Bulgan	1,166
Gobi-Altay	1,464
Dornod	864
Dornogovi	3,876
Dundgovi	2,009
Dzavhan	3,079
Ovorhangay	2,344
Omnogovi	854
Sukhbaatar	849
Selenge	4,552
Tov	2,179
Uvs	2,104
Hovd	1,848
Hovsgol	2,306
Hentiy	1,375
City	
Darhan	7,100
Erdenet	6,871
Ulaanbaatar	47,797
Total	**97,797**

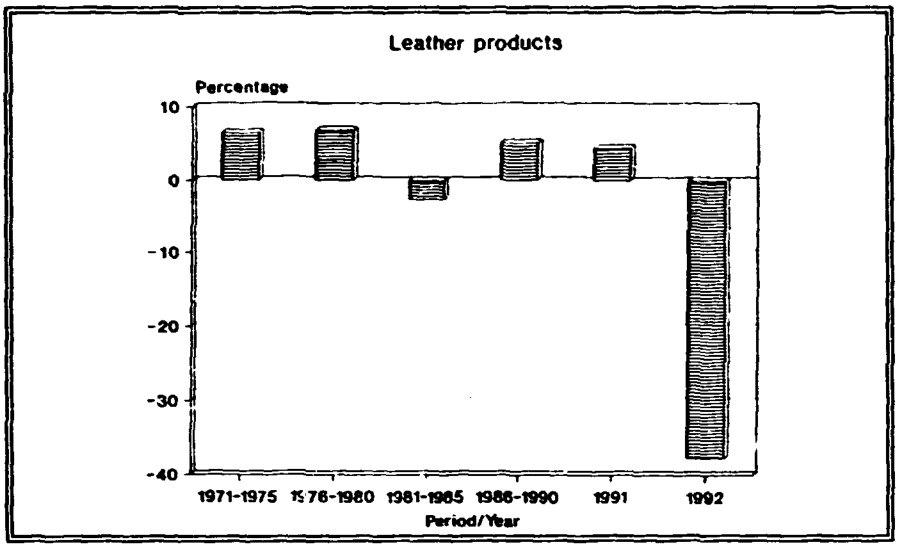
Source: State Statistical Office

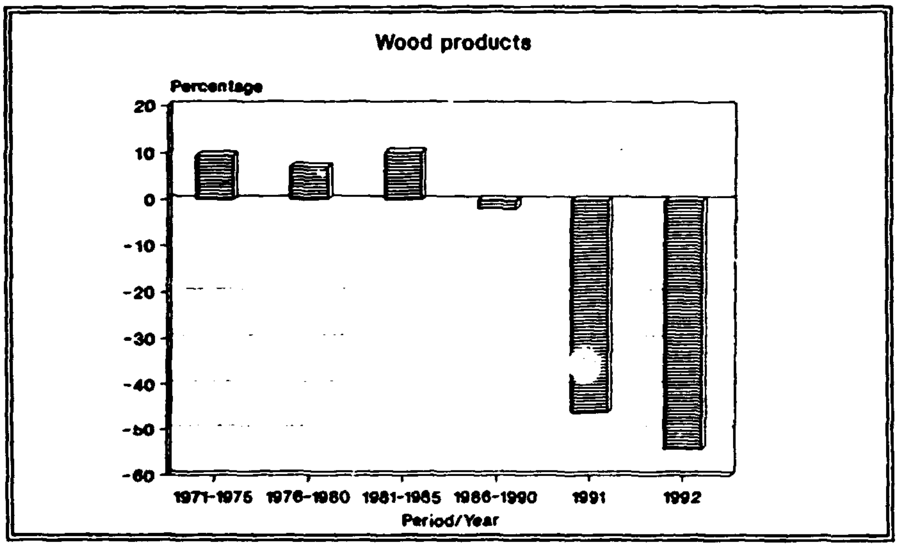
FIG. III.A. GROWTH OF INDUSTRIAL OUTPUT BY PRODUCT, 1971-1992
(Annual average in percentage)

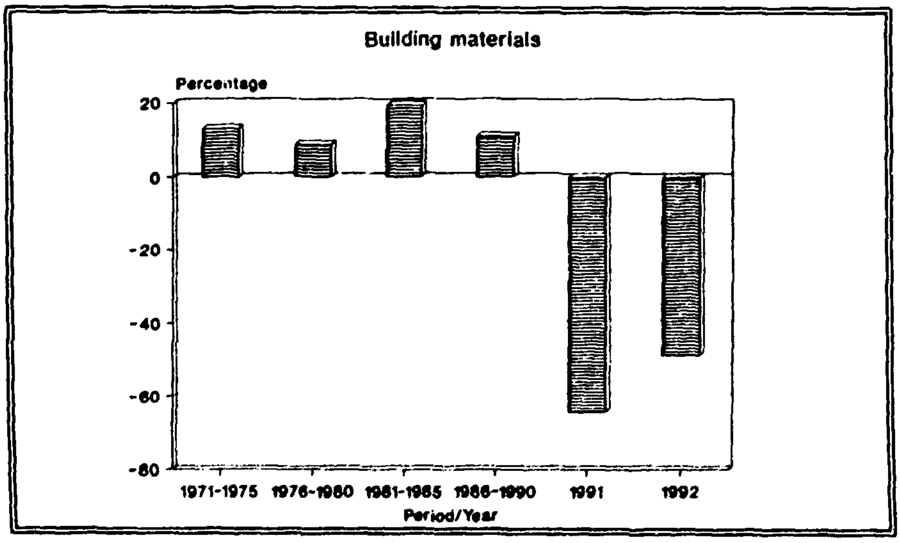


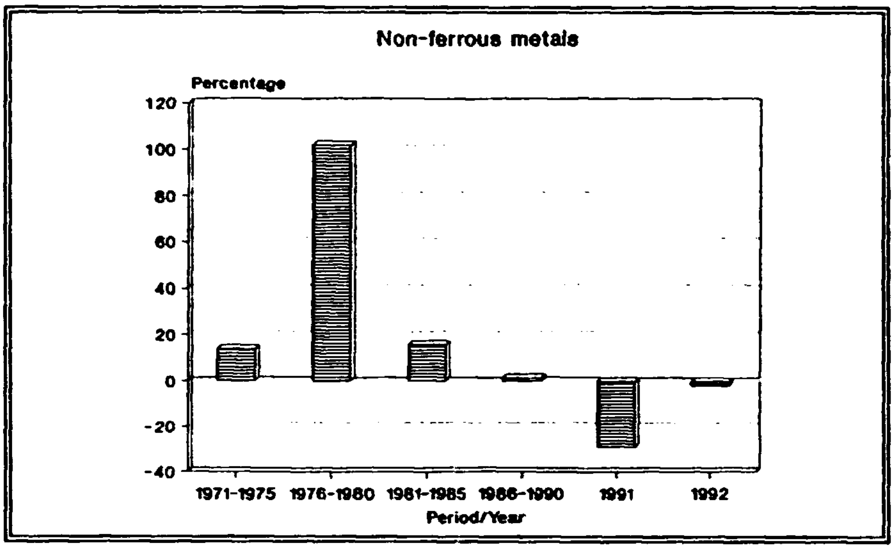


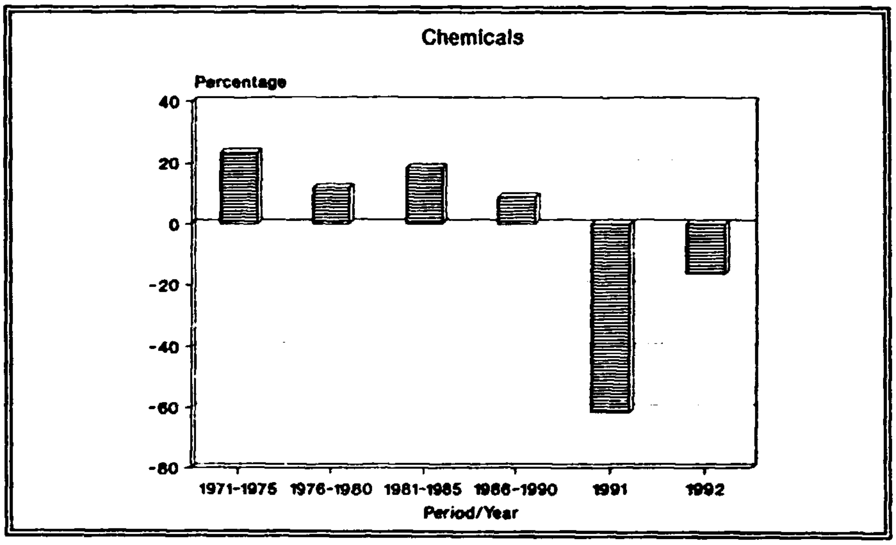


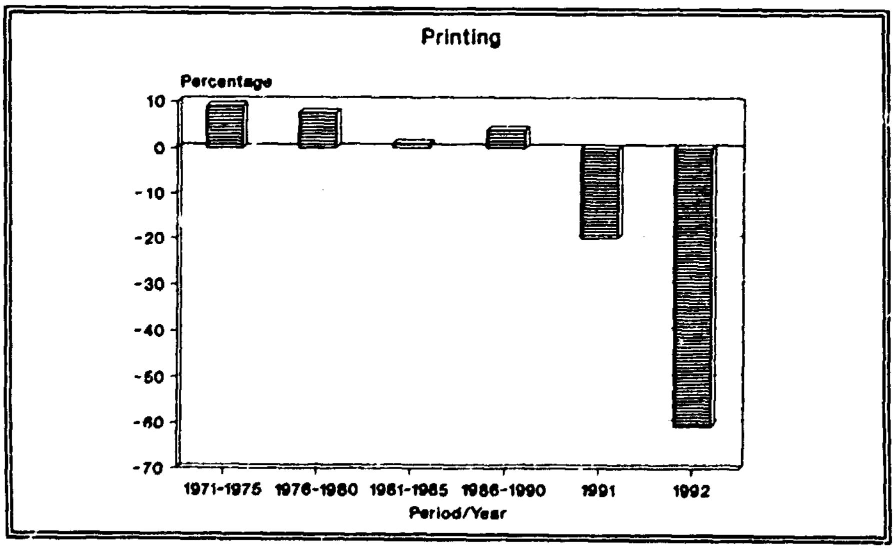

Leather products
Percentage
10
0
-10
-20
-30
-40
1971-1975
1976-1980
1981-1985
1986-1990
1991
1992
Period/Year

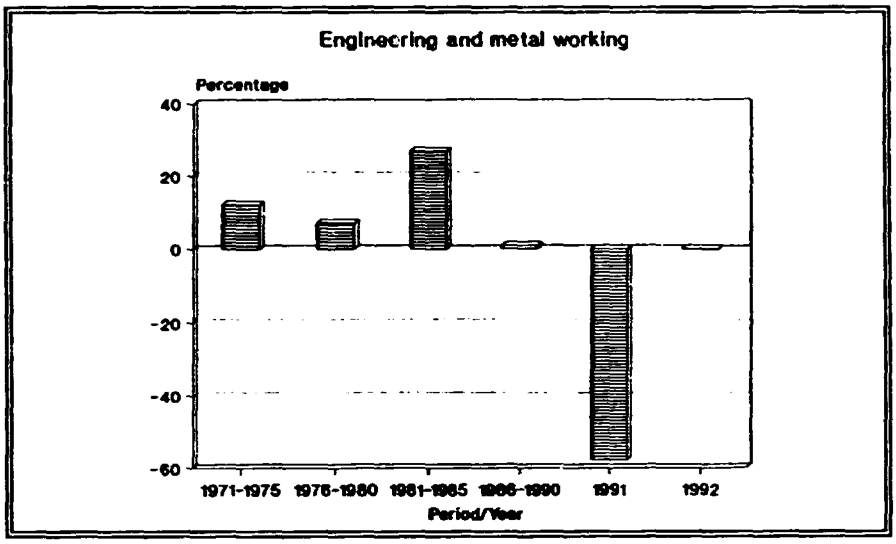

Wood products
Percentage
20
10
0
-10
-20
-30
-40
-50
-60
1971-1975
1976-1980
1981-1985
1986-1990
1991
1992
Period/Year

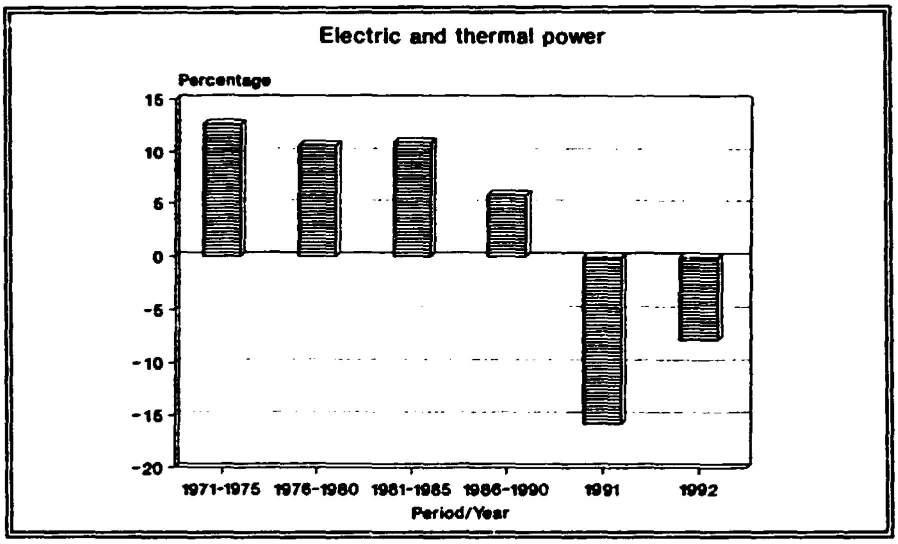

Building materials
Percentage
20
0
-20
-40
-60
-80
1971-1975
1976-1980
1981-1985
1986-1990
1991
1992
Period/Year


Non-ferrous metals
Percentage
120
100
80
60
40
20
0
-20
-40
1971-1975
1976-1980
1981-1985
1986-1990
1991
1992
Period/Year


Chemicals
Percentage
40
20
0
-20
-40
-60
-80
1971-1975
1976-1980
1981-1985
1986-1990
1991
1992
Period/Year


Printing
Percentage
10
0
-10
-20
-30
-40
-50
-60
-70
1971-1975
1976-1980
1981-1985
1986-1990
1991
1992
Period/Year


Engineering and metal working
Percentage
40
20
0
-20
-40
-60
1971-1975
1976-1980
1981-1985
1986-1990
1991
1992
Period/Year


Electric and thermal power
Percentage
15
10
5
0
-5
-10
-15
-20
1971-1975
1976-1980
1981-1985
1986-1990
1991
1992
Period/Year

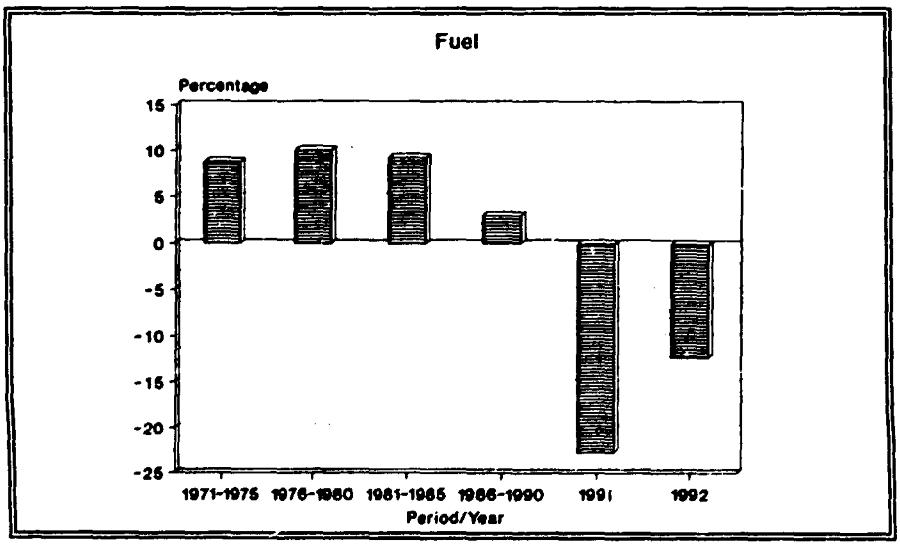

Fuel
Percentage
15
10
5
0
-5
-10
-15
-20
-25
1971-1975
1976-1980
1981-1985
1986-1990
1991
1992
Period/Year

Fig. III.B. Industrial investment, 1977-1990

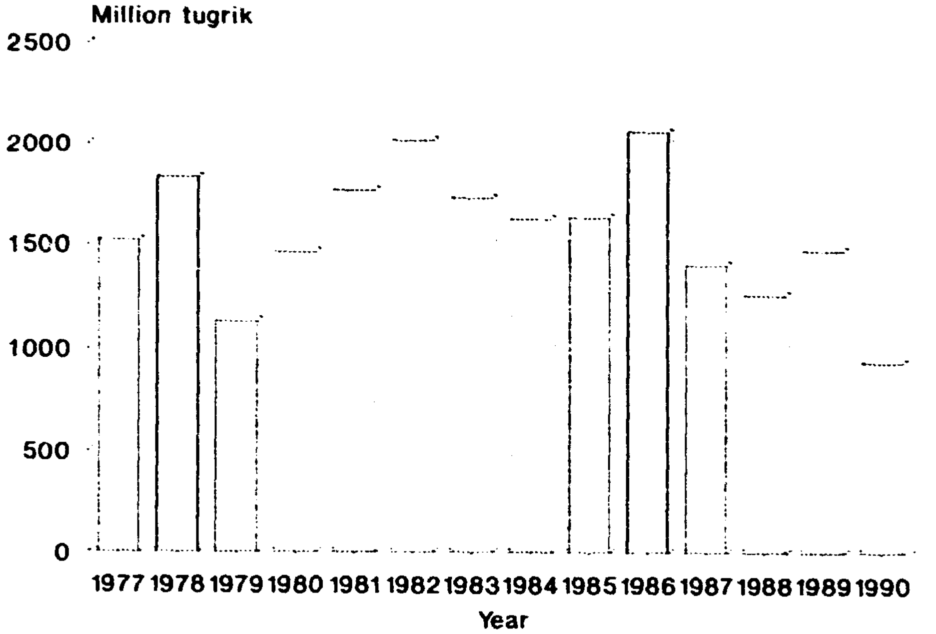


Fig. III.C. Foreign investment by country, July 1992 (Cumulative)

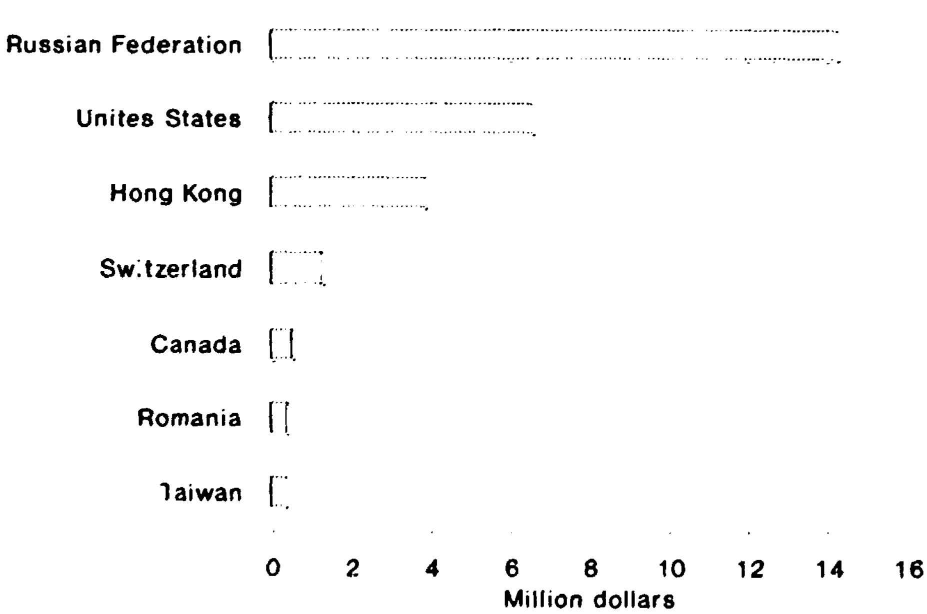
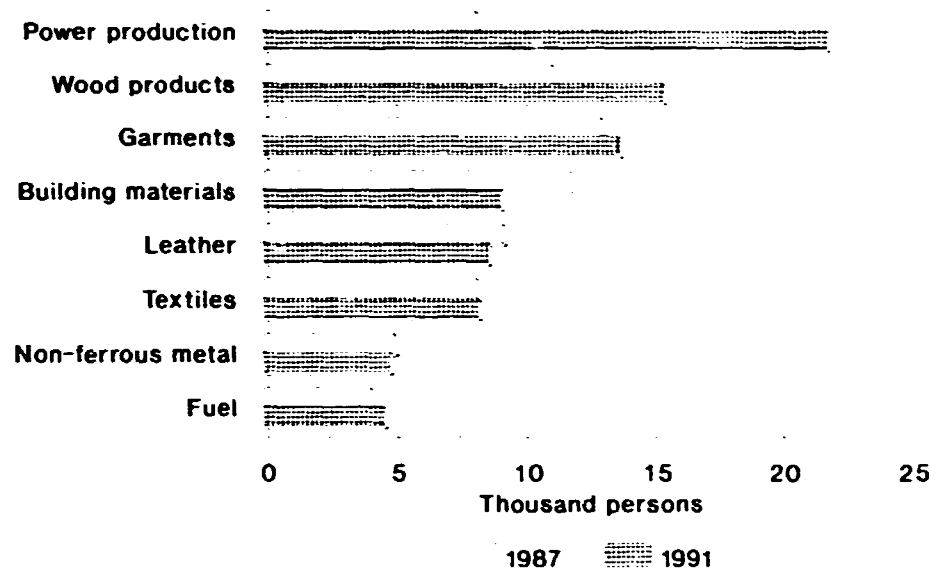


Fig. III.D. Number of employees by industry branch, 1987 and 1991



IV. PROBLEMS AND PROSPECTS OF MANUFACTURING SUBSECTORS

A. FOOD AND BEVERAGES

Food and beverages is the leading manufacturing sub-sector. In 1990, it accounted for an estimated 25.9 per cent of total manufacturing output, 27.4 per cent of MVA, and 21.5 per cent of manufacturing jobs. It has strong backward linkages to the economy and a low level of import dependence. Meat is currently the only food export product and is the only one with further potential for development as an export. All other food products are limited to supplying the domestic market.

The food industry is hampered by both high year-to-year fluctuations in agricultural output, consequent upon Mongolia's erratic precipitation levels, and a marked seasonality in supply. Milk production is concentrated in the summer, wheat is harvested in September/October, and most livestock is slaughtered in three or four autumn/winter months. Hence, food processing factories have a relatively short production season, operating for substantial parts of the year at very low output, since storage facilities for most products is inadequate. At present this does not appear to affect levels of employment. Most processing units operate with outdated equipment, a problem which probably requires government intervention, and pay little attention to sanitation and hygiene.

The problems of supply to the food industry are aggravated by the status of the agricultural sector which is production rather than market oriented. Although agricultural privatization is virtually complete there is little conception of what the new privatized agricultural structure should be. For example, the state controls up to 70 per cent of agricultural output through the state order system which designates a supply quota to each company, paid for at floor prices. Although it has been promised that the state order system will be abolished, it remains yet. Restructuring and relaxation of price controls is an essential reform for the successful operation of the food processing industry in the new market economy. The present system means that there are no incentives for agricultural producers to improve quality since products are purchased at a standard price. The fact that this price is in many cases significantly lower than the market price has also led to acute shortages.

The transition to a market economy in this sector will be a long and drawn out process. At present, food processing factories are *de facto* labour managed enterprises, so that they tend to avoid making the adjustments necessary to improve production and efficiency, including lay-offs. Factory management also have a lack of knowledge regarding pricing strategies, information systems, marketing strategies, advertising, distribution, new product development, quality awareness and financial control. This area should be a prime target for technical assistance.

Meat production, which is highly seasonal (high in winter, low in summer), remained virtually stagnant during the 1980s and stood at about 500,000 tonnes live weight in 1990. About one quarter of this offtake enters organized marketing channels to supply the main meat processing plants while the remainder is accounted for by local slaughter by herdsmen and small-scale butchery. Shortages of meat in the cities have been commonplace. These are a function of inadequate prices and a lack of producer incentives, and poor distribution. Meat should never be in short supply in a country of 2 million people and a national herd of 26 million.

Production in the State Meat Organization is highly concentrated and consists of five abattoirs (three big and two small) and two meat processing factories. The organization purchases live animals at farm-gate based on live weight at the time of sale. The three large abattoirs and the two processing factories are all located in the three main cities. The combined slaughterhouse and meat processing complex in Ulaanbaatar accounts for about half of all officially recorded slaughterings, processing one million sheep, 80,000 head of cattle and 20,000 pigs annually. This concentration of processing facilities is inefficient, since herds have to be walked long distances (200-1,000 km) from rural areas, often taking many months. The limited capacity of slaughter houses, and the need to stagger their intake, means animals from some regions arrive for slaughter at a time when their live weight has fallen well below its summer maximum, leading to output losses. Cold meat storage capacity is low at 19,500 tonnes.

Several new small slaughtering plants are desirable to reduce driving distances of livestock, a policy being pursued by government. Other necessary reforms in this branch include the improvement of livestock grading and the introduction of payment differentials depending on carcass quality. A restructuring of producer prices should also extend the currently short length of the slaughtering season. A substantial improvement of hygiene standards and in quality control is also essential if Mongolian meat products are successfully to find new export markets.

Mongolia has one milk processing factory, in Ulaanbaatar, which produces pasteurized milk, yogurt, butter, ice cream, curds, sour cream, dried curds and milk powder for the domestic market. Most aimaks also have a dairy unit, part of the multi-product food processing complex, with limited pasteurization capacity, catering to local markets. Milk supply is ample during the summer months, but very low during winter. Only the Ulaanbaatar processing factory is supplied with a significant amount of winter milk, from specialized dairy farms where production per cow is low (about 2,600 litres a year), milk quality is low, fodder costs high and productivity of labour is low (6-8 cows per worker).

The Ulaanbaatar factory turned in an operating profit of Tugrik 16 million in 1990 and Tugrik 13.6 million in 1991, despite only working at 54 per cent capacity in 1991. After tax, social insurance and small interest repayments, the factory generated a net profit of Tugrik 2.4 million in 1990 and Tugrik 4.6 million in 1991. Since only 3 per cent of raw material costs are for imported inputs, and the factory operates without any competition, a situation which is unlikely to change in the near future, the future looks good. In the longer term, new processing capacity is needed to reduce Mongolia's import dependence for milk products of 55 per cent.

The problems of poor sanitation and hygiene plus the Ulaanbaatar factory's outdated equipment may require government intervention, but privatization and de-regulation, in combination with appropriate policy initiatives, should solve some of the other problems inherent in this branch. A market-set winter/summer price differential, as opposed to the former standard state price, should provide incentives for specialized dairy farms to maintain winter supplies, increase quality and improve supplies over a longer time period. Competition should also improve production and quality, encouraging better fodder conservation practices, and improved livestock management with a special emphasis on disease control.

The production of flour and feed for the domestic market takes place in 10 mills distributed throughout the grain growing areas, in the central and northern parts of the country. The monopoly on production held by the Corporation of Flour and Feed Milling is unlikely to continue, with its mills being broken up into 10 separate companies to increase market competition. Additional milling capacity is required for the future development of the industry which will also depend upon new product development and improved feed quality. Currently feed quality is low due to the lack of ingredients that must be imported, such as oil seed cakes and premixes.

The production of beverages is entirely for the domestic market in the case of beer and soft drinks, and very largely so in the case of vodka. Production is concentrated in large enterprises. The country's main factory, in Ulaanbaatar, produced 65 per cent of Mongolia's soft drink output in 1990 and 45 per cent of vodka output. Factory equipment is outdated and inefficient (energy accounted for a high 23 per cent of total operating costs at the Ulaanbaatar factory in 1991), and production is frequently interrupted by breakdowns and work stoppages. Vodka output rose from 4.9 million litres in 1989 to 6.9 million litres in 1990, but exports remained at just 3 per cent of production, not through lack of demand but due to the low quality of bottles.

Development of some new food industries are under consideration by government. These include a sugar industry based on irrigated sugar beet and an oil seed processing industry based on rainfed or irrigated rapeseed. Most cooking oil and all sugar is currently imported.

B. LEATHER PROCESSING AND PRODUCTS

Output from Mongolia's slaughter houses destined for the leather industry is all channelled through a single pre-treatment plant. There are three tanneries, Number One for sheep skins, Number Two for goat skins and Number Three specializing in cowhide and horse skins. Some of their output is exported to former CMEA countries and the People's Republic of China, but most supplies domestic garment and shoe factories. Sheep skin coats and jackets are manufactured in two main factories and have a relatively high export potential, although production is currently hampered by shortages of imported inputs such as zips and buttons. Poland and Slovak Republics remain important markets from the traditional CMEA customers.

Table IV.1. Production, import costs of raw materials and foreign exchange earnings in leather processing and products, 1991

Enterprise	Value of production (Million tugrik)	Import costs of raw materials and parts (Thousand dollars)	Value of exported production (Thousand dollars)	Net foreign exchange income (Thousand dollars)
Leather pre-treatment	346	91	459	368
Tannery Number 1	160	5,013	0	-5,013
Tannery Number 2	37	2,100	308	-1,792
Tannery Number 3	123	3,365	0	-3,365
Leather garments	873	9,800	16,500	6,700
Leather garment accessories	68	766	631	-135
Fur products	284	1,800	2,700	900
Fur products (Darhan)	300	2,411	7,000	4,589
Shoe soles	108	1,500	0	-1,500
Shoes (Ulaanbaatar)	158	7,962	0	-7,962
Leather factory repair shop	...	1,324	0	-1,324

Source: Ministry of Trade and Industry, consultation with Boston Consulting Group.

In the mid-1980s leather exports collapsed, falling by a factor of ten in terms of revenue earned and share of total manufacturing exports, which stood at 39.1 per cent in 1984 and 4.0 per cent three years later. But some parts of the leather processing and products value-added chain continue to have good export potential. Analysis of the hard currency costs of imported raw materials and spare parts, compared to export values of output in the leather sector indicates that the tanning link in the value-added chain is the biggest drain on foreign currency reserves (Table IV.1). Export of pre-treated hides provides a net gain of foreign currency, as does export of leather garments and fur products. The shoe manufacturing industry, which produces only for the domestic market, represents a net drain of $9.5 million a year, but exports will continue to have limited potential until quality is improved. Mongolia's main shoe factory, which employs 2,750 employees, is large by any standards, and has an annual capacity of 3 to 4 million pairs a year.

C. TEXTILES AND GARMENTS

Textiles is a rapidly growing manufacturing branch. Between 1980 and 1990, the number of enterprises grew from 9 to 15, more than doubling the total workforce and gross output, while MVA grew by about 400 per cent. This growth has meant its contribution to total MVA has grown from 6.6 per cent to 16.4 per cent over the period, and its contribution to total manufacturing output from 10.5 per cent to 16.1 per cent. Much of this growth has been export-led, and textiles' share (dominated by cashmere) of total manufactured exports grew rapidly from 6.1 per cent in 1980 to peak at 57.6 per cent in 1987. In 1990, it stood at 39.9 per cent.

Most wool is collected by hand and 15 per cent of collected wool is exported in greasy form to Europe. The remainder is washed in three wool washing factories, with a wastage rate of 50 per cent due to impurities. The wool washing factories use outdated equipment and suffer from shortages of spare parts and soap. Approximately 30 per cent of the washed wool goes for export, with a small proportion of the remaining 70 per cent used in felt production. Most of the washed wool which stays in the domestic economy feeds one spinning factory which supplies three carpet factories, two knitting factories and a textile factory. Labour productivity at the spinning factory is low by world standards, less than 2 tonnes per worker per year, which compares unfavourably with Poland (3 tonnes per worker per year), the Republic of Korea (7), Italy (8) and Japan (17).

The garments industry, by contrast, is with the exception of cashmere, largely geared to the domestic market. Some export of woollen garments was made previously to the former USSR, but this trade has declined recently. Garment production is dominated by a few large enterprises with low productivity. Some smaller private factories are developing, but their output to date is minor, and other assembly enterprises are being established by Asian entrepreneurs using no domestic inputs. The industry is hampered by shortages of key inputs such as needles, thread and fabric, and management has little idea of marketing strategies.

Some success has been achieved in finding new customers for exported cashmere garments however. Exports of cashmere knitwear stood at about 270,000 units in 1989 and 1990, although the declining price of cashmere meant the value of these exports fell from $17.0 million in 1989 to $13.7 million in 1990. In the first three quarters of 1992, exports were significantly down, at 46,000 units, worth $2.3 million, but 95 per cent of these exports were to EC countries, which represented a completely new export market. This is well below the planned exports for 1992, which aimed for an ambitious $24.1 million (Table IV.2).

Most of the value-added potential in the Mongolian wool and wool processing sub-sector is at the finished goods level. In fact, when the cost of imported raw material inputs and spare parts is compared to the final foreign exchange value of production for export, it is clear that the export of raw and partially processed goods from the early stages of the value chain represent a net loss of foreign exchange (Table IV.3). Hence, it is clear that policies should encourage value added production to the finished goods stage. While the drain of raw and semi-processed goods could be stemmed by the simple measure of banning exports, the preferable, but more time-consuming and costly, approach must be to facilitate the capability for processing. In the medium and long term this is the only viable approach. While Mongolian labour costs are low by world standards, manufactured exports in this sub-sector, as in most other manufacturing branches, are constrained by outdated technology, poor design, low productivity, the lack of marketing skills and poor international communication and transport capacity.

Table IV.2. Planned output from the 'Gobi' cashmere and camel wool enterprise, 1992

Product	Unit	Quantity	Value of production (Million tugrik)	Proportion for export (Percentage)	Value of exported (Thousand dollars)
Combed cashmere	Tonnes	100		100	
Cashmere tops	Tonnes	33		100	
Cashmere head hair	Tonnes	80		100	
Cashmere garments	Thousand pieces	234		79	
Camel wool garments	Thousand pieces	25		64	
Camel wool blankets	Thousand pieces	45		71	
All above (1992)			1,145		24,054
All above (1993)			1,150		24,500

Source: Ministry of Trade and Industry.

Table IV.3. Production, import costs of raw materials and foreign exchange earnings in wool and wool processing for export, 1991

Stage	Value of production (Million tugrik)	Import costs of materials and parts (Thousand dollars)	Value of production (Thousand dollars)	Net foreign exchange income (Thousand dollars)
Washing	72	415	400	-15
Spinning	300	4,500	560	-3,940
Weaving	380	2,163	1,760	-403
Knitting	240	1,960	800	-1,160
Carpet manufacture	1,369	12,797	17,572	4,776

Source: Ministry of Trade and Industry, consultation with Boston Consulting Group.

D. WOOD PROCESSING AND PRODUCTS

Wood processing and products has been declining in importance through the last decade. Its share of total manufacturing output fell from 13.9 per cent in 1980 to 8.5 per cent in 1990; and its contribution to MVA declined from 10.9 per cent in 1980 to 7.9 per cent ten years later, as gross output from the branch in constant 1980 tugriks was slightly lower in 1990 than in 1980. The decline in wood processing and products is a reflection of the decline in production of sawn wood (including boxboards) which represents the largest portion of the industry's output. Output fell steadily through the latter half of the 1980s, from 686,000 cu m in 1985 to 509,000 cu m in 1990, and plummeted to 270,000 cu m in 1991. In the first half of 1992, output was half that of the first half of 1991. Employment in this branch has not fallen accordingly, however. The number of employees peaked at 11,100 in 1987, but had only fallen to 9,053 by 1991. The planned volume of sawn timber production for 1992 and 1993 was 265,400 cu m, with 11 per cent of this production for export (Table IV.4). The projected foreign currency income from these exports was expected to exactly cover the needs of imported spare parts.

Lumber is initially processed in nine enterprises, which produce the sawn timber. Sawn timber for in the domestic economy is further processed by 12 enterprises, into basic wooden furniture and construction materials and also feed a furniture factory, a match factory and a cardboard factory. While production in the first half of 1992 was more or less stable at 1991 levels in the case of furniture, match production, like sawn timber, was around 50 per cent down (Table IV.5).

Table IV.4. Planned output of sawn timber, 1992-1993

Year	Volume of production (Thousand cubic metres)	Value of production (Million tugrik)	Volume of production for export (Thousand cubic metres)	Value of exported production (Thousand dollars)
1992	265.4	71.7	30.0	3,900
1993	265.4	71.7	30.0	3,900

Source: Ministry of Trade and Industry.

Table IV.5. Production of wood and wood products industry, 1989-1992

Product	Unit	1989	1990	1991	1992[a/]
Sawn timber	Thousand cubic metres	553	509	270	79
Furniture	Thousand tugrik	38,058	31,231	34,554	17,978
Matches	Million boxes	33	26	29	8

Source: Ministry of Trade and Industry, State Statistical Office.

a/ First half

V. RESOURCES FOR INDUSTRIAL DEVELOPMENT

A. HUMAN RESOURCES

Labour force

Mongolia's population in 1991, estimated from 1989 census data, was 2.1 million, growing at a rate of 2.5 per cent per year. Approximately 1.1 million (49 per cent of the population) were of working age in 1991, of which 688,100 were employed, giving a participation rate of 65 per cent for the population as a whole. This high participation rate is a reflection of the government's former commitment to provide jobs for all, the high level of education, and the high level of women's involvement in employment.

The rate of growth of the labour force is very high due to Mongolia's young population (more than 40 per cent of the population are children aged 15 years or younger). A total of 304,300 people were aged 10 to 15 years in 1989, indicating that the labour force will be augmented by 30 per cent in the five years to 1994. The economy's capacity to absorb this growth in labour supply is limited by its current structure, reflecting past development emphases which have constrained labour-intensive activities such as light industry and the retail sector. The leading sectors - mining, mineral-based industries, and livestock - are all capital- and land-intensive activities.

The economic slowdown of 1989, followed by serious declines in production in 1990 and 1991, have had an adverse effect on employment while new entrants to the labour force have been faced with an unknown situation: no guaranteed jobs. At the same time, privatization and streamlining of former state enterprises have meant some redundancies, a situation which will continue. Unemployment is a new phenomenon in Mongolia. It stood officially at 8.4 per cent of the labour force in 1991, and the rate in Ulaanbaatar is estimated to be double the national average. The situation has been offset, to some extent, by the growth of private enterprises which employed 56,000, or 8.6 per cent of total employment in mid-1991.

Training

Education's high priority in former government programmes has resulted in a very high overall literacy rate of 97 per cent. Education to secondary level (ten years of schooling in total) is compulsory and free, and enrolment rates in these schools are high (Table V.1). Post-secondary education consists of vocational schools, technical schools, colleges and universities. Training for a trade in vocational schools takes two years, consisting of 40 per cent classroom time and 60 per cent on the job instruction. There are 44 vocational schools, with about 29,000 students in 1990, and 26 vocational secondary schools, with 21,000 students.

Education for the 18,000 students in the 31 technical schools is theoretical. Although practical and professional training is not offered, it can be gained through work experience. Industrial subsectors requiring skills in craftsmanship, such as metal-working, suffer accordingly from ill-prepared workers. Mongolia's five universities are all in Ulaanbaatar: the Mongolian State University; the Pedagogical University; the Medical University; the Agricultural University, and the Technical University. In 1990 the universities began a drive to improve standards by limiting enrolment and establishing higher entrance standards, including entrance exams. The top 30 per cent of students now receive a state grant, while the remainder are self-supporting. At the end of 1989, 1,364 students graduated with a candidate of science degree and 108 students graduated with doctorates.

Table V.1. School gross enrolment rates, 1990

	Age group	Gross enrolment rate (Percentage)
Kindergarten	3-6	28.5
Grades 1 - 3	7-9	100.2
Grades 4 - 8	10-14	94.2
Grades 9 - 10	15-16	45.7

Source: Ministry of Education.

The narrow focus of vocational and tertiary education curricula will have to be widened and restructured in line with the needs of the market economy, together with an upgrading of teacher training and educational materials. An important aspect of this latter point stems from the government's re-introduction of the traditional Mongolian script, to fully replace the Cyrillic by 1994. This will require the re-printing of all text books and re-training of teachers.

Ulaanbaatar also houses the Academy of Sciences, which encompasses 65 research institutes with a work force of 5,000 research scientists and 2,000 support staff. All the researchers have studied abroad, most in eastern Europe or the former USSR, and a large percentage have doctorates. Their research is largely aimed at relevant Mongolian topics, and this applied aspect will need to be developed as government funding is cut, necessitating the marketing of relevant research results to third parties.

B. AGRICULTURAL RESOURCES

Agriculture plays an important role in the Mongolian economy, generating 20 per cent of GDP and employing nearly 40 per cent of the total labour force. Agricultural products provide important inputs to many sectors of Mongolia's manufacturing industry and account for 44 per cent of total exports, most of these being from the livestock sector.

An estimated land area of 126 million hectares is used for agriculture, most of which is natural pasture for extensive livestock production. Arable land totals about 1.4 million hectares, of which just over half is cropped annually. The livestock sector contributes 70 per cent of agricultural production value, and crop cultivation 30 per cent.

Mongolia's severely continental climate is the most important factor influencing agriculture. The country experiences very low winter temperatures, a short growing season, and rainfall which is erratic and low (100 to 400 mm a year). These conditions limit the number of activities which can be successfully practised and affect productivity in those that are practised. Severe winters affect livestock survival rates and the short growing season means that land is typically cultivated in the year preceding the spring in which it is to be sown. Climatic conditions are an important factor influencing the significant year-on-year variations in agricultural production. Output declined in both the livestock and cultivated sectors in the latter half of the 1970s, whereas the 1981-1985 period saw an impressive annual average growth rate of 7.1 per cent for gross output, with a very high average annual rate of 20.6 per cent recorded in crop production (Table V.2). The growth rate sank to 0.7 per cent in 1986-1990 and the decline in output continued in 1991, as the economic crisis hit hard through the shortage of imported inputs and a slump in demand.

Until recently agriculture was centrally planned with the state fully responsible for production, input supply, distribution, sales and marketing. All land and most of the livestock was owned by the state and arable farming was run by 70 state farms and 256 collectives. A privatization programme for the sector was begun in 1985, and more than 60 per cent of livestock is now in private ownership, while state farms have been split into 280 companies and sold off. Privatization of the remaining collectives is expected to be complete by the end of 1993. The rising proportion of agricultural output produced by the private sector is indicated in Table V.3. A price liberalization programme has also been initiated, to improve producer incentives, and an Agricultural Exchange and an Agricultural Central Bank have been established. However, there is little conception in government of what the newly privatized agricultural structure should be and policy on methodology and organizational structure is conspicuous by its absence.

Table V.2. Annual average growth of gross agricultural output, 1976-1990
(Percentage)

	1976-1980	1981-1985	1986-1990
Gross output	-2.7	7.1	0.7
Livestock	-1.5	2.9	2.4
Crops	-7.0	20.6	-3.0

Source: State Statistical Office.

Livestock

Animal herding has long been Mongolia's traditional agricultural activity and still employs a large majority of the rural working population. Livestock provides the source of food, clothing and transport for many pastoralists who live a more-or-less subsistence existence. Production in the extensive livestock sector, which relies almost completely on natural grassland, is relatively efficient and meat, livestock, wool, cashmere, skins and hides are all important export commodities.

Improvements in traditional methods are largely limited to the provision of winter shelter and water supplies in areas without adequate river, lake or spring water. Animal numbers are still very dependent upon climatic conditions and losses are often as high as 1 million newborn stock and almost as many adult stock after severe winters, although survival rates for newborn stock have been generally higher in recent years than in previous decades (Table V.4). Nonetheless, the size of the national herd of camels, horses, cattle, sheep and goats shows considerable variations, dependent largely on climate. In 1990, these livestock totalled 25.9 million animals (Table V.5). Mongolia's other domesticated livestock include yaks, found in the highland region and numbering about 500,000 in 1984, and small numbers of poultry and pigs (see below).

There has been some effort to control endemic and parasitic diseases, but general veterinary care is inadequate. The current economic crisis has affected this area of animal care, since most medicines are imported and Mongolia's only veterinary medicine factory all but closed down in 1991 due to a lack of spare parts. One estimate puts the number of deaths due to the shortage of medicines in 1991 at 100,000. Winter livestock survival rates have also been adversely affected by a lack of fodder. Inadequate domestic production has led to a heavy dependence on imported fodder, and to consequent shortages during the early 1990s period of economic hardship. Fodder is currently produced on fodder farms and transported over long distances. In the future the

Table V.3. Net product of agriculture, 1980-1991
(Million tugriks)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
CURRENT PRICES												
Total	**838.2**	**1,007.7**	**1,219.5**	**1,320.2**	**1,250.2**	**1,237.8**	**1,520.7**	**1,405.5**	**1,510.0**	**1,722.9**	**1,686.9**	**3,452.7**
State Farms	(35.8)	20.9	84.5	223.5	138.7	165.8	221.9	148.6	203.3	231.7	241.3	559.6
Cooperatives	532.9	622.9	739.9	664.4	651.2	563.6	729.3	670.2	664.6	805.8	757.7	1,327.6
Personal plots and private farms	341.1	363.9	395.1	432.3	460.3	508.4	569.5	586.7	642.1	685.4	687.9	1,565.5
CONSTANT PRICES 1986												
Total	**1,004.9**	**1,181.9**	**1,348.9**	**1,347.7**	**1,232.4**	**1,348.1**	**1,426.6**	**1,335.7**	**1,367.1**	**1,556.3**	**1,525.6**	**1,696.8**
State Farms	(44.7)	15.8	89.8	270.4	150.9	227.2	195.0	182.1	173.5	196.3	189.5	272.5
Cooperatives	661.3	749.6	806.5	623.9	605.5	640.2	681.9	637.5	622.2	755.3	710.8	625.0
Personal plots and private farms	388.3	416.5	452.6	453.4	476.0	480.7	549.7	516.1	571.4	604.7	625.3	799.3

Source: State Statistical Office.

organization of winter fodder supply should aim to produce as much as possible from within local soum districts, with a concomitant effort at improving drying facilities, which are inadequate or non-existent at present, and introducing storage facilities. Hay stored in the open, as it is at present, is prey to the vagaries of the weather. Unseasonable rains were responsible for the loss of a large part of the crop in 1990.

Table V.4. Survival rates for younglings in the national herd, 1970-1992, selected years
(Percentage)

	1970	1980	1985	1986-1990 average	1991	1992
All animals[a/]	90.5	84.9	92.5	94.9	95.3	94.9

Source: State Statistical Office.

a/ Young camels, foals, calves, lambs and kids.

Table V.5. Number of livestock, 1975-1990, selected years
(Thousand head)

Animal	1975	1980	1985	1990
Camel	617.1	591.5	559.0	537.5
Horse	2,254.6	1,985.4	1,971.0	2,262.0
Cattle	2,427.0	2,397.1	2,408.1	2,848.7
Sheep	14,458.1	14,230.7	13,248.8	15,083.0
Goat	4,594.7	4,566.7	4,298.6	5,125.7
Total	**24,351.5**	**23,771.4**	**22,485.5**	**25,856.9**

Source: State Statistical Office.

Several other livestock issues are currently on the government's agenda for the newly privatized herds. Legal reforms and the establishment of new methodologies will have to be introduced in areas such as land tenure, to ensure the proper management of leasing arrangements and communal grazing land, taxation, and rules on livestock mov[illegible]

A few specialized dairy farms exist to supply the Ulaa[illegible] [illegible]rocessing factory with winter milk, the only milk produced during the winter m[illegible] [illegible] farms are characterized by outdated equipment, high fodder (imported) costs, lo[illegible] of hygiene, low milk quality and poor labour productivity and hence ha[illegible] [illegible]uch scope fo[illegible] [illegible]provement.

Poultry, numbering 326,200 in 1990, and pigs, 134,700 in 1990, represent two other small subsectors of livestock production. Both animals are traditionally only reared by Buryat Mongolians, who are concentrated in the northern parts of the country. But the numbers and distribution of poultry and pigs were increased significantly from the early 1980s when factory and office workers were encouraged to establish small farms for these animals. Pork contributes only a very minor portion of the Mongolian diet, and as feed costs are high, since most needs to be imported, this subsector is unlikely to be expanded in the near future. Further production of eggs, however, and to some extent broilers, may be encouraged, especially around urban areas. Output can be improved with imported feedstuffs such as corn, oilseed, and cake.

Food crops

Significant large-scale agriculture dates from the early 1960s when large tracts of 'virgin' steppeland were ploughed up mainly for cereal cultivation. Although this early policy met with widespread problems of soil erosion by wind, the sown area increased from 265,500 hectares in 1960 to 786,400 hectares in 1990, and planting is now carried out in strips with intervening strips of grassland providing protection from the wind during the dry spring ploughing season. Cereals are grown on 83 per cent of the sown area, with fodder crops accounting for a further 15 per cent (Table V.6). Some vegetables, mostly tomatoes and cucumbers, are grown on irrigated land which totals about 33,000 hectares. Production of all food crops has grown steadily over the last 20 years (Table V.7). Wheat is the main cereal crop and production reached a peak of 688,500 tonnes in 1985, three times the 1980 production. Most of this improvement came through intensification, with yields for cereals as a whole being doubled over the period, although in absolute terms yields are still low, approximately 1 tonne/hectare for cereals. Production of potatoes also increased by 300 per cent from 1980 to 1985, also largely through a doubling in yields, to about 11 tonnes/hectare. In normal years Mongolia is self-sufficient in wheat and potatoes, but produces only about one-third of its vegetable and fodder requirements and virtually no fruit.

Table V.6. Sown area of major agricultural crops, 1980-1992, selected years
(Thousand hectares)

Crop	1980	1985	1990	1991	1992
Cereals	557.5	636.2	654.1	615.2	594.3
Potatoes	7.4	10.3	11.3	9.8	8.5
Vegetables	2.4	3.3	3.1	2.5	1.9
Fodder crops	136.7	139.8	117.8	75.7	48.3

Source: State Statistical Office.

The short growing season has meant that high levels of technological inputs have been made in crop cultivation, making unit production costs high. Mongolia's stock of agricultural equipment includes 11,200 tractors and 2,500 combine harvesters, all from former CMEA countries, most from the former USSR. Previously, the former USSR supplied most of the spare parts, fuel, fertilizers and pesticides, but the collapse of the former Russian distribution system and Mongolia's shortage of foreign currency have led to severe shortages of all these inputs in recent years. At the end of 1991 between 40 and 50 per cent of agricultural equipment was inoperative for lack of tyres, transmission belts, batteries and other spare parts. Fertilizer imports, which ran at about 90,000 tonnes annually in recent years, were reduced to 20,000 tonnes in 1991. The effect on output has been dramatic. The sown area of the main crops has fallen only slightly, but reductions in planting of vegetables and fodder crops have been significant (Table 5.6). Production of oats in 1991 was 81 per cent down on the 1989 level, barley production fell by 56 per cent over the same period, potato production fell by 37 per cent, and wheat production by 21 per cent (Table V.7).

Table V.7. Production of major agricultural crops, 1980-1991, selected years (Thousand tonnes)

	1980	1985	1986	1987	1988	1989	1990	1991
Wheat	229.8	688.5	663.7	543.3	672.2	686.9	596.2	538.3
Maize[a]	15.7	1.3	9.5	...	...	...	...	...
Barley	35.2	132.4	146.0	102.0	100.2	108.5	88.9	48.0
Oats	19.4	52.6	49.3	37.8	37.4	38.2	30.2	7.2
Sunflower seed[a/]	23.9	306.2	246.3	204.2	148.5	222.7	246.3	131.5
Potatoes	37.9	113.9	132.8	147.6	103.0	155.5	131.1	97.5

Source: State Statistical Office.

a/ For the years 1987-1991, sunflower seeds and maize figures are combined.

Forestry

Forests cover an estimated 14 million hectares, or approximately 10 per cent of the country's territory. Most of the forests lie in the northern mountain regions, at an altitude of between 1,700 metres and 2,400 metres, with a predominance on the wetter northern slopes. Timber stocks total about 1.3 billion cubic metres, of which 73 per cent is Siberian larch, 11 per cent cedar and 6.5 per cent pine. Just over half of the 2.4 million cubic metres of roundwood removed annually is used for fuelwood, mostly in the countryside.

Nature conservancy, and particularly forest protection, has been a common theme of public interest in the 1970s and 1980s, and a Ministry for the Protection of Nature and the Environment was established in 1987, which was re-organized as the State Committee for Environmental Control in 1990. Proper forestry methods are a regular theme of the State Committee's work and some success in replanting has been achieved. But good intentions in Ulaanbaatar are often frustrated by local indifference: woods are often clear felled without being replanted; young wood is cut for fuel, and felled timber is often left to rot, increasing the danger of fires. The rate of felling is 15,000 hectares a year with only about a third of this area being replanted annually.

C. ENERGY RESOURCES

The principal source of energy in Mongolia is electricity, primarily generated in thermal power stations which burn domestically-mined coal with some imported fuel oil. About 11 per cent of electricity generated is supplied by diesel generators. Energy is also a major industrial subsector, accounting for 11 per cent of industrial value added in 1990 and employing about 20,000 people in 1991. The government's former industrialization policy put heavy emphasis on the energy sub-sector, so that it received an average 30 per cent of industrial investment during the 1980s, producing a growth in output which averaged 11 per cent a year between 1981 and 1985 and 6 per cent a year from 1986 to 1990. Nevertheless, Mongolia still imports electricity from the former Soviet Union, due to thermal power stations' inability to respond quickly enough at times of peak demand, and exports smaller amounts to the former Soviet Union during periods of excess supply. Imports accounted for about 8 per cent of a total consumption of 2,732 GWh in 1990 (Table V.8). Average *per capita* energy consumption was 1,287 KWh in 1990, comparable to consumption in middle income countries, although about a quarter of the population, mostly in outlying rural areas, remains without electricity. Industry and construction is by far the largest consumer of electricity, accounting for 66 per cent of total consumption in 1990.

Table V.8. Electricity production and consumption, 1980, 1985 and 1990 (GWh)

	1980	1985	1990
Total generation	**1,566**	**2,843**	**3,466**
of which:			
Coal-fired generation	1,311	2,480	3,068
Oil-fired generation	255	363	398
Electricity imports	263	153	228
Electricity exports	0	53	76
Transmission and distribution losses	125	174	323
Power station use	267	443	563
Total consumption	**1,437**	**2,380**	**2,732**
of which:			
Industry and construction	873	1,633	1,803
Transport and communications	68	145	174
Agriculture	96	85	116
Households	325	327	349
Others	75	190	290

Source: State Statistical Office, Ministry of Energy.

Electricity is produced by two distinct systems. The Central Energy System (CES), which produced 86 per cent of total output generated in 1990, covers 30 per cent of Mongolia's territory, supplying the three main cities and six aimaks, where half of Mongolia's population lives. The CES is fed by five thermal stations with a combined capacity of 690 MW. These five stations are in Ulaanbaatar (3), Darhan (1) and Erdenet (1), and their output is augmented with imports from the former Russian grid via a 220 kW line to Irkutsk. Imports accounted for about 9 per cent of the CES's total supply in 1990 and 4 per cent in 1991 (Table V.9). Gross generation from the CES increased by 240 per cent between 1980 and 1988, as the Ulaanbaatar No 4 power station, the largest in the country, went into operation in 1985, and its capacity of 380 MW doubled Mongolia's generating capacity. But gross generation fell by 14 per cent by 1991, and consumption has fallen by 19 per cent in the two years to 1991, primarily due to the decline in gross generation as coal supplies have fallen because of shortages of fuel and explosives, and 50-100 MW of production at the Ulaanbaatar No 4 power station were shut down for lack of spare parts. Transmission and distribution losses have also risen in recent years, from around 9 per cent of total supply in 1989 to 13.5 per cent in 1991. The inefficiency of the Soviet-built stations is also indicated by their high level of own use (19 per cent in 1991).

Industrial consumption from the CES stood at 89 per cent in 1990, but fell to 85.4 per cent in 1991, with public and residential use accounting for the remainder (Table V.10). The breakdown of consumption by region indicates that Ulaanbaatar consumes 40 per cent of supplies.

Despite its inefficiencies, the CES operates at a profit, with tariffs more than covering costs in 1991. Operating profits in the first half of 1992 indicated that profits for the year would be cut by more than half, as the cost of importing electricity and fuel oil from the former Soviet Union rose from 16 per cent of domestic coal costs in 1991 to 45 per cent in the first half of 1992 (Table V.11).

Electricity outside the CES is supplied by a system which comprises diesel powered generators in 11 aimaks with an installed capacity of 119 MW plus a 36 MW coal fired plant at Dornod. This system generated about 500 GWh in 1990, about 14 per cent of total domestic production. The costs of this decentralized system are higher than in the CES, but while these higher costs are passed on to industrial users, residential users pay the same as CES users. The subsidies needed to equalize residential tariffs are the largest item in the 1991 government budget, accounting for more than 50 per cent of total subsidies. In more isolated areas, not served by either system, wood, roots, bushes and dried animal dung are used for domestic fuel.

Capacity is an important long-term issue. Forecasts for future demand are difficult in the current economic climate, but with an economic recovery a deficit of 150-200 MW capacity by 1998 is thought likely. A new 80 MW coal-fired plant is presently under construction in Ulaanbaatar, and proposals for a 600 MW mine-head power station at Baga Nuur are being actively pursued. Coal will remain the lowest cost energy source for some time to come; Mongolia's total coal reserves are estimated to be some 100 billion tonnes, one of the largest in the world. Current coal production comes from 17 mines which produce some 7 million tonnes of coal annually (Table V.12). Nevertheless, the CES is also actively investigating Mongolia's hydro-power potential. The Asian Development Bank is financing a feasibility study for a 160-180 MW hydroelectric station near Ingittolgoi on the River Egyin in Bulgan aimak in the north, and the design phase has also been approved. The project has some opposition from environmental groups, but it is hoped that it will be completed by 1998.

Although Mongolia's hydro-power potential has not been comprehensively studied, it has good prospects for supplying remote areas. Some selected areas have, however, already been surveyed. Suitable sites for two small hydro-power stations with capacities of 200-400 KW have been identified in Hovsgul aimak, one on the Delger River, south-east of Moron, and a second on a tributary of the River Uur west of Halgal. Both areas are currently supplied by diesel generators, but have good potential for small-scale agricultural processing industries (cashmere, camel wool and sheep skins) given an energy supply. The CES is looking for foreign investment to turn these schemes into reality.

Given Mongolia's high transmission and distribution losses, and the high unit energy consumption in several manufacturing industries (wool spinning, textile finishing, food processing industries) energy efficiency is another key area of concern. To this end, an energy audit, efficiency and conservation study was carried out in 1992. More efficient use and effective conservation of energy should also be encouraged by a drive for correct pricing. Mongolia's energy prices are already being adjusted to reflect the international hard currency prices now being paid for imported energy products, and the true international value of domestic coal. The government has stated that prices to industrial and commercial users will be raised rapidly to reflect true costs, but prices to domestic consumers will be increased more gradually.

Table V.9. Electricity generation and consumption in the Central Energy System, 1980-1991
(GWh)

	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Gross generation (A)	1,311	1,320	1,271	1,479	1,958	2,480	2,830	2,991	3,169	3,090	2,966	2,725
Station use (B)	258	260	270	294	378	430	460	494	525	519	538	574
As percentage of gross generation (C=B/A)	19.7	19.7	21.2	19.9	19.3	17.3	16.3	16.5	16.6	16.8	18.1	19.2
Net generation (D=A-B)	1,053	1,060	1,001	1,185	1,580	2,050	2,370	2,497	2,644	2,571	2,428	2,201
Electricity imports (E)	263	505	760	679	410	169	67	72	75	158	228	84
Electricity exports (F)	...	...	...	...	4	53	38	32	58	77	76	33
Total supply (G=D+E-F)	1,316	1,565	1,761	1,864	1,986	2,166	2,419	2,537	2,661	2,652	2,580	2,252
Transmission and ditribution losses (H)	112	97	110	123	146	169	234	195	234	242	323	305
As percentage of total supply (I=H/G)	8.5	6.2	6.2	6.6	7.4	7.8	9.7	7.7	8.8	9.1	12.5	13.5
Electricity consumption (J=G-H)	1,204	1,468	1,651	1,741	1,840	1,997	2,185	2,342	2,427	2,410	2,257	1,947

Source: Ministry of Energy.

Table V.10. Electricity consumption in the Central Energy System by consumer type and by region, 1989-1991

Consumer category	1989 GWh	1989 per cent	1990 GWh	1990 per cent	1991 GWh	1991 per cent
A. By consumer type						
Residential	109.3	4.5	95.8	4.3	120.5	5.7
Industrial	2,103.3	87.3	2,009.4	89.0	1,821.7	85.4
Public	197.2	8.2	151.5	6.7	190.9	8.9
Total	**2,409.8**	**100.0**	**2,256.7**	**100.0**	**2,133.1**	**100.0**

District (aimak)	Main population centres	1990 GWh	1990 per cent	1991 GWh	1991 per cent
B. By region					
Central	Ulaanbaatar	880.7	39.0	855.4	40.1
Bulgan	Erdenet, Bulgan	770.3	34.1	723.1	33.9
Arhangay	Tsetserleg				
Ovorhangay	Arvayhaar				
Selenge	Darhan, Suhkbaatar	364.7	16.2	320	15.0
Dornogobi	Baganur, Saynshand	241.0	10.7	234.6	11.0
Total		**2,256.7**	**100.0**	**2,133.1**	**100.0**

Source: Ministry of Energy

Table V.11. Income statement of the Central Energy System, 1988-1992
(Million tugrik)

	1988	1989	1990	1991	1992[a]
Revenues from electricity	508.7	479.3	452.8	755.8	244.5
Revenues from heat	296.5	311.1	318.1	465.1	254.1
Other revenues	0.0	0.0	8.1	23.9	5.5
Total revenues	**805.2**	**790.4**	**779.0**	**1,244.8**	**504.1**
Coal	197.4	183.8	185.0	379.5	197.0
Fuel oil	21.3	19.2	30.2	43.2	32.5
Own use of electricity	9.8	9.0	9.4	18.4	12.5
Electricity imports	16.2	26.4	31.9	17.3	57.0
Water	13.7	13.9	14.4	9.1	8.0
Maintenance materials	5.6	3.5	5.8	10.8	12.0
Salaries and wages	32.1	27.4	33.4	140.2	50.8
Technical personnel	37.6	28.8	34.3	58.0	18.5
Administration	9.4	7.5	7.7	4.6	1.0
Insurance	3.0	2.6	3.2	18.8	6.8
Depreciation	219.5	210.6	215.9	251.9	67.9
Bank charges	52.7	0.0	49.9	...	...
Total costs	**618.3**	**537.7**	**621.1**	**950.9**	**454.7**
Operating profit	186.9	257.7	157.9	293.9	49.4
Other profit	2.3	2.6	2.4	5.3	2.4
Total profit	**189.2**	**260.3**	**160.3**	**299.2**	**51.8**

Source: Ministry of Energy
a/ First half

Oil was extracted in the 1950s and 1960s from deposits in the south and east, in Dornogov and Dornod aimaks, and in 1961 domestic production was said to be satisfying more than 50 per cent of Mongolia's needs. These fields have now been worked out, however. Further surveying for new deposits has been carried out by Western companies recently.

D. HARD MINERAL RESOURCES

Although Mongolia's minerals industry is relatively new, it plays a significant role in the national economy, with exports of copper concentrate providing the largest single source of foreign exchange earnings. Current large-scale mining operations are concentrated on copper, coal, fluorspar, molybdenum and lime; while smaller-scale operations exploit silver, gold, tin, tungsten, cassiterite, uranium and precious stones.

Mongolia is well-endowed with mineral resources: over 600 deposits and occurrences of more than 80 mineral types have been recorded by geological mapping teams and prospectors, but more exploration is needed before any meaningful estimate of the country's mineral potential can be made. Geological maps, compiled 20 years ago, cover 75 per cent of the national territory at a scale of 1:200,000, and aeromagnetic maps at the same scale cover just over half the country. Airborne spectrometer surveys of less than 25 per cent of the land area have been carried out at 1:25,000 and 1:50,000 scales, but there are no airborne electromagnetic survey records. Gravity surveys in the eastern and east central part of the country have been carried out at 1:25,000 to 1:200,000.

Table V.12. Coal balance sheet, 1975-1991, selected years
(Thousand tonnes)

	1975	1980	1985	1990	1991
Sources	**3,013**	**5,107**	**6,537**	**7,413**	**7,335**
Stocks at the beginning of the year	285	729	21	184	274
Production	2,726	4,376	6,516	7,156	7,061
Imports	2	2	0	73	0
Uses	**3,013**	**5,107**	**6,537**	**7,413**	**6,954**
For electric power stations	1,763	2,184	3,679	4,323	4,984
Consumption	990	2,132	2,483	2,303	1,971
Industry	392	712	1,232	948	798
Agriculture	77	322	401	206	101
Households	211	671	702	723	611
Other	311	427	148	426	461
Losses	15	0	0	0	0
Exports	...	0	225	512	119
Stocks at the end of the year	246	791	150	274	262

Sources: State Statistical Office and Ministry of Energy

Copper and molybdenum

All of Mongolia's copper and molybdenum are produced from the open pit mine at Erdenet. Ore is processed in a modern concentrator which produces copper concentrate averaging 29 per cent copper, and molybdenite concentrate which averages 50 per cent molybdenum. In 1991, 360,000 tonnes of copper concentrate and 3,300 tonnes of molybdenite concentrate were produced. The mining and milling operation, which commenced production in 1978, was built with the former Soviet capital, using the former Soviet equipment and technology, and remains a 51 per cent Mongolian, 49 per cent Russian Federation's joint enterprise. It is a modern, well-equipped operation and runs efficiently. Until recently, all the concentrate was exported to smelters in the former Soviet Union and accounted for 40 per cent of Mongolia's export revenues. This is still very largely the case, although concentrates are now valued at hard currency prices and represent Mongolia's largest source of foreign exchange, although in practice Erdenet's output is bartered for the Russian fuel imports. However, the sole reliance on the Russian market shows some signs of changing since an agreement reached with the Russia allows Mongolia to export its share of production to the former non Russian smelters, and small quantities are now exported to Japan. Shortages of explosives and flotation reagents have become acute in the current economic crisis.

A second, very large and as yet unexploited deposit of porphyry copper is located at Tsagaan Suvarga in Dornogov aimak, south-east of Ulaanbaatar. The deposit, estimated to contain one million tonnes of copper, was the subject of preliminary negotiations with Japanese businessmen in the 1980s but not pursued. The average grade is said to be 0.6 per cent Cu + Mo, lower than the Erdenet deposit, but there is no available indication of the variation of grade with depth. Mongolia's other known mineral deposits are summarized, in alphabetical order, as follows.

Construction materials

There are 170 known deposits of granite, marble and other construction materials, of which 35 are currently being exploited and another 90 are in the process of development.

Fluorspar

Production of fluorspar, most of which has been exported to the former Czechoslovakia and former Soviet metallurgy industries, has been declining since 1985. Output stood at 456,000 tonnes in 1990 and fell to 251,000 tonnes in 1991 (Table V.13). The larger fluorspar mines are joint ventures with the former Czechoslovakia and are located in east-central Mongolia in the aimaks of Sukhbaatar, Hentiy and Dornogov.

Gold

About 25,000 ounces of gold are produced annually in five placer operations which process stream gravels. The mines are small, over-manned and inefficient by Western standards. Recently, a joint venture agreement has been signed between the Bureau of Mines and Morrison Knudsen, a United States company, to develop an operation which will process two million tonnes of ore and produce three tonnes of gold a year.

Lime

Lime is mined for domestic cement production, most being supplied to the cement and lime complex at Hotol between Erdenet and Darhan. Production stood at just over 100,000 tonnes a year during the 1980s, but fell to 76,000 tonnes in 1991 as the construction industry slumped.

Perlite

Deposits of perlite near Zamiin Uud in the south-east have been the subject of recent investigations into appropriate methods for quarrying and grinding and the establishment of a pilot manufacturing plant. Proposed uses of expanded perlite and perlite products are in domestic building insulation and as an input into fertilizers.

Phosphates

Extensive deposits of phosphate rock are known to occur in Upper Cambrian sediments at Urandosh in northwestern Hovsgul aimak. Three deposits in the area were drilled in the 1980s, outlining 400 million tonnes of open pit rock containing about 20 per cent P2O5, but the total reserve was estimated to be more than two billion tonnes. A joint Soviet venture to exploit the deposits, including mines, concentrating plant and a new rail spur to the Trans-Mongolian line, was announced in 1986 but the venture never proceeded, apparently because of environmental concerns over the impact of mining in the area.

Tin and tungsten

Showings of tin and tungsten mineralization are abundant, particularly in the intrusive rocks which host the fluorite deposits.

Uranium

Several uranium deposits have been reported and one mine was developed in cooperation with the former USSR near the town of Mardaar, a purpose built settlement with its own power station. Little is known publicly about the deposit other than the fact that it is in sandstones.

Wolfram

Wolfram deposits are being worked on a small scale in Tov and Sukhbaatar aimaks in the central and eastern regions.

Zinc-lead-silver

At least five zinc-lead-silver deposits have been drilled in northeastern and eastern areas. These largely low grade reserves range from 75 tonnes to 3 million tonnes. A Japanese group is reportedly exploring the deposits, reasonable access to which is provided by the rail link from Choibalsan to the Trans-Siberian railroad. Other lead-zinc deposits have been reported from the Alma Altai mountains in the west.

Table V.13. Production of selected minerals, 1985-1991
(Thousand tonnes)

Minerals	1985	1986	1987	1988	1989	1990	1991
Fluorspar	787	592	544	523	578	456	751
Lime	103	107	114	122	95	103	76
Copper concentrate	...	...	...	...	353	354	360

Source: State Statistical Office

E. TRANSPORT INFRASTRUCTURE

Despite rapid industrial development in recent decades, Mongolia's transport infrastructure remains seriously inadequate. The sector grew at a healthy average 9.5 per cent through the 1980s and in 1990 accounted for 11 per cent of GDP and employed 51,000 people. However, the current economic crisis and the collapse of international trade has inevitably meant that utilization rates have fallen in recent years. In 1991, both the total freight tonnage carried and the freight turnover in tonne kilometre was about half the 1988 totals (Tables V.14 and V.15). After the present economic situation improves, the lack of infrastructure will be a major constraint on regional and national economic development given the country's large size and widespread distribution of resources.

In a national territory of 1.6 million square kilometres there are 42,000 kilometres of roads (an average of just 26 metres per square kilometre), of which 3 per cent are paved and 7 per cent are gravel-surfaced. About a quarter of the total road length is made up of state roads which connect the aimak centres. Road transport accounts for 72 per cent of freight tonnage, but only 31 per cent of freight turnover (Tables V.14 and V.15). Nearly 60 per cent of all freight carried by road is construction materials, and it has been estimated that the poor road conditions raises transport costs by approximately $100 million a year. Mongolia's road fleet is antiquated, inefficient or idle for lack of spare parts. It consists of just 40,000 vehicles, of which 27,000 are trucks, 2,500 buses, 6,000 cars and 4,000 agricultural vehicles, mainly tractors. There are also about 10,000 trailers. Until 1988, about 1,000 trucks were replaced annually, a very low rate of less than 4 per cent, but

Table V.14. Freight carried by type of transport, 1988-1991
(Million tonnes)

	1988	1989	1990	1991
Rail	17.9	16.8	14.5	10.3
Road	45.8	45.1	39.4	26.2
Air	0.014	0.01	0.01	0.004
River	0.044	0.056	0.072	0.000
Total	**63.7**	**62.0**	**54.0**	**36.5**

Source: State Statistical Office.

Table V.15. Freight turnover by type of transport, 1988-1991
(Million tonne kilometres)

	1988	1989	1990	1991
Rail	6,241.1	5,956.1	5,087.8	3,012.6
Road	2,162.2	2,097.9	1,870.9	1,362.5
Air	10.6	9.9	8.0	4.1
River	4.9	5.0	4.9	1.7
Total	**8,418.8**	**8,068.9**	**6,971.6**	**4,380.9**

Source: State Statistical Office.

since 1989 regular replacement has stopped due to hard currency shortages. Hence Mongolia's newest trucks are now five years old and almost 50 per cent of trucks are more than 10 years old. About one third of trucks and buses are currently inoperative for want of spare parts, tyres and batteries. One estimate suggests that a modernized fleet could save 25 per cent of fuel costs, a very important consideration given the drain on foreign exchange which fuel imports represent.

Mongolia's rail network consists of 1,815 kilometres of track plus another 200 kilometres of side tracks and shunt lines. The main rail artery runs north-south through Ulaanbaatar and Darhan, the two largest cities and industrial centres, with two main branch lines, one to the third city of Erdenet and a second to the Baga Nuur coalfield. Another line joins the eastern city of Choybalsan to the Russian rail network. The railway, which regularly shows an operating profit, has been built and run as a joint venture with the former USSR, and continues as a joint venture with the Russian Federation. The railways carry 28 per cent of all freight, including virtually all international cargo, and account for 69 per cent of freight turnover. But efficient use of the network suffers from a shortage of energy and locomotives, and a sub-optimal mix of rail cars. In 1990, 59 per cent of rail freight was domestic, but in 1991 domestic freight accounted for 69 per cent, as international trade slumped. Most of the domestic cargo is coal, mainly for power stations.

The gauge is the same as that of the former USSR, but wider than in China, and this difference will be an important constraint on Mongolia's future ability to transport freight internationally, since the route through China offers the shortest land route to the sea. While wheels are changed beneath passenger trains at the border with China, an operation which takes a few hours, freight is reloaded manually. Reloading times currently range from two weeks to two months per train, depending on the priority of the cargo. These times can be shortened dramatically; reloading at frontiers in Europe takes a matter of hours. With more efficient cargo handling, the recycling of container cars could double. The building of a new 1 million tonne reloading facility at the border town of Zamiin Uud has been suggested to improve the poor transhipment situation.

Mongolia has an extensive domestic air network which links the 21 main population centres and 160 smaller centres. Very little freight is moved by air, about 4,000 tonnes in 1991, most of which was mail, but the network is an important service for long distance passenger travel, carrying 830,000 passengers in 1990 and 610,000 passengers in 1991. The network is serviced by the national airline MIAT, which has 45 12-seater aircraft and 16 50-seater aircraft, most of which are at least 15 years old. In 1992, the shortage of fuel led to the cancellation of all internal flights for a week, after which a reduced service was resumed. Ulaanbaatar is serviced internationally by MIAT, Aeroflot and the Chinese airline CAAC, with flights to Moscow, Irkutsk and Beijing, the latter route being introduced in 1990. There were several flights a week to Moscow in the 1980s, but these were cut back to one a fortnight in 1992.

ANNEX A
STATISTICAL TABLES

Table A-1. Employment by sector, 1970-1991
(Thousands)

	1970	1980	1985	1986	1987	1988	1989	1990	1991[a/]
Total	**387.4**	**511.2**	**561.6**	**580.9**	**598.4**	**616.1**	**633.2**	**651.4**	**688.1**
Sector									
Material	312.3	388.3	413.2	426.6	435.5	443.3	451.4	468.8	492.3
Agriculture	181.9	202.7	187.0	185.8	184.8	183.6	186.0	178.3	180.4
Forestry	1.2	0.9	1.2	1.2	1.2	1.6	2.1	2.6	--
Industry	60.0	81.6	104.6	109.9	115.6	119.2	119.6	135.6	145.3
Construction	22.5	30.7	33.9	35.5	37.2	38.9	41.7	51.4	55.3
Transport	18.0	32.3	38.7	43.4	44.6	47.4	47.0	50.8	53.7
Communications	3.1	4.2	5.5	5.8	6.1	6.1	6.9	7.1	9.0
Trade (retail and wholesale)	25.4	35.0	41.7	44.4	45.4	46.0	47.5	42.4	44.1
Other material production	0.2	0.9	0.6	0.6	0.6	0.5	0.6	0.6	4.5
Non-material	75.1	122.9	148.4	154.3	162.9	172.8	181.8	182.6	195.8
Housing and municipal services	8.0	14.3	20.0	20.9	23.3	4.3	26.4	27.4	29.4
Science, research and development	3.7	9.0	10.3	10.7	11.3	12.9	14.1	12.9	13.6
Education, culture and arts	30.4	49.2	58.7	60.4	63.1	70.5	74.6	69.5	74.2
Health care, social security, and sports	20.2	32.0	37.3	39.7	42.2	42.9	44.7	44.1	46.3
Banking, finance, credit, and insurance	1.1	1.9	2.1	2.4	2.5	2.6	2.9	3.1	4.0
Government	8.1	11.5	13.9	13.9	13.9	12.8	12.3	20.8	23.0
Other non-material	3.6	5.0	6.1	6.3	6.6	6.8	6.8	4.9	5.3

Source: State Statistical Office.

a/ Provisional.

Table A-2. Gross industrial product by branch, 1987-1991
(Million tugrik, average 1991 prices)

	1987	1988	1989	1990	1991
Total industry	**16,658.4**	**16,961.8**	**17,982.1**	**17,183.5**	**13,730.9**
Electric and thermal energy	1,865.5	1,969.2	2,100.2	2,116.9	1,782.2
Fuel	650.4	708.7	684.8	617.3	477.2
Engineering and metal working	622.4	620.1	641.5	551.2	232.8
Non-ferrous metal	2,090.7	2,082.2	2,058.4	2,103.1	1,488.2
Building materials	1,797.2	1,848.8	1,905.3	1,859.5	664.6
Wood processing	1,211.3	1,186.0	1,241.2	1,034.6	556.5
Textiles	1,900.9	1,856.0	2,166.1	1,972.8	1,340.8
Clothing	758.7	757.8	878.7	807.9	629.7
Leather, fur, shoes	1,580.3	1,609.2	1,726.5	1,828.6	1,909.5
Printing	142.4	146.0	156.9	137.5	110.4
Glass, faience	59.3	65.7	75.0	62.6	41.3
Food	3,157.1	3,180.2	3,372.0	3,131.2	3,757.0
Chemical	599.5	702.3	745.8	715.9	275.4

Source: State Statistical Office.

Table A-3. Installed capacity and number of employees by branch, 1991

	Installed capacity (million tugriks)	Number of employees
Total industry	**7,326.3**	**97,797**
Electrical power	1,586.8	19,979
Fuel	323.1	4,431
Non ferrous metals	653.4	4,848
Engineering and metal-working	160.9	2,154
Chemicals	53.7	3.057
Construction materials	650.0	7,764
Timber and wood-working	246.0	8,653
Glass, china and pottery	24.7	520
Textiles	955.3	8,167
Clothing	220.3	13,749
Leather, fur and shoes	688.5	8,558
Printing	39.0	1,251
Food	1, 437.9	12,824
Other	132.4	1,842

Source: State Statistical Office.

Table A-4. Volume of gross industrial product per one tugrik of productive fixed assets, 1987-1991
(Tugrik)

	1987	1988	1989	1990	1991
Total industry	**0.56**	**0.54**	**0.52**	**0.37**	**0.38**
Electric and thermal energy	0.50	0.20	0.20	0.18	0.15
Fuel	0.30	0.31	0.27	0.22	0.21
Engineering and metal working	0.78	0.91	1.03	0.80	0.91
Non-ferrous metals	0.51	0.50	0.46	0.04	0.27
Building materials	0.45	0.44	0.39	0.33	0.24
Wood processing	0.79	0.82	0.75	0.49	0.47
Textiles	1.15	1.14	0.98	0.75	0.61
Clothing	1.56	1.36	1.33	1.26	1.06
Leather, fur, shoes	1.44	1.28	1.27	1.03	1.04
Printing	0.94	0.96	0.94	0.73	1.03
Glass, faience	0.89	0.99	1.03	0.82	1.51
Food	1.06	1.02	1.01	0.95	1.03

Source: State Statistical Office.

Table A-5. National consumer price index

	16 January 1991	31 December 1991	1 June 1992
Food beverages and tobacco	100.0	131.0	342.5
Of which:			
Meat and meat products	100.0	124.6	280.8
Dairy products	100.0	156.3	511.7
Grain and grain products	100.0	124.0	235.6
Potatoes	100.0	100.0	450.0
Chocolate	100.0	114.6	170.8
Sugar	100.0	100.0	975.0
Vodka	100.0	100.0	100.0
Clothing and fabrics	100.0	148.4	436.0
Men's suits and coats	100.0	174.5	321.9
Women's suits and dress	100.0	229.3	236.0
Men's and women's garments	100.0	173.5	318.7
Children's clothing	100.0	100.0	368.6
Shoes and boots	100.0	236.1	456.3
Rent and utilities	100.0	115.5	148.0
Household goods	100.0	209.6	586.1
Medical care	100.0	100.0	196.7
Transport and communications	100.0	137.3	218.5
Education and recreation	100.0	277.3	561.5
Other goods and services	100.0	152.3	341.7
Overall index	**100.0**	**152.7**	**340.1**

Source: State Statistical Office

ANNEX B
FOREIGN INVESTMENT LAW

THE MPR FOREIGN INVESTMENT LAW

The MPR Great People's Khural passed it on March 23, 1990. It enters into force on May 1, 1990.

ARTICLE 1
PURPOSE OF THE LAW

The purpose of the present Law shall be to establish a legal framework for foreign investment in the MPR on the basis of equality and mutual benefit, and setting up rules governing the relations arising from these activities.

ARTICLE 2
DEFINITIONS OF THE LAW

1. " A company with foreign capital participation " shall mean an enterprise or organization, the contribution to the initial capital of wich has been wholly or partly made by a foreign legal entity or foreign natural persons.

2. " A foreign participant" shall mean a foreign legal entity or foreign natural person.

3. " A Mongolian participant" shall mean an enterprise or organization or natural person of the MPR, that participates in the foreign investment activities in the MPR.

4. " Foundation documents" shall mean an agreement or treaty establishing a company with foreign capital participation and the charter of such a company.

ARTICLE 3
SPHERES OF INVESTMENT

1. Foreign participants may invest in any sector of the national economy, unless the MPR legislation stipulates otherwise.

2. Priority shall be given to foreign investments in the following areas:

a. export-oriented or import substituting production;
b. highly advanced and science-intensive production based on the use of modern techniques and technologies;
c. deep processing of natural resources and raw materials of agricultural origin and production of finished articles as well as geological prospecting;
d. development of economic infrastructure in the field of energy, roads, transport, communications and other spheres;
e. development of international tourist industry and all corresponding services.

ARTICLE 4
LEGAL GUARANTEES

1. Companies with foreign capital participation shall conduct their activities in accordance with the present Law and other legislation of the MPR.

2. The MPR shall protect the rights and interests of foreign participants in compliance with its legislation, internationally recognized norms, as well as the foundation documents of the company with foreign capital participation. Foreign investments in the MPR shall not be nationalized.

3. If provisions of the present Law are amended after the entry into force of the foundation documents of any company with foreign capital participation, it shall be up to companies with foreign capital participation to decide whether to apply the foundation documents or the amended provisions of the present Law.

4. Foreign participants shall have the following rights:

a. to take part in the management of any company with foreign capital participation;
b. to transfer their rights and obligations to other foreign or Mongolian participants;
c. to have profit in proportion to their share in the company's capital as well as to possess, use and dispose of profit in accordance with their wishes including the transfer of the profit abroad.

ARTICLE 5
FORMS OF INVESTMENT

1. Foreign and Mongolian participants can invest in the following forms:

a. cash in foreign and/or national currencies;
b. buildings, equipment, machinery, tools, components, spare parts etc;
c. patents, technology, know-how and technical services;
d. other mutually agreed forms of contributions.

2. Contributions of foreign and Mongolian participants to the charter fund shall be valid on the basis of prices to be agreed upon depending on world market prices.

ARTICLE 6
ESTABLISHING PROCEDURES OF COMPANIES WITH FOREIGN CAPITAL PARTICIPATION

1. To set up a company with foreign capital participation, its foreign and Mongolian participants shall submit an application and draft of the company's foundation documents to the MPR Council of Ministers. A permission authorising the establishment of the company shall be granted within 60 days upon the receipt of the application.

2. The duration term of the company with foreign capital participation and its extension shall be determined in the foundation documents.

3. Companies with foreign capital participation shall be subject to registration with the MPR Ministry of Finance.

ARTICLE 7
EXPORT, IMPORT ACTIVITIES AND SUPPLIES

1. Companies with foreign capital participation shall conduct their export, import operations related to their activities through/or in cooperation with foreign trade organizations of the MPR and/or themselves.

2. Companies with foreign capital participation shall settle their payments in Mongolian tugriks or other mutually agreed currencies on the basis of world market or agreed prices when buying raw and other materials needed for their activities from the domestic market and selling there their products.

3. Relevant national organizations shall render assistance to companies with foreign capital participation in procuring equipment, raw and other materials necessary for their activities.

ARTICLE 8
TAX, DUTY, AUDITING

1. Companies with foreign capital participation shall pay a differentiated tax from their profits reaped in Mongolian tugriks and/or in foreign currency into the MPR budget. However, the tax shall not exceed 40 per cent of the profit. Tax shall be paid in the same currency as the profit.

2. Companies with foreign capital participation may be exempted from profit tax in the first three / 3 / years of their activities.

3. A foreign participant shall be exempted from any tax in transferring its share of profit abroad.

4. Goods imported by a company with foreign capital participation for its production needs and its export products shall be exempted from customs duties.

5. Companies with foreign capital participation shall operate under the supervision of financial organizations of the MPR, unless their foundation documents stipulate otherwise.

6. Companies with foreign capital participation may have an account with the State bank of the MPR in Mongolian tugriks and/or any other currency.

ARTICLE 9
EXPLOITATION OF NATURAL RESOURCES

Companies with foreign capital participation in the territory of the MPR shall pay fees for the use of land, forest, water and other natural resources. They shall guarantee the environmental protection in conducting their activities.

ARTICLE 10
EMPLOYMENT, SALARIES AND SOCIAL INSURANCE OF EMPLOYEES

1. Companies with foreign capital participation shall recruit engineers, workers and other personnel on the basis of contracts.

2. Employees of companies with foreign capital participation shall pay income tax from their salaries and other income in accordance with the MPR legisiation.

3. Foreign employees of companies with foreign capital participation may transfer abroad tax-free their salaries and other income.

4. Social insurance of employees of companies with foreign capital participation shall be regulated by the MPR legislation, unless foundation documents of the company stipulate otherwise.

ARTICLE 11
SETTLEMENT OF DISPUTES

Any dispute that may arise in connection with the activities of a company with foreign capital participation between:

- this company and Mongolian state, cooperative, public organizations and enterprises;
- companies with foreign capital participation;
- participants of the company;
- this company and Mongolian citizens - shall be settled in courts and arbitration bodies of the MPR, unless foundation documents stipulate otherwise.

ARTICLE 12
MATERIAL RESPONSIBILITY

Companies with foreign capital participation shall be subject to material responsibility for any damage to the Mongolian State caused by their activities in violation of the provisions of the present Law and their foundation documents.

RESOLUTION OF THE GREAT PEOPLES KHURAL OF THE MPR

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The Government of the MPR resolutes the following:

1. The Ministry of Trade and Industry is instructed to:

a. carry out general policy regarding companies with foreign capital participation and coordinate its activities;
b. Follow the principles that urge foreign investors to make their first investment to companies with foreign capital participation in hard currency.
c. encourage companies with foreign capital participation and foreign investors to participate in currency auctions.
d. ellaborate and pass a procedure of the establishment and activity of a company with foreign capital participation together with ministries and special agencies concerned.

2. The foreign investment made to the production mentioned in the Annex 1 of this Resolution The establishment of a company with the initial capital of over 50 million tugriks or on 100 % foreign investment will be determined with the consent of MPR's Government.

3. The list of productions and branches where the foreign investment is banned or maximum share of a foreign participant is limited is approved in the Annex 2 of this Resolution.

4. The establishment of a company with foreign capital participation not mentioned in the provisions 2 and 3 of thus Resolution shall be decided by the Ministry of Trade and Industry on the basis of agreements with the Ministry of National Development and other organizations concerned.

5. In order to encourage Mongolian participants in the establishment of a company with foreign capital participation, particulariy, small scale and medium scale production, the Ministry of Finance and the Ministry of Trade and Industry are instructed to found a special fund equal to up to 100 % of the State export income and use it as a credit source of the Government.

6. In connetion with the adoption of this Resolution, the Resolution No.135 of the MPR's Council of the Ministers is considered invalid.

Annex 1.

THE LIST OF PRODUCTIONS WHERE THE CONSENT OF MPR's GOVERNMENT IS NECESSARY FOR FOREIGN INVESTMENT

1. Production of tobacco and alcoholic drinks;

2. Production of explosives and poisnous substances;

3. Prospecting, exploration and research of minerals and its production.

Annex 2.

THE LIST OF PRODUCTIONS AND BRANCHES WHERE FOREIGN INVESTMENT IS BANNED OR THE MAXIMUM SHARE OF FOREIGN INVESTMENT IS LIMITED.

1. Production and branchesd where foreign investment is banned:

- production connected with the State and civil defence
- telecommunication
- mass media, newspaper, journals, radio and TV
- possesion of gold and silver mines (if the element is main)

2. Productions and branches where the maximum share of foreign investment in charter fund is limited:

- exploration and production of minerals and agricultural raw materials (no more than 49 %)
- national culture and arts (no more than 30 %)

COMMENTARY ON FOREIGN INVESTMENT LAW OF THE MPR

Foreign investment shall be one of the most important prerequisites of the successful implementation of the MPR's social-economic development policy.

The major purposes of foreign investment are:

a. solution of the following tasks using advanced techniques and technology:
- production of industrial goods of high technological standards;
- increase of agricultural production output;
- enhanced processing of natural and mineral resources and raw materials of agricultural origin and production of finished articles;
- development of economic infrastructure including energy supply, roads, transport, communications, etc;

b. development of tourist industry and sanatoriums for local and foreign tourists, extension of all correspon-ding services;

c. training of highly qualified specialists;

d. improvement of management and organizational set-up;

e. expansion of research and scientific works.

DEFINITIONS OF THE LAW

1. " A foreign participant" shall mean a foreign legal body participating in investment activity, including industrial, trade, bank, finance, construction, transport, communication or service enterprise or institution, research institutes, private or joint-stock company or natural person.

2. " A Mongolian participant" shall mean a state or cooperative legal body or natural person participating in foreign investment activity.

3. Contract establishing an entity with foreign capital participation / hereinafter "entity"/ and the charter of an "entity" shall contain the following clauses:

- participants's names
- the name of the entity
- the location
- the duration of activity
- spheres of its activity
- total amount of the investment, capital contribution by each participant and forms of investment
- rights and obligations of the participants
- feasibility study
- other claises subject to mutual agreements

The following clauses shall be definitely indicated in the charter of the entity:

- balance sheet
- method of profit calculation and distribution
- terms of terminating the activity and procedure of dissolving the entity
- management and organization of the entity
- other issues inevitably to arise from the contract and further operation of the entity.

SPHERES OF INVESTMENT

The MPR gives priority to foreign investment which is in full compliance with the guidelines and conditions stipulated in paragraph 2 of Article 3 of the MPR's Foreign Investment Law / hereinafter "law"/. The foreign capital may be invested in the following areas:

- development of agricultural and food production with the aim of improving food supply, diversification of export resources, promotion of import substitution, which includes:
    - processing and production of meat and meat products
    - production of milk and related products
    - processing and storage of vegetables and reduction of their spoiling and waste
- production technology with reduced industrial waste with its effective utilization in agriculture/in cattle-breeding, plant growing/, wood processing
- production of consruction materials
    - mining and processing of mineral resources/ coal, copper,oil, zinc, magnesite. etc./
- development of biotechnological / microbiological / production

- development of tourist industry
- development of veterinary service
- production of medicines and related products
- expansion of light industry production output with the aim of diversification of export resources:

  - wool and cashmere products
  - worsted cloth
  - clothing
  - leather and fur products
  - footwear
  - carpets
  - pottery and glasswear
  - packaging equipment and materials
  - salvage utilization
  - production of machine spare parts
  - production of industrial equipment, its spare parts and components
  - production of electronic goods
  - transport and communication
  - solar and wind energy equipment.

LEGAL GUARANTEES

1. If provisions of Foreign Investment Law are amended after coming into force of the foundation documents of an entity with foreign investment, such an entity can carry out its activity in accordance with the foundation documents at its own discretion.

2. Any participant has rights to transfer, grant into inheritance or sell its share in the charter fund to foreign or Mongolian participants and to remit abroad the profit gained as a result from such activity. The rights and obligations related to the transferred share will be delegated to another participant.

CHARTER FUND

Charter fund is a total amount of investment contributions of foreign and Mongolian participants.

Required aggregate expenditures to implement the project shall be calculated by one or all parties concerned. The participants shall determine the total value of investment upon the evaluation of these expenditures in mutually agreed currency using the current exchange rate.

On the basis of the total amount of required capital investment, the foreign and Mongolian participants shall agree on their share in the charter fund.

ORGANIZATION AND REGISTRATION OF ENTITIES WITH FOREIGN CAPITAL PARTICIPATION

The application for the investment licence shall be filled in 4 copies, in English and in Mongolian and shall include:

- the participants's names, their respective nationalities and addresses;

- the name of the entity, the form of organization, the place of its registration, the location and the scope of its activity;
- the amount of the entity's assets, the capital contribution by each participant;
- the manner of after-tax profit distribution and loss compensation;
- the intended duration of the entity with foreign capital participation;
- organization and composition of the managing bodies;
- information about foreign participants's financial standing;
- feasibility study.

In case of an entity with 100 percent foreign capital investment there shall be no Mongolian participant. In case of a joint venture there shall be no restrictions on participants' share, either maximum or minimum.

Within two / 2 / months from the receipt of the application with the foundation documents the authorised Mongolian body shall communicate its decision to the entity. In case of positive decision Mongolian authorities shall issue an investment licence. If no written reply is given within this period the application for the investment licence shall be considered as rejected.

Depending on the importance of the branch or sector of investment and in respect of projects requiring large investments and a long period for construction or for recovery of the invested capital the duration of an entity with foreign investment shall be determined by mutual agreement between the participants and stated in the foundation documents.

In case of the extension of the duration of the entity, the participants shall file an application to this effect with Mongolian authorised bodies for consideration and approval, at least six / 6 / months prior to the expiry of the duration of the entity.

The duration of the entity with foreign capital participation shall commence from the date of the investment licence and the certificate of registration.

The entity with foreign capital participation shall be subject to registration with the MPR Ministry of Finance and the Ministry of Trade and Industry.

EXPORT, IMPORT, SUPPLY

1. Entities with foreign capital participation may conduct import and export operations but only in connection with the scope of their activity. The entity shall conduct at its own discretion such activities either itself or through Mongolian foreign trade organizations.

Goods exported and imported by the entity for its operation shall be free of customs duties. All other imported and exported products shall be subject to payments of customs duties currently in force in the MPR.

When buying raw and other materials from the domestic market and selling its products the entity may do this independently or through relevant Mongolian organizations.

Payments shall be settled in Mongolian tugriks or in other mutually agreed upon currency on the basis of the current world or agreed prices.

The conversion of foreign currencies into Mongolian currency and vice-versa for purposes of investment, remittance, transfer of capital abroad and business operations of the entity shall be effected at the current official exchange rate announced by the State Bank of the MPR.

3. Relevant Mongolian organizations shall assist entities with foreign capital participation by:

- providing transport facilities
- rendering the assistance of specialists and specialised organizations
- rendering communication service
- facilitating customs procedure etc.

TAXES, DUTIES, AUDITING

1. An entity with foreign capital participation shall be liable to pay a corporate income tax on its profits in the currency of the earned profit.

The taxable corporate income shall be net income in a tax-year after deduction of all costs and expenditures during this year. Expenditures shall cover costs of raw materials and energy, wages, salaries and fringe benefits paid to the personnel, amortization of fixed assets, costs of insurance of the assets of the entity.

An income tax shall be levied on an annual profit of the entity with foreign capital participation irrespective of the currency and shall not exceed 40 percent of the profit. The taxe rate to be levied to the entity with foreign investment shall not be higher than the rate for local entity. Depending on the branch of investment, the amount of invested capital, the level of profitability, unfavourable natural, economic and social conditions the entity shall pay a differentiated income taxes.

2. Taking into account the significance of the certain branch or sector of investment, the scale of its capital investment the entity with foreign capital participation may be exempted from income tax for up to three / 3 / year period starting from the first profit-making year.

In exceptional cases where encouragement of investment is needed the tax holiday period may be extended by the Mongolian authorities.

In the event of re-investment of profit the relevant part of the profit shall not be taxed.

There shall be no withholding tax on profits transferred abroad by the entity with foreign investment.

Goods exported and imported by the entity intented for its main operation shall be exempted from customs duties. All other imported, exported goods shall be subject to payment of such duties.

The entity with foreign capital participation shall open its account in Mongolian tugriks and/ or in any other currency with the State Bank of the MPR or abroad.

EXPLOITATION OF NATURAL RESOURCES

An entity with foreign invested capital shall be liable to take necessary steps for protection of the environment and shall pay roalty for the use of land, entrails of the earth, forest, water and natural resources in accordance with the laws currently in force in the MPR.

EMPLOYMENT, SALARIES AND SOCIAL WELFARE

Mongolian citizens shall be given priority in the recruitment of engineers, workers and other personnel for the entity with foreign capital participation.

Labour relations in such entity, including work hours, holidays, labour protection, labour discipline, wages and salaries, settlement of labour disputes shall be regulated in accordance with the Mongolian legislation, unless the foundation documents of the entity stipulate otherwise.

MATERIAL RESPONSIBILITY

An entity with foreign investment shall carry a material responsibility in the event it conducts any activity or commits any act which contradicts the terms of the MPR's Foreign Investment Law and its foundation documents.

The liability of the participants shall be limited to the amount of their contribution to the charter fund.

ANNEX C
TAX LAW

TAX LAW OF THE MONGOLIAN PEOPLE'S REPUBLIC

CHAPTER I

GENERAL PROVISIONS

Article 1. The Purpose of the Law

The main purpose of the law is to guarantee the social duty of enterprises, organizations and individuals involved in all forms of ownership to make an equal and fair contribution to the MPR's budget - the centralized fund of state's economic and social development, and to regulate relations arising from the carrying out of this duty.

Article 2. Legislation regulating tax relations in the MPR

Relations arising from the payment of taxes /hereinafter referred to as "the taxes"/ shall be regulated by this law and other legal acts issued in conformity with this law, unless international treaties of the MPR stipulate otherwise.

Article 3. Types of taxes

The taxation of the MPR shall consist of direct and indirect taxes. Direct taxes shall be imposed on the monetary income and property of enterprises, organizations and individuals.

Indirect taxes shall include turnover tax and payments for use of land and natural resources.

The taxes shall be paid in cash or by written order.

CHAPTER 2

Personal Income Tax

Article 4. Taxpayers.

The citizens of the MPR, foreign residents and stateless persons in the MPR shall pay income taxes, unless legislation and international treaties of the MPR stipulate otherwise.

Article 5. Income and Property to be imposed by taxes

The taxes shall be imposed on the following income and properties:

1. basic and additional salaries and wages, income in kind (recognized as salary,wage), non-cash income, lease, rend, services obtained, productivity bonuses, pensions and allowances;

2. income from activities and services rendered to enterprises ,organizations and individuals besides the main job;

3. shares received after enterprises and organizations are liquidated;

4. income of self-employed;

5. author's awards;

6. income received in foreign currencies;

7. inheritance in cash and in kind;

8. income from sale of private livestock and agricultural products;

9. other incomes except tax exemptions under Article 9 of this Law.

Article 6. Tax Rates

1. Taxes are levied on monthly income envisaged in Article 5 (1,6) at the following rates:

Monthly income (in tugriks)	Tax Rates
1001-1400	12.66 tgks plus 2.4% of the amount of income exceeding 1000 tugriks
1401-1800	22.26 tgks plus 2.6% -"- 1400 tgks
1801-2400	32.66 tgks plus 2.7% -"- 1800
2401-3000	48.86 tgks plus 2.9% -"- 2400 tgks
3001-4000	66.26 tgks plus 3.5 % -"- 3000 tgks
4001-5000	101.26 tgks plus 5.0% -"- 4000 tgks
5001-6000	151.26 tgks plus 10.0 % -"- 5000 tgks
6001-8000	251.26 tgks plus 20.0% -"- 6000 tgks
8001-10000	651.26 tgks plus 30.0 % -"- 8000 tgks
10001-12000	1251.26 tgks plus 40.0 % -"- 10000 tgks
12001- above	2051.26 plus 50.0% -"- 12000 tgks

Note: 1. The tax rate per month should not exceed 46 per cent of the total income.

2. According to the provisions 2-5; 7-9 of Article 5, the income up to 1000 tugriks shal be taxed at the rate given in provision 1 of this Article.

Awards for scientific. literary and art work estimated up to 3000 tugriks shall be taxed at the rate given in provision 2 of this Article, awards up to 60000 tugriks - at the rate of 3 per cent, awards estimated at 60001 and above shall be taxed at the rate of 5 per cent.

Article 7. Income from Self-employment or Contract work services

Income received from the contract work and services executed by families or groups at enterprises and organizations, income from the contract work executed by individuals according to the Civil Code shall be devided by the number of persons involved in the contract and the number of months with the aim to determine the monthly income per person wich shall be taxed at the rate given in provision 1 of Article 6 with final tax settlement to be done at the termination of the contract.

The procedure of taxation of self-employment income or other incomes which are difficult to calculate, shall be defined by the MPR Government.

Article 8. Income Tax of Mongolian citizens Employed Abroad.

Income tax of Mongolian citizens employed abroad and receiving their salaries from the MPR shall be determined by the MPR Government.

Article 9. Tax-free Incomes

The following categories of income shall be exempted from personal income tax:

1. monthly basic and additional salaries and wages, income in kind (recognised as salary, wage); income received from self-employment. work and services under contract; pensions and allowances up to 1000 tugriks;

2. wages and income of disabled persons of Group 1 and Group 2 for being blind, deaf and dumb;

3. children allowances and others , except of cases of temporary disability, pregnancy and after-birth;

4. all one-time awards except of productivity bonuses;

5. income from sales of products of private holdings for the state and local centralized procurement;

6. recompence for bodily injuries and health damages incurred to citizens during their work;

7. compensations for damages from insurance agencies to citizens ;

8. income from state credits and lottery, money borrowings;

9. gifts and money presents;

10. travel expenses and daily allowances;

11. money and in-kind donations for humanitarian charity funds of nation's and social significance.

CHAPTER 3

TAXATION OF ENTERPRISES AND ORGANIZATIONS

Article 10. Taxpayers

All enterprises and organizations, notwithstanding the form of their ownership, shall be the taxpayers.

Article 11. Taxable Income

1. The taxable income of the taxpayers shall be the amount remaining from the gross income after the costs of raw materials, basic and auxiliary materials, semi-processed products, energy, fuel, packaging, spare parts, steam and water, transport expenses, outside work and services, social security, payments for use of land and natural resources have been deducted.

2. The turnover taxes shall be levied on sale of spirit, alcohol, wine, tobacco, jewellery made out of gold, silver, precious metals and stones.

Article 12. Tax Rates

1. Annual income of enterprises and organizations shall be taxed at the following rates:

0-1000000	8%
1000001-5000000	80.0 thousand tgks plus 15 % of the amount exceeding 1 million tgks
5000001-10000000	680.0 thousand tgks plus 22 % -"- 5 mln tgks
10000001-20000000	1780.0 thousand tgks plus 30 % -"- 10 mln tgks
20000001-30000000	4780.0 thousand tgks plus 38 % -"- 20 mln tgks
30000001-above	8580.0 thousand tgks plus 46 % -"- 30 mln tgks

Note: 1. In order to ensure equal economic conditions and balanced development the income of enterprises and organizations wich own the state property could be taxed at the rate increased by 20 units the above level by the MPR Government's coordination decision

2. Enterprises with foreign capital participation shall be taxed as above. Nevertheless, the income taxes shall not exceed 40 % of their profit.

3. Turnover taxes and taxes for use of land and natural resources will be set by the MPR Government.

Article 13. Tax Rebates.

1. Taxable income shall be reduced by:

   a. up to 60 % of the amount of the taxpayers's own capital and longterm bank credit payment wich have been invested during the respective year for production of highly efficient new products, designing, testing and introduction into production of advanced techniques and technologies, and for training of specialist;

   b. the amount spent on ensuring the ecological balance;

   c. contributions to humanitarian charity funds of nation's and social significance.

2. The taxes could be reduced by the following percentage:

   a. taxes imposed on the income of agricultural enterprises - up to 60 %;

   b. taxes imposed on meat, milk, flour, bread manufacturers - up to 60 %;

   c. taxes imposed on enterprises and organizations with disabled employees - by the percentage of disabled on the payroll;

   d. taxes imposed on small-scale enterprises considered as such by the MPR legislation for 2 year from the commencement of production and services - up to 50 %.

3. The Ministry of Finance and the executive administrations of the local People's Khurai shall have the right to reduce the taxes in compliance with this Article.

CHAPTER 4

TAX PAYMENT

Article 14. Tax payment procedure

Enterprises, organizations and individuals shall pay income taxes to the appropriate budget and submit a report at least twice per month.

The MPR Government will decide the distribution of income / profits/ taxes imposed on entities with foreign capital participation and on the state enterprises and organizations to the state and local budgets.

Self-employed persons and citizens with additional income on a non-permanent basis shall pay their income taxes quarterly to a local budget. The annual income tax payment shall be made on the basis of income-tax definition form.

Article 15. Rights And Duties Of Taxpayers

1. Taxpayers shall have the following rights:

   a. to enjoy tax rebates and exemptions according to this law;

   b. to make a complaint to administrative bodies and courts, should the taxes imposed be considered groudless.

The complaint shall not be a reason for non-payment of the taxes.

Payment of the taxes could be suspended by the decision of a court investigating this complaint.

2. Taxpayers shall have the following duties:

   a. the enterprises and organizations should send the shedule of monthly and quarterly tax payments to the state and local budgets for the coming fiscal year to the appropriate financial organizations 2 months in adva ce at the end of the fiscal year; self-employed persons should send the income-tax definition form which defines the calculation of taxes to the local budget, to the financial organizations within 21 days after the fiscal year begins;

   b. to report one's own income truthfully and pay the taxes within the prescribed time limit, to provide the financial organization with the corresponding reports;

   c. to inform the appropriate financial organizations about the reasons and calculation of tax rebates to be made;

   d. to take immediate measures for corrections of infringements and deficiencies revealed by the tax control agencies.

Article 16. Tax Control

The tax control will be carried out by the MPR Ministry of Finance / state tax agency/ and executive administrations of the local People's Khural. The Charter of the State Tax Agency will be approved by the MPR Government.

Article 17. The penalties for Taxpayers

The following penalties shall be borne by the State Tax Agency for the violation of the tax legislation:

1. should the taxable income be reduced intentionally or hidden, the tax payment shall be recovered and a fine equal to it shall be imposed;

2. for each day of tax payment delay, 1 % of the tax not paid completely, will be paid as a forfeit;

3. the taxpayers, who do not face the criminal responsibility for being self-employed in production and services banned by the MPR legislation, will be fined from 700 to 1000 tugriks with the confiscation of means of production and services and the income received;

4. should the taxpayers be engaged in production and services not banned by the MPR legislation, without appropriate licence, they shall be fined from 500 to 800 tugriks with the confiscation of income received;

5. those, who evade paying the taxes and fines, shall be fined from 500 to 1000 tugriks.

ANNEX D
THE APPROVED AND/OR OPERATIONAL TECHNICAL COOPERATION PROJECTS OF UNIDO

Project Number	Backstopping Responsibility	All.Acc.Code	Project Title
DP/MON/88/008*	IO/T/MET	J13207	Establishment of a mineral processing technological centre of mining industry
SI/MON/90/801	IO/T/ENG	J13318	Immediate technical assistance in laboratory tests for adopting a wind generator type for pilot production
US/MON/91/105	IO/T/CHEM	J13422	Preparatory assistance for the industrial extraction of indigenous medicinal plants and production of plant derived pharmaceuticals
DP/MON/86/002*	IO/T/CHEM	J13428	Establishment of a mineral pigments facility in Ulaanbaatar (continuation of DP/MON/82/005)

* Large-scale project (= total allotment $150,000 or above)
** Total allotment $1 million or above

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