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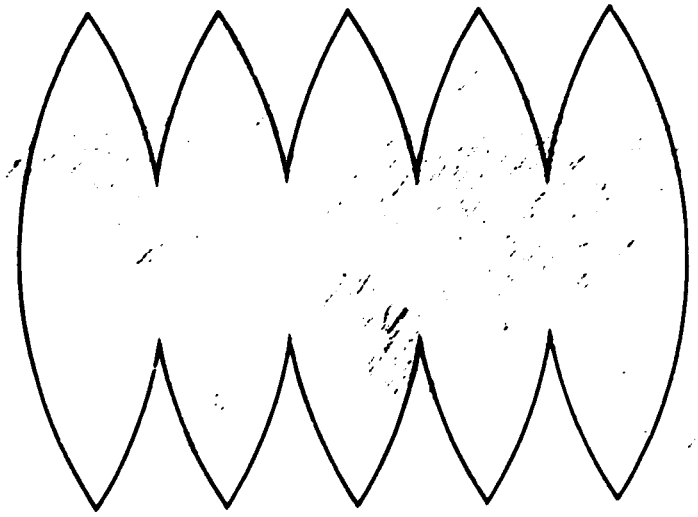

THE ECONOMIC ENVIRONMENT

STRUCTURE AND PERFORMANCE OF MANUFACTURING

INDUSTRY BRANCH PROFILES

INDUSTRIAL POLICIES, STRATEGIES AND INSTITUTIONS

RESOURCES FOR INDUSTRY

INVESTMENT OPPORTUNITIES

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CZECHOSLOVAKIA

CZECHOSLOVAKIA

Industrial transformation and regeneration

INDUSTRIAL DEVELOPMENT REVIEW SERIES

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PREFACE

This Industrial Development Review of Czechoslovakia is part of a 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. It is known from experience that readily available reference material on the industrial sector is eagerly sought. The favourable responses received from regular readers both inside and outside UNIDO have facilitated extension of the scope of the Reviews in successive issues.

The scope and dimensions of the sales series of the Reviews are designed to accommodate the needs of a wide readership in the international industrial community associated with industry, finance, trade, business, research and government. The Reviews aim at laying the groundwork for undertaking in-depth analyses of specific aspects of industrial policies, strategies and programmes and at providing a basis for informed discussion of industrial development trends and policies.

The Reviews are also intended to strengthen the Organization's relationship with the private sector. By acquiring a wide readership for this series, UNIDO hopes to provide new and pertinent information on the role of industry: information that is essential to understanding and accelerating the process of industrialization.

This Review comprises four Chapters. Chapter I presents an overview of the economy of Czechoslovakia and analyses the economic environment, with special emphasis being given to the scope and implications of the economic transformation currently in progress. The policy framework for industrial development and the investment climate are examined in Chapter II. The structure and performance of the manufacturing sector are analysed in Chapter III with particular reference to value added, output, employment, productivity, wages and salaries, international trade, investment and financing patterns, industrial location and regional development perspectives. Chapter IV examines the retrospects and prospects of key industrial branches. Data on industrial trends are presented in Annex A. The Review also furnishes information pertaining to industrial investment procedures, contact points for investors, economic prospects, firms selected for privatization and Czechoslovakia's trade relations with western European countries in a set of Annexes.

This Review is based on information available as at June 1992.

EXPLANATORY NOTES

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 (1990-1991) indicate the full period, including the beginning and the end years.

In this publication, references to the Federal Republic of Germany and the German Democratic Republic indicate the period prior to unification of the two German States, on 3 October 1990. As of that date, the designation "Germany" is used. In Tables and listings, the former component States are listed under "G": Germany, Federal Republic of; German Democratic Republic.

In Tables:

Totals may not add precisely because of rounding.
Two 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:

BOD	Biochemical oxygen demand
CMEA	Council for Mutual Economic Assistance
CNC	Computer numerically controlled
COMFAR	Computer Model for Feasibility Analysis and Reporting
DMEs	Developed market economies
EBRD	European Bank for Reconstruction and Development
EC	European Community
ECE	United Nations Economic Commission for Europe
EFTA	European Free Trade Association
FAO	Food and Agricultural Organization of the United Nations
FDI	Foreign direct investment
FSO	Federal Statistical Office
GATT	General Agreement on Tariffs and Trade
GDP	Gross domestic product
GFCF	Gross fixed capital formation
GNP	Gross national product
IIASA	International Institute for Applied Systems Analysis
IMF	International Monetary Fund
INFOSTAT	Institute of Informatics and Statistics
IPFs	Investment privatization funds
ISIC	International Standard Industrial Classification
Kcs	Koruna československá
MPS	Material Product System
NMP	Net material product
OECD	Organization for Economic Cooperation and Development
SITC	Standard International Trade Classification
SOEs	State-owned enterprises
UNIDO	United Nations Industrial Development Organization
VAT	Value added tax

BASIC INDICATORS

BASIC INDICATORS I: THE ECONOMY

Gross material product (1991)	:	Kcs 545.2 billion[a/]
Gross domestic product (1991)	:	Kcs 586.9 billion[b/] $83.8 billion[b/]
GDP per capita (1991)	:	$5,400[c/]
GNP per capita (1990)	:	$3,140[d/]
Population (1991)	:	15.6 million
Labour force (1991)	:	7.9 million
Total employment (1991)	:	7.7 million

Rate of unemployment (Percentage) :

1989	1990	1991
0.1	1.0	6.6

Growth of GDP (Percentage) :

1980-1987	1987	1988	1989	1990	1991[b/]
2.0	1.8	2.0	2.0	-1.7	-15.9

Structure of GDP (Percentage) :

	1970	1980	1990
Agriculture	10.1	7.7	7.2
Industry	48.5	49.7	49.4
Construction	9.0	9.1	8.9
Trade	11.7	12.9	11.6
Transport	3.9	4.4	4.4
Other services	16.8	16.2	18.5

	1989	1990	1991
Exports ($ billion) :	13.3	11.7	11.5
Imports ($ billion) :	13.7	13.2	10.5
Balance of trade ($ billion) :	-0.37	-1.5	1.00
Current account ($ billion) :	0.44	-1.10	0.36
External debt ($ billion)[e/] :	7.9	8.1	9.4
Debt service as percentage of exports:	20.4	13.8	13.9
Foreign reserves ($ billion)[e/] :	2.39	1.21	3.30
Official exchange rate (Kcs equivalents to $1) :	14.29	28.00	27.84
Consumer prices (Percentage change) :	1.4	10.0	55.0

a/ In constant 1980 prices.
b/ Estimate.
c/ In constant 1980 prices. Converted at the purchasing power parity rate of Kcs 7.0 per $1.
d/ World Bank, *World Development Report 1992* (Washington D.C., March 1992).
e/ End of period.

BASIC INDICATORS II: THE INDUSTRIAL SECTOR

Industrial value added (1991) : Kcs 310.4 billion[a/] ($28.4 billion)[b/]

Industrial employment (1991) : 2.41 million

MVA (1991) : Kcs 272.2 billion[a/] ($24.9 billion)[b/]

MVA per capita (1991) : $1,600[b/]

Growth of industrial value added (Percentage) :

1980-1987	1988	1989	1990	1991[c/]
2.8	2.2	0.5	-3.4	-19.0

Structure of industrial value added (Percentage) :

	1970	1980	1990
Mining	10.6	7.5	5.8
Energy	5.9	5.9	5.9
Metallurgy	12.2	10.5	9.3
Engineering	29.1	34.6	39.5
Building materials	4.3	3.9	3.3
Chemical industry	10.1	11.7	11.1
Light industry	15.2	14.5	14.2
Food industry	9.5	7.9	7.3
Other manufacturing	3.3	3.5	3.6

Share of industrial exports in total exports (January-June 1991) : 83 per cent

Share of industrial imports in total imports (January-June 1991) : 49 per cent

Structure of manufactured exports and imports (1990) (Percentage) :

	Exports	Imports
Food processing	3.3	9.0
Textiles, leather, footwear	8.0	3.5
Wood products, furniture	1.5	0.4
Paper, printing, publishing	1.0	0.6
Chemical products	9.4	12.0
Non-metallic mineral products	3.4	1.8
Iron, steel, other metals	9.0	11.0
Machinery and equipment	62.9	61.3
Miscellaneous products	1.5	0.4

Gross fixed capital formation (1989):

	Manufacturing	All industry
- Billion current Kcs	48.6	65.9
- As percentage of value added	20.7	23.1

Producer prices (Percentage change) :

1989	1990	Jan.-March 1991	April-June 1991	July-Dec. 1991
-0.7	4.5	39.8	9.6	0.3

a/ In constant 1980 prices.
b/ Converted at the industrial purchasing power parity rate of Kcs 10.94 per $1.
c/ Estimate.

BASIC INDICATORS III: SELECTED INDICATORS OF CZECH AND SLOVAK REPUBLICS

Indicator	Unit	Year		Czech Republic	Slovak Republic
Population	Million	1991		10.3	5.3
	Share in total (Percentage)			66.0	34.0
GDP	Constant 1984 Kcs billion	1991		430.7	180.7
	Share in total (Percentage)			70.4	29.6
Growth of GDP	Percentage	1988		2.8	1.9
		1989		1.5	1.2
		1990		-1.9	-1.3
		1991		-14.4	-16.4
Structure of GDP by sector of origin	Percentage	1991			
			Agriculture	6.1	7.1
			Industry	51.6	48.5
			Construction	8.7	9.2
			Other	33.6	35.2
Gross industrial output	Constant 1984 Kcs billion	1991		506.4	199.5
	Share in total (Percentage)			71.7	28.3
Growth of gross industrial output	Percentage	1988		1.9	2.2
		1989		1.3	-0.7
		1990		-3.4	-4.1
		1991		-19.7	-24.7
Exports	Constant 1984 Kcs billion	1987		180.1	69.2
		1991		165.2	59.9
	Share in total (Percentage)	1987		72.2	27.8
		1991		73.4	26.6
Imports	Constant 1984 Kcs billion	1987		164.3	78.6
		1991		132.8	54.3
	Share in total (Percentage)	1987		67.6	32.4
		1991		71.0	29.0

BASIC INDICATORS IV: INTER-COUNTRY COMPARISON OF SELECTED INDICATORS

Indicator	Unit	Czechoslovakia	Austria	Germany	Hungary	Poland
Population (mid-1990)	Million	15.6	7.7	79.5	10.6	38.2
Area	Thousand square km	128	84	357	93	313
GNP per capita (1990)	$	3,140	19,060	22,320	2,780	1,690
Average annual growth rate of GDP (1980-1990)	Percentage	1.4	2.1	2.1	1.3	1.8
Government consumption (1990)	Percentage of GDP	21	18	18	11	7
Private consumption (1990)	Percentage of GDP	51	55	54	62	54
Gross domestic investment (1990)	Percentage of GDP	30	25	22	23	31
Gross domestic savings (1990)	Percentage of GDP	28	27	28	27	39
Exports of goods and non-factor services (1990)	Percentage of GDP	33	41	32	33	26
Exports (1990)	$ billion	11.7	41.8	397.9	9.5	13.6
Imports (1990)	$ billion	13.2	49.9	341.2	8.6	9.7
Current account balance after official transfers (1990)	$ billion	-1.1	0.95	46.8	0.23	3.1
Gross international reserves (1990)	$ million	1,207	17,228	104,547	1,186	4,674
Total external debt (1990)	$ billion	8.1	..	..	21.3	49.4
Total debt service (1990)	Percentage of exports of goods and services	13.8	..	..	15.2	1.6
OECD imports of manufactured goods (1990)	$ billion	3.3	28.7	280.7	3.4	4.5

Source: World Bank, *World Development Report 1992* (Washington D.C., 31 March 1992); and Federal Statistical Office, Prague.

SUMMARY

Recent economic developments

The collapse of the long-established political order in Czechoslovakia in November 1989 has brought in its wake a thorough review of the country's economic structure and performance, and a fundamental shift in the orientation of economic policy. As a result of these developments, the economy of Czechoslovakia is currently undergoing a far-reaching transformation. From being a centrally planned economy dominated by publicly owned enterprises and integrated into the essentially closed trading system of the Council for Mutual Economic Assistance (CMEA), it is now being transformed into a largely privatized and market-based economy with rapidly growing and diversified international trade and investment links.

The need for a transition to a market economy was recognized at a very early stage by the new government. Within only a few months of the initial interim "Government of National Understanding" being replaced by a democratically elected government in June 1990, the Federal Parliament adopted a comprehensive set of economic reform proposals in October 1990. This programme, known as the "Economic Reform Scenario", called for an extensive liberalization, deregulation and privatization of the economy within as short a space of time as possible. At the same time, it contained a commitment to the maintenance of Czechoslovakia's economic stability through the pursuit of appropriate monetary, fiscal, exchange rate, price and wage policies.

The implementation of the macroeconomic reform programme commenced on 1 January 1991 with a radical liberalization of domestic prices and external trade. The impact of these measures on the Czechoslovak economy was exacerbated by the fact that their introduction coincided with the effective dissolution of the CMEA, with intra-CMEA trade being conducted at world prices and settled in convertible currencies from that date onwards. The short term effect of these developments was extremely severe, and the first half of 1991 witnessed sharp increases in unemployment and inflation as well as a significant decline in industrial production. The situation stabilized itself to some extent in the second half of the year, however, with only marginal monthly changes being recorded in inflation, unemployment and output.

Despite the loss of its established export markets and import suppliers caused by the collapse of the CMEA, Czechoslovakia's external trade and payments position remained favourable in 1991. This was due mainly to the fact that the fall in its exports to its former CMEA partners was offset both by the penetration of new markets, especially in western Europe, and by a sharp decline in imports caused by the deteriorating domestic economic situation. Consequently, the country was able to record small surpluses on both its merchandise trade and current account. With financial assistance from the IMF and private investments contributing to a significant net inflow of foreign capital, Czechoslovakia ended the year with foreign reserves of $3.3 billion, representing four months of convertible currency imports. Its gross external debt, meanwhile, was estimated at a comparatively modest $9.4 billion.

Economic structure

The structure of Czechoslovakia's economy has been determined by the role of industrial supplier it was assigned to play in the CMEA during the past four decades. This resulted in a continuous expansion of the country's already large industrial sector (comprising mining, manufacturing and energy), and by 1990 the share of industrial output in GDP amounted to almost 50 per cent, well above the levels prevailing in the developed market economies. Within the industrial sector, moreover, particular emphasis was placed on the development of engineering and other heavy manufacturing activities. The share of light industries has been relatively low from the outset, and has declined further during the past two decades.

By contrast, the non-industrial sectors play a relatively small role in the Czechoslovak economy. The share of agriculture in GDP has declined from approximately 10 per cent to only about 7 per cent during the past 20 years, while the share of construction has remained steady at about 9 per cent of GDP. The combined share of trade, transport and services has customarily amounted to 30-35 per cent of GDP, with housing, education, and health services playing a particularly significant role as an integral part of the country's social welfare policy.

Economic policy

One of the prime objectives of the economic reforms being introduced by the government is to stimulate a shift in Czechoslovakia's economic structure through a weeding out of inefficient industrial enterprises. Such a restructuring at both the sectoral and enterprise levels will be essential if Czechoslovakia is to build up its international competitiveness and increase its trade with the market economies. This process of structural adjustment will be neither easy nor painless in the short term, and the contraction of national income, decline in industrial production and increase in unemployment recorded in 1990-91 is likely to persist at least until the end of 1992. Most reasonable projections anticipate a gradual recovery from 1993 onwards, however, as the initial shocks of the reforms wear off. By the mid-1990s the effects of the reforms are expected to become apparent, with the contribution to GDP of the industrial sector in general and the heavy manufacturing industries in particular having contracted markedly.

The principal measures employed by the government to achieve its goal of industrial restructuring and regeneration are mass privatization and the encouragement of private, including foreign, investment. The privatization scheme comprises three separate programmes involving the restitution of property to former owners, the sale of small scale enterprises to private entrepreneurs, and the divestment of state holdings in large scale enterprises to private shareholders. The procedure employed for the large scale privatization programme is particularly innovative, and involves the sale of vouchers or coupons at a nominal price to Czechoslovak citizens, who may use these vouchers to acquire shares in the companies to be privatized.

The government's privatization programmes are being accompanied by a variety of measures to attract increased private investment, especially from foreign investors. Numerous investment incentives, in the form of non-interest bearing loans, non-returnable financial grants, tax relief, and State guarantees for corporate bank loans, have been made available both by the Central Government and by the Governments of the Czech and Slovak Republics since 1990. Many of these incentives have been formalized in the Commercial Code of November 1991, which came into effect on 1 January 1992. A particular feature of this code, which provides a comprehensive legal framework governing commercial activities by private entrepreneurs, is that it provides foreign investors with the same benefits granted to domestic investors. In particular, it abolishes the need for private investors to seek official approval of their investment projects. Henceforth, a simple listing of the enterprise in the company register is sufficient.

After a relatively slow start in 1990-91, foreign investment flows have increased significantly after the introduction of the Commercial Code. Data compiled by the Federal Statistical Office suggest that 8,691 enterprises with foreign capital participation had been registered in Czechoslovakia by the end of March 1992. Of this total, 6,680 were located in the Czech Republic and 2,011 in the Slovak Republic. Germany accounted for the largest number of these investments, followed by Austria, Switzerland, Italy, United States, Netherlands, United Kingdom, Sweden, France and Hungary.

The industrial sector

The high priority accorded for well over four decades to the promotion of the industrial sector in general and the engineering industry in particular has left Czechoslovakia with an excessively large

share of heavy industry in its economic structure. This pattern of industrial development became unsustainable in the 1980s, when the industrial sector became increasingly dependent on low quality domestic inputs and extensive government subsidies. The situation was exacerbated by the political and economic restrictions imposed on the country's external economic relations, which prevented the transfer of technology from the developed market economies (DMEs) and thereby widened the gap between the level of technology and efficiency prevailing in Czechoslovakia and the DMEs. Faced with these constraints, the country was unable to take full advantage of its rich engineering traditions.

The deceleration in the rate of growth of industrial output during the 1980s was accompanied by a steady slowdown in the growth of labour productivity. The growing dependence on obsolete capital stock also prompted a decline in capital productivity. Despite government subsidies, the unit material costs increased in the 1980s as a result of the rising material intensity of the production processes employed by the Czechoslovak industries. The virtually complete absence of any competitive pressures, either in the domestic market or in the established markets of the former Soviet Union and the CMEA, also facilitated the increase in industrial inefficiency.

The relatively high share of industrial goods in Czechoslovakia's exports (83 per cent) and the much lower proportion of such products in the country's imports (49 per cent) confirm the role of a manufacturing economy assigned to Czechoslovakia in relation to the former Soviet Union and CMEA countries. This pattern is being reversed in relation to the countries of the Organization for Economic Co-operation and Development (OECD) and the European Community (EC). While heralding a territorial diversification of Czechoslovakia's external trade, the recent shift in regional trade links does not imply a complete reversal of the former trade patterns. Despite the recent changes in the direction of trade, the markets of central and eastern Europe may regain much of their erstwhile importance in the foreseeable future.

The radical transition to a market economy has had a profound impact on industrial employment. By 1990 the share of manufacturing employment in industrial employment had fallen to about 88.1 per cent from 91.3 per cent in 1970. According to forecasts prepared by the Federal Statistical Office of Czechoslovakia, the share of non-electrical machinery in industrial employment will fall significantly in the first half of the 1990s. The newly acquired freedoms permitting the personal choice of training and employment opportunities will have to be supported by a system of occupational counselling suited to the new requirements of the restructured industries. There is also a need to monitor the labour market and disseminate information on job opportunities, with a view to providing signals to the educational and training institutions.

As the programme of large-scale privatization gets under way, the high concentration of ownership of industrial assets is being dismantled. The denationalization and commercialization of the large State-run industrial enterprises, coupled with organizational and financial restructuring, are likely to result in a balanced industrial structure with a predominant role being played by small- and medium-scale enterprises.

The geographical distribution of industries is characterized by significant imbalances, with 77 per cent of the country's gross industrial output being produced by the Czech Republic. The less favourable resource endowment of the Slovak Republic led to its substantially lower share in total domestic sales and exports. The most important industries in the Slovak Republic are the metalworking industry and the chemical and rubber industries, largely as a result of the concentration of military production in the Republic. The total cost of converting military production into civilian use is estimated at $780 million. There are indications that military production may not be completely given up until alternative employment opportunities have been generated in other industrial subsectors.

Food processing

Following a faltering average annual growth of 2.6 per cent during 1976-1980, compared with around 5 per cent in 1971-1975, the food industry's output, excluding beverages and tobacco, remained low at 1.5 per cent in the first half of the 1980s and plunged to a sluggish annual average growth rate of less than 1 per cent in 1986-1990. The wide divergence between what Czechoslovakia's food consumers want and what the economy can deliver necessitates an urgent re-assessment of the position of the food processing industries and an overhaul of the technologically obsolescent capital stock of this industry. The adoption of modern technology is crucial for a revival of the industry, where computerized systems to carry out specific tasks, such as the "pick and place devices" in common use in OECD countries, are virtually unknown. Czechoslovakia's still largely untapped market for sophisticated food processing machinery and equipment provides a considerable opportunity for foreign manufacturers of such equipment.

Product development is crucial in the future development of the food processing industry. Convenience is a decisive element of new product introductions, leading to the development of an increasing range of refrigerated, frozen and shelf-stable processed foods. These include ready-to-eat pastas, salads and prepared meats. The increased use of microwave ovens has created a demand for frozen products, especially in western Europe. Food manufacturers throughout the world are also trying to capture the world-wide "weight-loss" market. This has spurred new competition in the production of low calorie food products, with new technologies constantly creating new opportunities for new products.

With its famous Pilsner Urquell and Budweiser brands, Czechoslovakia also has a strong potential as an international beer producer. Although both domestic demand and exports have declined in recent years, the future looks bright. Considerable efforts are consequently being made to develop the beer industry into a major earner of export revenues.

Textiles and clothing

The textile and clothing industry grew at a relatively slow average annual rate of 1.5 per cent during 1986-1990. In the face of depressed demand, rising raw material prices and the insolvency of many enterprises, the industry's growth rate declined further in 1991. The recent economic reforms have had a significant effect on the production of both textiles and clothing. The abolition of subsidies and liberalization of prices have resulted in a drastic fall in domestic demand for textiles. In the current phase of industrial restructuring, some 30-50 per cent of Czechoslovakia's producers of textiles and clothing are on the verge of collapse.

The need to create a competitive dominance is a strategic requirement, the achievement of which will necessitate a significant improvement in the efficiency and technological performance of Czechoslovakia's textile and clothing industry. In view of the fundamental weaknesses of much of the existing industry, this will necessarily entail an extensive modernization of the plant and equipment currently in use. In many cases, this will only be feasible in connection with a comprehensive overhaul of the prevailing production facilities, and the creation of new manufacturing capabilities which existing plants do not possess.

The *per capita* consumption of clothing in Czechoslovakia is comparatively low by international standards. During the current phase of economic and industrial deceleration it is difficult to envisage any significant increase in the *per capita* consumption of textile products. However, the economy's anticipated medium-term recovery in response to new market impulses is likely to generate a rise in real income, leading to a corresponding increase in *per capita* consumption of textiles.

The process of industrial modernization faces a severe financial constraint, with the initiatives of private entrepreneurs being threatened by a lack of resources. This constraint could be breached by attracting foreign participation in corporate equity, although the experience of developing

countries and newly industrializing economies suggests that foreign direct investment has not been a major feature of the textile and clothing industry. Alternatively, Czechoslovakia could attempt to benefit from the increasing tendency of big firms to opt for international sourcing.

Acquiring a comparative advantage in international sourcing does not come through technology alone. In view of other determinants of competitiveness, the pace of technological change in the global textile industry is slowing. Despite significant advances in automation, spinning and weaving, the level of computerization in clothing production is still low, implying that big textile groups in developed countries are still vulnerable to low cost competition. Given Czechoslovakia's textile tradition and the relatively low wages a potential comparative advantage clearly exists.

Leather and footwear

Production of leather and footwear is estimated to have fallen by more than 30 per cent in real terms during 1991, due more to a sharp fall in internal demand than exports, and is expected to remain subdued in the near future. Leather goods and shoes account for around 1 per cent of industrial exports. However, the export orientation of the leather industry, as measured by the share of exports in production, rose from 16.8 per cent in 1980 to 22 per cent in the late 1980s. The former CMEA countries were the main export destinations of shoe and leather exports.

Foreign investment is being eagerly sought by the government. Several negotiations are under way with respect to various forms of cooperation, particularly joint ventures and licensing. Bata International of Toronto has expressed strong interest in cooperating with the Czechoslovak manufacturer Svit in the modernization of the latter's shoe factories. Recently concluded negotiations between the government and Thomas Bata, whose ancestor founded the industry at Zlin in 1894, will determine the extent of joint venture initiatives towards rationalization of the industry.

The leather and footwear industry is constrained by a serious shortage of capital, the indebtedness of many enterprises, obsolete technology and growing demands for ecologically sustainable production methods. These constraints have already resulted in the termination of production in many factories. However, the country's relatively cheap labour and the skills developed over the years are likely to attract investors.

A significant feature of the global leather industry over the last two decades has been a surge in the popularity of leather clothing. This was to a large extent engineered by the leather industry itself in order to ward off the growing threat to the shoe upper leather market in the 1990s. This threat failed to materialize, however, as customers retained their preference for real leather. The result has been a sharp rise in demand for leather products.

The growing popularity of leather products has been matched by a significant acceleration in the pace and scale of technological change in the leather industry, challenging even the most adaptable enterprises. Many enterprises throughout the world are faced not only with an erosion of their traditional markets, but also with soaring costs of production and strict legislation on environmental pollution. These pressures have even led to the closure and consolidation of a number of tanneries. Czechoslovakia's leather industry will have to keep abreast of all of these developments if it is to justify its existence in a market economy.

Wood and paper products

The wood and paper industries of Czechoslovakia are relatively large and well developed. Three of the country's paper mills have annual production capacities of more than 200,000 tonnes. With the exception of a small sulphite pulp mill at Gremerska Horka, which has been closed down because of its failure to comply with environmental regulations, all other pulp and paper mills are operating at high rates of capacity utilization. However, small non-integrated mills with obsolete

capital stock are threatened by their exposure to market forces. Although prices of basic consumer goods such as toilet paper, hygienic paper products, etc. are State-controlled, producer prices of pulp and paper are not regulated. In view of the availability of considerable domestic supplies of raw materials, imports of waste paper are restricted. *Per capita* consumption of paper and board in Czechoslovakia stands at 77.8 kg, compared with an average of about 40 kg in eastern Europe as a whole. In western Europe the average *per capita* consumption of paper is about 150 kg. At present paper consumption in Czechoslovakia is decreasing moderately as a result of price liberalization. This general downward trend is expected to continue in the short term, but demand for selected products, such as communication paper and packaging grade paper is expected to pick up in 1992.

The further development of the wood and paper industries will depend crucially on improvements in efficiency and the rapid application of modern technologies, a restructuring of production in favour of more end-products and an enhancement of the skills of the labour force. As promising industries based on domestic raw materials, the wood processing, cellulose and paper industries need to expand their production of more technologically advanced products for both the domestic and international markets. The printing and publishing industry will also have to overhaul its manufacturing processes by way of automation and electronic processing.

In the wood processing, cellulose and paper industries priority will be given to the development of production capacities for packing materials, graphic paper, hygienic paper and related products, newsprint, wooden furniture, wooden consumer goods, beds and window frames, semi-hard fibreboards, wooden fencing, wall units, tables, etc. In the printing and publishing industries an expansion of high quality book, catalogue and magazine printing will be encouraged. Substantial investments in both capital and know-how will be needed to create better conditions for the competitive manufacture of products with higher quality, lower production costs and higher levels of labour productivity. Foreign investment opportunities are vast and have already been exploited in many cases, especially in the production of semi-hard fibreboard, chipboard, coated folding board.

Europe is expected to experience a roundwood deficit of 40-60 million cubic metres by the year 2010. Regional deficits are also likely to occur in other parts of the world. The growing concern for environmental issues will also have an impact on the world's raw material supplies of wood. The loss of potential harvests in Europe, where almost 80 per cent of the existing forests are threatened by air pollution, is estimated at 85 million cubic metres per year up to 2000 and 2005. The ensuing deficit of wood-based fibres for the pulp and paper industry may result in considerable changes in the structure of the industry, its technology and the fibre content of its products.

Chemicals

The chemical industry's sudden exposure to market forces during the past two years has made its weaknesses more transparent. Although a degree of selectivity is likely to be maintained in the privatization process on account of environmental issues, the speed and direction of privatization augurs well for a healthy expansion of the chemical industry.

Investment opportunities stem largely from a shift in production priorities towards a higher degree of oil processing, and the production of light and specialty chemicals, polyamide textile rayon and polyethylene foils for packing materials. New product development is likely to encompass new organic dyestuffs and pigments, pesticides, second generation cytostatics in pharmaceuticals and diagnostic agents. Higher value added plastic products for import substitution and export, particularly polyolefin composites, PVC copolymers and engineering plastics seem likely to gain importance in investment priorities. Five promising product areas of the Czechoslovak chemical industry include organic dyes, polymer additives, pesticides, pure chemicals and drugs and veterinary products. If the reorganization of the chemical industry is pursued in line with the changing investment priorities, the share of heavy chemicals in total output is likely to fall.

While the chemical industry in Czechoslovakia is gearing up for a facelift through participation with foreign firms, the global trends for the industry are likely to be characterized by falling demand, soaring environmental costs and overcapacity. Throughout the world, manufacturers of chemicals are unable to pass on their increased costs of production to customers because of the weak world demand for their products. Given the glut in world chemical production, many producers have diversified into specialty chemicals, producing small volumes of high value products for customers mainly in the textiles, plastics and electronics industries. Specialty chemical producers have managed to survive with operating margins of 15 per cent even during the global recession. Diversification into pharmaceutical production has also proved highly productive. However, this promising product area faces very high research and development costs, partly caused by the rising complexity of new products. Chemical companies in developed countries are trying to meet the challenge of recession through rationalization while being faced with increasing environmental expenditure. The cost of complying with environmental legislation in the United Kingdom is estimated between 20-25 per cent of all capital investment. Given the industry's problems it will be hardly surprising if leading players of the world chemical industry redeploy production units to other locations where foreign investment is eagerly sought. However, the redeployment of production units to eastern Europe will not be without cost as east European countries are also adopting increasingly stringent environmental norms. But east European countries are expected to benefit from the relatively better environmental practices of their foreign partners.

Czechoslovakia's chemical industry is counting on the inflow of foreign capital and technology and pinning its hopes of survival on product diversification into promising areas. However, success in these endeavours depends crucially on identifying inexpensive sources of raw material supplies and on considerable capability in marketing products. It is believed that privatization of the chemical industry in Czechoslovakia will continue to attract interest from major players in the world chemical industry.

Non-metallic mineral products

Czechoslovakia is endowed with abundant supplies of a wide variety of non-metallic minerals, which form the basis for a well developed processing industry. With proven reserves of more than 90 million tonnes, Czechoslovakia ranks as one of the world's leading producers of magnesite. In addition, it also has substantial deposits of high quality kaolin for the production of ceramics and glass. Other major non-metallic minerals include cement, limestone, gypsum, barite, fluorspar, graphite, clays, bentonite, and decorative stones. Czechoslovakia accounts for 6 per cent of the world production of magnesite and 3 per cent of the world production of kaolin.

Notwithstanding the recent downturn in the industry caused by the short-term effects of the economic transition currently in progress, its medium-term prospects remain bright because of the immense reconstruction and modernization needs of Czechoslovakia's housing stock. In the meantime, most building materials industries are seeking to compensate for the temporary decline in domestic demand through a substantially increase in exports, with certain branches doubling their sales in foreign markets. The State's support for major infrastructural projects (highways, railways, airports, etc) with foreign participation augurs well for rapid expansion of this resource-based industry.

Priority product areas are those with a high export potential (e.g., tiles, building ceramics and glass). The required modernization of the industry to increase productivity and efficiency offers broad opportunities for investment. In 1991 Czechoslovakia's cement industry attracted considerable interest from west European companies willing to enter into joint venture and equity participation agreements.

The process of demonopolization and the transfer of State enterprises to joint-stock companies is being actively pursued. Since 1990 several large enterprises involve in the production of glass, ceramics and porcelain have been broken up into more efficient smaller units, and a number of private ventures have been established. However, the success of the reorganization programme currently in progress will depend crucially on the adoption of new production processes and products by the various segments of the non-metallic mineral industry.

Metallurgy

Czechoslovakia's metallurgy industry has also been affected by a deceleration of output growth in the recent past. The exposure of this hitherto highly subsidized industry to market forces has made it clear that many antiquated mills cannot survive in their present form and that the industry is in need of far-reaching modernization. Maintaining steel output at 16 million tonnes appeared to be impossible even as early as the second half of the 1980s. Production of steel fell significantly in 1990 and the declining trend continued through 1991. The decline of the non-ferrous metal segment was more pronounced in the first half of 1991 with a 30 per cent drop in output, a 19 per cent decline in employment and a 16 per cent fall in labour productivity. This drastic contraction of the metallurgy industry reflects the structural changes currently taking place in the economy in general and the industrial sector in particular. In addition, more restrictive environmental norms and the shift to a market-based economy are necessitating investment in the modernization and restructuring of the industry, as well as the introduction of new mining technologies. Primary production of several non-ferrous metals is being reduced significantly for environmental reasons, with greater emphasis being given to the development of a production capacity based on the use of scrap. However, the country's ore base has been critically re-evaluated, and a part of the State subsidies is being selectively reassigned to support private sector initiatives to develop the country's raw material base.

Investment opportunities are likely to emerge from the de-monopolization of recycling of ferrous and non-ferrous scrap. Higher utilization of metal scrap in ferrous and non-ferrous manufacturing activities will require new melting capacities, modern methods of collection, sorting and reprocessing. These changes call for considerable investment. Foreign participation will be sought in expanding continuous steel casting, production based on increased use of scrap, and a modernization of steel production technologies.

The programme to reduce the *per capita* consumption of steel favours investments that could significantly reduce the steel intensity of the engineering, electrical and construction industries. While the government plans to abandon the production of certain non-ferrous metals for ecological reasons, it welcomes investments in the modernization of plants producing copper, lead and other selected non-ferrous metals. The only aluminium smelter in the country looks likely to be modernized in cooperation with Hydro Aluminium of Norway. The attempts of Czechoslovakia's metallurgy industry to compete and survive in a free market will only succeed if it attracts capital, know-how, and technical and managerial expertise from foreign partners.

Machine tools

Czechoslovakia has a long and rich tradition in the production of metal cutting and metal forming machinery. With the value of machine tool production amounting to $450 million in 1988, Czechoslovakia ranked next to the Republic of Korea which turned out $597 million worth of machine tools in the same year. The industry is highly export oriented, with the share of exports in production amounting to some 50 per cent during the last two decades. Although a large share of the exports was oriented towards uncompetitive markets, around 20 per cent of machine tool exports were shipped to the competitive markets of the developed countries. However, the relatively slow rate of technical progress in some segments is clearly visible, and Czechoslovakia's machine tool manufacturers are under considerable pressure to re-equip themselves in order to survive in a market economy.

Czechoslovakia could attempt to benefit from the shift towards internationalization, cooperation and integration currently taking place in the world machine tool industry. The introduction of new machining concepts and computer-integrated manufacturing will gradually be realized through close contact between machine tool producers and their customers as well as by high investments in research and development. Czechoslovakia will need to rely on the transfer of know-how from traditional and new generation machine tool producers through cooperation agreements.

No single measure can bridge the technology gap that persists in the Czechoslovak machine tool industry. This will require at the outset a grand liquidation of obsolete capital stock, followed by an upgrading of manufacturing facilities, intensive skill development, strong technical information support and an effective institutional framework for assimilating, generating and diffusing modern technology. In this context, both market forces and the government will have to collaborate in the creation of a national climate conducive to the rapid absorption and utilization of new technologies.

Transport equipment

Within the traditional CMEA division of labour, the Czechoslovak automobile industry fell into the clutches of an uncompetitive market environment, which failed to make optimal use of the country's long industrial tradition, engineering skills, low wages and strategic location with proximity to eastern and western European markets. Although productivity is below international standards, foreign entrants into the industry have been impressed by the high level of local engineering skills. By February 1992 three major joint ventures had been concluded, and a few smaller joint venture agreements are being negotiated for the production of car accessories, selected instruments, wipers, electric parts and components, etc.

By the end of February 1992 Volkswagen had spent around DM 620 million on its 31 per cent stake in the car manufacturer Škoda, and taken significant control over the company's management. Volkswagen's equity participation is expected to be raised to 70 per cent by 1995. It is envisaged that this joint venture will more than double its output to about 450,000 cars annually by the mid-1990s. The strategy of Volkswagen is to retain the identity of Škoda and to establish it as an eastern European equivalent of its Spanish subsidiary Seat. In March 1992 the Government of the Czech Republic approved a $250 million joint venture between Mercedes Benz AG of Germany and two local truck manufacturers Avia and Liaz. This joint venture is expected to turn out 27,000 small, medium and large trucks per annum by the year 1997. Czechoslovakia's truck manufacturer Tatra is reported to have begun negotiations with a number of potential foreign partners, including Mercedes Benz, Renault and Iveco of Italy. German automobile producers have also shown interest in acquiring control of Karosa, a bus and fire engine manufacturer located in eastern Bohemia. Iveco, the truck and industrial vehicle unit of Fiat, is planning to establish a joint venture with Tatra.

Regionalization and transnationalization had become major objectives of most western automobile producers. While the growth of competition in the once protected market raises the strategic importance of Poland and the former Soviet Union for Fiat, the balance of power in European automobile production seems to have tilted in favour of German producers as a result of the re-unification of Germany. The German groups are seeking to consolidate their position in eastern Europe through strategic investments in Czechoslovakia.

Electrical machinery and electronics

Although Czechoslovakia's electrical goods industry is relatively dynamic, technological deficiencies and set-backs in innovation cycles have generated significant inefficiencies. In the current phase of industrial deceleration the consumer electronics industry has been affected particularly severely, with a 40 per cent fall in production in 1991. Local demand fell much faster than declining

production and exports. Obsolete capital machinery and equipment was estimated at 49.3 per cent of the total capital stock in 1989.

The structural changes currently taking place in the industry will result in machinery production being focused on activities with a higher share of local value added, a less intensive use of metals, raw materials and energy, and a high export orientation. This implies a concentration on relatively successful traditional products such as medical devices (surgery tools, X-ray devices, spirometres, machines to produce medicines), construction machinery, engineering consumer goods (refrigerators, washing machines, vacuum cleaners, utensils, sewing machinery), components for electronics and telecommunications, telephone exchanges and consumer durables. In addition, however, some efforts are also being made to enter into the new product areas, and a number of joint venture agreements have been concluded with foreign firms in this connection.

The future development and expansion of Czechoslovakia's electronic components industry is likely to proceed in line with the country's prevailing comparative advantage. Potential new electronic component industries would, in particular, include those which are considered to have beneficial linkages - technologically and industrially - with other firms. The development of the integrated circuit industry may provide the basic framework for this collaboration since technological development in integrated circuit production has far-reaching effects on the production of other electronic components.

The development of supporting industries for electronic component manufacturing will probably be based on firms producing die punches, precision jigs and fixtures supplying the new integrated circuit industries. Since the production tools supplied to the integrated circuit industries have to be very precise, with tolerances being measured in microns, the development of these industries will provide an important focus for the accumulation of high precision and automation technology. Starting from this point, and with properly planned promotion, these firms could grow into engineering firms with sophisticated technology supporting the integrated circuit industries and other electronics component industries.

Fuel and power

The industrial sector accounted for about 52 per cent of total final consumption of energy in 1989. The relatively high share of industry in energy consumption is due to the preponderance of energy-intensive heavy industries, namely iron and steel, industrial chemicals, non-electrical machinery and building materials. In the late 1980s the share of these four industries represented 70 per cent of energy consumption in industry. Other energy-intensive industries include fuels, pulp and paper industry, glass and ceramics and food industries.

The energy intensity of Czechoslovakia measured as energy consumption per unit of GDP is estimated at two-and-a-half times higher than that of developed countries. Energy requirements per unit of GDP fell from 0.659 petajoule to 0.584 petajoule in 1989, representing an annual decline of 1.3 per cent. The energy intensity per unit of value added in Czechoslovak industry is estimated at 2.1 times higher than that of Austria, 3.4 times higher than industrial energy intensity in the former Federal Republic of Germany and 2.3 times higher than that of Sweden. Energy consumption in trade, services, transport and particularly for household purposes is, however, relatively low by international standards. The government is seeking to increase the energy-efficiency of the economy in general and the industrial sector in particular by reducing energy-intensive industries and introducing energy-efficient technologies. According to rough estimates consumption of primary energy in the year 2000 will be lower by 20 per cent than in 1990.

The most energy-demanding industry is electricity production, followed by the fuels, iron and steel, non-metal production, glass and pottery industries. Most of the branches showed a decline in energy consumption in the 1980s. In electricity, the high level of energy consumption was affected by the growing volume of electricity produced in nuclear power plants and by a high consumption of fuel to generate electricity in thermal power stations.

The shift towards a market economy in Czechoslovakia is expected to result in a rationalization of the energy sector through the creation of a competitive environment, a change in the ownership structure of industrial assets, and a deregulation of prices. Pollution control is also being emphasized in the current phase of economic restructuring, and Czechoslovakia plans to reduce sulphur dioxide emissions significantly within a short period. This is likely to be achieved, among other things, by the installation of desulphurization equipment and the increased use of fluidized-bed combustion processes at coal-fired power stations and gas works. Such programmes in the sphere of rationalization and modernization will create considerable investment opportunities in such fields as the production of efficient electrical appliances and technologies, the modernization of production technologies employed in the energy sector, and the rationalization of the coal mining industry.

An open market in energy across all European countries is currently being envisaged, with far-reaching implications for eastern Europe. In December 1991 the European Commission allocated an extra ECU 5 million to expand the EC's energy links with central and eastern Europe. The resulting access to the EC's electricity and gas network will make an important contribution towards the integration of Czechoslovakia's energy sector into that of Europe as a whole.

Prospects

Industrial trends of the past two years have provided a clear indication of the need to re-evaluate the tools of transition to a market economy in order to ensure that this transition is accomplished with as little disruption as possible. While relieving the supply side from microeconomic inefficiencies, there is a need to revive domestic demand, which has fallen dramatically since the beginning of 1990.

While the process of industrial rejuvenation is under way, the prospects for industrial growth and structural change over the coming years remain uncertain. Forecasts for 20 industrial branches by the Federal Statistical Office suggest a strong likelihood of a recovery in industrial production during 1992-1995. The rational behaviour of industrial enterprises in a market economy is expected to result in significant changes in the structure of industrial production. The most dramatic of these changes are likely to be a decline in the share of non-electrical machinery and mining in the total volume of industrial production in favour of some light industries.

As the structural transformation of the industrial sector faces formidable challenges, there is a need to build up a functioning market system that facilitates the regeneration of the manufacturing sector. This process will require investment capital, technology acquisition and generation, human resource development, management and marketing know-how and the creation of an appropriate institutional infrastructure. In redefining the priorities of Czechoslovakia's industrial development, ecological issues will also need to be addressed since industrial emissions have already reached critical levels in the country. The process of industrial rejuvenation and the integration of the country's manufacturing industry into the technologically advanced and highly competitive world markets will lay the stepping stones for realizing Czechoslovakia's considerable industrial potential.

POSTSCRIPT

This Review was finalized in June 1992 when the results of general elections, held on 5-6 June 1992, revealed much more deep rooted differences of opinion on political, economic and social matters between the country's two constituent republics than had previously been anticipated. In the Czech lands, the Civic Democratic Party (ODS) of the incumbent Vice Prime Minister and Finance Minister, Mr. Václav Klaus, emerged as the leading party with 33.9 per cent of the votes for the Federal Parliament and 29.7 per cent of the votes for the parliament of the Czech Republic. In Slovakia, by contrast, the Movement for a Democratic Slovakia (HZDS) led by Mr. Vladimir Mečiar gained a majority of 33.4 per cent of the votes for the Federal Parliament and 37.2 per cent of the votes for the parliament of the Slovak Republic.

With the two winning parties pursuing radically different objectives, the formation of a new federal government proved extremely difficult. This was exacerbated by the demands of the HZDS for a comprehensive revision of the constitutional structure of the Czechoslovak federation, leading to sovereign statehood for the two republics within a loose confederation. Claiming that this relationship would be too unwieldy, the ODS argued instead for a retention of a viable federal structure or a complete dissolution of the federation. After extensive negotiations the two parties concluded a tentative agreement in mid-June, which provided for the establishment of a much reduced federal government. The leaders of these two parties themselves did not accept portfolios in this government, and assumed the prime ministerships of the Czech and Slovak Republics, respectively. The parliaments of these republics were meanwhile assigned the task of preparing recommendations for the future structure of Czechoslovakia by 30 September 1992.

The outcome of these developments is highly uncertain. While the eventual transition of the Czech and Slovak Republics into sovereign states now appears inevitable, the future possibility of some form of association between these states cannot be ruled out. Political pressures from within and outside Czechoslovakia, as well as the established economic complementarities between the Czech lands and Slovakia, could still cause the two republics to enter into a confederation even after a formal partition into sovereign and separate states.

Despite these recent events and the uncertainties they have generated, the essence of this Industrial Development Review of Czechoslovakia remains valid. The economic and industrial implications of these constitutional developments for the Czech and Slovak Republics may be derived from this Review. In the Czech Republic, which accounts for 70-75 per cent of Czechoslovakia's combined industrial output and has so far attracted the bulk of private investment in the country, the post-1989 economic reform programme appears certain to be sustained following the installation of its prime architect, Mr. Klaus, as the republic's prime minister. In the Slovak Republic, which has a less diversified industrial base than the Czech Republic and has suffered a much higher rate of unemployment as a result of the recent restructuring, Mr. Mečiar has also stressed his commitment to economic reform and renewal, although its pace may be slowed to minimize its adverse social effects.

While adjustments may therefore be made to the economic and industrial reform process embarked upon by Czechoslovakia in the past few years if the country does divide into two separate sovereign states, the broad thrust of this programme is certain to be maintained in both successor states. In the changed international economic environment in which they now find themselves, they will both continue to face the need to increase the efficiency and international competitiveness of their industries. In this context, foreign investment, technical cooperation and market access will continue to be required by both republics, which the newly sovereign Czech and Slovak Republics will have to attract through the establishment of an appropriate institutional framework and the provision of appropriate policy environment and incentives. Having already taken the lead in this process during the past two years, there are strong reasons to believe that the economic and political decision makers in the Czech lands and Slovakia will continue to adopt appropriate and innovative economic policies in pursuit of their common quest for industrial transformation and regeneration.

I

THE ECONOMIC ENVIRONMENT

A. THE TRANSITION TO A MARKET ECONOMY

The recent political changes in eastern and central Europe have unveiled the economic malaise rooted in the policies pursued over the past four decades, and further resulted in Czechoslovakia becoming detached from its traditional suppliers and markets to a considerable extent. The country faces an urgent need to integrate itself more fully into the global economic system in order to take advantage of the opportunities for a more rapid growth and development of its economy offered by an increased level of participation in international trade and capital flows. In recognition of the need to establish a structural and institutional framework for this transition to a market oriented and open economy, the government has launched a far-reaching reform programme aimed at a complete transformation of the country's existing economic system and its established development strategy.

The government's economic reform proposals were summarized in an "Economic Reform Scenario", adopted by Parliament in October 1990. This programme emphasized the need for a radical transformation of the economy and the introduction of a market-based economic system at the earliest possible date. In addition to an anti-inflationary economic stabilization policy, it contained a comprehensive set of structural reform proposals. These included measures to liberalize prices and imports, alter ownership and management patterns at the enterprise level, promote private sector activities and bring about the "internal" convertibility of the Czechoslovak koruna (*Koruna československá*, Kcs) by granting domestic enterprises unrestricted access to foreign exchange for current account transactions.

More specifically, the government's economic reform package contained the following crucial reform measures, which were to be implemented within as short a space of time as possible after 1 January 1991:

- the liberalization of a wide range of domestic prices, including those of all tradeable goods and non-tradeable goods produced under reasonably competitive conditions;

- the introduction of the koruna's "internal" convertibility and the establishment of a unified exchange rate responsive to supply and demand;

- the installation of an adequately financed social safety net to meet the needs of those individuals becoming unemployed or otherwise suffering losses in income as a result of the adjustment process;

- the creation of a new legal and institutional framework appropriate for a market economy;

- changes in the operational practices of State-owned enterprises (SOEs) aimed at increasing the level of commercialization and enforcing a higher degree of financial discipline, giving managers authority and responsibility for decisions regarding prices, product lines, employment and inputs; and introducing incentive systems for managers, who will also be held accountable for the results of their activities,

- the progressive restructuring and privatization of large numbers of SOEs;

- the introduction of policies aimed at attracting private foreign direct investment to strengthen local management skills, introduce new technology, improve product design and quality, and facilitate Czechoslovakia's access to foreign markets.

These reform measures were to be accompanied by a continued commitment to economic stability through the adoption of fiscal and monetary restraint and appropriate exchange rate, price and wage policies. In particular, the government set itself the goal of achieving an overall budget surplus, mainly as a result of expenditure cuts, and to limit credit expansion while maintaining interest rates at levels that will make it attractive to hold domestic deposits. The exchange rate of the koruna, meanwhile, was to be stabilized against a basket of foreign currencies.

The break with the established political and economic systems in November 1989 and the subsequent uncertainties associated with the formulation and implementation of a comprehensive and coherent economic reform process have had wide ranging implications for the Czechoslovak economy. While the replacement of central planning with competitive market mechanisms is almost universally expected to bring substantial improvements in the medium term, the radical nature of the changes being introduced has unavoidably given rise to considerable economic dislocations in the short term, including an acceleration of inflation, a surge in unemployment, a decline in production, and a deterioration in the trade balance.

These adverse effects were intensified, moreover, by a number of external shocks suffered by the Czechoslovak economy in 1990-1991. The most significant of these was the rapid erosion and eventual dissolution, on 1 January 1991, of the Council for Mutual Economic Assistance (CMEA) trading system as a result of the similar political and economic changes taking place elsewhere in central and eastern Europe. This, in turn, resulted in the loss of long established export markets and disruptions in the supply of important raw materials. In particular, there was a 20 per cent shortfall in deliveries of oil and some other raw materials from the former Soviet Union, and a significant shrinkage in the country's exports to the former German Democratic Republic and the former Soviet Union. These problems were exacerbated by the rise in international oil prices and the further loss of export markets caused by the Gulf crisis, which are estimated to have cost the Czechoslovak economy a total of some $2 billion during 1990 alone.

The effect of these internal and external disruptions was particularly severe in 1990, when the volume of net material product (NMP)[1/] contracted by 3.1 per cent, while gross output in industry (including manufacturing, mining and energy) fell by 3.7 per cent in real terms, the volume of construction work declined by 5.4 per cent, and gross agricultural production contracted by 3.4 per cent. The decline in economic activity recorded in 1990 persisted into the first half of 1991, with estimates prepared by the Federal Statistical Office indicating that GDP declined by 8 per cent in real terms in the first quarter of the year and a further 10-15 per cent in the second quarter. The rate of decline of industrial production also accelerated during this period, from 4-6 per cent in the first two months of the year to 15-25 per cent in March-June. The construction and transport sectors contracted even more rapidly, although the services and agricultural sectors recorded a somewhat better performance.

The situation improved significantly in the second half of 1991, however, following a substantial easing of the tight fiscal and monetary policies employed by the government since the beginning

of 1990. Industrial production in October and November 1991 was actually higher in absolute terms than in July. Preliminary estimates compiled by the Federal Statistical Office suggest that Czechoslovakia's GDP contracted by 15.9 per cent in real terms during 1991 as a whole.

In spite of the adoption of highly restrictive financial policies in 1990, which resulted in a surplus of Kcs 3.8 billion being achieved on the State budget and the growth of credits to enterprises being held below 0.5 per cent, external and domestic inflationary pressures remained strong. The annual average increase in consumer prices thus amounted to 10 per cent in 1990, with the end-year inflation rate being measured at 18.4 per cent. The liberalization of administered prices on 1 January 1991 caused the consumer price index to surge by almost 26 per cent in that month, but price increases in the following months were more moderate and approached zero in July-October before accelerating modestly in November and December. After increasing by almost 50 per cent in the first half of 1991, the price level thus rose by only 3.5 per cent in the second half, resulting in an overall increase in consumer prices during 1991 of about 58 per cent.

The increased cost of living in 1990 caused a reduction in real wages by 5.5 per cent. The effects of this decline were mitigated, however, by the provision of a State allowance of Kcs 140 per person and month, representing about 5 per cent of the net monthly average wage, and the growth of social and other incomes, which allowed the decline in total incomes to be limited to 1.1 per cent. Nominal wage growth remained well below the rate of inflation in 1991, which resulted in a further decline in real wages by 20-25 per cent. This moderation in wage growth made an important contribution towards the restoration of price stability in the second half of 1991, with the government's conservative fiscal and monetary policies also playing an important role.

Employment levels in the State and cooperative sectors fell steadily throughout 1990, with the number of full-time jobs in these sectors declining by 203,000, or 2.7 per cent. At the same time, however, the number of officially registered private entrepreneurs rose rapidly and amounted to 488,000 by the end of the year, of whom 149,000 were licensed in the last three months alone. Only about 20-25 per cent of this number were believed to be engaged in business on a full-time basis, however, with the remainder either conducting their business activities on a part-time basis as a sideline to their regular occupations or not having commenced them at all. The number of unemployed was officially estimated at 77,000 at the end of December 1990, representing 1 per cent of the labour force. Unemployment continued to rise in 1991, with the total number out of work being estimated at 524,000 at the end of the year, which represented about 6.6 per cent of the total labour force. There was a marked difference in the regional distribution of unemployment, however, with the unemployment rate at the end of 1991 amounting to approximately 4 per cent and 11 per cent in the Czech and Slovak Republics respectively.

As noted above, the Czechoslovak economy suffered a severe shock as a result of the accelerating disintegration of the established patterns of international trade in eastern and central Europe from the end of 1989 onwards. This culminated in the dissolution of the CMEA on 1 January 1991, and the introduction of free market pricing and convertible currency settlement of trade flows between the former CMEA countries with effect from that date. Under these circumstances, the effects of which were reinforced by the rise in oil prices caused by the Gulf crisis, Czechoslovakia suffered a trade deficit of Kcs 22.9 billion in 1990. The trade deficit narrowed significantly in the first two quarters of 1991, with the decline in exports caused by the effective disintegration of Czechoslovakia's traditional export markets being offset, with a short lag, by a sharp decline in imports prompted largely by a sharp devaluation of the koruna in 1990.[27] This allowed the achievement of trade surpluses in the third and fourth quarters of the year, so that a positive trade balance was recorded in 1991 as a whole.

Between 1989 and 1991 the value of Czechoslovakia's exports to the developed market economies increased by almost 48 per cent in terms of constant 1990 korunas, and by more than 142 per cent if the devaluation of the koruna during this period is taken into account. As a result partly of this shift in exports from the former CMEA countries to the industrial countries of western Europe and partly of the effects of German unification in October 1990, Germany replaced the former

Soviet Union as Czechoslovakia's principal export market in 1991. Despite this success in penetrating Western markets, Czechoslovakia's attempts to expand its presence further are likely to be constrained in the short term by the detrimental effect that its hitherto limited exposure to these markets has had on its international competitiveness.

Despite the deterioration in its balance of payments, Czechoslovakia's external liquidity came under no serious threat. By the end of 1990 the country's gross official debt in convertible currencies amounted to a relatively modest $8.1 billion, of which only $200 million had accrued in 1990. In 1991 a current account surplus of $356 million was achieved, and the capital account recorded a significant surplus, mainly due to the assistance of the International Monetary Fund (IMF) and increased inflows of private capital. Foreign reserves consequently increased to $3.3 billion by the end of the year, representing four months of convertible currency imports, and the rise in Czechoslovakia's external indebtedness fell well short of the ceilings laid down by the IMF. At the end of 1991 the volume of gross debt was estimated at only $9.4 billion, or about $600 *per capita*, which was much less than the gross debt *per capita* of Hungary or Poland.[3/] Taking its reserves and its own loans to other countries into account, Czechoslovakia's net external debt amounted to a negligible $600 million at the end of 1991.

B. A DIAGNOSIS OF THE ECONOMY

Sectoral distribution of production

Industry

The economic structure of Czechoslovakia has been shaped to a considerable degree by the role of industrial supplier it was assigned to play in the former CMEA. As noted above, the orientation of Czechoslovakia's production and exports towards the CMEA, and the system of directive central planning employed within the country, ensured that priority was given to the further development and expansion of the country's already large industrial sector. The share of industry (comprising manufacturing, mining and energy) in GDP amounted to an estimated 48.5 per cent in 1970 and 49.4 per cent in 1990, significantly higher than in developed market economies. As indicated in Table 1.1, its share in NMP, which excludes non-material services, is even higher and has grown even faster, from 57.4 per cent in 1970 to 61.7 per cent in 1991. Within the industrial sector, moreover, there has been a high and increasing concentration in the engineering branches, and a similarly high, but declining concentration in metallurgy and mining. By contrast, the shares of light industries have been relatively low and have continued to decline over the past two decades.

Non-industrial production

The share of non-industrial sectors in the Czechoslovak economy falls well below the levels prevailing in the developed market economies. The share of agriculture in GDP has declined from 10.1 per cent to 7.2 per cent over the past 20 years. The share of construction has remained relatively steady at about 9 per cent of GDP, while the share of trade, transport and services has increased slowly from 32.4 per cent to 34.5 per cent. Housing, education and health services, which have traditionally formed an integral part of the country's social welfare policy, are particularly important and have been provided at low cost or free of charge to the population. On the whole, however, the services and trade sectors have remained relatively underdeveloped in Czechoslovakia as in most other former centrally planned economies.

Agriculture

The agricultural sector, which originally consisted predominantly of small and medium sized family farms with productivity levels similar to those of other European countries, was collectivized during the late 1940s and 1950s. This emphasis on collective farming was retained until the mid-1980s,

Table I.1. Net material product by industrial origin, 1970-1991, selected years
(Percentage share)

Year	Agriculture	Industry	Construction	Trade and catering	Other material branches[a/]	Total
1970	10.6	57.4	11.8	9.4	10.7	100.0
1975	8.7	58.7	13.0	10.1	9.6	100.0
1980	7.5	59.2	11.8	12.5	8.9	100.0
1981	6.4	59.2	12.1	13.1	9.2	100.0
1982	7.1	58.2	11.7	13.6	9.4	100.0
1983	7.0	57.9	11.8	14.0	9.3	100.0
1984	6.6	52.6	9.8	12.5	8.1	100.0
1985	6.7	58.9	11.4	14.0	9.0	100.0
1986	6.7	59.2	11.2	13.9	9.0	100.0
1987	6.4	60.3	11.3	13.4	8.6	100.0
1988	6.2	60.8	11.2	13.5	8.2	100.0
1989	6.6	62.2	11.0	12.2	8.1	100.0
1990	6.6	60.8	11.1	11.7	8.4	100.0
1991[b/]	7.4	61.7	10.2	12.4	8.3	100.0

Sources: Federal Statistical Office; World Bank.

a/ Forestry, water resources, material transport, "material" part of communications, raw material resources, State purchases of agricultural products, etc.

b/ Preliminary data.

when the "socialist" sector accounted for about 95 per cent of total agricultural land. During this period some 1,700 farmers' cooperatives with almost one million members produced about two-thirds of total agricultural output while some 220 State farms, employing about 166,000 farm workers and operating like State-owned enterprises, accounted for about 30 per cent of agricultural output.

Until the 1980s private farming accounted for only 4 per cent of both agricultural land and agricultural output, and although members of cooperatives were permitted to cultivate small plots of up to 0.5 hectares and to own some livestock, privately produced output remained negligible and only served as a food source for the cultivators. During the 1980s, however, the authorities began to encourage animal husbandry and the cultivation of fruits and vegetables on a small scale by private farmers in order to help satisfy the growing demand for these products. As a result, private farms are now estimated to account for about 60 per cent of Czechoslovakia's vegetable production and 40 per cent of its fruit production. More recently, the passage of a new law on land and agricultural cooperatives in June 1991 has paved the way for the restitution of collectivized and cooperativized agricultural land to its original owners and their heirs.

Grain production rose by some 50 per cent between the early 1970s and the late 1980s, with yields rising close to the 5 tonnes per hectare level prevailing in Hungary, which had the highest yields among the former CMEA countries. The yields of a number of other crops, including potatoes, maize, fodder roots, hay and sugar beets, are also among the highest in eastern Europe. Livestock yields and productivity levels are also at or near the top of the eastern European scale. Czechoslovakia's relatively good agricultural performance is due in large part to the previous government's policy of self-sufficiency, which resulted in the country meeting about 98 per cent of its agricultural requirements by 1988. This achievement has not been without cost, however, and the agricultural sector is heavily subsidized. During the 1980s some 55 per cent of all budgetary subsidies were thus channelled into agriculture.

MACROECONOMIC TRENDS

Fig. I.A. Growth of gross material product (GMP) and manufacturing value added (MVA), 1980-1991
(Percentage)

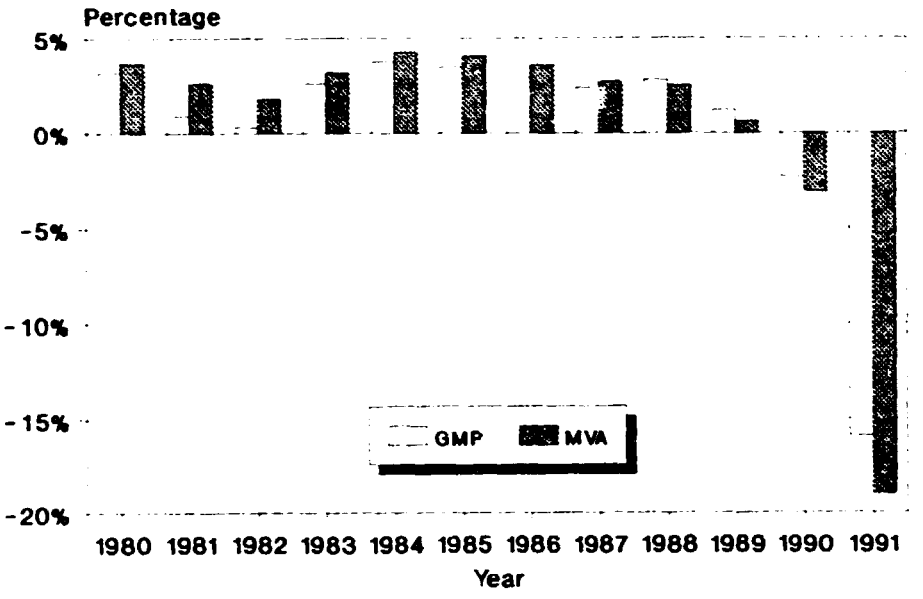
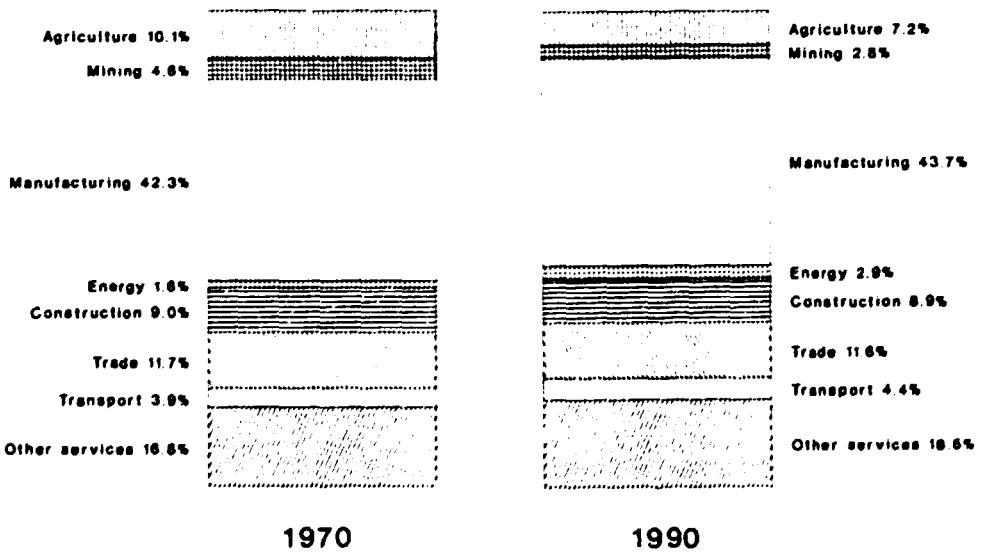


Fig. I.B. Structure of GDP by sector of origin, 1970-1990
(Percentage)



Sources: Industrial Statistics Yearbook, UN New York
Federal Statistical Office, Prague

Fig. I.C. Exports and imports, 1989-1991
(Billion dollars)

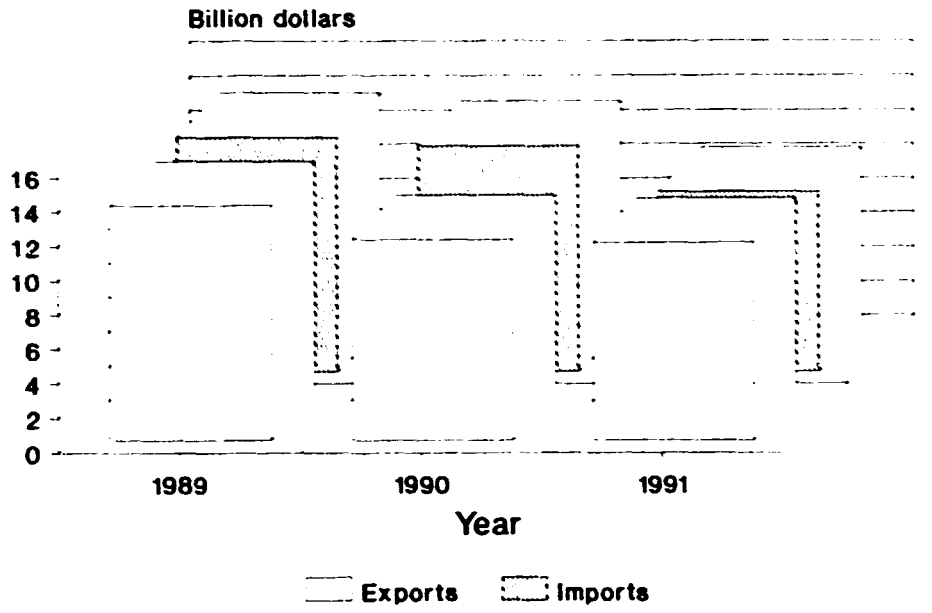


Fig. I.D. Trade balance in convertible and non-convertible currencies, 1985-1991 (Million dollars)

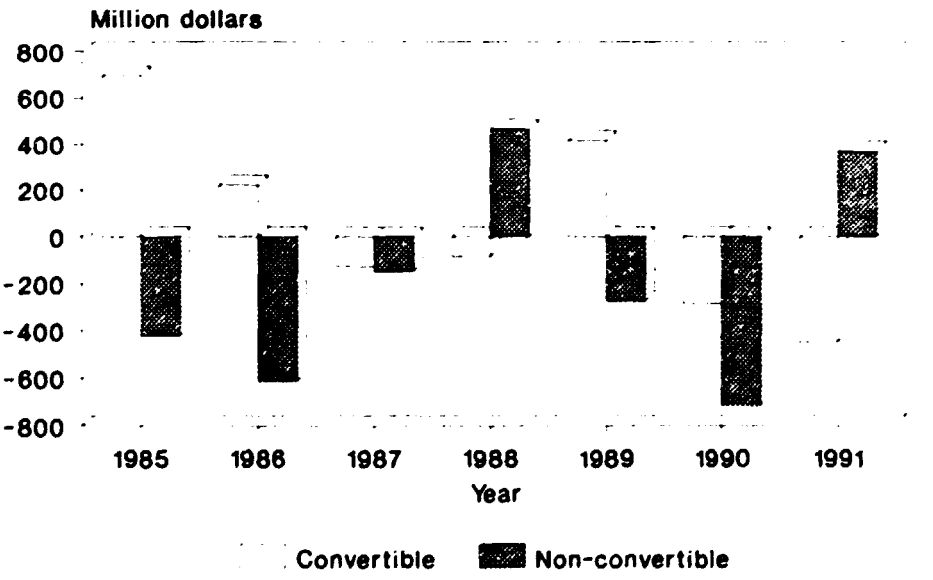


Fig. I.E. External debt and debt service ratio, 1985-1991
(Billion dollars and percentage of exports)

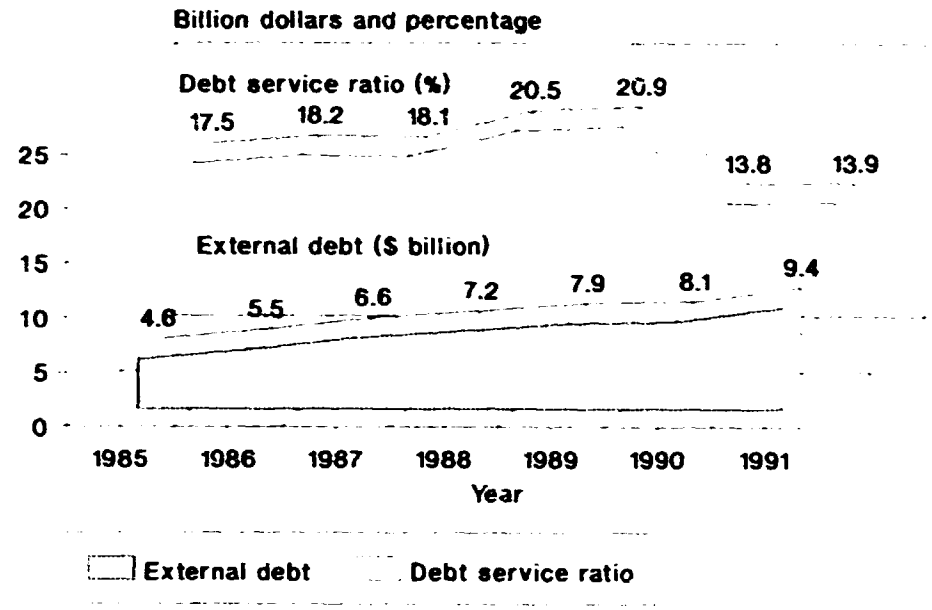


Fig. I.F. International reserves, 1985-1991
(Billion dollars)

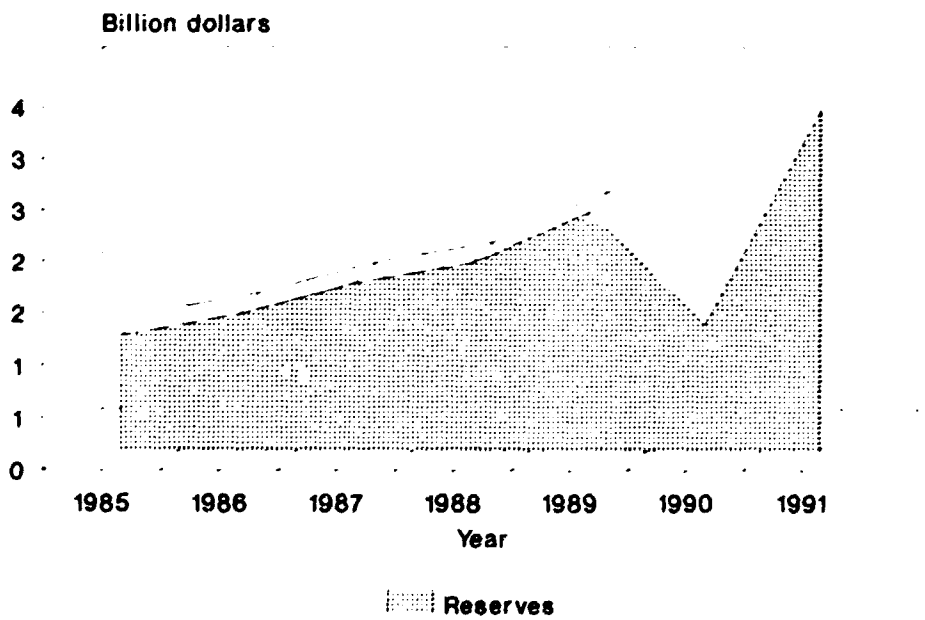


Fig. I.G. Consumer price index, 1991

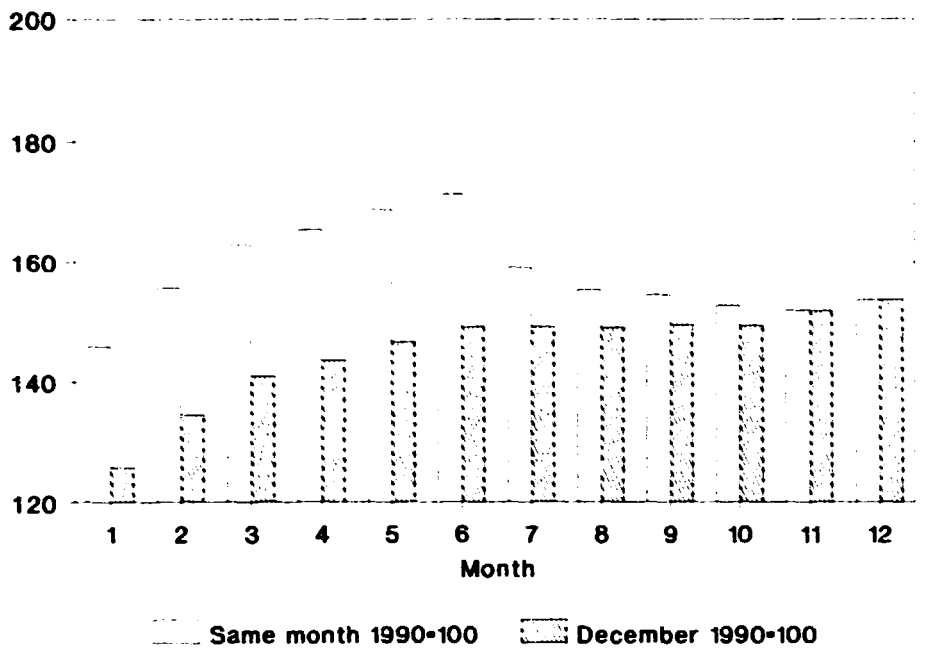
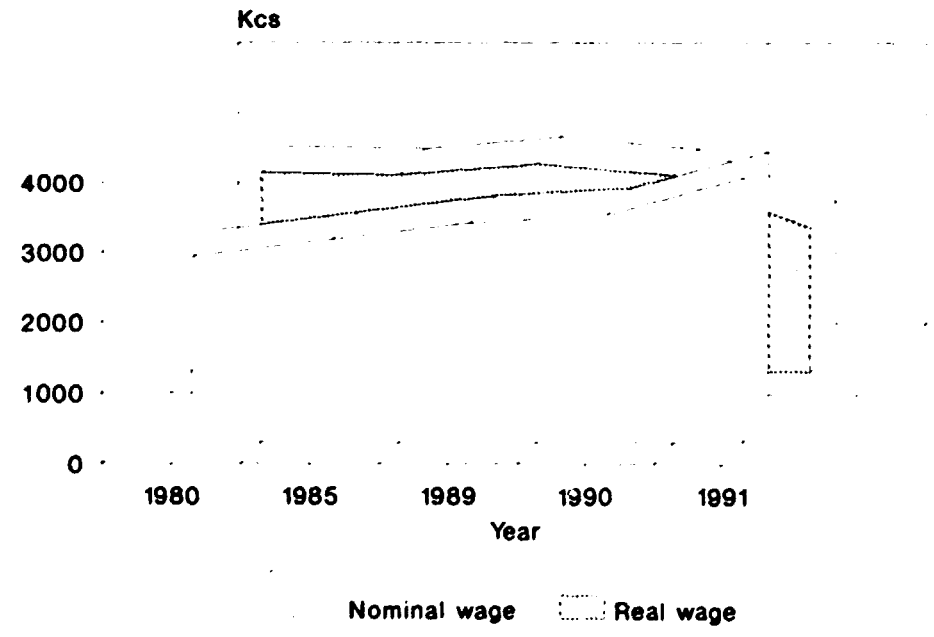


Fig. I.H. Nominal and real monthly wages, 1980-1991, selected years
(Kcs)



Housing

In the field of housing, the State owns slightly more than half of all residential dwellings, with the remainder being privately owned. Privately rented and owner-occupied housing has been subsidized to some extent through budgetary transfers and the provision of loans at preferential interest rates. Housing construction expanded rapidly during the 1970s, but slowed down in the following decade when the rate of economic growth decelerated. The shortages of materials and specialized services faced by construction companies in recent years have resulted in a decline in the quality of newly built housing. The inter-regional distribution of housing is also sub-optimal, with some areas facing an excess of supply and others an excess of demand. This is constraining labour mobility and hampering the government's efforts at industrial restructuring.

Education

Education is free at all levels, and access to general education, technical schools and higher education is universal. Over the past 20 years the number of students in establishments of higher education has risen significantly, and the standards of education in technical fields such as engineering and science are high. The number of pre-school facilities has also expanded considerably, and enabled a high rate of participation by women in the labour force.

Czechoslovakia's health system is well organized, and such physical and demographic indicators as infant mortality and life expectancy at birth show its performance to be relatively good. The number of doctors per population has risen steadily over the past 20 years, but the ratio of hospital beds to the number of inhabitants has remained broadly unchanged.

Transport, communications and trade

Services in support of economic activities, such as transport, communications and trade, reflect the patterns of overall economic growth, since they are closely related to general economic development. Czechoslovakia has a well functioning network of road, rail and air transport systems. The output of the transport and communication sectors expanded rapidly during the 1960s and early 1970s, but slowed down in the late 1970s and 1980s in line with the deceleration in economic growth prompted by the rise in fuel prices during this period. The transport intensity of production is approximately twice as high in Czechoslovakia as in developed market economies of a similar size, largely as a result of the strong orientation of the Czechoslovak manufacturing sector towards heavy industries with high utilization rates of raw materials and energy, which place high demands on transport infrastructure.

Trade accounts for about 12-14 per cent of NMP, and is monopolized by large companies to a significant extent, although cooperatives have gained an increasing share in recent years. The trade sector is seriously understaffed compared to market economies despite the fact that there has been a slight increase in employment in the recent past and that the proportion of labour employed in the sector is higher in Czechoslovakia than in any other country of eastern Europe. The sector is expected to expand as a result of the government's small privatization programme launched in November 1990, which covers the retail trade and has attracted considerable interest from emerging entrepreneurs.

Finance

Banking and finance were also seriously underdeveloped under the system of central planning, but have begun to be expanded during the past two years. The State Bank (Statní Banka Československá), which was established in 1950, is the central bank and the bank of issue. Under new regulations introduced in January 1990 it no longer provides credit directly to enterprises. This function has been transferred to the Commercial Bank of Prague (Komerční Banka Praha) and the Credit Bank of Bratislava (Úverova Banka Bratislava) both of which were established in

early 1990, and the Investment Bank (Investiční Banka), which was reactivated at the same time. The State Bank does, however, retain overall responsibility for managing Czechoslovakia's external debt.

In addition to the State and commercial banks listed above, Czechoslovakia's banking industry comprises two savings banks, one in each of the country's two constituent republics, and two banks involved in foreign exchange activities, the Czechoslovak Trade Bank (Československá Obchodní Banka, CSOB) and the Živnostenská Banka. The activities of the two savings banks are currently limited to the provision of housing finance and selected housing loans, while the CSOB holds the government's debt and the Živnostenská Banka deals with private depositors. Some smaller commercial banks have also been established in the recent past, and a number of foreign banks have also opened branches in Czechoslovakia.

Measures are expected to be taken in the foreseeable future to establish a variety of financial markets in Czechoslovakia, including a market for shares, a bill market, an inter-bank deposit market, a bond market and a property (real estate) market. Proposals have also been put forward for the establishment of one or two stock exchanges, which would initially be owned and managed by the Ministry of Finance but eventually by the brokers themselves. To operate a secondary market, a network of brokerages with a nationwide coverage would have to be established, and the role and prerogatives of such financial institutions as pension funds and life insurance companies would have to be reassessed. The introduction of a new tax law on 1 January 1993 is also expected to boost the development of the financial sector by regulating tax liabilities on dividend income, capital gains, pension fund contributions and transactions on securities.

Expenditure on net material product

An analysis of the demand components of Czechoslovakia's NMP indicates that consumption plays a dominant role in overall expenditure. As shown in Table I.2, the share of total consumption spending has remained broadly unchanged during the past two decades, fluctuating only mildly around the 80 per cent level for most of this period. The distribution of this expenditure between personal and social consumption has changed dramatically over the past two decades, however, with the share of the former falling from almost 64 per cent in 1970 to a low of less than 50 per cent in 1984 before rising gradually to about 60 per cent in 1990. The share of the latter, meanwhile, rose steadily from a mere 19.5 per cent in 1970 to almost 30 per cent in 1990.

The share of net fixed investment in NMP remained relatively stable at 15-20 per cent during the 1980s, but declined almost continuously in the following decade to 7.6 per cent in 1990. To some extent, however, this decline was offset by an increase in construction activity in the second half of the 1980s. The net effect of external trade on Czechoslovakia's national income also changed significantly during the 1980s. From being typically negative in the 1970s, the trade balance became much more favourable in the 1980s and recorded a surplus in every year between 1983 and 1988. This pattern was reversed in 1989 and 1990 as a result of the weakening export markets and the increased import demand triggered by the wide ranging political, economic and social changes then taking place in both Czechoslovakia and its main trading partners. A significant surplus is estimated to have been achieved in 1991, however, largely as a result of declining domestic demand for imports.

Population and labour

Czechoslovakia had a total population of approximately 15.6 million in 1990, of which some 9.8 million people were regarded as being in the labour force. As indicated in Table I.3, this labour force included about 9.1 million persons of working age, defined as men between the ages of 15 and 59 years and women between the ages of 15 and 54 years, as well as 0.7 million workers above retirement age and a small number of foreign workers. Of the total labour force of 9.8 million, no fewer than 7.4 million were in gainful employment, implying a labour force participation rate of 75.7 per cent.

Table I.2. Net material product by expenditure, 1970-1991, selected years
(Percentage share)

	Net material product used					Residual		Total
	Consumption		Accumulation					
Year	Personal	Social	Net fixed investment	Unfinished construction	Change in inventories	Trade balance	Losses	
1970	63.6	19.5	16.1	0.8	8.3	-10.1	2.1	100.0
1975	61.1	20.6	20.2	1.5	7.3	-12.9	2.1	100.0
1980	56.1	22.0	17.8	0.4	7.1	-4.8	1.3	100.0
1981	57.2	23.1	19.8	-3.2	3.2	-1.4	1.3	100.0
1982	55.8	23.5	15.4	0.2	3.7	-0.1	1.5	100.0
1983	55.7	23.9	13.7	0.3	3.5	1.6	1.3	100.0
1984	49.1	21.9	14.1	-2.1	2.1	3.3	1.2	100.0
1985	54.2	24.9	15.6	-2.5	2.7	4.0	1.2	100.0
1986	54.0	25.7	14.3	-0.4	3.3	1.9	1.1	100.0
1987	54.4	26.5	10.5	2.0	4.3	1.1	1.3	100.0
1988	55.8	26.8	11.3	1.6	1.8	1.5	1.2	100.0
1989	56.4	28.5	8.7	4.5	1.5	-3.8	1.2	100.0
1990	59.8	29.0	7.7	4.1	4.9	-7.1	1.7	100.0
1991[a/]	49.7	35.4	3.4	-3.3	3.4	9.7	1.8	100.0

Sources: Federal Statistical Office; World Bank.

a/ Preliminary data.

During the period of central planning some sections of the economy suffered from artificial shortages of labour. In part, this was the result of political and ideological constraints against the emergence of open unemployment, which were formalized in a constitutional prohibition of unemployment. More importantly, however, it reflected considerable overemployment elsewhere in the economy as managers avoided the scrapping of obsolete labour-intensive technologies and preferred to hoard labour in order to be able to comply with sudden directives demanding output increases beyond planned levels.

The excessively high levels of employment arising from these practices were mirrored in labour force participation rates of 75-80 per cent during the past two decades. As late as 1990 about one quarter of all people of pensionable age were thus still in employment, constituting more than 7 per cent of the total work force. The participation of women was also high, with about 75 per cent of working-age women being gainfully employed and accounting for 46 per cent of the economically active population.

This overemployment, especially in the manufacturing and construction industries, was the principal source of the sharp rise in unemployment during the first phase of the economic reform process in 1990-1991, as these industries were forced to shed unproductive labour. By the end of 1991 the rate of unemployment was estimated to have reached 6.6 per cent. In view of the fact that the existing labour force participation rates were too high by the standards not only of developed market economies but also of other eastern European countries, a significant further rise in unemployment levels appears inevitable in the short term. This will be reinforced further by the effects of the economic restructuring currently in progress, which is likely to force the closure of a large number of uncompetitive enterprises and to constrain output growth for some time to come.

The sectoral distribution of employment has been determined mainly by the sectoral distribution of production structure. As shown in Table I.4, the share of manufacturing industry in total employment fluctuated mildly around 37 per cent throughout the 1970s and 1980s, which is about twice as high as in developed market economies. At about 10 per cent the share of construction

Table I.3. Demographic base of employment, 1970-1990, selected years
(Percentage share)

Year	Labour force				Non-employed			Total employment[e/]
	Working age population[a/]	Retirement age employment	Foreign workers[b/]	Total	Women on maternity leave	Working age students[c/]	Others[d/]	
1970	92.7	7.1	0.2	100.0	1.6	9.4	12.1	76.9
1975	93.1	6.7	0.2	100.0	3.9	9.0	10.7	76.4
1980	92.9	7.0	0.1	100.0	4.1	9.7	9.2	77.1
1981	92.7	7.0	0.2	100.0	3.8	9.3	9.7	77.2
1982	92.6	7.1	0.3	100.0	3.7	9.0	9.7	77.5
1983	92.5	7.1	0.4	100.0	3.6	8.6	10.0	77.8
1984	92.4	7.2	0.4	100.0	3.6	8.0	10.2	78.1
1985	92.2	7.4	0.4	100.0	3.6	7.7	10.3	78.5
1986	92.1	7.6	0.4	100.0	3.7	7.5	10.2	78.6
1987	91.9	7.7	0.3	100.0	3.7	7.5	10.5	78.3
1988	92.0	7.7	0.3	100.0	3.7	7.7	10.5	78.1
1989	92.2	7.4	0.4	100.0	3.8	8.1	10.7	77.4
1990	92.4	7.2	0.4	100.0	4.1	8.5	11.7	75.7

Sources: Federal Statistical Office; Economist Intelligence Unit.

a/ Males 15-59 and females 15-54 years old.
b/ Minus domestic workers abroad.
c/ Including school-children and trainees of working age.
d/ Unfit for work, housewives, armed forces, self-employed and unemployed.
e/ Excluding those with two or more jobs.

Table I.4. Sectoral distribution of employment, 1970-1990, selected years
(Percentage share)

Year	Total[a/]	Agriculture	Industry	Construction[b/]	Trade and catering	Other material branches[c/]	Non-material services
1970	100.0	16.6	37.9	9.1	7.6	7.7	21.3
1975	100.0	13.8	38.1	10.0	8.6	7.5	22.0
1980	100.0	12.2	37.5	10.2	9.1	7.3	23.7
1981	100.0	12.1	37.5	10.0	9.2	7.3	24.0
1982	100.0	11.9	37.5	9.9	9.2	7.3	24.2
1983	100.0	11.6	37.6	9.9	9.3	7.4	24.2
1984	100.0	11.5	37.5	9.9	9.4	7.3	24.4
1985	100.0	11.4	37.3	9.9	9.4	7.3	24.7
1986	100.0	11.2	37.4	10.1	9.4	7.1	24.9
1987	100.0	11.0	37.4	10.3	9.4	7.0	25.0
1988	100.0	10.8	37.3	10.3	9.4	7.0	25.4
1989	100.0	10.4	37.2	10.2	9.5	7.0	25.8
1990[d/]	100.0	10.5	36.5	9.8	9.4	7.0	26.3

Source: Federal Statistical Office.

a/ Including double payment.
b/ Including designing and geological activities (corresponding to NMP produced in construction).
c/ Forestry, water resources, material transport, "material" part of communications, raw material resources, State purchases of agricultural products.
d/ Preliminary data.

is also excessively high, and despite its decline from 16.6 per cent in 1970 to about 10.5 per cent in 1990, the share of agriculture also remains high. By contrast, the service industries account for a comparatively small proportion of total employment even though their share has increased since the 1970s.

Regional distribution of production and employment

The Czech Republic has historically been the more heavily industrialized part of the country, and made a significantly larger contribution to overall NMP than the Slovak Republic. Although a conscious effort to raise output levels in the Slovak Republic has resulted in an annual average increase of 3.6 per cent in net material product (NMP) in real terms during the past two decades, well above the corresponding growth rate of 2.7 per cent achieved by the Czech Republic, the latter is still estimated to have accounted for 70.5 per cent of Czechoslovakia's total NMP in 1990.

The industrial structure of the Czech and Slovak Republics also varies significantly. The Czech Republic thus has a relatively well balanced industrial base, with chemical and rubber, electrotechnical and electrical, and food processing industries in the vicinity of Prague, non-ferrous metallurgy, building materials and food processing industries in central Bohemia, and glass and ceramics, chemical and rubber, and textile industries in northern Bohemia. In addition, there is a substantial textile industry in eastern Moravia and concentrations of wood-working, clothing and leather industries in southern Moravia, as well as a significant ferrous metallurgy and pulp and paper industry in northern Moravia. The Slovak Republic has a much narrower industrial base, which is dominated by heavy industries as well as military production, such as metalworking, chemicals and rubber, and power. In addition, there is an important concentration of clothing and leather industries in the western part of the Republic.

These differences between the two constituent parts of Czechoslovakia are due mainly to the fact that manufacturing industry has longer historical roots in the Czech Republic than in the Slovak Republic. The Czech Republic's industrial development therefore occurred in a more spontaneous manner, at least in the initial stages, and was based to a greater degree on rational economic considerations. In the Slovak Republic, by contrast, the industrialization process did not begin in any meaningful sense until the 1950s, when the development of an industrial base in this part of the country came to be seen as an important priority of public policy for political and social as well as economic reasons. The allocation of industries to the Slovak Republic was consequently determined by the central planning apparatus, and was subject to political as well as economic considerations. In this context, the geographical proximity of Slovakia to the former Soviet Union also played a significant strategic role.

The more brisk rate of output growth in the Slovak Republic during the past two decades has, in turn, prompted a similarly rapid rate of employment growth than in the Czech Republic. Adjusting for the fall in employment levels triggered by the changing economic environment in 1989-1990, the data in Table I.5 indicate that the number of persons employed in the Slovak Republic increased by 1.1 per cent per year between 1970 and 1990, from 1.95 million to 2.41 million. By contrast, the number of persons employed in the Czech Republic increased at an annual average rate of less than 0.3 per cent during this period, from 4.92 million to 5.2 million.

In spite of the relatively higher proportion of fixed investment allocated to the Slovak Republic and its faster rate of industrialization during the past 20 years, the level of labour productivity has consistently remained about 10 per cent below that prevailing in the Czech Republic. This reflects not only capital intensity but also in the more rapid growth of employment in the Slovak Republic and the resulting higher level of overemployment. The lower level of labour productivity has, however, also prompted much higher levels of unemployment in the Slovak Republic than in the Czech Republic following the recent changes in the political and economic environment. At the end of 1991, the rate of unemployment was thus estimated at 11.8 per cent in the Slovak Republic and 4.1 per cent in the Czech Republic.

Table I.5. Regional distribution of production and employment, 1970-1990, selected years
(Percentage share)

Year	Net material product[a/]				Total employment[b/]			
	Czech Republic		Slovak Republic		Czech Republic		Slovak Republic	
	Billion Kcs	Percentage share	Billion Kcs	Percentage share	Thousand persons	Percentage share	Thousand persons	Percentage share
1970	222.3	73.8	79.0	26.2	4,923	71.6	1,948	28.4
1975	286.1	72.3	109.5	27.7	4,960	70.3	2,100	29.7
1980	329.8	71.6	130.6	28.4	5,092	69.2	2,266	30.8
1981	327.3	71.5	130.5	28.5	5,115	69.1	2,292	30.9
1982	324.6	71.4	130.3	28.6	5,128	69.0	2,307	31.0
1983	328.6	71.0	134.5	29.0	5,134	68.8	2,332	31.2
1984	337.2	70.6	140.7	29.4	5,168	68.6	2,366	31.4
1985	345.6	70.4	145.6	29.6	5,209	68.5	2,397	31.5
1986	354.4	70.0	152.0	30.0	5,264	68.3	2,441	31.7
1987	361.3	69.6	157.8	30.4	5,287	68.2	2,467	31.8
1988	369.1	69.3	163.2	30.7	5,313	68.1	2,491	31.9
1989	378.0	69.6	165.0	30.4	5,343	68.2	2,487	31.8
1990[c/]	380.1	70.5	158.8	29.5	5,200	68.3	2,410	31.7

Source: Federal Statistical Office.

a/ NMP produced excluding the product of foreign trade, in billion Kcs, 1 January 1984.
b/ Thousand persons, yearly averages, including double employment.
c/ Preliminary data.

Foreign trade and payments

Foreign trade

Czechoslovakia's integration into the former CMEA resulted in a radical shift in its trade flows. Between 1948 and 1953 the country's trade with the socialist countries increased from 39.6 per cent to 78.5 per cent of its total trade, while that with the developed market economies dropped from 45.7 per cent to 14.9 per cent. This situation persisted until the end of the 1980s, when the centrally planned economies accounted for well over 60 per cent of Czechoslovakia's total external trade. In line with its assigned role as supplier of investment goods to the other member countries of the CMEA, Czechoslovakia's exports consisted mainly of industrial goods in general and machinery in particular. Its imports, on the other hand, consisted largely of the inputs required for the production of its main export products, and originated mainly from the former Soviet Union. By contrast, the developed market economies accounted for only about 30 per cent of Czechoslovakia's total trade, and the developing countries for the remaining 7-8 per cent.

The geographical distribution of Czechoslovakia's foreign trade has changed dramatically during the past two years. By 1991 the share of the post-socialist economies in Czechoslovakia's exports and imports had declined to 39 per cent and 43 per cent respectively, while the shares of the developed market economies had risen to 52 per cent and 48 per cent. Meanwhile, the share of developing countries in both exports and imports increased to about 9 per cent.

Balance of payments

Czechoslovakia's balance of payments in convertible currencies has not sustained any large or persistent deficits. Although the country has customarily recorded deficits in its merchandise trade with the developed market economies, these have usually been offset to a substantial degree by

surpluses in its trade with developing countries. A deterioration in the convertible currency trade balance caused by increases in the world prices of petroleum and other raw materials in the mid-1970s was arrested by the adoption of a firm policy of economic stabilization, which resulted in a sharp contraction of imports from convertible currency countries. Czechoslovakia subsequently recorded substantial surpluses in its current account in convertible currencies during most of the 1980s (see Table I.6). These favourable results need to be qualified, however, by the fact that exports to some developing countries were supported by trade credits, a significant proportion of which are unlikely to be recoverable.

Table I.6. Balance of payments, 1970-1991, selected years
(Current million $)

Year	Current account: Trade balance	Current account: Services balance[a/]	Current account: Unrequited transfers	Current account: Total	Capital account	Valuation changes[b/] and errors	Change in reserves[c/]
In convertible currencies							
1970	-70.8	60.6	-5.9	-16.1	64.9	-11.3	-37.5
1975	370.5	118.4	-27.1	-279.2	185.1	-29.3	123.4
1980	-11.6	-262.2	-41.9	-316.2	1,020.3	-347.3	-356.8
1981	341.2	-286.5	-33.3	21.4	-614.8	-293.8	887.2
1982	658.1	-87.8	-162.0	408.3	-522.0	-50.7	164.4
1983	819.9	71.1	-36.3	854.7	-612.7	-129.4	-112.6
1984	900.2	204.2	-29.6	1,074.8	-615.4	-301.7	-157.7
1985	695.4	133.4	-40.1	788.7	-824.7	-75.6	11.6
1986	224.0	281.2	-36.7	468.5	-12.5	-196.5	-259.5
1987	-124.4	112.6	-47.2	-59.0	389.5	-71.4	-259.6
1988	-82.6	74.4	-50.7	-58.9	367.3	-101.6	-206.8
1989	419.2	55.1	-35.0	439.3	326.3	-197.0	-568.6
1990	-285.3	-279.3	-39.9	-1,104.5	326.1	-324.0	1,102.4
1991[d/]	-447.3	762.0	41.8	356.5	1,247.0	494.4	-2,097.9
In non-convertible currencies							
1970	141.5	24.4	-3.5	162.4	-175.5	13.1	-
1975	-224.3	29.1	-8.6	-203.8	211.3	-7.5	-
1980	-137.5	202.1	44.3	108.9	-111.6	2.7	-
1981	49.1	253.6	53.3	356.0	-310.2	-45.7	-
1982	-357.1	458.5	46.2	147.3	-74.6	-72.7	-
1983	-424.1	392.9	24.5	-6.7	28.3	-21.6	-
1984	-479.3	320.3	38.1	-120.9	140.6	-19.7	-
1985	-419.0	274.8	44.5	-99.7	-132.0	231.7	-
1986	-610.0	261.9	48.4	-299.7	84.3	215.4	-
1987	-146.3	461.0	115.3	430.0	-497.6	67.6	-
1988	467.7	568.2	116.3	1,152.2	-1,260.3	108.1	-
1989	-274.1	630.6	143.2	499.7	-614.8	115.1	-
1990	-713.7	261.1	246.7	-205.9	227.9	-22.0	-
1991[d/]	371.4	200.3	18.9	590.6	-853.5	262.9	-

Sources: State Bank of Czechoslovakia; World Bank.

a/ Including interest payment.
b/ Differences in exchange rates and value of gold.
c/ Counterpart item, minus sign indicates increase in reserves.
d/ Preliminary data.

The changed economic environment in 1990 prompted a sharp deterioration in Czechoslovakia's external payments position as the re-orientation towards trade in convertible currencies resulted in a more rapid growth of imports than exports. The country consequently suffered a substantial current account deficit, in excess of $1.1 billion. Owing largely to a sharp contraction of imports and a significant improvement in the invisibles balance, however, a modest surplus of some $360 million was recorded in 1991.

Czechoslovakia's balance of payments in non-convertible currencies reflects primarily its trade links within the former CMEA. The country benefited for a time from a former CMEA agreement signed in 1975, which fixed the price of raw materials as an average of the world price for the preceding five years. This only delayed the effect of the rise in oil prices, and Czechoslovakia's payments for its oil imports from the former Soviet Union increased by 170 per cent between 1980 and 1986. To help Czechoslovakia overcome the resulting deficit in its trade with the CMEA, the former Soviet Union granted a long term credit bearing an interest rate of only 2 per cent per year. Meanwhile, Czechoslovakia's heavy industry benefited from a renewed expansion of machinery exports to the former Soviet Union and other eastern European countries, which had been forced to cut their imports from the West.

The post-1986 decline in world oil prices also affected the price of Czechoslovakia's oil imports from the former Soviet Union and permitted a surplus to be restored in Czechoslovakia's trade balance with the former Soviet Union. The former Soviet Union responded by reducing its imports of Czechoslovak machinery, and prompted the Government of Czechoslovakia to begin considering a shift in its industrial structure towards the manufacture of more modern products capable of competing in world markets. The decision of the former Soviet Union to demand payment at world prices and in hard currency from the beginning of 1991 onwards, and the subsequent dissolution of the former Soviet Union and the CMEA have increased the urgency for such a shift in Czechoslovakia's industrial and trade relationships.

External debt

Czechoslovakia has traditionally pursued a prudent policy towards external borrowing, and has consequently accumulated a relatively low level of foreign debt. Although the country's debt in convertible currencies has fluctuated over the past decade in line with its trade performance, and rose significantly in the latter half of the 1980s, it remained modest in comparison with that of other central and eastern European countries. Total external debt was thus estimated at $8.1 billion at the end of 1990, and despite a significant increase to approximately $9.4 billion by the end of 1991 remains within manageable limits (see Table I.7).

Interest and amortization payments on Czechoslovakia's convertible currency debt increased from about $1 billion in 1980 to almost $1.5 billion in 1989, or from about 17 per cent to 20 per cent of convertible currency earnings. Bearing in mind the modest extent of Czechoslovakia's overall indebtedness, this relatively high debt service ratio reflected the comparatively low level of the country's convertible currency exports rather than an unduly high level of debt service payments. Despite the high burden imposed by these debt service payments, Czechoslovakia met its commitments regularly and on time. As the share of convertible currency exports in total exports rose between 1989 and 1991, the debt service ratio in terms of convertible currencies also declined to about 14 per cent.

Foreign investment

Foreign investment into Czechoslovakia has been very limited so far, and has most commonly tak n the form of joint ventures with local enterprises. In 1991 the total amount of foreign investment into Czechoslovakia is estimated to have amounted to approximately $600 million, with the Czech Republic having attracted about 95 per cent of this figure. This disparity is due largely to differences in the established economic structure of the two regions.

Table I.7. External debt, reserves and other assets in convertible currencies, 1970-1991, selected years
(Current billion $, end of period)

Year	Gross external debt	Debt service[a/]		Official external reserves[c/]	Other foreign assets
		Billion $	Percentage of exports[b/]		
1970	0.608	..	..	0.320	0.446
1975	1.398	..	..	0.671	0.858
1980	6.850	1.001	17.2	1.983	2.085
1981	6.316	1.216	21.3	1.096	2.254
1982	5.769	0.965	18.0	0.931	2.329
1983	5.160	0.989	17.9	1.044	2.568
1984	4.737	1.094	19.4	1.202	2.851
1985	4.608	0.928	17.5	1.107	3.462
1986	5.567	1.098	18.2	1.363	4.319
1987	6.657	1.140	18.1	1.618	4.881
1988	7.281	1.371	20.1	1.827	5.150
1989	7.915	1.483	20.4	2.390	5.351
1990	8.085	1.121	13.8	1.207	5.450
1991[d/]	9.400	1.500	13.9	3.300	5.600

Source: State Bank of Czechoslovakia; World Bank.

a/ Principal and interest payments.
b/ Exports of goods and services in convertible currencies.
c/ Including gold.
d/ Estimate.

Inflows of foreign investment are expected to increase substantially in the years to come. Czechoslovakia is an attractive country for foreign investors owing to its long industrial tradition and its cheap and highly skilled and reliable labour force. Local firms are well acquainted with the markets of the former CMEA countries, and geared to meeting their needs for industrial machinery and equipment. The country's low level of foreign indebtedness and the prudent economic policies adopted by the government over the past two years should also help to generate confidence among potential investors that the country is capable of maintaining economic stability and a balance of payments equilibrium. This confidence is likely to be reinforced, moreover, by the strongly market-oriented economic reform programme being pursued by the government, which includes a wide range of measures designed specifically to attract private investment and provide foreign investors with assurances that they will be able to remit profits and dividends.

C. ECONOMIC PROSPECTS

Although the Government of Czechoslovakia has made a determined and so far largely successful start to the process of economic reform, much still needs to be done to ensure that the transformation from a centrally planned to a market-oriented system proceeds smoothly and results in the emergence of a dynamic, efficient and competitive economy. According to a recent IMF study four issues are particularly important in this context:[4/]

- The government will have to provide the entire framework of a market economy, including an appropriate legal system and the necessary institutions to administer it (such as anti-trust and bank supervision offices), modern basic infrastructure, and a variety of other facilities (such as labour exchanges or trade and investment promotion activities);

- Government interference with market signals should be minimized, and the government will need to refine the rather blunt instruments with which it has thus far conducted macroeconomic policy. To this end, several further measures are necessary, including a major tax reform planned for 1993, a replacement of the clearly distortionary direct credit ceilings on banks with instruments of reserve money management; and a phasing out of the excess wage tax;

- Market signals should not be distorted by "noise" from the past. In this respect, it is particularly important that measures are taken to prevent the burden of bank debt inherited by enterprises from obscuring their current viability;

- It is necessary to ensure that economic agents react to market signals in an efficient manner. Privatization is the key to the success of this effort, and little improvement in economic performance can be expected ahead of privatization.

As noted by the authors of the IMF study cited above, the structural measures required to lay the basis for a thriving market economy will take time, and there will be lags between implementation of these measures, reactions to them by the various economic agents, and the results of these responses. The all but complete absence of an entrepreneurial tradition will lengthen this process significantly. They conclude, therefore, that it is impossible at this stage to predict just how long all these lags will delay an improvement in economic performance, particularly in the context of a highly uncertain, and perhaps worsening, regional economic climate.

In general, the adjustment of the economy to market conditions will result in a decline in industrial output and real GDP in the short term as inefficient and uncompetitive production is weeded out. In the second stage of the transition to a market economy, which may start in the second half of 1992 or in 1993, the positive effects of the more efficient new or restructured production facilities should prevail, and a new period of economic and industrial growth is expected to commence.

As a consequence of these anticipated trends in economic activity, unemployment is expected to rise initially and then decrease in the medium term to a level similar to that in western Europe. Provided that the present anti-inflationary macroeconomic policies are sustained, moreover, the rate of inflation will also be maintained at moderate levels comparable to those prevailing in developed market economies. The economic prospects for Czechoslovakia will be determined to a considerable extent by the need to restructure and modernize the Czechoslovak economy, which will require massive imports of advanced foreign technology. This will not be possible without large foreign capital flows in the form of both investments and loans, and will be reflected in an increase in Czechoslovakia's foreign debt.

A fundamental restructuring will be essential at both the sectoral and enterprise levels if Czechoslovakia is to build up its competitiveness as it increases its trade with the market economies. As a first step in this process, an assessment of Czechoslovakia's comparative advantage under the new competitive circumstances would need to be made. On the positive side, Czechoslovakia has a tradition of technological innovation and a skilled and low-cost labour force. It is also well located with respect to European markets and can offer western companies access to markets elsewhere in central and eastern Europe. On the negative side, however, it suffers from a lack of familiarity with western commercial markets, a reliance on relatively outdated plant and technology, a comparatively low level of labour productivity, a weak managerial base and a lack of technological linkages with west European industries. Although the recently signed trade agreements with the European Community (EC) and the European Free Trade Association (EFTA)[5/] will help Czechoslovakia to overcome these weaknesses, they will nevertheless hamper the country's ability to penetrate western markets for some time to come.

Several other factors will also prevent a quick increase in industrial exports. The government's policies to make the koruna "internally convertible" and liberalize Czechoslovakia's foreign trade regime from the beginning of 1991 will increase the pressure on the balance of payments in the

short term. The current programme to restructure the existing export industries and establish new ones will also take time to complete. Exports of machinery are likely to suffer a particularly sharp decline in the short term, since they are oriented primarily towards former CMEA and developing country markets, and in the case of the latter have been supported by a policy of providing export credits to importers, which is now increasingly being discontinued.

Export competition from the other reforming countries in the region and the newly industrializing countries will not make it easier for Czechoslovakia to increase its share in competitive world markets. Further, while the successor States of the erstwhile Soviet Union may provide a potentially large market for Czechoslovakia's exports over the longer term, the more immediate future is likely to witness low levels of demand from Czechoslovakia's traditional partner countries, which are themselves undergoing economic reform and stabilization programmes. Over the coming years, therefore, Czechoslovakia's exports can be expected to grow at a less rapid pace than its imports.

Some segments of industry, with flexible technological characteristics permitting a rapid adjustment to the changed market conditions and aggressive managements to make such adjustments, will adapt quickly to the new situation. Overall, however, it is inevitable that there will be a drop in industrial output in the short to medium term, partly in response to uncontrollable external conditions, and partly due to the need for significant restructuring. The impact of these changed circumstances is already being felt, and is exemplified by a significant decline in the production of Czechoslovak armaments in response to a deliberate policy decision as well as reduced sales at home, in the former Soviet Union, and in other countries.

Foreign direct investment (FDI) is expected to play a major role in transforming Czechoslovakia's economy into a market economy and in facilitating a restructuring at enterprise level. Czechoslovakia could derive considerable benefits from making such investment, particularly through joint ventures, a centre-piece of its transition programme, since FDI in joint ventures is capable of providing what Czechoslovak enterprises need most: risk capital, management skills, technology, and export marketing or access. In addition, FDI can also help to accelerate the privatization process. For this reason, considerable emphasis is being given to measures that would stimulate an increase in foreign investment activity.

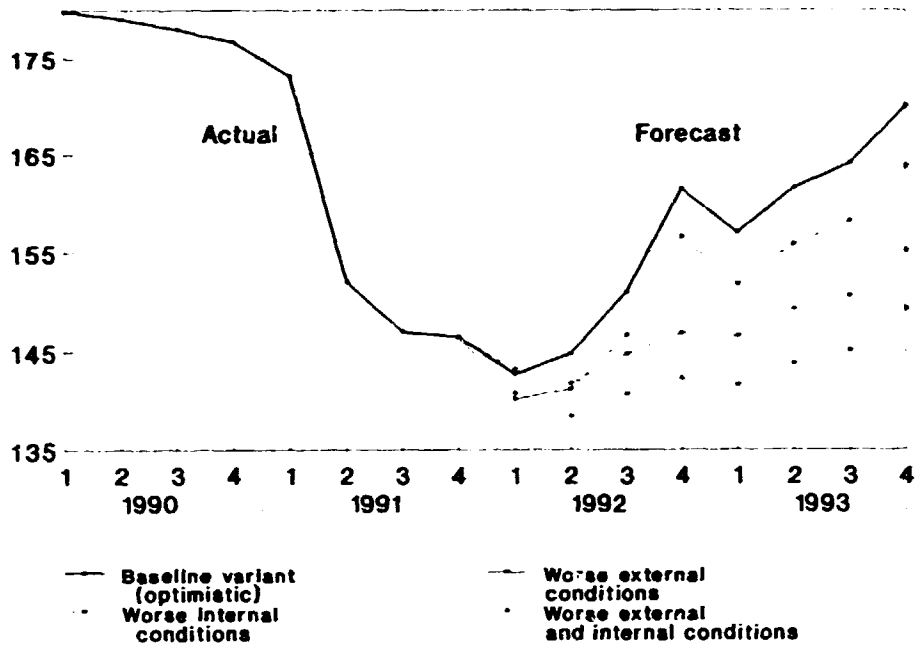
Assuming on the basis of recent developments that the economic reform process will continue and that an incipient increase in foreign investment interest will be sustained, Czechoslovakia's short term economic prospects appear broadly encouraging. A quantitative forecast computed by I. Sujan, suggests the strong likelihood of a recovery in economic activity. Generated by means of an econometric model developed by the Institute of Informatics and Statistics (INFOSTAT) at Bratislava in collaboration with the Federal Statistical Office (FSO), this forecast provides projections of the principal macroeconomic variables for 1992-1993. It has been produced in four separate variants according to different combinations of assumptions regarding the successful implementation of the domestic economic reform process and the state of the world economy. The results of this forecast, as illustrated in the following figures, and presented in detail in Annex D, suggest that the contraction of national income recorded in 1990-1992 will be reversed in 1993, when a significant growth of real GDP will be achieved. With inflation being held at about 6-7 per cent, the decline in real disposable household income registered in recent years is also expected to be arrested in all but the worst case scenario. After continuing to rise in 1992, the level of unemployment is also expected to fall noticeably in 1993 as the economy recovers.

A separate medium-term forecast of likely developments in Czechoslovakia's industrial sector during the transition period based on an econometric model developed by I. Sujan and D. Strauch[6/] is also presented in Annex D. This forecast suggests that it will not be possible to maintain the present share of industry in GDP or the proportion of industrial employment, and also projects a significant shift in the industrial structure of production and employment in favour of some light industries. The precise nature of the likely changes will depend, of course, on a combination of numerous external influences, in view of which this forecast presents also four alternative scenarios. In each case, however, the forecast predicts that the current structure of the

Czechoslovakia is unlikely to be sustained. It suggests in particular that the contribution of the industrial sector to overall GDP will decline as market based investment criteria begin to have an impact, and that within the industrial sector the share of mining and heavy manufacturing will be reduced in favour of light industries.

MACROECONOMIC FORECASTS FOR 1992 AND 1993

Fig. I.I. GDP forecast for 1992 and 1993
(Billion 1984 Kcs, seasonally adjusted)



Source: Federal Statistical Office, INFOSTAT, Bratislava.

Fig. I.J. Forecast of industrial production, 1992 and 1993
(Billion 1984 Kcs, seasonally adjusted)

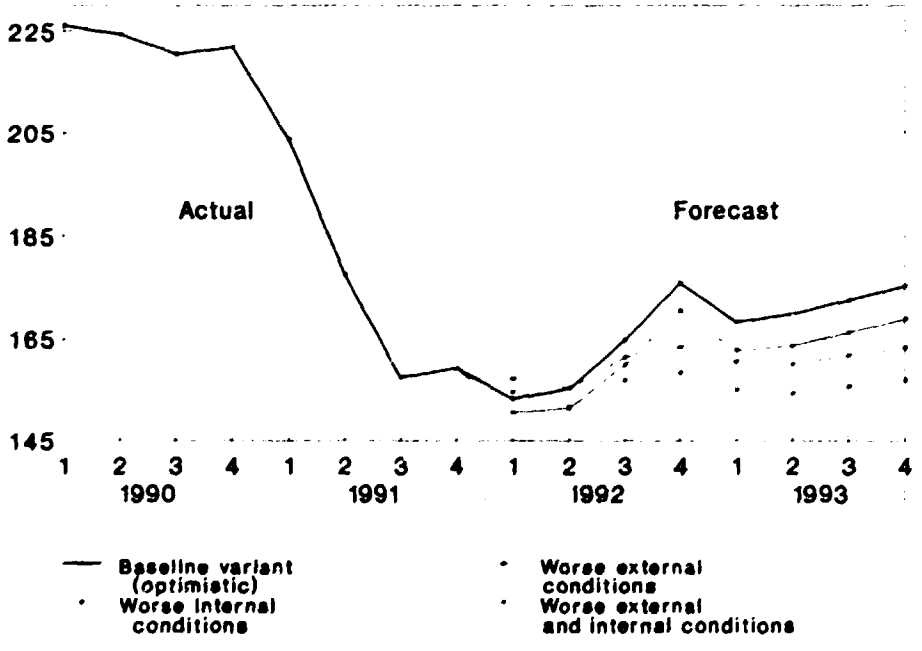
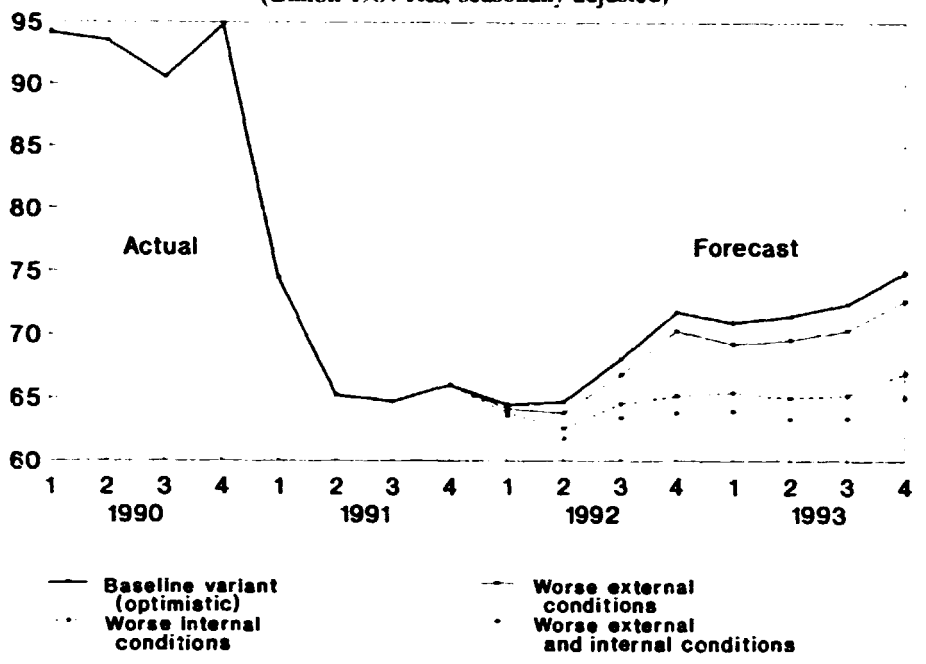
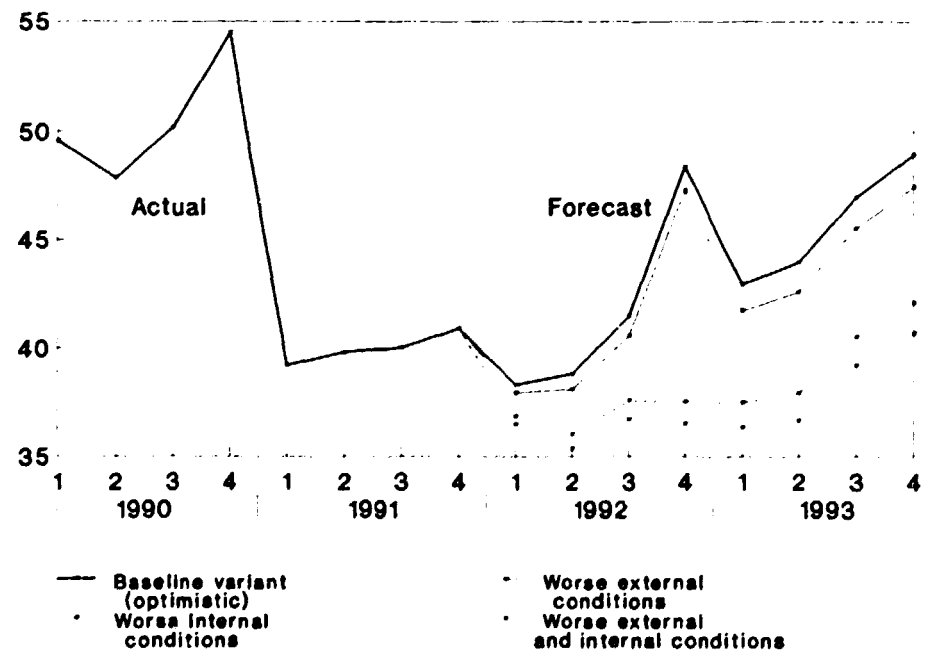


Fig. I.K. Forecast of private consumption, 1992 and 1993
(Billion 1984 Kcs, seasonally adjusted)



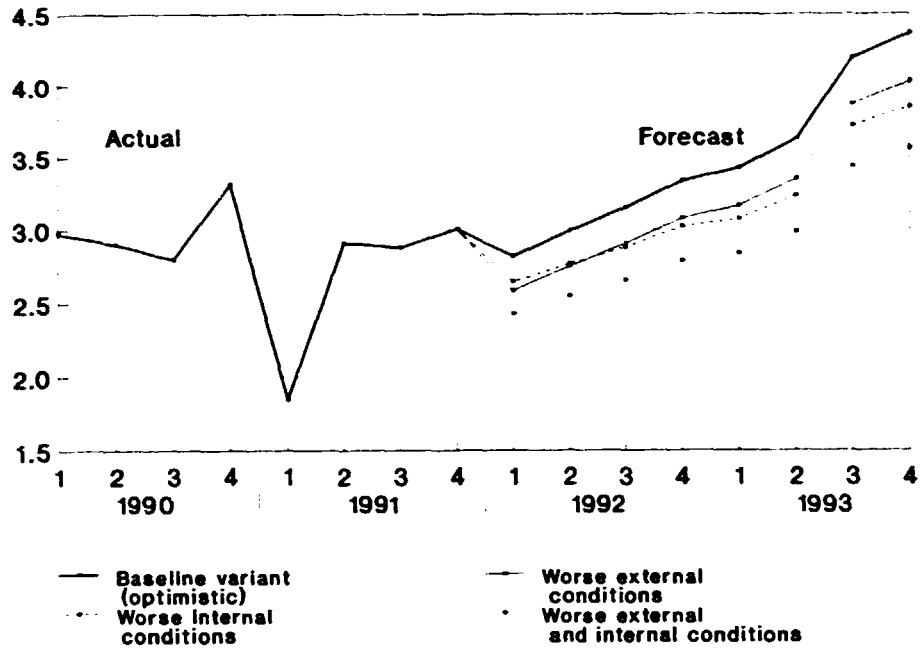
Sources: Federal Statistical Office, INFOSTAT, Bratislava

Fig. I.L. Forecast of gross fixed investment, 1992 and 1993
(Billion 1984 Kcs, seasonally adjusted)



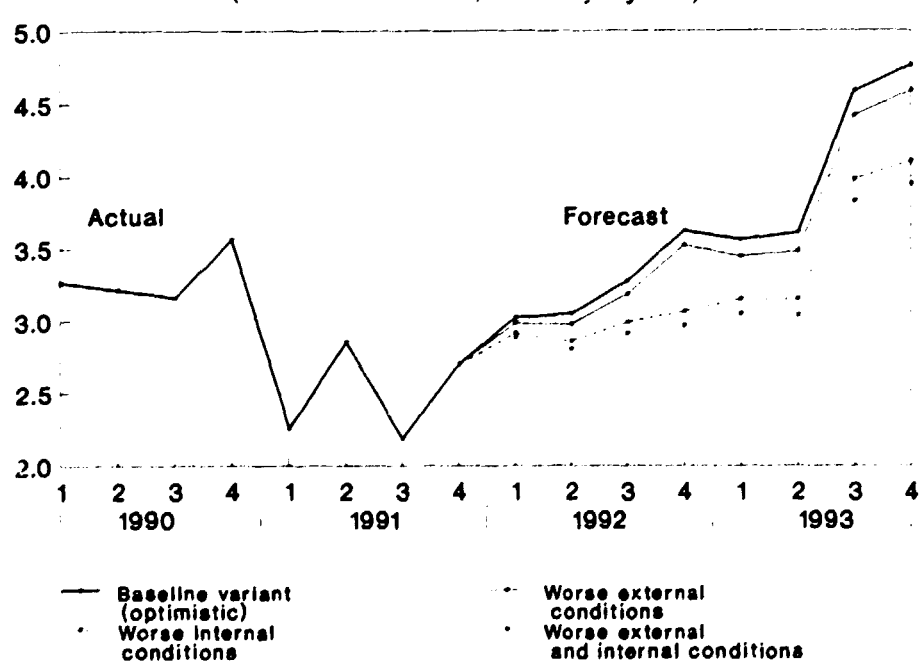
Sources: Federal Statistical Office, INFOSTAT, Bratislava

Fig I.M. Export forecast, 1992 and 1993
(Billion current dollars, seasonally adjusted)



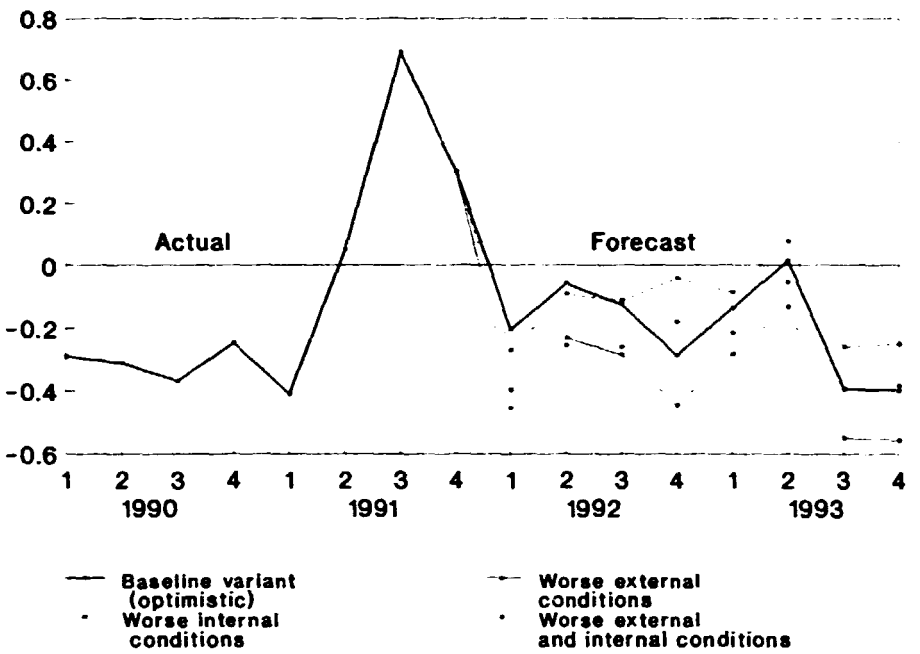
Sources: Federal Statistical Office, INFOSTAT Bratislava

Fig. I.N. Import forecast, 1992 and 1993
(Billion current dollars, seasonally adjusted)



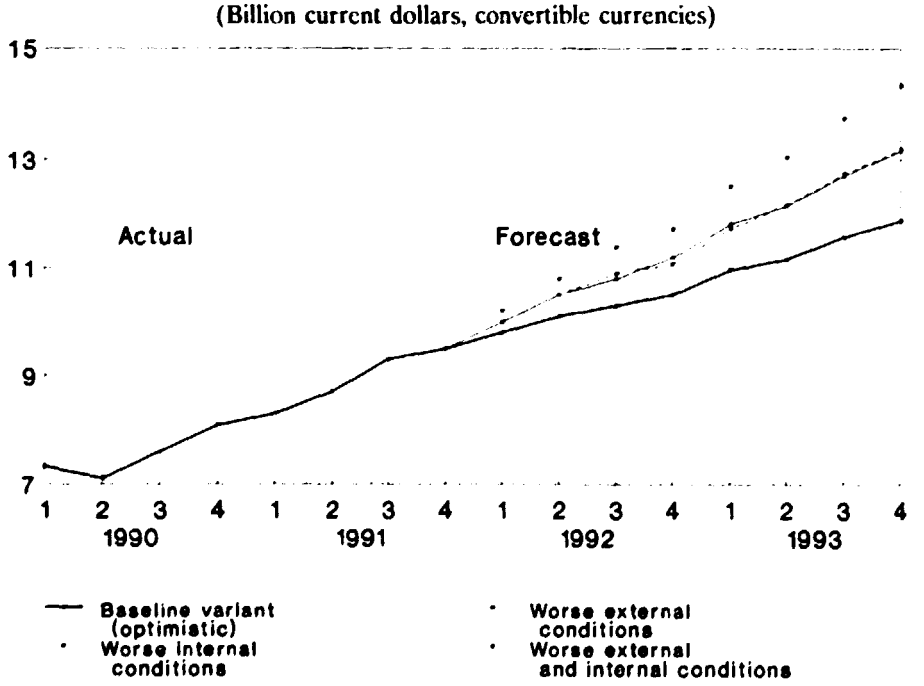
Sources: Federal Statistical Office, INFOSTAT Bratislava

Fig. I.O. Balance of trade forecast, 1992 and 1993
(Billion dollars, seasonally adjusted)



Sources: Federal Statistical Office and NFOSTAT Bratislava

Fig. I.P. Forecast of gross external debt, 1992 and 1993
(Billion current dollars, convertible currencies)



Sources: Federal Statistical Office and NFOSTAT Bratislava

Fig. I.Q. Forecast of consumer price index, 1992 and 1993
(December 1990 = 100)

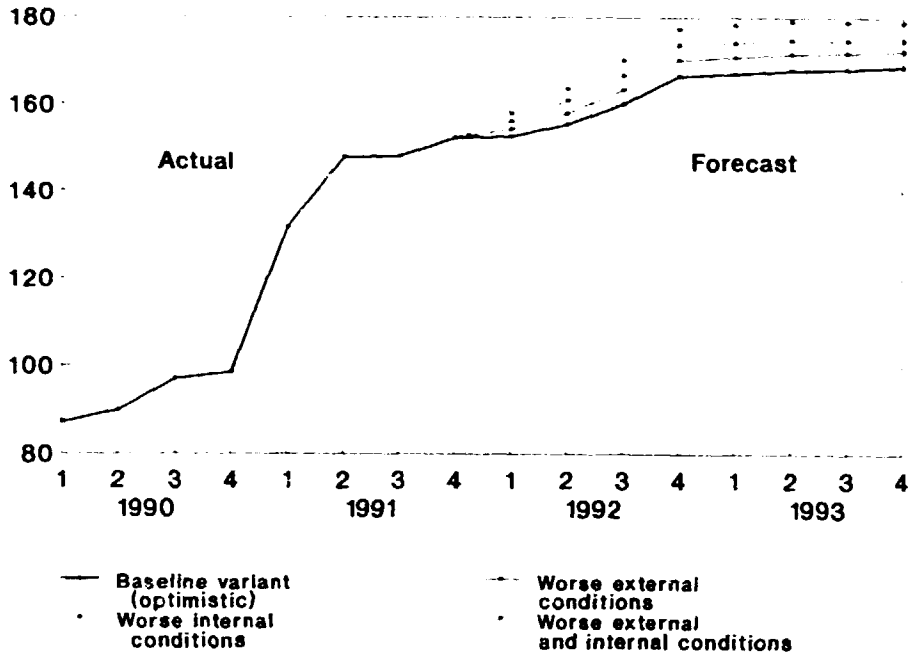


Fig. I.R. Forecast of monthly nominal wages, 1992 and 1993
(Thousand current Kes, seasonally adjusted)

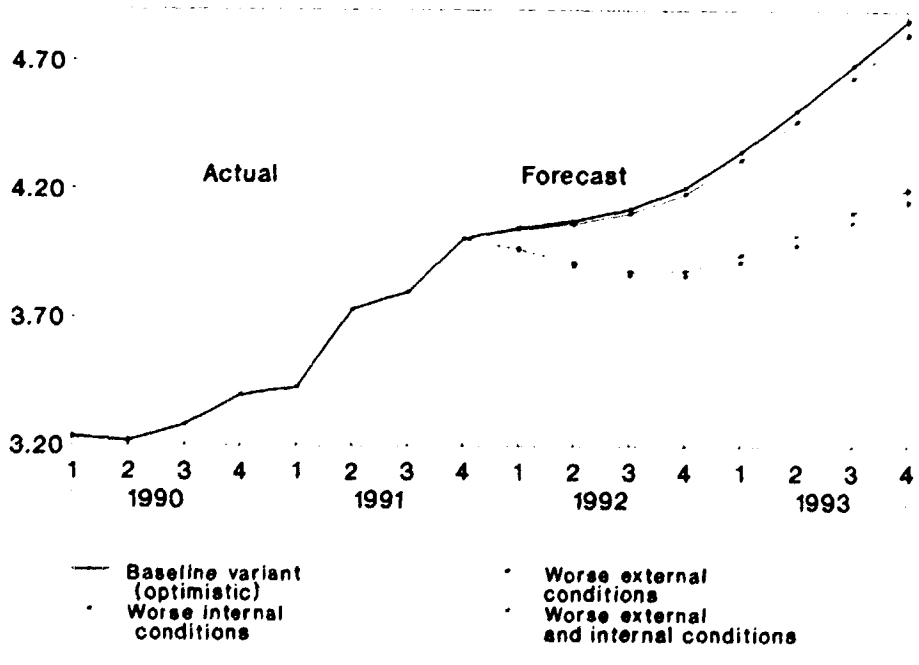
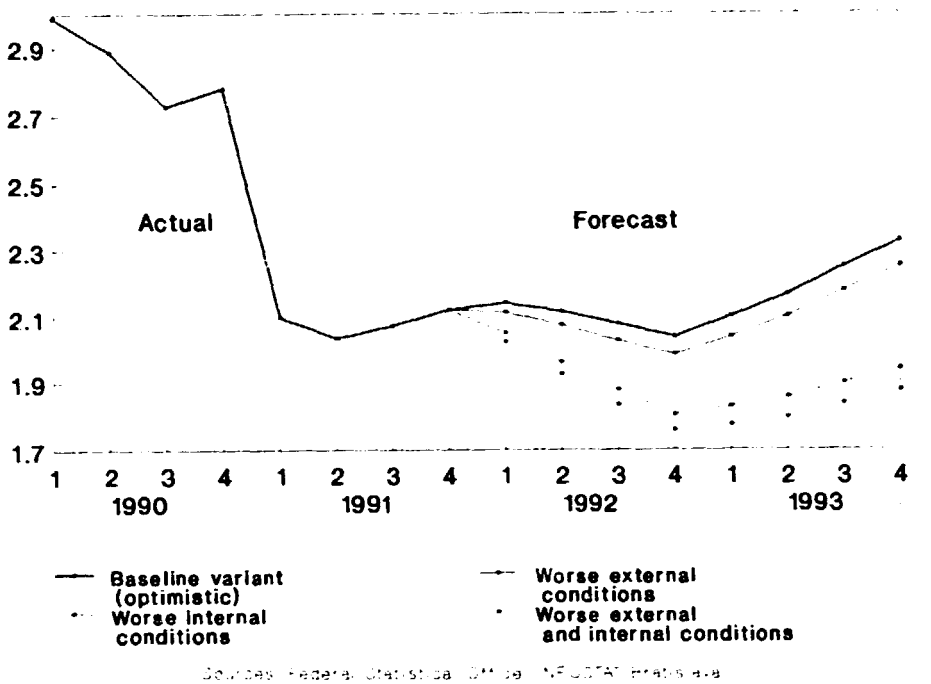
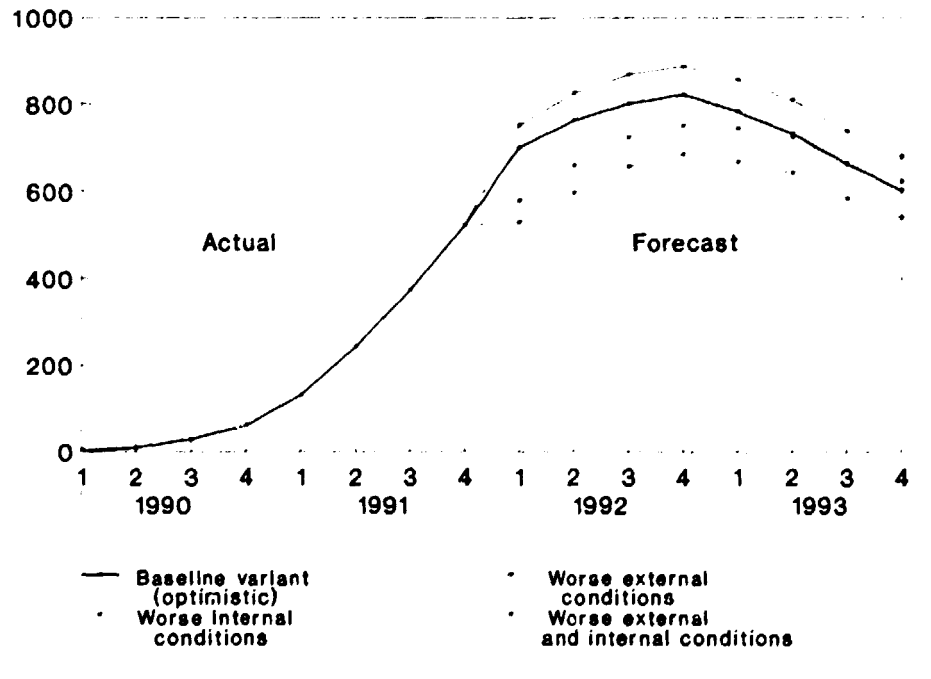


Fig. I.S. Forecast of monthly real wages, 1992 and 1993
(Thousand 1984 Kcs, seasonally adjusted)



Sources: Federal Statistical Office, VÚPSAT Prognosis

Fig. I.T. Unemployment forecast, 1992 and 1993
(Thousand persons)



Sources: Federal Statistical Office, VÚPSAT Prognosis

NOTES TO CHAPTER I

1/ In common with other centrally planned economies, Czechoslovakia's national accounts statistics have been computed according to the Material Product System (MPS) during the post-World War II period. The basic indicator employed in the MPS is net material product (NMP), also known as national income, which represents the value added output of all goods and services related to physical production, transport and distribution. Health, education, public administration, defence, banking, the hotel industry and most personal services are excluded from the calculation of NMP (although restaurants are included). Consequently, NMP yields a smaller estimate of national income, output and expenditure than the gross domestic product (GDP) and gross national product (GNP) concepts utilized in the West. The "non-productive services" excluded from NMP are also referred to collectively as the "non-material sphere" of the national economy. The usual NMP measure referred to is "NMP produced", which differs from "NMP distributed" in that the latter excludes the net foreign trade balance as well as losses in production.
The NMP measure of national economic activity also excludes depreciation. NMP adjusted for depreciation is referred to as gross material product (GMP) or gross national income, and is widely used as an alternative economic indicator. "GMP distributed" is equal to the sum of personal and material social consumption (excluding "non-productive services"), gross fixed investment and changes in inventories.
GDP and other macroeconomic indicators based on the Western system of national income accounting may be approximated by adding and subtracting certain components to and from GMP and other MPS indicators.

2/ The koruna was first devalued on 8 January 1990, when the commercial and non-commercial rates of exchange were unified at a significantly depreciated level of Kcs 17 per dollar, and an additional tourist rate was introduced at an even more depreciated level. This was followed by a further devaluation of the commercial rate by 35 per cent on 15 October 1990 to Kcs 29 per dollar. On 28 December 1990, the commercial and tourist rates were merged at Kcs 28 per dollar. This implied a total devaluation of more than 45 per cent during 1990.

3/ According to World Bank data, in 1990, the *per capita* foreign debt of Poland and Hungary amounted to $1,290 and $2,010, respectively.

4/ Bijan B. Aghevli, Eduardo Borensztein and Tessa van der Willingen, *Stabilization and Structural Reform in the Czech and Slovak Federal Republic: First Stage*, IMF Occasional Paper No. 92, March 1992, p. 28.

5/ For a detailed discussion of these agreements, see Annex F.

6/ Šujan, I., and Strauch, D., *Ekonometrická analýza vývoja štruktúry priemyslu vo vyspelých kapitalistických krajinách a v ČSSR*, Ekonomicko-matematický obzor, 26, 1990, no. 2, pp. 121-143.

II

INDUSTRIAL POLICIES AND INVESTMENT ENVIRONMENT

A. THE LEGACY: UNFULFILLED POTENTIAL

Czechoslovakia's large industrial sector is undergoing a process of structural change and modernization. The country had achieved a high degree of economic development before World War II and had been one of the 10 most industrialized countries in the world at that time. In economic terms the country was quite comparable to such other European States as Germany, France, Belgium and Austria.

Following the takeover of power by the Communist Party in February 1948, Czechoslovakia became a founding member of the CMEA in 1949. By 1952 nearly all sectors of the economy had been nationalized, with all commercial and industrial enterprises employing more than 50 workers being taken over by the State and private ownership of agricultural land being limited to 50 hectares. At the same time, the Soviet system of central planning was imposed on the comparatively advanced economy of Czechoslovakia.

For the next four decades economic policy making in Czechoslovakia was dominated by the effects of its absorption into the CMEA and the adoption of central planning. Its external economic relations were determined almost entirely by the role it was required to play within the CMEA as a supplier of industrial goods in general, and heavy industrial goods and armaments in particular. Its internal economic management, meanwhile, relied on a detailed central allocation of economic resources aimed at ensuring that the country could fulfil its assigned role within the intra-CMEA system of specialization and trade. This resulted in the establishment of a policy framework which placed a strong emphasis on high investment ratios and the development of heavy industry, and which was characterized by administrative pricing, the conduct of foreign trade through State monopolies, and the selection of enterprise managers for their political reliability rather than their managerial competence.

Although some technologically advanced subsectors or enterprises do exist in Czechoslovakia, the central planning mechanisms employed in the country failed to bring about the kind of efficiency-improving technical and organizational changes that were taking place in the competitive market economies. In addition, the absence of market determined prices reflecting relative scarcities led to a wasteful use of human and material resources. This is illustrated most vividly by the high level of energy use, which is several times higher than in western European economies. The high degree of environmental degradation in Czechoslovakia is another indication of this wasteful use of resources. The achieved levels of economic growth could only be maintained because production costs did not include the long term costs of damage to the environment, and because too little was spent on environmental protection.

The accumulating economic inefficiencies made themselves felt during the 1980s, even though they were partially obscured by rising consumption levels. In combination with adverse external factors, these inefficiencies led to a period of slow growth and eventual stagnation in the 1980s. By the end of the decade the situation had become virtually untenable, and significant reforms of the economic system appeared unavoidable. The political changes throughout central and eastern Europe during the closing years of the 1980s, which resulted in the establishment of a popularly elected democratic government in Czechoslovakia in November 1989, paved the way for the formulation and introduction of these reforms, which are currently being implemented in the country.

B. INDUSTRIAL POLICIES SINCE 1989: DAWN OF A NEW ERA

The long term decline in the competitiveness of Czechoslovakia's industrial exports in international markets has underlined the urgent need for policy reform in the industrial sector. This need is heightened by the recent abolition of central planning and the end of the former CMEA trading system, which through their inherently distorting effect on the economy had served to conceal some of the industrial sector's shortcomings when measured against its competitors in international markets. The most important of these have arisen from misdirected investment and an inefficient use of available resources, and include the technologically deficient energy- and input-intensive structure of industrial plant and equipment, the inappropriate output mix of the manufacturing sector, and the often environmentally unsound state of the country's production facilities.

To overcome these weaknesses, the government has initiated an extensive and radical programme of industrial reform and a number of new laws have been adopted. The most important of these is the Commercial Code of 5 November 1991, which provides a comprehensive regulatory framework for the entrepreneurial activities of both Czechoslovak and foreign companies. A reform of the entire taxation system has also been prepared, and is due to come in force on 1 January 1993. A particularly significant feature of the new tax laws will be the introduction of a value added tax. The adaptation of the banking system to a market-based economy is also proceeding rapidly, with a new Banking Law having been introduced on 1 February 1992 and an Act on the Czechoslovak State Bank having been promulgated on 21 April 1992. The legal basis for the establishment of a capital market has also been laid with the promulgation of the Act on Stock Exchanges on 21 April 1992 and the Act on Investment Companies and Investment Funds on 28 April 1992.

The industrial policies and strategies pursued by the new government are based on the need to transform the structures and processes of Czechoslovak industry to the point where it is able to produce goods efficiently and enhance its competitiveness in external markets. This objective is intended to be achieved through the utilization of international capital markets, industrial cooperation in all possible forms, and joint activities in research, acquisition of technology, and the introduction of ecologically benevolent production techniques. In addition, the new industrial strategy seeks to enhance the efficiency of the manufacturing sector by reducing the range of goods produced, particularly in the engineering, metallurgy and textile industries, in line with the precepts of comparative advantage and the international division of labour.

The proposed transformation of industrial structures will be directed primarily by market forces, with the government concentrating on a liberalization of private investment regulations and encouraging the privatization and commercialization of State-run enterprises. Despite the adoption of this essentially market-oriented approach, however, the government is nevertheless likely to provide an increasing degree of State support for manufacturing industries. Particular emphasis is expected to be paid to the processing of domestic raw materials and taking advantage of the traditional skills of the Czechoslovak labour force, with State intervention being geared towards the promotion of production techniques involving a less wasteful use of raw materials and stimulating an increase in employment. The ultimate objective of this policy will be to encourage export-oriented production and the development of more efficient production methods.

The measures employed by the State to achieve these aims will include the provision of a wide range of incentives to promising industries, including export allowances, tax relief, bank credit guarantees, and concessional credits from a number of specialized funds established by the Federal Government and the Governments of the Czech and Slovak Republics. Within the transitional period exceptional and limited use may also be made of some direct policy tools, such as controls on external trade and the imposition of mutually agreed regulation systems elsewhere in the economy.

The Federal Government's industrial promotion policies will, however, be based almost exclusively on entrepreneurial initiatives, and will provide assistance only to commercially viable enterprises. Government support to unviable enterprises will be discontinued, and the social consequences of their closure will be addressed by specific means. These are likely to include the introduction of an employment programme providing for staff retraining, graduate support, encouragement of private sector efforts to increase production and employment levels, and the creation of jobs for social and public benefit.

C. THE PRIVATIZATION PROGRAMME: THE GREAT GIVEAWAY

Overview

State ownership of the means of production was more pervasive in Czechoslovakia than in many other member countries of the CMEA prior to the political changes of November 1989, with the private sector accounting for less than 0.5 per cent of the country's non-agricultural output at that time. One of the principal features of the present government's industrial reform programme is an extensive divestment of State-owned enterprises from public ownership. This involves both the restitution of properties and business enterprises nationalized after 1948 to their former owners, and the privatization of the vast array of other corporations owned and operated by the State.

The legal framework for this divestment process was established by the government between October 1990 and June 1991 through the introduction of five laws dealing with the issue. These comprised:

- the law on the alleviation of some property injuries (law on restitution of small-scale enterprises, Law No. 403/90, October 1990);
- the law on the transfer of State property of certain businesses to other physical or legal persons (law on privatization of small-scale enterprises, Law No. 427/90, October 1990);
- the law on out-of-court rehabilitations (law on restitution of large-scale enterprises, Law No. 87/91, February 1991);
- the law on conditions of transfer of State property to other persons (law on privatization of large-scale enterprises, Law No. 92/91, February 1991); and
- the law on land and agricultural cooperatives (law on restitution of agricultural land, Law No. 229/91, June 1991).

As indicated by these laws, the government makes a clear distinction between small-scale and large-scale enterprises in connection with its divestment programme. This distinction is made with regard to both the restitution and privatization components of this programme, with different rules and procedures being employed in each case.

Restitution

The restitution of property seized by the State from the original owners during the post-World War II period has emerged as a particularly sensitive issue during the past two years with a

number of economic and political implications. The most important of these include a threat to the timely execution of the privatization programme, which could be significantly delayed by the problems associated with the registration and processing of restitution claims. In addition, this issue has acquired an important foreign policy dimension as large numbers of ethnic Germans expelled from the Sudetenland region along the north-western frontier of Czechoslovakia in the immediate aftermath of World War II have begun to demand the return of their confiscated properties.

In order to minimize the threat posed by the restitution issue to the privatization programme, the government has imposed very stringent eligibility conditions and registration deadlines for potential claimants. In addition, it has also sought to link the restitution of industrial and commercial enterprises with the privatization programme, and thereby to ensure as high a degree of compatibility and consistency between the two schemes as possible. This is especially true in the case of large-scale enterprises, where restitution measures are limited to the payment of financial compensation.

The law on the restitution of small-scale enterprises relates only to properties confiscated after 1955, including those seized in contravention of the then prevailing laws. This property is being returned in its natural form and in its existing condition wherever possible. Only in cases where it has been significantly altered is financial compensation being offered instead. The deadline for registering claims expired on 1 April 1990, and the government expects to return about 70,000 properties under this law.

The law on the restitution of large-scale enterprises covers firms nationalized between February 1948 and November 1989 in accordance with the then prevailing national laws within Czechoslovakia but in contravention of international civil rights conventions. The deadline for filing claims under the terms of this law was set for 1 October 1991. Although restitution is ostensibly to be made in kind and as is, the law on large-scale restitution provides for financial compensation to be paid in lieu of physical restitution in cases where the property concerned has been significantly altered. Since this exemption clause is likely to cover most enterprises, the payment of compensation is likely to be the most common form of restitution. In such cases cash payments will be limited to Kcs 30,000, with the still outstanding compensation payments being made in the form of securities. A special restitution fund, financed by an allocation of 3 per cent of the proceeds of the large-scale privatization programme, has been set up for this purpose.

In a perspeceptive analysis of the economic impact of the restitution procedures, a recent study published by the OECD argues that the most pertinent issue in this connection is the degree to which these procedures will hinder the implementation of the privatization process. In assessing this issue, it notes that "the laws seem to have been designed with the objective of limiting possible damage to the privatization process", and cites the following reasons for this conclusion:[1/]

- Restitution is limited to nationalizations after 1948, when the Communist party took power. Since most nationalizations of large enterprises took place between 1945 and 1948, however, only about 6 per cent of State assets will be affected by the restitution scheme;

- The mechanism employed to finance the restitution fund links the compensation payments offered to restitution claimants with the privatization programme. A speedy and successful execution of this programme is therefore in the interest of these claimants;

- The link between the restitution and privatization of large-scale enterprises is also formalized in the law on large-scale privatization, which treats restitution as an integral part of the privatization programme. Under the terms of this law, enterprises facing privatization must specify clearly how they propose to settle restitution claims filed against them;

- The potential negative impact of the restitution programme on the privatization process is further reduced by a regulation exempting joint ventures and commercial companies involving natural persons from any obligation to restitute or compensate former owners.

The restitution of agricultural assets, including land, is not expected to pose any serious problems, since they were never formally expropriated in Czechoslovakia. The establishment of State and cooperative farms under the previous governments merely involved the alienation of user rights and rights of disposal to the State. Under the new land law promulgated in June 1991, these rights have been returned to the original owners and their heirs provided that they are Czechoslovak citizens and have their primary residence in Czechoslovakia. Claims for restitution under this law have to be submitted by December 1992.

Meanwhile, the issue of restituting property confiscated from the Sudeten-German expellees remains extremely sensitive. So far, the Czechoslovak authorities have sought to resolve this problem by restricting the eligibility of restitution claims to properties seized after February 1948, by which time the Sudeten-German community had already fled the country, although individual expellees were made an offer to return to Czechoslovakia and lodge claims for their properties after obtaining Czechoslovak citizenship. This has been rejected as inadequate by the politically influential Sudeten-German associations in Germany, who are exerting intense pressure on the Government of Germany to support their claims. Any official support of the Sudeten community's claims could undermine the Treaty on Good Neighbourly Relations and Friendly Cooperation signed between Czechoslovakia and Germany in February 1992, however, and could also have serious implications for future German investment into Czechoslovakia. With many Czechoslovaks already wary about the extent of German investment in their country, any tension triggered by the Sudeten-German problem could also restrain further investment flows from Germany.[2/]

Small-scale privatization

The law on the privatization of small-scale enterprises approved by the Federal Assembly in October 1990 provides for the sale or lease of an estimated 120,000 small enterprises, such as hotels, restaurants, shops, workshops and small manufacturing units of local importance. The deadline for the registration of privatization proposals under this programme expired on 31 October 1991. According to its original schedule, the government was expected to have divested itself of about 50,000 of these enterprises by the end of 1991, with the remaining 70,000 firms being privatized in 1992. After a slow start, the programme is proceeding well. According to data compiled by the Federal Statistical Office in Prague almost 21,300 companies had been privatized under this scheme for a total price of Kcs 24 billion by January 1992, with the average sale price exceeding the asking price by about 40 per cent.

The transfer of these small-scale enterprises to the private sector is carried out by public auction under the auspices of local committees, which are supervised by the privatization ministries of the Czech and Slovak Republics. Prior to the auction the enterprises to be privatized are independently assessed to determine a starting price, which is usually based on the book value of the enterprise. Potential buyers at these auctions are required to submit a non-refundable deposit of Kcs 1,000 as well as a returnable deposit equivalent to 10 per cent of the starting price. The auction can be conducted over two rounds, of which the first is only open to natural persons over the age of 18 years who are or were Czechoslovak citizens after 1948. If no buyer is found at the predetermined starting price, this price can be lowered to a minimum of 50 per cent of its original level provided that at least five persons participate in the auction. If the enterprise fails to attract the interest of domestic entrepreneurs in the first round, the auction may be taken into a second round, which is also open to foreigners.

The items available for sale at these auctions include the machinery, furniture and inventories of business units without any financial claims or liabilities. Although these auctions could, in principle, also include the sale of buildings and land, the possibility of outstanding restitution

claims renders the purchase of such assets risky. Consequently, in the vast majority of cases to date the successful bidder has acquired the right to rent the premises at a fixed rent for five years, following which an extension has to be re-negotiated.

Large-scale privatization

As indicated above, the large-scale privatization programme is based on an act (Law No. 92/91) passed by the Federal Assembly in February 1991. This provides for the transfer of a wide range of centrally controlled enterprises, including industrial operations, foreign trade corporations, State-run financial institutions and insurance companies. In addition, the large-scale privatization law covers properties managed by State-owned enterprises and properties run by other legal entities with the participation of State-owned enterprises. It does, however, exclude properties subject to restitution to legal entities or natural persons with a prior claim on ownership and properties covered by the small-scale privatization procedures.

The large-scale privatization programme distinguishes between three groups of companies. The first includes companies to be privatized within the next five years in the first and second "waves" of privatization; the second includes companies which will not be privatized for at least another five years; and the third includes companies which are to go into liquidation. Lists of enterprises to be included in each of these groups have been compiled by the appropriate Federal or Republican Governments, and were published between August and October 1991.[3/]

According to these lists, 4,129 of the total number of 5,482 large-scale State-owned enterprises are to be privatized within the next five years. Of these, 2,285 are scheduled to be privatized in the first wave, which began on 1 October 1991 and was due to be completed by the end of May 1992. For enterprises to be privatized in the second wave, the deadline for submission was set for 31 May 1992. Of the remaining 1,353 enterprises not scheduled for privatization within the coming five years, 1,271 are to be retained under State control and 82 are to be liquidated in accordance with a bankruptcy law adopted in June 1991.

The process of large-scale privatization is to be accomplished by a number of standard and non-standard methods. These include auctions, sales by public tender and direct sales to particular clients subject to the approval of the relevant Federal or Republican Government. More innovatively, they include the sale of coupons at a set nominal price to all Czechoslovak citizens above the age of 18. As explained in the accompanying box, these coupons can be exchanged for shares in private enterprises by the holder or entrusted to financial institutions for the purchase of such shares on the holders' behalf.

The procedure for each individual privatization project is tailored to the prevailing circumstances. It is determined through consultations between the enterprise concerned, its controlling ministry, any foreign partners that may be involved, and other institutions specified in the law on large-scale privatization. In general terms, each privatization plan must include a firm time schedule for the privatization process, as well as provisions for the prior divestment of unsuitable or uneconomic parts of the enterprise concerned, for dealing with the transfer of intellectual property rights, and for dealing with restitution claims by previous owners.

Management issues

The process of transition to a market economy will undoubtedly be accompanied by a number of difficulties. One of the main problems is that the long history of State paternalism in the management of enterprises has resulted in a severe lack of experienced managers familiar with the operation of a market economy. As noted in a recent IMF study by Aghevli et al., "although the market system has survived as a dim memory, most skills associated with that system had faded by the 1980s".[4/] This circumstance will almost certainly have an adverse effect on the privatization process and constrain the further economic development of Czechoslovakia during the transition period.

Box II.1. The Voucher Privatization Scheme

Background:

The voucher privatization scheme is intended to facilitate a wide dispersal of equity ownership in the hitherto nationalized enterprises among the Czechoslovak population. The government's adoption of this scheme arises from its desire to divest itself of a large number of publicly owned enterprises within a very short time, and the recognition that traditional methods of privatization, such as those employed by the Treuhandanstalt in the former German Democratic Republic, would be inadequate for this purpose.

Operating mechanism:

The voucher privatization scheme entitles all Czechoslovak citizens aged 18 or above and resident in Czechoslovakia to purchase a voucher booklet containing 1,000 investment points for Kcs 1,000, which is intended to cover the administrative costs of the scheme rather than generate public revenue. The buyer can use these investment points to acquire shares in up to ten enterprises on the privatization list. While the voucher booklets and the investment points contained in them are not transferable, the owners of the vouchers are permitted to assign them to "investment privatization funds" (IPFs) especially established for the purpose, which may invest them on the owners' behalf.

The value of each company's shares is to be determined by comparing the number of such shares available with the number of investment points offered for them. Shares in the various companies being privatized will be allocated according to the preferences expressed by the voucher holders if there is no oversubscription. Otherwise the shares of the enterprise in question may be temporarily withdrawn until a later round of the privatization process. Under each "wave" of large-scale privatization there may be as many as five such elimination rounds to assess investor interest in, and determine the price of, particular shares. The shares obtained by the voucher holders will be freely tradeable, and stock exchanges are expected to be established in both Prague and Bratislava by the end of 1992.

Schedule:

The sale of voucher booklets for the first wave of large-scale privatization began on 1 October 1991, and was to continue until the end of March 1992. By the end of April all companies earmarked for privatization were expected to have been made ready, and their sale was expected to begin in mid-May. The process was scheduled to be completed by the end of that month.

Despite a slow start, the programme has attracted considerable public interest, with more than 8 million of the 12 million eligible citizens having participated in the scheme. It has also resulted in the spontaneous establishment of about 500 IPFs, which are competing furiously to attract voucher holders. With some of these funds offering their clients guaranteed returns of 10-50 times their initial investment within a year, fears have arisen that they may not be able to meet their extravagant commitments and be forced into bankruptcy. The government is therefore being called upon to regulate their activities more closely.

There is consequently an urgent need to train and educate managerial staff in managerial decision-making, creative and flexible management and control of industrial systems, marketing methods and strategies, optimization methods, financial management, accounting, price making, statistical methods, foreign trade transactions, and similar skills. This need will be partially satisfied by short-term courses held by foreign lecturers in Czechoslovakia, and by the training of Czechoslovak managers abroad. Both of these forms of training can be partly financed by technical aid flows provided by bilateral and international donors, such as the "Know-How Fund" established by the United Kingdom. An important role can also be played by UNIDO in this context, with assistance being provided in the form of training courses to evaluate industrial development projects.

A particular problem in this context arises from the diffusion of ownership resulting from the voucher privatization scheme, which may significantly inhibit the effectiveness of corporate governance by the shareholders. This issue has been discussed in some detail by Aghevli et al.[5/], who point out that effective governance requires the presence of at least one large shareholder. IMF notes further that two basic approaches have been proposed to resolve this problem:

- A complete "hands-off" attitude, in the expectation that large active shareholders will spontaneously appear in the context of extensive profit opportunities for "corporate raiders"; and

- An active involvement for the State in designing and organizing financial intermediates to exercise management supervision on behalf of the public.

The Government of Czechoslovakia has opted for an intermediate approach, in as much as it is not playing any direct role in the establishment of the structures and procedures of corporate governance, but is encouraging the creation of so-called investment privatization funds (IPFs) to exercise shareholder control. Aghevli et al. argue, however, that the IPFs may not be able to fill this role for a number of reasons, including the fact that in some cases they may simply be serving as a vehicle for management/worker buyouts, while in others they may wish to limit themselves to the provision of portfolio diversification and other financial services to individuals rather than acting as supervisors of managements. They also note that there is no mechanism to guarantee the creation of large shareholders, for example by selling shares in large blocks to IPFs, and that, on the contrary, the authorities are considering regulations that would limit their ability to acquire a very large interest in any given company or to concentrate their interests in only one or a very few companies in order to promote their risk-spreading role.

D. THE INVESTMENT ENVIRONMENT: INCREASINGLY ATTRACTIVE

Investment policy

The extensive rehabilitation and restructuring needs of Czechoslovakia's industrial sector will require large volumes of investment for its revival and modernization. As discussed above, however, the private sector has been assigned the primary role in realizing the proposed restructuring goals, and is therefore expected to bear the bulk of this investment burden. The various policies formulated by the Czechoslovak authorities to facilitate this restructuring consequently do not call for any large-scale State investment but are aimed mainly at supporting private sector initiatives and entrepreneurial activities, which are expected in principle to be self-reliant.

While the market mechanism is expected to be the main determinant of the proposed new economic structure in Czechoslovakia, the market imperfections prevailing in the period of transition from the centrally planned economy to a market based economy will necessitate a degree of State intervention in the short term. This will, for the most part, be indirect in nature, involving promotional activities and the provision of incentives or disincentives for particular

activities to correct any temporary distortions in market signals caused by the transitional state of the economy. Only in very exceptional cases is the State expected to resort to instruments of direct control.

The Czechoslovak policy-makers will seek in particular to promote activities generating increased levels of domestic value-added and using efficient production techniques minimizing wastage of raw materials and energy. In addition, they will encourage export-oriented enterprises exploiting the country's comparative advantage in the production of goods using local raw materials. Environmental considerations will also be given considerable weight, with priority being given to industrial activities with a beneficial, or at least a neutral, impact on the environment. Where labour-intensive technologies are available, their adoption will also be encouraged in order to maximize the creation of employment opportunities.

The role of private investment

Private investment will be needed in the manufacturing sector in particular, since this will be especially severely affected by the shift from a centrally planned to a market based economic system. To facilitate this transition, the Federal and Republican Governments of Czechoslovakia are proposing a number of programmes aimed at providing economic support to investors. In this context, special emphasis is being given to industries with a heavy reliance on technological inputs such as the automotive industries, defence industries requiring conversion to civilian use, industries with underutilized capacities, the chemical industry, the food-processing industry, and light industries based on domestic raw materials. In addition, the participation of private capital is also being welcomed in energy-related industries and the metallurgy industry.

The measures proposed by the Federal Government to stimulate private investments in priority fields include the provision of returnable credits. In some limited cases involving projects of prime importance, non-returnable financial contributions will also be made available. As a rule, however, such State funding will only be provided in conjunction with a similar level of participation by private sector financial institutions, both domestic and foreign.

The Republican Governments offer similar assistance to investors in priority fields. The Government of the Czech Republic, which is pursuing an industrial policy based mainly on the development of small- and medium-scale enterprises employing modern production methods and progressive technologies, provides non-interest bearing loans, non-returnable financial grants, contributions to cover the cost of bank loans, tax relief, and State guarantees for up to 70 per cent of the investors' bank credits. The Government of the Slovak Republic, which is seeking to rejuvenate the republic's industrial economy, has a comparable programme for the promotion of technologically advanced small- and medium-scale enterprises. This involves the provision of concessional loans and grants, financial guarantees for bank loans and assistance in meeting the interest payments on such loans, tax exemption and relief, and non-investment subsidies from the Republican budget.

Apart from these more general measures of support offered to private investors, the Czechoslovak authorities have also established a special fund to support the divestment of public enterprises producing military equipment and their conversion to civilian production. This fund, which in 1991 was allocated a sum of Kcs 1.5 billion, is operated by the Federal Government in close cooperation with the Republican Governments and the Czechoslovak banking system. It is intended to ensure the continued utilization of the skilled labour force employed by, and capital invested in, the country's once extensive military industrial complex. The fund is expected to support about 100 of the approximately 300 military conversion projects that have applied for State assistance.

In evaluating the projects submitted by the private sector for State assistance, the authorities will consider such criteria as evidence of market demand for the goods produced by the enterprise concerned, its profitability and environmental impact, and the degree to which it makes full use

of existing manufacturing capacities. In addition, the contribution of the projects towards employment creation and the generation of foreign exchange earnings will also be taken into consideration.

Foreign direct investment

In view of the large volumes of investment needed to rehabilitate and modernize Czechoslovakia's manufacturing industries and the relative dearth of local capital resources, the Czechoslovak authorities are particularly keen to draw increased levels of foreign direct investment into the country. In pursuit of this objective the government has introduced a variety of measures to attract such investment, including a substantial liberalization of the previously prevailing foreign investment regulations. Under the newly revised terms, foreign entities may invest by:

- establishing a trading agency;
- establishing an enterprise with 100 per cent ownership;
- setting up a joint venture with Czechoslovak individuals or corporate entities; and
- investing in existing Czechoslovak enterprises.

A particularly significant relaxation of the existing controls on foreign direct investment was contained in the Commercial Code of 5 November 1991, which came into force on 1 January 1992. This permits foreign investors to engage in business activities in Czechoslovakia under the same conditions as Czechoslovak citizens. In particular, foreign investors are no longer required to seek official approval for their business activities in Czechoslovakia, but merely to record them in the Company Register.

The most popular form of foreign investment in Czechoslovakia has, so far, been in joint ventures. These are defined as corporate bodies engaged in economic activities with a legal address in Czechoslovakia. The establishment, legal form, legal circumstances and termination of the enterprise are governed by Czechoslovak law. The joint venture can be established in a variety of forms, such as joint-stock company, an association, a general commercial partnership, a limited liability company, or a limited partnership.

Joint ventures can operate in all economic sectors with the exception of those regarded as being essential for the defence capability and security of the State. The most frequent legal form of a joint venture is a joint-stock company or a limited liability company. Where the foreign partner's share amounts to more than 30 per cent, an income tax of 20 per cent is levied on profits up to Kcs 200,000 and 40 per cent on profits exceeding this sum. Enterprises with a lower share held by the foreign partners (under 30 per cent) are taxed in the same way as purely Czechoslovak enterprises, i.e., with an income tax of 55 per cent. The enterprise can apply to the Ministry of Finance of the Czech Republic or the Slovak Republic, as appropriate, for a tax holiday lasting two years if all profits achieved during that period are re-invested. Exceptionally, the tax exemption may be extended for another two years.

All Czechoslovak enterprises, including those with foreign property participation, are also subject to a wage tax. This is levied at a rate of 50 per cent, except in the case of some service industries, where it amounts to 20 per cent. This is a deductible item, however, and its payment diminishes the base used for the calculation of the income tax. Domestic sales of Czechoslovak enterprises are also subject to a turnover tax of 0, 11, 20 or 29 per cent according to the commodity in question. Some selected commodities, such as alcoholic beverages, coffee, tea, tobacco and petrol, are liable to special rates of turnover tax. A revised tax law has been prepared for introduction on 1 January 1993.

The property in a joint venture in Czechoslovakia can be expropriated only if an appropriate compensation is offered in accordance with the Act on the Enterprise with Foreign Property Participation. According to the Czechoslovak constitution, this property is also protected against nationalization. Other restrictions of property ownership rights are admissible only in the public interest with compensation.

Box II.2. Regulatory framework for foreign direct investment in Czechoslovakia

Basic legal framework	1986: Legalization of joint ventures 1988: (November): Law on companies with foreign participation 1990: (April): Amendment authorizing 100 per cent foreign participation 1991: Act on conditions and terms governing the transfer of State-owned property to other persons (Large-Scale Privatization Act) 1992: Commercial Code
Approval/Registration procedures	Authorization delivered by the Ministry of Finance of the Czech and Slovak Republic. For the banking sector, the approval of the State Bank required. Since April 1990, no authorization needed for 100 per cent foreign ownership and if the Czechoslovak participant in joint venture is a private person and/or a cooperative formed after July 1988. Approval given within 60 days. No feasibility study required.
Types of activities	No sectoral or equity limitations. Establishment of a "negative list" under consideration.
Taxation	**Profit tax**: Enterprises with foreign equity exceeding 30 per cent: 20 per cent on the profit up to Kcs 200,000, 40 per cent on additional income. **Enterprises with foreign equity less than 30 per cent, and banks and insurance companies**: 55 per cent. **Wage and turnover taxes**: same as for domestic firms. **Tax on dividends**: 25 per cent, or less where double-taxation agreements exist.
Tax exemptions	The Federal Ministry of Finance may approve tax relief for a maximum of 2 years after the beginning of operations (with a condition, that the dividends will not be paid during this period).
Profit repatriation	Since 1 January 1990 no restriction on repatriation of profit or capital; repatriation of capital gains also permitted.
Special provisions	Reserve fund required: set up from after-tax profits with a minimum contribution of 5 per cent until equal to 10 per cent of overall assets; a part of the reserve fund should be in foreign currency. Restitution: property held by joint ventures will not be eligible for restitution; also exempt from physical restitution are substantially reconstructed buildings and land on which buildings have been renovated.

Source: Updated from "Czech and Slovak Federal Republic 1991", *OECD Economic Surveys*, Organization for Economic Co-operation and Development, Centre for Co-operation with European Economies in Transition, Paris, December 1991, Table 12, p. 90.

Box II.3. Czechoslovakia's new tax laws

A package of new taxes, including personal and corporate taxes, value added tax (VAT), a consumer goods tax, real estate taxes, an inheritance and gift tax and an environmental tax, was passed by the Federal Parliament at the end of April 1992 and will come into force on 1 January 1993. The new tax laws foresee a uniform 45 per cent corporate profit tax rate, as well as stiffer income tax levels for expatriates working in the country. A value added tax of 23 per cent will also be introduced on most goods and services, and a new consumer goods tax will replace the higher rates of the present turnover tax.

Despite a higher corporate tax of 45 per cent, which is to apply without exception to domestic businesses as well as those with foreign participation, foreign investors are not expected to hold back. Joint ventures now pay 40 per cent corporate tax if their participation exceeds 30 per cent, instead of the 55 per cent corporate tax rate paid by local enterprises. The proposed new rate, which is a compromise between proposed levels of 40-53 per cent, is not final. The Czech and Slovak Parliaments might raise the corporate tax rate by 5 per cent in their respective Republics. It is possible that both governments will use this option to discriminate against environmentally unfriendly manufacturing ventures.

On the other hand, the new federal tax laws do not directly address the status of tax holidays after 1 January 1993. Ventures presently benefiting from a two-year tax holiday, however, will not be affected retroactively: they will only fall under the new, stricter tax regime once their present incentive runs out. By the end of 1992, tax holiday rules are expected to be included in Republican laws on the collection of taxes and fees. These incentives are likely to be used to boost investments in "priority sectors", in depressed areas and in some regions suffering serious pollution problems. Moreover, the rules governing the tax holiday are likely to be clearly defined and apply equally to all firms listed in the company register of Czechoslovakia.

Many expatriate employees will also face a harsher income tax environment next year. The proposed maximum personal income tax rate of 47 per cent, which will apply to annual income over Kcs 1,080,000 ($37,250), represents a drastic increase over the current annual tax rate of 17 per cent. In addition, all forms of compensation in cash and in kind (estimated at market value) will also be regarded as taxable income; the personal use of company cars, for example, will be taxable. Furthermore, if a foreign resident stays in the country for more than 183 days, his income tax will be based on his world-wide income.

Apart from these general protective guarantees, the Government of Czechoslovakia is prepared to enter into intergovernmental agreements concerning the mutual support and protection of investments. Such agreements have already been signed with Australia, Austria, Belgium, Canada, China, Denmark, Finland, France, Germany, Greece, Italy, Netherlands, Norway, Republic of Korea, Spain, Sweden, Switzerland, Thailand, Turkey, United Kingdom and United States. The agreements between Czechoslovakia and Austria, Belgium, Canada, Finland, France, Sweden, Switzerland and United Kingdom have already been ratified by all parties. Negotiations on the conclusion of similar agreements are under way with Bulgaria, the Commonwealth of Independent States, Iceland, Japan, Kuwait, Malaysia, Nigeria, United Arab Emirates, and several other countries.

By 30 June 1991 the Federal Ministry of Finance had issued some 2,900 licences for the establishment of enterprises involving foreign investment. Although changes in data collection procedures after that date have significantly reduced the comprehensiveness and accuracy of subsequent investment related statistics,[6/] data compiled by the Federal Statistical Office (FSO)

indicate that a total of 8,691 enterprises with foreign capital participation had been registered in Czechoslovakia by the end of March 1992, of which 6,680 were located in the Czech Republic and the remaining 2,011 in the Slovak Republic. A further disaggregation of these FSO statistics, which refer to registered rather than operational joint ventures, reveals that 3,410 enterprises were wholly owned by foreign investors. Of these, 2,838 were sited in the Czech Republic and 572 in the Slovak Republic. Germany accounted for the largest number of these investments, followed by Austria, Switzerland, Italy, United States, Netherlands, United Kingdom, Sweden, France and Hungary.

Separate data on the value of investment flows have been compiled by the Czechoslovak State Bank. These show that the inflow of direct investment funds dropped from $256 million in 1989 to $180 million in 1990, but rose sharply to $600 million in 1991. More than 50 per cent of these funds flowing into Czechoslovakia in 1991 originated from Germany, with United States, Netherlands, Belgium, Austria and Switzerland accounting for much of the remainder. As indicated further in Table II.1, the largest single investor by a very wide margin is Volkswagen AG. The principal features of its joint venture with the Czechoslovak automobile manufacturer Škoda are summarized in Box II.4.

Table II.1. Foreign investment activity in Czechoslovakia[a/]

Joint venture	Country of origin	Capitalization	Activity
Principal joint ventures			
Škoda-Volkswagen	Germany	Kcs 9.6 billion	Motor vehicles
Čs. čokoládovny-Nestlé-BSN-EBRD	Switzerland	Kcs 3.. billion	Chocolate products
CHZ Sokolov-Dow Chemicals	United States	Kcs 2.9 billion	Acrylic acid
Chemlon Humenné-Rhône Poulenc	France	Kcs 2.5 billion	Polyamide fibres
AVIA/LIAZ-Mercedes Benz	Germany	Kcs 2.3 billion	Motor vehicles
Sklo Union Teplice-Glaverbel	Belgium	Kcs 1.9 billion	Glass
Škoda Plzeň-Siemens	Germany	Kcs 1.8 billion	Power engineering technology
ČSA-Air France	France	Kcs 1.7 billion	Air transport
Technoplyn-Linde	Germany	Kcs 1.6 billion	Technical gases
Aluminium Děčín	Switzerland	Kcs 1.1 billion	Aluminium
BAZ Bratislava-Volkswagen	Germany	Kcs 1.1 billion	Motor vehicles
Calex-Samsung	Republic of Korea	Kcs 0.7 billion	Washing machines, refrigerators
Rakona-Procter and Gamble	United States	Kcs 0.7 billion	Detergents
Other joint ventures with foreign capital exceeding Kcs 300 million			
ČKD Kompresory-Borsig Berlin	Germany		Compressors
Jihočeská keramika-Ke.. holding	Switzerland		Ceramics
Transa Břeclav-OTIS El.. or	United States		Elevators
Palma Bratislava-Henkel	Germany		Detergents
Chemika Bratislava-Messer Griesham	Germany		Technical gases
Moravia Glass Kyjov-VETROPACK Holding	Austria		Glass products and moulds
Prageřement-Heidelberger Zement	Germany		Cement
ČEVA Králův Dvůr-Heidelberger Zement	Germany		Cement
Motorlet Praha-TRIPLEX LLOYD	United Kingdom		Die castings

Source: Federal Agency for Foreign Investment.

a/ As of 30 April 1992.

Box II.4. ŠKODA-VOLKSWAGEN
Anatomy of a joint venture

The joint venture agreement signed between Volkswagen AG of Germany and Škoda Automobilovy Kor ·rn of Czechoslovakia in March 1991 represents the largest single foreign investment ... Czechoslovakia to date. Under the terms of this agreement, Volkswagen is to acquire a 70 per cent stake in Škoda by 1995 for an investment of DM 1.4 billion. In addition, it is to invest DM 9 billion in a ten year programme to modernize Škoda's product range and production facilities at Mlada Boleslav in Bohemia. As a result of these investments the Czechoslovak company's output is projected to double to 400,000 cars per year.

In view of its good reputation in the markets of eastern Europe, Škoda will retain its brand name and identity, and produce its own distinct models. Volkswagen's technical, managerial and marketing skills and experience will be employed to upgrade and extend Škoda's model range and enhance its consumer appeal. Particularly heavy investments are expected to be made in Škoda's foundry and paintshop, which use antiquated and inefficient technology.

Volkswagen, meanwhile, will benefit from the long engineering tradition of Czechoslovakia and the skills of its well trained and educated labour force. As the quality of Škoda cars improves in response to the injection of Volkswagen's capital and technical know-how, their already high level of attractiveness to eastern European consumers will be significantly enhanced. Škoda could thus provide Volkswagen with the perfect means to become a major force in the eastern European market for low priced but well engineered family cars, which is expected to grow exponentially during the coming decade as the current process of economic transformation results in an increasingly rapid growth of disposable income and consumer demand.

The volume of foreign capital invested in the Czechoslovak economy has been limited so far. The reluctance on the part of foreign capital and transnational corporations can be explained to a large extent by the inevitable uncertainties arising from the transition from a centrally controlled to a market economy. The most important of these include the still unclarified division of powers between the Federal and Republican Governments, the low transparency of legislation governing the activities of foreign investors, differences in the taxation and accounting systems, the poor state of the banking and telecommunications infrastructure, and the absence of a capital market. As these weaknesses are being addressed by the government, however, foreign investment interest is also increasing, and the first three months of 1992 have witnessed the conclusion of several important joint venture agreements.

The Federal and Republican Governments have established investment promoting agencies to provide foreign investors with the information necessary for launching activities in Czechoslovakia and facilitate initial negotiations on the entry of foreign capital into the country. The main areas in which the Czechoslovak authorities are seeking to attract foreign investment are telecommunications, transport, environmental rehabilitation, chemical production, light industries based on local raw materials (including the production of ceramics, glass, wood products and packaging materials), energy generation and the spread of energy-saving technologies, metallurgy, tourism (including hotels), banking and insurance, engineering, and the conversion of military industries. Specific priority projects for foreign capital participation currently include:

- the nuclear power plants at Mochovce and Temelin;
- the desulphurization of brown-coal fired thermal power plants;
- the construction of a cracking unit in Kralupy;

- the linkage of Czechoslovak petroleum refineries to the western European pipeline system and the construction of storage tanks;
- the modernization of iron and steel metallurgy and aluminium production;
- projects for the conversion of defence production;
- the overhaul and full utilization of existing capacity within the electronics industry;
- the digitalization of the telephone network;
- the construction of a public data transmission and mobile telephone network;
- the upgrading of existing production facilities to meet improved environmental standards; and
- the modernization of the railway network.

NOTES TO CHAPTER II

1/ *Czech and Slovak Federal Republic 1991*, OECD Economic Surveys, Organization for Economic Co-operation and Development, Centre for Co-operation with European Economies in Transition (Paris, December 1991), pp. 140-141.

2/ For a summary of the implications of the Sudeten-German issue see Tony Paterson, "Sudetenland Spectre That Haunts Havel", *The European* (12-18 March 1992).

3/ See *Hospodarske noviny*, Nos. 31 and 32 (August 1991) for enterprises to be privatized in the Czech Republic, and Nos. 39 and 40 (September/October 1991) for enterprises to be privatized in the Slovak Republic.

4/ Bijan B. Aghevli, Eduardo Borensztein and Tessa van der Willingen, "Stabilization and Structural Reform in the Czech and Slovak Federal Republic: First Stage", IMF Occasional Paper No. 92, March 1992, p. 1.

5/ *Ibid.*, pp. 18-19.

6/ After 30 June 1991 the authorization procedure for foreign joint ventures was liberalized significantly, with a simple registration of the proposed enterprise in the Company Register being sufficient to legalize its establishment in most cases. This has prevented a centralized compilation of investment related statistics, which from the second half of 1991 onwards are therefore frequently incomplete and outdated.

III

STRUCTURE AND PERFORMANCE OF THE INDUSTRIAL SECTOR

A. GROWTH AND STRUCTURAL CHANGE

Heavy industry orientation

Czechoslovakia's economic policy has long been oriented towards the development of heavy industry, with successive economic plans according high priority to a long-term shift in the allocation of economic resources in favour of industrial production, and particular emphasis being placed on the development of the engineering industry. This pattern of industrial development was encouraged by the role assigned to Czechoslovakia as an industrial supplier within the former CMEA, which provided Czechoslovakia with access to relatively cheap energy and raw material supplies from the former Soviet Union, and to the comparatively favourable, but distorted, markets of eastern and central Europe for its products.

After four decades of this policy, the country was left with an excessively large share of heavy industry in its industrial structure. The share of metal products, non-electrical machinery, electrical machinery and transport equipment together accounted for 43.8 per cent of manufacturing output in 1990, compared with 39.2 per cent in 1980. The average of these segments of manufacturing in the industrial production of a sample of small industrially developed market countries was around 35 per cent in 1987 (see Table III.1). By the late 1980s the role of machinery production had become particularly large. Its share in manufacturing output stood at 22.4 per cent in 1987, compared with 8.5 per cent in Austria, 8.6 per cent in Belgium, 12.2 per cent in Denmark, 11.6 per cent in Finland and 12.6 per cent in Sweden.

Thus the degree of industrialization, measured by the share of heavy industry in industrial output, proved to be incompatible with the level of economic development. The Federal Statistical Office has calculated that a share of about 19 per cent for all engineering segments would have been more appropriate for the level of economic development achieved by Czechoslovakia in the late 1980s. The share of electrical machinery seems to correspond to the country's level of economic development, but the share of professional goods and metal products is rather low.

This pattern of industrial development became unsustainable in the 1980s. The situation was exacerbated by the geographical restrictions imposed by the prevailing political and economic circumstances on Czechoslovakia's external economic relations, which prevented the transfer of technology from the developed market economies (DMEs), and thereby served to widen the gap between the level of technology and efficiency prevailing in Czechoslovakia and the DMEs.

Table III.1. Inter-country comparison of composition of manufacturing output[a/],1980, 1987 and 1990
(Percentage)

Branches (ISIC)	Czechoslovakia			1987					Average five DMEs
	1980	1987	1990	Austria	Belgium	Denmark	Finland	Sweden	
Food (311/2, 313, 314)	9.1	8.0	8.2	15.6	19.5	22.4	10.8	9.6	15.0
Textiles (321)	6.4	5.9	6.2	4.1	5.0	3.1	2.0	1.5	3.1
Wearing apparel (322)	1.6	1.5	1.6	2.4	2.0	1.4	2.7	0.5	1.6
Leather and products (323)	0.5	0.5	0.5	0.3	0.3	0.2	0.3	0.1	0.2
Footwear (324)	1.7	1.4	1.4	1.1	0.1	0.5	0.7	0.1	0.4
Wood products (331)	2.2	2.1	2.0	1.1	0.5	2.6	6.3	6.0	3.4
Furniture (332)	1.2	1.1	1.2	5.0	3.7	3.1	1.6	1.2	2.8
Pulp and paper (341)	2.3	2.4	2.6	4.5	2.6	2.4	14.8	8.5	6.4
Printing (342)	0.8	0.8	0.9	4.1	3.2	7.8	8.7	6.1	5.6
Chemical industry (35)	13.8	13.4	12.9	10.1	19.4	14.3	11.4	11.8	13.7
Non-metal products (36)	6.9	6.2	6.4	6.6	3.3	5.5	3.8	2.8	4.1
Metallurgy (37)	12.2	10.5	10.6	7.9	7.2	1.4	4.9	5.9	5.8
Metal products (381)	4.7	4.5	4.6	9.7	6.6	8.5	6.5	8.2	7.8
Machinery (382)	19.9	22.4	21.2	8.5	8.6	12.2	11.6	12.6	10.7
Electrical machinery (383)	4.8	6.9	7.1	11.6	7.4	6.6	6.2	10.2	8.6
Transport equipment (384)	9.8	10.5	10.9	5.9	8.0	3.6	5.1	12.9	8.1
Professional goods (385)	0.5	0.5	0.6	0.8	0.6	2.8	1.7	1.5	1.3
Manufacturing (3)	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Sources: *Industrial Statistics Yearbook*, volume I; *General Industrial Statistics*, United Nations, New York; Federal Statistical Office.

a/ Value added in $ (1980 prices).

Subsectoral growth trends

UNIDO estimates of annual growth rates of manufacturing value added, measured in constant 1985 dollars, reveal a marked deceleration across several International Standard Industrial Classification (ISIC) categories of manufacturing in the 1980s (see Table III.2). These indicators of a sharp deceleration in the growth of several segments of manufacturing, particularly in 1989 and 1990, are corroborated by physical output data presented in Annex Table A-3. Despite this gradual erosion over the years, however, the role of the industrial sector in the Czechoslovak economy remains pre-eminent.

A comparison of the growth rates achieved by individual manufacturing industries relative to the industrial sector as a whole shows that only a comparatively small number of such activities grew at a more rapid rate than the overall industrial average during 1971-1990. These include the wood, furniture, paper, publishing and printing, industrial and other chemicals, rubber, glass, metallurgy and engineering and miscellaneous "other" industries. It was these industries, consequently, which were able to increase their share of total manufacturing output during this period, at the expense of such light industries as food processing and textile production.

The strongest expansion during the preceding two decades was achieved by the electrical machinery industry (ISIC 383). Its share of total manufacturing output increased significantly during 1980-1990. Most other engineering industries also attained relatively high annual growth rates and were thus able to increase their share of manufacturing production over the years. The resultant structural change within the manufacturing sector was characterized by falling shares of light industries. Data for 1990 show marginal increases in the share of light industries in manufacturing output. This was due primarily to a more rapid decline in the output of heavy industries during the current phase of industrial deceleration.

Focus on engineering industry

In 1990 machinery accounted for 42.4 per cent of engineering output, 47.9 per cent of value added in engineering, 44.9 per cent of fixed capital formation in engineering, 62.5 per cent of engineering exports and 69.3 per cent of engineering imports. A comparison of these figures with those of 1975 shows the limited degree of structural change within the engineering industry over the years.

The present predominance of the engineering industry is the result of technological deficiencies. In the past, Czechoslovakia's engineering industry was one of the world's most efficient and competitive. Its orientation towards the east European markets for the past four decades prevented any significant competitive pressure being imposed upon it to improve the quality of its production. As the industry's development was geared to a very narrow range of heavy industrial products, the central planning system and non-market interventions created an unbalanced industrial structure leading to a high material and energy intensity of its products. With the situation being exacerbated by the industrial sector's growing dependence on low quality domestic iron ore and coal, as well as extensive government subsidies, the country proved unable to take full advantage of its rich engineering traditions.

Industrial growth prospects

Czechoslovakia's industrial growth prospects are constrained by a wide range of difficulties, the most important of which include:

- the continued imbalance of the structural pattern of industrial production;
- the high concentration of factors of production in manufacturing industry, resulting in a low level of labour productivity, high rates of energy consumption, heavy demand for capital and intermediate goods, and a steady decline in the efficiency of fixed assets;
- a very wide and growing technological gap between Czechoslovakia's manufacturing industries and those of the developed market economies;

- a very low degree of competitiveness of Czechoslovakia's manufactured goods in developed market economies;
- a shortage of the capital and entrepreneurship required to effect the necessary restructuring and overhaul of the industrial sector.
- an insufficient synchronization of restrictive credit and monetary policies on the one hand, and structural and industrial policies on the other, in the first stages of the transformation process towards a market-oriented economic system; and
- the uncertain political and economic conditions prevailing in the Commonwealth of Independent States and the collapse of intra-regional trade within the former CMEA economies.

In the early stages of transition to a market economy, the new government's goals have so far been expressed mainly in qualitative terms such as the need to reduce the industrial sector's material and energy requirements, increase its export capability and improve its utilization of domestic resources. These objectives are currently being pursued mainly through the use of macroeconomic measures aimed at creating a more market-oriented economic environment and encouraging a restructuring of the supply side which is riddled with microeconomic inefficiencies.

While consolidating the supply side of the economy, the Czechoslovak authorities will also have to take measures to revive domestic demand, which has fallen dramatically since the beginning of 1990. To some extent, such a reduction in demand is an inevitable consequence of the transition to a market system, which through privatization and rationalization of existing economic structures, results in a temporary increase in unemployment and an associated decline in disposable income. This domestic recession, combined with the loss of external markets, has imposed significant constraints on industrial enterprises, which are reflected in a continuing decrease in industrial output. The profitability of industrial enterprises in Czechoslovakia has dropped markedly during 1991 as a result of higher input prices, falling price reform, and the faltering sales, with a large number of enterprises becoming insolvent.

With consumer demand weakening, there has been a noticeable shift in the allocation of resources towards branches involved in the manufacture of intermediate goods, such as fuel, energy, ferrous metallurgy, metal-working and industrial chemicals. These industries enjoy a relatively high degree of international competitiveness, which has been enhanced by the devaluation of the koruna, and have therefore registered comparatively good results in export markets. This changing commodity structure is particularly evident in the case of Czechoslovak exports to western Europe, which are beginning increasingly to consist of primary products and semi-manufactured goods with a relatively low level of manufacturing value added.

Thus, industrial trends of the past two years have provided a clear indication of the need to reevaluate the tools that have so far been employed to foster the transition from a centrally-planned to a market-oriented economy. In particular, they have highlighted the need for the formulation and implementation of appropriate industrial and structural policies to ensure that this transition is accomplished with as little disruption as possible. Such policies appear indispensable for a transformation of the Czechoslovak economy and a restructuring of economic production in accordance with the needs of Czechoslovakia's industrial integration in the emerging European and global structures.

While the process of industrial rejuvenation is under way, the industrial sector as a whole is almost inevitably experiencing a significant and broad-based contraction in the short and medium term. The process of industrial restructuring is aimed at facilitating the emergence of a more balanced and viable industrial base, with market principles governing the performance and efficiency of all subsectors of manufacturing.

The prospects for industrial growth and structural change over the coming five years remain uncertain. Forecasts computed in 4 variants for 20 industrial branches by the Federal Statistical Office suggest a strong likelihood of a recovery in industrial production during 1992-1995 (see Annex D). The rational behaviour of industrial enterprises in a market economy is expected to

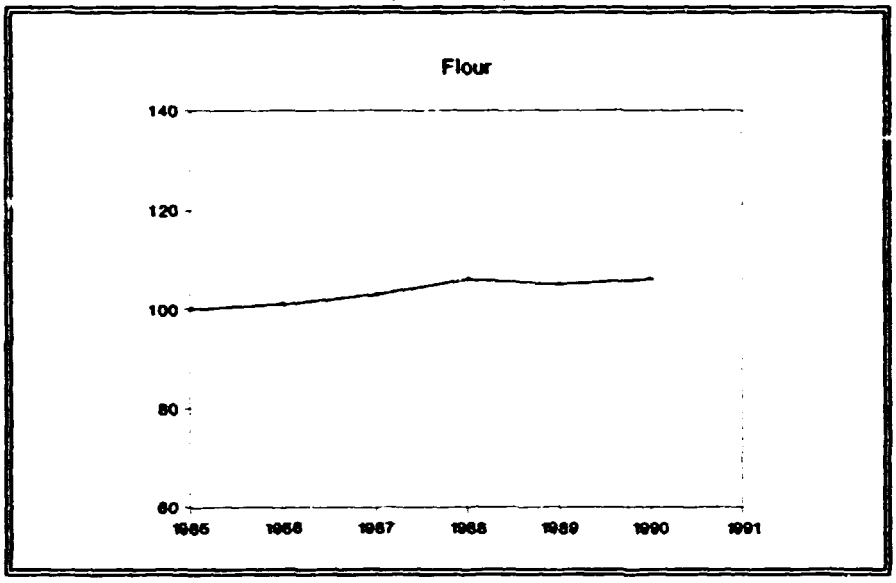
Table III.2. Annual growth rates of value added by manufacturing subsector, 1971-1990
(Percentage at 1985 dollars)

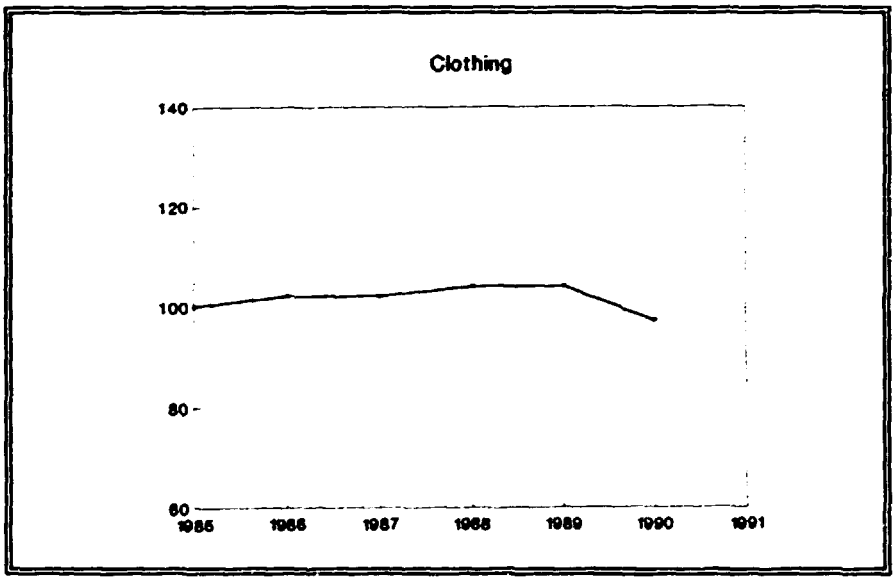
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989[a/]	1990[a/]
Manufacturing	6.89	5.63	8.43	9.50	4.43	3.16	28.38	4.02	1.80	1.58	-21.49	0.66	6.09	-0.99	5.04	-0.09	5.45	4.47	-7.16	-3.67
Food manufacturing	7.98	6.23	6.52	1.87	1.30	-0.39	64.27	5.42	0.79	-1.61	-27.33	-1.14	3.77	0.63	10.63	0.45	0.70	3.84	1.76	-3.12
Beverages	6.86	7.87	5.75	-3.85	-0.70	-2.61	81.42	-2.56	-0.67	-1.05	-35.96	25.65	7.39	-10.06	8.16	-7.26	-5.12	9.69	16.60	-7.07
Tobacco manufactures	9.54	-3.87	38.70	11.93	15.84	1.56	10.18	-1.56	-6.24	-0.64	-4.26	-12.80	4.88	-7.35	0.00	0.00	5.00	4.62	-8.09	-5.51
Textiles	1.69	10.77	7.06	6.45	1.85	-3.39	28.94	4.63	4.26	2.13	-13.65	0.35	1.40	-1.96	2.61	-2.82	0.42	2.89	6.20	-4.04
Wearing apparel	1.24	8.53	6.11	4.10	1.66	1.17	5.14	4.15	2.64	3.40	-4.15	2.88	3.49	-1.51	-0.74	-2.23	4.05	-3.54	5.10	-2.05
Leather and fur products	7.02	12.70	5.17	0.53	6.46	3.97	-1.29	4.76	5.42	4.24	-10.45	-5.17	3.33	-4.34	0.00	5.08	1.61	8.58	2.24	-2.56
Footwear, excluding rubber or plastic footwear	4.99	8.67	2.98	6.20	7.54	4.37	9.93	2.82	0.29	1.52	-12.88	1.80	3.25	-1.99	4.23	-9.31	-5.00	8.44	15.75	-0.24
Wood and cork products	6.23	4.09	11.54	10.65	-0.97	-1.33	24.84	6.55	-0.76	2.83	-21.56	3.09	2.74	-5.63	-2.20	0.68	-1.12	6.86	-0.32	-6.27
Furniture and fixtures	9.74	6.87	7.03	7.46	11.90	8.51	-5.53	9.03	8.13	6.50	-20.07	5.49	5.72	-1.65	1.09	-23.38	-2.35	16.18	12.50	1.47
Paper and paper products	-1.64	6.06	10.49	15.41	3.10	-1.17	85.72	1.34	1.58	-0.25	-31.06	6.79	0.84	9.04	4.02	-5.69	1.94	8.73	12.81	-6.13
Printing and publishing	2.94	3.60	4.44	4.77	3.58	1.25	16.71	5.18	-0.07	-1.23	-16.49	-0.08	1.71	-0.98	3.51	-5.08	1.79	2.20	19.49	-0.96
Industrial chemicals	14.22	5.11	13.60	9.88	4.48	12.31	37.52	4.43	2.67	2.90	-32.96	2.98	12.20	-7.65	9.48	-9.27	4.03	4.23	-10.78	-6.73
Other chemical products	9.48	5.65	7.53	5.19	18.37	9.03	-20.59	-1.57	8.81	3.78	-10.63	2.86	-0.53	-17.91	11.50	3.59	6.93	4.31	-6.71	-3.9
Petroleum refineries	11.19	16.66	24.61	-1.41	-8.60	14.69	59.69	5.43	8.06	3.52	-25.95	6.89	12.99	-9.19	10.60	25.15	14.35	10.20	-39.69	-5.62
Miscellaneous petroleum and coal products	8.14	11.06	6.12	8.54	-6.22	139.24	34.82	8.10	8.17	22.27	-12.28	-17.59	-0.90	11.29	-11.19	-0.79	19.84	2.51	-12.18	1.39
Rubber products	5.99	8.23	11.85	7.60	14.26	6.13	-2.10	5.73	6.46	4.43	-16.07	-4.20	13.07	-8.56	1.88	2.95	8.96	4.46	-5.39	-2.94
Plastic products n.e.c.	7.74	6.26	7.71	7.88	6.28	7.89	4.19	5.34	5.85	4.61	-14.08	-5.11	3.28	-15.48	0.43	0.00	1.72	-0.14	-19.75	-2.95
Pottery, china and earthenware	10.13	9.16	2.39	9.97	-0.70	-7.89	54.39	1.66	-2.17	-1.21	-14.06	12.37	6.23	-4.17	0.00	-15.15	-5.36	-2.02	13.81	8.00
Glass and glass products	5.79	3.71	2.96	10.86	4.10	5.94	39.14	0.57	-1.82	3.06	-31.23	0.95	3.41	-6.47	6.13	-11.33	4.51	7.76	19.02	-2.76
Other non-metallic mineral products	3.11	1.73	-0.51	7.42	7.54	9.17	53.41	2.45	-1.98	2.35	-33.03	4.35	2.31	-0.06	1.33	-3.46	-1.11	3.61	2.80	-3.83
Iron and steel	1.11	2.79	17.92	28.48	-7.94	-3.70	27.77	1.76	-0.09	-2.64	-33.28	-8.19	4.11	22.99	9.33	24.99	10.74	3.84	-12.39	-7.18
Non-ferrous metals	3.93	2.57	8.12	9.61	8.77	8.39	3.27	4.00	-0.35	3.46	-24.89	-7.50	4.43	-2.72	6.38	-0.82	20.60	3.50	-13.72	-6.06
Metal products excluding machinery	6.92	18.36	7.51	4.25	9.34	2.59	59.24	7.05	4.54	2.12	-19.12	-0.61	9.17	0.55	-3.35	-1.38	6.62	8.03	-8.39	-6.00
Non-electrical machinery	9.02	2.51	6.87	7.90	9.59	12.23	17.46	4.17	0.95	2.60	-15.14	-0.23	7.32	-3.96	7.55	-3.80	5.73	2.19	-15.64	-5.47
Electrical machinery	10.36	-7.29	12.35	13.43	11.86	12.46	0.10	2.01	0.73	3.18	-7.89	3.18	6.50	5.91	3.65	-0.28	11.73	8.20	-11.15	-6.32
Transport equipment	10.23	6.40	4.01	5.74	6.15	11.08	37.94	6.32	3.46	1.22	-17.44	2.58	9.28	-3.45	0.58	-4.92	2.29	2.68	-5.12	7.98
Professional and scientific goods	12.38	9.83	2.01	8.74	10.93	-81.03	0.45	7.85	6.38	-4.89	-15.67	8.52	-0.11	-5.05	-5.74	-19.13	44.09	2.84	1.50	-7.47
Other manufactures	4.72	9.24	5.33	4.82	5.47	22.94	15.23	5.67	3.53	0.07	-19.18	4.98	1.34	-19.11	3.45	0.42	2.07	8.38	7.87	7.85

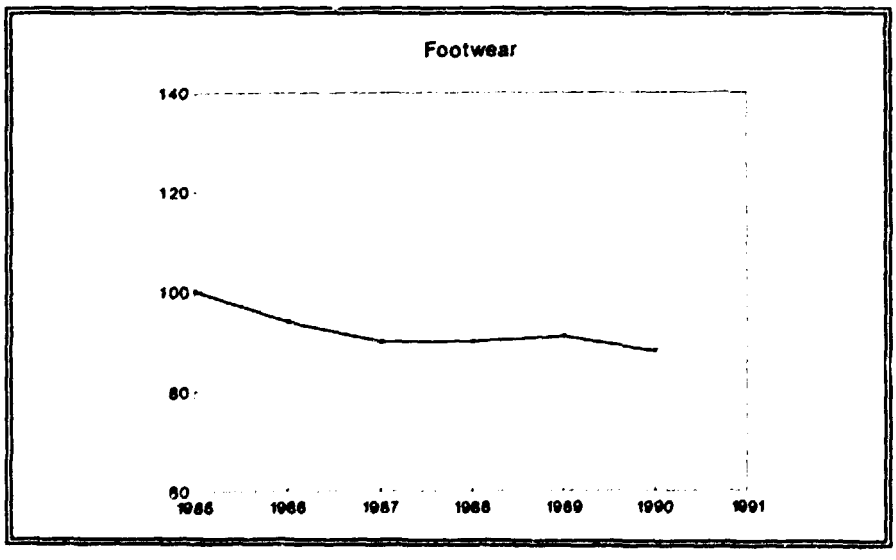
Source: UNIDO Global Econometric Database

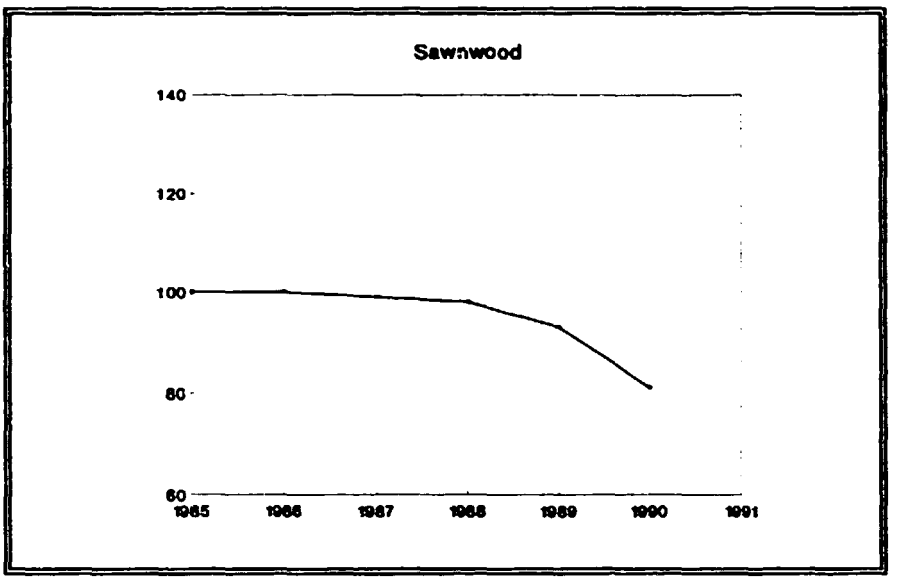
a/ Estimate

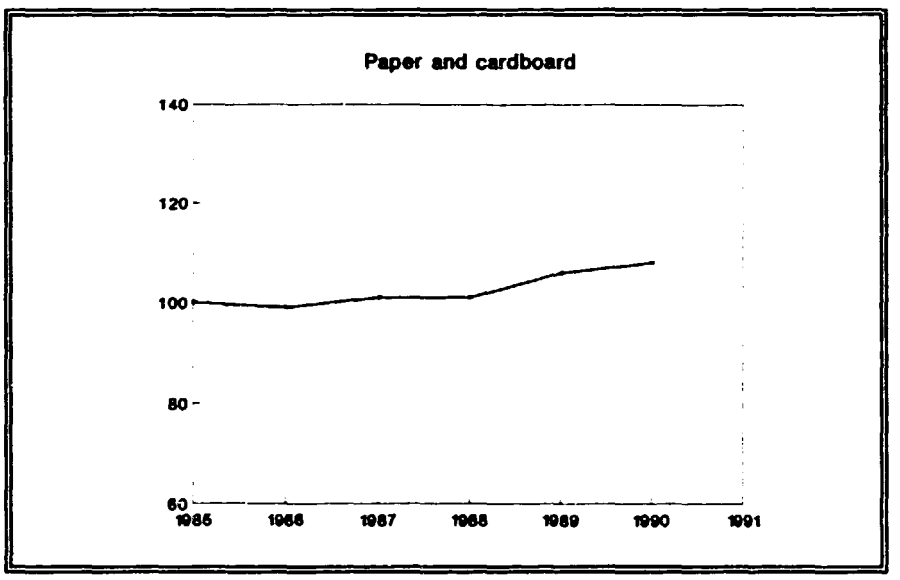
Fig. III.A. Physical output indices of selected manufactured products, 1985-1990
(1985 = 100)

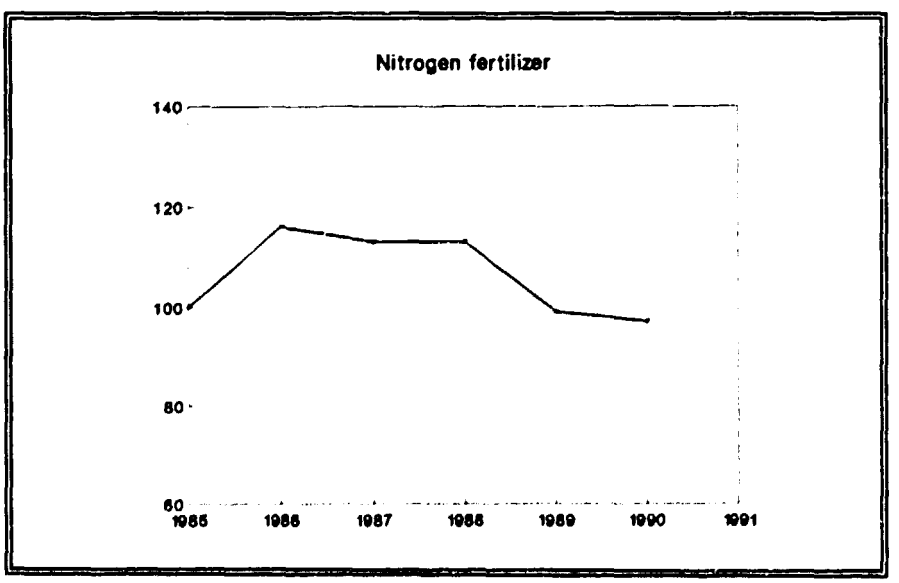


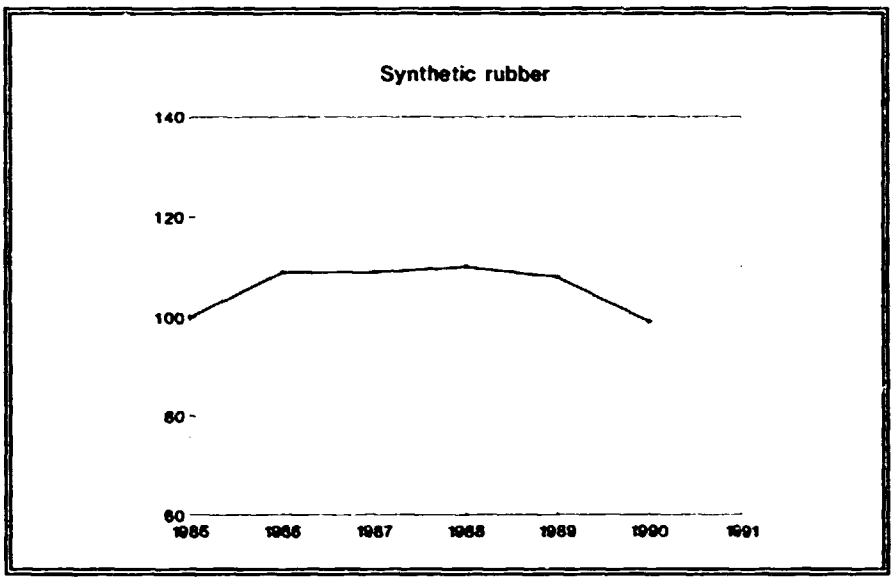


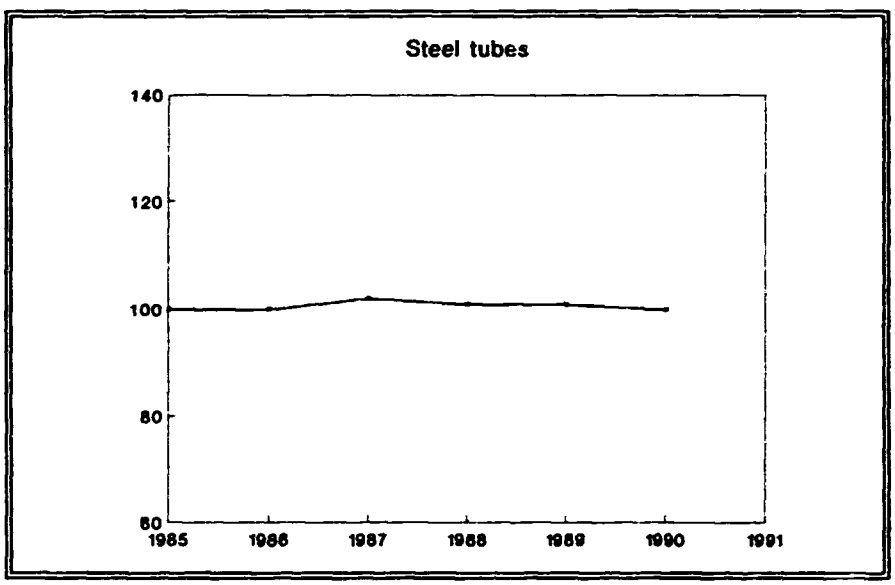


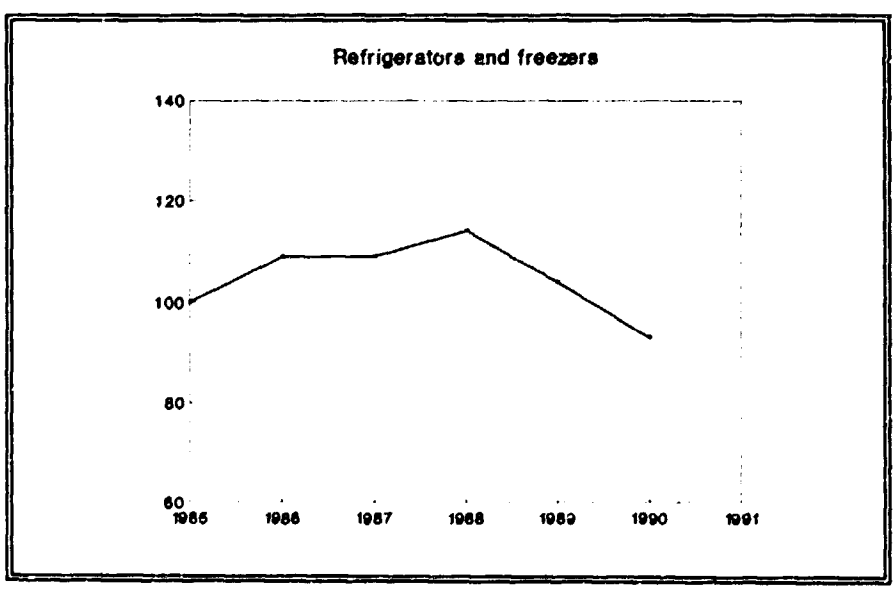

Sawnwood
140
120
100
80
60
1985
1986
1987
1988
1989
1990
1991

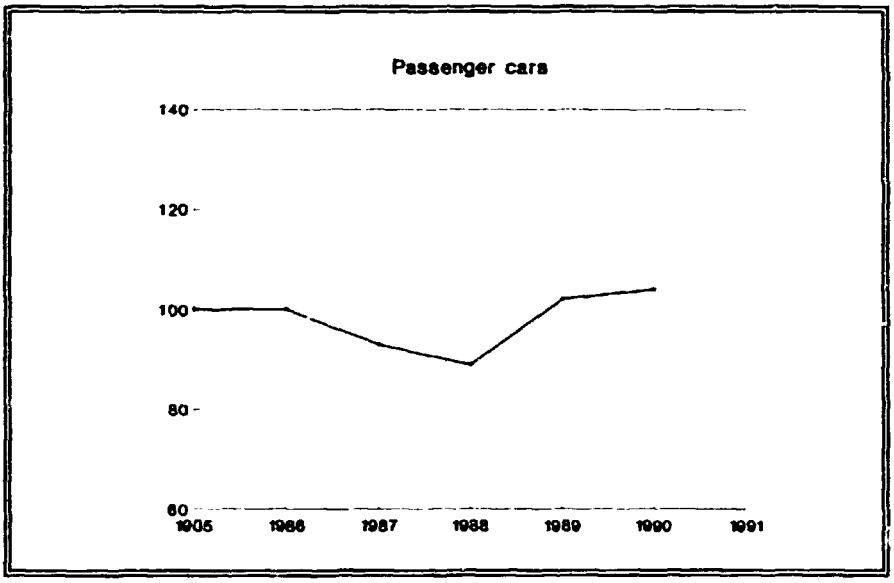

Paper and cardboard
140
120
100
80
60
1985
1986
1987
1988
1989
1990
1991

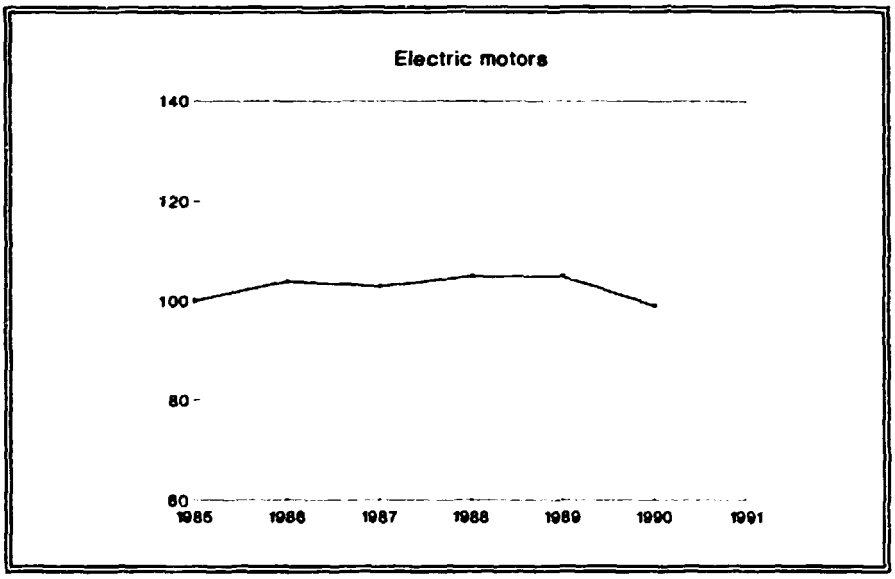

Nitrogen fertilizer
140
120
100
80
60
1985
1986
1987
1988
1989
1990
1991

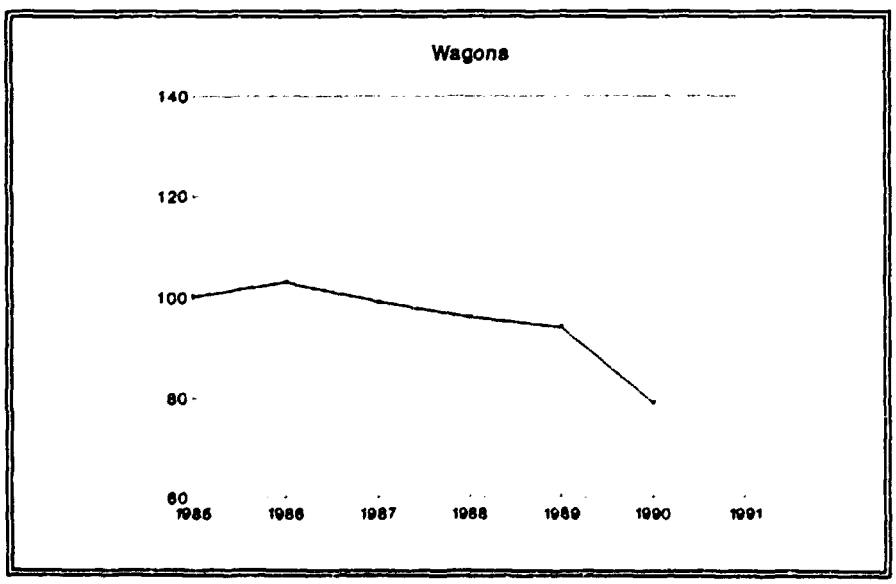

Synthetic rubber
140
120
100
80
60
1985
1986
1987
1988
1989
1990
1991


Steel tubes
140
120
100
80
60
1985
1986
1987
1988
1989
1990
1991


Refrigerators and freezers
140
120
100
80
60
1985
1986
1987
1988
1989
1990
1991


Passenger cars
140
120
100
80
60
1985
1986
1987
1988
1989
1990
1991


Electric motors
140
120
100
80
60
1985
1986
1987
1988
1989
1990
1991


Wagons
140
120
100
80
60
1985
1986
1987
1988
1989
1990
1991

result in significant changes in the structure of industrial production. The most dramatic of these changes are likely to be a decline in the share of non-electrical machinery and mining in the total volume of industrial production, mainly in favour of some light industries.

B. INDUSTRIAL PERFORMANCE

Labour productivity

The deceleration in the rate of growth of industrial output over the years was accompanied by a steady slowdown in the growth of labour productivity. However, this overall slowdown concealed considerable inter-industry differences, with some industries experiencing a substantially faster deceleration of productivity than others (see Table III.3). A large number of industries even recorded significant declines in productivity in the latter half of the 1980s.

A comparison of labour productivity levels in Czechoslovakia and five similar sized developed market economies is presented in Table III.3. While acknowledging that such a comparison cannot be perfect because of differences in output quality, problems of valuation and, in particular, the choice of the appropriate exchange rates, these data do suggest very strongly that productivity levels in all branches of the Czechoslovak economy's manufacturing sector fell well short of levels prevailing in the DMEs. In no branch did the level of labour productivity in Czechoslovakia exceed 50 per cent of the average level for the five DMEs in question in 1987, and only in the metallurgy industry (ISIC 37) was this 50 per cent threshold achieved. Significant improvements in the absorption and diffusion of modern technology are the prerequisites for bridging the gap in labour productivity in the manufacturing sector between Czechoslovakia and comparable DMEs.

Table III.3. Labour productivity in manufacturing in Czechoslovakia and five comparable developed market economies[a/], 1987

Branches (ISIC)	Value added per employee in USD (1980 prices)		Ratio VA/E in CSFR	Level of VA/E in manufacturing=1.00	
	CSFR	Average 5 DMEs[a/]	Average 5 DMEs=1.00	CSFR	Average 5 DMEs
Food (311/2, 313, 314)	12.79	49.65	0.26	0.97	1.25
Textiles (321)	9.56	26.39	0.36	0.72	0.66
Wearing apparel (322)	5.08	17.11	0.30	0.38	0.43
Leather and products (323)	6.08	25.85	0.24	0.46	0.65
Footwear (324)	7.06	21.91	0.32	0.53	0.55
Wood products (331)	11.42	40.56	0.28	0.86	1.02
Furniture (332)	6.36	34.58	0.18	0.48	0.87
Pulp and paper (341)	17.26	53.05	0.33	1.31	1.34
Printing (342)	9.09	40.40	0.23	0.69	1.02
Chemical industry (35)	24.38	53.96	0.45	1.84	1.36
Non-metal products (36)	12.65	35.99	0.35	0.96	0.91
Metallurgy (37)	18.45	37.32	0.50	1.40	0.94
Metal products (381)	9.45	34.25	0.28	0.71	0.86
Machinery (382)	13.90	39.32	0.35	1.05	0.99
Electrical machinery (383)	13.88	38.37	0.36	1.05	0.97
Transport equipment (384)	13.99	34.47	0.41	1.06	0.87
Professional goods (385)	9.27	36.01	0.26	0.70	0.91
Manufacturing (3)	13.22	39.68	0.33	1.00	1.00

Sources: *Industrial Statistics Yearbook*, volume I; *General Industrial Statistics*, for selected years. United Nations, New York; UNIDO Database.

a/ Austria, Belgium, Denmark, Finland and Sweden.

The forecasts of labour productivity per employee presented in Annex D show possible improvements in productivity in a large number of industry branches by the year 1995. Assuming favourable developments both within and outside Czechoslovakia, the forecast indicates the highest level of labour productivity in almost all industry branches over the transition period.

Material cost and intensity

The material intensity of industrial production is substantially higher in Czechoslovakia than in most western countries. The level of material cost can be gauged from the share of value added in gross output. UNIDO estimates of the share of value added in gross output across manufacturing subsectors show that material cost fell in the 1970s as indicated by an increase in the share of value added in gross output from 31.9 per cent in 1970 to 41.5 per cent in 1980. A close look at similar data for manufacturing subsectors for the years 1970 and 1980 suggests similar trends of falling material costs in all 28 ISIC categories of manufacturing. Such a situation in the 1970s was due largely to the highly subsidized inputs supplied to enterprises. It is rather difficult to deduce inferences from the highly distorted price and cost structure. Despite subsidies, the unit material cost seems to have increased rapidly in the 1980s. This is revealed by a significant fall in the share of value added in gross output in all ISIC categories of manufacturing (see Table III.4).

For the manufacturing sector as a whole the share of value added in gross output fell from 41.5 per cent in 1980 to 29.0 per cent in 1990. UNIDO estimates of the share of value added in gross output for most of the 1980s show rising levels of material cost across the subsectors of manufacturing. This occurred in spite of subsidies, implying that an increase in material cost in the 1980s was more a reflection on the rising material intensity of products turned out by obsolete mode of production than on the rising input prices. Thus the relatively high material intensity of products was one of the principal causes of relative industrial inefficiency in Czechoslovakia, compared to western countries.

Capital productivity

The process of production with a low rate of liquidation of outdated fixed assets resulted in a low level of capital productivity. The productive rate of return on fixed assets in Czechoslovakia was often distorted by the methodology and definitions employed in the computation of assets. For example, the fixed assets of the machine building industry in the late 1980s included around Kcs 30 billion worth of non-productive assets such as housing, medical and educational facilities.[1/]

Although there were attempts to achieve technical progress, the low rate of liquidation of obsolete equipment and high obsolescence of capital stock constrained the growth of capital productivity. In the electrical engineering industry, which underwent some degree of [illegible] the share of obsolete equipment in fixed assets fell from 46.7 per cent in 1980 to [illegible] in 1989. The share of outdated assets in the fixed assets of the country's textile [illegible]ing industry was around 60 per cent in most of the leading enterprises in 1990.

According to the Federal Statistical Office, the index of capital productivity (1970 = 100) in textiles fell from 80 in 1985 to 74.8 in 1989, while in wearing apparel it fell from 60.5 to 49.6 during the same period. The index of capital productivity in the leather industry (1970 = 100) fell for several consecutive years from 69.1 in 1985 to 59.2 in 1989. Thus the subsectoral physical productivity trends in the 1980s were generally discouraging. The equipment stock of Czechoslovakia's industrial sector was allowed to become obsolete because of the virtually complete absence of any competitive pressures either in the domestic market or in the established markets of the former Soviet Union and the CMEA which persisted over several decades.

Table III.4. Selected performance indicators of manufacturing subsectors, 1970, 1980 and 1990

Manufacturing subsector (ISIC)	Value added per worker (1970=100)		Share of value added in gross output (Percentage)			Share of wages and salaries in value added (Percentage)		
	1980	1990	1970	1980	1990	1970	1980	1990
Manufacturing	189	160	31.9	41.5	29.0	49.1	32.5	43.2
Food	196	164	14.2	22.1	10.8	46.4	28.4	38.7
Beverages	191	165	25.8	39.8	25.4	38.5	24.4	33.6
Tobacco	194	117	17.3	28.3	16.7	36.4	25.5	38.7
Textiles	186	181	34.8	44.8	39.7	54.7	37.7	45.1
Wearing apparel	165	183	37.4	39.9	42.9	91.3	69.7	70.9
Leather and fur products	160	163	29.7	32.1	23.8	71.1	52.9	58.2
Footwear	158	169	36.9	42.1	36.4	63.5	49.9	54.9
Wood and cork products	181	149	38.5	45.2	28.7	52.5	35.9	49.0
Furniture and fixtures	188	167	37.6	43.5	34.7	91.4	59.2	72.7
Paper and paper products	236	208	29.7	44.8	27.0	46.9	25.3	32.3
Printing and publishing	125	142	47.8	51.6	45.7	54.6	49.5	44.9
Industrial chemicals	264	177	27.1	35.3	28.0	37.3	17.6	30.1
Other chemicals	167	127	21.3	34.9	25.7	36.8	27.2	44.0
Petroleum refineries	273	192	24.5	28.8	15.5	26.3	11.9	19.8
Miscellaneous petroleum and coal products	398	174	7.8	37.3	23.6	38.5	12.3	33.9
Rubber products	177	157	31.1	38.7	31.1	37.5	28.2	36.9
Plastic products	189	136	38.9	46.1	30.3	50.7	32.4	49.9
Pottery, china and earthenware	229	218	53.5	72.7	55.5	70.9	37.5	47.5
Glass and glass products	182	142	56.0	69.8	43.2	50.7	35.1	51.4
Other non-metallic mineral products	202	160	44.7	67.5	39.5	43.3	26.3	37.3
Iron and steel	196	198	29.7	42.5	34.2	38.4	25.2	27.8
Non-ferrous metals	204	196	18.8	25.1	20.8	34.6	21.9	25.7
Metal products excluding machinery	212	167	39.1	42.9	34.9	78.3	46.0	68.1
Non-electrical machinery	172	125	47.2	56.4	39.9	49.6	35.8	53.3
Electrical machinery	154	148	38.5	44.3	38.1	44.8	36.2	44.0
Transport equipment	184	164	35.1	46.2	35.7	50.3	34.9	41.7
Professional and scientific goods	167	136	50.8	60.4	41.2	50.0	37.3	52.1
Other manufactures	182	163	28.9	37.9	27.3	56.4	37.1	45.2

Source: UNIDO, Global Econometric Database.

C. MANUFACTURED EXPORTS AND IMPORTS

The degree of export orientation

In the first half of 1991 industrial products accounted for around 83 per cent of total exports and 49 per cent of total imports in Czechoslovakia. The relatively high share of industrial goods in Czechoslovakia's exports and the much lower proportion of such products in imports confirms the role of a "manufacturing" economy assigned to Czechoslovakia in the international division of labour, especially in relation to the former Soviet Union and CMEA countries, and also in relation to the developing countries. This pattern is being reversed in relation to the OECD and EC countries.

The export orientation of the Czechoslovak industry, measured in terms of the share of exports in production, has been very high in a number of products (see Table III.5). In the heavily import-dependent textile industry the share of exports in production stood at 13.5 per cent in 1990, compared with 15.2 per cent in 1980. A substantial proportion of the exports from this segment of manufacturing comprised synthetic textiles destined mainly for the former Soviet Union in exchange of cotton. The share of exports in production grew significantly in wearing apparel from 25.4 per cent in 1980 to 34.2 per cent in 1989. An increased export orientation of production was also experienced by the leather industry. Although the share of exports in footwear production fell over the years, it was as high as 42.1 per cent in 1989. Steel products recorded a fall in the share of exports in production, while that of non-ferrous metals was meagre to the extent of being negligible. The export orientation of transport equipment remained high throughout, while that of electrical machinery and electronics was 22.9 per cent in 1988, compared with 25.1 per cent in 1980 and 25.9 per cent in 1985.

Table III.5. Share of exports in the production of selected manufactured goods, 1980, 1985 and 1988
(Percentage)

Product	1980	1985	1988
Textiles	15.2	13.6	13.5
Wearing apparel	25.4	27.7	34.2
Leather	16.7	24.2	21.9[a/]
Footwear	56.6	47.3	42.1
Iron and steel	23.8	16.0	15.4
Non ferrous-metals	0.9	1.4	1.2
Transport equipment	37.6	39.6	37.1
Electrical machinery and electronics	25.1	25.9	22.9

Source: Federal Statistical Office.
a/ 1989.

Table III.6 shows that external demand accounted for around 64 per cent of the growth of gross output in manufacturing in 1972-1984. The contribution of external demand to an increase in gross output[2/] was particularly high for pottery, china and earthenware products, wearing apparel, furniture and fixtures, transport equipment, glass and glass products and non-electrical machinery.

A summary of Czechoslovakia's external trade patterns since the early 1980s is provided in Table III.7. This shows that the share of industrial products in total exports declined modestly between 1983 and 1991, due largely to the falling share of exports to developing countries. This development was matched by a similar decline in the share of industrial imports in total imports, which was prompted by a dramatic drop in the proportion of industrial goods imported from the former CMEA countries and, to a lesser extent, from the developing countries.

Fig. III.B. Share of industrial exports in total exports, January-June 1991 (Percentage)

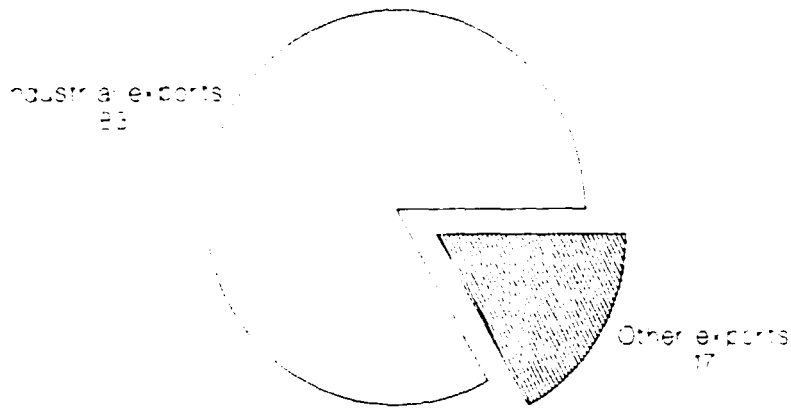


Fig. III.C. Share of industrial imports in total imports, January-June 1991 (Percentage)

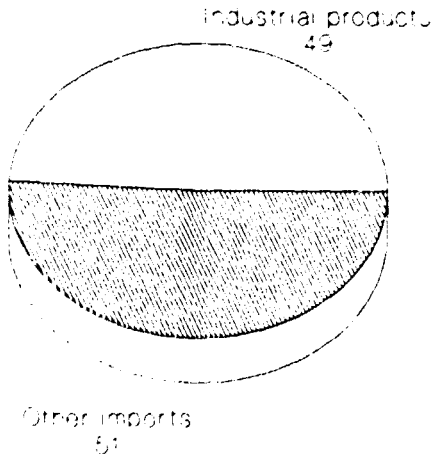


Table III.6. Sources of growth in manufacturing output, 1972-1984

	Export (Million $)		Import (Million $)		Gross output (Million $)		Domestic demand 1972-1984 (Percentage)	External demand 1972-1984 (Percentage)	Import substitution 1972-1984 (Percentage)
	1972	1984	1972	1984	1972	1984			
Total manufacturing	2,398.00	12,065.00	2,241.00	10,047.00	26,525.00	44,880.00	77.42	63.98	-41.40
Food manufacturing	94.40	259.40	178.90	393.10	3,951.00	7,016.00	97.03	5.47	-2.50
Beverages	0.19	121.70	0.16	30.30	533.00	765.00	60.53	52.45	-12.98
Tobacco manufactures	3.40	0.20	69.20	95.90	90.90	116.20	128.18	-8.47	-19.70
Textiles	131.20	512.90	162.70	209.30	1,702.00	2,284.00	-4.13	101.72	2.41
Wearing apparel	147.90	459.20	86.80	145.20	473.00	626.00	-114.03	211.77	2.26
Leather and fur products	3.90	74.10	5.30	20.80	200.50	287.80	30.32	96.30	-16.13
Footwear	208.10	486.40	16.30	20.80	493.00	687.00	229.86	-128.97	-0.89
Wood and cork products	38.70	195.70	28.40	36.30	533.00	828.00	29.36	67.29	3.35
Furniture and fixtures	51.80	220.40	18.50	24.30	288.10	468.40	-97.53	190.99	6.54
Paper and paper products	33.70	149.90	35.20	103.70	493.00	970.00	81.57	26.19	-7.76
Printing and publishing	17.20	54.30	17.30	23.60	184.50	295.00	52.39	42.91	4.70
Industrial chemicals	114.40	702.70	214.20	753.30	1,680.00	3,368.00	84.21	35.13	-19.34
Other chemical products	53.10	169.30	42.60	191.80	566.00	450.00	81.93	-50.32	68.39
Petroleum refineries	20.90	229.70	29.00	89.30	680.00	2,668.00	88.51	10.28	1.21
Rubber products	47.70	114.50	34.30	38.40	371.00	567.00	31.92	56.27	11.81
Plastic products n.e.c.	25.20	29.10	9.70	22.20	68.80	101.70	69.20	-30.32	61.12
Pottery, china, earthenware	10.00	27.60	0.60	15.00	42.80	68.60	42.20	285.64	-227.83
Glass and glass products	59.20	204.60	5.50	39.20	386.00	588.00	-32.49	168.13	-35.64
Other non-metallic minerals	50.40	166.50	18.40	24.20	795.00	1,329.00	72.47	26.06	1.47
Iron and steel	439.90	1,192.00	192.00	397.50	3,221.00	5,054.00	38.27	70.79	-9.06
Non-ferrous metals	21.20	23.50	244.30	532.60	969.00	1,105.00	296.82	1.80	-198.62
Metal products excluding machinery	29.80	238.40	18.40	295.60	770.00	1,681.00	105.36	23.89	-29.25
Non-electrical machinery	415.30	3,608.20	427.10	1,850.00	3,602.00	6,460.00	10.88	134.93	-45.81
Electrical machinery	101.60	568.90	56.30	386.70	1,186.00	2,086.00	75.71	63.19	-38.90
Transport equipment	629.60	2,039.00	270.40	681.40	2,048.00	3,833.00	-62.06	185.09	-23.02
Professional and scientific goods	70.90	206.30	59.30	192.10	604.00	168.00	93.52	-21.82	28.30

Source: UNIDO Database.

Changing the direction of trade

The strong territorial concentration of Czechoslovakia's industrial exports and imports on the former members of the CMEA indicated above is confirmed by the data in Annex Tables A-10 and A-11, respectively. These show that the former CMEA countries have dominated Czechoslovakia's external trade in all four categories of the Standard International Trade Classification (SITC) covering industrial products (SITC 5-8), and especially for machinery and transport equipment (SITC 7). This pattern was particularly evident in the period to 1988, but began to change in favour of OECD and EC countries between 1989 and 1991.

A particularly important development is the increase in the share of Czechoslovakia's industrial exports to the OECD and the EC indicated in Annex Table A-12. They do not, therefore, reflect a dramatic expansion of Czechoslovakia's trade with the OECD. This is most evident in the case of Czechoslovakia's exports of machinery and transport equipment (SITC 7), of which the share shipped to the OECD countries increased from 3.2 per cent in 1983 to 32.0 per cent in the first half of 1991. The OECD countries have also achieved a growing dominance as suppliers of these products to Czechoslovakia. As shown in Annex Table A-13, their share in Czechoslovakia's imports of SITC 7 products has grown from 18.8 per cent in 1983 to 81.4 per cent in 1991, while the share of the former CMEA countries has dropped from 77.0 per cent to 13.2 per cent during the same period. The growing share of machinery and transport equipment imports from the OECD is indicative of the transfer of technology and accelerated pace of the modernization of fixed assets in Czechoslovak industry.

Industrial products (SITC 5-8) in general, and machinery and transport equipment (SITC 7) in particular, have retained their dominant position in Czechoslovakia's overall export trade. Reinforcing the point made above about the recent loss of eastern European markets, they also show a significant decline in the share of exports to these markets held by SITC 7 products (see Annex Table A-12). Encouragingly, however, this decline was partially offset by an increase in the share of machinery and transport equipment in Czechoslovakia's exports to the OECD and EC countries.

Table III.7. Industrial[a/] exports and imports in total foreign trade[b/], 1983-1991, selected years
(Percentage)

	Exports			Imports		
	1983	1989	1991[c/]	1983	1989	1991[c/]
Total trade	87.4	84.1	82.9	52.3	67.2	49.1
CMEA countries	91.4	90.7	91.4	47.9	56.7	20.2
Soviet Union	91.9	90.9	97.6	29.7	38.7	29.3
OECD countries	64.8	68.0	75.8	73.6	80.6	83.5
EC countries	74.2	76.2	78.3	79.6	82.8	83.4
Developing countries	94.8	88.2	88.5	18.4	18.8	14.9

Source: Federal Ministry of Foreign Trade, Research Institute of External Economic Relations, Prague.

a/ Standard International Trade Classification (SITC) categories 5-8.
b/ In current prices converted at average commercial exchange of Kcs in each respective year.
c/ January-May 1991.

The changes in the regional orientation of Czechoslovakia's foreign trade in industrial products have been caused primarily by the loss of markets and suppliers in the former CMEA countries, and in particular the former Soviet Union, as a result of the wide ranging political and economic

changes that have occurred in those countries in recent years. In this connection it is also important to note that the shift in regional trade patterns experienced in recent years does not imply the replacement of one form of territorial dependence with another, but constitutes a part of the necessary territorial diversification of Czechoslovakia's external trade. Despite the recent increase in the role of the OECD and EC countries in Czechoslovakia's foreign trade, the markets of the central and eastern European countries may regain much of their erstwhile importance in the future.

D. INDUSTRIAL EMPLOYMENT

The structure of industrial employment

The industrial sector absorbed a large proportion of the labour released from such shrinking sectors as agriculture until the mid-1980s. A turning point in the hitherto rising trend of industrial employment occurred in the late 1980s, when the level of industrial employment declined in absolute terms.

The share of industrial employment in total employment, at 37.0 per cent, is broadly comparable to that in Germany (38.7 per cent) but substantially higher than in the smaller developed market economies such as Belgium (28.1 per cent), Austria (30.2 per cent) and Sweden (24.9 per cent). While the ratio of industrial employees per 1,000 inhabitants amounts to 52 in Belgium, 89 in Austria, 63 in Sweden and 118 in Germany, the corresponding figure for Czechoslovakia is 183 despite falling levels of industrial employment across industry branches.

The overall decline in industrial employment experienced during the latter half of the 1980s was very broadly based within the manufacturing sector (see Table III.8). In particular, it was prompted by a sharp reduction in the number of persons employed by the textile and leather, wood and paper-related industries. This was reinforced by a significant shedding of staff in various parts of the non-metallic manufacturing, metallurgy and engineering branches, and especially in the non-metal products, non-ferrous metals and transport equipment industries. By contrast, employment in mining and energy related activities expanded dramatically during this period, with the petroleum and gas industry (ISIC 220) increasing its labour force by almost 10.8 per cent per year, the metal ore mining industry (ISIC 230) by some 10.4 per cent, the petroleum and coal products industry (ISIC 354) by an impressive 17.1 per cent, and the electricity, gas and steam industries by almost 2.5 per cent.

By 1990, the share of manufacturing employment (including mining) within total industrial employment had fallen to approximately 88.1 per cent, compared to 91.3 per cent in 1970. The bulk of this decline was made up for by the mining and quarrying sector, which recorded a particularly sharp increase in its share of total employment in 1990, to 9.1 per cent from 6.9 per cent in the previous year.

Within the manufacturing sector the engineering industries are by far the largest employers of labour. The machinery industry is thus shown to have accounted for almost 18.0 per cent of total industrial employment in 1990, with the metal products, electrical machinery and transport equipment industries accounting for a further 5.9 per cent, 6.8 per cent and 7.3 per cent respectively. In addition, the iron and steel industry accounted for another 6.1 per cent of the active industrial labour force.

Despite this emphasis on heavy industries, however, some of the light industrial branches also remained significant employers of labour. With a 6.1 per cent share of total industrial employment, the food processing industries continue to play a particularly important role in absorbing labour, as do the textiles and leather industries with a combined share of approximately 15 per cent, and the wood and paper based industries with a joint share of some 7 per cent.

The radical economic changes towards a market economy will have profound impact on the employment structure and labour market conditions. According to forecasts prepared by the Federal Statistical Office, the share of non-electrical machinery in the structure of employment will fall from 19 per cent in 1990 to less than 14 per cent in 1995 irrespective of the underlying assumptions of the four scenarios (see Annex D).

Table III.8. Average annual growth rates of industrial employment by subsector, 1971-1990
(Percentage)

Branches	ISIC	1971-1975	1976-1980	1981-1985	1986-1990	1971-1990
Mining, quarrying	2	-0.11	0.57	1.31	5.70	1.84
Coal mining	210	-0.60	0.75	1.71	5.23	1.75
Petroleum and gas	220	8.45	-19.73	8.45	10.76	1.12
Metal ore mining	230	2.25	2.02	0.93	10.35	3.82
Other mining	290	-1.08	2.13	-2.09	2.13	0.26
Manufacturing	3	0.57	0.49	0.55	-1.11	0.12
Food products	311/2	0.26	1.59	0.58	-0.93	0.37
Beverages	313	0.00	0.62	0.60	0.00	0.30
Tobacco	314	0.00	0.00	0.00	0.00	0.00
Textiles	321	0.00	-0.53	-0.36	-1.62	-0.63
Wearing apparel	322	-1.00	-1.60	-0.38	-2.40	-1.35
Leather and products	323	0.76	-0.75	0.76	-1.53	-0.20
Footwear	324	1.12	-0.82	-0.28	-0.87	-0.22
Wood products	331	0.60	-0.60	-0.30	-2.94	-0.82
Furniture, fixtures	332	0.66	0.00	0.00	-0.99	-0.08
Paper and products	341	1.36	0.43	0.84	-1.69	0.23
Printing, publishing	342	0.73	2.71	-1.95	-0.70	0.18
Industrial chemicals	351	1.60	0.43	0.84	-1.91	0.23
Other chemical products	352	2.13	-4.36	0.00	2.38	0.00
Petroleum refineries	353	1.92	0.89	0.00	0.00	0.70
Petroleum, coal products	354	0.00	8.45	10.76	17.08	8.90
Rubber products	355	1.61	0.00	0.76	0.00	0.59
Pottery, china, etc.	361	-1.89	-2.09	0.00	2.13	-0.48
Glass and products	362	1.15	0.28	0.81	-0.80	0.36
Non-metal products n.e.c.	369	0.23	0.23	-0.23	-2.70	-0.62
Iron and steel	371	0.22	-2.31	1.09	-0.24	-0.32
Non-ferrous metals	372	1.61	-5.75	-0.70	-3.04	-2.01
Metal products	381	-0.16	6.51	-0.72	0.00	1.37
Machinery n.e.c.	382	-0.87	3.97	1.18	-1.71	0.62
Electrical machinery	383	1.03	1.39	1.80	2.88	1.77
Transport equipment	384	4.10	0.75	0.80	-4.36	0.28
Professional goods	385	1.15	-29.21	-1.28	5.92	-6.98
Other industries	390	1.03	1.46	2.22	-0.85	0.96
Electricity, gas, steam	4	2.21	2.62	1.18	2.45	2.11
All industry	2-4	0.56	0.54	0.61	-0.50	0.30

Sources: *Industrial Statistics Yearbook*, volume I; *General Industrial Statistics*, United Nations, New York; Federal Statistical Office.

Fig. III.D. Average annual growth rate of industrial employment 1971-1990 (Percentage)

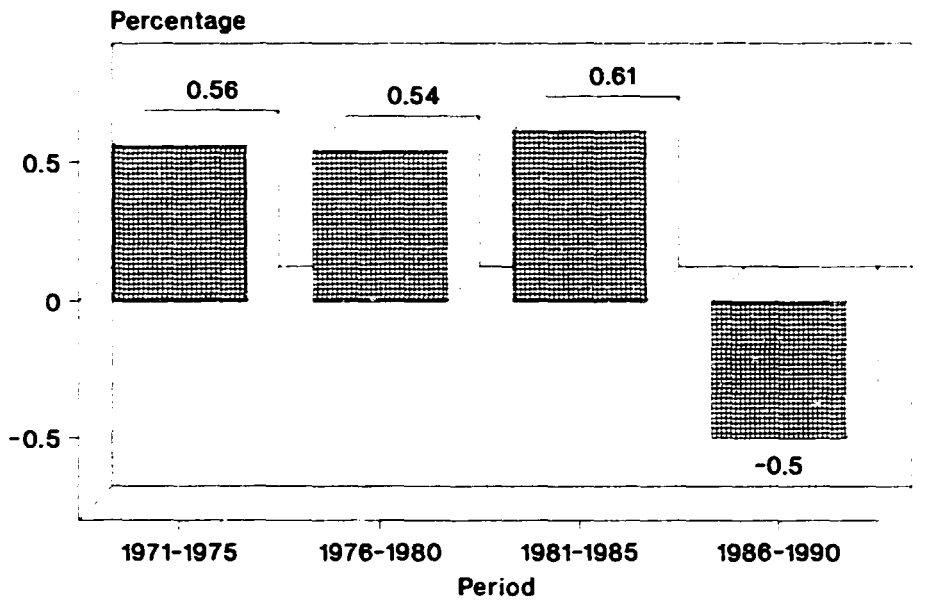
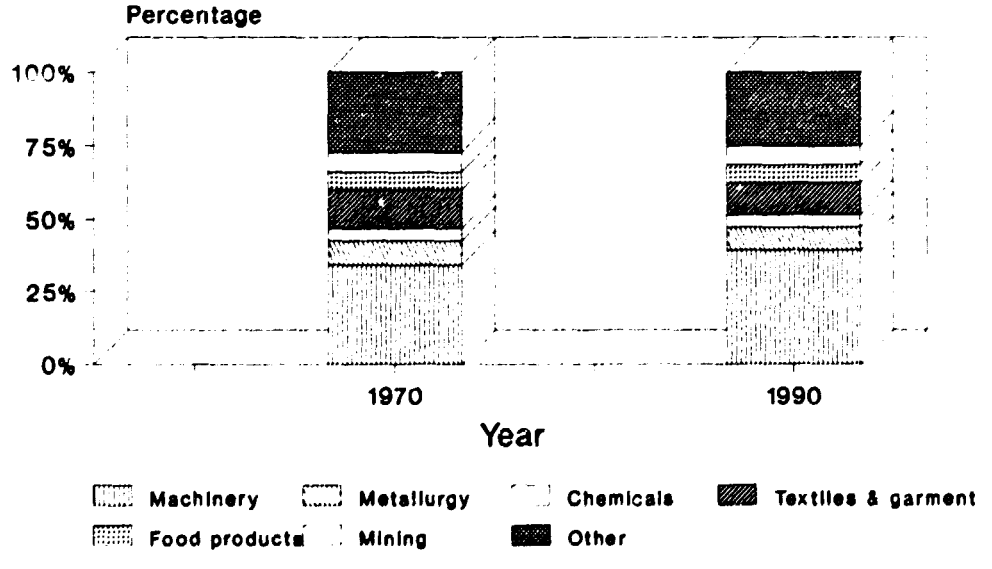


Fig. III.E. Structure of industrial employment, 1970 and 1990 (Percentage)



Wages

The administrative allocation of labour and centrally determined wages are being replaced by market forces. During January and February 1991 wage policy guidelines allowed the average wage level in the industrial sector to increase by a cumulative 5 per cent above the level of December 1990, and by 6 per cent in the government sector. The minimum wage is set at Kcs 2,000 per month. The minimum wage level is intended to be indexed to inflation, with a view to avoiding a fall in real wages by more than 10 per cent. However, actual increases in wages paid by enterprises in 1991 were much lower because industrial enterprises simply did not have the means to pay higher wages.

The role of women

The female participation rate, which is around 80 per cent in eastern Europe compared with 59 per cent in the OECD countries, is expected to fall in the wake of falling real wages and rising unemployment. In mid-1991 the rate of unemployment of women exceeded that of men and the trend continued through the second half of the year. Legal regulations, which ban certain jobs for women on grounds of physical and health risks, contributed to the excessive predominance of women in "light industries" and men in "heavy industries" such as coal, steel, energy and chemicals. In 1987 women constituted 89.3 per cent of the labour force in the clothing industry, 74.4 per cent in the textile industry, 67.5 in the leather industry, and 52.4 per cent in the food processing industry. Although a survey conducted in 1988 showed that the share of women is higher in the metallurgy and engineering industries than in the OECD countries, only 20 per cent of female manual workers in those industries had chosen their occupation deliberately. Sixty per cent were forced to take the jobs because there were no vacancies in the occupations for which they had a preference.

Light industries, especially those with export prospects, could capitalize on the availability of skilled blue-collar female workers provided that they adapt quickly to the new competitive requirements. Also the development of hitherto neglected industry-related services such as consultancy, design, banking, management, accountancy etc. have the potential to absorb some of the labour force shed by the industrial sector. In 1989, the banking, insurance and business services accounted for only 1.4 per cent of total employment and 1.9 per cent of female employment. The present challenge is to prevent the proportionately higher level of female unemployment from rising further during the restructuring period.

Human resource development

The newly acquired freedom of personal choice of training and employment will have to be supported by a system of occupational counselling attuned to the new requirements of the industry under restructuring. There is a need to monitor the labour market and disseminate information on job opportunities, with a view to providing signals to the educational and training institutions.

In order to reduce the number of new entrants into the labour market, the government extended primary education by one year and introduced training programmes for school leavers in 1990, postponing the arrival of 100,000 school leavers annually into the labour market. The government attempted to improve the skills of unemployed persons through re-qualification and training programmes. These attempts have only met with limited success so far.

Traditionally the Czechoslovak labour force was known for its proven industrial skills. Foreign investors in Czechoslovakia commonly praise the technical skills of semi-skilled and skilled labour which is also imbued with high morale and ability to adjust. In particular, engineers and researchers are appreciated for the range of their professional knowledge and capabilities. However, the management faces the difficult task of adjusting to the new concept of running businesses. There is no doubt that the existing industrial and technical skills will be raised to an

internationally competitive level sooner or later if appropriate educational and training facilities are established with modern technology and equipment, and if the transfer of technology is accelerated through foreign investment and international technical cooperation. With the opening up of the economy to market forces and to foreign investment, the skill requirements will be different. The existing gap in academic and technical skill levels will need to be bridged in order to take advantage of new technologies and production processes.

E. INDUSTRIAL CONCENTRATION AND INVESTMENT PATTERNS

Industrial size and concentration

A legacy of the command system was the high concentration of ownership of industrial assets. In 1990, around 90 per cent of Czechoslovakia's industry was State-owned, and over 80 per cent of industrial employment was in enterprises employing more than 1,000 workers. Small enterprises, employing less than 500 persons, accounted for less than 8 per cent of industrial employment (see Table III.9).

As the programme of large-scale privatization gets under way, it will lead not only to the denationalization and commercialization of the large State-run industrial enterprises, but also to their organizational and financial restructuring, separating them into a larger number of small- and medium-size enterprises.

The deconcentration of industrial assets is already visible in the data for 1989-1990 presented in Table III.9. In 1989 only about 9.2 per cent of the total number of 588 enterprises had less than 500 employees. By 1990 the share of enterprises with less than 500 employees had increased to 43.4 per cent of a much larger total of 1,409. The share of enterprises with more than 5,001 employees fell during the same period from 11.6 per cent to 2.9 per cent.

The degree of concentration, as measured by the number of workers, has also changed substantially. While only about 0.9 per cent of workers were employed in enterprises with a staff of less than 500 in 1989, this share increased to 7.9 per cent in 1990. During the same period the proportion of workers employed in large enterprises with a work force of 5,001 and more workers fell from 52.4 per cent to 27.9 per cent. Meanwhile, the total number of industrial workers declined from 1,855 million to 1,788 million.

Enterprises with less than 100 employees still play only a minor role in Czechoslovak industry despite the restructuring of the past few years. The latest available data show that their number amounted to 1,007 and that the number of staff employed by them amounted to about 19.500 on 31 March 1991, suggesting an average workforce of 19.4 per enterprise. Financial data for these small-scale enterprises indicate average revenues of Kcs 2.59 million and average expenditures of Kcs 2.33 million.

Investment patterns

There has been a marked slowdown in the average annual growth rate of gross fixed capital formation (GFCF) in the industrial sector in general and the manufacturing industries in particular (see Annex Table A-4). A recovery occurred between 1986 and 1989, largely as a result of a restoration of investment activity in the manufacturing and the electricity, gas, and steam subsectors. Investment growth in the mining and quarrying subsector experienced no such improvement, however, and suffered a substantial contraction in the second half of the 1980s.

Data on the ratio of investment to gross output, presented in Table III.10, reveal considerable inter-industry differences. The investment ratio was thus retained at a relatively high level in the mining sector until the early 1980s, largely because of the need to extract black coal under increasingly difficult geological conditions and the growing investment demands of the brown coal quarrying industry. The slowdown in investment growth in this subsector during the 1980s is

Table III.9. Size of industrial enterprises, 1989 and 1990

Branches	1989											
	Number of enterprises	Average annual number of workers					Number of workers in thousand	Enterprises with average number of workers				
		to 500	501-1,000	1,001-2,500	2,501-5,000	5,001 and more		to 500	501-1,000	1,001-2,500	2,501-5,000	5,001 and more
State industrial enterprises total	**588**	**54**	**114**	**243**	**109**	**68**	**1,855**	**17**	**87**	**401**	**378**	**972**
Fuels	8	-	-	-	2	6	157	-	-	-	7	150
Power	2	-	-	-	-	2	50	-	-	-	-	50
Ferrous metallurgy	16	-	1	5	3	7	123	-	1	9	11	102
Non-ferrous metallurgy	17	5	4	4	3	1	26	2	3	6	10	5
Chemical and rubber industry	32	4	6	10	6	6	132	2	3	16	23	88
Mechanical engineering	134	7	33	53	20	21	486	2	23	89	72	300
Electro-technical industry	32	3	6	15	5	3	111	1	5	25	20	60
Metalworking industry	49	6	15	20	7	1	89	2	11	31	22	23
Building materials	40	-	17	19	2	2	60	-	15	25	[illegible]	13
Woodworking industry	28	1	1	14	12	-	70	-	1	28	41	-
Pulp and paper industry	18	1	6	5	6	-	32	-	5	8	19	-
Glass and ceramics industry	12	2	-	3	3	4	65	1	-	5	11	48
Textile industry	57	1	2	28	22	4	152	-	1	51	76	24
Clothing industry	13	-	1	4	4	4	43	-	1	7	14	21
Leather industry	12	-	-	6	3	3	68	-	-	11	10	47
Printing industry	4	-	-	2	1	1	17	-	-	3	3	11
Food industry	93	14	20	48	8	3	151	4	16	76	25	30
Freezing industry	9	5	1	3	-	-	7	1	1	5	-	-
Other industries	12	5	1	4	2	-	16	2	1	6	7	-

(continued)

Table III.9. (continued)

Branches	1990											
	Number of enterprises	Average annual number of workers					Number of workers in thousand	Enterprises with average number of workers				
		to 500	501-1,000	1,001-2,500	2,501-5,000	5,001 and more		to 500	501-1,000	1,001-2,500	2,501-5,000	5,001 and more
State industrial enterprises total	**1,409**	**611**	**297**	**345**	**115**	**41**	**1,788**	**141**	**214**	**544**	**389**	**500**
Fuels	18	3	-	5	4	6	157	1	-	8	14	134
Power	13	-	1	9	1	2	49	-	1	15	3	30
Ferrous metallurgy	23	3	2	8	3	7	126	-	1	13	11	101
Non-ferrous metallurgy	28	14	7	4	1	2	37	3	5	6	3	20
Chemical and rubber industry	80	27	19	22	10	2	104	5	13	36	37	13
Mechanical engineering	341	129	90	81	29	12	439	32	64	129	99	115
Electro-technical industry	106	37	20	39	9	1	119	10	14	57	33	5
Metalworking industry	96	40	22	28	5	1	92	9	15	44	17	7
Building materials	136	86	32	16	1	1	69	16	24	20	3	6
Woodworking industry	64	28	12	16	8	-	66	6	8	28	24	-
Pulp and paper industry	23	8	6	3	6	-	30	2	5	5	18	-
Glass and ceramics industry	46	17	11	10	7	1	61	5	9	18	23	6
Textile industry	90	18	14	37	20	1	147	3	10	60	68	6
Clothing industry	25	8	3	8	4	2	42	2	2	14	14	10
Leather industry	13	2	-	6	3	2	60	-	-	10	10	40
Printing industry	40	28	9	3	-	-	18	7	7	4	-	-
Food industry	217	131	40	41	4	1	146	33	29	65	12	7
Freezing industry	9	5	1	3	-	-	7	1	1	5	-	-
Other industries	41	27	8	6	-	-	19	6	6	7	-	-

Source: Federal Statistical Office.

reflected in a marked decline of the investment ratio between 1980 and 1989. The high investment ratio in the electricity, gas and steam subsector throughout the past two decades was influenced mainly by the construction of nuclear power stations. Most major branches of manufacturing industry experienced a decline in the investment ratio during the 1970s. The restoration of investment activities during the second half of the 1980s prompted a slight increase in the investment ratios prevailing in most manufacturing branches, especially since it coincided with a slowdown in the growth of industrial output.

Until the mid-1980s the pattern of industrial investment was characterized by an increase in the share of the mining and the electricity, gas and steam subsectors, and by a decline in the share of manufacturing. Within manufacturing, moreover, the existing investment flows were concentrated in a comparatively small number of heavy industries (see Annex Table A-5). In the second half of the 1980s the share of mining began to drop, while that of electricity, gas and steam continued to grow as a result of ongoing investment activities in the nuclear power generation programme.

Inter-branch differences in investment allocation within manufacturing industry have to a large extent reflected changing priorities in the government's industrial and structural policies during the 1970s and 1980s. In the 1980s the share of total investment accounted for by the food products branch increased significantly, and that allocated to the textile and the leather products branches also increased modestly. By contrast, the share of investment in wood processing declined markedly in the 1980s.

The share of the chemical industry in total investment remained broadly stable during the 1980s after having suffered a substantial decrease in the 1970s, primarily as a result of declining investment levels in the industrial chemicals branch. Meanwhile, the share of investment in the non-metal products and metallurgy industries declined continuously throughout the 1970s and 1980s. This contrasted sharply with the performance of the engineering industries, which attracted a steadily increasing share of total investment. The deliberate structural re-orientation of the manufacturing subsector towards the engineering industries, was particularly noticeable in the metal products, miscellaneous and electrical machinery, and transport equipment branches.

The proportion of investment spending devoted to the modernization and rehabilitation of machinery and equipment declined in both the mining and the electricity, gas and steam subsectors during the 1980s. By contrast, the share of investment in machinery and equipment in manufacturing industries tended to rise during this period, with many of the heavy manufacturing branches recording particularly strong growth. In the second half of the 1980s increased efforts were made to modernize the machinery and equipment employed in light manufacturing branches as well, which resulted in an increase in the share of such investment.

Although the proportion of total investment in machinery and equipment allocated to the mining and electricity, gas and steam subsectors declined sharply in the 1980s, the composition of investment within the metal ore mining and manufacturing subsectors shifted significantly in favour of machinery and equipment in the latter half of the decade. This trend is illustrated in Annex Table A-5. This development, represents one of the most positive features of the investment activity that took place in Czechoslovakia's industrial sector during the 1980s, as it improved the technological structure of these subsectors. Only in the electricity, gas and steam subsector did the share of machinery and equipment in total investment continue to decrease in the late 1980s, largely as a result of the heavy investment in construction involved in the building of nuclear power stations during that period.

This trend towards an increasing emphasis on investment in machinery and equipment has been sustained during 1990 and 1991. It was stimulated both by the need to penetrate more demanding western export markets as a result of the declining opportunities for sales offered by the former CMEA countries and by an easing of controls on the import of technology from the developed market economies. Although these imports have pushed local producers of machinery and equipment out of the domestic market, they will contribute to an acceleration of the modernization of the fixed assets employed in Czechoslovakia's industry.

Table III.10. Ratio of investment to gross output in industry branches, 1970-1989, selected years
(Percentage)

Branches	ISIC	1970	1980	1985	1989
Mining, quarrying	2	15.12	23.62	19.36	12.20
Coal mining	210	14.82	26.20	20.72	15.19
Petroleum and gas	220	13.43	42.11	41.18	10.43
Metal ore mining	230	16.23	7.55	9.60	4.95
Other mining	290	17.24	21.01	12.13	6.67
Manufacturing	3	7.30	6.10	5.06	5.84
Food products	311/2	3.90	4.06	3.46	4.45
Beverages	313	7.46	7.26	6.88	7.69
Tobacco	314	3.15	3.61	2.11	4.04
Textiles	321	11.10	6.40	5.88	7.77
Wearing apparel	322	2.62	2.38	3.91	4.07
Leather and products	323	4.30	3.59	3.85	4.35
Footwear	324	3.67	3.25	3.58	4.06
Wood products	331	9.76	9.91	4.48	4.86
Furniture, fixtures	332	6.99	3.06	3.13	4.32
Paper and products	341	20.91	25.12	6.66	9.78
Printing, publishing	342	12.05	11.97	8.24	12.99
Industrial chemicals	351	13.20	5.75	5.04	7.01
Other chemical products	352	5.23	4.81	7.29	5.02
Petroleum refineries	352	13.13	3.37	1.21	2.62
Petroleum, coal products	354	1.50	7.21	5.92	8.13
Rubber products	355	10.58	4.94	5.67	5.86
Plastic products n.e.c.	356		3.90	5.06	11.59
Pottery, china, etc.	361	6.90	18.18	9.40	7.09
Glass and products	362	15.40	6.73	10.98	8.43
Non-metal products n.e.c.	369	18.06	9.80	6.79	8.61
Iron and steel	371	5.54	6.46	3.54	3.69
Non-ferrous metals	372	5.77	2.75	3.46	2.47
Metal products	381	5.07	5.40	5.32	6.27
Machinery n.e.c.	382	5.55	7.00	6.90	7.24
Electrical machinery	383	4.35	4.70	7.28	6.52
Transport equipment	384	6.81	6.20	5.89	6.17
Professional goods	385	7.11	4.50	12.06	8.75
Other industries	390	6.61	3.82	4.61	6.56
Electricity, gas, steam	4	14.83	21.15	19.39	27.11
All industry	2-4	6.06	7.54	6.41	7.13

Sources: *Industrial Statistics Yearbook*, volume I; *General Industrial Statistics*, United Nations, New York; Federal Statistical Office.

As to the foreign investment flows into manufacturing subsectors, a recent study[3/] shows the engineering industry as the most attractive sub-sector in early 1991. The combined weight of the engineering industry, including non-electrical engineering, office equipment and computers, electrical equipment, communication equipment, precision instruments and transport equipment is 50 per cent in terms of number of projects, 57 per cent in terms of capitalization and 67 per cent in terms of foreign component (see Table III.11).

Of the various engineering branches non-electrical machinery was the most important one. Around 10 per cent of the joint ventures in March 1991 operated in chemicals, rubber and plastics. Other significant subsectors are food and textile products and wood and wooden products, office equipment and communication equipment.

Table III.11 Manufacturing foreign investment projects in Czechoslovakia, by branch

ISIC rev.3 Code	Industry	Statutory capital			Number
		Total	Foreign		
		(Million Kcs)	(Million Kcs)	(Million $)	
15	Food	112.8	93.9	5.7	6
17	Textiles	9.1	4.5	0.3	2
20	Wood and wood products	36.5	14.1	1.9	5
21	Paper and paper products	..	..	..	..
22	Publishing and printing	7.7	3.6	0.2	5
24	Chemicals	303.0	154.5	6.4	2
25	Rubber and plastics	140.1	68.7	12.4	5
26	Non-metallic products	5.3	3.6	0.2	3
28	Metal products	26.5	5.4	0.3	2
29	Machinery and equipment n.e.c	513.8	255.8	37.7	21
	of which:				
291	General purpose machinery	32.4	16.1	2.0	6
291	Special purpose machinery	202.6	105.4	11.8	13
	Other[a/]	278.8	134.3	23.9	2
30	Office equipment and computers	254.4	163.0	10.7	3
31	Electrical equipment	13.1	8.7	0.4	5
32	Communication equipment	213.8	44.0	7.8	4
33	Precision instruments	2.1	1.1	0.1	3
34	Motor vehicles	4.2	2.3	0.1	1
35	Other transport equipment	..	..	..	..
36	Furniture and manufacturing n.e.c.	102.6	6.7	0.5	4
	Other[b/]	5.6	2.7	0.2	2
	Total	**1,750.6**	**832.6**	**84.8**	**73**

Source: Economic Commission for Europe Database on joint ventures.

a/ Including activities not classified in specific manufacturing ISIC group.
b/ Including activities not classified among manufacturing.

Note: On 25 March 1991. Figures may not add to totals because of rounding.

In early 1990 the President of Czechoslovakia proclaimed that the arms industry in the country should be transformed into civilian production. However, optimistic expectations about a fundamental change in the pattern of industrial investment in view of a conversion programme seem to be constrained by a number of factors. The programme is aimed at converting the military production equipment and infrastructural facilities into civilian use. In 1991 arms production in Czechoslovakia amounted to Kcs 7.6 billion, representing hardly 50 per cent of the 1990 level of production.[4/] Around two-third of the military industry, employing 100,000 workers, is located in Slovakia. Arms production facilities in the Slovak Republic turn out 10 tanks per week.

In the late 1980s Czechoslovakia ranked among the 20 leading arms exporters in the world. There are indications that the Slovak arms factories want to continue producing military equipment in view of the employment implications. In the Slovak factory of Mevtin 400 persons already lost their jobs and another 9,700 persons would have lost their jobs but for fresh export orders. In 1991 licences to export military products were granted to 28 enterprises.

In 1991 the Federal Government granted Kcs 1.5 billion to support projects that convert arms factories into civilian production. By early 1992 $67 million was spent on the conversion programme. The total cost of converting military production into civilian use is estimated at $780 million. In view of the possible social tension arising from the conversion programme military production may not be completely given up until alternate sources of generating employment opportunities are found.

Fig. III.F. Statutory capital of foreign investment projects, 1983-1990 (Million Kcs)

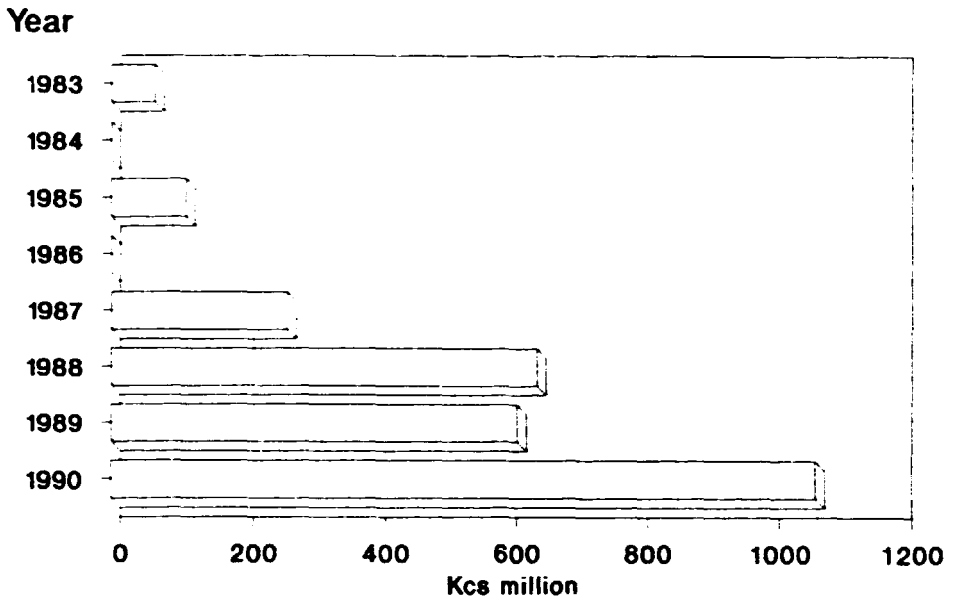
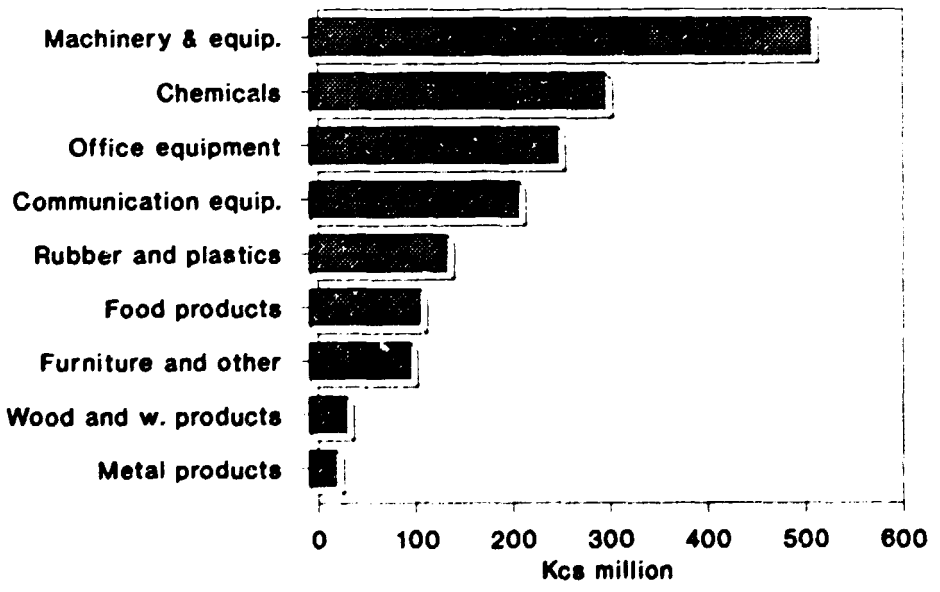


Fig. III.G. Statutory capital of foreign investment in manufacturing subsectors, March 1991 (Million Kcs)



F. INDUSTRIAL LOCATION

As discussed in Chapter I the territorial structure of individual industries is only partially a result of long-term specialization processes based on divergent local resource endowments. To a considerable extent the existing pattern of industrial location has also been determined by a number of non-economic factors. The former Soviet Union also played an important part in the decision to locate the military and electronics industries in particular on the territory of the Slovak Republic.

The regional imbalance in industrial development is marked by 77 per cent of the country's gross industrial output being produced by the Czech Republic (see Table III.12). The less favourable natural resource base of the Slovak Republic led to its substantially lower share in total sales and exports of fuel and glass, ceramics and porcelain. The most important industries in the Slovak Republic are the chemical and rubber industries and the metal-working industry, largely as a result of the concentration of military production in the Republic. In addition, the Slovak Republic also has relatively large shares of Czechoslovakia's clothing, building materials, wood-working and pulp and paper industries.

As mentioned earlier, Prague has a relatively high concentration of chemical and rubber, electrotechnical and electronic, and food processing industries. Central Bohemia is the principal location of the non-ferrous metallurgical industry as well as the building materials and freezing industries. Northern Bohemia has a high share of Czechoslovakia's glass, ceramics, chemical, rubber, and textile industries. A strong concentration of the textile industry is also found in eastern Moravia. Southern Moravia is the principal location of the wood-working, clothing and leather industries, while northern Moravia is dominated by the ferrous metallurgy and pulp and paper industries.

Bratislava is a very important industrial centre, with a high concentration of chemical and rubber, printing and food processing industries. Clothing and leather industries are dominant in the western part of the Slovak Republic, while non-ferrous metallurgy and wood working predominate in central Slovakia. Ferrous metallurgy is the principal industrial activity in the eastern part of Slovakia.

G. ENVIRONMENTAL ISSUES

In redefining the priorities of Czechoslovakia's industrial development ecological issues will need to be addressed. The positive correlation between the pace of industrial expansion and the volume of pollutants emanating from factories underlines the urgent need for the introduction of ecologically sustainable patterns of industrial development. The total amount of annual sulphur dioxide (SO_2) emissions, one of the major pollutants, increased from 0.9 million tonnes in 1950 to 3.2 million tonnes in 1985. Having remained stable until 1988, SO_2 emissions fell from 2.7 million tonnes in 1989 to 2.4 million tonnes in 1990 in the face of industrial deceleration. An accelerated pace of industrial expansion with continuous use of obsolete technology will make Czechoslovakia an undesirable location in the ecological map of Europe.

The greatest contributor to the SO_2 emissions are the power plants and heating plants which burn low-quality brown coal, lignite and heavy fuel oils containing sulphur (79 per cent).[5/] A total of about two thousand major industrial sources of emissions have been registered. For the time being there is no desulphurization equipment in common operation in Czechoslovakia for large energy sources and home fire heating sites, and desulphurization of the waste gases is only partial in some technological processes. Under these circumstances, the fulfilment of the international commitment of a 30 per cent decrease of the SO_2 emissions before the beginning of 1993, in comparison with the level of 1980, seems improbable. In industrial centres and in towns the specific SO_2 emissions reach extremely high levels: 120 tonnes per square km in the north Bohemian region and 76.5 tonnes per square km in Prague annually.

Table III.12. Geographic distribution of gross industrial output, 1990
(Percentage)

Branches	Czech Republic									Slovak Republic				
			Bohemia					Moravia						
	Total	Prague	Central	Southern	Western	Northern	Eastern	Southern	Northern	Total	Brati-slava	Western	Central	Eastern
Ferrous metallurgy	77.2	-	9.3	0.5	14.5	4.9	-	2.1	45.9	22.8	-	-	4.6	18.2
Non-ferrous metallurgy	71.0	-	48.7	-	2.7	8.5	-	-	11.1	29.0	-	2.3	21.7	5.0
Chemical and rubber industry	62.2	18.2	7.0	0.8	0.9	17.1	3.9	8.7	5.6	37.8	19.1	6.6	6.6	5.5
Electro-technical and electronic industry	78.8	24.7	6.0	2.3	3.1	5.5	6.2	19.9	11.1	21.2	1.7	4.6	11.8	3.1
Building materials	72.2	3.1	27.3	3.8	7.5	5.5	6.0	11.6	7.3	27.8	4.7	6.1	5.5	11.5
Woodworking industry	63.4	9.7	-	11.9	5.6	-	6.0	21.6	8.3	36.6	4.6	6.5	19.6	5.9
Pulp and paper industry	64.4	3.6	-	10.5	4.8	14.7	8.7	3.7	18.3	35.6	-	12.3	15.8	7.5
Glass and ceramics industry	83.1	-	11.5	1.1	6.6	44.2	7.2	4.5	7.9	16.9	-	15.2	1.6	-
Textile industry	79.7	-	-	9.7	5.5	19.8	26.4	9.6	8.6	20.3	1.1	5.5	7.7	6.1
Clothing industry	60.8	11.6	-	15.5	-	5.4	-	25.0	3.4	39.2	-	18.7	7.7	12.7
Leather industry	65.0	-	3.0	0.5	2.4	-	10.7	46.7	1.7	35.0	-	22.3	6.8	5.9
Printing industry	67.5	19.1	13.7	4.5	2.4	8.1	5.8	7.5	6.3	32.5	20.3	-	12.2	-
Food industry	71.1	34.3	2.3	4.2	4.3	3.4	7.3	9.8	5.3	28.9	16.0	5.6	3.5	3.8
Freezing industry	71.0	34.2	3.4	4.1	4.2	3.3	7.0	9.5	5.2	29.0	16.4	5.5	3.4	3.7
Other industries	84.0	20.0	9.4	8.4	8.4	6.1	11.8	8.7	11.1	16.0	16.0	-	-	-
Industry total	**72.4**	**18.2**	**7.7**	**3.2**	**4.4**	**8.6**	**6.4**	**10.4**	**13.4**	**27.6**	**6.9**	**5.5**	**8.9**	**6.3**

Source: Federal Statistical Office.

The total amount of nitrogen oxide emission (NO_2) is estimated at about 1.1 million tonnes annually, leading to 73 kg *per capita* in 1989. These emissions are accounted primarily by energy production and industry (71 per cent), transport (22 per cent) and central as well as local heating plants (7 per cent). The relatively low NO_2 production in power plants is caused by the large dimensions of the combustion chambers and the low temperatures of brown coal burning. Recently the NO_2 emissions of some chemical works have been reduced, particularly in fertilizer production. The NO_2 specific emissions are the highest in the north Bohemian region (41.0 tonnes per square km annually) and in Prague (79.3 tonnes per square km annually.)

Also, the emissions of solid materials (particularly fly-ash) and aerosols increased from 800 thousand tonnes in 1950 to 1.4 million tonnes in 1985. Thereafter they were lower, growing again now due to the technical inefficiency, and hence the effectiveness of the electrostatic separators installed 10-15 years ago. The concentration of fly-dust has increased continuously, the average annual levels significantly exceed the highest admissible concentration limits.

Smaller particles (less than 10 μm) are also being emitted to the atmosphere to a great extent. Many of the smaller industrial sources of these emissions and some heating sites are not equipped with separators at all. Areas with the highest specific dust emissions are the north Bohemian region with 20.0 tonnes per square km a year, Prague with 40.9 tonnes per square km a year, the north Moravian region with 11.6 tonnes per square km a year. The average load on Czechoslovak territory is 7.7 tonnes/square km a year. The fly-ash generated by burning brown coal contains many hazardous substances, including arsenic, beryllium, cobalt, nickel, selenium, bismuth, and radioactive elements such as uranium and thorium. In addition, the metallurgical plants also release a great amount of harmful substances into the atmosphere, namely cadmium, cobalt and other heavy metals.

The level of lead in the atmosphere has been reduced somewhat in recent years due to the introduction of petrol with a lower content of tetraethyl lead. This petrol, however, is available only in large cities. The total amount of hydrocarbon emissions is estimated at 150-200 thousand tonnes annually, with industry accounting for about 50 per cent, transportation for 30 per cent and home heating sites for 17 per cent. These amounts are rising in proportion to the increasing consumption of natural gas.

A significant burden to the atmosphere is represented by heavy emissions from the chemical industry containing various hydrocarbons, halogen compounds, etc. Incineration plants in Bratislava and some other towns operate without adequate temperature controls, and are not equipped with efficient waste-gas cleaning facilities. Hence, the incineration of plastic materials emits many hazardous organic substances into the atmosphere, including dioxin.

The burning of low-quality solid fossil fuels also generates substantial quantities of carbon dioxide (CO_2). These emissions are currently estimated at approximately 60.4 million tonnes per annum, giving Czechoslovakia a share of about 1.1 per cent in global annual emissions of this gas. These emissions represent 4.1 tonnes per capita annually.

A great local hazard is the atmospheric pollution from accidents and large fires. In 1988, for instance, several thousand chemicals were burned in an accident in a poorly secured storehouse for fertilizers and other agrochemicals at Borsov, near the town of Kyjov in southern Moravia. The combustion products from this fire included large amounts of undefined chemicals, among which were dioxin and other highly hazardous compounds. Atmospheric pollution is also caused by carbon monoxide emissions estimated at 1.5 million tonnes annually of which the principal sources are transportation (45 per cent), central and local heating (29 per cent), the metallurgy and the foundry industry (16 per cent) and poor energy management (10 per cent).

The contamination of water resources by organic substances, measured by means of the biochemical oxygen demand (BOD) from registered sources, increased until the beginning of the 1980s to about 320,000 tonnes of BOD annually; it has dropped only slightly to the present level of about 270,000 tonnes of BOD annually. The municipal share of this contamination increased

Fig. III.H. Total emissions of main pollutants, 1985, 1988 and 1990
(Million tonnes)

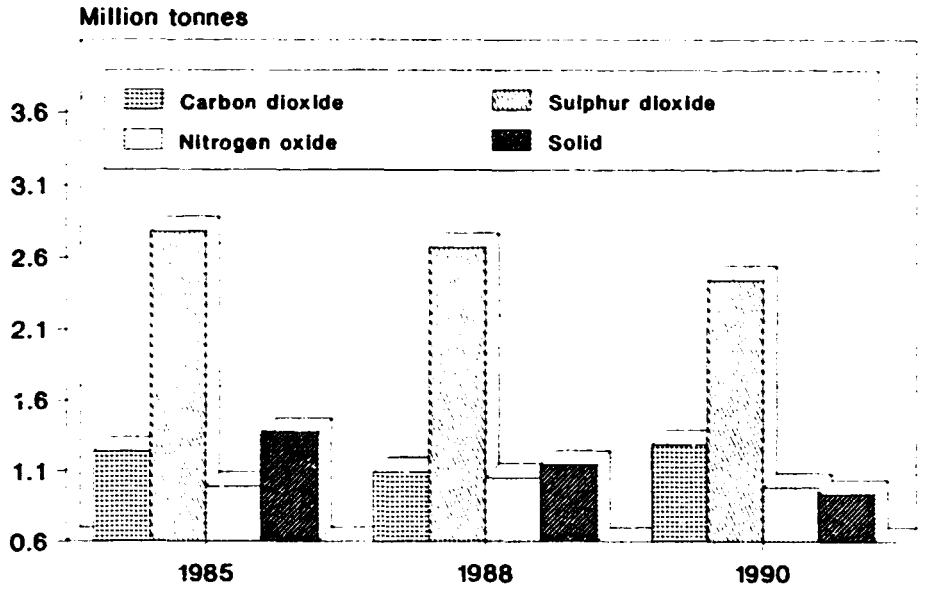
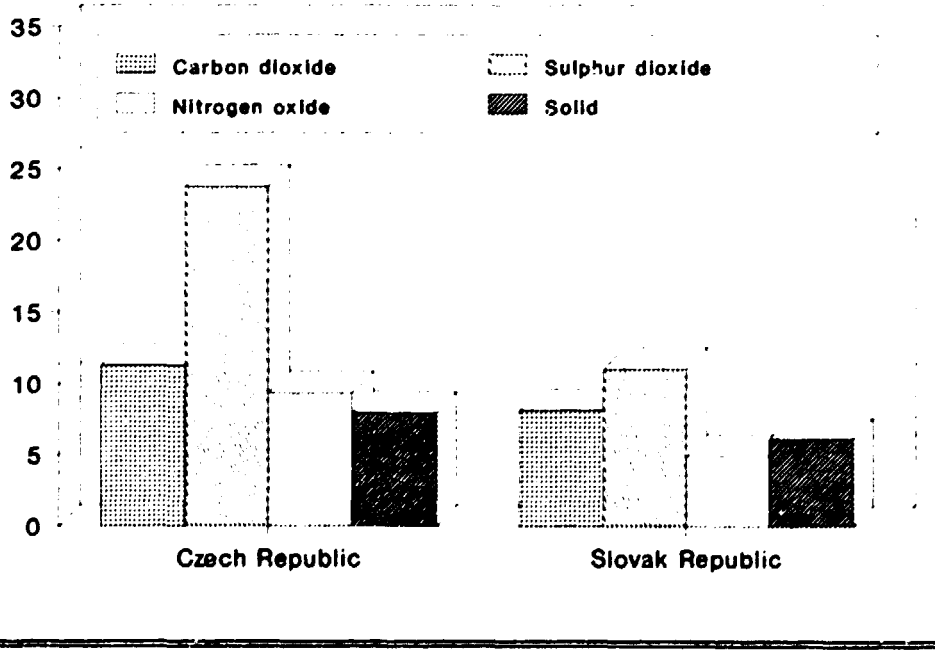


Fig. III.I. Specific emissions of main pollutants in Czech and Slovak Republics, 1990
(Tonnes per square kilometre)



from 55,000 tonnes in 1971 to 103,000 tonnes in 1990; the amount of organic contamination released by industrial enterprises is gradually decreasing.

According to the findings of a four-year research study conducted by the International Institute for Applied Systems Analysis (IIASA),[6/] the volume of annual forest losses from sulphur pollution in Czechoslovakia is around 9.5 million cubic metres. In the absence of air pollution Czechoslovakia's forests could yield 23.7 million cubic metres of forest products against the 1987 harvest of 14.2 million cubic metres. According to IIASA, the damage caused to forests has already reached critical levels. Sulphur dioxide, nitrogen oxide and ammonia are the three main pollutants causing damage to forests. Sulphur pollution damage to forests alone costs an annual loss of around $369.5 million in forest-based industrial products.

The somatic and psychical stresses of living in a disturbed environment with a contaminated human food chain is one of the primary causes of the deterioration of the general state of health of Czechoslovakia's population. This is highlighted by the fact that the mean life expectancy of Czechoslovakia's inhabitants has stagnated or even decreased slightly from the beginning of the 1960s. The environmental situation in Czechoslovakia calls for immediate action at all levels. At the same time, the country needs stable and enduring policies and management systems for the environment. Economic development must be weighed against environmental remedies and protection, and a proper balance must be found.

In 1991 a group of agencies looked at the environmental problems of Czechoslovakia and proposed policy changes and actions to remedy the situation. These were outlined in a Joint Environmental Study issued in March 1991 by the Governments of Czechoslovakia, the Czech and Slovak Republics, the European Community, the Government of the United States and the World Bank. A number of proposals are now being considered by the agencies involved. The proposals may be supplemented as new programmes are proposed and approved.

Changes in economic and management policies will have a major impact on the environment. For example, a free market with fully cost-based pricing would eliminate incentives to overuse energy and other resources. Energy users will be pressed to be more efficient, with competition leading to a restructuring of the national economy away from heavy industry, reducing the wasteful use of resources and other environmentally harmful practices. Energy conservation will become a priority. Agricultural chemicals that pollute water and food supplies will be curtailed and eventually banned. A policy committed to mass transportation systems will decrease these emissions, with the ultimate goal of non-polluting fuel sources. Criteria will be set for enforcing priorities, and systems developed for allocating resources, monitoring compliance with environmental laws, and resolving disputes.

Industrial restructuring, increased private ownership, and legal and regulatory reforms are expected to encourage more rational use of scarce resources, and reduce the flow of pollutants. But realistic pollution standards must be set by the government, and reasonable charges, fines and fees must be coupled with effective monitoring and enforcement.

The Federal Government is endeavouring to increase energy prices to reflect fully all costs, including environmental costs. This should result in a major shift from use of low-grade coal to higher quality coal and to natural gas. Reducing metallurgical production and other heavy industries, with full-cost pricing of raw materials and energy, will decrease their wasteful use and harmful environmental impact.

The agencies of the Czech and Slovak Republics responsible for the economic aspects of environmental policy have adopted the polluter-and-user-pays principle. Charges will be set in each republic and earmarked for the Environmental Funds of the respective Republics. These funds will offer loans and direct subsidies to major polluters to change their environmental practices. In addition, the government also proposes to include environmental taxes in the tax reform package scheduled for January 1993.

As market conditions and an adequate institutional management system develop, economic incentives are expected to play a larger role in reducing and preventing pollution. Emphasis will be given in the earlier stages to setting standards, cleaning up toxic waste sites already in existence, and moving toward decentralized management. Decentralized units should be large enough to prevent polluting units from influencing overall policy choices.

Environmental data is relatively plentiful in Czechoslovakia, but not designed for users' needs. Environmental management requires systems giving information on comparative risks to support the establishment of priorities for regulations. Information systems for risk management are also needed to summarize more specific information. Compliance information is also needed for environmental enforcement. The information system could also serve the press and the public, as well as the international community. Information can be disseminated through brochures, newsletters, scientific journals and data tapes.

Strong public participation is essential for environmental policies to be effective. There would need to be public access to information, and a public role in decision making processes. Environmental impact assessment reports should be made public before development decisions are made. There could be public review before new regulations and policies are set. Information on pollution emissions should be published regularly.

Over the next few years, as the industrial sector contracts and is restructured, it is expected that the volume of pollutants will decrease and that the sources of emissions will be reduced. Environmental compliance is not an obstacle to industrial success. On the contrary, the growth potential will be enhanced by the adoption of energy-efficient technologies, the development of alternative sources of energy, a reduction in the material intensity of products, and the prudent management of hazardous waste. Thus, environmental protection and industrial development should be viewed as mutually reinforcing pillars of a sustainable economic development strategy in the future.

H. THE ROLE OF INTERNATIONAL COOPERATION[7/]

A formidable challenge lies ahead for Czechoslovakia to reform economic policies, build up a functioning market system and rehabilitate and modernize the industrial sector. This process will require investment capital, technology acquisition and generation, human resource development, management and marketing know-how and the creation of an appropriate institutional infrastructure.

Industrial restructuring

The efforts to pave the way for industrial rehabilitation and recovery require policy reforms, subsectoral restructuring programmes, privatization, the inflow of direct investment from abroad, the rehabilitation and modernization of companies, as well as the upgrading and retraining of various categories of technical, managerial and administrative staff.

Whereas the speed and sequence of the fundamental policy reforms needed to be undertaken has been the subject of considerable debate, there can be little disagreement about the need to support the restructuring process with specific measures and assistance linked in a consistent way. Indeed, there is little automaticity in this first, complex stage of transformation towards competitive structures of production. With inevitable time lags in the operation of market forces entrepreneurship and industrial modernization in the near future can not be expected to emerge automatically.

Compared to west European countries, industrial productivity levels are low in Czechoslovakia. So is product quality and there is a general lack of market orientation, marketing capabilities, after-sales services and other company services required for an industry to survive in a modern

competitive environment. Overall, the country's industrial sector is largely dualistic and disintegrated - with large industrial complexes dominating the economic structure. A critical need therefore exists to build up an efficient industrial system based on specialization and economic inter-linkages between enterprises of various sizes.

Both the theory and practice of industrial organization have convincingly demonstrated that efficiency is derived from a system's synergies, and not from the strength of large individual companies alone. The creation of effective integrated production structures is thus a prime requirement. Autonomous-specialized production units active in industrial subcontracting, parts and components manufacturing and industrial services for larger companies - thus forming production networks - are key prerequisites for a dynamic and efficient industrial sector.

There is an urgent need in Czechoslovakia to build up such networks and to restructure some industrial subsectors and break up unnecessarily large industrial complexes. Therefore, the economic reform process critically requires a two-pronged approach: on the one hand, at the company level, there is a need to introduce proper accounting and cost calculation systems, enhance technical and managerial skills, provide access to relevant international business information and, generally, instill a modern business culture. On the other hand, even the greatest efforts in these areas are bound to fail unless the physical infrastructure is enhanced, the proper policy framework established, and the administrative and institutional infrastructure installed or improved to allow cost-effective operation of companies and cooperation between different companies.

At the level of individual companies, there is an increasing need for a diagnosis of rehabilitation prospects and for a valuation of assets in the context of privatization programmes. UNIDO - parallel with other agencies - is providing assistance in these fields, including training in relevant analytical and valuation methods. Such company level diagnoses and prospective assessments are carried out *inter alia* in cases where most of the market has been lost due to the termination of former CMEA trade agreements, where environmental damages force current production to be discontinued, where high energy costs induce the company concerned to carry out major energy saving programmes or where in general the company is no more able to operate under the new conditions of market competition.

A particular case of company diagnosis concerns the conversion of military industries to civilian production. The issue here is to examine the possible utilization of the - mostly technologically sophisticated - installed capacities for other product lines for which market niches could be captured.

Foreign investment

The promotion of foreign direct investment (FDI) is given major attention in Czechoslovakia as a means of acquiring investment capital, technology, management capabilities and to obtain access to foreign markets. Although a dramatic increase in the number of foreign joint ventures has been registered in Czechoslovakia over the last one to two years, the impact on industrial development seems so far not to have been as significant as expected. The reason is that only a small proportion of the registered joint ventures have become operational due to various implementation obstacles, that a major part of FDI was directed to the commercial, tourist and other services sectors and that in the industrial sector investment occurred largely in the form of acquisitions of existing, reputable but ailing companies.

The obstacles perceived and difficulties expected by potential investors include inadequate and ill-maintained infrastructure, such as obsolete telecommunications facilities, uncertain and imprecise property rights, problems in evaluating enterprises' worth and calculating future returns, the poor state of domestic financial markets and other services, the lack of an efficient banking system, complicated bureaucratic procedures and the lack of sufficiently trained personnel.

At this stage, a number of critical areas can be identified which would call for particular attention in the formulation of international cooperation programmes. These areas comprise the following:

- investment code formulation or assessment; formulation and design of supplementary support measures; reforms of decision-making procedures etc.;
- assessing the relative attractiveness of the investment incentive packages versus competing investment locations;
- investment project preparation: pre-investment studies and evaluation of projects including the building up of domestic capacities in the areas through training and institution-building;
- creation of an efficient approval system and of "one-stop" service units for joint ventures etc.

International organizations, be they development finance institutions or specialized technical agencies, are substantially involved now in assisting the authorities in remedying many of these investment obstacles and creating a better environment for private commercial activities. UNIDO sees its main task to act as a bridge, as a neutral broker, between the industrial development potential offered and the technical, managerial and financial resources represented by international business.

In particular, UNIDO prepared and organized an investment forum in November 1991 in which potential foreign investors were invited to review investment projects and negotiate directly with the local partners. To ensure a proper follow-up of the investment forum, UNIDO will carry out a two-year investment promotion project in Czechoslovakia. Apart from these follow-up activities, the project will aim at attracting other foreign investments within or outside the process of large-scale privatization. The project will concentrate on medium-size investment (up to $5 million). The premises of the project secretariat will be provided by the Industry Confederation of the Czech Republic on the basis of an agreement concluded between this Confederation and the Industry Confederation of the Slovak Republic. The Federal Ministry of Foreign Affairs will provide general counterpart support for the project.

The preparation and evaluation of feasibility studies is yet another critical area which needs technical cooperation inputs in order to facilitate local and foreign investment. UNIDO has, for several years, been involved in assisting in the preparation of feasibility studies and - above all - in providing training to professionals in the industry, government and banking sectors. UNIDO's methodology, and in particular its Computer Model for Feasibility Analysis and Reporting (COMFAR), is being applied in most countries in central and eastern Europe.

Technology

In spite of major technological advances and the broad science and technology base prevailing in Czechoslovakia, industry generally suffers from outdated technology in installed production processes and in various final products in comparison with competing countries in western Europe, North America, Japan and in newly industrializing countries such as the Republic of Korea, Brazil, Singapore etc. A major challenge is thus the refurbishing of industrial companies with, and new investment in up-to-date technological processes. Besides improving general production efficiency through new plant and equipment and better management methods, environmental protection and energy-saving considerations will also need to be given full attention.

With new technologies being introduced in various industries, the organizational systems and skills at the company level will also need to be enhanced, including for activities such as quality control, inventory systems and repair and maintenance.

The move from centralized planning towards autonomous company decision-making will necessitate the upgrading of skills at the company level for technology acquisition through licensing

contracts etc. International assistance may be essential for this period of transition in the form of advisory services for building up decentralized information systems, evaluation and negotiation skills, and decision-making for acquisition of foreign technology.

In addition, the commercial application of indigenous scientific research results will need to be encouraged. So far, too little of the significant scientific base in the central and eastern European countries seems to be utilized in domestic industrial production or for sales or production in other markets.

Environmental compliance

Urgent measures are called for to avoid further pollution and to utilize the technological upgrading and renewal in industry for applying environmental protection devices. This will require, *inter alia*, the:

- selection and acquisition of new, "clean" technology as part of investment modernization programmes;
- environmental impact assessment methods in investment project studies on both rehabilitation of existing plants and new capacity investments;
- incentive and disincentive schemes for pollution abatement and control;
- special programmes for certain geographical areas and specific problem cases where heavy pollution has already occurred; and
- the setting of environmental standards and establishing appropriate monitoring, measuring systems and appropriate control systems at the company level.

UNIDO programmes in these fields contain both regional projects - covering several of the central and eastern European countries - and country projects in Czechoslovakia itself. The Programmes cover assistance in rehabilitation of existing production facilities by application of low waste and introduction of environmentally clean equipment and related measures. Improved process control, accelerated cooling systems and monitoring of emissions, and environmental impact assessment are further examples in which UNIDO provides technical services at the company level. Advisory and training activities are also provided to concerned entities in the field of management and safety. It is primarily the metallurgical subsector which is being currently assisted but overall information and control systems at the country level are also subject to UNIDO's co-operation. Undoubtedly, UNIDO can play an important role as a neutral, non-commercial and technical body to screen projects, technologies and entire operating plants for environmental safety.

Entrepreneurship

Assessments of the current structure and recent developments in Czechoslovakia reveal that the small-scale industry sector has hitherto played only a very minor role. Past plans and policies obviously were directed primarily towards establishment and expansion of large public industries and industrial complexes. In the current economic transformation process, the lack of small-scale industries is emerging as a severe structural weakness. In western European countries, Asian NICs, etc. it is the prevalence of specialized small-scale supporting industries providing parts and components to large industries, which form an essential part of the production and subcontracting networks and thus of the national competitive system. Moreover, the built-in flexibility and responsiveness of small industries to external challenges and the role of this sector as a nucleus for future growth industries constitute important features of the dynamism of industrial growth.

For Czechoslovakia's economic transformation, it is of major importance that small-scale entrepreneurship be encouraged. So far, small-scale industrial support schemes, incentives and credit facilities for small-scale entrepreneurial development are generally lacking or are largely ineffective. It is essential to build up these supporting measures in order firstly to generate dynamic growth and secondly to ensure that domestic partners are prevalent for foreign joint

ventures. Such measures may include training in management skills, awareness courses for investments and technological opportunities and assistance to potential entrepreneurs, the setting up of "incubators" or other forms of basic infrastructure and special banking facilities etc. to support entrepreneurial activities.

International experience can be utilized to enhance such endeavours. It is an area where UNIDO has accumulated substantial expertise which could be provided to Czechoslovakia.

Integration into the world economy

International cooperation is being earnestly sought for integrating the Czechoslovak economy into the world economy. For decades the country's industrial output was inter-twined with the former Soviet Union and CMEA countries. Integrating these segments of manufacturing into the high-technology and highly competitive world markets is a formidable task. Full integration into the European Free Trade Association and membership in the European Community are the medium-term goals of Czechoslovakia. Recent negotiations and agreements with EFTA and EC for market access (see Annex F) seem to lay the stepping stones for achieving the above goals. Market access is perhaps the most effective support other developed countries can also offer in order to strengthen the market orientation of east European economies. Technical cooperation inputs will need to be directed to the identification of products that can penetrate and thrive in external markets with and without privileges. In the process of integrating the Czechoslovak economy into the world economy, the Uruguay Round negotiations are equally important in order to provide a framework of reference within which Czechoslovakia can formulate the modalities and define future changes in a more open trade system.

Czechoslovakia, Hungary and Poland are close to concluding an agreement on the creation of a Free Trade Area with a view to reviving the intra-regional trade that existed in the past. Given the complexity of the economic transformation process, attention will need to be given to policy reforms, institutional changes and entrepreneurial development as local initiatives towards the regeneration of intra-regional trade, which is likely to take place in a more transparent manner in the future.

It may be necessary to launch inter-regional and intra-regional integration approaches on the basis of diagnostic surveys of existing industry and available and potential resources for development in individual regions with a view to identifying investment opportunities and the need for special measures in support of private investment, skill development, R & D, financing etc. UNIDO is involved in such activities and is envisaging the launching of various support programmes for regional development in some of the central and eastern European countries. It may also be possible to utilize western European countries' experience and the potentials for direct region-to-region co-operation to initiate regional growth dynamics.

UNIDO, as the central, specialized agency for industrial development within the United Nations system and with its broad experience in technical, economic, investment-related, organizational and institutional aspects of industry in many countries of the world, is well-placed to assume a major role in conceiving, carrying out and advising on the specific international co-operation programmes for central and eastern Europe's industrial restructuring.

NOTES TO CHAPTER III

1/ Jiří Šparěl, "The role of investment in the modernization of the machine-building industry: conditions, productivity and problems", *Eastern European Economies* (Winter 1988-90), pp. 75-105.

2/ The change in gross domestic output of a subsector of manufacturing during a given period is ΔGO. It is calculated using the following formula:

$$\Delta GO=[\Delta GO+\Delta M-\Delta X]\frac{GO_1}{GO_1+M_1}+\Delta X\frac{GO_1}{GO_1+M_1}+GO_2-\frac{GO_1}{GO_1+M_1}[GO_2+M_2]$$

The above formula ascribes a change in the gross output (ΔGO) to:
(a) Change in domestic demand +
(b) Change in external demand +
(c) Import substitution, where

ΔM	=	Change in imports
ΔX	=	Change in exports
GO_1	=	Gross output in period$_1$*
GO_2	=	Gross output in period$_2$*
M_1	=	Imports in period$_1$
M_2	=	Imports in period$_2$
$GO_1 + M_1$	=	Total supply in period$_1$
$GO_2 + M_2$	=	Total supply in period$_2$

* In the present case, period$_1$ denotes the first year, and period$_2$ denotes the last year.

3/ An analytical exposition of the pattern of foreign investment in manufacturing is provided in a study entitled *Foreign Direct Investment in Central and Eastern European countries: Recent Developments and Determinants*, prepared by the Regional and Country Studies Branch of UNIDO, 1992.

4/ *Financial Times* (11 March 1992).

5/ Analyses of environmental issues presented in this section draw largely on information contained in Federal Committee for the Environment, *State of Environment in Czechoslovakia* (Prague 1991).

6/ *Environmental conservation* (Winter 1990), vol. 17, No. 4.

7/ This section is based on an unpublished paper entitled *Industrial Restructuring in Central and Eastern Europe: Critical Areas of International Cooperation*, prepared by the Regional and Country Studies Branch of UNIDO (25 September 1991).

IV

INDUSTRY BRANCH PROFILES: RETROSPECTS AND PROSPECTS

A. FOOD PROCESSING: CREATING THE APPETITE FOR MARKET NICHES

The resource base

With arable land accounting for two-fifths of the country's total land area of about 128,000 square kilometres, Czechoslovakia has a diversified agricultural resource base for food processing. The output of food crops, namely wheat, sugar beet, potatoes, barley, maize and rye, has increased considerably over the years. The total harvest of cereals, which amounted to an annual average of 5.6 million tonnes in the 1930s, reached 10.7 million tonnes in 1980. The yield of wheat per hectare rose from 1.7 tonnes in the 1930s to around 5 tonnes in 1984. The land productivity of other cereals followed the same trend, leading to a steady increase in the volume of food grain production in the first half of the 1980s (see Table IV.1). However, the rate of increase in food crop production declined thereafter, leading to a fall in production levels with the exception of wheat, which recorded a marginal increase in the second half of the 1980s, and barley which also recorded an increase in 1990. Although the exploitation of new agricultural technology was severely constrained by the limited resources and by the saturation of the domestic market, the best harvest in Czechoslovakia was recorded in 1990 with 12.5 million tonnes of cereal production. The output of food grains output was forecast by the Food and Agricultural Organization of the United Nations (FAO) at 12 million tonnes for the year 1991.[1/] Following larger stocks from the good harvest of 1990, a sharp decline in domestic demand and disruption of regional marketing systems, a surplus of 1.5 million tonnes of grains is estimated. Food self-sufficiency amounted to 95 per cent in the late 1980s. The limited dependence on imports is due to the necessity of importing mainly seafood products.

Table IV.1 shows that the production of vegetables and fruits rose significantly during 1980-1985. In the early 1980s the government began to encourage private small-scale fruit and vegetable cultivation in order to increase the supply response to growing domestic demand. As a result the production of fruit and vegetables grew significantly. By the late 1980s small-scale private producers accounted for 61 per cent of fruit production and 46 per cent of green vegetable production. Their contribution to the total livestock production stood at 11.2 per cent.

Products of animal origin (excluding poultry) also rose steadily from 1.7 million tonnes in 1980 to 1.9 million tonnes in 1989. The most pronounced increases were experienced by beef and poultry production. Beef production rose from 668,900 tonnes in 1980 to 727,400 tonnes in 1989 while poultry production rose from 266,400 to 310,400 tonnes during the same period. There had been

a rapid expansion in the production of pork in the 1970s which was made possible through increased imports of feed grain. The production of pork remained subdued in the 1980s when the government cut animal feed imports. An increase in the domestic production of animal feed in the second half of the 1980s helped raise the production of pork in particular. Producers of livestock were urged to increase production in order to meet the growing demand for meat. Raising livestock is usually undertaken in conjunction with cropping. Lack of feed mixes has tended to deter the expansion of animal husbandry.

Table IV.1. Agricultural resource base for food processing, 1980-1990, selected years
(Thousand tonnes unless otherwise specified)

Agricultural resources	1980	1985	1989	1990
Crops				
Wheat	5,386	6,023	6,356	6,707
Rye	570	710	708	736
Barley	3,575	3,677	3,550	4,071
Maize	745	1,114	1,000	468
Potatoes	2,695	3,450	3,167	2,534
Sugar beets	7,255	7,746	6,389	5,608
Vegetables				
Cabbages	217.3	261.6	271.7	232.5
Onions	135.8	151.2	155.6	147.8
Carrots	127.6	152.2	160.2	147.2
Cucumbers	142.9	38.6	63.2	79.6
Tomatoes	81.7	121.7	121.9	123.3
Fruits				
Apples	278.2	379.4	552.4	350.0
Pears	27.1	40.8	47.9	40.3
Plums	68.5	50.4	48.8	40.8
Cherries, morello	20.8	31.3	[illegible].7	30.9
Apricots, peaches	43.9	17.7	69.3	50.4
Major products of animal origin				
Production of meat	1,690.9	1,748.7	1,881.3	1,842.8
Beef	668.9	720.6	724.4	719.8
Veal	16.8	20.6	8.2	7.8
Pork	1,005.3	1,007.4	1,145.6	1,115.3
Poultry	266.4	266.8	310.4	326.9
Dairy products				
Production of milk (million litres)	5,731	6,676	6,888	6,722
Hen's eggs (million units)	4,900	5,499	5,628	5,665

Source: Federal Statistical Office.

Despite a steady increase in livestock and dairy farming, the country's animal breeding does not reach the standards of many countries in western Europe, though livestock yields and productivity levels are generally at the top of the east European scale. Nevertheless, agricultural labour productivity, measured by net output per agricultural worker, has been declining over the years, and by the late 1980s it was the lowest in eastern Europe. Thus the country's relatively good quantitative agricultural performance was achieved at the very high cost of an inefficient use of agricultural inputs.

The unified agricultural cooperatives, whose members are officially defined as peasants, continue to constitute the decisive segment of agricultural production. Around 1,700 such cooperatives with about 1 million members produce about two-thirds of the agricultural output. There are

approximately 220 State farms, employing around 166,000 farm workers. These State farms account for around 30 per cent of agricultural output. Currently agricultural cooperatives and State farms cultivate 98 per cent of all arable land.

The privatization of agricultural land is unlikely to be accomplished without some difficulty. There is some opposition from members of cooperatives who are claiming compensation for their work on improving land. Most agricultural machinery, designed for use on large farms, may prove to be uneconomical on small farms. If the original owners are prepared to sell or lease the land to cooperatives a market equilibrium price will have to be established, which may exceed the financial resources of the cooperatives. What seems to be desirable is to implement measures to enhance agricultural productivity significantly irrespective of forms of agricultural operations. As part of a pragmatic approach, the government accorded priority to agriculture in its restructuring programme in 1989, granting greater autonomy and financial independence to agricultural cooperatives and State farms.

The cultivation of alternative crops is being pursued with a view to supplying appropriate and high quality raw materials for the food industry. It is estimated that alternative crop cultivation will cover 70,000-140,000 hectares of farm land by the year 2000. One of the primary objectives of the current agricultural policy is to enhance the quality of raw materials gradually and to create a more diversified resource base for the country's food processing industries through a more widespread application of modern bio-technology and genetic engineering.

Emerging trends

Following a faltering average annual growth rate of 2.6 per cent during 1976-1980, compared with around 5 per cent in 1971-1975, the food industry's output, excluding beverages and tobacco, remained low at 1.5 per cent in the first half of the 1980s and plunged to a sluggish annual average growth rate of less than 1 per cent in 1986-1990 (see Table IV.2). Beverage production followed broadly similar trends. Tobacco production, which is regarded as a part of food processing in Czechoslovakia's statistical system, rebounded well in the second half of the 1980s with a 4.4-4.5 per cent average annual growth rate in both output and labour productivity, measured in terms of value added per worker. Table IV.2 shows a marginal increase in the labour productivity of food and beverages in 1986-1990. Viewed against the negative growth rate of employment in cereal, meat and dairy processing a marginal increase in labour productivity in these segments of food processing could be ascribed mainly to marginal workers dropping out. Such an inference is corroborated particularly by the subdued output growth of less than 1 per cent during 1986-1990. The significant increase in labour productivity in the capital-intensive tobacco processing industry is likely to have been the result of technical progress.

The movement of the food industry in general from stagnation to deceleration over the years resulted in a significant drop in its share of gross industrial production from 15 per cent in 1970 to 13.2 per cent in 1990, and in value added from 9.5 per cent to 7.3 per cent during the same period. However, its share of industrial employment rose marginally from 7.3 per cent in 1970 to 7.4 per cent in 1990.

Gross fixed capital formation in food processing has been relatively high. In 1989 the value of total fixed assets per worker was 37 per cent higher than in total industry while that of machinery and equipment per worker was 30 per cent higher than in total industry. However, the technological level of machinery and equipment in food processing is well below the level in other branches of Czechoslovak industry. Due to the obsolescence of the accumulated capital stock, labour productivity in food processing is merely a quarter of that in developed market economies. The development of the food industry was influenced, to a great extent, by government policies aiming at self-reliance and import substitution and the maintenance of low and stable retail prices for basic food products in the domestic market. Under the prevailing political and economic conditions, the growing levels of food consumption did not generate competitive pressures for efficiency. The high amortization rate and low technological levels of fixed assets represent additional strains to the further development of the industry.

The Czechoslovak food industry also suffers from a high cost structure. In 1989 the industry accounted for 21 per cent of total material costs of State-run industrial enterprises. The industry's cost structure shows 25.3 per cent material costs, 8.2 per cent energy costs and 7.0 per cent depreciation of fixed assets. The relatively high material cost is one of the principal causes of inefficiency in food processing. This inference is corroborated by UNIDO estimates of the share of value added in gross output.[2/] According to UNIDO estimates, the share of value added in the gross output of food manufacturing fell from 22.1 per cent in 1980 to 10.7 per cent in 1990, reflecting a rise in material costs caused at least in part by a deliberate government policy to permit a rise in the price of farm products in order to raise farm incomes. Despite this increase in agricultural prices, however, the prevailing price structure remained heavily distorted and did not reflect the true scarcity value of farm products. Food production and processing remained heavily subsidized, with some 55 per cent of all budgetary subsidies being channelled into agriculture in the 1980s. The largest part of these subsidies was given to less and least efficient farmers facing relatively poor soil and other production conditions that led to costs in excess of the average national production costs.

Table IV.2. Average annual growth rates of production, labour productivity and employment in food industry, 1970-1990, selected years
(Percentage)

Indicator	Years	Food products	Beverages	Tobacco
Output[a/]	1971-1975	4.98	3.81	5.50
	1976-1980	2.59	2.59	0.40
	1981-1985	1.55	1.17	0.79
	1986-1990	0.55	1.11	4.40
Labour productivity[b/]	1971-1975	4.72	3.82	5.62
	1976-1980	0.98	1.98	0.43
	1981-1985	0.96	0.55	0.84
	1986-1990	1.49	1.14	4.48
Employment	1971-1975	0.26	0.00	..
	1976-1980	1.59	0.62	..
	1981-1985	0.58	0.60	..
	1986-1990	-0.93	0.00	..

Sources: Federal Statistical Office, *Industrial Statistics Yearbook*, volume I; *General Industrial Statistics*, United Nations, New York.
a/ Based on official index numbers.
b/ Value added per employee (in constant prices 1980).

Although its efficiency is low by international standards, the food-processing industry has begun to emerge as a foreign exchange earner. During January-May 1991, the agricultural and food processing industry accounted for an estimated 8 per cent of the country's total exports, compared to around 3 per cent in 1983. Of the total exports destined for the OECD countries, food products, including live animals, accounted for 9.12 per cent in January-May 1991, compared with 8.1 per cent in 1983. Of these exports beverages accounted for about 1 percentage point. With 22.2 million hectolitres of beer production in 1987, Czechoslovakia ranked sixth in beer production in Europe. The best known brands of Czechoslovak beer are Pilsner Urquell and Budweiser. Czechoslovakia is also well known for quality wines produced by the vineyards in Moravia, southern Slovakia and Bohemia.

In 1989 export earnings from food products amounted to Kcs 9.3 billion; 80 per cent of it came from exports to convertible currency markets. Around 66 per cent of exports comprised products of animal origin; meat products (50 per cent), dairy products (38 per cent) and poultry and other

products (10 per cent). Food products of crop origin, mainly traditional malt, exported to convertible currency markets in 1989 represented around 22.7 per cent. The profile of Czechoslovakia's food exports to the former CMEA countries in 1989 comprised 37.2 per cent of products of animal origin and 31.4 per cent of products of crop origin. Fruits, vegetables, flour and sweets accounted for 7.9 per cent, while beverage exports had a relatively high share of 23.1 per cent exports. While these percentage figures tend to depict an exaggerated picture of the country's food exports, it is important to note that the transformation of the Czechoslovak food industry into an export-oriented segment of manufacturing had never been a part of economic policy; and this strategy coupled with the saturation of domestic demand for food products hardly created competitive pressures for enhancing the quality of products. This led on the one hand to relatively significant but uncompetitive exports of meat and meat products, dairy products and sugar. On the other hand, the relatively competitive exports such as chocolate products, paste, vegetable oil, and distillates remained practically insignificant in volume terms. The only exception to this trend is beer.

The share of food imports in total imports remained at around 6 per cent in the 1980s. Its share in the imports from OECD countries fell from around 10 per cent in 1983 to about 6 per cent in January-May 1991.

Despite the mixed performance of the food industry, individuals and enterprises are showing a keen interest in its expansion. By January 1991, 2,552 private producers had come forward to participate actively in food processing activities, but only 16 were listed in the Company Register in addition to 11 joint-stock companies, 9 cooperatives and 276 State-run enterprises (including those run by former national committees). The new wave of policy reforms encourages different forms of establishments, including foreign direct investment, to enter into promising avenues of food processing.

Investment opportunities

A list of ten proposed projects in food processing were submitted to an investment forum in November 1991 organized under the joint auspices of UNIDO and the Government of Czechoslovakia in cooperation with Arthur Andersen and Co. They were part of a short list prepared by UNIDO after carefully screening over 500 original investment proposals in the manufacturing sector as a whole. Hence the list of proposed projects presented in Table IV.3 gives some idea as to the emerging pattern of production in food processing.

It can be seen from Table IV.3 that 8 out of 10 investment proposals seek equity participation, joint venture agreements and market access as forms of external cooperation, while all ten proposals seek equity participation and joint ventures. Four project proposals are related to dairy products, two projects are related to bakery products and one project seeks an expansion of a range of packed fruits and vegetables. One of the proposals aims to manufacture 1,200 tonnes of instant coffee, cereal and instant beverages per year, while a beverage producer plans to manufacture 7.5 million litres per year of spirits from starch and fruit wine. The latter seeks equity participation, joint venture, licensing, technology and market access. A proposal to manufacture rapeseed oil for bio-degradable products is the biggest project proposal requiring $6.7 million to create an annual output capacity of 20,000 tonnes of oil. This project seeks equity, joint venture, management, licensing and market access. Investment requirements of these proposed projects in food processing range from $6.7 million to $0.2 million.

The construction of new processing facilities will play a more decisive role in determining the future development of the food industry in Czechoslovakia than the modernization of the existing manufacturing capacities. This process will require the construction of small and medium, primarily cooperative-owned or joint-stock companies with modern technologies, located predominantly in farming regions in order to create industrial linkages with primary production.[3/] These enterprises could become an indispensable supplement to large food enterprises mostly situated in large consumer centres.

Table IV.3. Investment proposals in food processing seeking external assistance, November 1991

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/318/V/91-07	Broiler processing, mushroom and snail production	10 t mushroom 1,500 t broiler	1.5	Equity capital, joint venture, market access, technology, marketing
CZE/115/V/91-07	Expansion of range of packed fruits and vegetables	10 t per day	0.2	Equity capital, joint venture, technology, market access, product development
CZE/183/V/91-07	Modernization of poultry plant and start further process	20 000 t of chicken	3.3	Equity capital, joint venture, market access, product development
CZE/402/V/91-07	New dairy for bottle milk at Komarno	120,000 l/day	2.0	Equity capital, joint venture, market access, marketing
CZE/484/V/91-07	Production of milk casein	200 t/year	2.2	Equity capital, joint venture,market access, technology, marketing
CZE/230/V/91-07	Rapeseed oil for bio-degradable products	20,000 t/year	6.7	Equity capital, joint venture, management, license, market access
CZE/400/V/91-07	Production of dietary biscuits	500 t/year	0.5	Equity capital, joint venture, license, product development, marketing
CZE/398/V/91-07	Manufacture of durable extruded bakery products	600 t/year	3.0	Equity capital, joint venture, technology, license, marketing
CZE/185/V/91-07	Instant coffee, cereal and instant beverages	1,200 t/year	6.0	Equity capital, joint venture
CZE/194/V/91-07	Spirits from starch/fruit wine products	7.5 million l/year	0.2	Equity capital, joint venture, license, technology, market access

Source: UNIDO, Investment Promotion Division, *Investment Forum for Czechoslovakia* (Prague, 4-6 November 1991).

Fig. IV.A. Major food products of animal origin, 1980 and 1990
(Thousand tonnes)

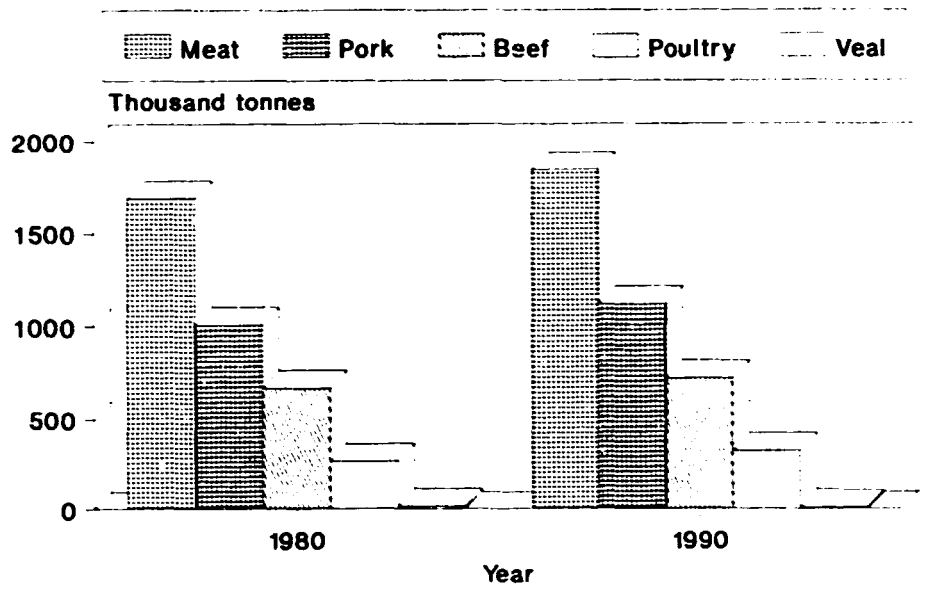


Fig. IV.B. Growth of output, employment and labour productivity in food products, 1986-1990
(Percentage)

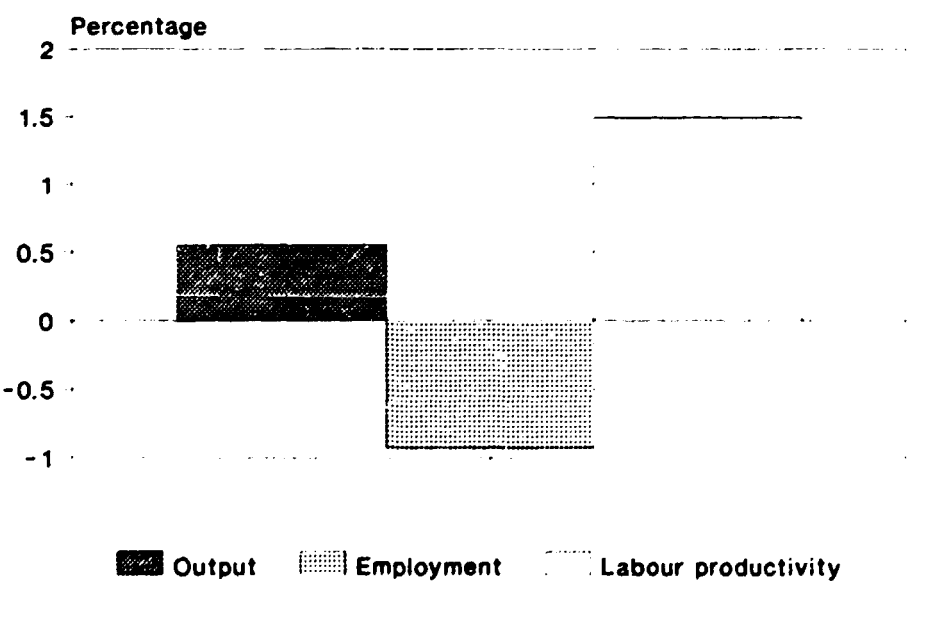


Fig. IV.C. Share of food exports in manufactured exports, 1989
(Percentage)

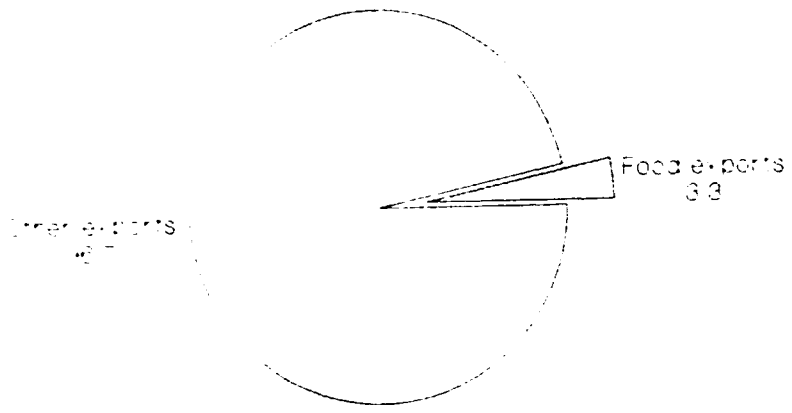
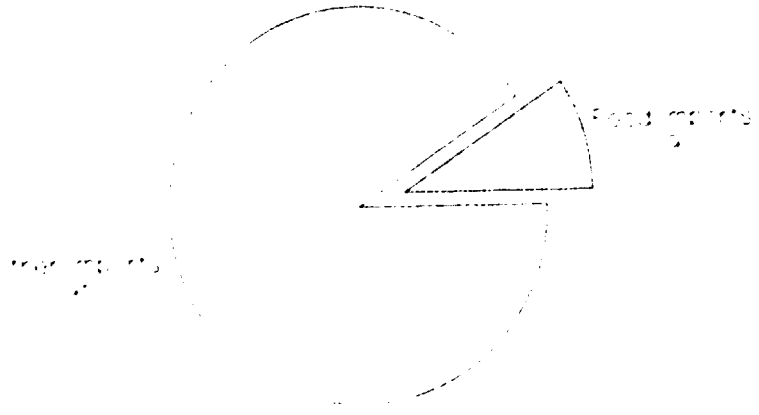


Fig. IV.D. Share of food imports in manufactured imports, 1989
(Percentage)



Major investment opportunities in industrial modernization, construction of new fixed assets and ecologization of production are likely to present themselves in the following areas:

- investment in the meat and dairy industries aimed at improving the quality of processing and packing technology;

- investment in the milling and baking industries, and in the construction of small bakeries and modernization of milling plants in particular;

- investment in the canning industry for modernization of existing manufacturing capacities, with particular emphasis being given to export-oriented production; and

- investment in the freezing industry and foodstuff storage to enable an increased utilization of farm production.

While implementing these emerging project ideas, emphasis will be placed on ecologically sound manufacturing, improved packaging and matching the output to changing pattern of food consumption in internal and external markets.

Constraints and prospects

In the process of moving towards a market economy, the price liberalization of agricultural production resulted in a 27 per cent rise in consumer prices of foodstuffs in June 1991, compared with the price level in December 1990. At the same time the index of food production continued to decline in the first half of 1991 in response to falling demand for food products. The current phase of deceleration is expected to continue through 1992. The liberalization process could serve as an impetus provided there is a fundamental shift in the attitude of producers towards the manufacture of quality products.

A substantial quantitative saturation in food consumption highlights the need to understand the difference between what the Czechoslovak food consumers want and what producers can deliver. There is an urgent need to review the position of food industries in order to make a realistic assessment of inputs and conditions needed to overhaul the low technological level of fixed assets. Prospects for the healthy recovery of the food industry also depend on the potential of the available arable land to produce high quality raw materials.

Switching over to intensive technologies at a time when the ownership structure of agricultural land is liable to change means that production would involve different types of technical equipment. The introduction of a wide range of new technologies will become one of the decisive factors in increasing the productivity and efficiency of grain cultivation.

The introduction of new varieties and crop rotations could significantly enhance the quality of raw materials for food processing. According to research findings, grain yields in European countries have increased through the introduction of new varieties by 34 to 50 per cent, through the use of fertilizers by 30 to 35 per cent and through the application of pesticides and growth retardants by 25 to 30 per cent.[4/] According to Soviet specialists[5/] the successful use of capital intensive technologies to ensure a continuous supply of high quality raw materials for processing activities involves the adoption of high-yielding varieties suitable for intensive cultivation, the provision of an adequate supply of nutrients for plants, the split application of nitrogen during the growth period on the basis of soil and plant analysis, the use of an integrated system of weed, pest and disease control, the timely and skilled application of appropriate techniques to prevent an accumulation of moisture in the soil, and a strict observance of the correct rates, times and techniques of application of chemicals using modern and carefully adjusted machinery and equipment.

The quality standards applied to meat have undergone significant changes in recent years, particularly in Europe and the United States. The nutritional value of meat is increasingly playing a less important role, particularly at the middle and upper consumption levels. The share of industrial broilers in poultry consumption is declining despite a growing preference of customers for poultry. The growing concern over possible contamination through international trade has also greatly increased public interest in the processing of quality meat.

The shift in consumer expectations regarding the components of quality meat in western Europe prompted suppliers to respond by quality differentiation and product segmentation. In response to some recent emerging marketing concepts, the supply side is beginning to concentrate on different quality levels. These developments entail fresh initiatives to achieve quality improvements by the adoption of an integrated production strategy covering the entire production chain from genetic improvement, husbandry and feeding techniques, slaughtering and processing. The processing stage has to be targeted at well defined consumer groups with specific quality requirements.

A leading product of the global dairy industry is cheese. Innovations in cheese-making arise from capitalizing on consumers' unprecedented demand for low-fat cheeses. Research on low-fat cheeses may offer greater product performance.[6/] Thus the value of the final product is the result of the combined operations of impr ved farm practices and technology. In Czechoslovakia, it is imperative that an appetite is created for practising advanced means of quality improvements in dairy farming. While sales of liquid milk and butter are declining in most European countries, cheese and cream consumption is rising. Fruit-flavoured yoghurt is a promising product area among dairy products. New packaging, new flavours and sugar-free yoghurt desserts are also becoming increasingly popular in European countries.

Food manufacturers in the world are trying to capture the world-wide "weight-loss niche". This has spurred new competition in producing low-calorie food products. According to a recent study,[7/] in 1989 some 48 million Americans, one in four adults, spent $32 billion on weight-loss products and programmes. The market for low-calorie products in the United States is estimated to grow by around 10.6 per cent annually through 1995. One of the project proposals submitted to the Investment Forum for Czechoslovakia, Prague, 4-6 November 1991, proposes the production of 500 tonnes of dietary biscuits per annum. The investment requirement of the project is around $500,000. The project seeks equity, management, licence and market access. This project proposal demonstrates the interest of Czecho-lovak entrepreneurs in penetrating external markets with promising products.

New technologies constantly create new opportunities for new products. Convenience is the decisive element of new product introductions, leading to an increasing range of entries into the ready-meal categories of refrigerated, frozen and shelf-stable. These also include ready-to-eat pastas, salads and prepared meats. The growing influx of microwave ovens has created a demand for frozen products. A huge market for frozen products is opening up in Europe because of the increasing use of microwaves which are making slow inroads into the eastern European markets.

The fastest growing varieties of fruit juice on the world market in recent years have been drinks with higher pure juice content. Demand for products with added sweeteners, water, colours, flavouring and vitamins is declining as consumers look for a healthy diet. For example, in the United States, better quality fruit drinks with a higher fruit content (with 25 per cent or more fruit juice) have been successful, increasing the share of total juice/fruit drink sales to over 50 per cent in 1989.[8/]

There is currently a glut on the world wine market despite an estimated downturn in the production of wine in 1991. Recent emphasis on reducing alcohol consumption and a fear of wine being tampered with are the main factors responsible for falling demand for wine in the world market.[9/] The estimated surplus stock for 1989-1990 was at 4.2 million hectolitres. The greatest impact of the disequilibrium between production and consumption appears to be in the EC, with total production exceeding 1.8 million hectolitres and consumption stagnating at around 1.4 million

hectolitres in the late 1980s. The general trend is in the direction of expanding the production of better quality wine. An element of uncertainty is created due to the possible fiscal harmonization of alcoholic beverage taxes when the EC's single market is launched on 1 January 1993. It is difficult to determine how wine prices will move in the face of a continued market disequilibrium. The strengthening of market interventions may remove surpluses from the market. Czechoslovakia is an insignificant wine producer in the international market. Wine produced in the vineyards of Moravia, southern Slovakia and Bohemia satisfies mainly domestic demand. The country's relatively low cost of production may give it an export advantage. World trade in wine will continue to be influenced by changes in exchange rates, corresponding relative price levels, tariff and non-tariff barriers and commercial trading agreements. These developments could strengthen the comparative advantage of low cost producers of good quality wines on the world market.

With its famous Pilsner Urquell and Budweiser brands, Czechoslovakia is seeking to turn its beer industry into one of the country's major export earners. Although domestic demand and exports have declined in recent years, the future looks bright. A look at the regional trends in the consumption of beer across Europe shows that low-alcohol beers are enjoying increasing popularity, with 100 per cent annual growth in the United Kingdom and 580 per cent growth in Germany in the 1980s.[10/] Czechoslovakia ranks second in the world in *per capita* consumption of beer (134.8 litres) after Germany (143.5 litres). One of the most significant trends in recent years has been the increasing internationalization of the brewing business.[11/] Both Europe and the United States have seen a number of takeovers in key areas by Australian companies.

Almost all segments of food manufacturing in Europe experienced an acquisition binge in the late 1980s.[12/] While the pace of acquisition slowed down in 1990 and 1991, new names emerged, e.g., cereal partners in breakfast cereals, and old names entered into new fields. A fall in consumer spending and recession in some parts of western Europe have hit food manufacturing less severely in recent years. Looking beyond the current recession, the European food manufacturing industry's biggest challenge is the single market in 1993.

The single Europe in 1993 may not have much significance for Czechoslovakia, a marginal exporter and importer of food products. However, in view of the fact that "Europe 1993" creates a super market for more than 350 million customers, it would be timely for Czechoslovakia as an aspirant for membership, to establish linkages with the single market, particularly in view of the shift towards quality and export-orientation. With the growing will and determination to become western in their pattern of production and products, the perception of food manufacturers has to be charged with a high degree of motivation. Investors in food processing certainly have obstacles to circumvent, but there are incentives and avenues that could attract foreign partners.

Achieving competitive advantage in the 1990s requires the acquisition of modern technology by the Czechoslovak food industry which has been hampered by decades of domestic orientation. An appetite for a change towards efficiency has to be met by the use of modern technology. Computer systems to carry out specific tasks, such as "pick and place devices" are common in OECD countries. The largely untapped eastern European market for sophisticated food manufacturing machinery and equipment provides an opportunity for the OECD food manufacturing equipment manufacturers.

The implications of emerging trends in the global food manufacturing in general and Europe in particular have implications for all eastern European countries which may in the long run become part of the United Europe. Recent developments in the former Soviet Union, particularly the new waves of economic liberalization, are of particular interest to the east European countries. This traditional export destination may once again emerge as a vast market for non-traditional exports, including food products. A significant transformation of the Czechoslovak food manufacturing industry will enable the country to gain from such developments in the future.

B. TEXTILES AND CLOTHING: ACQUIRING COMPARATIVE ADVANTAGE IN INTERNATIONAL SOURCING

The resource base

Despite a significant increase in the production of synthetic fibres, chiefly polypropylene, the textile industry's dependence on imports remains high at 50 per cent of raw material requirements. The bulk of these imports, mainly cotton, originates from the former Soviet Union. Domestic supplies of flax and wool are inadequate, but efforts are under way to utilize the large areas of mountain pasture for increasing the country's sheep population. Estimates of the pattern of raw material utilization by textile mills for the year 1990 show the significantly high share of synthetic fibre (205,000 tonnes) followed by cotton (130,000 tonnes), wool (25,000 tonnes) and flax (12,500 tonnes). Imports of cotton, wool and jute were broadly stable in 1990 (see Table IV.4).

Table IV.4. Imports of cotton, wool and jute, 1980-1990, selected years
(Thousand tonnes)

	1980	1985	1988	1989	1990
Cotton	114	126	117	125	108
Wool	26	19	22	20	18
Jute	5	3	3	5	3

Source: Federal Statistical Office.

Sourcing of the main raw material, medium- and long-stapled cotton, from the hitherto most important supplier, the former Soviet Union, is posing a problem due to the decline of counter-trade and the increasing orientation of primary exporter in the former CMEA countries towards hard currency markets. Sourcing of raw cotton from other origins is also a problem because of a significant change in the export profile of developing countries from primary to semi-processed or finished products. While the world-wide consumption of natural fibres, such as cotton, wool, jute and silk, has stabilized in recent years, developing countries' consumption of cotton and wool has grown faster. World consumption of cotton rose from 18.5 million tonnes in 1988 to 18.7 million tonnes in 1989, while that of developing countries rose from 10.8 million tonnes to 11.1 million tonnes during the same period.

In Czechoslovakia man-made fibres are extensively utilized in the production of textile items. The general tendency is towards a higher use of cellulosic and synthetic fibres. It was estimated that by 1995 synthetics will account for 72 per cent of total man-made fibre use, the remainder would be represented by viscose fibres. Czechoslovakia was one of the world's first producers of polypropylene fibre on a large scale.

Emerging trends

The textile and clothing industry grew at an average annual rate of 1.5 per cent during 1986-1990. In the wake of depressed demand, rising prices of raw materials and insolvency of many enterprises, the growth of the industry faltered in 1991. Recent economic reforms significantly affected the production of both textiles and garments. The abolition of subsidies and price liberalization have meant a drastic fall in internal demand for textile products. In the current phase of restructuring and rejuvenation of the industry around 30-50 per cent of the textile and clothing production are on the verge of collapse.

The installed capacity of Czechoslovakia's spinning and weaving industry exceeded that of many central and eastern European countries (see Table IV.5) in 1989. When production is reduced

by 30-50 per cent, a major part of the installed capacity will remain idle. Exports may not adequately compensate for falling internal demand because obsolescence of capital stock, turning out relatively low quality products, makes it difficult to penetrate foreign markets effectively.

Table IV.5 Spinning and weaving capacity in eastern Europe and the World, 1989

	Spindle and rotors (Thousand units)			Looms[a/] (Number)			
	Short-staple	Long-staple	OE rotors	Shuttleless	Shuttle	Filament weaving	Wool weaving
Bulgaria	620	0	40	7,000	4,000		
Czechoslovakia	1,586	0	292	7,000	18,000		
Hungary	750	119	44	3,300	4,000		870
Poland	1,399	533	188	9,880	14,570		5,200
Romania	2,100	0	97	2,000	12,000		
Soviet Union	10,000	0	4,000	175,000	85,000	20,000[b/]	20,000[b/]
Yugoslavia	1,486	0	51	1,500	15,400		
Eastern Europe	17,941	652	4,712	205,680	152,970	20,000	26,070
Asia and Oceania	97,494	6,178	1,151	137,960	1,493,260	796,620	66,510
World	165,248	15,684	7,812	550,640	2,187,700	856,320	171,450

Source: Anton Gälli, "Eastern Europe, rising star", *Textile Asia* (September 1991).

a/ Automatic and non-automatic, 75 cm or wider.
b/ Estimate.

The ability to create competitive dominance is a strategic issue. Such a strategy has to pinpoint the fundamental flaws of traditional plants which will need to be replaced. Modernization primarily entails technologically improving the performance of plants. Such endeavours could be achieved in Czechoslovakia's textile and clothing industry through the creation of new manufacturing capabilities which existing plants do not possess. Within the framework of the former CMEA division of labour in textiles, Czechoslovakia specialized in the production of textile machinery. The technological obsolescence led to falling production levels and low labour productivity by international standards.

Data pertaining to physical volumes of textile and clothing output for the year 1990 do not reveal a significant breakthrough in production when compared with production levels in 1980 (see Table IV.6). The physical output of knitted outerware, knitted underwear, flax fabrics and silk fabrics was lower in 1990 than in 1980. Other products such as cotton fabrics and woollen fabrics suffered severe deceleration of production in recent years.

On the export front cotton fabrics accounted for around 40 per cent of the value of textile exports in the late 1980s, followed by silk fabrics (34 per cent), linen fabrics (27.9 per cent) and wool fabrics (12.1 per cent). Recent export performance of textile products can be gauged from Table IV.7.

The *per capita* consumption of clothing items in Czechoslovakia is presented in Table IV.8. By international standards *per capita* consumption of clothing in Czechoslovakia is low. During the current phase of economic and industrial deceleration it is difficult to envisage any significant increase in textile products *per capita* consumption. However, the possible recovery of the economy in response to new market impulses may lead to a rise in real income leading in turn to a rise in *per capita* consumption of clothes.

As of May 1990 there were 68 enterprises in the Czechoslovak textile industry: cotton (17), wool (16), knitting (15), linen (8) and clothing (12).

Table IV.6. Structure of industry, 1980-1990, selected years

Products	Unit	1980	1985	1988	1989	1990
Cotton fabrics	Thousand metre	560,449	606,355	591,243	581,845	580,429
Woollen fabrics	Thousand metre	58,415	60,147	58,669	59,106	58,759
Knitted outerware	Thousand pieces	72,534	67,680	65,666	64,965	63,100
Knitted underwear	Thousand pieces	75,505	70,475	63,395	62,063	61,528
Stockings and socks	Thousand pairs	96,564	111,631	108,349	108,040	110,256
Flax fabrics	Thousand metre	104,289	99,209	105,559	107,129	104,147
Silk fabrics	Thousand metre	92,277	95,566	97,979	93,948	90,907
Clothing of fabrics	Thousand pieces	44,096	46,540	48,819	47,667	45,259

Source: Federal Statistical Office.

Table IV.7. Export performance of textile products, 1980-1990, selected years

Commodity	Unit	1980	1985	1988	1989	1990
Cotton fabrics	Million metres	145	146	235	228	217
Wool fabrics	Thousand metres	3,437	20,429	7,113	7,130	7,134
Silk fabrics	Thousand metres	24,544	25,141	33,331	30,237	25,726
Linen fabrics	Thousand metres	22,243	19,907	29,487	28,618	27,540

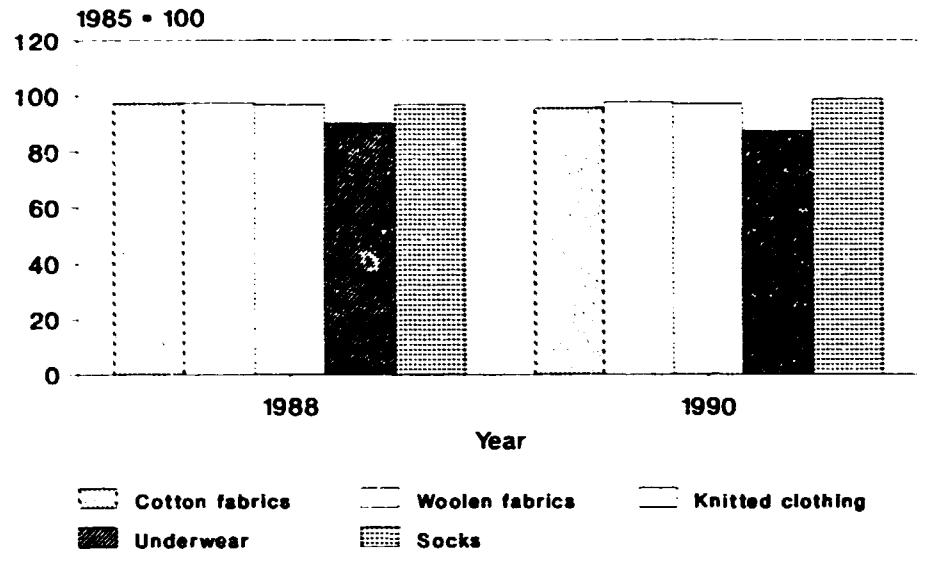
Source: Federal Statistical Office.

Table IV.8. Per capita consumption of clothing items, 1988

Underwear stitched	Pieces	2.96
Underwear knitted	Pieces	4.56
Knitted outerwear	Pieces	4.32
Outerwear	Pieces	3,20
Stockings/socks	Pairs	11.86

Source: International Textile Manufacturers Federation, *International Textile Manufacturing* (Zurich 1990), vol. 13, p. 77.

Fig. IV.E. Physical output indices of textiles and garments, 1988 and 1990
(1985 = 100)



While labour productivity (value added per worker) remained subdued over the years, the index (1970 = 100) of capital productivity (efficiency of fixed capital assets) in textiles fell for several consecutive years from 80 in 1985 to 74.8 in 1989. The deceleration of capital productivity was more pronounced in wearing apparel, with the index falling from 60.5 in 1985 to 49 in 1989. This trend was in marked contrast to advances in automation which enabled the big textile groups in the world significantly to enhance both labour productivity and capital productivity, and to operate the plants more efficiently. In the 1980s technology was treated as the main catalyst in developed countries' textile industries in order to erase the low cost advantage of super exporters of textile and clothing items. There have been dramatic innovations notably in spinning and weaving technology. While the textile industries of the EC, Japan and North America, found new ways of enhancing competitiveness, the Czechoslovak textile industry failed to keep pace with the rapid transformation of the textile technology elsewhere.

In view of the apparent lag in the evolution of technical progress in Czechoslovak textile industry, it is worth considering how the process of textile modernization has proceeded until now in the country.[13/] Modernization of the textile industry proceeded slowly in the past due to the centralized regulations of capital investment policy in new and traditional branches of the textile industry. However, the country's textile research did contribute to improvements in original technologies of jet weaving, OE spinning, non-woven fabric technology and knitting-weaving. New innovations in weaving preparation and finishing also occurred. In the cotton and silk industries the jet looms have developed considerably. In the 1970s Czechoslovakia introduced a new original weaving technology called the multi-shed weaving machines. Industrial testing started in one cotton enterprise in 1984. These technologies were devised by the Cotton Textile Research Institute.

These attempts in textile research, however, failed to respond quickly to an ever-changing market. This was largely due to the fact that the managements of the companies were attuned to the needs of central planning rather than to the needs of the market. Directors of textile factories were instructed at the beginning of the year as to the volume of production, the type of products, value and financial index fluctuations. These factors hardly created incentives for rejuvenating the industries.

Some corrective measures were implemented during 1987-1989. The general directions given to industry branches were abolished and a number of planned targets were replaced with an emphasis on profit indexes. In the face of the new government's decision to initiate the process of transferring of property from the State to private entrepreneurs, the possessions of the former textile enterprise proprietors will be handed over to them provided they or their heirs request these possessions within two years of the date of the law coming into effect.

Transferring the textile industry to the private sector and the market economy implies that managers will be able to rely on their own ability in responding to market signals. It is too early to predict how the textile industry companies will be able to adapt to the challenges in the changing environment which is likely to be characterized by self-finance, possible participation with foreign partners and by public purchase of stocks.

Investment opportunities

Many of the investment opportunities stemming from rationalization and modernization are likely to accrue to the textile engineering industries which are set to undergo restructuring with foreign participation. Out of 28 investment proposals submitted to the UNIDO-sponsored Investment Forum in November 1991, many project proposals envisage rationalization of the production process and modernization of equipment in a move towards producing a wide range of high quality products (see Table IV.9). Almost all the investment proposals seek equity participation, joint ventures and market access from external sources. Despite uncertainties surrounding the competitiveness of textiles and clothing products in the highly competitive markets, particularly in the EC and the United States, traditional skills developed over decades and relatively cheap labour could create viable investment opportunities in the production of wool, carpets, handkerchiefs, shirts, linen cloth, flax products, and higher value added cotton products. Some negotiations have already taken place between foreign firms and domestic producers.

Constraints and prospects

The weakness of the Czechoslovak textile and clothing industry became transparent in the light of the transition to a market economy. The industry's traditional pattern of production, conforming to the quality requirements of the domestic market and to the needs of the division of labour within the former CMEA countries, is a constraint on "quick response" to the market environment. The situation is exacerbated by the new wave of import liberalization as importers tend to take a bigger share of the demand for higher quality products. A significant revival of internal demand is unlikely in the short run in the face of stagnating real incomes.

When production of textiles and clothing is cut by 30-50 per cent, the need to modernize the obsolete capital stock will be severely felt. This process of "creative destruction" calls for rationalization of the industry with new machinery and equipment. This, in turn, raises the question of financing the modernization process. Private entrepreneurs' initiatives towards modernization may be hampered by a lack of resources. An important option is to look for foreign participation in corporate equity and joint ventures. The experience of developing countries and newly industrializing economies suggests that foreign direct investment has not been a major feature of the textile and clothing industry. Although foreign investment has been concentrated within the enclaves of export processing zones, with fabrics generally being imported duty-free for re-export, the attractiveness of the textile and clothing industry to foreign investors

has been relatively low. Foreign investors seem to be interested in big projects which ensure economies of scale. However, international experience has shown that economies of scale do not necessarily imply an advantage, especially in clothing industry.

Czechoslovakia could endeavour to seize opportunities stemming from the increasing tendency of big firms to opt for international sourcing. By the late 1980s around 240 locations were identified by transnational corporations as sources, due to the complexity and the need for increased flexibility in clothing. French entrepreneurs are now actively sourcing in North Africa, British enterprises in Asia and United States enterprises in the Caribbean.[14/]

Acquiring a comparative advantage in international sourcing does not come through technology alone. In view of other determinants of competitiveness, the pace of technological change in the global textile industry is slowing. Despite significant advances in automation in spinning and weaving, the level of computerization in clothing is still low, implying that big textile groups in developed countries are still vulnerable to low cost competition. Given Czechoslovakia's textile traditions and relatively low wages a potential comparative advantage clearly exists.

The developments in the former Soviet Union have serious implications for the Czechoslovak textile and clothing industry. The country relied heavily on the former Soviet Union for the import of cotton fibres and for exporting fabrics and ready-to-wear products. As the developed countries remain lucrative markets for textile fabrics and clothing, Czechoslovakia will seek market access especially to the European Community. Amidst intensive negotiations with the EC for associate membership, there are wide differences of opinion regarding textile and clothing items and restrictions are unlikely to change significantly.

The short- and medium-term global outlook for natural fibres, in particular cotton, will have some implications for Czechoslovakia's textile and clothing industry, which depends heavily on imports.[15/] There has been a recovery in the demand for cotton in recent years. The level of demand for cotton could reach 19.8 million tonnes by the year 2000, growing at a projected average rate of 1.1 per cent per annum when measured from the 1987 cyclical peak in consumption. In developed countries demand for cotton is strongly affected by cyclical economic conditions. In eastern Europe and the former Soviet Union cotton demand is expected to increase at an average annual rate of 0.9 per cent up to the year 2000.

Recent changes in environmental regulations governing textile factories call for environmental compliance. Dyeing, printing and finishing operations are directly affected by these regulations. Textile firms will be increasingly faced with costs arising from solid waste disposal, toxic waste disposal and hazardous waste treatment. The process of rejuvenating the country's textile and clothing industry will need to take all these factors into consideration.

C. LEATHER AND FOOTWEAR: A LONG WALK TOWARDS COMPETITIVENESS

The resource base

Czechoslovakia is endowed with a significant raw material base for the leather and footwear industry. Until 1990 around one-third of the industry's raw materials requirements were met by imports. As the industry plunged into the general wave of industrial deceleration, local supplies of raw leather in 1991 were adequate to meet the low demand for processing activities. The country's agricultural resource base as a source of raw material can be gauged from data pertaining to livestock holdings (see Table IV.10). There has been a steady increase in the number of livestock in the 1980s. The year 1990, however, witnessed a decline in the number of livestock.

Table IV.9. Investment proposals in textile and clothing, November 1991

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/114/V/91-07	Produce range of looms and knitting machinery	5,000 looms 500 knitting machines	88.6	Equity capital, joint venture, market access, subcontracting, marketing
CZE/128/V/91-07	Re-equipping The Perla 7 spinning mill	1,800 tonnes	20.9	Equity capital, joint ventures
CZE/ 38/V/91-07	Weaving modernization programme, increasing width to 150 cm	26 million square metres	26.3	Equity capital, joint venture, market access, product development, marketing
CZE/122/V/91-07	All wool and blend suit and dress fabrics	820,000 metres/y	5.0	Equity capital, joint venture, market access, product development, marketing
CZE/ 92/V/91-07	Modernization of factory and production of "Walk Terry" fabrics	1.1 billion picks/y	16.4	Equity capital, joint venture, market access, credit, management
CZE/119/V/91-07	Furnishing, water-proof and shirt fabrics	10 million metres/y	12.1	Equity capital, joint venture, marketing, market access, subcontracting
CZE/111/V/91-07	Expand production of worsted fabrics	1,000 tonnes/y	14.9	Equity capital, joint venture, technical expertise
CZE/397/V/91-07	Modernization of wool yarn production, upgrade specifications and quality	2.7 million metres	6.2	Equity capital, joint venture, product development, market access, management
CZE/110/V/91-07	Expand high quality fabrics, improve response time	4.3 million metres/y	4.9	Equity capital, joint venture, market access, marketing
CZE/138/V/91-07	Expansion of semi-worsted production	Increase 3,300 tonnes/y	4.8	Equity capital, joint venture, management, marketing
CZE/146/V/91-07	Development of exclusive dress fabrics, 160 cm width	5 million metres/y	2.6	Equity capital, joint venture, market access, supply of equipment
CZE/322/V/91-07	Parasols, tents, deck and camp chairs	2 million linear metres	1.4	Equity capital, joint venture, market access, management, marketing
CZE/ 60/V/91-07	Increase camping tent production capacity	Increase by 30 per cent	4.4	Equity capital, joint venture, market access
CZE/120/V/91-07	Lighter PAD linings, looped fur fabrics	1.75 million metres/y	2.0	Equity capital, joint venture, marketing, technology, supply of equipment

(continued)

Table IV.9. (continued)

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/123/V/91-07	Upgrade knitted outerwear production	1.65 million pieces/y	6.5	Equity capital, joint venture, market access, product development, management
CZE/141/V/91-07	Expansion of knitted sports, leisure and work-wear	820,000 pieces/y	5.1	Equity capital, joint venture, market access, product development, management
CZE/320/V/91-07	Plush, sheared and filler knitted fabrics	1,000 tonnes/y	5.2	Equity capital, joint venture, market access, management, technical
CZE/475/V/91-07	High quality and more fashionable knitwear	396,000 pieces/y	4.2	Lease of machinery, market access, marketing
CZE/476/V/91-07	Heat insulating material from textile waste	456,000 square metres/y	1.1	Equity capital, joint venture, market access, technology, management
CZE/466/V/91-07	Non-woven material from polypropylene fibrous waste	3,000 tonnes/y	9.7	Equity capital, joint venture, market access, management, marketing
CZE/325/V/91-07	Expand spun-bonded non-woven fabrics	1,600 tonnes/y	0.7	Equity capital, joint venture, market access, technology, management
CZE/417/V/91-07	Expand production of sanitary napkins	300 million pieces/y	2.0	Equity capital, joint venture, market access, product development, management
CZE/366/V/91-07	High quality knitted day, night and sports wear	500,000 pieces/y	1.2	Equity capital, joint venture, market access, technical, supply of equipment
CZE/364/V/91-07	Protective clothing, sleeping bags and sails	65,000 pieces/y	0.4	Equity capital, joint venture, market access, technical, management
CZE/363/V/91-07	Improve the quality of ladies' coats	343,000 pieces/y	4.5	Equity capital, joint venture, loan, market access
CZE/387/V/91-07	More fashionable leisurewear	200,000 pieces/y	2.4	Equity capital, joint venture, market access, technology, product development
CZE/152/V/91-07	Upgrade existing hat production and manufacturing machinery	$2.9 million/y	3.0	Equity capital, joint venture, marketing
CZE/362/V/91-07	High quality classical and leisure shirts	400,000 pieces/y	1.8	Equity capital, joint venture, market access, technology, management

Source: UNIDO, Investment Promotion Division, *Investment Forum for Czechoslovakia* (Prague, 4-6 November 1991).

Table IV.10. Livestock holdings, 1980-1990, selected years
(Thousand heads)

	1980	1985	1989	1990
Cattle	5,002	5,065	5,129	4,923
Cows	1,902	1,860	1,795	1,744
Pigs	..	6,651	7,498	7,090
Sheep and rams	..	1,087	1,051	1,030

Source: Federal Statistical Office.

The number of cattle destined for slaughtering fell from 1.7 million head in 1986 to 1.6 million head in 1988, while that of sheep rose from 1.3 million head to 1.5 million head during the same period. While the country's stocks of goats fell for several consecutive years from 64,000 in the late 1970s to 50,000 in 1988, the number of goats for slaughtering rose significantly over the years. A marginal surplus of leather raw materials for export surfaced in 1991 in the face of a rapid fall in leather processing activities.

Emerging trends

The index (1980 = 100) of leather production rose from 107 in 1985 to 116 in 1988, remained steady at 117 in 1989 and 1990, and fell sharply to an estimated 70 in 1991. Production of leather and footwear fell by more than 30 per cent in the first eight months of 1991 due to a sharp fall in internal demand. A 35 per cent fall in the production of leather and footwear in real terms was estimated for 1991. Production is expected to remain subdued in the near future.

Leather goods and shoes do not occupy an important place in the country's export profile. They account for around 1 per cent of industrial exports. However, the export orientation of the leather industry, as measured by the share of exports in production, rose from 16.8 per cent in 1980 to 22 per cent in the late 1980s. The former CMEA countries were the main export destinations of shoe and leather exports (see Table IV.11). In 1988, the former CMEA countries accounted for 87 per cent of shoe export earnings and 80.7 per cent of leather goods export earnings.

Table IV.11. Export destinations of shoes and leather goods, 1987 and 1988
(Thousand Kcs)

	1987	1988
Shoes	2,176,261	2,300,261
Of which to		
CMEA	1,868,417	2,002,100
Non-CMEA	307,844	298,161
Leather goods	643,420	642,149
Of which to		
CMEA	502,051	518,292
Non-CMEA	141,369	123,857

Source: *World Leather* (February/March 1991), p. 15.

Fig. IV.F. Index of leather production, 1985-1991, selected years
(1980 = 100)

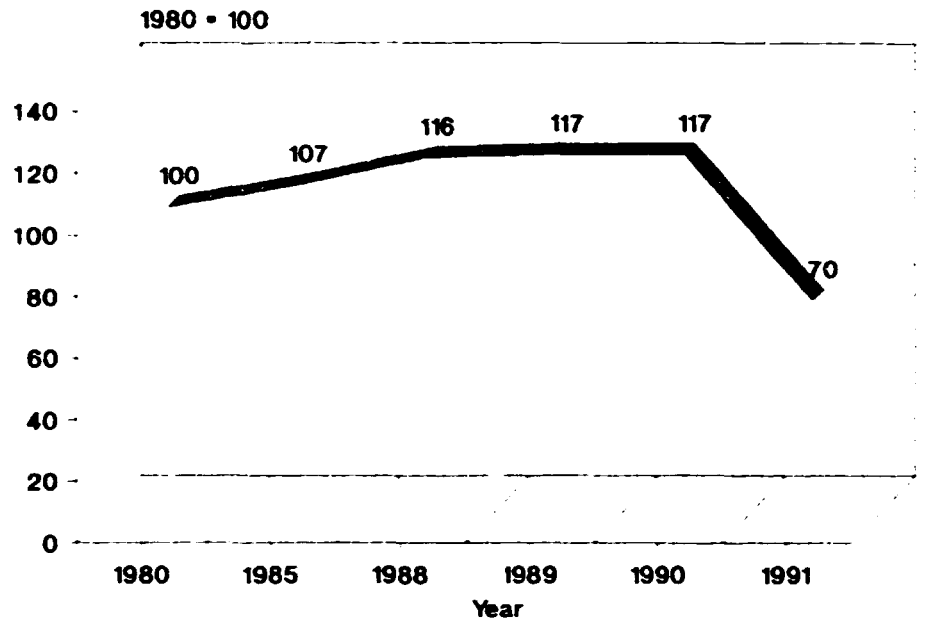
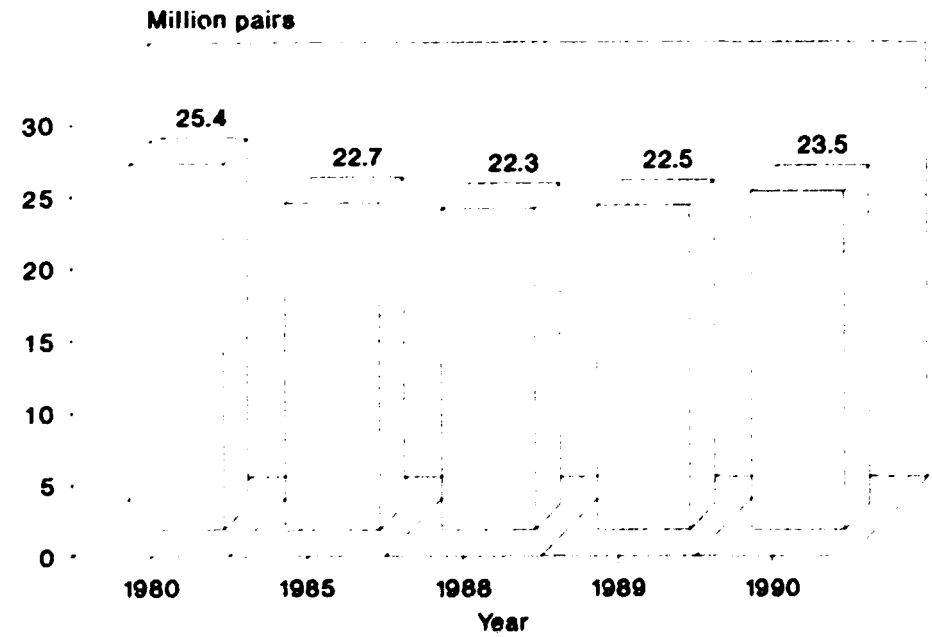


Fig. IV.G. Exports of leather shoes, 1980-1990
(Million pairs)



With obsolete machinery and equipment, lower sales, low capital and labour productivity, firms were increasingly faced with a high level of indebtedness. The index (1970 = 100) of capital productivity fell from 69.1 in 1985 to 59.2 in 1989.

The country's *per capita* consumption of footwear is estimated at four pairs per year. A major portion of total production has been turned out by the Czech Footwear Trust which includes the Svit factories at Zlin. With its associated tannery, research institute and service organizations, the Svit enterprise constitutes the largest shoe manufacturing complex in the world. In addition to this, there is the Závody G. Klimenta factory (Zbik) at Trebic-Borovina. The Sazavan factory at Zruc specializes in children's shoes and the Botana factory at Skutec in sport shoes. The Bardeja factory was most recently built. Most of the smaller shoe factories operate independently.[16/]

In 1990, the Svit factories produced over 63 million pairs of shoes, representing over 50 per cent of Czechoslovakia's shoe output. Of these 30 million were leather-uppered, 17.5 million were textile, 6 million were poromeric, 7 million were plastic and 3 million were rubber. In the same year the Svit tannery at Otrokovice supplied around 7 million square metres per year of upper, lining and sole leather to the four Svit shoe factories.

Bata International of Toronto has expressed strong interest in cooperating with Svit in the modernization of the shoe factories. Recently concluded negotiations between the government and Thomas Bata, whose ancestor founded the industry at Zlin in 1894, will determine the extent of joint venture initiatives towards rationalization of the industry. According to this agreement, Bata will take over one small enterprise in Dolni Némči on 1 July 1992 at a quoted price of Kcs 24 million. Other cooperation agreements are also expected to be concluded in 1992.

Investment opportunities

Foreign investment is being eagerly sought by the government. Several negotiations are under way with respect to various forms of cooperation, particularly joint ventures and licensing. At the Investment Forum in November 1991 only one project proposal in leather production was presented. The project proposal envisages the production of quality leather for shoes, furniture and cases. The investment requirement is estimated at $2.4 million. The project idea seeks equity participation, joint venture, management, marketing and assistance for market access from external sources.

Constraints and prospects

A considerable lack of capital, the indebtedness of enterprises, growing demand on ecological compliance and obsolete technology are the constraints leading to the termination of production in many factories. However, the country's relatively cheap labour and the skill developed over the years are likely to attract investors. The restructuring of the industry will need to capture the dynamism of the global leather industry.

A significant feature of the global dynamism in the leather industry over the last two decades has been the rapid growth in the demand for leather clothing. This was to a large extent engineered by the leather industry itself in order to ward off the growing threat to the shoe upper leather market in the 1960s. However, customers' preference for leather as against synthetics multiplied the demand for leather, reflecting its popularity on the world market.

Concomitant with the growing popularity of leather products, the scale and pace of change in leather technology have been significant, challenging even the most adaptable enterprises. Many enterprises all over the world have been faced not only with the erosion of much of their traditional markets, but also with soaring costs of production and strict legislation on environmental pollution. The pressures even led to closures and consolidation of tanneries. The leather industry of Czechoslovakia has to keep abreast of all these developments in order to justify its existence in a market economy.

In the 1980s, there was a continuing and significant shift of shoemaking on a global scale from developed to developing countries.[17/] Low labour-cost countries have attracted considerable interest from investors in simplified shoemaking. By 1987 developing countries accounted for 82 per cent of world shoemaking, compared with 75 per cent in 1978. The main benefactor of this trend has been Asia, a region which has seen its share rise from 40 per cent in 1978 to 50 per cent in 1987. Eastern Europe, the former Soviet Union, western Europe and North America have seen their combined share reduced from 47 per cent to 36 per cent during the same period. In 1987 China was the leading producer of footwear with 1,903 million pairs followed by the former Soviet Union (1,052 million pairs), Taiwan Province of China (803 million pairs), Brazil (592 million pairs), Republic of Korea (534 million pairs), Italy (456 million pairs), Japan (409 million pairs), India (390 million pairs) and the United States (291 million pairs). Czechoslovakia's output of footwear in 1987 was less than that of Poland, Turkey, Yugoslavia and Romania. In recent years, the shift in shoe manufacturing within Asia has shown a clear trend with production of simpler styles of shoes moving offshore from countries or areas such as Hong Kong, Republic of Korea, Taiwan Province, to China, Thailand and even Indonesia, as manufacturing gravitates to lower labour cost producers. China has emerged as a major exporter drawing in European and North American know-how. While the EC and North America are the lucrative markets for footwear, the low cost producers in eastern Europe have not yet exploited their proximity to the European market in particular.

The advantage achieved through lower labour costs continues to be a determining factor in the sourcing of footwear. A product such as sports footwear, involving approximately 75 operations in manufacturing, will inevitably move to countries with lower cost structures. According to rough estimates labour costs account for 35 per cent of the cost of production in the leather industries of developed countries.

Developed countries are continually looking for solutions to combat the seemingly endless flood of imports from lower-labour-cost countries. These solutions include, *inter alia*, various forms of protection, improved emphasis on special or high quality footwear, superior design or craftsmanship and the use of sophisticated technology. The question is to what extent the use of advanced technology makes developed market economies more competitive. Does it bridge the price gap to such an extent that buyers will switch sources? Automatic stickers and computer-controlled machines have certainly come into prominence[18/] in shoemaking in the 1980s, but do not seem to have the potential to revolutionize the production process for design. Given the continued importance of low-cost labour in footwear production, Czechoslovakia will have to cultivate an improved image and a new recognition of value added by meeting requirements at the right time and at a relatively attractive price.

Environmental pressures are increasingly rolling over into the leather industry because of its severe solvent discharges. But it is equally true that procedures and technologies to minimize pollution or reduce the severity of discharges do exist. However, these procedures and technologies are not sufficiently used. There is a need to enforce more effective environmental audits, and to ensure the promotion of cleaner technologies. The two main sources of pollution in a tannery are the beamhouse (unhairing) and the tanning yard. These should be the target segments of the introduction of cleaner leather processing technologies. The use of chrome-free solids as by-products and the disposal of chrome containing sludge are critical areas requiring particular attention. Modern production control systems should be used in conventional tanneries in order to prevent chemicals and water from becoming sources of pollution. A wide range of low-waste processing methods are available in developed countries. These include green fleshing, hair-saving beamhouse systems, ammonium-free processing, high chrome exhausting and chrome-free tannage, organic solvent free finishing, including recycling of floats and chrome recovery. These methods should be promoted. Many tannery wastes are valuable by-products which can be converted into products like gelatin, glue fodder and fertilizer.[19/]

The world footwear industry is forecast to consume an extra 2.8 billion square feet of leather annually until the year 2000,[20/] the proportion of total supply of bovine leather used in this sector is estimated to decline from 62 per cent in 1990 to 58 per cent in 2000. While the garment sector

is expected to retain its current share, the proportion of leather utilized for upholstery and leather goods is expected to increase. The demand for upholstery has grown by 16 per cent in the 1980s, overtaking footwear in some countries. Such a pattern of leather consumption calls for improved efficiency of tanners for supplying high quality leather. By producing leather of unique features, Czechoslovakia's leather industry could greatly enhance its competitiveness.

D. WOOD AND PAPER PRODUCTS: SUSTAINING THE RESOURCE POTENTIAL

The resource base

Forest area accounts for around 36 per cent of the total territory in Czechoslovakia, compared with an average forest area of 23.3 per cent in Europe. Endowed with a relatively rich resource base, the country's annual output of forest products has remained more or less stable over the years (see Table IV.12). Marginal fluctuations in the annual output of roundwood, industrial roundwood, pulp wood and particles and sawnwood and sleepers in the second half of the 1980s were reflections of the supply response to changes in demand, particularly external demand. Czechoslovakia is a net exporter of forest products. The raw material base of the wood-processing industry suffers from large-scale environmental damage inflicted on the Czechoslovak forests, which has affected 57 per cent of forests in the Czech Republic and about 30 per cent of those in the Slovak Republic. However, the country's resource potential is sustainable.

Table IV.12. Production of wood and pulp by type, 1982-1989, selected years
(Thousand cubic metres)

Type of wood	1982	1983	1984	1985	1986	1987	1988	1989
Roundwood	18,925	18,833	18,913	19,002	18,933	18,520	18,096	18,552
Industrial roundwood[a/]	17,421	17,505	17,607	17,620	17,551	17,044	16,564	17,020
Pulpwood and particles	4,238	4,280	4,361	4,578	4,613	4,390	4,759	4,766
Sawnwood and sleepers	5,093	5,143	5,227	5,219	5,251	5,186	5,126	4,993

Source: FAO, *Yearbook, Forest Products 1989* (Rome 1990).

a/ Sawnlogs and veneer logs, pulpwood, chips and particles and wood residues.

Total removals of coniferous logs in Czechoslovakia in 1989 accounted for around 6 per cent of total removals in coniferous logs in Europe (excluding the former Soviet Union). Production of sawn softwood in Czechoslovakia stood at 3.9 million cubic metres in 1990, compared with 3.0 million cubic metres in Poland. Pulpwood requirements for further processing grew from 7.29 million cubic metres in 1989 to 7.57 million cubic metres in 1990. While most of the European countries experienced a negative growth in the demand for pulpwood in 1990, it grew by 3.9 per cent in volume terms in Czechoslovakia.

Emerging trends

The woodworking industry comprises the manufacturing of veneer and plywood, construction joinery products, wooden covers, and wooden furniture, as well as the brush, basketry, and production of cork products and matches. Sawmills account for about one-third of the total production. Physical volumes of products that have undergone downstream processing rose significantly in the 1970s. The production of plywood rose from 56,800 cubic metres in 1970 to

137,300 cubic metres in 1990 and that of fibreboard more than doubled from 23,000 cubic metres to 47,500 cubic metres during the same period. The production of chipboard rose from 195,900 cubic metres in 1970 to 519,000 cubic metres in 1990. The value of furniture production grew from Kcs 4,465 million in 1970 to Kcs 9,215 million in 1980. The production of fibreboard and chipboard continued to grow rapidly in the 1980s, and their respective physical output data for 1990 reveal significant strides made in the production of these products (see Table IV.13). On the other hand, the 1990 production level of plywood was far below its 1980 level of production. The value of furniture also fell from Kcs 9,215 million in 1980 to Kcs 8,663 million in 1990.

Table IV.13. Output of main products of woodworking industry, 1970, 1980 and 1990

Product	Unit	1970	1980	1990
Plywood	Thousand cubic metre	56.8	137.3	111.4
Fibreboard	Thousand cubic metre	23.0	47.5	121.2
Chipboard	Thousand cubic metre	195.9	519.1	736.6
Furniture	Million Kcs	4,465	9,215	8,663

Source: Federal Statistical Office, Prague.

The wood processing, paper, printing and publishing industries accounted for about 6 per cent of manufacturing value added in 1990. The highest share in this group was held by paper products, followed by the wood products and furniture industry. The share of these industries in industrial production has tended to rise over the years, and increased further in 1991 because their output declined less sharply than that of the industrial sector as a whole. In 1990 the share of these industries in total employment made up about 6.8 per cent.

The highest share in exports and long-term growth has been registered by the furniture industries. Paper and paper products account for a smaller share of exports, but this has tended to increase for some time and rose from 10.8 per cent in 1980 to 18.3 per cent in 1990. The principal markets for these exports include the former Soviet Union, the countries of the European Community, Austria and the United States. Exports to the former CMEA countries have been declining recently, however.

Labour productivity in the wood and paper industries has increased in the past four years, but remains below that of Czechoslovakia's manufacturing industry as a whole and that of comparable industries in the developed market economies of western Europe. One of the main reasons is the comparatively low level and poor quality of plant and equipment. As these industries were not defined as strategic industries, the command economy has slowed down the restructuring. However, the wood and paper industries in Czechoslovakia seem to be in a relatively more advanced stage than their counterparts in eastern Europe. Three paper mills in Czechoslovakia have annual production capacities of over 200,000 tonnes.

Per capita consumption of paper and board in Czechoslovakia stands at 78 kg, compared with an average of about 40 kg in eastern Europe. In western Europe the average *per capita* consumption of paper is about 150 kg. At present, paper consumption in Czechoslovakia is decreasing moderately in the wake of price liberalization. The general trend is expected to continue in the short term, but demand of selected products, such as communication papers and packaging grade is expected to pick up in 1992.[21/]

With the exception of a small sulphite pulp mill at Gremerska Horka, which has been closed down because of its failure to comply with environmental regulations, all other pulp and paper mills are

operating at high rate of capacity utilization. However, small non-integrated mills with obsolete capital stock are threatened by their exposure to market forces. Although prices of basic consumer goods such as toilet paper, hygienic paper products, etc., are State-controlled, producer prices of pulp and paper are not regulated. In view of considerable domestic supply of raw materials, imports of waste paper are restricted by means of import levies.

Recent data pertaining to the production, imports and exports of a varieties of paper, paper board and pulp are present in Table IV.14. The production and export of paper and paper board stagnated with very marginal changes in 1990, while imports fell sharply. Czechoslovakia is a significant exporter of market pulp. The production of market pulp rose from 590,000 tonnes in 1989 to 712,000 tonnes in 1990 and its exports in 1990 stood at 172,000 tonnes. Domestic waste paper recovery amounted to 550,000 tonnes in 1990, representing a 4.3 per cent fall over 1989. However, consumption of domestic waste paper rose from 465,000 tonnes in 1989 to 470,000 tonnes in 1990. Exports of waste paper fell sharply in 1990.

Total turnover of the paper industry in 1990 amounted to about $700 million. Sales in 1990 rose by 4.7 per cent and profits recorded an 8.7 per cent increase. Thus the paper industry performed better than other subsectors of manufacturing. Yet another positive sign has been an increase in the exports to hard currency markets. The largest increase in paper production in 1991 seemed to have stemmed from the growing demand for booming graphic and printing industries.

Table IV.14. Production, imports and exports of paper, board and pulp, 1989 and 1990
(Thousand tonnes)

	Production		Imports		Exports	
	1989	1990	1989	1990	1989	1990
Paper and board						
Newsprint	74	75	5	9	2	2
Printing/writing	282	309	24	17	45	56
Of which:						
Wood-free, uncoated	139	169	17	11	39	51
Wood-free, coated	20	22	7	6	4	3
Containing wood, uncoated	104	99	-	-	2	2
Containing wood, coated	19	19	-	-	-	-
Corrugating materials	253	245	38	35	62	61
Of which:						
Kraftliner	-	-	38	25	14	19
Other wrapping papers	105	114	5	2	47	43
Tissue	25	25	0	0	7	6
Other paper	229	249	20	8	8	10
Board	344	306	28	22	27	19
Total paper and board	**1,312**	**1,323**	**120**	**93**	**198**	**197**
Pulp						
Bleached sulphate	284	286	23	18	83	76
Unbleached sulphate	178	195	9	7	0	0
Bleached sulphite	264	250	1	0	104	96
Unbleached sulphite	176	158	0	0	1	0
Semi-chemical	83	80	0	0	0	0
Mechanical	157	148	1	1	0	0
Total pulp	**1,142**	**1,117**	**34**	**26**	**188**	**172**
Market pulp	590	712	34	26	188	172

	Recovery		Consumption		Imports		Exports	
	1989	1990	1989	1990	1989	1990	1989	1990
Wastepaper	575	550	465	470	0	0	110	80

Source: Frantisek Valcek, "Czechoslovakia on the road to bigger and better things", *Pulp and Paper International* (July 1991), p. 49.

Fig. IV.H. Output of wood products, 1970 and 1990
(Thousand cubic metres)

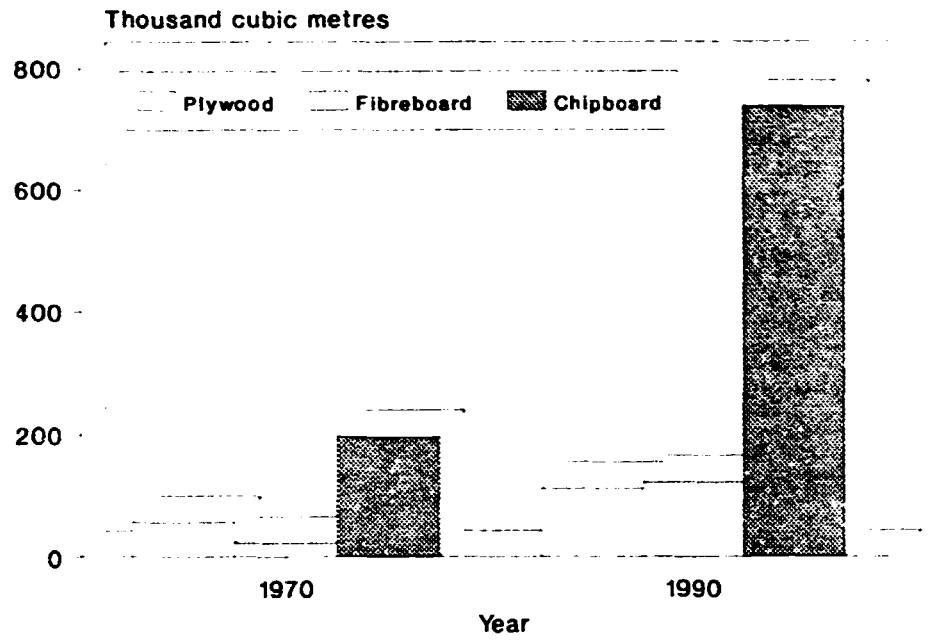
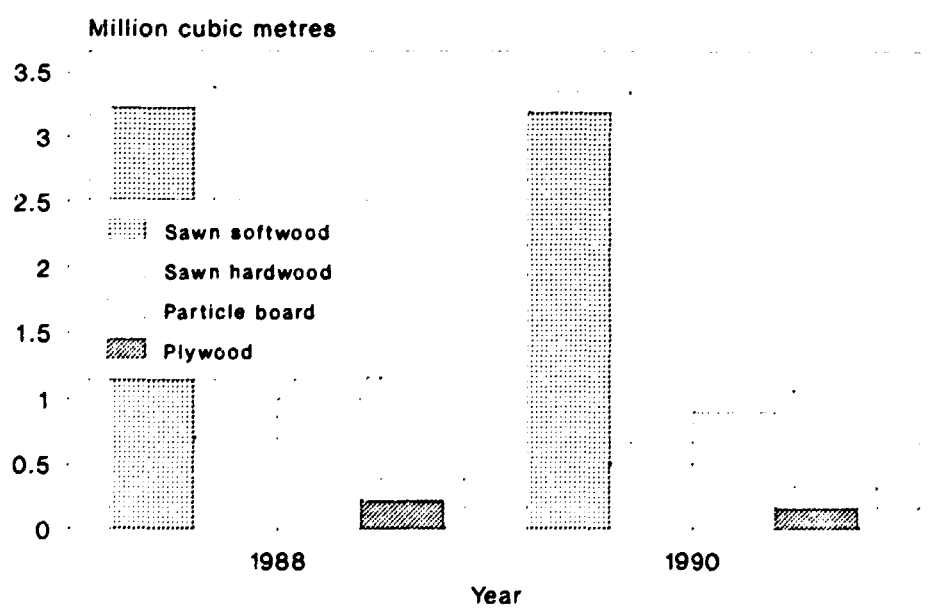


Fig. IV.I. Apparent consumption of selected wood products, 1988 and 1990
(Million cubic metres)



Investment opportunities

The further development of these industries will depend crucially on improvements in efficiency and the rapid application of modern technologies, on a restructuring of production in favour of more end-products and on an enhancement of the skills of the labour force. As promising industries based on domestic raw materials, the wood-processing, cellulose and paper industries need to expand their production of more technologically progressive products for both the domestic and international markets. The printing and publishing industry will also have to overhaul its manufacturing processes by way of automation and electronic processing.

In the wood-processing, cellulose and paper industries priority will be given to the development of production capacities for packing materials, graphic paper, hygienic paper and related products, newsprint, wooden furniture, wooden consumer goods, beds and window frames, semi-hard fibreboards, wooden fencing, wall units, tables, etc. In the printing and publishing industries an expansion of high quality book, catalogue and magazine printing will be encouraged. Substantial investments in both capital and know-how will be needed to create better conditions for the competitive manufacture of products with better quality, lower production costs and higher levels of labour productivity. Foreign investment opportunities are vast and in many cases, especially in the production of semi-hard fibreboard, chipboard, and coated folding board, have already been exploited.

Table IV.15 provides a list of investment proposals in wood and paper products seeking different forms of external cooperation and assistance.

A significant change in the ownership pattern from State ownership to joint-stock companies with both domestic and foreign capital is being increasingly realized with a view to modernizing plants. Leasing is also being pursued.

Completed new capital investment projects[23/] include a new sulphite waste liquor evaporator at Jihočeské Papírny's Větřní mill, new toilet paper production lines at Chemicelulóza Žilina, and at Harmanecké Papierne, a napkin machine at Slavosevske, as well as a new line for liquid food packaging at Grafobal, Skalica. By far the most important project under way is the construction of a new paper mill (PM) 8 at Severoslovenské Celulózky, Ružomberok, at an estimated cost of Kcs 4,023 million ($130 million). The PM is expected to reach its capacity of 100,000 tonnes/year of white woodfree papers by 1992.

Slovakian paper-maker Severoslovenské Celulózky a Papierne (SCP) Ružomberok is planning to start up its new 160,000 tonnes per year uncoated woodfree PM in 1991.[25/] An agreement has been signed with the graphic papers division of the German company PWA to help market the output.

The new 6.5 metre wide PM 8, supplied by Voith, will run at a speed of 1,000 metres per minute and produce uncoated woodfree papers in large and small sheets as well as reels. Output will be targeted at Czechoslovakia, Hungary and the western republics of former Soviet Union.

The agreement has been signed a newly established PWA subsidiary, Tatra Munich. It covers only the marketing of output from the new machine. SCP Ružomberok's other six paper machines are excluded from the deal. PWA also added that the agreement could eventually lead to PWA taking a shareholding in SCP Ružomberok.

The rebuilding of newsprint PM4 at Sepap Štětí as well as corrugated board and container lines at Juhoslovenské Celulózky Štúrovo are in progress, and the construction of an effluent treatment plant at Brněnské Papírny Tienev mill is almost completed.

Sepap Štětí is also working on the reduction of emission and effluent loads. Other proposed new projects include the 140,000 tonnes per year coated folding boxboard machine at the Lukavice mill at Olšanské Papírny, plus several environmental protection projects.

Table IV.15. Investment proposals in wood and paper products, November 1991

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/419/V/91-07	Wooden fencing, bed frames and shelving	300,000 pieces/y	0.3	Equity capital, joint venture, market access, marketing, management
CZE/418/V/91-07	Upgrade and develop window frame production	250,000 square metres/y	7.0	Equity capital, joint venture, technology, market access, management
CZE/235/V/91-07	Expand range of uses for lignamon	750 tonnes/y	1.9	Equity capital, joint venture, market access, technical, marketing
CZE/414/V/91-07	Production of semi-hard fibreboards	8,000 cubic metres/y	39.5	Equity capital, joint venture, loan, market access, technical
CZE/430/V/91-07	Rustic and children's furniture	$0.85 million/y	4.0	Equity capital, joint venture, credit, marketing, market access
CZE/413/V/91-07	Wall units and tables	$7.4 million/y	2.3	Equity capital, joint venture, design, technology, marketing
CZE/193/V/91-07	Introduction of new furniture lines	$21.0 million/y	7.9	Equity capital, joint venture, marketing market access, subcontracting
CZE/142/V/91-07	Expansion of furniture production, improve design and quality	10,000 pieces/day	3.8	Equity capital, joint venture, market access, supply of equipment, management
CZE/ 52/V/91-07	De-inked pulp for carbon-less copy paper	20,000 tonnes/y	6.0	Equity capital, joint venture, loan
CZE/112/V/91-07	Production of OSB type, chipboard	72,300 cubic metres/y	35.2	Equity capital, joint venture, market access, management, marketing
CZE/416/V/91-07	Manufacture of newsprint and printing paper	36,000 tonnes/y	17.9	Credit, market access
CZE/432/V/91-07	Hygienic paper from recycled materials	13,000 tonnes/y	58.5	Equity capital, joint venture, market access, loan, management
CZE/153/V/91-07	Corrugated board boxes	24,000 tonnes/y	14.0	Equity capital, joint venture, management, marketing, market access
CZE/ 55/V/91-07	Upgrade carton production	15,000 tonnes/y	1.5	Equity capital, credit, supply of equipment technical
CZE/136/V/91-07	Production of coated folding board	140,000 tonnes/y	345.0	Equity capital, joint venture, market access

(continued)

Table IV.15. (continued)

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/ 29/V/91-07	Upgrade bound and unbound book printing	6.5 million books/y	2.7	Equity capital, joint venture, supply of equipment, marketing management
CZE/472/V/91-07	Upgrade catalogue and magazine printing	Not stated	0.5	Credit, market access, subcontracting, marketing

Source: UNIDO, Investment Promotion Division, *Investment Forum for Czechoslovakia* (Prague, 4-6 November 1991).

Investment opportunities with majority shareholdings by foreign companies include[22]:

- Olšanské Papírny - a greenfield mill at Lukavice for 150,000 tonnes/year of folding boxboard. Investment budget would be Kcs 10,000 million (approximately $350 million);
- Biocel Paskov - a greenfield paper mill (hygienic paper) adjacent to the company's sulphite pulp mill;
- Chemicelulóza Žilina - a new PM 2 (hygienic paper) mill and converting facilities for a variety of consumer goods.

Among the brownfield projects which might provide foreign investors with opportunities are:

- Jihočeské Papírny, C. Budějovice mill - converting (cartonboard, corrugated board);
- Jihočeské Papírny, Větřní mill - reconstruction of both the pulp and paper mill;
- Severočeské Papírny, Štětí - chlorine-free bleaching line, newsprint PM rebuild;
- Chemicelulóza, Žilina - mechanical pulp production replacing the present sulphite pulp mill;
- Bukoza, Vranov - pulp mill rebuild to shift output from dissolving to paper grade; and
- Juhoslovenské Papierne, Štúrovo - rebuilding of the semi-chemical pulp mill, changes in the furnish for corrugating medium, and a rebuild of the converting plant.

Jipap, Jihočeské Papírny, is envisaging a new world-scale supercalendered (SC) paper machine at its Větřní mill.[24] The mill already has an output of around 50,000 tonnes per year of SC papers and is the country's only SC producer. The new PM is planned to be built on the existing site, using recent infrastructure investments.

Located in southern Bohemia, close to the borders of Germany and Austria, Větřní has easy access to the major European markets. Preliminary estimates show that operating costs of the new machine could be 20 per cent lower than those of a similar PM due to favourable wood and labour costs, making the project highly competitive.

As well as SC papers, Jipap also produces around 70,000 tonnes per year of sulphite pulp; 65,000 tonnes per year of testliner integrated with its own board and box production; and close to 100,000 tonnes per year of other grades.

Constraints and prospects

The forestry and paper industries in Czechoslovakia are well placed to benefit from the deep recession faced by their competitors in Europe and North America, which are facing fierce price cutting, idle capacity, and falling profits. Against these global trends the pulp and paper industry in Czechoslovakia is singularly fortunate to have survived the general wave of industrial deceleration in the country.

The paper industry is one of the beneficiaries of the recent political changes in eastern Europe where newspaper reading has been low compared to other countries. The market for magazines is also underdeveloped. The revitalization of the newspaper and magazine industries in the face of dramatic political changes could lead to a significant increase in the consumption of paper. The average newsprint consumption in the "reforming" eastern European countries in 1988 was 5 kg per head, compared with 45 kg in Scandinavia.[26] It is important to note that paper consumption in eastern Europe has to a large extent been determined by supply. An inadequate domestic supply response coupled with reduced imports because of shortage of hard currencies kept the *per capita* consumption of paper at low levels in eastern Europe. The current market orientation would imply aggressive sales through advertising, leading to a significant increase in the demand for paper. Given the country's rich natural resource endowment, Czechoslovakia could seize new opportunities accruing to the pulp and paper industries in the face of new socio-economic and political developments.

In view of the importance of market pulp in production and exports of wood products in Czechoslovakia, an analysis of the constraints and prospects for market pulp within the global perspective merits attention.[27] The short-term outlook for market pulp producers is not good. In a traditionally cyclical market, which in early 1991 was at or near the bottom of the cycle, more new production capacity is coming on stream. Pulp stocks at producers' mills have risen from their low point of 1989, and there is too much pulp available.

On the demand side, many of the paper mills which need market pulp are seeing a slowdown in the growth of demand and, in some cases, a drop in demand below the levels of 1989. Though still good in overall terms, demand is not growing at the same strong rate as in the late 1980s. In Europe, and to a lesser extent in Asia, the continuous shift in local currency exchange rates relative to the dollar means that the market prices may change quickly. In mid-April 1991, European suppliers were trying to raise bleached softwood kraft prices by about 5 per cent and those of bleached kraft eucalyptus by about 3 per cent, solely because of a rise in the value of the dollar against most European currencies.

When the current cycle will bottom out is a matter of conjecture, although the low point was generally expected to come by the end of 1991. There is little reason to doubt that the cycle will continue, and there may be a slow recovery in the pulp market during 1992, with stronger demand, tighter supply and rising or at least stable prices, followed by a stronger market in 1993. This will be supported by the delay in or cancellation of several big expansion projects, which should help tighten supply.

There are many underlying longer-term trends in the market pulp industry, two of which are worth mentioning. First, there is likely to be a significant increase in the supply of recycled fibre. Legislation in North America and Europe is spurring a growing desire among consumers to collect waste for recycling. It is difficult to judge what effect this may have on the market pulp business. But a greater supply of paper-making fibre from another source, plus a desire to develop methods to use more of it, particularly in grades of paper that today contain no recycled fibre, would seem to have an inevitable effect on the market pulp business. The much higher quality of virgin

bleached fibre is a major advantage for market pulp. But it is possible, for example, that much more efficient collection of separated office waste would lead to a greater supply of white waste paper of high quality, the nearest equivalent of pulp. Another element may be the increasing demand for paper containing recycled fibre by companies and printers that can in turn claim to be environmentally friendly. Changes such as these could impinge on market pulp demand.

The second trend is much older. Producing market pulp is often seen as a preliminary step towards making higher value paper. While some companies continue to produce pulp, others aim at eventual integration of their pulp mill with paper production lines, a fairly common objective in developing countries. Emerging forest products industries move from selling logs or wood-chips to making pulp and paper. It is natural to want to add value to the raw material, and to want to end the unprofitable trade of exporting market pulp and importing paper. However, the making and, particularly, the marketing of paper is a much more complex and expensive business, and there have been occasions when integration plans have not worked out well.

Other developments include long-distance integration, where a pulp mill in one country will supply part of its output to a paper mill, often part of the same group, in another. The pulp and paper industry has been going through its biggest-ever period of acquisition and mergers. As a result, the size of companies has increased, and the number of small- and medium-sized independent companies has decreased. One result of this process is more market pulp tonnage being traded among newly merged companies.

New arrivals in rapidly increasing quantities on the market pulp scene are the so-called mechanical pulps, made, as the name suggests, primarily by grinding wood to separate the fibres, often with the help of heating and the use of some chemicals. Being high energy users, they are at an environmental disadvantage, but the use of fewer chemicals and the need for less bleaching make them attractive. They are also priced considerably lower than prime bleached softwood kraft. New mechanical market pulp mills, particularly in North America, will alter the shape of the market, but probably not radically. This is because of potential energy savings and the fact that chemical pulps still have considerable technical advantages. The current production capacity of mechanical market pulps is only about 8 to 10 per cent for the total of all market pulps. This could rise to about 10 per cent by the mid-1990s.

There continues to be a search for small-scale chemical pulp mills using "environmentally friendly" processes to complement existing paper mills, thus replacing at least a portion of bought-in market pulp. These efforts have so far not met with widespread success, but new techniques may prove more successful.

The rise of the eucalyptus tree over the last 10 to 15 years as a source of good bleached kraft hardwood pulp has been well charted. It reflects the arrival of Portugal, Spain and some countries of the south as substantial market pulp producers. In this connection, work on the genetic selection of eucalyptus to increase its quality and speed of growth, carried out in Brazil, notably by Aracruz, is being continued in other countries, such as Indonesia and Thailand.

Overall, the north enjoys no significant advantage in applying new technology to offset the lower cost of labour and raw materials in the south. The technology of making wood pulp is sufficiently well-known to render it improbable, but not impossible, that a major competitive advantage could suddenly be achieved as a result of a technical innovation.

Consumption of waste paper in Czechoslovakia rose from 465,000 tonnes in 1989 to 470,000 tonnes in 1990, while exports fell from 110,600 to 80,000 tonnes during the same period. Emerging trends suggest that supplies of recycled fibre are likely to expand internationally.[28/] Waste paper collection for recycling is being stimulated by legislation in North America and Europe, where landfill capacity is becoming exhausted, adding to the need to extract and recycle this major ingredient of waste. One immediate short-term effect is over supply, with more waste produced than paper-makers in North American and Europe can handle. A more serious consequence is

that the surplus could seriously undermine the profit incentive needed by waste-paper exporters to ship waste paper to Asia, particularly to the Republic of Korea, Taiwan Province, Japan and Thailand.

According to a recent study,[29/] Europe will experience a roundwood deficit of 40-60 million cubic metres by the year 2010. Regional deficits in other parts of the world are also likely to occur. The growing accent on environmental aspects will also have its impact on the world's wood raw material supplies. According to the above-mentioned study, at present 79 per cent of European forests lie above the critical level for sulphur. The loss of potential harvest, caused by air pollutants in Europe, is estimated at 85 million cubic metres per year up to 2000 and 2005. This estimate is based on individual countries' own estimates in Europe. The implications of wood-based fibre deficit for the pulp and paper industry may entail considerable changes in the structure of the industry, technology and fibre content of products.

E. CHEMICALS: GEARING UP FOR A FACELIFT

The resource base

Czechoslovakia's narrow raw material base for the production of chemical products inevitably makes the chemical industry heavily dependent on imports. In 1990 the value of crude oil imports for chemical processing amounted to Kcs 26.5 billion, followed by synthetic rubber (Kcs 1.6 billion), phosphoric acid (Kcs 1.1 billion), natural rubber (Kcs 0.78 billion), sulphur (Kcs 0.5 billion), phosphate (Kcs 0.5 billion), calcinated sodium carbonate (Kcs 0.35 billion) and isocrylate (Kcs 0.35 billion). Currently processed chemical products meet about 85 per cent of domestic demand. Czechoslovakia imported ammonia and phosphates mostly from the former Soviet Union. Sulphur is imported mainly from Poland. An increase in the domestic supply of sulphur depends on efforts to reduce sulphur dioxide emissions from the extraction process.

The share of imports in the intermediate demand for chemical products ranges from 55 per cent in sodium chlorate to 100 per cent in the processing of phosphates, isokyanates, and natural rubber and latex (see Table IV.16). The share of hard currency imports is significantly high across a number of chemical raw materials.

Table IV.16. Import shares in intermediate demand for selected chemical raw materials, 1990
(Percentage)

Product	Share of import	Share of hard currency import
Oil	99.2	-
Phosphates	100.0	51.8
Sulphur	88.2	-
Phosphoric acid	66.5	94.4
Boric acid	82.3	42.4
Calcinated sodium carbonate	58.0	1.0
Sodium chlorate	55.0	39.2
Synthetic methanol	95.8	-
Isokyanates	100.0	73.4
Ledons	57.9	88.0
Polyobs	78.4	57.7
Natural rubber and latex	100.0	94.1
Synthetic rubber and latex	55.5	29.3

Source: Federal Statistical Office.

Emerging trends

The past two decades have experienced a rapid growth in the chemical industry. Its share in gross industrial production rose from 13 per cent in 1970 to 14.2 per cent in 1990, and in manufacturing value added from 10.1 per cent to 11.6 per cent during the same period. The industry's contribution to the structure of industrial employment also rose from 6.1 per cent in 1970 to 7.1 per cent in 1990. By 1990 the fixed assets in terms of equipment per worker was 3.1 times higher in chemical production than the average for the industrial sector, and that of machinery and equipment was 3.5 times higher. It shows the relatively higher incidence of technical progress that has gone into the production process of chemical products.

While the average annual growth of industrial chemicals and petroleum products remained low during 1986-1990, that of petroleum experienced a negative growth rate of 1.6 per cent in the same period following stagnation in 1981-1985. In the second half of the 1980s other chemicals and rubber products continued to grow albeit at a slow pace. The production of plastics grew at 4.2 per cent in 1986-1990, compared with 2.8 per cent in 1981-1985.

The industry's sudden exposure to market forces has made its weakness more transparent. Selected indices of the performance of the chemical industry during January-August 1991 (January-August 1990 = 100) show a marked deceleration of the industry. The index of chemical output fell to 78.3, and that of employment and productivity stood at 91.6 and 85.5 respectively. With a slow pace of restructuring and rise in exports, mainly to the former Soviet Union, the industry's share of manufacturing value added is forecast to rise marginally from 11.6 per cent in 1990 to approximately 12 per cent in 1995. With fast reforms and rising exports, the industry share is forecast at 12.48 per cent of manufacturing value added in 1995.

Industrial chemicals are predominant in the structure of the chemical industry (see Table IV.17). The share of industrial chemicals in the output of the country's chemical industry rose from 48.6 per cent in 1970 to 52.6 per cent in 1980, and further to 54.4 per cent in 1990. Its share in value added also rose significantly over the years. However, its contribution to employment in the chemical industry fell. In contrast, the contribution of petroleum products to employment rose significantly from 3.3 per cent in 1980 to 11.2 per cent in 1990 as a result of new projects coming on stream. One of the striking features of Table IV.17 is a significant increase in the share of other chemical products in output and value added. A high degree of selectivity is likely to be introduced in the restructuring process, with a focus on a higher degree of processing. Oil refining seems likely to be intensified and the proportion used for petrochemical production stepped up. Due to structural changes and specialization, the energy-intensity of the industry is likely to be significantly reduced. Priority is being accorded to speciality chemicals, pharmaceuticals and new low-wastage technologies. Production of speciality chemicals is likely to concentrate on additives for polymers and lubricants, pesticides, organic dyestuffs, fine chemicals, materials for the electronics industry and pharmaceutical substances.

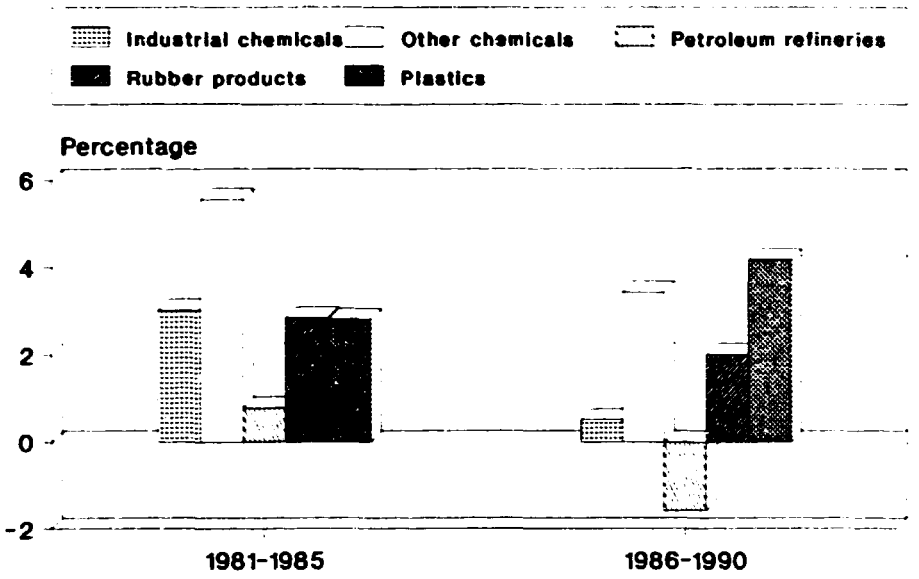
The export orientation (share of exports in production) of industrial and other chemicals rose significantly from 8.9 per cent to 16.0 per cent and from 15.7 per cent to 49.7 per cent, respectively during 1975-1988. The production of plastics also became significantly more export-oriented from 164.9 per cent in 1980 to 194.6 per cent because of re-exports. Petroleum refineries, petroleum products and rubber products experienced a significant decline in the share of exports in production.

Table IV.17. Structure of the chemical industry, 1970-1990, selected years
(Percentage)

Indicators	Years	Industrial chemicals	Other chemical products	Petroleum refineries	Petroleum products	Rubber products	Plastic products
		ISIC					
		351	352	353	354	355	356
Gross output	1970	48.68	7.09	28.03	8.18	8.02	..
(in constant 1980 prices)	1980	52.62	7.50	25.42	4.73	8.14	1.59
	1990	54.43	10.11	21.21	3.33	8.99	1.95
Value added	1970	50.72	7.31	23.80	8.99	9.17	..
(in constant 1980 prices)	1980	54.37	7.68	21.43	5.17	9.22	2.15
	1990	55.73	10.26	17.73	3.62	10.07	2.60
Employment	1970	53.13	16.88	12.50	2.50	15.00	..
	1980	51.93	13.26	12.71	3.31	14.36	4.42
	1990	45.41	13.78	11.73	11.22	13.78	4.08
Gross fixed capital formation	1970	57.47	8.00	23.16	1.05	10.32	..
(GPCF)	1980	59.92	7.16	16.97	6.75	7.98	1.23
	1989	55.88	8.42	16.98	7.09	8.42	3.21
GFCF machinery and equipment	1980	61.61	6.50	17.96	3.41	9.29	1.24
	1989	55.74	8.85	17.89	5.08	8.29	4.14

Source: *Industrial Statistical Yearbook*, volume I; *General Industrial Statistics*, United Nations, New York; Federal Statistical Office.

Fig. IV.J. Average annual growth rates of chemical products, 1981-1990
(Percentage)



As to the destinations of chemical exports, around 69.4 per cent was destined to hard currency markets in 1990. Over 70 per cent of exports to these markets comprises fuel, basic products of organic chemistry and basic materials for plastic production. Major chemical exports to non-convertible currency markets include products of basic chemistry (30 per cent), rubber and plastics products (20 per cent) and synthetic fibres. In addition, pesticides and pure chemicals are also exported by Czechoslovakia. The import-substitution bias of the industry is being replaced, and the promotion of more extensive cooperation with foreign firms is being earnestly pursued as a major part of the restructuring planned for the 1990s.

A number of chemical plants are included in the first wave of privatization. One of the most significant developments in 1991 has been the interest expressed by a number of western firms to enter into joint ventures and production agreements with Czechoslovak chemical factories. The State-owned Austrian oil company ÖMV, Phillips Petroleum, and Texaco have identified opportunities in Czechoslovakia.[30/] Slovnaft, located in Bratislava, Slovakia's largest producer of chemicals, is close to concluding an agreement with ÖMV of Austria and its polymers subsidiary, PCD, on a number of joint ventures. The joint initiative calls for pipelines to be laid under the Danube River for oil, oil products, and petrochemicals linking the two enterprises, as well as the construction of joint projects including a methyl tert-butyl ether plant and an alkylation unit at Schwechat, a suburb of Vienna. The Government of Slovakia intends to sell 49 per cent of the shares in this undertaking to local and foreign investors. Another major development concerning feedstock supply has been a decision to link the Kraluvpy and Litvinor petrochemical complexes in the Czech Republic with Ingolstadt in Germany, giving Czechoslovakia easy access to an alternative oil source.

Of the 80 chemical plants affiliated to the Czech Republic's Ministry of Industry, 36 are listed for the first wave of privatization.[31/] All are still State-owned, but three of them are reported to have proposed investment alliances with foreign partners. Production areas covered by the plants include oil processing (26 per cent in terms of sales), petrochemicals and basic plastics (13-14 per cent), speciality chemicals including pharmaceuticals (18-20 per cent), basic organic chemicals,

fertilizers and plastic processing, organic dyes, industrial materials and technical gases (each less than 10 per cent). The government's intention is to phase out the production of inefficient products and to make the chemical industry more export-oriented. The government also recognizes the need for a transformation in management and marketing skills. Around 80 per cent of the Czech chemical industries are engaged in negotiations with potential foreign partners, varying from joint ventures to cooperation agreements.

The United Chemical and Metallurgical Works (Spolchemie) based at Usti nad Labem in the north of the Czech Republic is currently undergoing a radical reorganization with the aid of a young management team. The company's intention in the first half of the 1990s is to maintain its main production fields and gradually venture into non-chemical production. In the second half of the 1990s it will endeavour to implement a more aggressive strategy of production and marketing and possibly expand to other locations. Because of the diversity of the company, its sales are expected to double from Kcs 3 billion in the 1990s to Kcs 6 billion by turn of this century.

H & G Process Contracting (London), a subsidiary of Humphrey & Glasso International, is reported to have signed a joint venture agreement with Chepos IDO, Prague, to provide engineering and procurement services for a carbon black plant for C.S. Cabot, Valašske Mezifici, Czechoslovakia.[32/] This agreement seems to be a prelude to a more formal joint venture once the Czechoslovak firm is privatized in 1992. Two of the existing lines of production at the Valašske Mezifici are likely to be closed down and the third modernized.

Three potential foreign partners are interested in entering into joint venture agreements with Chemical Works Sokolov (Sokolov), one of the country's most successful chemical companies which is currently doubling its acrylic acid capacity from its present level of 24,000 million tonnes per year. The process technology is supplied by Mitsubishi Corporation, Tokyo.

Dow Europe is believed to have bought a controlling stake in the Czechoslovak acrylates producer Chemiche Závody Sokolov (CHZS) in a deal worth about $100 million. Union Carbide is also believed to be interested in the company[33/] for the production of speciality chemicals and plastics targeted at the east European market. Dow Europe's agreement involves a doubling of CHZS's capacity in acrylic acid and esters. The Czechoslovak plant's current acid equivalent production is around 25,000 tonnes per year. The production process is based on technology supplied by Mitsubishi. The new venture is planned to be completed by 1994.

Spolana, a leading chemical firm in Czechoslovakia, has already established contacts with Chevron, whose technology is being used under licence for the construction at Neratovice of a 120,000 tonnes per year linear alpha olefins plant which was due to come on stream in early 1991.[34/]

The chemical industry of Czechoslovakia is thus experiencing a new era of progressive expansion of foreign participation. Privatization on a major scale is expected in the 1990s. Although a degree of selectivity is likely to be maintained in the process of privatization on account of environmental issues, the speed and direction of privatization augurs well for the healthy expansion of the chemical industry. Sales of the companies selected for privatization range from $50 million to $500 million. In the first phase of privatization the participation of smaller enterprises of strategic importance seems to be high.

Investment opportunities

Investment opportunities stem largely from changing priorities. Priority product areas include a higher degree of oil processing, and the production of light and specialty chemicals, polyamide textile rayon and polyethylene foils for packing materials. New product development is likely to encompass new organic dyestuffs and pigments, pesticides, second generation cytostatics in pharmaceuticals and diagnostic agents. Higher value added plastic products for import substitution and export, particularly polyolefin composites, PVC copolymers and engineering plastics seem likely to gain importance in investment priorities. Five promising product areas of the

Czechoslovak chemical industry include organic dyes, polymer additives, pesticides, pure chemicals and drugs and veterinary products.[35/]

If the reorganization of the chemical industry is pursued in line with the changing priorities for investment, the share of heavy chemicals in total output is likely to fall. The following selected branches of processing activities are of importance to investors.

Oil processing and petroleum refineries and products

Production of deep oil processing, light petrol isomerization and continual catalytic treatment of heavy petrol, innovation in production of oils through the application of new refining additives, introduction of low-sulphur ecologically friendly diesel oil of high quality, modernization and innovation of flavouring extracts for the production and processing of polyester fibres and plastics, and the optimization of asphalt production.

Light chemistry and specialty chemicals

Production of chemicals designed for electronics, development of single crystal production, new kinds of pesticides, bio-factors, selected organic dyes and pigments, progressive catalysts, rubber chemicals (antioxidants, antidegradants, vulcanization catalysts), new polymers and copolymers, composite plastics especially designed for the automobile industry, development of contact and construction glues and waterproof paints, and development of special light fibre production.

Chemical fibres and plastics

Production of textile silk, polyamide tows and cords of high strength, polyester technical fibre for non-textile applications, and polyethylene foils (packaging materials).

Investment proposals worth of $206 million were presented to the Investor's Forum held under the auspices of UNIDO in Prague in November 1991. Among the various forms of external assistance sought by these project ideas, technology management and subcontracting are eagerly sought by a number of entrepreneurs (see Table IV.18).

Constraints and prospects

The chemical industry in Czechoslovakia is poised for fundamental structural changes and a more rapid evolution with new technology and foreign participation likely to make deep in-roads into the production processes of priority product areas. As the industry works its way through for survival in a market economy, a number of challenges lie ahead in the 1990s.

Synthesia, one of Czechoslovakia's largest chemical companies, may be taken as a representative case, in order to illustrate the constraints and prospects facing the country's chemical industry.[36/] Synthesia is located in Pardubice, around 100 km east of Prague. Dyestuffs output accounts for over 23 per cent of Synthesia's total production, followed by organic products and intermediates derived mainly from aliphatic alcohols and aromatic hydrocarbons (18 per cent), plastic materials manufactured on the basis of products of formaldehyde chemistry (14 per cent), industrial and military explosives (13 per cent), agrochemicals (12 per cent), fertilizers (10 per cent), and pharmaceuticals and fine chemicals (4 per cent). The company's sales fell by 10-15 per cent in 1991 due largely to reduced exports to traditional markets. Exports to the former Soviet Union fell by about 5 million rubles in 1991. Even if the company is boosted by access to new markets, technology and business alliances, the company expects a total turnover of around Kcs 6 billion, compared with Kcs 4.8 billion in 1991. As an inevitable consequence of the current wave of industrial deceleration and the company's reorganization, employment is set to drop from 9,000 in 1989 to 7,000-7,500 in the first half of the 1990s. As a result of the adverse market conditions, i.e., the depressed agricultural situation in the domestic market, fertilizer production at Synthesia is running at 50 per cent of the plant's installed capacity. Pesticide production is also suffering similar constraints.

Table IV.18. Investment proposals in chemical and plastic products, November 1991

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/463/V/91-07	Activated bentonites (Brafin HE, S, RF, P)	15,000 tonnes/y	26.0	Equity capital, joint venture, technology, subcontracting, management
CZE/178/V/91-07	Production of palostan solid, liquid and powder	8,750 tonnes/y	23.3	Equity capital, joint venture, subcontracting, technology, management
CZE/386/V/91-07	Manufacture of lactic acid	2,500-3,500 tonnes/y	6.5	Equity capital, joint venture, market access, technology, marketing
CZE/332/V/91-07	Development of light stabilizers-Dastib 1052	250 tonnes/y	5.7	Equity capital, joint venture, subcontracting, technology, management
CZE/176/V/91-07	Sodium bisulfate and thiosulfate products	11,000 tonnes/y	5.3	Equity capital, joint venture, management, technical, license
CZE/361/V/91-07	Manufacture of pitch-based carbon fibre	150 tonnes/y	12.2	Equity capital, joint venture, marketing, supply of equipment
CZE/104/V/91-07	Production of biaxial plain and treated PETP films	2,300 tonnes/y	50.6	Equity capital, joint venture, market access
CZE/117/V/91-07	MPVC, glass-clear and dry-to-the-feel sheets	6,000 tonnes/y	5.5	Equity capital, joint venture, market access, credit, technical
CZE/116/V/91-07	Hoses, sheeting, bags from HDPE, 0.015-0.05	1,800 tonnes/y	2.7	Equity capital, joint venture, market access, credit, technical
CZE/465/V/91-07	Polypropylene staple as substitute for asbestos	3,000 tonnes/y	6.2	Equity capital, joint venture, market access, management, marketing
CZE/464/V/91-07	Composite polypropylene granules, boards and mouldings	2,500 tonnes/y	8.3	Loan, market access, marketing, management
CZE/436/V/91-07	Development of veterinary vaccines	Not stated	2.9	Equity capital, joint venture, market access, technical, equipment
CZE/439/V/91-07	Semi-synthetic penicillin preparations	Not stated	4.6	Equity capital, joint venture, subcontracting, management, technical
CZE/ 67/V/91-07	Transfer to non-CFC propellant base	30 million pieces/y	7.0	Loans, marketing, market access, subcontracting
CZE/236/V/91-07	Alcohol extraction from medicinal plants	260 cubic metres/y	0.5	Equity capital, joint venture, marketing, market access

(continued)

Table IV.18. (continued)

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/159/V/91-07	Chemicals for photo-finishing	1.5 million litres/y	0.4	Equity capital, joint venture, marketing, management, technical
CZE/415/V/91-07	Modernization of match production	225 million boxes/y	5.7	Loan, license, marketing
CZE/ 17/V/91-07	Production of new engine lubricants	42,000 tonnes/y	9.7	Loans, subcontracting credit, technology
CZE/213/V/91-07	Production of crumb rubber from waste	875 tonnes/y	0.3	Lease of machinery, market access
CZE/214/V/91-07	Modernize high-pressure hose production	700,000 metres/y	2.5	Lease of machinery, market access
CZE/197/V/91-07	Expand surgical gloves and condoms production	32 million pairs, pairs, 10 million pieces/y	4.2	Equity capital,j oint venture,market access, subcontracting
CZE/212/V/91-07	Armoured car brake hose	2.5 million metres/y	2.1	Lease of machinery, market access
CZE/68b/V/91-07	Non-CFC PE foamed profiles and PE insulation	Not determined	1.8	Equity capital, joint venture, equipment, loan, marketing
CZE/315/V/91-07	Production of PVC window profiles	50,000 units/y	3.3	Equity capital, joint venture, technology, subcontracting, license
CZE/118/V/91-07	Interior car roof linings and polyurethane blocks	200,000 pieces/y 400,000 pieces/y	5.9	Equity capital, joint venture, development, subcontracting, credit
CZE/215/V/91-07	Plastic medical products	Depend on demand	1.3	Lease of machinery, technology, market access
CZE/155/V/91-07	Broaden range of kitchen-ware products	$5 million/y	1.5	Equity capital, joint venture, management market access, design

Source: UNIDO, Investment Promotion Division, *Investment Forum for Czechoslovakia* (Prague, 4-6 November 1991).

Lack of finance is the principal cause of a very slow pace of modernization. Planned investment in waste water treatment facilities is lagging behind schedule and construction work on a new Kcs 60 million pigment intermediate unit has been suspended. The management is seeking to form joint ventures with several foreign companies as the only means of completing ongoing projects. Synthesia's high expectations are placed on dyestuffs and intermediate business, which account for around 75 per cent of the country's dyestuffs output.

Inadequate oil supplies from the former Soviet Union are also posing problems for chemical industries in Czechoslovakia. For example, Chemopetrol Litvinov, scheduled for privatization in the second stage, is utilizing only 60 per cent of its refining capacity due to lack of oil supplies. Its plastics unit is running at 100 per cent. The prevailing uncertainties in the former Soviet Union

are a cause of concern for Czechoslovakia's oil dependent chemical industries, particularly in view of the fact that the Commonwealth of Independent States is increasingly changing the direction of its exports in pursuit of hard currency earnings. Oil output in the former Soviet Union has fallen sharply in recent years because of deteriorating infrastructure, obsolete technology and incompetent management. According to some estimates,[37/] oil experts will soon fall by around 50 per cent, and the Commonwealth of Independent States may well become a net oil importer in the near future.

Although the chemical industry's capital and labour productivity is relatively high by Czechoslovak standards, it lags behind international technical standards. In the late 1980s labour productivity levels in the Czechoslovak chemical industry were only 76 per cent of those prevailing in Austria, 37 per cent of Belgian productivity and 41 per cent of labour productivity in the Swedish chemical industry. The industry in Czechoslovakia will need to make rapid technical progress, which will probably be possible only through joint ventures and other business alliances with foreign firms.

While the chemical industry in Czechoslovakia is gearing up for a facelift through participation with foreign firms, it is important to bear in mind global trends which are characterized by falling demand, soaring environmental costs and overcapacity.[38/] Throughout the world chemical manufacturers are unable to pass on their soaring production costs to customers because of the weak world demand for their products. Given the glut in world chemical production, many producers have diversified into speciality chemicals, producing small volumes of high value products for customers mainly in the textiles, plastics and electronics industries. Speciality chemical producers managed to survive with operating margins of 15 per cent even during the global recession. Diversification into pharmaceutical production has also proved highly productive. However, this promising product area faces very high research and development costs, partly caused by the growing complexity of new products. Chemical companies in developed countries are trying to meet the challenge of recession through rationalization while being faced with increasing environmental expenditure. The cost of complying with environmental legislation in the United Kingdom is estimated at between 20-25 per cent of all capital investment. Given the industry's problems it will hardly be surprising if leading players in the world chemical industry redeploy production units to other locations where foreign investment is eagerly sought. However, overdeployment of production units to eastern Europe will not be without cost as east European countries are also adopting increasingly stringent environmental norms. But east European countries are expected to benefit from the relatively improved environmental practices of their foreign partners.

Czechoslovakia's chemical industry is counting on the inflow of foreign capital and technology and pinning its hopes of survival on product diversification into promising areas. However, success in these endeavours depends crucially on identifying inexpensive sources of raw material supplies and increasing its marketing capabilities. The privatization of the chemical industry in Czechoslovakia is expected to continue to attract interest from major players in the world chemical industry.

F. NON-METALLIC MINERAL PRODUCTS: RESHAPING FOR A COMPETITIVE FUTURE

The resource base

Czechoslovakia's non-metallic mineral industries are based primarily on abundant supplies of a variety of domestic raw materials. With proven reserves of over 90 million tonnes, Czechoslovakia ranks as one of the world's leading producers of magnesite. The country is also endowed with abundant supplies of high quality kaolin for ceramics. Other major non-metallic minerals include cement, limestone, gypsum, barite, fluorspar, graphite, clays, bentonite, and decorative stones. Czechoslovakia accounts for 6 per cent of the world production of magnesite and 3 per cent of the world production of kaolin. A geographical overview[39/] of these reserves in Czechoslovakia is presented in Table IV.19.

Table IV.19. Non-metallic mineral reserves
(Thousand tonnes)

County	Barytes	Fluorspar	Magnesite	Graphite	Kaolin	Clays, ceramics etc.	Bentonite	Gypsum Anhydrite	Lime	Decorative stones and blocks (Thousand cubic metres)	Total reserves	Per-centage
Central Bohemia						171,296			990,127	34,364	1,210,574	9.8
Southern Bohemia				2,931	4,320	125,669			49,284	3,556	186,207	1.5
Western Bohemia					398,197	98,728	14,170		137,874	20,709	662,704	5.4
Northern Bohemia	1,211	7,409			147,941	157,475	131,639		289,062	20,630	919,066	7.4
Eastern Bohemia	1,058	1,015				157,155			316,606	33,255	726,379	5.9
Southern Moravia					42,873	24,637			689,459	19,806	819,918	6.6
Northern Moravia				617		5,150		376,688	924,896	43,935	1,440,501	11.6
Bohemia and Moravia	2,269	8,424		3,548	593,331	740,110	145,809	376,688	3,397,308	176,235	5,928,492	48.2
Western Slovakia						3,999			613,446	961	1,758,354	14.2
Central Slovakia			52,049		5,655	13,221	3,403	99,237	493,794	21,116	1,001,489	8.2
Eastern Slovakia	1,911		461,061			34,114	10,895	180,934	2,915,826	11,197	3,632,749	29.4
Slovakia Sabotal	1,911		513,110		5,655	51,334	14,298	280,171	4,023,066	33,274	6,392,592	51.8
Total Czechoslovakia	**4,180**	**8,424**	**513,110**	**3,548**	**598,986**	**791,444**	**160,107**	**656,859**	**7,420,374**	**209,509**	**12,375,084**	**100**
Production	3	25	2,521	53	3,301	2,008	235	848	22,958	250		
Portion of reserves annual output (Percentage)	0.1	0.3	0.5	0.6	0.6	0.3	0.1	0.2	0.3	0.1		

Source: J. Hruska, "Czechoslovakia's minerals: production, reserves and exploration", *Industrial Minerals* (October 1991).

Most of the magnesite deposits, located mainly in the carboniferous area of the Spišsko-Gemerské mountain in east Slovakia, are mined by underground methods. A significant portion of the annual output of around 2.45 million tonnes is consumed in the production of brick sinter and alkaline shaped building materials. Around 30 per cent of magnesite production is exported.

With proven kaolin reserves of about 120 million tonnes Czechoslovakia ranks as the third biggest exporter in Europe. The kaolin industry turns out quality raw materials for a wide range of products. High quality kaolin for ceramics is mined in the Karlovy Vary region which is endowed with estimated reserves of 60 million tonnes, turning out an annual output of 580,000 tonnes. The most extensive producer of kaolin is Kaznějov, north-east of Plzeň, accounting for 50 per cent of national output, followed by Horní Bříza representing 17 per cent of the country's output of kaolin.

The production of barite stems from mono-mineral barite deposits in west Bohemia, a barite-fluorspar deposit mined in Harvakor, a barite-siderite deposit mined in the Rudnary district of east Slovakia and from barite obtained as a by-product of sulphide at some flotation operations in Slovakia. Dolostone deposits are widespread in the Carpathian mountains of Slovakia. Czechoslovakia's graphite production accounted for about 9 per cent of the world's production of graphite in the mid-1980s.

Lime reserves are widespread and deposits of andalusite have recently been found. The asbestos deposits at Dobsiné in eastern Slovakia are rapidly depleting. New discoveries are too small to warrant commercial extraction. Substantial and suitable layers of sandstone have been discovered in north Moravia.

Extensive exploration of the country's non-metallic mineral resources has been undertaken during the last four decades. Many of the discoveries and proven reserves augur well for further exploration of kaolin, graphite, magnesite, clays, bentonite, limestones, decorative stones and gypsum in particular. Although the quality of some minerals is below the standards required for the manufacture of the new generation of advanced products, efforts are under way to reshape the industry for a competitive future.

The Geological Survey is endeavouring to encourage the exploitation of new raw materials such as kaolinite clays with high organic content for refractory applications, sillimanite, glauconite, rare earths and zircon. By November 1990 around Kcs 86 million was invested as part of a four-year plan under the joint auspices of UNESCO in order to examine non-traditional non-metallic minerals.

Emerging trends

The present slowdown in investment as well as in housing construction has led to a decrease in domestic demand for building materials. The volume of output and employment declined by 26.9 per cent and 22.5 per cent, respectively, in the first half of 1991 as compared with the same period of 1990. The industry's low productivity is due mainly to outdated machinery and equipment. Demonopolization, conversion of enterprises into smaller units and the establishment of numerous small private businesses (over 1,000 by 1 January 1991) characterize the current phase of restructuring.

Slovenské Magnezitové Závody (SMZ) located in Slovakia is the major producer of magnesite. With seven individual affiliated plants, SMZ produces 3 million tonnes of raw magnesite, 600,000 tonnes of dead burned magnesia and 300,000 tonnes of bricks annually.[40] Caustic calcined magnesia for agriculture and animal feed is also produced by SMZ. Total turnover of SMZ in 1990 was estimated at Kcs 2.3 billion. By the late 1980s over 50 per cent of SMZ's production was exported to over 30 countries; predominant destinations being the former Soviet Union and CMEA countries. For logistic and strategic reasons SMZ appears likely to retain these export destinations.

Fig. IV.K. Production of cement and lime, 1985-1990
(Million tonnes)

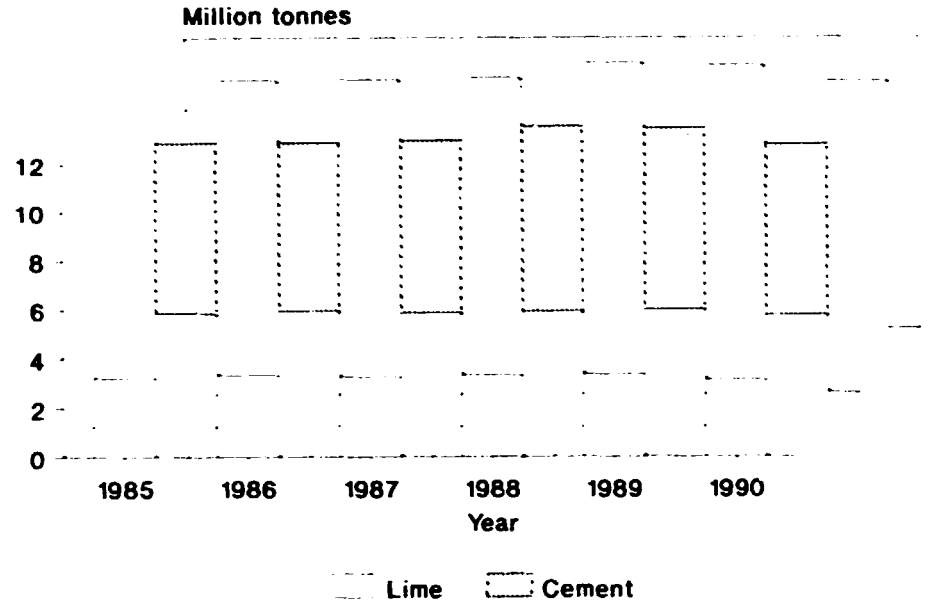
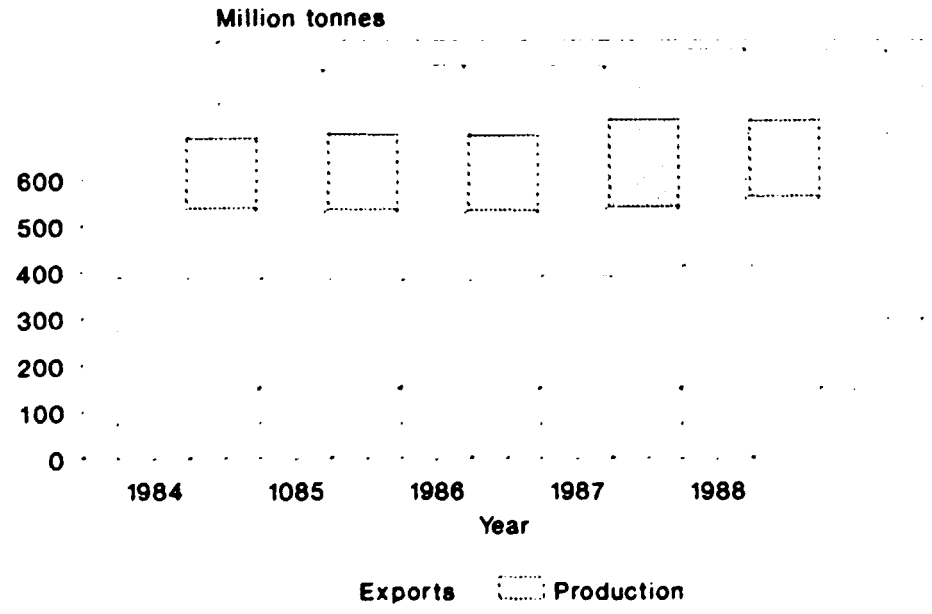


Fig. IV.L. Production and exports of kaolin, 1984-1988
(Thousand tonnes)



With a view to surviving in a market economy, and being more competitive, SMZ is attempting to upgrade its technology, which is lagging behind its counterparts in developed countries. It is also developing new products. One of the new SMZ projects involves the chemical treatment of magnesite grading for manufacturing bricks. Yet another project involves the production by a flotation process of the highest quality magnesite for brick manufacture. Thesenew projects are expected to turn out 26,000 tonnes and 15,000 tonnes per day of the above products respectively.

The ceramics industry, including cement and glass, employs around 130,000 persons, representing 6.8 per cent of the total labour force. The industry accounted for 4.7 per cent of industrial production.[41/] With the extraction of about 13,000 tonnes of raw materials the industry occupies a significant place in the economy. The annual value of whiteware (tableware and sanitary ware) is estimated at $300 million. With 172,000 tonnes of stoneware turned out annually, structural ceramics are also equally important. The annual output of refractories is estimated at 1.2 million tonnes. Electro-technical porcelain and electronics ceramics are also manufactured in Czechoslovakia.

The country's ceramics industry is being reorganized, with special emphasis being placed on the establishment of medium- and small-sized enterprises. There is an increasing accent on modern technology and energy-efficient means of production. The energy intensity of 1 tonne of glass in Czechoslovakia is estimated at 7 GJ, compared with 4.45 GJ in the EC.

Whiteware

Emerging trends in selected industrial sites and laboratories of the country's non-metallic mineral industry are well documented in a recent survey.[42/] The Karlovarsky Porcelain Factory, located in Karlovy Vary, is highly automated, producing 3,600 tonnes of hotel china per annum. The plant uses very high quality kaolin. The company employs 80 persons. Using its own research facilities the plant carries out research on raw materials and develops production equipment. Another plant founded in 1803 in Vystava produced high quality china. It is equipped with a modern kiln room suitable for the production of high-quality products. At present demand exceeds supply, and it is expected that supply response will cope with demand when additional production facilities are created in 1992.

Glass

Moser Glass, founded in 1856, is located in Karlovy Vary. It is engaged in the production of glass. In 1991 it employed 400 employees who manufacture hand-made products. Around 60 per cent of the production is exported. The plant is equipped with three gas-fixed pit furnaces. The plant's technology, attuned to classical glass blowing, is likely to be changed. The plant is known for significant engraving work. Some patterns made by artisans fetch more than $50,000.

One of the largest manufacturers of glass products in Czechoslovakia is Crystallex, employing 7,000 persons in 11 plants throughout Bohemia and Moravia. Seventy per cent of output turned out by this company, whose origin dates back to 1440, is exported to 90 countries. Today it stands as an integrated plant using electric furnaces to melt a number of glass compositions. The company supplies hand-blown products and machine-formed products. The plant's facility at Novy Bor generates a great deal of hand decorating, including glass frits. A three-year apprenticeship programme in high quality glassware is offered by the plant for artisans. The plant is also equipped with research facilities, in order to improve electric melting, surface treatment of glass, diamond grinding and acid polishing. Research facilities for improving designs and fabricated products and machinery have facilitated the creation of its own equipment.

Cement

Cement production in Czechoslovakia dates back to 1860. At present cement is manufactured at 15 sites and the country's annual output of cement, including asbestos cement, is estimated at 10 million tonnes. In view of fast depleting raw material reserves the production of asbestos-

containing products will cease by 1995. The high energy intensity of cement production is posing a major problem. With the exposure of the energy sector to market forces since 1989, a changeover from gas or oil to coal is envisaged. However, such a changeover is constrained by a 25 per cent ash content of Czechoslovak coal. In order to achieve energy efficiency, the industry has to keep other options open, and there may be a need to adjust the raw material mix.

The Cementárny a Vápenky plant, established in 1950, was completely modernized in 1980. In 1991 the plant employed 1,500 employees. The relatively large number of employees in the plant is due to the in-built infrastructural facilities supplying a wide range of inputs and equipment. The plant has an installed capacity of 1.2 million tonnes per annum for Portland, slag-Portland and special cement. In the wake of the economic slowdown in general and a downturn in construction activities in particular, the plant was operating at less than its optimal capacity. Idle capacity in 1991 was estimated at 0.2 million tonnes. The computer-operated control centre and television cameras mounted throughout the complex monitor the production process from grinding of the raw material to the manufacture of the final product.

With the assistance of "Holderbank" Management and Consulting Ltd, Prachovice Cement Works is planning the modernization and extension of its cement packing and dispatch facilities.[43/] Efforts are also under way to construct a cement terminal at Prague. Rohoznik Cement and Lime seems to have prepared a study for productivity enhancement, and energy efficiency. Thus the reconstruction of the country's cement industry is placing emphasis on modern technology and energy-efficient means of production.

Structural clay products

The accent on modernization is apparent in the production of structural clay products. The brick plant at Hodonín, employing 126 workers, was designed with Italian and French assistance. The plant produces ceiling panels. Its annual output is estimated at 40,000 tiles per day. In its highly automated plant, the raw material is automatically loaded into a 106-metre tunnel kiln and then unloaded onto pallets. Proven clay reserves on site are projected to last for more than half a century.

A white brick plant, established in 1973 at Bzenec, employs 100 persons and turns out 200,000 white lime-silica bricks per day. The production process involves mixing silica sand and reactive lime in an automatic system and is pressed under steam atmosphere. Having undergone the various stages of the production process, the bricks are automatically removed and packaged in shrink-wrap. These weather and moisture resistant bricks are used in chimney linings and chimney foundations, walls and fences.

Investment opportunities

Notwithstanding the temporary downturn exacerbated by strict monetary policies, immense needs and prospects exist for the industry in the reconstruction and modernization of housing and towns in Czechoslovakia. Most building material industries are endeavouring to compensate for the temporary decline in demand by substantially increasing exports with certain branches doubling their sales in foreign markets. The State's support for major infrastructural projects (highways, railways, airports, etc) with foreign participation augurs well for the rapid expansion of this resource-based industry.

Priority product areas are those with a high export potential (e.g., tiles and building ceramics). The modernization of the industry required to increase productivity and efficiency offers broad opportunities for investment. Negotiations have been under way for foreign participation in a number of Czechoslovak cement and lime works, fire-clay and lime factories, e.g., Cement and Lime Works Hranice, Stone Works Liberec, Fire-clay Works Velké Opatovice, and West Bohemia Building Ceramics Factory Horní Bříza. Modern management methods and marketing techniques are sought by large and small enterprises in order to set new records in production and exports (see Table IV.20).

Table IV.20. Investment proposals in non-metallic mineral products, November 1991

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/401/V/91-07	Hydrolytic glass, ampoules, vehicle glass	Depends on product	26.8	Equity capital, joint venture, market access, licence, management
CZE/375/V/91-07	Improve productivity in glass-bottle manufacturing	53,500 tonnes/y	12.1	Barter, loan, market access, technology
CZE/189/V/91-07	Expand and upgrade range range of bricks manufactured	10 million pieces (+20%)/y	4.3	Equity capital, joint venture, marketing, loan, management
CZE/352/V/91-07	Develop range of hollow and facade bricks	30,000 tonnes/y	5.0	Equity capital, joint venture, management, technical, marketing
CZE/160/V/91-07	Modernize clay brick and tile production plants	33 million pieces/y	17.0	Equity capital, joint venture, management marketing
CZE/431/V/91-07	Prefabricated building parts, ferroconcrete panels	30,000 cubic metres/y	7.0	Equity capital, joint venture, market access, technology, marketing
CZE/354/V/91-07	Prefabricated frames and construction systems	10,000 cubic metres/y	2.5	Equity capital, joint venture, technology credit, marketing
CZE/351/V/91-07	Non-asbestos tiles, panels and concrete tiles	3 million square metres/y	0.7	Equity capital, joint venture, market access, marketing, loan
CZE/229/V/91-07	Manufacture of prefabricated building elements	6,000 cubic metres/y	0.5	Equity capital, joint venture, market access loan, management
CZE/222/V/91-07	Production of mineral fibre and insulating board	24,000 tonnes/y	30.1	Equity capital, joint venture, market access marketing, development
CZE/168/V/91-07	Glass fibre felt and board for insulation	9,000 tonnes/y	9.0	Equity capital, joint venture, license, loan, subcontracting
CZE/167/V/91-07	Production of flexible graphite and Na2SO4	100 tonnes grapnite/y	2.0	Equity capital, joint venture, market access, management,marketing
CZE/479/V/91-07	Pre-stressed reinforced concrete pipes	Not stated	0.9	Credit, market access, technology, management
CZE/219/V/91-07	Mineral wool insulation slabs, mats and felts	30,000 tonnes/y	20.1	Equity capital, joint venture, market access, management, technology
CZE/181/V/91-07	Ash concrete foundation block manufacturing	100,000 cubic metres/y	0.5	Equity capital, joint venture, license, management, marketing
CZE/355/V/91-07	Terrazzo floor and wall elements	495,000 square metres/y	2.7	Equity capital, joint venture, market access, technology, equipment

(continued)

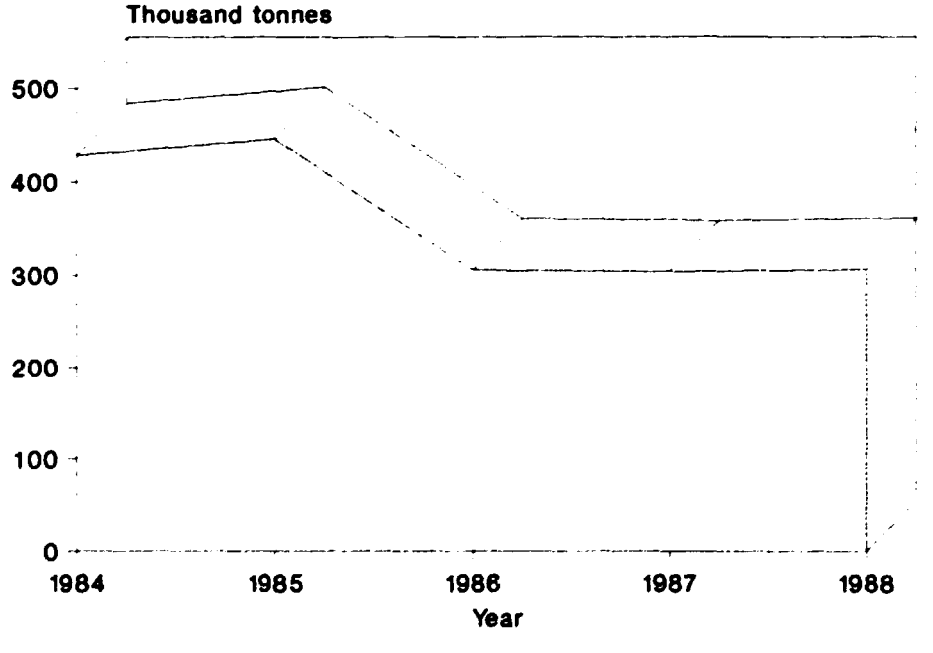
(continued)

Table IV.20. (continued)

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/209/V/91-07	Introduce upgraded insulation-tiroplast	$4.3 million square metres/y	0.2	Equity capital, joint venture, market access marketing, development
CZE/319/V/91-07	Manufacture coloured concrete roofing tiles	27 pieces per minute	1.8	Equity capital, joint venture, market access, marketing, equipment

Source: UNIDO, Investment Promotion Division, *Investment Forum for Czechoslovakia* (Prague, 4-6 November 1991).

Fig. IV.M. Exports of magnesite, 1984-1988
(Thousand tonnes)



In 1991 Czechoslovakia's cement industry emerged as a target segment for a number of European companies willing to enter into joint venture and equity participation agreements.[44/] In June 1991 Holderbank and Heidelberger Zement concluded agreements for purchasing shares in cement companies. Holderbank planned to buy 30 per cent of shares in the Ceva Prachovice Cement Works in northern Bohemia. Its aim is to increase its share to about 50 per cent by 1994. Ceva Prachovice's installed capacity is capable of turning out 1.2 million tonnes of cement and 100,000 tonnes of lime per annum. Heidelberger seems to have agreed to purchase a 40 per cent share in Czechoslovakia's two largest cement companies. Ceva Králuv Druz, based in Beroun is also planning to sell 49 per cent of its wholly-owned subsidiary Velkolom Čertovy Schody to Belgian lime producer Lhoist, giving Lhoist access to the largest limestone reserves in eastern Europe. Belgium's largest cement company S.A. Cimenteries is also aspiring to buy equity stakes in Czechoslovak cement companies. S.A. Cimenteries appears to have agreed to the acquisition of an initial 33 per cent stake in Mokrá Cement Work located in southern Moravia with subsequent increases to 51 per cent by 1994. The aim is to raise S.A. Cimenteries's equity participation to 71 per cent over the period 1995-1997. Mokrá has an installed capacity to produce 2 million tonnes of cement per year and a lime capacity of 350,000 tonnes annually. There are indications that future development of Mokrá and Cimenteries joint initiatives will be conducted in close cooperation with Lhoist and an Austrian cement company.

Constraints and prospects

The current economic malaise has not left this important resource-based industry unscathed. In the wake of falling demand and recession of the construction sector idle capacity persists across plants engaged in the production of building materials. Notwithstanding the sombre climate surrounding the country's non-metallic mineral industries, the process of demonopolization and transfer of State enterprises to joint-stock companies is being actively pursued. Since 1990 big enterprises in glass, ceramics and porcelain production have been disintegrating and private ventures have come on stream. Although the outlook is pessimistic for the short term, the new wave of privatization and reorganization of the industry is set to achieve efficiency. The current phase of reorganization can yield results only when different segments of the country's non-metallic mineral producers adopt new production processes and products.

Emerging trends in the Japanese ceramic patents, as reported by the Japan Fine Ceramics Centres (JFCC),[45/] gives some idea of directions in advanced ceramics research and technology. One of the most significant trends has been a rapid increase in the category of electromagnetic applications. The close cooperation between the industry and research in universities has enabled Japan to make significant strides in the production of advanced ceramics and fine ceramics. Japan has successfully commercialized these products at a faster rate than anywhere else in the world. The Pacific Rim is also slowly emerging as a force in advanced ceramics, posing a competitive threat to Europe and the United States. These developments will have implications for traditional ceramics producing countries. It is important for Czechoslovakia to keep abreast of major innovations in ceramic sectors and the possible future areas of improvement.

Within the paper industry demand for kaolin is increasingly being generated by graphics, printing and writing sector. Kaolin's principal function is to act as a substitute for pulp. Kaolin as a coating agent improves the paper's receptivity to ink and makes the paper smooth.[46/]

Glass fibre production in Europe rose from 340,000 tonnes in 1987 to 415,000 tonnes in 1989. The use of non-metallic minerals in fibre glass production is increasing. According to the European Glass Fibre Producers Association, the total glass fibre market in Europe in 1990[47/] was around 410,000 tonnes.

The demand for cement currently remains depressed. The industry's importance as an exporter is at present limited as a large part of the industry's capital stock is outdated and not competitive in the free market. Cement plants also face pollution problems. The establishment of modern production capacity with long-gestation projects needs substantial capital. Eastern Europe as a

whole is expected to experience a slow growth in cement production from 63 million tonnes in 1991 to 68 million tonnes in 1995.[48/] A few countries in eastern Europe may face increasing difficulties in exporting cement as their economies become more market oriented. However, it is expected that with the opening of the canal systems between eastern and western Europe an increase in cement transport by large and small coasters with associated mini-terminals is likely to occur.

A number of unique production processes are being developed world-wide for a variety of non-metallic mineral products. These are the outcome of intensive R and D activities. Czechoslovakia being one of the traditional non-metallic mineral producers, attention will need to be focused on making use of research findings as a major element in preparing the industry for a competitive future.

G. METALLURGY: MAJOR OVERHAUL FOR EFFICIENCY GAINS

The resource base

Czechoslovakia has a limited resource base for ferrous and non-ferrous metal industries. Domestic iron ore supplies account for only 5 per cent of the total metal charge in blast furnaces. Around 90 per cent of iron ore has traditionally been imported from the former Soviet Union, and the reminder mostly from developing countries. Local scrap is widely used. Though it is of low quality, Czechoslovakia does not import scrap for iron and steel production. The share of domestic scrap in the total metal charge was about 43 per cent in 1990 (see Table IV.21). The supply of domestic iron ore in 1990 was less than its level in 1980. Most domestic ores were inefficiently sourced from mines at Rudňany Slovinky, Nižna Slaná and Roznava.

Table IV.21. Domestic supplies and imports of ferrous raw materials, 1980-1990, selected years
(Thousand tonnes)

	1980	1985	1988	1989	1990
Domestic raw materials					
Iron ore	1,927	1,859	1,773	1,780	1,831
Ferrous scrap	7,400	7,450	..	..	7,230
Percentage of scrap in the total charge	43.0	43.8	..	..	42.8
Imported raw materials					
Iron ore	12,819	11,268	10,058	9,765	10,123
Manganese ore	525	457	484	871	951
Chrome ore	182	174	171	171	170
Pig iron	809	869	675	671	668

Sources: Federal Statistical Office; Federal Ministry of Foreign Trade; and Federal Ministry of Economy.

Non-ferrous ores mined in Czechoslovakia include copper, tin, tungsten, barite, lead and zinc. Data pertaining to the supplies of ferrous ores in 1990 are presented in Table IV.22. The quality and mining capacity fell short of world standards of processing concentrates. Copper is mined at the Zlaté Hory deposit. Tin-tungsten ores are mined at Horní Slavkov and Cínovec in Bohemia, while zinc ore is mined at Kutná Hora and Staré Žansko. An open pit mine at Čelina Mokrsko was scheduled to reopen in 1990, with reserves of 100-150 tonnes of gold.

Table IV.22. Supplies of non-ferrous ores, 1990
(Tonnes)

Type of ore	Total CSFR	Czech Republic	Slovak Republic
Lead ore	3,000	1,200	1,800
Zinc ore	9,100	6,800	2,300
Copper ore	3,600	600	3,000
Tin ore	360	360	-

Source: Federal Statistical Office.

The mining of ferrous and non-ferrous ores was subsidized at an annual cost of Kcs 1 billion until 1989. Since 1990 this heavy subsidy has been significantly reduced and by 1994 no more mines will be State-owned. This implies phasing out inefficient mining activities which fail to justify their existence in a market economy. There are indications that metallurgy mining activities may be phased out fully and that all mining activities will be stopped by the year 1995 in the Czech Republic, but that the mining process may last for another 10 years in the Slovak Republic. In both Republics the utilization of non-ferrous metal scrap is likely to be intensified.

Emerging trends

Despite a narrow domestic raw material base, metallurgy occupies a significant position in Czechoslovakia. In the 1980s, it accounted for 8 to 10 per cent of total industrial production, 7 to 8 per cent of employment and around 8 per cent of energy consumption. Within metallurgy output the iron and steel industry predominates, accounting for three-quarters of total metallurgy output. In the mid-1980s the ratio of gross fixed capital formation was in the order of 88:12 in ferrous and non-ferrous metals respectively, and the ratio changed in favour of non-ferrous metals to 77:23 in the late 1980s.

Czechoslovakia's metallurgy industry is no exception to the general wave of industrial deceleration. The exposure of this hitherto highly subsidized industry to market forces has made it clear that many antiquated mills cannot survive in their present form and that the industry is in need of far-reaching modernization. Maintaining steel output at 16 million tonnes appeared to be impossible even as early as the second half of the 1980s. Production of steel fell significantly in 1990 and the declining trend continued through 1991. The decline of the non-ferrous metal segment was more pronounced in the first half of 1991 with a 30 per cent drop in output, a 19 per cent decline in employment and a 16 per cent fall in labour productivity. Such a drastic decline of the metallurgy industry is interpreted as a reflection of structural changes in the economy in general and industry in particular. Environmental norms and market principles require investment in modernization, reconstruction and new mining technologies. Primary production of several non-ferrous metals based on concentrates is being reduced significantly for environmental reasons. What is now being supported is production based on scrap utilization. However, the country's ore base has been critically re-evaluated and a part of the State's subsidies are being selectively reassigned to support entrepreneurs involved in the development of raw materials.

Crude steel production fell from 15.4 million tonnes in 1989 to 14.8 million tonnes in 1990, representing a 3.9 per cent fall in the physical volume of output. A further fall to 12.3 million tonnes was estimated for the year 1991 (see Table IV.23). The production estimates of rolled steel and steel tube for 1991 reveal falling levels of output. Only around 10 per cent of steel output is continuously cast and a significant proportion of its liquid steel is produced in open hearth furnaces, causing environmental pollution. The relatively very high *per capita* steel consumption of around 700 kg reflects the high material intensity of the inefficient steel production process.

Table IV.23. Production of iron and steel, 1989-1991
(Thousand tonnes)

Product	1989	1990	1991[a/]
Pig iron	9,911	9,667	8,475
Crude steel	15,465	14,877	12,277
Rolled steel	11,397	10,983	9,314
Steel tubes	1,579	1,567	1,200

Source: Federal Statistical Office.

a/ Estimate.

There has been a 30.4 per cent decline in the production of non-ferrous metals between January and October 1991. Production of copper and lead fell significantly in 1990, while that of aluminium recorded a sharp increase from 62,576 tonnes in 1989 to 69,076 tonnes in 1990. The production of nickel and cobalt stagnated at low levels of production (see Table IV.24). It is expected that production of these two non-ferrous metals will cease in 1992.

Table IV.24. Production of non-ferrous metals, 1980-1990, selected years
(Tonnes)

Product	1980	1985	1989	1990
Aluminium	68,304	61,725	62,576	69,076
Crude copper	30,966	33,476	36,832	33,000
Lead	20.014	21,441	26,008	23,668
Nickel	..	..	2,600	2,600
Cobalt	..	..	55	55

Source: Federal Statistical Office.

Falling levels of output in major segments of Czechoslovakia's metallurgical industry reflect the on-going industrial restructuring, with curbs on heavy engineering, falling levels of investment and construction activities and significant changes in foreign trade. Despite a limited resource base, the Czechoslovak iron and steel industry has been a net exporter, while the non-ferrous segment of metallurgy has been a net importer. Exports of rolled steel were the means to pay for imports in the country's counter-trade with the former Soviet Union. During the first seven months of 1991 the share of ferrous metals in industrial exports to convertible currency areas stood at 17.4 per cent while that destined for non-convertible currency countries stood at only 3.6 per cent. The share of iron and steel exports in manufacturing production fell from around 24 per cent in 1980 to about 17 per cent in 1991. The decline became more pronounced with the collapse of counter-trade with the former Soviet Union. Czechoslovakia is exporting up to 30 per cent of steel production, mainly flat products.

The five major steel plants are Poldi at Kladno, Nová Hut Ostrava-Kunčice, East Slovakian Steelworks at Košice, Třinec (TZ) and Vitkovice Steel. The metallurgy firms are totally out of tune with the product, quality, cost and service demands of market forces. Excess capacity in plants is eclipsed by very low levels of both capital and labour productivity. The process of restructuring the country's metallurgy industry is aimed at a significant reduction in steel

production and consumption and in increasing energy efficiency and promoting environmentally friendly production techniques. A reduction in the *per capita* consumption of steel to around 350-400 kg annually implies an annual output target of 6-7 million tonnes of steel, compared with the current production level of over 10 million tonnes. In the process of "creative destruction" the abandonment of certain non-ferrous metals is also envisaged for ecological reasons. However, fresh investments in the modernization of plants are encouraged.

Investment opportunities

Investment opportunities are likely to emerge from the de-monopolization of recycling of ferrous and non-ferrous scrap. Higher utilization of metal scrap in ferrous and non-ferrous manufacturing activities will require new melting capacities, modern methods of collection, sorting and reprocessing. These changes call for considerable investment. Foreign participation will be sought in expanding continual steel casting, production based on higher use of scrap, modernization of electric steel production and in concentration and overhaul of steel production in oxygen converters.

The programme to reduce the *per capita* consumption of steel favours investments that could significantly reduce the steel intensity of the engineering, electrical and construction industries. While the government plans to abandon the production of certain non-ferrous metals for ecological reasons, it welcomes investments in the modernization of plants producing copper, lead and other selected non-ferrous metals. The only aluminium smelter in the country looks likely to modernize its operations in cooperation with Hydro Aluminium of Norway. The attempts of Czechoslovakia's metallurgy industry to survive and compete on a free market basis will succeed only if they attract capital, know-how, and technical and managerial expertise from foreign partners.

Fifteen investment opportunities in basic metal production were presented to the Investment Forum for Czechoslovakia in November 1991 (see Table IV.25). Fourteen project proposals seek equity participation from external sources. Other forms of external cooperation sought by investment proposals include technology, market access, loans and management. A glance at these investment proposals reveals a tendency of emerging entrepreneurs to venture into modern production processes in order to turn out high quality products. For example, the biggest project requiring an investment of $100 million envisages continuous casting of steel billets weighing 1 million tonnes per annum. This project seeks equity participation, joint venture, training and technology from external sources.

Constraints and prospects

A major reconstruction of the metallurgical industry is under way in Czechoslovakia. The primary objective is to reduce the consumption of raw materials and energy and to achieve greater efficiency in all aspects of metal making. This undoubtedly calls for a gradual decline particularly in the production of steel and the modernization of production facilities.

A radical modernization of the country's obsolete steel industry poses several problems.[49/] The work force is likely to be reduced by 35,000-45,000 or more. A major overhaul of the industry for efficiency gains necessarily depends on the availability of substantial amounts of hard currency. Steel has been a significant export earner. Significant losses on the export front in the wake of sharp production cuts would imply significant restructuring of the economy in order to compensate for the loss. A reduction in domestic demand for steel entails significant restructuring of the industrial sector, with a view to reducing the material intensity of products.

Fig. IV.N. Exports of selected metallurgical products, 1989 and 1990
(Thousand tonnes)

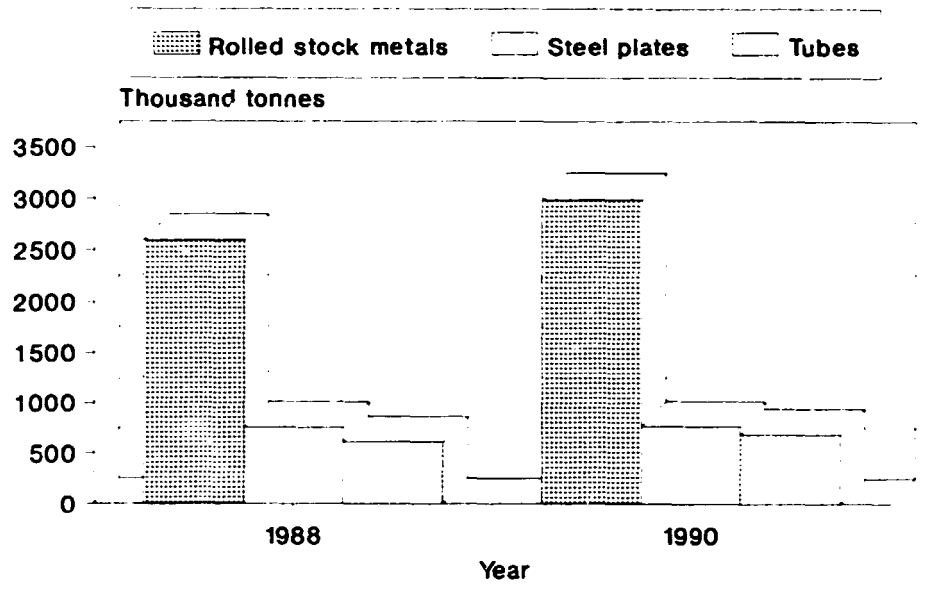
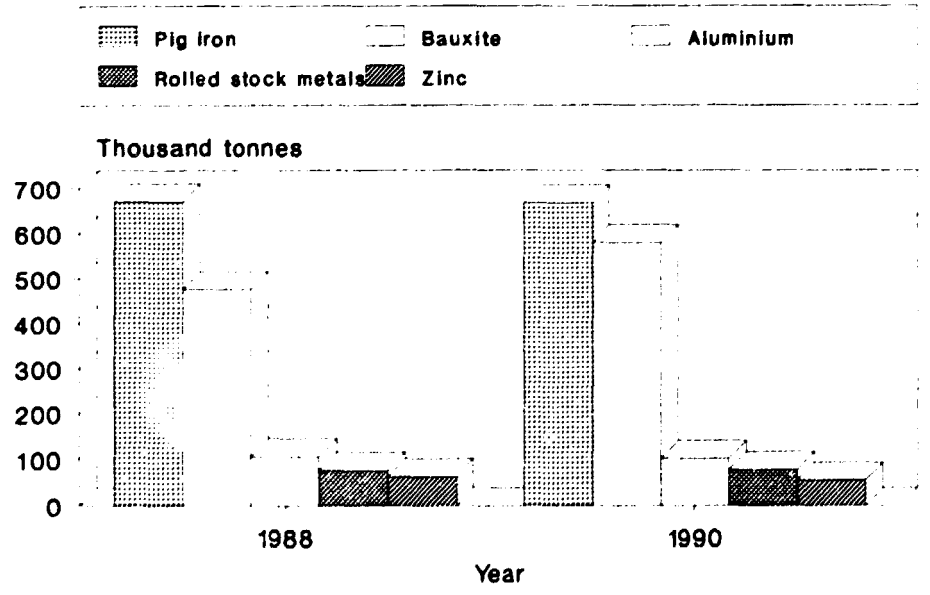


Fig. IV.O. Imports of selected metallurgical products, 1989 and 1990
(Thousand tonnes)



The main dilemma of the industry is its dependence on the former Soviet Union for iron ore and natural gas which are now available only in exchange for hard currency. The high sulphur content of the ore imported from the former Soviet Union imposes a significant technical constraint on processing activities. Although Czechoslovakia is self-sufficient in metallurgical grade coal, the quality is low, causing environmental problems. There is a formidable clean-up backlog.

A change in management practices in order to lead an enterprise in a competitive environment will need to be accompanied by a careful selection of technology. Continuous casting accounts for only a small percenta of semi-finished steel output, reflecting the general absence of technological sophistication. Modern oxygen and electric steelmaking practices could deliver high quality flat-rolled steel. But the capital needed for such a modernization exercise is huge.

The rationalization initiative of Czechoslovakia's leading steel producer Poldi epitomizes the strengths and weakness of the country's iron and steel industry; and illustrates the process of rejuvenation it is currently undergoing.[50/] The company, originally affiliated to the Ministry of Industry, is being transformed into a State joint venture through the "voucher" scheme. Poldi enjoys a virtual monopoly in the domestic market for special steel products: speed steels (100 per cent), alloyed structural steels (90 per cent), tool steels (85 per cent) and high grade carbon steels (70 per cent). Although much of the machinery is obsolete, the company's electric steelworks is fairly modern. Its survival in a market economy depends crucially on the participation of foreign partners. The modernization programme for Poldi One during 1991-1993 includes the installation of a new rolling mill and ladle furnace, as well as the revamping of rolling mill number 6 and the modernization of finishing lines, the peeling shop and billet grinding facilities. For Poldi Two the rationalization programme includes the installation of a new western-built 100 tonne electric arc furnace to replace the two existing Soviet designed units, the revamping of the continuous casting machinery, and the modernization of the heavy sections mills and an increase in finishing capacity. Steel production is expected to fall to around 730,000 tonnes in 1995, from 962,000 tonnes in 1990. By November 1991, the modernization process at Poldi led to substantial job losses. Rationalization scheduled for the end of 1991 included the shedding of the two batteries of open hearth furnaces in Poldi Two because of high costs and environmental hazards. The furnaces' output has already fallen from 150,000 tonnes in 1990 to 40,000 tonnes in 1991. The immediate problem is the virtual collapse of the traditional east European markets. Sales to eastern Europe fell from 120,000 tonnes in 1989 to 2,000 tonnes in 1991. In order to compensate for the disappearance of the traditional markets, an increase in exports to western Europe is envisaged. According to rough estimates, sales to western Europe, especially Germany and Italy, rose from 90,000 tonnes in 1989 to 200,000 tonnes in 1991. Renewed demand in eastern Europe seems to be far from realization. Currently eastern Europe is flooded with cheap long products. Perhaps there may also be a glut of flat products in the near future if mini-mills come on stream.

Czechoslovakia's comparative advantage in steel production lies mainly in the lower cost of utilities and low prices of domestic scrap. Despite a 100 per cent increase in the price of electricity, it is about one-third of the price in the EC. For Poldi scrap costs only 25 per cent of what a steel producer pays in developed countries. A 30-40 per cent increase in the imported raw materials, mainly iron ore and alloys, is largely due to the purchase of raw materials at world prices. The former system was such that the State bought materials at world prices and then sold them to local producers at domestic prices.

The non-ferrous component of metallurgy is struggling to gain a foothold in the new market environment. The domestic demand for non-ferrous metals has plummeted 80 per cent in 1991. The problems of a non-ferrous metal producer Kovohute Rokycany typify the plight of the industry in Czechoslovakia.[51/] In 1990 the company turned out 182 tonnes of nickel strip, 594 tonnes of nickel anode, 12 tones of nickel tube, 2,615 tonnes of bronze strip, and 935 tonnes of bronze tube. The main end-users are electronics (20 per cent), engineering (35 per cent), and micro-electronics (25 per cent). Tesla, which enjoyed the monopoly of producing television sets and radios in the home market, absorbed around 25 per cent of Rokycany's production. Tesla's domestic sales fell by 57 per cent and its exports fell by over 50 per cent. As Rokycany's exports to traditional markets fell, the company tried to penetrate new markets, such as Portugal, France, Germany and

Table IV.25. Investment proposals in basic metal industries, November 1991

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/108/V/91-07	Introduction of lost wax technique for casting	6,000 tonnes/y	3.5	Equity capital, joint venture, market access, marketing, management
CZE/ 90/V/91-07	Develop private venture in heat treatment of metals	1.3 million tonnes/y	3.5	Equity capital, joint venture, market access, subcontracting, marketing
CZE/455a/V/91-07	Ferrocalcium-silicon with +30% calcium	2,000 tonnes/y	0.6	Equity capital, joint venture, license, marketing
CZE/379/V/91-07	Carbon/low alloy steel for seamless tubes	Blm023,Tbs0.16m tonnes/y	33.0	Equity capital, joint venture, market access, loan
CZE/ 87/V/91-07	Develop range of cast fittings	17,438 tonnes/y	15.3	Equity capital, joint venture, market access, credit, management
CZE/ 50/V/91-07	Expand and upgrade casting and forging	$86.6 million	20.2	Equity capital, joint venture, market access, subcontracting, technology
CZE/ 85/V/91-07	Expansion of rod and and casting product range	480,000 tonnes/y	50.0	Equity capital, joint venture, market access, management,equipment
CZE/ 94/V/91-07	Upgrade technologies for engine casting	10,000 tonnes/y	6.0	Equity capital, joint venture, market access, development,technical
CZE/224/V/91-07	Improve inner and outer pipe coating	30,000 tonnes	3.0	Equity capital, joint venture, marketing, technology
CZE/ 98/V/91-07	Produce high quality castings for cars, machinery and motors	5,000 tonnes/y	6.1	Equity capital, joint venture, market access, technology, credit
CZE/ 83/V/91-07	Reconstruction of steel melting shop - Stage 2	194,000 tonnes/y	36.8	Loan, market access, technology, management
CZE/201/V/91-07	Production of passenger car wheels	4.5 million pieces/y	100.0	Equity capital, joint venture, training, loan, technology
CZE/ 43/V/91-07	Increase production range of crankshafts	800 pieces/y	20.5	Equity capital, joint venture, market access, loan, marketing
CZE/198/V/91-07	Continuous casting of steel billets	1 million tonnes/y	100.0	Equity capital, joint venture, training technology
CZE/ 10/V/91-07	Production of tungsten carbide wire	150 tonnes (WC) 10 tonnes wire	1.5	Equity capital, joint venture, market access, technical

Source. UNIDO, Investment Promotion Division, *Investment Forum for Czechoslovakia* (Prague, 4-6 November 1991).

Austria with limited success. In 1991 the company was operating at around 30 per cent of its installed capacity. The number of persons employed by the company fell from 1,200 in 1989 to about 800 in 1991. A further 160 redundancies are in the offing. The management is of the opinion that any modernization of the plant would need to include slitting machines, wire drawing plant and efficient chemical analysis. The company is currently examining which products should be given priority in the face of uncertainty in the prevailing metal market.

Currently the world metal market is in deep recession. Following a 5.2 per cent fall in the demand for steel in the OECD economies in 1991, a 1 per cent fall is estimated for 1992. Revival of demand depends crucially on a revival in investment and output of key steel consuming industries such as cars and trucks. In western Europe several thousands of jobs in steelmaking have been cut, and even stable producers are in turmoil. In the sombre steel climate in the United States, low cost mini-mills seem best able to survive. These mills combine new technology, electric arc furnaces and innovative systems to manufacture low cost steel especially for the construction industry.

Non-ferrous metal producers face a grim year in 1992 as prices remain depressed on the world market. While eastern European imports of lead, tin and zinc faded away, its exports of aluminium, copper and nickel to the developed countries grew significantly. According to metal analysts,[52/] the swing in east-west trade in non-ferrous metals was almost entirely responsible for depressing metal prices. It appears that supplies of metals to the world market from former CMEA countries are not based on domestic cost calculations, but rather on the desperate need to earn hard currency. Indications are that consumption of non-ferrous metals in eastern Europe is unlikely to pick up in the short run. At the same time, the metal glut from east European countries may soon pass its peak as a result of a radical restructuring of the industrial sector.

Despite plans to reduce the ferrous component of metallurgy production significantly, increased production of alloys, refined steel, flat rolled products and thin-walled profiles has to take place. This implies the abolition of open hearth furnaces and development of electric furnaces, oxygen converters and continual steel casting. Emphasis is to be placed on efficient specialization of metallurgy production, optimal use of capacities and exchange of products with foreign firms. Emphasis on the production of scarp-based refined products calls for significant restructuring and modernization of enterprises such as Poldi Kladno and Nova Hut Kuncice as well as the abandonment of hearth furnaces at the Trinec Iron Works.

The preparation of detailed restructuring programmes towards addressing the crucial issues of the country's metallurgy restructuring are under way within the framework of a new programme funded by the EC. Environmentalists are also putting pressure on metal manufacturers to make their products recyclable in order to ensure a better use of resources, reduced energy- and material-intensity of products, and to reduce the demand for waste disposal facilities. The metallurgical industry should be well placed to meet these challenges in the 1990s.

H. MACHINE TOOLS: BRIDGING THE TECHNOLOGY GAP

An overview

Czechoslovakia has a long and rich tradition in metal cutting and metal forming machinery. The industry dates back to the 19th century, growing from small shops to large-scale factories specializing in specific machine tools. The steady evolution of the industry enabled the country to emerge as one of the major machine-tool producers in the world. With machine tool production worth of $450 million in 1988, Czechoslovakia ranked next to the Republic of Korea which turned out $597 million worth of machine tools in the same year.[53/]

Metal-cutting machinery production grew significantly from 36,876 units in 1980 to 38,438 units in 1988, with a rapid increase in the production of grinding machines from 15,100 units to 21,427

units during the same period. The growth of metal forming machinery was also significant, rising from 4,551 pieces to 5,247 pieces in 1988 (see Table IV.26). Despite a subdued production trend across several segments of the machine tool industry in 1989 and 1990, the production of drilling machines continued to increase and that of metal-forming machinery rebounded well in 1990 from the sharp setback suffered in the preceding year. Significant declines in production were experienced by grinding machines and milling machines. Recent falls in the output of most machine tools have been the result of falling levels of investment rather than declining exports.

Table IV.26. Machine tools production trends, 1980-1990, selected years
(Number of pieces)

	Metal cutting machinery					Metal forming machinery	
Year	Total	Lathes	Drilling machines	Milling machines	Grinding machines	Total	Mechanical presses
1980	36,876	7,617	505	2,655	15,100	4,551	1,817
1985	37,246	7,157	393	2,260	17,185	4,958	1,578
1988	38,438	6,055	221	2,208	21,427	5,247	1,409
1989	37,281	6,393	381	1,596	20,087	5,055	1,486
1990	36,682	6,319	385	1,504	16,647	5,189	1,425

Source: Federal Statistical Office.

Exports of metal-cutting machinery to the former Soviet Union reached their peak in 1985. After declining in 1988 and 1989, exports rose significantly in 1990, with shipments to Poland and Germany showing particularly strong increases.

The export orientation of the machine tool industry, as measured by the share of exports in production, was as high as 50 per cent during the last two decades. Although a large share of the exports was oriented towards uncompetitive markets, around 20 per cent of machine tool exports could penetrate the competitive markets of the developed countries. However, the relatively slow rate of technical progress in some segments is clearly visible. Though Czechoslovakia's machine builders make some advanced machine tools of their own, machine tool manufacturers are under tremendous pressure to re-equip themselves in order to survive in a market economy.

According to the Central Statistical Office's estimates, production of machine tools fell by 20 per cent in 1991, and production is forecast to stagnate in 1992. The machine tool segment of manufacturing has been passing through a painful era of adjustment, and only about 30 machine builders, employing approximately 30,000 workers, had survived by November 1991.[54/]

Selected performance indicators of four leading enterprises depict a sombre climate casting a cloud over sales, labour productivity and the level of technology (see Table IV.27). Total sales, share of exports in production and labour productivity fell in all the four enterprises. The most disturbing feature of their performance is the high level of accumulated obsolete fixed assets. The share of outdated assets in total fixed assets was more than 60 per cent in two enterprises. It is imperative that the machine-building industry be adapted to a new course of modernization in order to overcome the problems of technical obsolescence.

Many plants are still State-owned and are likely to be turned over completely to private ownership in the near future. Now that the industry has access to advanced foreign technology, it could endeavour to make technically advanced machines in collaboration with foreign partners.

Table IV.27. Selected performance indicators of four leading enterprises in machine tool production, 1989, 1990 and 1991

Firm/indicator	1989	1990	Jan.-June 1991
ZPS Zlín			
Total production (Million Kcs, current prices)	1,042.0	984.0	426.0
Share of exports in production (Percentage)	33.2	23.9	26.9
Ratio of profit to sales (Percentage)	18.5	..	..
Number of workers	5,418	5,185	5,040
Labour productivity (Million Kcs, current prices)	214.5	189.8	..
Obsolete fixed assets (as a percentage of total assets)	..	48.2	..
TOS Kuřim			
Production		964.0	671.0
Total production (Million Kcs, current prices)	1,009.0	1,012.9	..
		32.0	20.9
Share of exports in production (Percentage)	38.0	31.4	..
Ratio of profit to sales (Percentage)	16.0	14.8	14.9
Number of workers	6,166	6,033	5,660
Labour productivity (Million Kcs, current prices)	185.0	168.2	..
Obsolete fixed assets (as a percentage of total assets)	..	62.0	..
Žďárské strojírny a slévárnay, Žďár n/Sázavou			
Total production (Million Kcs, current prices)	..	1,295.0	615.0
Share of exports in production (Percentage)	..	20.6	23.7
Number of workers	..	5,491	5,308
Labour productivity (Million Kcs, current prices)	..	235.8	..
Obsolete fixed assets (as a percentage of total assets)	..	61.3	..
Kovosvit, Sezimovo Ústí			
Total sales (Million Kcs, current prices)	1,018.0	1,060.0	646.0
Share of exports in production (Percentage)	32.5	21.4	..
Ratio of profit to sales (Percentage)	24.9	14.9	14.9
Number of workers	4,685	4,638	..
Labour productivity (Million Kcs, current prices)	245.4	228.5	..

Sources: Economic Institute, Academy of Sciences; and Federal Statistical office.

Investment opportunities

Negotiations on several possible joint venture arrangements are currently in progress. By early 1992 no single major arrangement has been concluded although a few small-scale ventures had been concluded and provide sales access to Spain, Switzerland and other countries. Promising product areas include:

- production of turning lathes, computer numerically controlled (CNC) turning automats, single-spindle and multi-spindle automats, turning centres;
- development of CNC techniques, including automation electronics and regulating drives;
- production of measuring devices, position indication, monitors and pick-ups;
- production of tools and chucking systems;
- production of technically exacting moulding machines, particularly vertical forging presses; and
- production of heavy turning lathes, milling and boring machines.

Fig. IV.P. Exports of metal cutting machinery, 1980-1990
(Number of pieces)

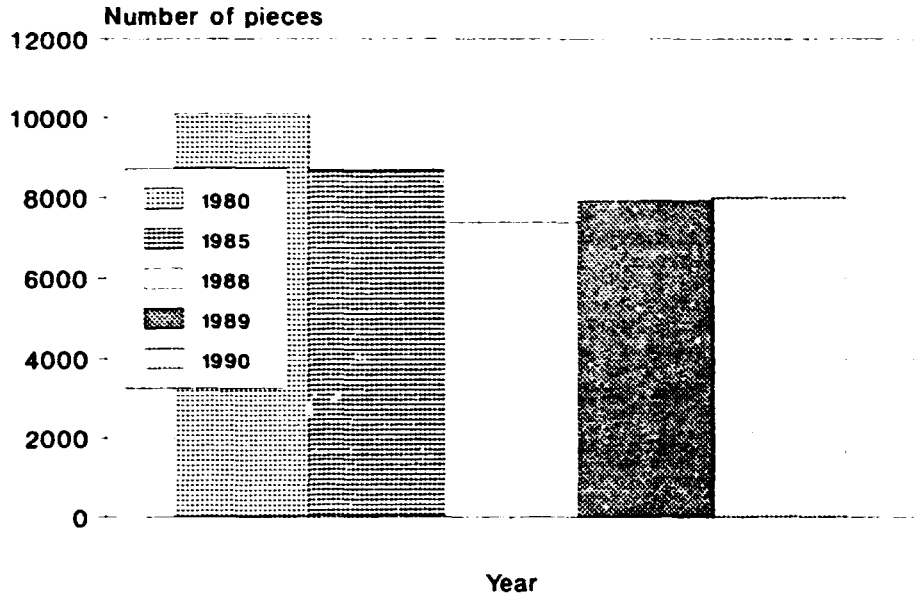
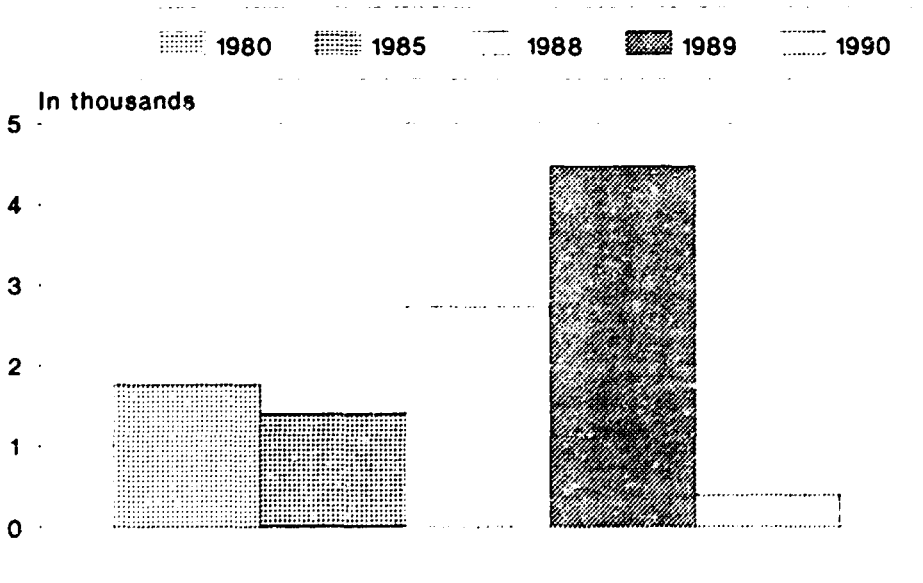


Fig. IV.Q. Imports of metal forming machinery, 1980-1990
(Number of pieces)



Five investment proposals presented to the Investment Forum in November 1991 seek a wide range of external cooperation including equity, joint venture, market access, equipment, management, etc., (see Table IV.28).

Table IV.28. Investment proposals in machine tool production, November 1991

Reference number	Project description	Output capacity	Investment required	Type of foreign contribution sought
			(Million $)	
CZE/460/V/91-07	Unit built CNC lathes, establishing export sales	4-5,000 units/y	60.0	Equity capital,joint venture,market access, development,management
CZE/ 79/V/91-07	Development of machine tool high speed spindle units	300 pieces/y	1.3	Equity capital,joint venture,market access, equipment,management
CZE/470/V/91-07	Upgrade gearboxes and sheet bending machinery	$13 million/y	5.0	Equity capital,joint venture,market access, development,management
CZE/ 47/V/91-07	Increase quality and range of measuring instruments	Not determined	2.3	Market access,loan development,training
CZE/311/V/91-07	Upgrade flow measurement instrument range	40 pieces/y	0.4	Equity capital,joint venture,market access, subcontracting, management
CZE/202/V/91-07	Expand portable instruments production	$1 million/y	0.1	Joint venture,market access,marketing, management

Source: UNIDO, Investment Promotion Division, *Investment Forum for Czechoslovakia* (Prague, 4-6 November 1991).

Constraints and prospects

The world machine tool industry will continue to change considerably in the 1990s.[55/] The accompanying structural changes will entail internationalization, cooperation and integration. Czechoslovakia could endeavour to benefit from such developments. The introduction of new machining concepts and computer-integrated manufacturing will gradually be realized through close contact between machine tool producers and their customers as well as by high investments in research and development. Czechoslovakia will need to rely on the transfer of know-how from traditional and new generation machine tool producers through cooperation agreements.

No single measure will be sufficient to bridge the technology gap in the Czechoslovak machine tool industry. This will necessitate a grand liquidation of obsolete capital stock which, followed by upgrading of manufacturing facilities, intensive skill development, strong technical information support and the provision of an effective institutional framework for assimilating, generating and diffusing modern technology. In these spheres of activities a number of lessons can be learned from the Japanese experience of enhancing international competitiveness.[56/]

There is a need to provide a national climate conducive to rapid technology growth. To this end, both market forces and the government have important roles to play. With substantial allocation of resources and government support for private initiatives, a favourable atmosphere can be created for bridging the technology gap in machine tool production.

I. TRANSPORT EQUIPMENT: HOSTING THE REGIONALIZATION OF TRANSNATIONALIZATION

An overview

Transport equipment is the second most important segment of Czechoslovakia's engineering industry, accounting for over one-quarter of engineering output. Its contribution to manufacturing value added stood at 16 per cent in 1990, compared with 15 per cent in 1980. On the industrial export profile of the country, its contribution rose for several consecutive years from 12.6 per cent in 1975 to 13.8 per cent in 1988. Meanwhile its share of imports in total industrial imports fell from 6 per cent in 1975 to 4.5 per cent in 1988. The share of imports in apparent consumption fell from 22.8 per cent in 1975 to 15.5 per cent in 1988, revealing the high degree of anti-importation bias rather than the progress in import substitution. The export orientation of transport equipment, as measured by the share of exports in production, rose significantly from 29.7 per cent in 1975 to 39.6 per cent in 1985, but faltered to 37.1 per cent in 1988.

Physical volumes of output presented in Table IV.29 show that growth was rapid across a wide range of products until 1985. The production of passenger cars rose from 142,858 in 1970 to 183,701 in 1985. Following a sharp fall in 1988, this segment of transport equipment recovered remark bly in 1989 and 1990. Truck production grew significantly until 1989, but declined sharply in 1990. Despite a significant increase in the production of motor cycles over the years, the 1990 production level was less than the volume turned out in 1970. In the wake of a changing policy focus, the production of electric locomotives fell from 149 in 1970 to 106 in 1990, while that of diesel locomotives rose significantly until 1985 and suffered a decelerating production trend thereafter. The peak in the production of railway wagons was recorded in 1980 with production reaching 7,269, compared with 4,354 in 1970. Because of the steady fall in the production of wagons in the 1980s, its 1990 output level was not significantly higher than the level of production achieved in 1970. Thus, production of most forms of transport equipment grew significantly in the 1970s and experienced mixed production trends in the 1980s, gravitating largely towards a downturn.

Table IV.29. Production of transport equipment by product, 1970-1990, selected years
(Number of units)

Product	1970	1980	1985	1988	1989	1990
Passenger cars	142,858	183,745	183,701	163,834	188,611	191,233
Trucks	24,462	45,688	47,956	50,498	50,570	47,589
Buses	2,602	3,303	3,386	3,329	3,201	3,178
Motorcycles over 100 cubic cm	107,754	136,986	157,289	136,160	118,911	105,014
Electric locomotives	149	102	126	132	107	106
Diesel locomotives	351	374	530	507	500	348
Wagons	4,354	7,269	6,215	5,979	5,900	4,910
Tramcars	760	923	955	685	937	342

Source: Federal Statistical Office.

Within the traditional CMEA division of labour, the Czechoslovak automobile industry operated in an uncompetitive market environment. Despite the obvious quantitative and qualitative shortfalls of vehicles produced in Czechoslovakia, there was a ready market for them. Lack of political will to make full use of the country's engineering skill potential was the reason for the industry's failure to keep pace with the frontiers of modern technology. Domestic and traditional external markets were rigorously isolated from the rapidly changing global automobile industry.

Fig. IV.R. Structure of transport equipment production, 1985 and 1990
(Percentage)

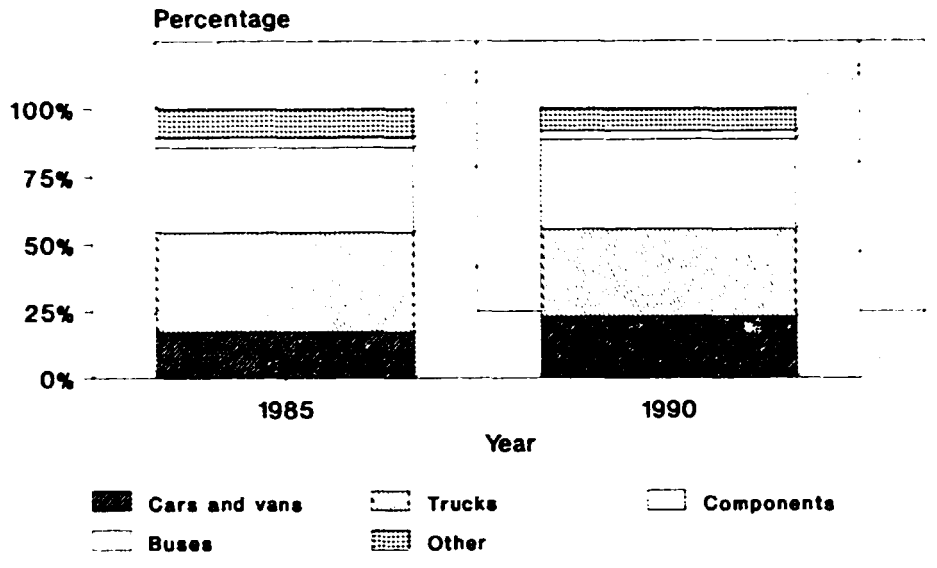
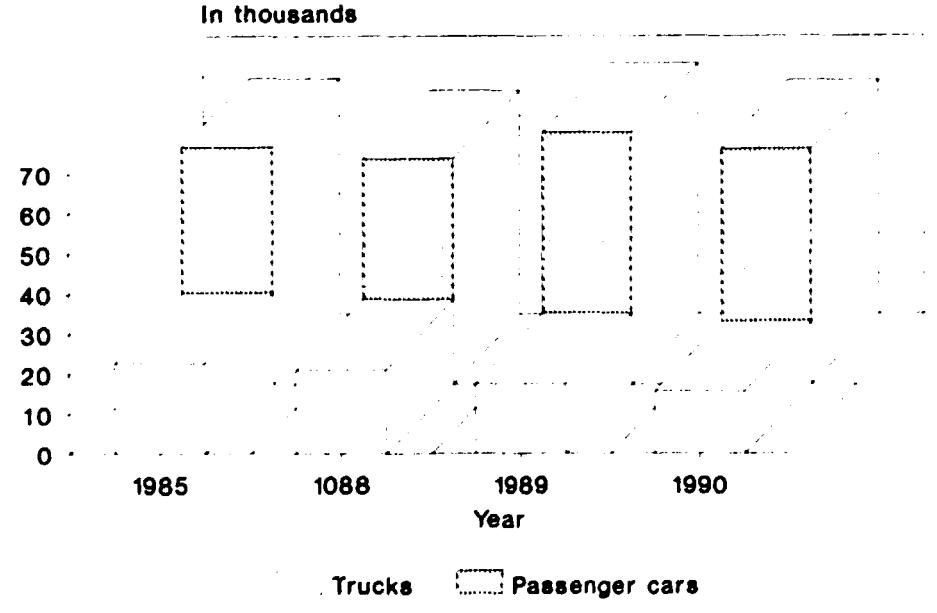


Fig. IV.S. Exports of passenger cars and trucks, 1985-1990
(Number of units)



Much of the inefficiency stemmed from rigid planning and ideological commitment to its trading links with the other CMEA countries.[57/] The experience of Škoda is illustrative of such a state of affairs constraining efforts to enhance efficiency and causing an irretrievable delay in modernization. In the late 1970s there were a few attempts to produce a new Škoda car with a front-wheel drive fitted with 1,600 cc engine. The project was abandoned because the former Soviet Union did not want a low priced competitor for its Lada. The production of a remodelled car, the Favorit, did not commence until 1988. The government never spelled out a clear policy for the automobile industry. The present government is urging automobile companies to seek foreign partners in order to invigorate the production apparatus of the ailing automobile industries and to alleviate the chronic shortage of vehicles. This shortage was so severe in 1988 that 120,000 potential customers were waiting for the delivery of Lada models, with 47,000 waiting alone for the Lada Samara. The shortfall in the supply of automobiles in 1990 was estimated at 400,000.[58/]

According to the Federal Statistical Office, the obsolescence of the capital stock across automobile enterprises exceeded 50 per cent in 1990. Productivity remains only at 40 per cent of their counterparts in developed countries.

The decline in the production of transport equipment in 1991 was estimated at 22 per cent in real terms. Medium-term projections for the first half of the 1990s suggest a recovery and possible increase in the share in industrial production due largely to the inflow of foreign capital into leading firms such as Škoda (cars), Avia (commercial vehicles) and Liaz (trucks).

New entrants

Czechoslovakia's long industrial tradition, engineering skills, low wages and strategic location with easy proximity to east and west European markets, offer a host of attractions to leading automobile producers. Although productivity is below international standards, new entrants have been impressed by the local engineering skills. By February 1992 three major joint ventures had been concluded (see Table IV.30). A few smaller joint venture agreements are being negotiated for the production of car accessories, selected instruments, wipers, electric parts and components, etc.

Table IV.30. Three major joint ventures in transport equipment, as of February 1992

Participants	Type of activity	Capital (Million Kcs)	
		Total	Foreign
Škoda, M. Boleslav and Volkswagen, Germany	Car production	9,600	3,500
BAZ, Bratislava and Volkswagen, Germany	Car assembly	1,100	272
AVIA, Praha and LIAZ, Jablonec and Mercedes Benz, Germany	Production of commercial vehicles	20,000	6,300

Source: Federal Statistical Office.

By the end of February 1992 Volkswagen had spent around DM 620 million on its 31 per cent stake of Škoda cars with a significant control over the management. Volkswagen's equity participation is expected to be raised to 70 per cent by 1995. It is envisaged that this joint venture will more than double its output to about 450,000 cars annually by the mid-1990s.[59/] The strategy of Volkswagen is to retain the identity of Škoda and to convert it to the equivalent of Spanish-built Seat in western Europe. In March 1992 the Government of the Czech Republic approved a $250

million joint venture between Mercedes Benz AG of Germany and two local truck manufacturers Avia and Liaz. This joint venture is expected to turn out 27,000 small, medium and large trucks per annum by the year 1997. Czechoslovakia's truck manufacturer Tatra is reported to have begun negotiations with a number of potential foreign partners, including Mercedes Benz, Renault and Iveco of Italy. The German automobile producers have also shown interest in acquiring control of Karosa, a bus and fire engine manufacturer located in eastern Bohemia. Iveco, the truck and industrial vehicle segment of Fiat, is planning to create a joint venture with Tatra.

Investment opportunities

A number of investment proposals in transport equipment were presented to the Investment Forum held in November 1991. These include, among other things, the production of automobiles, locomotives and components (see Table IV.31).

Table IV.31. Investment proposals in transport equipment, November 1991

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/437/V/91-07	Develop vehicle electric component range	$5.5 million/y	0.5	Equity capital, joint venture, market access, development, technical
CZE/ 3/V/91-07	Diversify into new types of truck bodies	200 pieces/y	0.9	Equity capital, joint venture, market access, subcontracting, technical
CZE/218/V/91-07	Development and production of high-speed locomotives	20 units-$160 million/y	10.7	Loan, technical, licence, subcontracting
CZE/ 84/V/91-07	Carriages for metros and light railways	80 units/y	24.0	Equity capital, joint venture, market access, technology, management
CZE/337/V/91-07	Production of refrigerated and tank containers	2,000 units/y	1.0	Equity capital, joint venture, management, subcontracting, license
CZE/134/V/91-07	Expand truck body-building production	1,500 units/y	0.2	Equity capital, joint venture, market access, development, equipment
CZE/ 43/V/91-07	Increase production range of crankshafts	800 pieces/y	20.5	Equity capital, joint venture, market access loan, marketing
CZE/ 48/V/91-07	Universal municipal vehicle with attachments	3,000 vehicles/y	0.7	Equity capital, joint venture, market access, subcontracting, development
CZE/ 44/V/91-07	Manufacture improved gearboxes	700 tonnes/y	9.3	Loan or joint venture, market access, equipment marketing
CZE/201/V/91-07	Production of passenger car wheels	4.5 million pieces/y	100.0	Equity capital, joint venture, training, technology, loan

Source: UNIDO, Investment Promotion Division, *Investment Forum for Czechoslovakia* (Prague, 4-6 November 1991).

The following are promising product areas:

- new engines for Tatra trucks;
- production of diesel engines particularly for farming purposes;
- increased production of high-lift trucks with possible external collaboration;
- diversification of truck bodies and introduction of new ones;
- vehicle accessories and components;
- development of metro carriages; and
- manufacture of improved gear boxes, universal municipal vehicles with attachments, refrigerated and tank containers.

Constraints and prospects

The constraints and prospects for the Czechoslovak transport equipment industry will have to be analysed within the perspective of the eastward movement of western automobile producers who have great expectations of capturing the markets of central and eastern Europe with around 420 million people. The regionalization of transnationalization is being vigorously pursued by leading players of the western automobile industry with almost similar long-term objectives. Fiat foresaw the long-term potential of eastern Europe and the former Soviet Union several decades ago. With licensing and production agreements with Poland, the former Soviet Union and Yugoslavia, it strengthened its foothold in eastern Europe. Fiat claims that more than half of the 2 million cars produced in eastern Europe and the former Soviet Union were Fiat derivatives. By adapting to the primitive road conditions Fiat models of 1960s vintage survived for decades because of their virtual monopoly. Currently the focus is on modernization and rationalized production of components. In the former Soviet Union Fiat envisages an investment of $7 billion in order to create capacity for an additional 900,000 cars per year at the Yelaboya complex. In Poland Fiat is to build 120,000 Fiat Tipo per year in the 1990s, involving a joint venture with 50:50 capital participation. Fiat is also planning to build an engine and gearbox plant in Poland. While the growth of competition in the once protected market raises the strategic importance of Poland and the former Soviet Union for Fiat, the balance of power in the European automobile production seems to have been tilted in favour of German producers, which are seeking to consolidate their position in eastern Europe through strategic investments in Czechoslovakia.

There are compelling commercial arguments justifying the creation of new capacities for automobile producers in eastern Europe. According to Volkswagen estimates, the opening of the east European countries will create a market for around 4,300,000 vehicles per year and the company will need new capacities that can produce 600,000 new vehicles annually.[60/] General Motors considers it as a unique opportunity that will not be repeated. According to General Motors, demand will be greater than capacities installed.[61/] However, the strategy of the east European countries in allowing the inflow of foreign investment is to export and to earn the much needed hard currencies. Even if 30 to 40 per cent of vehicles produced in east European countries are exported, it may create a glut of automobiles in Western Europe which is already suffering from overcapacity. Thus it may prove to be hazardous if the present eastward movement in automobile production is based exclusively on market intuition.

It is generally believed that the main attraction of eastern Europe lies in its low production costs resulting from relatively cheap labour and the existence of production capacities diminishing the costs of construction on site. There is also a wide range of industries scheduled for conversion to civilian production. For example, in the Commonwealth of Independent States 60 per cent of the entire military industry is scheduled for conversion to civilian production by the year 1995. In Czechoslovakia about 300 conversion projects have already been identified, with only a small part of them being able to be financed from domestic sources. For most of them, foreign participation is expected.

Amidst the growing tendencies of west European automobile producers to redeploy production units to eastern Europe, the attitude of the Japanese is paradoxical. Japanese manufacturers seem

to have been cautious of redeploying production units to eastern Europe, but are trying to increase their exports to this destination instead. When the Government of Poland refused to provide risk guarantees the Japanese manufacturer Daihatsu withdrew from a contract. However, it is believed that the comparative cost advantage, creation of market through investment and the growth impulses stemming from new waves of liberalization and marketization will attract the major players of the global automobile industry, and the competitive pressures in eastern Europe will significantly enhance the efficiency of the industry.

J. ELECTRICAL MACHINERY AND ELECTRONICS: RIDING INTO UNKNOWN AVENUES

An overview

The electrical machinery and electronics industry has been the fastest growing segment of manufacturing over the years. It recorded an average annual growth rate of 9.6 per cent during 1970-1980, compared with the industrial average of 5.7 per cent. During 1981-1990 when the pace of industrial expansion averaged a subdued annual rate of 2 per cent, the electrical machinery and electronics industry grew at an average annual rate of 6.2 per cent, compared with rates of 2.0 per cent, 2.8 per cent, 3.2 per cent and 2.4 per cent recorded by metal products, non-electrical machinery, transport equipment and professional goods, respectively.

With its relatively faster growth, the share of the electrical machinery and electronics industry in manufacturing value added rose significantly from 3 per cent in 1970 to 6.7 per cent in 1989. In the wake of a slowdown of economic and industrial growth its share in MVA fell to 6.4 per cent in 1990. In the late 1980s the industry's share in industrial exports was over 5 per cent. As the industry was insulated against competition within the framework of the CMEA, the share of exports in production grew from 14.8 per cent in 1975 to 25.9 per cent in 1985. Imports in apparent consumption of electrical machinery and electronics stood at 21.8 per cent in 1988.

Within the engineering industry, the electrical machinery and electronics industry's role in terms of output, value added, employment, gross fixed capital formation and exports expanded steady over the years. Its share in engineering output rose from 11.4 per cent in 1970 to 18.4 per cent in 1990, while that in engineering value added rose from 10.1 per cent to 16.3 per cent during the same period. Its contribution to engineering employment in 1990 was 18.9 per cent, compared with 13.6 per cent in 1970. In the engineering export profile the share of electrical machinery and electronics rose from 7.8 per cent in 1975 to 8.4 per cent in 1990. The industry's share in engineering imports remained at around 11 per cent since 1975.

The disaggregated production profile of the electrical machinery and electronics industry presented in Table IV.32 reveals the country's capabilities in this sphere of industrial activity. The physical output of a wide range of products lends credence to the fact that the spectrum of the industry is rather dynamic. However, technological deficiencies and set-backs in innovation cycles have led to the present state of inefficiency. In the current phase of industrial deceleration, consumer electronics have been affected severely, with a 40 per cent fall in production in 1991. Local demand fell much faster than declining production and exports. Obsolete capital machinery and equipment was estimated at 49.3 per cent of the total capital stock in 1989.

Selected export statistics for electrical machinery and electronics are presented in Table IV.33. In terms of physical volume, major product categories grew significantly until 1990, with the exception of the exports of electric motors which fell sharply in 1990 after recording a steady increase from 1.1 million units in 1980 to 2.1 million units in 1989.

Table IV.32. Major electrical engineering and electronics products, 1980, 1985 and 1990

Product	1980	1985	1990
Generators and alternators (Thousand kW)	1,285	735	992
Diesel aggregates (Pieces)	4,773	3,119	5,263
Steam boilers, industrial (Pieces)	225	190	163
Turbines: Steam (Pieces)	45	64	67
Water (Pieces)	7	33	112
Electric motors, total (Thousand pieces)	4,388	3,870	4,284
Transformers (Pieces)	29,775	30,619	55,925
Cables and conductors (Thousand tonnes)	170	174	148
Bulb: for general use (Thousand pieces)	49,714	77,516	93,271
special (Thousand pieces)	41,141	40,407	37,758
Electronic lamps (Thousand pieces)	4,756	2,946	2,671[a/]
Radio receivers (Thousand pieces)	230	242	154
Television sets, total (Thousand pieces)	389	432	505
Tape recorders (Thousand pieces)	191	133	47
Electric stoves (Thousand pieces)	78	67	75
Electric accumulation heaters (Thousand pieces)	78	58	80
Refrigerators and freezers (Thousand pieces)	353	480	449
Washing machines (Thousand pieces)	355	445	451
Vacuum cleaners (Thousand pieces)	478	574	699

Source: Federal Statistical Office.

a/ 1989.

Fig. IV.T. Production of selected electrical and electronic items, 1980 and 1990
(Million pieces)

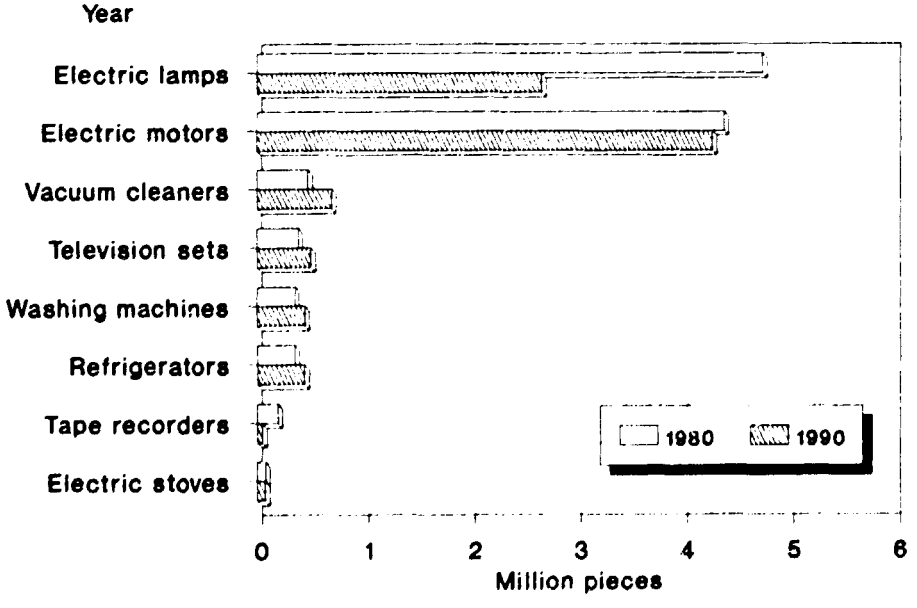


Table IV.33. Selected exports and imports of electrical machinery and electronics, 1980-1990, selected years

Product	1980	1985	1989	1990 Volume	1990 Value Million Kcs
Exports					
Electric motors (Thousand pieces)	1,139	1,615	2,169	1,665	1,102
Turbo-compressors (Pieces)	17	39	68	71	150
Domestic refrigerators (Thousand pieces)	49	67	98	108	176
Domestic washing machines (Thousand pieces)	49	167	189	152	220

	Value (Million Kcs)			
	1980	1985	1989	1990
Exports				
Power generating machinery and equipment (SITC 71)	..	..	8,761	7,583
Telecommunications and sound recording equipment (SITC 76)	..	..	2,969	2,403
Electrical machinery, apparatus and appliances (SITC 77)	..	..	6,766	5,476
Imports				
Power generating machinery and equipment (SITC 71)	..	..	5,747	4,869
Telecommunications and sound recording equipment (SITC 76)	..	..	4,458	5,771
Electrical machinery, apparatus and appliances (SITC 77)	..	..	6,835	7,693

Source: Federal Statistical Office.

New ventures

In the changing structure of production in line with the changes on the trade front, machinery production will tend to be based on activities with a higher share of value added and savings of metals, raw materials and energy as well as achieving a high export orientation. This implies concentration on relatively successful traditional products such as selected medical devices (surgery tools, X-ray devices, spirometres, machines to produce medicine), construction machinery, engineering consumer goods (refrigerators, washing machine, vacuum cleaners, utensils, sewing machinery, etc), components for electronics and telecommunications, telephone exchanges and consumer durables. Venturing into hitherto unknown avenues is an aspect of the current policy focus, with a view to entering new product areas within the industry. In order to achieve this, several joint venture agreements have been concluded with foreign firms. Ten cooperation agreements had also been concluded in the fields of management, research marketing, consultation, etc., by January 1992. Important joint ventures are listed in Table IV.34.

Whirlpool International, the European subsidiary of the United States white goods producer, is planning to form a new company with Tatramat, Czechoslovakia's leading washing machine producer, in order to manufacture and sell other domestic appliances in Czechoslovakia. It appears that Whirlpool International will own 43.8 per cent of the joint venture.[62/] Tatramat is to contribute its assets and Whirlpool its technology and equity. The venture will turn out Whirlpool's most modern top-loading washing machine. The production of other major domestic appliances is also envisaged. Export destinations targeted for the project include the Commonwealth of Independent States, Hungary, Poland and other countries.

Table IV.34. Important joint ventures in electrical machinery and electronics, January 1992

Participants	Activities	Capital investments
Tesla, Karlín Siemens, Germany	Telecommunication equipment, connection systems	Tesla, Kcs 184 million, 51 per cent Siemens, Kcs 177 million, 49 per cent
Bateria, Slany Ralston	Electrochemical thermo sources	Bateria, Kcs 1.2 million Ralston, Kcs 1.3 million
Electro-Praga, Hlinsko-cooperation Philips, Netherlands	Vacuum cleaners	.. ..

Source: Federal Statistical Office.

A new joint venture between Siemens and Škoda Plzeň and Škoda Praha, pending the formal approval of the Czech Government, is aimed at Siemens taking over the Czech firms' turbine, generator and nuclear power programmes and introducing environmental technology.

Investment opportunities

The electrical machinery and electronics segment of manufacturing attracted as many as 22 proposals seeking different types of foreign contribution (see Table IV.35). These constitute a set of potential investment opportunities in new avenues.

The most promising product areas include:

- communication techniques, equipment, connection systems, telephone switchboards, transmission equipment, radio and television transmitting network, radiolocators;
- automation techniques for machinery and equipment, particularly mini-automation techniques, sensors, detecting devices, servo-propulsion items;
- measurement and laboratory techniques, measurement instruments, chromatographs, microscopes, spectometres, ecology monitoring instruments;
- medical instruments, particularly stomatology techniques, surgical, micro-surgical and dental instruments, X-ray techniques, sterilization and respiratory techniques;
- special and unique machines and equipment with existing local research and development; and
- assemblies of electrical and electronics consumer goods.

Constraints and prospects

After two decades of sustained turnover growth at over 20 per cent per annum, the electronics industry has come to a shuddering halt in the United States and much of Europe. There is no guarantee that today's leading players in electronics will remain intact. Virtually all computer companies in Europe and the United States suffered declining profits in 1990. The majority of companies continue to struggle to contain overheads in line with expenses by cutting jobs. Price cutting and job cutting has reached an unprecedented scale, with limited success being achieved in restoring growth in revenues and profits. As manufacturers are being increasingly driven by the rapidly changing technology, the tendency is to concentrate on new methods of manufacturing wafers at ever lower cost. Japanese producers do not seem to have been threatened by falling prices. There is a constant unveiling of new devices and products. Frequent product innovations create a demand for more sophisticated semiconductors. While Japanese domination of the

Table IV.35. Investment proposals in electrical machinery and electronics, November 1991

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/485/V/91-07	Modernization and upgrade range of pulse changers, etc.	$15 million/y	0.6	Equity capital, joint venture, market access, development, marketing
CZE/ 45/V/91-07	Cooperate in market development for electric motors	$1.7 million sales	0.0	Market access, subcontracting, marketing
CZE/ 76/V/91-07	Upgrade and expand range of loudspeakers	4 million pieces/y	7.0	Equity capital, joint venture, market access, equipment, marketing
CZE/477/V/91-07	Manufacture of cable and satellite TV components	50,000 pieces/y	2.5	Equity capital, joint venture, market access, technology, license
CZE/190/V/91-07	Improve X-ray machinery production efficiency	$32 million/y	10.0	Equity capital, joint venture, market access, management
CZE/381/V/91-07	Modernize printed circuit board production	55,000 sq m/y	3.7	Equity capital, joint venture, market access, management, marketing
CZE/ 70/V/91-07	Upgrade klystron, linear accelerator and image intensifier	$10 million	7.0	Equity capital, joint venture, market access, subcontracting management
CZE/312/V/91-07	Expand production of electric appliance motors	2 million pieces/y	22.0	Equity capital, joint venture, technology equipment
CZE/377/V/91-07	Extend range of appliance controllers	3 million units/y	2.5	Equity capital, joint venture, technology, subcontracting, management
CZE/143/V/91-07	Upgrade and expand range of switchboards	According to demand	3.0	Equity capital, joint venture, market access, subcontracting, development
CZE/109/V/91-07	Produce electric control drives up to 1 MW	20,000 sets/y	17.5	Equity capital, joint venture, market access, management, marketing
CZE/182/V/91-07	Resistor networks using thin film technology	Not stated	6.5	Equity capital, joint venture, development, technology, marketing
CZE/ 32/V/91-07	Produce communication systems for railways	850 base stations	1.4	Market access, technical, subcontracting, credit
CZE/ 73/V/91-07	Development of radio network for vehicle control	10x100 vehicle systems	0.5	Equity capital, joint venture, market access, subcontracting, training
CZE/ 33/V/91-07	HRS radio networks, manufacture and installation	30 networks/y	0.5	Joint venture, technical subcontracting, credit

(continued)

Table IV.35. (Continued)

Reference number	Project description	Output capacity	Investment required (Million $)	Type of foreign contribution sought
CZE/378/V/91-07	Expand range of heating elements and convectors	3 million units/y	1.2	Equity capital, joint venture, subcontracting, technology, management
CZE/376/V/91-07	Development of range of fans,100-400mm, 10-150W	500,000 units/y	1.3	Equity capital, joint venture, subcontracting, technology, management
CZE/125/V/91-07	Increase small, pressed commutators production	2.57 million pieces/y	2.7	Equity capital, joint venture, market access, technology
CZE/204/V/91-07	Production of security and medical instruments	$0.7 million/y	0.1	Joint venture, loan, subcontracting, management, market access
CZE/191/V/91-07	Instrument to measure heat energy consumption	1.1 million pieces/y	2.1	Equity capital, joint venture, loan, license
CZE/ 35/V/91-07	Manufacture of ultrasonic diagnostic equipment	150 pieces/y	0.5	Joint venture/license, marketing, technology, subcontracting
CZE/ 34/V/91-07	Manufacture of small photometric analyser, AT180	400 pieces/y	0.5	Market access, credit, marketing

Source: UNIDO, Investment Promotion Division, *Investment Forum for Czechoslovakia* (Prague, 4-6 November 1991).

semiconductor market is likely to continue, the United States industry's strength lies in its ability to anticipate future needs. As Japan, the United States and Europe cannot allow their semiconductor industries to fall behind in the innovation cycle, relatively cheap labour cost countries will continue to be a source of attraction.

There is perhaps a need to step up technological support services to the electronics industry in Czechoslovakia, not so much for the big industries or joint ventures but for the smaller ones that may mainly be active in component and parts manufacturing. Policy measures will need to be devised to facilitate the inflow of technology to the industry and to strengthen the required manpower. While big industries can afford their own research laboratories, smaller units have to get their technologies through training courses, consultancy or contracted research.

Establishment of industries in line with prevailing comparative advantage will constitute an important element in the future development and expansion of the country's electronic components manufacture. Potential new electronic component industries would, in particular, include those which are considered to have beneficial linkages - technologically and industrially - with the country's emerging firms. The development of the integrated circuit industry may provide the basic framework for such projections, given the fact that technological development in integrated circuit production has far-reaching effects on the production of other electronic components.

As far as supportive industries to electronics component manufacturing are concerned, firms producing die punches and precision jigs and fixtures supplying the new integrated circuit industries may constitute an important core for accumulation of high precision and automation

technology. The production tools supplied to the integrated circuit industries have to be very precise; in most cases precision in the level of microns is required. Furthermore, production equipment used is essentially automated and is therefore providing the firms with good access to such technology. Starting from this point, and with properly planned promotion these firms could grow into engineering firms with sophisticated technology supporting the integrated circuit industries and other electronics component industries. These are unknown avenues as far as the Czechoslovak electronics industry is concerned. But the changing facets of the global electrical machinery and electronics industry makes it essential for the late-comers to keep pace with those development.

The above aspirations will have to be analysed within the perspective of the state of the electrical machinery and electronics industry as much of the investment flows into Czechoslovakia are originating from the EC. The European Community manufactures less than one-quarter of total world electronics but consumed over a quarter.[63/] In 1990 the EC produced 22.3 per cent of the world electronics output, but consumed about 26.4 per cent of the world total. In sophisticated and advanced fields of production, the EC firms continue to lag behind Japan and the United States, and are under pressure to restructure and re-organize. They are even forced to seek new alliances. The EC firms have been slow to move into the rapidly growing new markets for high-performance products, such as portable computers, telephone equipment, etc. For years their product range was narrowly focused on national or adjacent markets. The two product areas in which EC firms dominate the European market are defence electronics and telecommunications. In other fields R & D initiatives have been relatively poor, compared with Japan and the United States. The commercial introduction of radical new products, such as digital audio equipment, compact-disc players and VCRs has been far short of expectations. With a view to overcoming shortfalls, a small group of firms, such as Alcatel, Ericsson, Nokia, Olivetti, Philips, Siemens and Thomson, are establishing links with the United States and Japanese firms.

An element of distortion is increasingly being injected into the industry in the EC through government support in many countries in order to overcome structural problems and the current sluggishness of the industry. What is needed is a more coherent market-driven focus on the inherent problems of the industry, allowing competitive pressure to take its course in setting the stage for the survival of the fittest.

Amidst these developments in the adjacent EC, the east European countries have remained for too long wedded to outdated products and inept organizational structure. The plight of Czechoslovakia's telecommunications industry is illustrative of the constraints and prospects of the country's electrical machinery and electronics industry. For four decades the telecommunication networks were neglected in spite of the fact that even in the early 1940s, when Czechoslovakia's degree of industrialization was higher than many countries, this segment of the industrial sector was the most backward. When the EC experienced a telecommunications revolution in the 1980s, Czechoslovakia was deprived of access to these developments due to restrictions on the import of foreign technologies. Currently around 60 per cent of the telephone exchanges in the country are of the 1950s vintage. In 1988 there were only 13.6 main lines for 100 persons, compared with 41.4 main lines for 100 persons in OECD countries.[64/]

In order to reach current OECD standards by the year 2000, there is a need to create 4.1 million additional main lines, implying an average annual growth rate of 9.4 per cent in the telecommunications network in the 1990s. The immediate problem is who will pay for a rapid expansion of the network. Although telecommunications revenue *per capita* in Czechoslovakia is relatively high by eastern European standards, telecommunications network expansion is starved of investment funds. The dearth of domestic capital for investment in this basic infrastructural facility calls for external funds from the World Bank, the EC, the European Bank for Reconstruction and Development (EBRD) and other funding agencies. Foreign investment is also eagerly sought. It seems possible to build up a profitable business in telecommunications. Net profits (revenue minus expenditure, tax and interest) from the telephone network in Czechoslovakia in 1988 ran at 63 per cent of turnover, compared with 25 per cent in Poland and 37 per cent in Hungary.[65/]

The single European market means that the electrical machinery and electronics industries will be less able to rely on national markets. The accentuated run-up to European integration has already led not only to cooperation and mergers between European firms, but also to the increased formation of joint ventures and mergers between leading transnational corporations of Japan and the United States. The trend towards greater oligopoly in the global market does not necessarily imply a tendency towards a less competitive environment on the world market. The merging oligopolistic tendencies may establish new rules of the game. It is rather difficult to form an overall judgement about these developments. In the catching-up process, Czechoslovakia will have to concentrate on the development of human skill requirements of the rapidly changing electrical machinery and electronics industry.

K. FUEL AND POWER: CHANGING THE PATTERN AND INTENSITY OF ENERGY CONSUMPTION

The resource base

Czechoslovakia is endowed with abundant coal deposits. At the present rate of extraction, reserves of brown and hard coal are sufficient to last at least 30 and 100 years, respectively. The country's oil reserves are insignificant. Natural gas and nuclear energy are being increasingly substituted for oil. The country's domestic gas production from local reserves is inadequate to meet domestic requirements. Imports of solid and liquid fuels accounted for 33.5 per cent of total energy consumption in 1990. Nuclear power plants provide much of the electricity generated in Czechoslovakia. Nuclear power accounted for 28.4 per cent of electricity generation in 1990, compared with 6.2 per cent in 1980. Uranium for nuclear plants is sourced from local mines.

Coal reserves are concentrated mainly in the territory of the Czech Republic. Coal resources in the Slovak Republic are small and consist of brown coal suitable for power generation only. Proven resources of oil and gas in both republics are very small. Their hydroelectric potential is tied to the larger rivers and its further expansion will necessitate the construction of large water preservation and power generation reservoirs. As far as non-traditional power resources are concerned, the Slovak Republic is in a unique position since it has resources of geothermal waters and more favourable conditions for the use of solar energy.

The final energy consumption in the Czech and Slovak Republics is influenced by their different energy resource endowments. The Czech Republic depends largely on solid fuels while the Slovak Republic on imported natural gas. The Slovak Republic covers 63 per cent of its solid fuel consumption by imports from the Czech Republic, 21 per cent by imports from abroad and only 16 per cent by its own resources.

The low quality of coal and ecological considerations have led to a considerable decline in coal mining. During 1981-1990 coal mining fell at an average annual rate of 1.3 per cent, compared with a 1.2 per cent average annual increase during 1971-1980. Concomitant with the declining coal mining activity, the production of hard coal, brown coal and lignite fell in the 1980s (see Table IV.36).

After a considerable decrease in the production of naphtha in the course of the 1970s (from 203,000 tonnes to 93,000 tonnes) its production increased, to a certain degree, in the 1980s up to 144,000 tonnes in 1989, but fell again to 123,000 tonnes in 1990.

A considerable rationalization of the coal mining industry has taken place since the second half of the 1970s, which ha led in the second half of the 1980s to an absolute decrease of production. Following a decline of production in the petroleum and gas industry in the second half of the 1970s the coal industry recovered in 1981-1985, when comparatively high average annual rates of growth were achieved. But in the second half of the 1980s even the production of natural gas fell considerably. Its 1989 output was far below the level achieved in 1970. One of the striking features of Table IV.36 is a marked increase in the country's electricity generation over the years.

Energy balance

Data pertaining to the general energy balance in Czechoslovakia shows that domestic production in the 1980s accounted for around two-thirds of the country's energy needs. The remainder, mainly petroleum and natural gas, was met by imports.[66/] The country exports limited quantities of coal, electricity and natural gas produced in border areas. Exports of coal and oil fell significantly. During the 1980s an average annual rate of primary energy resources used in the country fell by 0.5 per cent, compared with 2.6 per cent in the 1970s (see Table IV.37).

Table IV.36. Domestic production of primary energy resources, 1970-1990

	1970	1980	1989	1990
Coal total (million tonnes)	109.49	123.09	119.34	107.57
Hard coal	28.20	28.20	25.07	22.41
Brown coal	77.52	91.69	90.52	82.04
Lignite	3.77	3.20	3.35	3.12
Naphtha (thousand tonnes)	203	93	144	123
Natural gas (million cubic metres)	900	788	711	..
Oil	715	342	548	..
Carbon	285	246	163	..
Electricity (million KWh)	45,163	72,131	89,200	..

Source: Federal Statistical Office.

Table IV.37. Energy production, iinports and exports, 1970-1990, selected years (Petajoulc)[a/]

Indicators	1970	1980	1989	1990
Domestic production	1,902	2,019	2,132	1,978
Solid fuels	1,838	1,919	1,803	1,645
Liquid fuels	9	4	6	6
Gas fuels	37	19	28	23
Primary heat, electricity[b/]	18	77	285	304
Imports	646	1,229	1,287	1,191
Of which solid and liquid fuels	493	1,080	1,131	1,027
Exports (-)	-200	-225	-260	-184
Stock change (+, -)	-16	-8	-22	+85
Primary energy resources used	2,332	3,015	3,137	3,070
Solid fuels	1,790	1,870	1,792	1,721
Liquid fuels	431	793	633	580
Gas fuels	81	268	407	449
Primary heat, electricity[b/]	30	84	205	320

Source: Federal Statistical Office.

a/ Petajoule (PJ) = 10^{15} joule = 34,121 tonnes equivalent fuel.
b/ Electricity is recalculated (1 kWh = 3.6 MJ).

Fig. IV.U. Coal exports, 1970, 1980 and 1990
(Thousand tonnes)

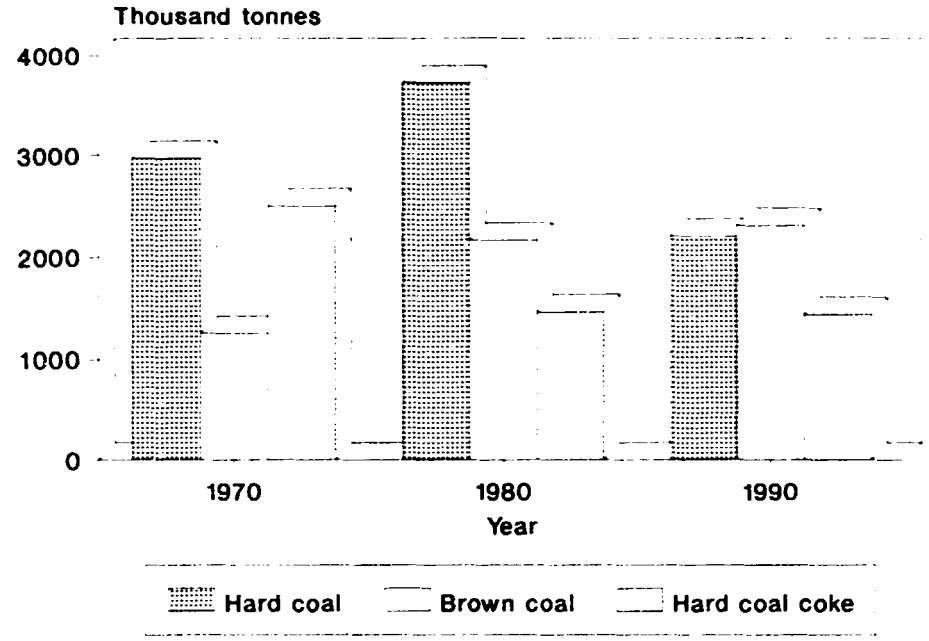
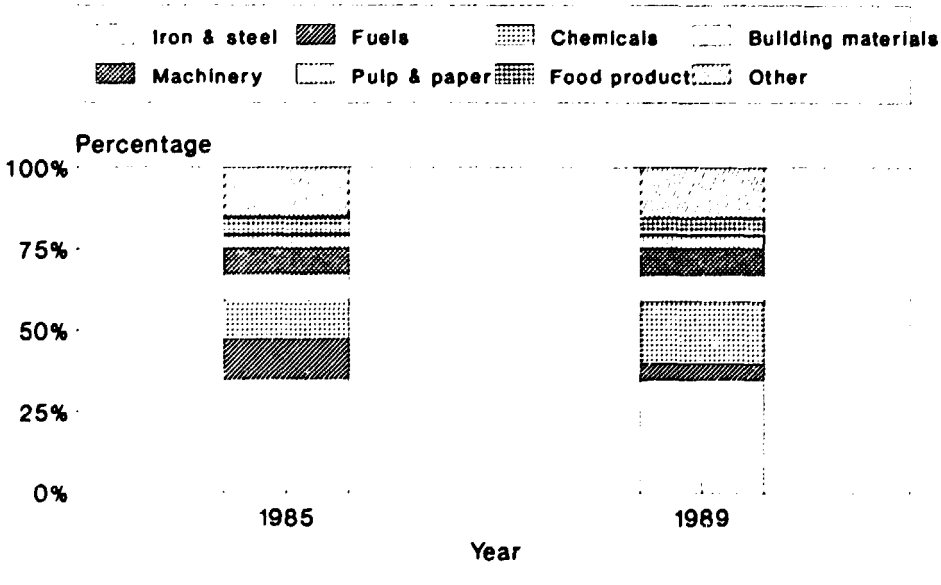


Fig. IV.V. Structure of final consumption of energy by industry branch, 1985 and 1989
(Percentage)



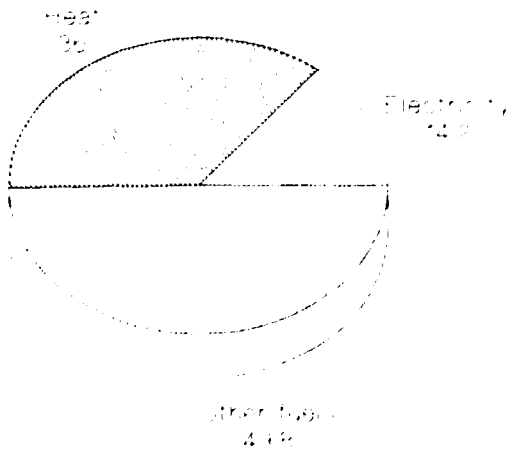
The share of fuel and energy imports in apparent energy consumption increased from 27.7 per cent in 1970 to 38.8 per cent in 1990, the major part consisting of liquid and gas fuels (from 76.3 per cent to 86.2 per cent), which was imported from the former Soviet Union.

In 1990 Czechoslovakia imported about 19.8 million tonnes of liquid fuels and 135 billion cubic metres of natural gas, compared with 77 billion cubic metres in 1980. The country's traditional overdependence on coal coupled with economic and trade links with the former CMEA resulted in high territorial concentration of imports, obsolete production and inefficient patterns of energy consumption.

Energy consumption pattern and intensity

Domestically produced coal accounted for 55.6 per cent of total final consumption of energy in 1989, followed by oil (21.4 per cent), natural gas (11.1 per cent) and hydroelectricity (1.8 per cent). Due to the inferior quality of the coal, low technical efficiency of the coal using plants and the environmental hazards caused by coal, efforts are under way to reduce the country's dependence on this source of energy. These attempts have met with some success, with the share of coal in total energy consumption falling from 61.2 per cent in 1980 to 57.1 per cent in 1987, and further to 55.6 per cent in 1989.

Fig. IV.W. Composition of final consumption of energy in industry, 1989
(Percentage)



There has been a significant reduction in the share of oil in energy consumption from 26.2 per cent in 1980 to 21.4 per cent in 1989 due partly to the country's desire to lower its dependence on imported oil, the prices of which remain volatile on the world market. One of the main reasons for the falling share of oil in energy consumption in the late 1980s has been a fall in the rate of economic growth. According to rough estimates, an annual reduction in oil imports of about 3 per cent in 1988 and 1989 was due to a 2 per cent annual drop in the consumption of oil during the same period.

In contrast to the falling shares of coal and oil, the shares of natural gas and nuclear power in energy consumption rose significantly; the increase in the share of nuclear power was more pronounced as it rose from 1.8 per cent in 1980 to 10.1 per cent in 1989. Given the environmental advantages of natural gas and an extensive network of gas pipelines across the borders in Europe, the share of natural gas in energy consumption is expected to increase. The share of hydroelectricity in energy consumption was meagre at 1.9 per cent in 1980, and remained at 1.8 per cent in 1987 and 1989.

The industrial sector accounted for about 52 per cent of total final consumption of energy in 1989. The relatively high share of industry in energy consumption is due to the preponderance of the energy-intensive heavy industries, namely iron and steel, industrial chemicals, non-electrical machinery and building materials. In the late 1980s the share of these four industries represented 70 per cent of energy consumption in industry (see Table IV.38). Other energy-intensive industries include fuels, pulp and paper industry, glass and ceramics and food industries.

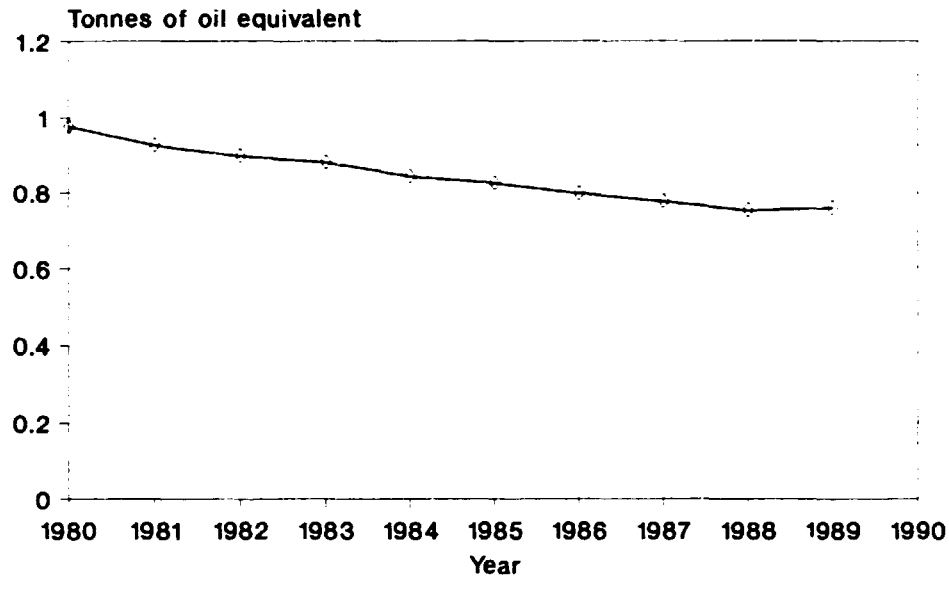
Table IV.38. Structure of final consumption of energy by industry branch, 1985 and 1989
(Percentage)

Industry branch	1985	1989
Fuels	12.2	5.1
Power	1.2	1.4
Ferrous metallurgy	35.3	35.0
Non-ferrous metallurgy	1.9	2.3
Chemical and rubber industry	11.7	18.7
Mechanical engineering	7.9	8.0
Electro-technical and metalworking industry	2.9	2.6
Building materials	8.1	8.3
Woodworking industry	1.8	1.8
Pulp and paper industry	3.9	4.0
Glass and ceramics industry	3.1	3.3
Textile industry	2.9	2.7
Clothing industry	0.1	0.2
Leather industry	0.7	0.7
Printing industry	0.1	0.1
Food industry	5.8	5.4
Freezing production	0.1	0.1
Other industries	0.2	0.3
Industry total	**100.0**	**100.0**

Source: Federal Statistical Office.

The government is endeavouring to enhance the energy-efficiency of the economy in general and the industrial sector in particular by reducing energy-intensive industries and introducing energy-efficient technologies. According to rough estimates consumption of primary energy in the year 2000 will be lower by 20 per cent than in 1990.

Fig. IV.X. Total final consumption of energy per one million of value added, 1980-1989
(Tonnes of oil equivalent)



The energy intensity of Czechoslovakia measured as energy consumption per unit of GDP is estimated at two-and-a-half times higher than that of developed countries. Energy requirements per unit of GDP fell from 0.659 petajoule to 0.584 petajoule in 1989, representing an annual decline of 1.3 per cent.

The energy intensity per unit of value added in Czechoslovak industry is estimated at 2.1 times higher than that of Austria, 3.4 times higher than industrial energy intensity in the former Federal Republic of Germany and 2.3 times higher than that of Sweden. Energy consumption in trade, services, transport and particularly for household purposes is, however, relatively low by international standards.

Despite a fall in the consumption of energy per $1 million of manufacturing, value added fell from 0.978 tonnes of oil equivalent (toe) in 1980 to 0.758 toe in 1989, the energy intensity of Czechoslovakia's industry is relatively higher than energy efficiency standards.

A comparison of final energy consumption per unit of production in industrial branches in the 1980s (see Table IV.39) shows that the most energy-demanding production is electricity, followed by fuels, iron and steel, non-metal production, glass and pottery. Most of the branches showed a decline in the specific energy consumption in the 1980s. In electricity, the high specific energy consumption was affected by the growing volume of electricity produced in nuclear power plants and by a higher specific energy consumption of fuel to generate electricity in thermal power stations.

Table IV.39. Final consumption of energy in industrial branches, 1980 and 1988

Industry branch	GJ per million Kcs in gross output[a/] 1980	1988
Fuels	4,504	4,776
Electricity	9,508	10,940
Ferrous metallurgy	5,081	4,371
Non-ferrous metallurgy	1,183	1,129
Chemical and rubber industry	2,007	1,531
Engineering and electro-technical industry	710	493
Building materials	4,136	3,432
Woodworking industry	1,240	775
Pulp and paper industry	3,109	2,413
Glass and ceramics industry	4,235	3,182
Food industry	656	550

Source: Federal Statistical Office.
a/ Consumption of energy in Gigajoule (GJ). Gross output in 1984 prices.

What is positive in the energy system of Czechoslovakia's industry is a changing pattern of final energy consumption in individual branches, with increased shares of electricity at the expense of thermal energy and other fuel (see Table IV.40). In a number of branches (non-metal production, glass, iron and steel) this trend has a favourable impact on the reduction in the specific energy consumption per unit of production. More electricity used in production also has a favourable impact on labour productivity.

Although electricity consumption in individual industries is also dependent on the technology of production, an increase in the share can be regarded as absorption and diffusion of scientific and technological advance. In the late 1980s electricity consumption grew in most industries.

In the 1980s, much of the change in the pattern of energy consumption was registered in the food industry, in paper and paper products, non-metal production, iron and steel, non-electrical and electrical machinery, and particularly in other branches of manufacturing.

It is believed that the growing importance of electricity consumption in these branches is a positive phenomenon contributing to an improvement in the quality of production with scope for reducing the energy consumption per unit of production. This conclusion can be applied primarily to the branches which take a significant share in electricity consumption in industry, i.e., paper and paper products, non-metal products and particularly iron and steel.

A driving force in the energy sector is thus the rising share of electricity. The key question relates to which form of electricity generation the country should opt for. Nuclear power appears to be regarded as the most suitable form of power generation, with due concern for international security norms. However, the possibility of utilizing steam-gas plants for mid-peak power generation depending on natural gas imports is being considered. Exploitation of the country's hydro potential for electricity generation is also being pursued. Energy experts propose the utilization and development of the country's spinal energy systems for transit services within the network of the possible evolution of "all European energy system".

Energy projects

Four nuclear reactors of the most recent version of the VVER-440 are in operation at Dukovany in Moravia. The construction of two 1,000 MW VVERs is likely to be resumed for commissioning in 1992 and 1994 respectively due to the closure of several brown coal mines. Two other VVER-1000s are being closed down.

Safety doubts have been expressed from neighbouring Austria about the four VVER-440 units located at Dukovany. Two of these are likely to be shut down, and others re-equipped with modern technology. At Mochovce in the Slovak Republic, four other VVER-440 will be completed and equipped with western safety diagnosis and control equipment.[67/]

Table IV.40. Pattern of industrial energy use, 1985 and 1989
(Percentage)

Industrial branches	1985			1989		
	Electricity	Heat	Other fuels	Electricity	Heat	Other fuels
Fuels	18.2	44.6	37.2	34.7	32.2	33.1
Power	45.8	47.5	6.7	50.1	38.4	11.4
Ferrous metallurgy	6.6	11.9	81.5	7.2	11.5	81.3
Non-ferrous metallurgy	27.6	27.4	44.8	30.3	29.7	40.0
Chemical and rubber industry	15.5	52.7	31.8	14.2	51.2	34.6
Mechanical engineering	18.1	58.2	23.7	20.0	56.3	23.7
Electro-technical and metal-working industry	22.1	54.3	23.6	25.1	61.3	13.6
Building materials	9.4	16.5	74.1	9.9	14.1	76.0
Woodworking industry	13.7	75.2	11.1	14.6	73.4	12.0
Metalworking industry	..	..	..	27.6	58.3	14.1
Pulp and paper industry	16.8	79.6	3.6	17.8	78.3	3.9
Glass and ceramics industry	10.5	21.5	48.0	11.8	19.6	68.6
Textile industry	18.4	77.9	3.7	20.9	75.3	3.8
Clothing industry	14.7	59.0	26.3	15.4	68.9	15.7
Leather industry	15.0	21.1	3.9	15.5	80.5	4.0
Printing industry	28.4	49.3	22.3	29.8	47.1	23.1
Food industry	9.1	76.6	14.3	10.7	77.8	11.5
Freezing industry	28.3	64.3	7.4	34.5	58.0	7.5
Other industries	21.1	60.2	18.7	28.2	48.5	23.3
Industry total	**12.8**	**37.1**	**50.1**	**14.2**	**36.0**	**49.8**

Source: Federal Statistical Office.

The Government of Slovakia seems to have decided to proceed with the controversial Gabcikovo-Nagymaros hydroelectric scheme, south of Bratislava under the pretext that the unfinished project cannot just be abandoned. Environmentalists in Austria, Czechoslovakia and Hungary have been opposing the project from its inception. According to the World-Wide Fund for Nature, 100 square km of forest and farmland have been razed by construction of the Slovak dam and 40 square km covered with concrete.[68/] The Gabcikovo project is scheduled for completion in 1992 and will have a capacity of 180 MW in three years against the originally envisaged target of 780 MW.

Under a compromise with Hungary, which is determined to wind up the cross-border project and to demolish the unfinished barrage in the Danube Bend in order to restore that section of the river, Slovakia has already completed a 17 km canal and planned to extend it by 9 km upstream.

Southern Electric International Inc. has concluded an agreement in order to study modernizing and upgrading a 1,320 MW Vojany power plant in eastern Corazia.[69/] The project will determine the extent to which rehabilitation, repowering and new construction will be required to improve the reliability and environmental compliance of the Vojany plant. The plant is equipped with 12 generating units of 110 MW each, and burns coal, heavy oil and natural gas, representing about 25 per cent of the total Slovak power generation capacity and about 70 per cent of the region's fossil fuel capacity. The major focus of the project will be on how to bring the plant into the EC air quality standards for particulate emissions and emissions of sulphur oxides and nitrogen oxides.

Investment opportunities

Rationalization of the energy sector under the conditions of market economy is aimed at creating a competitive environment, changing the ownership pattern and deregulating prices. Pollution control plays an important part in the current phase of restructuring. Czechoslovakia is attempting to reduce sulphur dioxide emissions significantly within a short period. This is likely to be achieved, among other things, by the installation of desulphurization equipment and increased use of fluidized-bed combustion processes at coal-fired power stations and gas works. Such rationalization and modernization programmes will create investment opportunities, e.g., production of efficient electrical appliances and technologies, modernization and reconstruction of production and technical base of the energy sector, and investments in coal mining rationalization.

The following priority areas are identified in the energy sector for foreign participation and external assistance:

- projects of new prospective technologies both in the sphere of resources and the use of energy and experimental verification of comprehensive energy saving devices;
- production of highly effective boilers, industrial furnaces, electrical appliances for industrial and non-industrial uses, equipment for utilization of secondary energy resources, small hydroelectric stations, equipment for using solar energy, geothermal energy and energetic utilization of the vegetable and animal wastes of agricultural production;
- projects ensuring the saving and ecological use of energy in buildings, including thermal insulation materials for increasing thermal resistance of building jackets (up to international standards), modernization of heating systems of buildings;
- production of measuring and regulating equipment; and
- construction of pipelines, gas lines and transmitting lines for electricity imports (including interconnection with the western European electrification system).

Constraints and prospects

Czechoslovakia's inefficient and energy-intensive heavy industries until recently depended on relatively cheap and sufficient supplies of oil and gas from the former Soviet Union. Sourcing of oil and gas from this hitherto important origin is posing a problem. Decades of underinvestment in modernization resulted in a marked decline in the production of crude oil in the former Soviet Union. Production of crude oil in Russia, which accounted for 80 per cent of total production in the former Soviet Union for decades, fell from 505 million tonnes in 1990 to 450 million tonnes in 1991. A further fall to 400 million tonnes is estimated for the year 1992. Export projections for 1992 suggest a 50 per cent fall. The political and economic transformation in the Commonwealth of Independent States with an accent on hard currency in commercial exchange would imply that difficulties in obtaining oil and gas from the traditional origin are imminent. Even if the flow of foreign investments significantly enhances exploration and production of oil and gas in the Commonwealth of Independent States, trade in these products may be attuned more towards the west in the greater European energy market.

An open market in energy across all European countries is currently being envisaged. The plan has far-reaching implications for eastern Europe. In December 1991 the European Commission allocated an extra ECU 5 million for expanding the network with central and eastern Europe, encompassing Russia, Byelorussia, the three Baltic republics, Poland, Czechoslovakia, Hungary and Bulgaria. Third-party access to the EC's electricity and gas network seems to suggest that the energy sector in Europe is fast moving towards an integrated Europe.

Czechoslovakia seems to be committed to the farther expansion of the role of nuclear power with western technology and inputs. Of the country's 11 uranium mines, nine are likely to be closed down. Two of the three yellow-cake production facilities are also being closed down. Czechoslovakia has applied to the EC for assistance in making the Bohunice nuclear power plant safe.

Environmental hazards caused by the use of low-quality coal call for a significant reduction in coal consumption as well as efforts for the removal of sulphur dioxide emissions from electric power plants. The government is determined to significantly reduce SO_2 emissions by reducing the country's reliance on coal. According to some estimates, the cost of pollution control over the next 15 years will be at least $23.7 billion.[70/]

A three-year programme, called Energy Efficiency 2000, administered through the United Nations Economic Commission for Europe (ECE) merits attention in analysing the prospects for bridging the energy-efficiency gap between west European and east European countries.[71/] The project is aimed at reducing environmental pollution, improving the efficiency in energy use and encouraging investment in energy-saving measures. The task of upgrading the energy infrastructure of central and eastern Europe over the next two decades is estimated at $120 billion. The long-term proposals outlined in a new study[72/] are to create business opportunities, enhance nuclear safety and to improve public health standards through reduced industrial pollution.

The Programme is aimed at reducing the east-west energy efficiency gap by half, saving 540 million tonnes of oil equivalent by the year 2000 and 600 million tonnes of oil equivalent by the year 2010. Of these savings 90 per cent will be fossil fuels. Emissions of SO_2 and CO_2 will be reduced by 20-25 per cent. According to ECE projections, primary energy imports required for the production of $1,000 of GNP in central and eastern Europe will be reduced from 0.92 tonnes of oil equivalent in 1985 to 0.60-0.71 tonnes of oil equivalent by the year 2010. However, such a level of energy intensity in central and eastern Europe in 2010 will be much higher than the 1985 energy intensity of 0.47 tonnes of oil equivalent for $1,000 of GNP in the traditional market economies of Europe. This illustrates the extent of energy inefficiency that prevails across the east European countries, including Czechoslovakia, and the formidable challenges that lie ahead.

NOTES TO CHAPTER IV

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19/ For proven means of making environmentally friendly leather, see *World Leather's* special issue entitled "Leathermaking and the Environment" (April 1991).

20/ See Gill Perkins, "The world leather industry 1990-2000", *World Leather* (August/September 1990).

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22/ Extracted from Frantisek Valcek, *Ibid* (April 1991).

23/ *Ibid* (July 1991).

24/ *Pulp and Paper International* (February 1991), p. 19.

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26/ *Pulp and Paper International*, "Will the East become a "Western" market" (February 1990).

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ANNEX A

STATISTICAL TABLES

Annex Table A-1. Net material product by industrial origin, 1970-1991, selected years
(Billion Kcs, constant 1 January 1984 prices)

Year	Agriculture	Industry	Construction	Trade and catering	Other material branches[a/]	Total
1970	33.5	180.8	37.1	29.7	33 8	314.9
1975	36.1	243.1	53.8	41.7	39.7	414.4
1980	37.0	290.3	58.1	61.5	43.5	490.4
1981	31.2	290.0	59.3	64.0	45.2	489.7
1982	34.9	285.4	57.6	64.5	46.1	488.5
1983	35.1	290.1	59.0	70.2	46.8	501.2
1984	38.4	304.2	56.7	72.5	46.6	518.4
1985	35.8	314.5	61.0	74.5	48.2	534.0
1986	36.9	324.4	61.3	76.2	49.1	547.9
1987	35.9	337.0	63.1	75.1	48.2	559.3
1988	35.6	348.3	64.2	77.3	47.0	572.4
1989	37.9	358.2	63.1	70.3	46.8	576.3
1990	38.4	351.3	64.2	67.9	48.4	570.2
1991[b/]	33.8	283.0	47.0	57.0	38.0	458.8

Sources: Federal Statistical Office; World Bank.

a/ Forestry, water resources, material transport, "material" part of communications, raw material resources, State purchases of agricultural products, etc.

b/ Preliminary data.

Annex Table A-2. Net material product by expenditure, 1970-1991, selected years
(Billion Kcs, constant 1 January 1984 prices)

	Net material product used					Residual		Total
	Consumption		Accumulation					
Year	Personal	Social	Net fixed investment	Unfinished construction	Change in inventories	Trade balance	Losses	
1970	200.3	61.3	50.6	2.4	26.2	-32.5	6.6	314.9
1975	253.4	85.3	83.6	6.3	30.4	-53.4	8.8	414.4
1980	275.3	107.8	87.3	1.9	35.0	-23.3	6.4	490.4
1981	280.1	113.1	97.0	-15.6	15.6	-6.8	6.3	489.7
1982	273.6	115.2	75.4	1.0	18.2	-0.4	7.5	490.5
1983	279.4	120.0	68.7	1.3	17.3	7.9	6.6	501.2
1984	284.2	126.9	81.5	-12.4	12.0	19.1	7.1	518.4
1985	289.4	132.8	83.1	-13.3	14.4	21.4	6.2	534.0
1986	296.1	140.6	78.5	-2.3	18.3	10.5	6.2	547.9
1987	304.4	148.0	58.5	11.0	23.9	6.4	7.1	559.3
1988	319.4	153.3	64.6	9.0	10.3	8.7	7.1	572.4
1989	325.0	164.5	49.9	26.0	8.7	-5.1	7.3	576.3
1990	340.7	165.5	43.7	23.1	28.0	-40.4	9.6	570.2
1991[a/]	228.1	162.2	15.4	-15.0	15.6	44.3	8.2	458.8

Sources: Federal Statistical Office; World Bank.

a/ Preliminary data.

Annex Table A-3. Physical volume of output, selected industrial products, 1970-1990, selected years

Product	Unit	1970	1980	1985	1986	1987	1988	1989	1990
Mining									
Bitumen coal	Thousand tonnes	28,195	28,201	26,223	25,658	25,736	25,503	25,070	22,406
Brown coal	Thousand tonnes	77,522	91,693	96,705	97,164	96,712	94,442	88,592	80,625
Iron ore	Thousand tonnes	1,606	1,927	1,859	1,784	1,798	1,773	1,780	1,831
Energy									
Electricity	Million kWh	45,163	72,732	80,627	84,774	85,825	87,374	89,200	86,626
Metallurgy									
Pig iron and ferro-alloys	Thousand tonnes	7,548	9,819	9,562	9,573	9,788	9,706	9,911	9,667
Crude steel	Thousand tonnes	11,480	15,225	15,036	15,112	15,416	15,379	15,465	14,877
Steel plates and sheets	Thousand tonnes	2,273	3,570	3,965	4,036	4,079	4,066	4,215	4,148
Steel tubes	Thousand tonnes	1,133	1,542	1,554	1,564	1,586	1,579	1,570	1,567
Lead, technical grade	Tonnes	17,615	20,014	21,441	23,600	26,008	26,045	26,008	23,668
Crude copper	Tonnes	17,032	30,966	33,476	31,686	34,415	34,792	36,832	33,000
Aluminium, technical grade	Tonnes	30,833	38,304	31,725	33,078	32,366	31,453	32,576	30,076
Machinery									
Pumps	Units	494,929	409,324	461,386	486,504	472,315	443,032	458,408	455,476
Passenger cars	Units	142,858	184,745	183,745	185,030	172,355	163,834	188,611	191,233
Trucks	Units	24,462	45,688	47,956	50,199	51,194	50,498	50,570	47,589
Buses	Units	2,602	3,303	3,386	3,410	3,350	3,329	3,201	3,178
Motorcycles over 100 cm^3	Units	107,754	136,986	157,289	151,483	134,573	136,160	118,911	105,014
Electric locomotives	Units	149	102	126	124	99	132	107	106
Diesel locomotives	Units	351	374	530	502	524	507	500	348
Wagons	Units	4,354	7,269	6,215	6,405	6,202	5,979	5,900	4,910
Tramcars	Units	760	923	955	883	950	685	937	342
Cranes	Units	2,668	2,258	2,254	2,583	2,235	2,399	2,230	2,311
Steam boilers	Units	6,967	5,431	4,800	4,486	5,150	2,088	1,935	2,481
Steam turbines	Thousand kW	1,813	312	1,227	875	1,039	1,250	994	986
Rolling equipment	Tonnes	43,843	47,032	31,854	28,210	29,700	29,100	29,106	30,996
Metalworking machines	Units	35,186	36,876	37,246	38,911	37,981	38,438	37,281	34,642
Forming machines	Units	9,156	4,551	4,958	5,050	5,321	5,247	5,055	5,189
Track-laying and wheeled tractors	Units	18,480	33,359	35,184	36,960	35,274	33,558	34,317	33,205
Electro-technical engineering									
Electric motors	Thousand kW	3,913	6,915	7,166	7,501	7,409	7,595	7,592	7,129
Radio sets	Units	356,219	229,619	242,348	240,066	177,823	169,208	135,156	..
Television sets	Units	383,176	389,183	432,338	434,450	506,743	481,897	524,190	504,577

(continued)

Annex Table A-3. **(continued)**

Product	Unit	1970	1980	1985	1986	1987	1988	1989	1990
Metalworking industry									
Anti-friction bearings	Thousand units	50,859	68,183	73,370	75,555	77,025	78,768	76,379	76,100
Refrigerators and freezers	Units	300,409	352,592	479,727	524,021	525,686	550,540	502,135	448,992
Household washing machines	Units	289,900	355,370	445,205	452,121	460,171	462,728	453,787	451,331
Electric vacuum cleaners	Units	195,770	478,190	573,870	601,206	657,268	677,331	676,705	699,291
Bicycles	Units	387,843	607,449	786,22[a]	786,586	754,119	735,756	684,078	653,176
Building materials									
Cement	Thousand tonnes	7,402	10,546	10,265	10,298	10,369	10,973	10,888	10,215
Lime	Thousand tonnes	2,148	3,018	3,227	3,329	3,237	3,311	3,350	3,120
Construction parts	Thousand cubic metres	4,550	7,296	6,425	6,425	6,459	6,522	6,021	4,924
Bricks	Million units	3,167	3,259	2,970	3,059	3,122	3,343	3,217	3,327
Chemicals									
Petrol	Thousand tonnes	1,917	3,540	3,576	3,523	3,777	3,913	3,742	3,268
Diesel oil	Thousand tonnes	2,937	4,145	3,647	3,784	4,076	4,469	4,495	3,524
Sulphuric acid	Tonnes	1,109,600	1,284,600	1,297,200	1,291,500	1,263,900	1,248,900	1,142,400	1,032,783
Hydrochloric acid	Tonnes	134,100	225,500	236,200	245,500	246,400	247,400	244,577	236,201
Sodium hydroxide	Tonnes	189,400	325,500	332,200	347,000	344,100	337,100	337,100	334,754
Calcium carbide	Tonnes	151,900	106,900	64,700	66,000	67,000	65,100	67,500	36,171
Propylene	Tonnes	61,100	150,700	276,500	281,300	287,000	322,000	297,300	288,716
Benzene	Tonnes	106,508	184,211	291,095	301,797	309,582	358,136	338,429	350,442
Ethylbenzene	Tonnes	68,619	76,477	125,822	133,595	140,543	153,053	152,500	161,760
Synthetic methanol	Tonnes	77,758	105,218	109,301	72,736	96,181	63,453	8,220	8,278
Synthetic ethanol	Tonnes	73,922	18,831	36,268	32,983	44,070	45,458	54,380	55,838
Phthalic anhydride	Tonnes	8,610	24,625	30,323	27,675	31,278	31,204	29,263	31,279
Caprolactam	Tonnes	26,519	56,883	67,424	71,554	71,660	71,441	72,424	73,300
Plastics	Tonnes	244,873	893,906	1,102,606	1,140,394	1,151,699	1,191,953	1,185,719	1,173,704
Coating compositions	Tonnes	165,164	244,317	261,889	270,397	270,565	266,147	262,390	240,531
Nitrogen fertilizers	Tonnes	296,000	618,300	525,900	614,300	596,400	596,400	524,999	513,897
Phosphoric fertilizers	Tonnes	322,400	361,00	310,300	307,000	277,000	313,000	295,600	256,870
Soap	Tonnes	22,918	37,262	36,073	36,193	34,353	34,972	36,534	34,951
Synthetic rubber	Tonnes	49,648	60,134	69,591	76,031	76,488	77,078	75,662	69,444
Passenger car tyres	Thousand units	1,583	3,123	2,896	3,065	3,147	3,270	3,414	3,496
Truck tyres	Thousand units	930	1,846	1,651	1,672	1,711	1,789	1,849	1,819
Man-made fibres	Tonnes	100,622	165,071	193,246	192,686	196,515	204,028	208,123	200,190
Wood processing									
Sawnwood	Thousand cubic metres	3,639	3,797	5,098	5,131	5,068	5,015	4,748	4,169

(continued)

Annex Table A-3. **(continued)**

Product	Unit	1970	1980	1985	1986	1987	1988	1989	1990
Paper									
Paper and cardboard	Tonnes	600,443	893,474	963,524	960,165	982,569	973,969	1,027,503	1,048,099
Paperboard	Tonnes	243,779	291,452	295,728	294,083	289,623	292,255	277,502	266,891
Textiles									
Cotton fabrics	Thousand metres	501,002	560,449	606,355	606,457	599,900	591,243	581,845	580,429
Woollen fabrics	Thousand metres	48,583	58,415	60,147	59,186	59,178	58,669	59,106	58,759
Knitted top clothing	Thousand units	54,329	72,534	67,680	68,285	65,491	65,666	64,965	63,100
Knitted underwear	Thousand units	60,138	75,505	70,475	64,755	61,483	63,395	62,063	61,528
Stocking and socks	Thousand pairs	105,823	96,564	111,631	111,469	110,090	108,349	108,040	110,256
Textile garments	Thousand units	38,914	44,096	46,540	47,686	47,648	48,819	47,667	45,259
Leather, shoes									
Footwear	Thousand pairs	117,396	127,484	131,410	124,469	119,427	119,088	120,226	116,575
Food industry									
Flour and semolina	Tonnes	1,219,457	1,296,089	1,334,159	1,354,253	1,384,360	1,424,638	1,404,757	1,417,983
Meal (rye)	Tonnes	313,257	292,738	309,355	305,020	287,015	285,213	305,290	289,026
Refined sugar	Tonnes	874,822	778,945	969,369	984,810	894,684	707,518	871,418	739,747
Crude spirit	Thousand litres	82,600	90,400	86,500	85,300	73,300	65,600	69,585	68,357
Processed meat	Tonnes	629,495	963,426	943,845	960,722	984,056	995,296	984,145	963,234
Slaughtered poultry	Tonnes	80,726	175,335	174,293	205,191	206,906	222,256	248,678	262,268
Cheese	Tonnes	72,574	108,697	128,212	133,634	142,415	146,483	151,762	148,782
Dairy butter	Tonnes	86,948	128,069	152,026	156,128	149,151	148,348	156,716	158,676
Beer	Thousand litres	1,117,760	2,339,305	2,235,450	2,278,926	2,222,794	2,267,072	2,333,319	2,352,718
Spirits and distillates	Thousand litres	87,642	125,003	120,535	122,420	121,083	122,657	118,673	132,594
Cigarettes	Million units	20,472	22,543	23,840	24,998	25,365	25,502	25,428	26,708
Other (glass)									
Flat glass	Thousand square metres	37,735	39,132	31,577	31,511	32,142	27,153	22,799	23,322
Beverage bottles	Thousand units	412,306	729,361	740,605	746,187	713,272	690,386	795,177	828,114

Source: Federal Statistical Office.

Annex Table A-4. **Average annual growth rates of gross fixed capital formation in industry, 1971-1989, selected years**
(Percentage)

Branches	ISIC	1971-1975	1976-1980	1981-1985	1986-1989
Mining, quarrying	2	7.72	7.25	4.64	-6.37
Coal mining	210	6.33	10.46	4.89	-6.95
Petroleum and gas	220	31.21	-14.49	16.95	-10.96
Metal ore mining	230	3.71	-3.58	7.57	8.01
Other mining	290	10.25	0.35	-4.95	-8.90
Manufacturing	3	5.14	1.91	1.68	5.57
Food products	311/2	6.43	2.99	5.10	6.36
Beverages	313	4.41	2.01	4.22	3.39
Tobacco	314	4.56	3.71	-7.79	22.47
Textiles	321	-2.16	-0.09	0.44	8.47
Wearing apparel	322	4.32	1.84	12.26	1.78
Leather and products	323	1.76	4.56	3.71	8.56
Footwear	324	15.81	-7.97	4.44	4.02
Wood products	331	7.82	3.48	-11.69	-0.39
Furniture, fixtures	332	13.97	-15.93	3.55	9.54
Paper and products	341	-3.25	21.67	-17.95	11.76
Printing, publishing	342	5.39	2.90	-4.36	19.33
Industrial chemicals	351	-4.23	5.90	0.14	9.10
Other chemical products	352	4.34	-5.73	10.63	2.09
Petroleum refineries	353	14.13	-17.18	-7.90	23.27
Petroleum, coal products	354	9.86	32.77	0.00	12.57
Rubber products	355	3.07	-7.31	7.12	3.45
Plastic products n.e.c.	356			8.45	27.79
Pottery, china, etc.	361	4.56	26.19	-7.22	-4.89
Glass and products	362	-4.24	-1.32	13.66	-2.11
Non-metal products n.e.c.	369	5.68	-9.04	1.81	2.74
Iron and steel	371	9.51	0.11	-4.43	2.54
Non-ferrous metals	372	-7.33	-1.14	4.97	-7.30
Metal products	381	9.98	13.92	1.64	7.54
Machinery n.e.c.	382	8,78	8.90	4.87	2.58
Electrical machinery	383	7.21	4.81	15.40	9.17
Transport equipment	384	14.16	-1.77	3.70	3.51
Professional goods	385	0.00	-28.63	25.39	-0.82
Other industries	390	-5.59	5.92	8.90	11.23
Electricity, gas, steam	4	17.48	1.70	3.14	10.21
All industry	2-4	6.69	2.49	2.28	4.77

Source: *Industrial Statistics Yearbook*, volume I: *General Industrial Statistics*, United Nations, New York; Federal Statistical Office.

Annex Table A-5. **Branch structure of gross fixed capital formation in industry, 1970-1989, selected years**
(Percentage)

Branches	ISIC	Gross fixed capital capital formation - Total				Gross fixed capital formation - Machinery and equipment		
		1970	1980	1985	1989	1980	1985	1989
Mining, quarrying	2	9.95	13.10	14.68	9.36	12.50	11.87	8.18
Coal mining	210	7.74	11.07	12.56	7.81	10.82	10.07	6.68
Petroleum and gas	220	0.29	0,33	0,64	0,33	0.09	0.35	0.22
Metal ore mining	230	0.80	0.51	0.66	0.74	0.43	0.52	0.78
Other mining	290	1.12	1.19	0.82	0.47	1.16	0.93	0.49
Manufacturing	3	81.57	73.71	71.56	73.78	74.82	76.11	79.91
Food products	311/2	6.65	6.73	7.71	8.19	6.40	8.00	8.00
Beverages	313	1.73	1.51	1.66	1.58	1.65	1.57	1.52
Tobacco	314	0.13	0.12	0.07	0.14	0.12	0.03	0.16
Textiles	321	8.03	4.58	4.19	4.81	5.30	5.24	6.10
Wearing apparel	322	0.54	0.47	0.75	0.67	0.40	0.70	0.67
Leather and products	323	0.35	0.31	0.33	0.38	0.27	0.29	0.38
Footwear	324	0.77	0.68	0.75	0.73	0.58	0.96	0.87
Wood products	331	2.24	2.48	1.19	0.97	2.47	1.22	1.17
Furniture, fixtures	332	0.83	0.43	0.46	0.55	0.34	0.52	0.58
Paper and products	341	4.41	6.38	2.12	2.75	7.23	2.42	2.91
Printing, publishing	342	0.96	0.92	0.66	1.11	0.12	0.81	1.43
Industrial chemicals	351	8.73	6.00	5.39	6.34	6.07	5.79	6.64
Other chemical products	352	1.22	0.72	1.06	0.96	0.64	0.96	1.05
Petroleum refineries	353	3.52	1.70	1.01	1.93	1.77	0.99	2.13
Petroleum, coal products	354	0.16	0.68	0.60	0.80	0.34	0.35	0.61
Rubber products	355	1.57	0.80	1.01	0.96	0.91	1.16	0.99
Plastic products n.e.c.	356		0.12	0.16	0.36	0.12	0.20	0.49
Pottery, china, etc.	361	0.13	0.33	0.20	0.14	0.37	0.15	0.13
Glass and products	362	2.46	1.19	2.01	1.53	1.22	1.51	1.61
Non-metal products n.e.c.	369	6.24	3.27	3.20	2.96	3.14	3.14	2.82
Iron and steel	371	7.68	7.78	5.54	5.08	7.65	6.52	5.96
Non-ferrous metals	372	2.53	1.04	1.19	0.73	1.28	1.51	0.76
Metal products	381	1.47	2.91	2.81	3.13	3.02	3.08	3.16
Machinery n.e.c.	382	8.38	12.50	14.17	15.02	13.17	15.42	14.19
Electrical machinery	383	2.30	2.64	4.83	5.69	2.99	5.47	6.72
Transport equipment	384	5.79	6.57	7.04	6.71	6.43	6.52	7.06
Professional goods	385	1.73	0.20	0.57	0.46	0.18	0.67	0.56
Other industries	390	1.02	0.65	0.90	1.14	0.64	0.87	1.21
Electricity, gas, steam	4	8.48	13.20	13.76	16.36	12.68	12.02	11.90
All industry	2-4	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: *Industrial Statistics Yearbook*, volume I; *General Industrial Statistics*, United Nations, New York; Federal Statistical Office.

Annex Table A-6. Technological component of gross fixed capital formation, 1980, 1985 and 1989
(Percentage)

Branches	ISIC	1980	1985	1989
Mining, quarrying	2	64.06	50.81	59.16
Coal mining	210	65.62	50.36	57.86
Petroleum and gas	220	18.75	34.29	45.45
Metal ore mining	230	56.00	50.00	71.43
Other mining	290	65.52	71.11	70.97
Manufacturing	3	68.13	66.79	73.31
Food products	311/2	63.83	65.17	66.11
Beverages	313	72.97	59.34	65.38
Tobacco	314	66.67	25.00	77.78
Textiles	321	77.68	78.60	85.80
Wearing apparel	322	56.52	58.54	68.18
Leather and products	323	60.00	55.56	68.00
Footwear	324	57.58	80.49	81.25
Wood products	331	66.94	64.62	81.25
Furniture, fixtures	332	52.38	72.00	72.22
Paper and products	341	75.96	71.55	71.82
Printing, publishing	342	8.89	77.78	87.67
Industrial chemicals	351	67.92	67.46	70.81
Other chemical products	352	60.00	56.90	74.60
Petroleum refineries	353	69.88	61.82	74.80
Petroleum, coal products	354	33.33	36.36	50.94
Rubber products	355	76.92	72.73	69.84
Plastic products n.e.c.	356	66.67	77.78	91.67
Pottery, china, etc.	361	75.00	45.45	66.67
Glass and products	362	68.97	47.27	71.29
Non-metal products n.e.c.	369	64.38	61.71	64.42
Iron and steel	371	66.05	73.93	79.40
Non-ferrous metals	372	82.35	80.00	70.83
Metal products	381	69.72	68.83	68.45
Machinery n.e.c.	382	70.70	68.39	73.78
Electrical machinery	383	75.07	71.21	80.00
Transport equipment	384	65.73	58.18	71.27
Professional goods	385	60.00	74.19	83.33
Other industries	390	65.63	61.22	72.00
Electricity, gas, steam	4	64.50	54.86	47.79
All industry	2-4	67.12	62.80	67.68

Source: *Industrial Statistics Yearbook*, volume I: *General Industrial Statistics*, United Nations, New York; Federal Statistical Office.

Annex Table A-7. Demographic base of employment, 1970-1990, selected years
(Thousand persons, yearly average)

Year	Labour force				Non-employed			Total employment[c/]
	Working age population[a/]	Retirement age employment	Foreign workers[b/]	Total	Women on maternity leave	Working age students[c/]	Others[d/]	
1970	8,158	625	14	8,797	141	830	1,063	6,763
1975	8,483	607	19	9,109	355	819	975	6,960
1980	8,709	653	13	9,375	380	909	860	7,226
1981	8,710	662	21	9,393	361	873	907	7,252
1982	8,696	667	32	9,395	347	850	914	7,284
1983	8,700	667	39	9,406	342	812	938	7,314
1984	8,713	682	39	9,434	339	759	964	7,372
1985	8,734	699	37	9,470	344	725	971	7,430
1986	8,763	723	34	9,520	350	715	969	7,486
1987	8,814	745	32	9,591	352	720	1,006	7,513
1988	8,883	741	32	9,656	358	740	1,013	7,545
1989	8,974	724	38	9,736	369	787	1,045	7,535
1990	9,069	711	35	9,815	404	836	1,145	7,430

Sources: Federal Statistical Office; Economist Intelligence Unit.

a/ Males 15-59 and females 15-54 years old.
b/ Minus domestic workers abroad.
c/ Including school-children and trainees of working age.
d/ Unfit for work, housewives, armed forces, self-employed and unemployed.
e/ Excluding those with two or more jobs.

Annex Table A-8. Sectoral distribution of employment, 1970-1990, selected years
(Thousand persons, yearly average)

Year	Agriculture	Industry	Construction[a/]	Trade and catering	Other material branches[b/]	Non-material services	Total[c/]
1970	1,138	2,607	624	525	531	1,446	6,871
1975	975	2,690	704	608	532	1,551	7,060
1980	896	2,761	748	670	537	1,746	7,358
1981	893	2,780	739	679	540	1,776	7,407
1982	883	2,791	734	687	540	1,800	7,435
1983	865	2,809	737	697	549	1,809	7,466
1984	867	2,822	748	706	550	1,841	7,534
1985	865	2,840	753	716	554	1,878	7,606
1986	861	2,879	779	725	544	1,917	7,705
1987	853	2,898	791	732	543	1,937	7,754
1988	839	2,908	798	735	544	1,980	7,804
1989	811	2,910	799	741	549	2,020	7,830
1990[d]	795	2,811	749	718	533	2,004	7,610

Source: Federal Statistical Office.

a/ Including designing and geological activities (corresponding to NMP produced in construction).
b/ Forestry, water resources, material transport, "material" part of communications, raw material resources, State purchases of agricultural products.
c/ Including double payment.
d/ Preliminary data.

Annex Table A-9. Total and specific emissions of main pollutants in the Czech and Slovak Republics, 1985-1990

Year	Total emissions (1,000 t/year)					Specific emissions per sq km (t/km^2)				
	Solid	SO_2	NO_x	CO	C_xHy	Solid	SO_2	NO_x	CO	C_xH_y
					Czechoslovakia					
1985	1,372.4	2,782.9	991.9	1,238.6	197.3	10.7	21.8	7.8	9.7	1.5
1986	1,352.3	2,782.7	1,045.9	1,084.8	202.5	10.6	21.8	8.2	8.5	1.6
1987	1,299.0	2,770.7	1,008.4	1,083.4	201.6	10.2	21.7	7.9	8.5	1.6
1988	1,144.7	2,671.6	1,054.3	1,090.0	202.4	9.0	20.9	8.2	8.5	1.6
1989	990.6	2,562.9	1,122.2	1,495.7	319.6	7.8	20.0	8.8	11.7	2.5
1990	939.5	2,443.4	988.6	1,291.0	303.7	7.3	19.1	7.7	10.0	2.4
					Czech Republic					
1985	1,014.7	2,161.4	795.0	899.3	136.4	12.9	27.4	10.1	11.4	1.7
1986	988.3	2,171.2	850.0	740.0	139.7	12.5	27.5	10.8	9.4	1.8
1987	950.5	2,163.7	816.1	738.2	139.4	12.1	27.4	10.3	9.4	1.8
1988	840.3	2,065.8	857.7	737.0	138.9	10.7	26.2	10.9	9.3	1.8
1989	673.2	1,997.8	919.6	951.8	253.0	8.5	25.3	11.7	11.2	2.9
1990	631.4	1,875.7	741.9	887.8	225.2	8.0	23.8	9.4	11.3	2.9
					Slovak Republic					
1985	357.7	621.5	196.9	339.3	60.9	7.3	12.7	4.0	6.9	1.2
1986	364.0	611.5	195.9	344.8	62.8	7.4	12.5	4.0	7.0	1.3
1987	348.5	607.0	192.3	354.2	62.2	7.1	12.4	3.9	7.0	1.3
1988	304.4	605.8	196.6	353.0	63.5	6.2	12.4	4.0	7.2	1.3
1989	317.4	565.1	202.6	543.0	66.6	6.5	11.5	4.1	11.1	1.4
1990	308.1	547.1	246.7	403.2	78.5	6.2	11.1	5.0	8.2	1.6

Source: Federal Statistical Office.

Annex Table A-10. Destination of exports, 1970-1991, selected years (Billion Kcs)[a/]

Year	Total exports f.o.b.	of which: convertible currency	Centrally planned economies: European CMEA[b/]	of which: USSR	Other CPEs[c/]	Market economies: Industrial countries	of which: Germany[d/]	Developing countries
1970	74.9	29.8	39.8	19.8	5.3	20.9	5.6	8.9
1975	128.8	51.5	69.6	35.0	9.4	34.7	9.7	15.1
1980	171.2	68.1	95.4	53.3	11.3	46.2	13.8	18.3
1981	153.8	59.7	86.1	49.2	10.7	38.7	11.6	18.3
1982	165.4	60.8	96.2	56.5	13.0	38.2	10.9	18.0
1983	171.6	63.6	100.0	59.7	12.2	38.4	11.1	21.0
1984	195.5	73.4	108.7	67.8	18.3	46.3	13.4	22.2
1985	203.1	72.3	119.2	74.0	15.1	47.2	13.5	21.6
1986	205.7	70.4	123.2	74.3	14.5	47.7	14.1	20.3
1987	210.7	67.8	130.6	76.6	15.1	48.9	14.2	16.1
1988	218.9	78.1	127.7	74.8	16.2	58.4	16.6	16.6
1989	217.5	88.2	117.2	66.4	15.1	67.8	18.0	17.4
1990	215.3	110.4	91.5	54.2	14.0	91.3	27.6	18.5
1991	321.2	298.0	105.6	62.4	20.8	166.8	80.7	28.0
1991[e/]	195.5	181.4	64.3	38.0	12.7	101.5	49.1	17.0

Source: Federal Statistical Office.

a/ Converted at average commercial exchange rates in each year.
b/ Bulgaria, German Democratic Republic (up to 1990), Hungary, Poland, Romania and Soviet Union.
c/ Cambodia, China, Cuba, Laos, Mongolia, People's Republic of Korea, Viet Nam and Yugoslavia.
d/ Federal Republic of Germany, including the former German Democratic Republic and West Berlin in 1991.
e/ Converted to average exchange rate of 1990.

Annex Table A-11. Origin of imports, 1970-1991, selected years (Billion Kcs)[a/]

Year	Total imports f.o.b.	of which: convertible currency	Centrally planned economies: European CMEA[b/]	of which: USSR	Other CPEs[c/]	Market economies: Industrial countries	of which: Germany[d/]	Developing countries
1970	73.1	30.2	38.3	19.6	4.6	24.4	5.7	5.8
1975	140.5	58.7	74.2	36.8	8.9	46.8	12.3	10.6
1980	173.5	66.4	98.6	54.4	10.4	52.7	11.7	11.8
1981	150.1	54.8	87.1	51.4	10.3	43.0	9.8	9.7
1982	160.3	51.7	99.9	61.1	10.9	40.2	9.9	9.3
1983	165.2	50.9	106.3	66.5	10.6	38.8	10.5	9.5
1984	187.5	57.4	120.5	74.1	11.6	43.1	11.8	12.3
1985	198.3	59.6	126.7	77.8	13.9	46.0	12.7	11.7
1986	209.3	66.1	132.0	80.2	13.7	51.7	15.4	11.9
1987	212.9	68.9	133.0	78.3	13.0	56.1	17.5	10.8
1988	214.3	79.2	123.2	68.1	14.8	64.7	19.6	11.6
1989	214.7	83.7	118.2	63.8	15.6	66.7	19.9	14.2
1990	238.2	117.7	104.3	51.4	17.6	101.5	31.7	14.8
1991	293.7	279.8	116.2	93.5	9.7	143.7	59.6	24.1
1991[e/]	178.7	170.3	70.7	56.9	5.9	87.4	36.3	14.7

Source: Federal Statistical Office.

a/ Converted at average commercial exchange rates in each year.
b/ Bulgaria, German Democratic Republic (up to 1990), Hungary, Poland, Romania and Soviet Union.
c/ Cambodia, China, Cuba, Laos, Mongolia, People's Republic of Korea, Viet Nam and Yugoslavia.
d/ Federal Republic of Germany, including the former German Democratic Republic and West Berlin in 1991.
e/ Converted to average exchange rate of 1990.

Annex Table A-12. Destination of exports by SITC categories[a/], 1983-1991, selected years (Percentage)[b/]

Countries and SITC categories	1983	1985	1986	1987	1988	1989	1990	1991[c/]
SITC 0								
CMEA countries	32.81	33.21	27.69	29.85	24.23	12.74	13.41	17.11
Soviet Union	23.23	22.40	17.72	14.93	11.67	4.73	6.20	4.84
OECD countries	56.48	51.55	63.15	63.52	68.65	79.87	76.62	61.56
EC countries	33.35	29.28	36.71	33.66	36.28	34.50	35.70	48.82
Developing countries	10.42	14.56	8.35	5.38	5.30	5.39	7.22	12.66
SITC 1								
CMEA countries	89.93	90.08	85.69	83.73	79.87	65.47	49.98	50.13
Soviet Union	37.82	53.80	33.17	30.97	25.33	23.50	6.41	3.12
OECD countries	9.82	8.53	14.25	16.17	19.91	34.02	48.90	48.09
EC countries	6.24	5.22	8.67	10.30	11.02	21.19	28.67	36.37
Developing countries	0.24	0.06	0.06	0.07	0.14	0.29	0.35	0.13
SITC 2								
CMEA countries	56.24	52.79	54.40	54.29	29.20	31.09	26.26	11.19
Soviet Union	41.90	37.78	38.96	38.48	5.03	21.29	17.65	1.50
OECD countries	38.35	40.63	39.96	40.90	64.36	62.30	68.23	80.85
EC countries	18.62	18.89	20.00	20.92	34.85	33.26	38.24	52.53
Developing countries	0.49	0.81	1.00	1.45	1.84	2.91	1.90	2.51
SITC 3								
CMEA countries	33.91	40.98	42.48	42.14	47.31	28.49	22.28	13.18
Soviet Union	5.79	9.88	7.68	9.26	10.06	6.21	13.47	0.09
OECD countries	62.87	55.30	49.54	53.95	48.36	67.98	74.13	83.16
EC countries	19.65	19.26	18.64	18.85	19.39	24.23	35.44	53.88
Developing countries	0.48	0.33	4.01	0.75	1.74	0.61	0.93	0.30
SITC 4								
CMEA countries	11.27	4.96	3.01	16.55	4.23	2.71	0.49	1.44
Soviet Union	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16
OECD countries	73.66	79.41	89.56	66.68	91.45	95.80	98.92	98.39
EC countries	65.25	18.94	23.18	39.96	19.52	25.65	7.09	68.58
Developing countries	0.00	2.63	1.40	1.39	0.24	0.06	0.00	0.00
SITC 5								
CMEA countries	47.39	51.79	59.48	60.97	55.17	35.86	25.77	28.41
Soviet Union	23.01	28.84	26.94	26.13	22.03	14.26	11.37	16.72
OECD countries	35.22	35.08	30.07	28.43	35.00	54.05	65.53	62.00
EC countries	23.33	22.21	18.89	17.87	20.62	34.08	38.90	50.09
Developing countries	7.30	4.72	4.01	5.29	3.68	3.82	3.48	3.69
SITC 6								
CMEA countries	54.08	53.31	54.42	55.31	53.70	33.47	20.47	32.10
Soviet Union	23.60	23.31	24.57	24.42	22.13	15.40	9.08	17.37
OECD countries	36.11	37.11	37.18	36.65	39.07	57.17	70.39	62.04
EC countries	18.88	19.45	20.57	21.12	21.71	29.81	40.01	44.72
Developing countries	7.73	7.47	6.22	5.43	6.36	10.68	11.18	6.72
SITC 7								
CMEA countries	80.66	83.40	84.41	87.15	87.54	75.08	67.80	38.75
Soviet Union	50.09	52.01	51.00	51.29	50.75	42.15	39.05	25.66
OECD countries	3.20	3.08	3.60	3.36	3.59	8.26	15.16	32.00
EC countries	2.13	2.05	2.54	2.42	2.61	5.72	11.07	27.49
Developing countries	12.20	9.12	8.52	6.08	5.20	10.20	11.27	13.86
SITC 8								
CMEA countries	78.37	80.25	79.80	78.94	79.22	64.72	54.74	37.08
Soviet Union	57.48	60.15	60.38	58.48	58.49	46.66	42.38	30.07
OECD countries	16.09	16.39	16.89	17.71	17.28	31.16	40.37	47.77
EC countries	10.67	10.37	11.52	12.03	11.54	21.44	27.30	36.45
Developing countries	3.13	2.69	2.53	2.59	2.96	3.35	3.78	14.31

(continued)

Annex Table A-12. (continued)

Countries and SITC categories	1983	1985	1986	1987	1988	1989	1990	1991[c/]
SITC 9								
CMEA countries	80.23	85.49	83.08	84.06	95.51	84.95	48.31	0.00
Soviet Union	61.70	63.92	57.78	51.13	85.38	70.60	33.72	0.00
OECD countries	5.68	5.65	6.50	7.33	2.49	10.15	45.68	100.00
EC countries	4.18	4.42	4.72	5.52	1.62	7.32	35.62	100.00
Developing countries	11.77	8.13	8.87	6.98	1.76	4.69	5.76	0.00
SITC 0-9								
CMEA countries	69.66	72.06	73.47	75.40	75.15	54.91	43.43	31.54
Soviet Union	41.82	43.65	43.48	43.34	43.06	30.54	25.16	18.89
OECD countries	16.43	15.75	15.68	15.55	16.28	31.17	42.40	50.75
EC countries	9.54	9.14	9.62	9.49	9.95	18.21	26.53	40.01
Developing countries	8.97	7.27	5.72	5.16	4.70	8.02	8.58	9.43

Sources: Federal Ministry for Foreign Trade, Prague; Research Institute of External Economic Relations, Prague.

a/ Standard International Trade Codes (SITCs)

0	=	Food and live animals
1	=	Beverages and tobacco
2	=	Crude materials, inedible, except fuels
3	=	Mineral fuels, lubricants and related materials
4	=	Animal and vegetable oils and fats
5	=	Chemicals
6	=	Manufactured goods classified chiefly by material
7	=	Machinery and transport equipment
8	=	Miscellaneous manufactured articles
9	=	Commodities and transactions not classified according to kind

b/ Underlying data in current Kcs converted at the average commercial exchange rate of the Kcs in each respective year.

c/ January-May.

Annex Table A-13. Origin of imports by SITC categories[a/], 1983-1991, selected years (Percentage)[b/]

Countries and SITC categories	1983	1985	1986	1987	1988	1989	1990	1991[c/]
SITC 0								
CMEA countries	45.03	46.89	42.82	46.94	46.39	27.20	19.47	14.76
Soviet Union	3.78	3.96	3.28	3.97	4.11	2.64	2.79	1.88
OECD countries	27.12	21.06	18.19	19.75	19.99	27.11	30.73	43.09
EC countries	15.04	12.24	14.63	15.41	14.15	19.44	19.54	33.34
Developing countries	20.02	24.04	28.81	26.66	26.28	37.65	39.81	37.83
SITC 1								
CMEA countries	65.07	66.01	68.55	73.31	74.97	52.50	33.75	15.02
Soviet Union	8.52	10.09	20.12	19.18	26.21	12.68	7.12	3.01
OECD countries	5.04	10.44	16.74	14.23	11.16	20.84	47.11	60.49
EC countries	3.85	7.83	10.80	9.06	6.29	12.12	26.19	41.77
Developing countries	6.45	6.93	8.99	9.98	9.90	14.97	5.63	23.94
SITC 2								
CMEA countries	55.84	55.79	58.75	58.59	55.34	33.69	28.70	41.73
Soviet Union	41.80	40.99	42.37	42.83	39.14	24.86	19.93	10.11
OECD countries	24.08	21.66	20.58	21.61	25.55	38.54	42.33	38.36
EC countries	8.44	8.81	8.26	9.38	10.52	15.20	19.19	23.32
Developing countries	15.70	16.78	14.61	13.54	13.47	19.45	19.67	17.64
SITC 3								
CMEA countries	97.32	97.95	98.45	97.78	98.63	94.21	90.55	89.10
Soviet Union	93.33	94.73	94.81	93.92	92.44	88.76	84.91	84.95
OECD countries	0.42	0.52	0.38	0.35	0.31	0.77	4.31	1.24
EC countries	0.07	0.08	0.06	0.07	0.07	0.19	0.66	1.02
Developing countries	2.17	1.23	1.14	1.85	1.03	4.93	4.74	9.46
SITC 4								
CMEA countries	35.59	28.35	38.44	50.73	42.74	14.65	4.81	11.82
Soviet Union	3.78	3.42	4.10	3.40	2.34	0.00	0.34	1.67
OECD countries	40.57	45.21	45.74	38.82	41.29	56.90	52.78	83.08
EC countries	16.53	12.60	17.52	16.58	18.47	19.88	16.51	66.11
Developing countries	16.63	15.97	10.62	7.93	14.07	26.08	42.36	4.97
SITC 5								
CMEA countries	43.29	47.49	48.23	46.65	45.47	29.99	25.25	16.15
Soviet Union	18.18	19.93	18.85	16.90	17.12	9.86	6.38	7.75
OECD countries	49.24	45.34	45.60	48.46	49.30	64.69	69.54	80.28
EC countries	28.78	27.38	26.53	27.97	31.75	39.60	42.92	56.53
Developing countries	2.04	2.08	2.13	1.68	1.56	1.82	1.42	0.63
SITC 6								
CMEA countries	59.03	60.09	56.12	57.83	58.99	42.64	33.50	40.73
Soviet Union	32.17	28.97	25.92	26.54	27.11	16.34	14.72	23.87
OECD countries	21.29	21.98	27.66	26.75	24.05	35.43	47.63	43.14
EC countries	15.05	13.47	20.24	18.15	13.77	19.10	28.01	30.84
Developing countries	5.61	4.72	4.84	3.54	3.98	5.23	5.12	3.70
SITC 7								
CMEA countries	77.01	78.79	77.23	76.90	75.68	59.81	43.36	13.18
Soviet Union	29.00	27.71	26.78	27.95	27.76	23.13	12.73	..
OECD countries	18.76	17.58	20.50	21.30	22.12	35.51	52.17	81.39
EC countries	10.04	10.28	11.78	13.10	13.34	21.37	29.11	54.28
Developing countries	0.04	0.26	0.12	0.07	0.10	0.98	1.11	1.94
SITC 8								
CMEA countries	63.46	59.55	60.70	59.98	59.04	40.16	37.58	11.22
Soviet Union	7.35	7.12	7.05	5.85	6.97	5.44	2.88	2.21
OECD countries	21.11	25.25	23.34	26.39	23.69	35.45	40.93	65.16
EC countries	11.41	13.70	12.41	15.28	13.40	19.17	22.89	42.19
Developing countries	1.66	1.52	1.49	1.52	3.66	2.64	2.85	5.83

(continued)

Annex Table A-13. (continued)

Countries and SITC categories	1983	1985	1986	1987	1988	1989	1990	1991[c/]
SITC 9								
CMEA countries	56.97	86.34	83.74	80.70	88.67	89.21	74.80	26.02
Soviet Union	9.10	12.02	10.97	9.93	8.57	12.90	10.39	26.00
OECD countries	26.21	6.68	10.07	11.86	8.34	9.64	22.93	73.98
EC countries	5.23	2.76	4.45	4.87	4.16	6.12	12.70	58.85
Developing countries	0.00	1.17	0.06	0.00	0.00	0.00	1.05	0.00
SITC 0-9								
CMEA countries	74.17	76.08	75.73	75.43	74.09	56.11	44.82	45.62
Soviet Union	46.18	46.00	45.27	43.63	40.29	29.71	21.58	43.90
OECD countries	16.75	15.31	16.49	17.63	18.56	31.07	42.60	42.35
EC countries	8.93	8.57	9.71	10.57	10.90	17.82	23.79	28.75
Developing countries	4.11	4.01	3.84	3.47	3.51	6.61	6.23	8.19

Sources: Federal Ministry for Foreign Trade, Prague; Research Institute of External Economic Relations, Prague.

a/ Standard International Trade Codes (SITCs)

0	=	Food and live animals
1	=	Beverages and tobacco
2	=	Crude materials, inedible, except fuels
3	=	Mineral fuels, lubricants and related materials
4	=	Animal and vegetable oils and fats
5	=	Chemicals
6	=	Manufactured goods classified chiefly by material
7	=	Machinery and transport equipment
8	=	Miscellaneous manufactured articles
9	=	Commodities and transactions not classified according to kind

b/ Underlying data in current Kcs converted at the average commercial exchange rate of the Kcs in each respective year.

c/ January-May.

Annex Table A-14. **Structure of exports by SITC categories[a/], 1983-1991, selected years** (Percentage)[b/]

Countries and SITC categories	1983	1985	1986	1987	1988	1989	1990	1991[c/]
CMEA countries	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	1.11	1.14	0.87	0.87	0.74	1.07	1.69	4.08
1	0.68	0.70	0.49	0.45	0.41	0.42	0.48	1.16
2	2.72	2.40	2.33	2.14	0.79	2.08	2.26	1.71
3	2.34	2.46	2.05	1.99	1.98	2.69	2.24	1.66
4	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01
5	4.11	4.29	4.85	5.18	5.15	4.93	5.36	11.06
6	13.47	12.41	12.63	12.03	11.71	13.68	12.08	27.76
7	60.22	62.03	62.29	63.82	62.45	60.69	61.15	38.42
8	13.55	12.58	12.70	12.15	11.71	11.39	13.12	14.15
9	1.80	2.00	1.79	1.37	5.07	3.03	1.63	0.00
Soviet Union	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	1.30	1.27	0.94	0.76	0.62	0.72	1.35	1.92
1	0.47	0.69	0.32	0.29	0.22	0.27	0.11	0.12
2	3.37	2.83	2.82	2.64	0.24	2.56	2.62	0.38
3	0.67	0.98	0.63	0.76	0.73	1.06	2.33	0.02
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	3.33	3.39	3.71	3.86	3.59	3.53	4.08	10.87
6	9.79	8.95	9.63	9.24	8.42	11.32	9.25	25.07
7	62.30	63.86	63.60	65.34	63.18	61.26	60.78	42.46
8	16.45	15.56	16.24	15.66	15.08	14.77	17.52	19.16
9	2.31	2.47	2.10	1.45	7.91	4.52	1.96	0.00
OECD countries	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	8.07	8.07	9.30	9.00	9.61	11.87	9.87	9.12
1	0.31	0.30	0.38	0.42	0.47	0.39	0.48	0.69
2	7.86	8.45	8.03	7.83	8.00	7.35	6.01	7.67
3	18.37	15.18	11.18	12.33	9.34	11.32	7.62	6.50
4	0.07	0.34	0.25	0.06	0.35	0.41	0.80	0.24
5	12.96	13.29	11.49	11.70	15.08	13.10	13.95	15.01
6	29.96	31.55	33.67	32.93	32.93	33.47	35.79	29.73
7	10.14	10.47	12.45	11.93	11.83	11.77	14.00	19.71
8	11.72	11.75	12.60	13.22	11.78	9.66	9.91	11.33
9	0.54	0.60	0.66	0.58	0.61	0.64	1.57	0.00
EC countries	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	8.21	7.90	8.80	7.81	8.32	8.78	7.37	9.17
1	0.34	0.32	0.38	0.44	0.42	0.41	0.45	0.66
2	6.57	6.77	6.55	6.56	7.09	6.72	5.38	6.32
3	9.90	9.11	6.86	7.06	6.13	6.91	5.82	5.34
4	0.11	0.14	0.11	0.06	0.12	0.19	0.09	0.21
5	14.79	14.49	11.75	12.05	14.55	14.14	13.24	15.37
6	34.35	35.66	36.44	36.50	35.77	36.74	38.65	30.48
7	11.64	11.99	14.34	14.09	14.07	13.94	16.33	21.48
8	13.40	12.81	14.00	14.72	12.88	11.38	10.70	10.96
9	0.68	0.82	0.78	0.72	0.65	0.79	1.96	0.00
Developing countries	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	2.73	4.94	2.87	2.29	2.57	3.11	4.59	10.09
1	0.01	0.00	0.00	0.01	0.01	0.01	0.02	0.01
2	0.19	0.36	0.47	0.84	0.79	1.34	0.83	1.28
3	0.26	0.20	2.11	0.52	1.17	0.40	0.47	0.13
4	0.00	0.02	0.01	0.00	0.00	0.00	0.00	0.00
5	4.92	3.87	3.57	6.55	5.50	3.60	3.66	4.81
6	14.95	17.24	15.77	17.24	22.19	22.89	33.40	19.43
7	70.72	67.28	68.72	65.06	59.29	56.47	51.46	45.97
8	4.18	4.19	4.40	5.82	6.98	4.04	4.58	18.28
9	2.05	1.88	2.09	1.66	1.50	1.14	0.98	0.00

(continued)

Annex Table A-14. (continued)

Countries and SITC categories	1983	1985	1986	1987	1988	1989	1990	1991[c/]
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	2.35	2.47	2.31	2.20	2.28	4.63	5.46	7.52
1	0.52	0.56	0.42	0.40	0.38	0.35	0.41	0.73
2	3.3[illegible]	3.28	3.15	2.98	2.02	3.68	3.74	4.81
3	4.80	4.32	3.54	3.56	3.14	5.19	4.36	3.97
4	0.02	0.07	0.04	0.01	0.06	0.13	0.34	0.12
5	6.05	5.97	5.99	6.40	7.02	7.56	9.03	12.28
6	17.35	16.77	17.05	16.40	16.39	22.44	25.63	27.27
7	52.01	53.60	54.22	55.21	53.61	44.39	39.16	31.26
8	11.97	11.29	11.70	11.61	11.10	9.67	10.40	12.04
9	1.56	1.68	1.58	1.23	3.99	1.96	1.46	0.00

Sources: Federal Ministry for Foreign Trade, Prague; Research Institute of External Economic Relations, Prague.

a/ Standard International Trade Codes (SITCs)

0	=	Food and live animals
1	=	Beverages and tobacco
2	=	Crude materials, inedible, except fuels
3	=	Mineral fuels, lubricants and related materials
4	=	Animal and vegetable oils and fats
5	=	Chemicals
6	=	Manufactured goods classified chiefly by material
7	=	Machinery and transport equipment
8	=	Miscellaneous manufactured articles
9	=	Commodities and transactions not classified according to kind

b/ Underlying data in current Kcs converted at the average commercial exchange rate of the Kcs in each respective year.

c/ January-May.

Annex Table A-15. Structure of imports by SITC categories[a/], 1983-1991, selected years (Percentage)[b/]

Countries and SITC categories	1983	1985	1986	1987	1988	1989	1990	1991[c/]
CMEA countries	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	3.45	3.55	3.15	3.15	3.55	3.37	2.45	1.44
1	0.84	0.85	0.76	0.81	0.81	0.67	0.60	0.19
2	6.92	6.05	5.81	5.66	5.40	5.26	5.32	9.34
3	39.64	39.52	39.60	36.18	32.39	29.06	28.93	68.67
4	0.17	0.13	0.15	0.15	0.16	0.09	0.06	0.08
5	4.17	4.26	4.29	4.16	4.25	4.99	5.74	3.38
6	7.41	7.06	6.75	6.45	6.56	7.92	7.96	8.31
7	32.57	32.24	32.75	36.39	38.28	39.38	36.08	7.03
8	3.80	3.75	3.79	3.89	4.43	4.40	7.64	1.47
9	1.04	2.59	2.95	3.15	4.15	4.85	5.22	0.08
Soviet Union	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	0.47	0.50	0.40	0.46	0.58	0.62	0.73	0.19
1	0.18	0.22	0.37	0.37	0.52	0.30	0.26	0.04
2	8.32	7.35	7.01	7.15	7.03	7.33	7.68	2.35
3	61.05	63.23	63.80	60.08	55.84	51.71	56.33	68.04
4	0.03	0.03	0.03	0.02	0.02	0.00	0.01	0.01
5	2.81	2.96	2.81	2.61	2.94	3.10	3.01	1.69
6	6.48	5.63	5.21	5.12	5.55	5.73	7.26	5.06
7	19.70	18.76	18.99	22.87	25.82	28.76	22.00	22.24
8	0.71	0.74	0.74	0.66	0.96	1.13	1.22	0.30
9	0.27	0.60	0.65	0.67	0.74	1.32	1.51	0.08
OECD countries	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	9.19	7.92	6.14	5.67	6.11	6.06	4.06	4.54
1	0.29	0.67	0.85	0.67	0.48	0.48	0.88	0.82
2	13.21	11.67	9.34	8.93	9.96	10.87	8.26	9.25
3	0.76	1.04	0.71	0.55	0.40	0.43	1.45	1.03
4	0.86	1.01	0.81	0.49	0.63	0.66	0.69	0.64
5	20.98	20.22	18.64	18.50	18.41	19.45	16.64	18.11
6	11.83	12.83	15.26	12.77	10.69	11.88	11.91	9.48
7	35.14	35.75	39.92	43.12	44.68	42.22	45.67	46.78
8	5.60	7.89	6.70	7.33	7.09	7.02	8.76	9.12
9	2.12	1.00	1.63	1.98	1.56	0.95	1.68	0.23
EC countries	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	9.56	8.22	8.39	7.38	7.36	7.57	4.63	5.18
1	0.41	0.90	0.93	0.71	0.46	0.48	0.88	0.83
2	8.69	8.49	6.37	6.46	6.98	7.47	6.71	8.29
3	0.25	0.30	0.18	0.17	0.16	0.18	0.40	1.25
4	0.66	0.50	0.52	0.35	0.48	0.40	0.39	0.75
5	23.01	21.81	18.41	17.81	20.17	20.76	18.39	18.79
6	15.69	14.04	18.97	14.45	10.41	11.17	12.54	9.99
7	35.26	37.35	38.96	44.23	45.84	44.29	45.64	45.96
8	5.68	7.65	6.05	7.08	6.83	6.62	8.77	8.70
9	0.79	0.74	1.22	1.35	1.32	1.05	1.67	0.27
Developing countries	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	27.65	34.48	41.73	38.96	42.45	39.52	35.98	20.63
1	1.50	1.69	1.95	2.40	2.25	1.61	0.72	1.68
2	35.13	34.49	28.46	28.47	27.75	25.78	26.24	21.99
3	15.92	9.44	9.02	14.89	7.15	12.91	10.90	40.58
4	1.44	1.36	0.80	0.51	1.13	1.42	3.79	0.20
5	3.54	3.53	3.73	3.26	3.08	2.57	2.32	0.73
6	12.72	10.50	11.47	8.60	9.35	8.24	8.74	4.20
7	0.32	2.03	0.96	0.77	1.04	5.49	6.62	5.77
8	1.79	1.81	1.84	2.15	5.79	2.45	4.17	4.22
9	0.00	0.67	0.04	0.00	0.00	0.00	0.52	0.00

(continued)

Annex Table A-15. (continued)

Countries and SITC categories	1983	1985	1986	1987	1988	1989	1990	1991[c/]
Total	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
0	5.68	5.76	5.57	5.07	5.67	6.94	5.63	4.47
1	0.95	0.98	0.83	0.83	0.80	0.71	0.80	0.57
2	9.19	8.25	7.49	7.29	7.23	8.76	8.32	10.21
3	30.21	30.70	30.46	27.91	24.33	17.31	14.32	35.15
4	0.36	0.34	0.29	0.22	0.28	0.36	0.56	0.33
5	7.14	6.83	6.74	6.73	6.93	9.34	10.19	9.55
6	9.31	8.93	9.10	8.42	8.25	10.42	10.65	9.31
7	31.37	31.14	32.11	35.70	37.48	36.95	37.29	24.34
8	4.44	4.79	4.73	4.90	5.56	6.15	9.11	5.93
9	1.36	2.28	2.67	2.94	3.47	3.05	3.13	0.13

Sources: Federal Ministry for Foreign Trade, Prague; Research Institute of External Economic Relations, Prague.

a/ Standard International Trade Codes (SITCs)

0	=	Food and live animals
1	=	Beverages and tobacco
2	=	Crude materials, inedible, except fuels
3	=	Mineral fuels, lubricants and related materials
4	=	Animal and vegetable oils and fats
5	=	Chemicals
6	=	Manufactured goods classified chiefly by material
7	=	Machinery and transport equipment
8	=	Miscellaneous manufactured articles
9	=	Commodities and transactions not classified according to kind

b/ Underlying data in current Kcs converted at the average commercial exchange rate of the Kcs in each respective year.

c/ January-May

ANNEX B

INVESTMENT INFORMATION

ANNEX B.1 BASIC CONDITIONS FOR FOREIGN INVESTMENT

Excerpts from the Investment Guide for Foreign Entrepreneurs in Czechoslovakia published by the Federal Agency for Foreign Investment, Federal Ministry of Economy. This Guide was based on the conditions prevailing in July 1991 and should be read in conjunction with the Supplement issued in December 1991, which has been reproduced here as Annex B.2.

Introduction

Both the Federal and the Republics' Governments consider foreign direct investment (FDI) to be a significant instrument of accelerating the transition from a centrally planned economy to a free market economy. The governments are well aware that the improvements of conditions and the definition of the framework for FDI is a crucial task.

Czechoslovakia's relative isolation from the world market in the last forty years has resulted in a considerable lagging behind in the competitiveness of Czechoslovak goods and services (mainly because of lower quality), primarily in the areas of modern technology, managerial skills, banking and financial services, and marketing. Foreign investment can help cure these deficits through the transfer of technology and managerial know-how, enabling Czechoslovak goods and services to become more competitive in the world markets. Joint ventures with foreign capital participation and fully foreign-owned companies can provide the risk capital needed to start these improvements and facilitate Czechoslovakia's entry into world markets. Foreign investment can remedy at least partially the general lack of capital in domestic privatization and also increase the supply of foreign currency. At the same time, it will result in higher demands on the labour market to which the domestic enterprises will have to adapt.

In the area of foreign investment, the government has considerably eased administrative procedures and has established agencies for foreign investments on the Federal as well as on the Czech Republic and Slovak Republic level in order to facilitate the entry of foreign investors into the Czechoslovak market.

The government is currently preparing reforms of the tax system. The new tax system is to enter into force on 1 January 1993. It will signify, inter alia, the transition from the turnover tax to the value added tax. A reform of investment incentives and the finance sector is under consideration. The second part of the act on land) concerning the transformation of cooperative farms) is being discussed in the Parliament. Its adoption will give foreign investors increased access to the use of immovables.

The government expect a greater flow of foreign investments after the restitution claims are solved and large-scale privatization launched. It is often politically more feasible to orient the privatization process towards the interests of a Czechoslovak entity which may later sell its share (enterprise) to or form a joint venture with a foreign investor. The government will also support the direct sale of enterprises to foreign investors although there will be certain political limitations in this respect. The former procedure is easier.

The government will, under the principle of "what is not forbidden is allowed", define clearly the areas where foreign investment is not allowed and where permission will be required. The activities not on the list will be permitted automatically, which will make the system transparent, operationally simple, and liberal.

Even though the reform process has only been in effect since January, the foreign business community has already demonstrated major interest in the Czechoslovak market. The number of joint ventures and their average size have increased dramatically over the last year.

A. Legal forms of foreign investment

According to Act 173/1988 Coll., as amended by Act 112/1990 Coll., on enterprises with foreign property participation, a foreign investor may invest in the Czech and Slovak Federal Republic by:

1. establishing his/her own enterprise;
2. establishing a joint ventures; and
3. investing in an existing enterprise.

The new enterprise or the existing enterprise in which the foreign partner intends to invest may assume one of the following legal forms:

1. a joint-stock company, Act 104/1990 Coll.;
2. an association, Act 101/1963 Coll.;
3. a commercial company, Act 103/1990 Coll. i.e."
   - company with limited liability,
   - unlimited partnership,
   - limited partnership, and
   - limited partnership with stock,
4. a cooperative.

All of these companies are deemed legal entities. At present, the most practical forms for foreign investors are the joint-stock company and the company with limited liability.

B. New procedures in accomplishing foreign investment

Until the end of march 1991, the crucial piece of legislation concerning foreign investments, i.e. founding enterprises, was Act 173/1988 Coll., in the wording of Act 112/1990 Coll. Under that Act, an enterprise with foreign property participation (the term employed by the Act and other acts) could be established only on the basis of an approval granted by the Federal Ministry of Finance (or by the Czechoslovak State Bank in the banking sector). However, the situation has changed significantly since the adoption of Act 92/1991 Coll., on the transfer of State-owned property to other persons (Large-Scale Privatization Act), and the Decree of the government of the Czech and Slovak Federal Republic 132/1991 Coll., dated 21 March 1991.

A foreign property participation enterprise may now be founded without approval provided that:

1. the enterprise in question is being founded or its business is being undertaken solely by a foreign participant; or
2. apart from a foreign participant, the Czechoslovak partners in the enterprise is a natural person or a Czechoslovak commercial company in which the partners are solely Czechoslovak natural persons or foreign persons; or
3. the Czechoslovak partners is a cooperative founded after 1 July 1988.

A licensed approval is still required for enterprises in the banking sector. Enterprises are restricted from participating in sectors important for ensuring the defence and security of the State. The number of sectors on the list of prohibited sectors is therefore limited at present. The government's intention is keep this "negative list" as short as possible.

When a foreign property participation enterprise is to be established with a State enterprise, the enterprise must have approval of its privatization project from the appropriate ministry, the Czechoslovak State Bank or, through an exemption, from a respective government (Act 92/1991 Coll.).

The following basic steps are needed to establish a foreign property participation enterprise. The enterprise must:

1. acquire a foundation license (in the banking sector), a decision approving the privatization project (involving the establishment of joint ventures with State enterprises);
2. acquire a license under special regulations, required by the nature of business activities. For example, enterprises wishing to engage in foreign trade must obtain in some cases, an additional license for foreign trade activities; and must be enroled in the company register.
3. Other specific steps are described below.

C. Characteristic features of the different organizational and legal forms of foreign investments

1. Joint-stock company

The laws pertaining to joint-stock companies are included in Act 104/1990 Coll. A joint-stock company does not need permission from the State for establishment, and the State does not supervise the company. A joint-stock company is a legal entity for entrepreneurial activities, whose basic capital is divided into a certain number of shares of predetermined nominal value. A joint-stock company may have a single founder (a juridical person only) who can provide all the capital.

The joint-stock capital must be greater than Kcs 100,000, with Kcs 1,000 as the minimum value for shares. The type of shares include preference shares (up to ½ the joint-stock capital), interest shares (earning interest on the nominal value of the shares), and employee shares. These may be either registered (transferable by endorsement) or bearer shares (transferable by delivery).

a. Foundation

In order to establish a joint-stock company, the enterprise must have a founding contract (or founding plan in the case of a single founder). Also, the enterprise must:

- subscribe the basic capital (at least Kcs 100,000 with a minimum compulsory payment of 30 per cent of the value and at least Kcs 50,000);
- convene a founding general shareholders' meeting (except in the case of a so-called single-act foundation);
- obtain an assessment of any non-monetary contributions from a sworn expert;
- prepare statutes of a prescribed minimum content and
- have the company registered in the Company Register.

b. Company bodies

similar to joint-stock companies in other countries the company is managed by shareholders; meetings and a Board of Directors (and also a Supervisor Board). The company is also required to have at least one auditor.

c. Reserve fund

After foundation, the joint-stock company is required to create a reserve fund, whose size and creation are stipulated in the company statutes. The minimum value es 10 per cent of the joint-stock capital, with a minimum annual allocation of 5 per cent of the net profit.

d. Dissolution

the joint-stock company may be abolished after a resolution of a shareholders' meeting, achievement of the company objectives, or expiration of the time period of the company's establishment. The company is officially dissolved after the final step of deleting its name from the Company Register.

2. Association

Upon entering into an association agreement, two or more persons join activities or property assets to achieve a certain economic objective. An association is established by signing the agreement and by registering in the Company Register.

3. Commercial companies

Natural and juridical persons may establish a commercial company, and a company may be founded by one member if so permitted by Act 103.1990 Coll. The foundation of the company requires a written company contract signed by all the members and the registration of the company in the Company Register.

The most frequent form of a commercial company with foreign property participation is the limited liability company. The following characteristics apply to the requirements and forms for a limited liability company.

As with other commercial companies, a company (foundation) contract is required for foundation. A company may be founded by a single person. A limited liability company is founded by a partnership deed on conducting entrepreneurial activities under a chosen commercial name with limited liability of the partners for the predetermined property deposit. The foundation capital (the net property value at the time of establishment) must be at least Kcs 100,000, with a minimum deposit of Kcs 20,000 per participant. The partners guarantee the creditors of the company by using only the property of the company as security.

The company contract must include:
- the commercial name and headquarters of the company;
- the object of activities;
- the foundation capital;
- the deposit of each participant.

The contract also includes:
a) bodies of the company, the method of their constitution and the scope of their authority (unlike joint-stock companies, the selection of the bodies is left to the discretion of the enterprise);
b) the duties and rights of partners and the consequences of their infringement;
c) the method of abolishing the partnership and its consequences;
d) the method of winding up the company without a legal successor; and
e) the method of increasing or decreasing the foundation capital.

Commercial companies may be abolished by a declaration of bankruptcy, an agreement of the partners, a lapsing of time (unless the partners continue in silence), other cases stipulated by the Act, or a court ruling. As with joint-stock companies, the name must then be deleted from the Company Register.

D. Financial management

1. Taxes

An enterprise with foreign property participation is subject to corporate income tax, wage levies, and turnover tax. Its individual partners are subject to the dividend tax.

a. Corporate income tax

There are three corporate tax rates. When taxable income does not exceed Kcs 200,000, the enterprise pays a 20 per cent tax. If its income is higher, and the share of the foreign partner(s) in the foundation capital is greater than 30 per cent, a 40 per cent rate applies. If the foreign

partner's share is less than 30 per cent, the enterprise pays 55 per cent tax from the amount which is over Kcs 200,000 (200,00 representing the basis for the taxation).

The Republic (Czech or Slovak) Ministries of Finance are authorized to grant tax reliefs to newly established enterprises, either full or partial, upon request. A tax relief may be granted for a period not to exceed 2 years from the beginning of operations.

b. Wage levies

The levy is imposed on the volume of wages the enterprise pays its employees in a current year. Generally the rate is 50 per cent. Enterprises in the service sectors are subject to a 20 per cent taxation. The rate is reduced if the enterprise involved employs handicapped people. The tax is included in the enterprise's costs, i.e., it is deductible from the tax base of the income tax. The Republic Ministries of Finance may also grant reductions.

c. Turnover tax

The turnover tax is similar to the value-added tax, yet is structured in a different way. The enterprise pays the tax on sales of goods of its own manufacture or purchase, as well as on sales of imported goods. The tax does not apply to sales of goods abroad. The taxable turnover is based on the selling price of the goods involved. Goods have been divided into four categories since 1 January 1991, with corresponding tax rates of 0, 11, 20 and 29 per cent. Products not falling under any of the four categories are taxed according to special rates. It concerns mostly products where, in developed market economies, consumer tax is imposed (e.g. alcoholic beverages, cigarettes, petrol).

The division of goods into four categories is a measure for the interim phase between the previous, administratively demanding turnover tax system and the value-added tax system, which should replace the turnover tax as of 1 January 1993. The lower-taxed categories include products the State wants to give preferential treatment, and the higher-taxed categories include goods whose rates were even higher in the past (this is a step-by-step tax reduction).

d. Dividend tax

Foreign partners pay a 25 per cent dividend tax. Bilateral double taxation prevention agreements that Czechoslovakia has entered into, stipulate lower rates (0,5,10 and 15 per cent). For Czechoslovak partners if these are juristic persons dividends are included in their profits, which are in turn subject to the profit tax (55 per cent).

2. Depreciation of fixed assets

Enterprises with foreign property participation over 30 per cent are entitled to apply higher depreciation rates on their fixed assets provided the assets have been purchased after 1 January 1991. For buildings as fixed assets, 30 per cent of their purchase costs in the first 5 years and 20 per cent in the next five years are evenly depreciated, and the balance is depreciated at relevant annual rates. With machinery, 50 per cent can be depreciated at a uniform rate during the first three years, the balance being depreciated at relevant annual rates.

E. Foreign exchange management

1. Internal convertibility

In 1 January 1991, the Foreign Exchange Act (528/1990 Coll.) introduced the so-called "internal convertibility" in Czechoslovakia. The Act provides for the equal and unlimited access of entrepreneurs to convertible currencies, (juristic persons and natural persons enroled in the company register, can, for the payment of imports from abroad, purchase foreign currency for Kcs in Czechoslovak foreign exchange financial institutions); on the other hand, the enterprise is bound

to offer to a bank all foreign currencies earned. This means that while companies are bound to offer all convertible currencies to Czechoslovak banks (except those which represent deposits to the foundation capital of enterprises with foreign participation and those on foreign currency accounts), they have a guaranteed access to convertible currencies for current account transactions. These transactions include the import of goods and services, royalties, interest payments, and dividend remittances.

2. Transfers of profits and capital

Transfers of profits and capital are based on bilateral investment promotion and protection agreements, and on the Foreign Exchange Act mentioned above.
According to Act 528/1990 Coll., and upon request by a juridic person, the bank is obliged to sell a foreign investor, for Kcs, foreign exchange resources representing the foreign exchange equivalent of the revenue from investment. The term "revenue from investment" denotes financial sums yielded by domestic investments, especially business profits, interest, capital increments, revenues from securities and fees for intellectual property rights. A foreign exchange non-resident is allowed to transfer or export abroad without a foreign exchange license, foreign payment documents, foreign securities, or foreign currency deposit books.

F. Protection of investments

Investments are protected against expropriation by the Constitution, the above Act on Enterprises with Foreign Property Participation, and bilateral agreements dealing with the promotion and protection of investments. According to these documents, expropriation may be accomplished or ownership rights curtailed only in compliance with relevant laws that provide for compensation. The compensation paid to a foreign investor in such cases will be freely transferable abroad and in the foreign currency in which the foreign partner has contributed his share to the basic capital of the enterprise.

A number of countries have bilateral agreements on the promotion and protection of investments with Czechoslovakia. The agreements with Belgium and Austria have already been ratified. Furthermore, the Federal Government is willing to prepare favourable conditions for other foreign investors even prior to the ratification of the agreements concerned.

G. Dispute settlement

Disputes between entrepreneurs are settled before the so-called Economic Arbitration Court. The powers of this body are similar to those of a court, but do not extend beyond the economic sphere. In 1992, according to current plans, a new Commercial Code will become effective, under which Commercial Courts would be established. Partners in a joint venture may include, in their founding agreement, a clause providing for the settlement of disputes which may favour each a Czechoslovak or a foreign court.

Investors' disputes over the interpretation or application of investment promotion and protection agreements may be solved by an accord. If such a solution fails, any party may submit the matter to a Court of Arbitration (the disputes are handled in accordance with the Arbitration Rules of the UN Commission of International Law (UNCITRAL), or to the International Centre for Settling Investment Disputes in Washington, D.C.

H. Real estate (Buildings, land)

1. Ownership rights

A foreign entity, i.e., a juristic person of foreign residence or a natural person with a foreign domicile, may only acquire ownership rights to real estate through inheritance or a special legal act. Currently, these acts are the Small-Scale Privatization Act (427/1990 Coll.), which permits foreign entities to acquire ownership rights to business facilities that have not been sold in the first

round of auctions), and the Large-Scale Privatization Act (92/1991 Coll.), which enables foreigners to acquire ownership rights to existing State-owned enterprises.

2. Leasing

Although ownership rights of foreign entities are currently restricted, they may rent or lease real estates. The arrangement is made on the basis of a leasing agreement in which the parties involved agree on the price. One of the restrictions is that an approval from the Ministry of Agriculture is required when agricultural land is to be used for purposes other than agricultural production. The first part of a Land Act concerning restitution has already been passed in the Parliament, and the successful adoption of the second part of the Act will open the door for the transfer of land to the private sector.

I. Privatization

The privatization of the economy is one of the most important measures of the economic reform and will be implemented under the mandate of two Acts: the Small-Scale Privatization Act (427.1990 Coll., on transfers of State-owned property to other juristic or natural persons) and the Large-Scale Privatization Act (92/1991 Coll. on conditions and terms governing the transfer of the State-owned property to other persons) under which the large-scale privatization will take place.

1. Small-scale privatization

The process of small-scale privatization involves selling or leasing small business facilities (such as restaurants, shops and hotels, municipally-operated workshops, etc.) to natural persons. The sale and leasing take place at public auctions, which have already begun. Foreign investors are allowed to participate only in the second round of auctions.

2. Large-scale privatization

The process of large-scale privatization will involve transferring the property of State enterprises to other entities (Czechoslovak or foreign juristic or natural persons). The large-scale privatization scheme will include manufacturing enterprises of centrally controlled industrial sectors, foreign trade corporations, State financial institutions, State insurance companies, etc. The privatization process will employ both standard and non-standard methods. The standard methods may include auctions (usually controlled) or negotiated sales.

The non-standard methods include the so-called voucher scheme. Vouchers will be issued by the Federal Ministry of Finance and will be available for a nominal sum (probably Kcs 1,000) to all Czechoslovak permanent residents over 18 years of age. Voucher holders may then exchange their vouchers for shares of State-owned enterprises.

In large-scale privatization, the enterprise must offer a privatization project for approval to the relevant ministry and to the Czech (Slovak) Ministry of National Property Administration and Privatization. The privatization project of an enterprise defines the privatization plan of a given enterprise. The privatization project is normally prepared by the enterprise to be privatized, but may also be prepared by the ministry, the foreign partner, or other bodies. The project must include the following information:

a. the enterprise's name, and specification of the property for privatization;
b. information on how the State acquired the property to be privatized;
c. identification of the property unusable for business purposes (i.e., uncollectible claims, unusable fixed assets and stocks);
d. valuation of the property to be privatized;
e. manner of transferring the property to be privatized, including the settlement of claims of entitled persons;
f. when establishing a commercial company, the definition of its legal form;

g. when establishing a joint-stock company, the distribution of stock shares and their value or type, as well as the information whether and how investment vouchers will be used;
h. if local property is to be sold, the location and method of sale, pricing, and terms of payment;
i. in some cases, the proportion of the privatization process proceeds to be handed over to the National Property Funds of the republics;
j. the manner of transfer of intellectual property rights, which must be discussed in advance with the Federal Bureau of Inventions, if those are the property of the privatized enterprise; and
k. the privatization project time schedule.

The privatization project of the enterprise may also contain recommendation concerning the object of business activities, information on potential buyers or investors, information on the existing and anticipated market position of the enterprise, and information on the number and qualification structure of the enterprise's work force.

J. Business agencies

A foreign entity may operate in the territory of the Czech and Slovak Federal Republic not only by investing according to Section B, but also by establishing a business agency. The agency can promote its own products and services, but cannot enter into agreements and contracts with Czechoslovak entities. However, if holding a relevant license, the agency may also perform other economic activities and may establish subsidiaries. The agency may be established after registering at the Federal Ministry of Foreign Trade or another ministry relevant to the sphere of business (Federal Ministry of Transportation, Czechoslovak State Bank, Republic Ministries of the Interior and Finance, etc.).

1. Application for the registration, establishment and operation of an agency

The application submitted by a foreign applicant must present the following prerequisites:

a. the business and/or personal name and place of residence;
b. object of business;
c. names of persons acting as statutory bodies of the foreign entity;
d. subject matter and scope of activities pursued in the Czech and Slovak Republic through the agency;
e. the period of duration of the agency;
f. the address of the agency, including the addresses of subsidiaries in Czechoslovakia if known at the time of application;
g. the name of the executive manager of the agency, if known at the time of application;
h. the number of foreign natural persons to be employed at the agency;
i. the number of Czechoslovak natural persons with permanent residence in the Czech and Slovak Federal Republic to be employed at the agency; and
j. if the foreign person does not submit the application directly, the name of the Czechoslovak person licensed to render services and authorized to receive notifications concerning the processing of the application, changes of registration, the prolongation, etc.

The foreign person must also enclose the following documents with the application:

a. an excerpt from the Company Register or a similar officially verified document confirming the legal status of the foreign person;
b. a copy of the agreement on renting or leasing the premises, including the addresses of the headquarters and subsidiaries if available at the time of application; and
c. the authorization of the above-mentioned (1.j) Czechoslovak liaison.

Two copies of the registration application, including its appendices, must be submitted in the Czech or Slovak language to the relevant authority. If the documents accompanying the

application are not in Czech or Slovak, it is necessary to have them translated by a Czechoslovak sworn interpreter.

The registration application is processed within 30 days, and the administrative fee is Kcs 10,000.

Upon receipt of the registration certificate, the foreign person must inform the authority within 30 days of:

a. the address(es) of the headquarters and subsidiaries in the Czech and Slovak Federal Republic, if not already given in the application; and
b. the name of the executive manager of the agency, if not already given in the application.

In addition, the following documents must be enclosed

a. a copy of the agreement on renting or leasing the premises;
b. a certified copy of the letter of appointment of the executive manager of the agency, signed by the statutory representative of the foreign person;
c. a certificate from a Czechoslovak banking institute, confirming that a foreign currency account has been opened to cover all costs and expenses associated with the agency's operation in Czechoslovakia, or a certificate confirming that a Czechoslovak currency account has been opened for the same purpose; and
d. a certificate confirming that the agency has been registered at a Czechoslovak tax and revenue authority.

K. Foreign trade

Foreign trade (export, imports) is governed by Act 42.1980 Coll., on economic relations with foreign countries, and its amendments and implementing regulation. The most important implementing regulation is Decree 27/1991 Coll., issued by the Federal Ministry of Foreign Trade. The Decree represents a significant liberalization of foreign trade transactions. Czechoslovak persons (including enterprises with foreign capital participation) may in principle import and export goods without limitation. A license is required for a small range of products listed in Decree 256/1990 Coll. and mediating employment of Czechoslovak natural persons abroad or foreign natural persons in Czechoslovakia. A fee of Kcs 4,000 is required for the license. Special registration is required for overseas shipping.

L. Customs duties and non-tariff protective measures

1. Customs duties

As one of the founding members of the GATT, the Czech and Slovak Federal Republic uses import duties based on a valid and internationally negotiated List of Tariffs. The average customs duty is 4.5 per cent, with actual duties ranging from 0 to 70 per cent.

Material investments of foreign investors are subject to an import duty. An amendment to the Customs Act (5/1991 Coll.) enables these investments or other imports of goods to be exempted from duty when the company concerned applies for the establishment of the so-called free customs zone. Such zones are established upon request by the Federal Ministry of Foreign Trade. (Other possibilities of obtaining a complete or temporary exemption from customs duties are listed in Decree 43/1991 Coll.).

2. Import surcharges

Decree 569/1990 Coll., issued by the Federal Ministry of Finance, has introduced an import surcharge of 20 per cent on imported consumer goods and food products. It is paid together with the import duty. This surcharge is temporary - the rates were reduced to 18 per cent in April 1991, and to 15 per cent in June 1991.

3. Free customs zones

Joint ventures may, after establishing the enterprise and obtaining a license for foreign trade activities, obtain a license for the establishment of a free customs zone (either a commercial or industrial free customs zone). Goods may be imported into the free customs zone without depositing a customs duty. The goods may then be re-exported. The company must pay an import duty only if the goods will be circulated in the Czechoslovak economy.

4. Export licenses

Non-tariff protection measures concerning exports are represented by export licenses. Lists of items which require export licenses can be found in the appendices to Decree 8.1991 Coll., issued by the Federal Ministry of Foreign Trade. The application for the export license is to be submitted after the contract with a foreign customer has been signed. The license is used by the Federal Ministry of Foreign Trade within 20 days from the delivery of the application.

An administrative fee of 0.2 per cent of the value of the goods to be exported must be paid.

M. Prices

Since 1 January 1991, most prices have been liberalized, and now prices are generally set by an agreement between the seller and the buyer. Act 526/1990 Coll. anticipates that some prices will continue to be regulated to a certain degree and for a certain period of time. The government hopes that all existing price controls will be eliminated soon, although in a few extreme cases the controls will be lifted gradually. At present, price controls cover some 10 to 15 per cent of total transactions.

The following price controls apply (in selected cases):

a) maximum, fixed or minimum prices;
b) specific conditions for price control
   - the maximum price increase of a given type of goods over a given period of time;
   - the maximum proportion by which increased prices of given inputs may be reflected in the price of a given type of goods over a given period of time;
c) conditions for price control timing
   - the minimum time lead for announcing a price increase;
   - the minimum period of time after which a price increase may be implemented;
   - a time-limited ban on repeated price increases; and
d) a price moratorium (for a period not exceeding 6 months).

N. Credits

Enterprises established in accordance with section B may accept credits from both Czechoslovak and foreign banks.

1. Accepting credits from Czechoslovak banks

Entrepreneurs can choose from short-term (up to one year), medium-term (3 to 4 years), or long-term (up to 10 years) credits offered by the banks. Current interest rates (July 1991) range from 12 per cent (on deposits) to 19.5 per cent (on credits).

2. Accepting credits from abroad

This form of financing is possible upon application and approval of the Czechoslovak State Bank. For financial credits not exceeding the value of Kcs 50 million equivalent (at a valid exchange rate), the approval procedure of the Czechoslovak State Bank has been simplified and the Bank now issues a foreign exchange license upon a request containing the following information:

- the sum and currency of the credit;
- the anticipated drawing and payback schedule;
- the interest rate and its nature (fixed, variable), other costs and credit-related fees;
- the name of the entity granting the credit;
- the name of the entity (i.e. the Czechoslovak Commercial Bank) guaranteeing the credit payback; and
- the purpose(s) of the credit and the method to be used for credit drawing and repayment.

For financial credits over Kcs 50 million, the Czechoslovak State Bank takes other factors into account, namely:

- the time schedule of drawings and repayments of major credits in individual years, with respect to the overall development of the Czechoslovak balance of payments; and
- advantages of the credit with respect to the interest rate and other credit costs.

If a foreign creditor requires a credit-payback guarantee of a Czechoslovak bank, the guarantee can be provided only by one of the Czechoslovak commercial banks upon request from the borrower. (The Czechoslovak State Bank does not grant such guarantees). When providing the guarantees, the Czechoslovak commercial banks are obliged to follow the foreign exchange liquidity rules set forth by the Czechoslovak State Bank.

When considering applications for the acceptance of foreign exchange credit lines from abroad, the Czechoslovak State Bank examines the identity of the lender, especially if the latter is not a registered banking institution. In this respect, it requires the borrower to submit appropriate verified information on the lender and the source of credit funds.

O. Capital market

The capital market is only beginning to develop its legislative, institutional, and technical framework, Steps are being taken to train professionals to operate stock exchanges, which will be located in Prague and Bratislava. The following relevant legal acts are available so far: the joint-stock company act, and the new debenture bonds act, which stipulates terms and conditions of issuing state, municipal, bank, corporate and mortgage bonds. A Commercial Code and a stock exchange act are under preparation.

At present, potential tradeable securities include part of the stock of several foreign trade corporations, shares of newly founded companies, and approximately 10 issues of freely marketable bank and corporate bonds.

An experiment is being launched whereby a secondary market of securities was introduced on 15 July 1991. The latter permits trading in securities at auctions and at a uniform market rate resulting from supply and demand relations and trends. Banks and savings banks will also participate in transactions on the market.

P. Labour and wage legislation

1. Labour legislation

Labour relations are governed by the Labour Code (65/1965 Coll.), and the latest amendment is Act 3/1911 Coll. Employment is founded on a contract, which may be concluded for a definite or an indefinite period of time. The contract may also specify a trial period (not longer than 3 months). The employer terminates the employment contract by an agreement with the employee concerned or by giving a notice two months in advance. The notice must be discussed beforehand with the relevant trade union body.

The weekly working hours are from 40 to 42.5 hours (maximum 43 hours), with three to four weeks of paid vacation, exceptionally 5 weeks. Overtime work (in excess of 8 hours/week or 150

hours/year) requires approval from the relevant central body. The Government of the Czech and Slovak Federal Republic may stipulate, for foreign property participation enterprises, conditions different from those of the Labour Code.

2. Wage legislation

Wages are governed by relevant wage regulations (Decree of the Federal Ministry of Labour and Social Affairs 269/1990 Coll. on a simplified system of wages of blue and white-collar employees). There are 21 wage classes: the basic wage of the highest class is Kcs 7,700 a month. The basic wage is supplemented by a personal allowance which ranges from Kcs 300 to Kcs 2,200, depending on the wage class. Furthermore various rewards, bonuses and extras (for overtime work, work on holidays, night work, etc.) can be paid.

The wage is taxed. Health care allowances, social security allowances, per diem, etc. are not taxed. The tax rate is progressive and the basic rate is maximum 20 per cent of that part of the wage which exceeds Kcs 2,400 monthly. For tax-payers with less than two dependants, the basic rate is increased by up to 60 per cent depending on tax-payers sex and age. Conversely, for tax-payers with more than two dependants, the tax is reduced by up to 70 per cent.

If labour costs exceed given limits and a given growth in the wage fund as compared with the previous year, the company must pay a regulating levy to the State budget. The average monthly wage in 1990 was Kcs 3,380, approximately $120. Currently, the minimum wage determined by the Federal Government is Kcs 2,000.

3. Employment of foreigners

A foreign property system includes basic health care, sickness insurance, a pension scheme, and social care. Social security costs are covered from resources acquired by the wage levy, the income tax, and State subsidies and contribution. Currently, a new concept of the social security system is being prepared.

Source: *Investment Guide for Foreign Entrepreneurs in the Czech and Slovak Federal Republic*, Federal Agency for Foreign Investment, Federal Ministry of Economy (Prague, July 1991).

ANNEX B.2 BASIC CONDITIONS FOR FOREIGN INVESTMENT

Summary of Supplement 1 to the Investment Guide for Foreign Entrepreneurs in Czechoslovakia

The Investment Guide for Foreign Entrepreneurs in the Czech and Slovak Federal Republic, which was published by the Federal Agency for Foreign Investment at the beginning of September 1991 was based on legislation passed before 31 July 1991. Since, then, however, a number of new acts, decrees and regulations have been adopted which have brought about certain changes to the position of foreign entrepreneurs in the Czech and Slovak Federal Republic. This Supplement to the Investment Guide contains information which replaces, complements or updates the data specified in the Guide, on the basis of the legislative changes introduced between 1 August and 31 December 1991.

From the foreign entrepreneur's point of view the most important of the newly enacted legislation is the Commercial Code of 5 November 1991 which came into effect on 1 January 1992. The Commercial Code constitutes a comprehensive system of legal norms applicable to entrepreneurial activities undertaken by both Czechoslovak and foreign entities; under the Code all entities pursuing business activity in the territory of the Czech and Slovak Federal Republic shall enjoy equal conditions. The Code renders null and void a whole series of legal regulations, including those that have hitherto governed business activities of foreign entities.s

I. Sections A and B of the Guide should be replaced by the following text:

Business activities carried out by foreign persons

The Commercial Code rescinds Act No. 173/1988 on Enterprises with Foreign Property Participation as amended in Act No. 112/1990, and Decree No. 132/1991 of the Czechoslovak Government which defined the cases in which an enterprise with foreign property participation may be set up without official authorization.

Under the Commercial Code foreign persons (both natural persons and legal entities) may undertake business activities in the territory of the Czech and Slovak Federal Republic under the same conditions and to the same extent as Czechoslovakian national unless stipulated otherwise under the law. A foreign person is deemed to carry out business activities in Czechoslovakia if he/she has a company, or an organizational component thereof, located in the Czech and Slovak Federal Republic. The authorization to do business commences on the day of registration in the Company Register by this person or by an organizational component of its company. Such a company, though, is not deemed to be a Czechoslovak legal entity.

A foreign person may, however, for the purposes of doing business, participate in the establishment of a Czechoslovak legal entity, or may become a partner or a member in an existing Czechoslovak legal entity. A foreign person may also establish a Czechoslovak legal entity on its own, or become the sole partner in a Czechoslovak legal entity. Such legal entities may be founded under the Czechoslovak or other law.

Finally, a legal entity whose seat is abroad may relocate for the purposes of carrying out business activities its seat to Czechoslovakia.

Where the business activities in question are to be undertaken through the purchase of a State-owned company or through property participation in a State-owned company, such intention shall be incorporated in the Privatization Project of the respective State-owned company. The Project requires to be approved by the relevant Ministry (under Act No 92/1991). Business in the banking sector continues to be contingent on a licence approved by the Czechoslovak State Bank.

II. Section C of the Guide should be replaced by the following text:

Legal forms of entrepreneurial activities carried out by foreign persons

Under the Commercial Code foreign persons may engage in business activities through any of the following legal forms:

1. Commercial companies, i.e.

- a joint-stock company
- a limited liability company
- an unlimited (general) partnership
- a limited partnership

2. Cooperatives

Joint-stock companies and limited liability companies are the most frequent and practical forms.

Joint-stock companies:

The Commercial Code abolishes the provisions governing joint-stock companies as contained in Act No 104/1990 on Joint-stock Companies. The provisions contained in the Commercial Code differ from those included in the rescinded Act in many respects.

A joint-stock company is such a company the stock capital of which is distributed into a certain number of shares having a certain nominal value. The company is liable for breach of its obligations by its entire capital. A shareholder in such a company shall not be held liable for the company's obligations.

A company's stock capital shall amount to at least Kcs one million (as compared to the previous minimum of Kcs 100,000). The Commercial Code permits the issue of preferred shares (up to one half of the stock capital) and employees' shares. It does not permit the issue of shares which would bear an interest regardless of the company's profits or losses. Finally the company may also issue bonds, up to one half of its stock capital, bearing the right to be exchanged for shares or the right of the first option to subscribe for shares.

A company may be set up by a single founder (a legal entity as of principle) or by two or more founders. One entity sets up a company in a Founding Deed, while several founders must sign Articles of Association.

A Founding Deed or Articles of Association must contain:

a. Name, head office and business activities of the company
b. Suggested stock capital of the company
c. Number of shares and their nominal value. If different types of shares are to be issued, their names and rights shall be specified.
d. The capital subscribed by the individual founders.
e. If non-monetary capital is to be subscribed to the company's stock capital, this must be specified too, as well as its valuation proved by an expert's appraisal.

If a company is to be founded on the basis of a call for subscription, the Articles of Association or the Founding Deed must moreover contain:

a. Date and venue of subscription to shares
b. The procedure for subscription to the shares which exceed the stock capital proposed
c. Date and venue for the payment of a part of the shares subscribed, as well as the amount to be paid

d. The manner of convoking the Statutory Shareholders Meeting

The Company Register will only register a company provided that it is in keeping with the law:

a. The Statutory Meeting took place properly if the holding of such a meeting is required
b. The shareholders-to-be have subscribed to the full value of the stock capital and paid at least 30 per cent of the stock capital composed of monetary deposits, with the exception of employees' shares
c. The by-laws of the company have been approved
d. Members of the company's bodies have been elected.

Attached to the application for registration shall be the Founding Deed (Articles of Association), approved by-laws and a Notarial Record as proof of the Statutory Meeting.

Bodies of the Company

The Company's supreme body is the Shareholders Meeting and its statutory body is the Board of Directors. Supervision over the Board of Directors and the business of the company is in the hands of the Board of Supervisors.

Reserve Fund

Upon its founding a company shall create its Reserve Fund in the amount and manner specified in its by-laws. The minimum amount of the Reserve Fund is ten per cent of the stock capital. The Fund must be annually replenished (by at least five per cent of net profits) until the amount of the Reserve Fund specified in the by-laws is reached (at least 20 per cent of the stock capital).

Liquidation of a Company

A Shareholders Meeting shall decide on liquidating the company.

A company shall be liquidated upon expiration of the term for which it has been established; upon achieving the purpose for which it has been established; by a decision of the Shareholders Meeting on liquidating the company; by a court's ruling on its winding up; by a decision of the Shareholders Meeting on the company's merger or dismerger, or transformation into a different company form or a cooperative; or by declaring bankruptcy or rejecting a motion for declaring bankruptcy on the grounds of lack of assets.

Limited Liability Company

A limited liability company is such whose basic capital is composed of pre-determined deposits by the partners. It may be founded by a single person, and may have a maximum of fifty partners.

The value of the company's basic capital shall amount to at least Kcs 100,000, while a partner's deposit shall be at least Kcs 20,000. Prior to filing an application for registration at least 30 per cent of each individual monetary deposit must be paid. The total value of paid monetary deposits together with the value of non-monetary contribution, however, requires at least Kcs 50,000. In the event of a single person founding a company, the latter may only be registered if the entire basic capital has been paid up.

The Articles must include:
a. name and domicile address of the company
b. names and domicile of partners, both legal entities and natural persons
c. business activity of the company
d. basic capital and each partner's contribution upon the establishment of the company, including the manner and time of payment, with respect to non-monetary contribution, the item(s) contributed

e. names and domicile of the initial managers of the company and the manner in which they shall act on behalf of the company
f. names and domicile of the members of the initial Supervisory Board, if applicable.

Bodies of the Company

A company's supreme body is the Partners Meeting. In the event of a single partner, he/she shall have the authority of a Partners Meeting. The company's statutory body is one or more managers. In the Articles the partners may agree to set up a Supervisory Board.

Reserve Fund

The same provisions apply as with joint-stock companies. The minimum amount of the Reserve Fund which requires to be reached through annual allocation from profits is ten per cent of the basic capital.

Liquidation of the Company

The procedure is similar to that concerning joint-stock companies. In addition, the partners may agree on other reasons for liquidation. On the grounds of such reasons and under the conditions stipulated in the Articles, the partners may demand liquidation of the company through a court's decision.

III. Section J and K of the Guide should be deleted

The Commercial Code rescinds Decree No. 265/1990 of the Federal Ministry of Foreign Trade on the establishment and operation of foreign persons' representative offices. Such offices shall now be set up under the relevant provisions of the Commercial Code. Moreover, the Commercial Code rescinds Decrees that govern permission and registration of foreign trade activities.

IV. Section L/1 Custom Duties

A new list of customs tariffs has been issued; certain have been reduced while others increased.

V. Section M

Prices were further liberalized during second half of 1991 so that only a mere five per cent of prices are still being controlled by the government.

VI. Section N/1

Current average interest rates are approximately 8.8 per cent on deposits and 14.2 per cent on loans (the maximum interest rate on loans being 17 per cent).

VII. Appendix I

The Commercial Code rescinds as of 1 January 1992:

- Act No. 104/1990 on Joint-stock Companies
- Act No. 109/1964 (Economic Code) and its subsequent amendments, particularly Act No. 103/1990
- Act No. 42/1980 on Economic Relations with foreign countries as amended in Act No. 115/1990, with the exception of the provisions under Sections 2,3, 13-16, 17 (Paragraph 2, Letter c.). Section 18 Paragraph 1, Section 19 Paragraph 1 Letter i., Section 22 Letter j., Section 43-56, 58 and 64
- Decree No. 132/1991 of the Government of the Czech and Slovak Federal Republic

- Decree No. 256/1990 of the Government of the Czech and Slovak Federal Republic
- Decree No. 533/1990 of the Federal Ministry of Foreign Trade..

VIII. Appendix III

The United States of America, People's Republic of China, Thailand should be added to the list of countries.

Source: *Investment Guide for Foreign Entrepreneurs in the Czech and Slovak Federal Republic. Supplement I to the Guide.* Federal Agency for Foreign Investment, Federal Ministry of Economy (Prague, December 1991).

ANNEX B.3 THE LAW ON THE PRIVATIZATION OF SMALL-SCALE ENTERPRISES

Summary of the Act of 25 October 1990 on the Transfer of State Property of Certain Businesses to Other Natural or Legal Persons[1/]

The Federal Assembly of the Czech and Slovak Federal Republic has passed the following Act:

Part One
Basic provisions

Article 1

The Act determines the conditions under which the State property of some businesses, including State enterprises, organizations financed through the State budget, organization financed through State contributions and national committees (hereinafter referred to as "enterprises" only), shall be transferred to natural or legal persons.

Article 2

(1) This Act applies to the movable and immovable assets of enterprises, or parts of enterprises, engaged in commerce, the provision of services and non-agricultural other than agricultural production (hereinafter referred to as "business unit" only).

(2) The Act does not apply to business units to which persons resident in another state have the right of use.

(3) The Act also does not apply to business units
   (a) subject to the Act on the Alleviation of some Property Injuries [i.e. the Act on the restitution of small-scale enterprises of October 1990];
   (b) which were transferred from natural persons and commercial companies into State ownership in accordance to legal rules issued after 25 February 1948.

Article 3

Only natural persons who are citizens of the Czech and Slovak Federative Republic or where Czechoslovak citizens after 25 February 1948, and legal entities comprising such natural persons (hereinafter referred to as "person" only), may become proprietors of the business units transferred from State ownership under this Act.

Part Two
Public Auction of Business Units

Article 4

(1) The sale of the business units in question shall be conducted by public auction.

(2) The public auctions shall be organized by the competent authorities of the Czech Republic or Slovak Republic (hereinafter referred as to "competent authority of the Republic" only).

(3) The enterprises shall produce and confirm lists of business units to be offered to sale. The lists shall include the following:
   (a) the exact specification of the business unit by
      1. the name of the business unit and its location;
      2. the name and registered address of the organization having the right of management over the business unit;
      3. a list of the real estate, buildings, machines and equipment and other factors of production owned by the business unit;
   (b) the starting price for the business unit and its assets;
   (c) the place and manner of placing the auction deposit;

(e) the terms under which the interested persons shall be allowed to examine the business units,

(f) the amount of credit to be opened in favour of the enterprises by prospective buyers of the respective business unit and conditions for the opening of new credits.

(4) If the building or real estate where the business unit is located are not to be auctioned as components of this business unit, the list shall also specify the name of the person or organization having the right of management over such buildings or land.

(5) The list shall include an inventory of the business unit prepared on the day of publication of the list.

(6) The lists of business units shall be published within 30 days before the date of the public auction. The manner in which this is done shall be determined by the Acts of National Councils.

Article 5

(1) Persons intending to participate in the public auction of a business unit (hereinafter referred to as "auction participant" only) must prove that they have placed an auction deposit amounting to at least 10 per cent of the starting price of the business unit in question, but not less than a minimum of Kcs 10,000.

(2) After deduction of the licence fee for attending the public auction, the auction deposit placed by a successful bidder shall be used in part payment of the price of the business unit he has acquired. The auction deposit of the other auction participants shall be returned to them at the end of the auction after deduction of the fee for the licence to attend the auction.

(3) The fee for the licence to attend the auction shall be Kcs 1,000.

(4) If the successful bidder does not pay the full price of the business unit he has acquired, the auction deposit shall accrue to the competent authority of the Republic.

(5) Other persons may also be present at the public auction provided they have paid the required fee.

Article 6

(1) The public auction shall be started by the auctioneer nominated by the competent authority of the Republic.

(2) The conduct of the public auction shall be inspected by a representative of the competent authority of the Republic.

(3) The auctioneer must not discriminate in favour of or against any participant of the auction. The auctioneer himself may not, directly or through a representative, apply for property being auctioned by himself. The same applies to close relatives of the auctioneer.

Article 7

Similarly, the auctioned property must not be applied for by representatives of persons acting on behalf of the competent authority of the Republic during the property's auction. The same applies to close relatives of such people.

Article 8

The starting price for a business unit to be auctioned will be based upon the price of its real estate and buildings, assessed in accordance with the valid price regulations, as well as the price of its machines and equipment and other capital and intermediate goods.

Article 9

(1) The auctioneer shall start the public auction by announcing the name of the business unit being auctioned, its starting price (Article 8) and the price of its inventories excluding intermediate goods, assessed on the day of the auction. The auction shall proceed as long

as the auction participants are bidding higher prices. When no higher price has been bid after two calls, the auctioneer shall announce once more the last bid. If during the next three minutes no higher price is offered, he shall assign the business unit by a knock down to the person who made the last bid (hereinafter referred to as "auction buyer" only).

(2) A record shall be made of the course of the public auction, which shall be signed by the auctioneer, the auction buyer and the representative of the competent authority of the Republic.

(3) The purchase price will consist of the price of the auctioned goods and inventories excluding intermediate goods. The closing inventory and its price at the date of the take-over of the business unit shall not differ substantially from the closing inventory and its price at the date of the auction.

Article 10

If the business unit cannot be successfully auctioned by the procedure stipulated in Article 9 and at least 5 persons are present at the public auction, the auctioneer shall gradually decrease the starting price in steps of 10 per cent to a minimum of 50 per cent of the starting price. If the business unit cannot be auctioned successfully even by this procedure, the auctioneer shall terminate the auction.

Article 11

(1) The property of the businesses auctioned by the knock-down of the auctioneer shall be transferred to the auction buyer, who shall be obliged to pay the auction price on a special account of the competent authority of the Republic after deduction of the remainder of the auction deposit (Article 5, Paragraphs 2 and 3) within 30 days of the date of the auction.

(2) If the auction buyer does not pay the auction price, the transfer of the property shall not take place. The auction deposit placed by the auction buyer shall accrue to the competent authority of the Republic. This does not affect any legal claims that the enterprise may launch against the auction buyer for defaulting on the purchase.

(3) The price of inventories shall be paid by the auction buyer to the enterprises within 30 days after the date of auction.

Article 12

(1) The use and any risks of accidental destruction or deterioration of the business unit shall pass to the auction buyer at the knock down.

(2) The previous proprietor will not be held liable for any defects of the business unit sold in the public auction.

(3) When the auction buyer complies with the provision under Article 11, paragraph 1, the competent authority of the Republic shall issue him a certificate confirming that the business unit was sold to him in a public auction and he became its proprietor on the date of the knock down. If the business unit concerned is an immovable asset the competent authority of the Republic shall send one copy of this certificate to the competent authority of geodesy and cartography to make a relevant entry in the register of immovable assets.

Article 13

(1) The competent authorities of the Republics shall draw up new lists of the businesses not successfully auctioned in accordance with Articles 4 to 12, and shall decide which of them shall be auctioned again. The procedure outlined in Articles 4 to 12 shall also be followed at any subsequent auction.

(2) If the same business unit is auctioned repeatedly, the participants of the auction need not be limited to the persons defined under Article 3 and the auctioneer may decrease the starting price in accordance with Article 10 to a minimum of 80 per cent of the starting price.

Article 14

If the business unit offered at auction is located on land managed by the business unit, this land must be sold with the business unit.

Article 15

The auction buyer shall be entitled to conclude an agreement on the rental of non-residential premises housing the business unit. The right of use shall belong to the auction buyer against the proprietor or his legal successor for a period of two years, unless agreed otherwise.

Article 16

(1) If the business unit was used on 1 October 1990 by a person on the basis of a temporary letting agreement or another similar agreement the sale of this unit shall be effected without public auction if that person (hereinafter referred to as "user" only) asks to acquire it within five days before the date of auction.

(2) The enterprise shall conclude a purchase agreement with the user on the sale of this business unit. Any claims originating from the use of the business unit shall be settled simultaneously.

(3) The purchase price shall be fixed in accordance with Article 8.

(4) If the purchase agreement is not concluded within 60 days after the auction date is publicized, the rights accruing to the user from the agreements referred to in Paragraph 1 shall be rescinded and the business unit shall be auctioned. Any other claims of the user and the enterprise shall remain unaffected.

(5) The purchaser shall acquire the same rights by this method of sale as those granted to the auction buyer by Article 15.

Part Three
Further Obligations of the Purchaser of the Business Unit

Article 17

(1) For the first two years after the date of auction the auctioned business unit can only be transferred to persons referred to in Article 3. If the business unit was sold at a subsequent auction, it may also be transferred to persons referred to in Article 13, Paragraph 2.

(2) If the enterprise used the business unit before the auction completely or partially for the sale of basic foods, the auction buyer will be bound by this sale for a period of at least one year from the seventh day after the auction unless this term is shortened by the local board to the request of the auction buyer.

(3) The provisions of the Paragraphs 1 and 2 shall also be applied to persons acquiring business units on the basis of a purchase agreement in accordance with Article 16.

Article 18

(1) If a person does not comply with the obligations referred to in Article 17, Paragraph 2, he can be fined by the competent authority of the Republic for up to Kcs 2,000 for each working day on which he failed to comply with these obligations.

(2) The fine may be imposed within one year of the infringement of this obligation.

Part Four
Liquidation of State enterprises
Article 19

The founder of a State enterprise of which the business units have been sold in accordance with this Act shall assess the further viability of the State enterprise. If the founder decides on its winding up, the liquidation shall be carried out in accordance with special legal rules. The proceeds of the liquidation shall be transferred to a special account. If the proceeds of the liquidation are not sufficiently high to cover all remaining claims, these shall be covered by the State through the intermediary of the competent authority of the Republic.

Part Five
Final Provisions

Article 20

(1) The net proceeds of the sale of the business units under this Act shall be transferred to a special account of the competent authority of the Republic.
(2) The funds accumulated in this special account cannot be used for a period of two years for any other purpose than to meet claims arising from the application of this Act.

Article 21

The employees of the enterprises and business units shall, upon request, render to the competent authorities of the Republics all required information, data and documents and provide them with access into the business units.

Article 22

Labour-law relations between employees and the enterprises concerned shall not be affected by this Act.

Article 23

(1) The Act No. 174/1950 on auctions except execution, Legal Provision of the Presidium of General Assembly No. 364/1990 on the disposal with the property of State enterprises, and Article 32, Letter a) of the Decree of the Federal Ministry of finance No. 119/1988 on the management of national property shall not apply to the transfers of property covered in this Act.
(2) The prices of the auctioned businesses shall not be limited by the provisions of legal pricing rules.

Article 24

The effectiveness of the Legal Provision No. 364/1990 on the disposal with the property of State enterprises shall not be affected by this Act.

Article 25

The Ministry for the Administration of National Property and its Nationalization of the Czech Republic and the Ministry for the Administration and Privatization of the National Property of the Slovak Republic shall issue generally binding legal regulations providing details regarding the public auctions, including the entry price to be set.

Article 26

The provisions of Article 26, Paragraph 4 of the Foreign Exchange Act No. 162,1989 in the wording of the Acts No. 104/1990 and No. 403/1990 shall be amended in that behind the word "injuries" the following text shall be added: "or by auction in accordance with the Act No. 20/1990 on transfers of State property to some businesses to other natural or legal persons".

Article 27

This Act shall come into effect on 1 December 1990.

1/ The text presented here is not an official translation of the Act, and does not provide a full transcription of the detailed definitions, stipulations, exceptions and annotations contained in the original document. It is intended to be used merely as a guide, and readers proposing to base business decisions on this Act are urged to take legal advice in Czechoslovakia. UNIDO cannot be held liable for any errors or omissions contained in this text.

ANNEX B.4 THE LAW ON THE PRIVATIZATION OF LARGE-SCALE ENTERPRISES

Summary of the Act of 26 February 1991 on Conditions of Transfer of State Property to Other Persons[1/]

The Federal Assembly of the Czech and Slovak Federal Republic has passed the following Act:

Part One
Subject Matter

Article 1

(1) This Act specifies the conditions governing the transfer of State property, to which the State enterprises, State banking institutes, State insurance companies and other State organizations (hereinafter referred to only as "enterprises") have the right of management. It also specifies the conditions governing the transfer of their proprietary participation in the entrepreneurial activities of other legal persons, as well as the conditions governing the transfer of the State's proprietary participation in these entrepreneurial activities to Czechoslovak or foreign natural or legal persons (hereinafter referred to as "privatization" only).

(2) This Act shall be applied analogously to the property of foreign trade companies and specialized foreign trade organizations, as well as their proprietary participation in the entrepreneurial activities of other legal persons.

(3) The conditions governing the transfer of State property specified by this Act shall not be applied to property which according to the constitution or special Acts may only be held by the State.

Article 2

For the purposes of this Act the property of an enterprise shall be deemed to comprise the all material and financial resources over which the enterprise has the right of ownership and management, as well as all rights, obligations and other proprietary assets of the enterprise.

Article 3

(1) This Act shall not apply to property which has to be returned to legal persons under the terms of other laws.

(2) This Act shall also not apply to property transferred to the State after 25 February 1948 from churches, orders and congregations and religious companies.

(3) Property subject to claims by natural persons in accordance with other laws may be covered by this Act only if these claims have not been lodged within the specified time limit or have been rejected.

Article 4

Property may also not be transferred under the terms of this Act if it has been designated for transfer to other natural or legal persons under the terms of other laws.

Part Two
Privatization Plans

Article 5

Transfer of property under the terms of this Act shall be exercised in conformity with the approved privatization plans for enterprises or the State's proprietary participation in entrepreneurial activities.

Article 6
Privatization Plans for Enterprises

(1) Privatization plans for enterprises shall comprise a variety of economic, technical and proprietary data, and shall specifically include
   a) the name of the enterprise and a precise definition of the property to be privatized under the project (hereinafter referred to as "property to be privatized" only);
   b) data on how the State had acquired the property to be privatized;
   c) a definition of property unusable for entrepreneurial purposes (e.g. uncollectible claims, unusable capital goods and inventories);
   d) an evaluation of the property to be privatized;
   e) the manner in which the property is to be privatized, and how the claims of other legitimate persons are to be settled;
   f) the definition of the legal form of the commercial company to be established through the privatization;
   g) information on the size of the public share issue and the distribution of shares in the case of the establishment of a joint-stock company, as well as information on the proposed use of investment coupons;
   h) the price of the property to be privatized and proposed conditions of payment in the case of enterprises sold in their existing form;
   i) the determination of the shares of the property to be privatized in accordance with Article 11, Paragraph 4, in the case of enterprises privatized under the terms of Article 11, Paragraph 3;
   j) the manner in which the transfer of industrial and intellectual property is to be negotiated with the Federal Office for Inventions, as far as these rights are the property of the enterprise;
   k) the time schedule for the implementation of the privatization project of the enterprise.

(2) Privatization plans for enterprises may additionally include
   a) recommendations regarding the future activity of the enterprise concerned;
   b) information on persons interested in purchasing the enterprise, participating in the foundation of a commercial company using the property of the enterprise, or purchasing the shares of such a newly established company;
   c) data on the present and anticipated position of the enterprise in the market;
   d) information on the number of employees and their qualifications.

(3) Privatization plans for enterprises may refer to the property of a part of an enterprise, the entire enterprise or several enterprises.

Article 7

(1) The promoter and/or sponsor (hereinafter referred to as "promoter" only) to whom the privatization plan for an enterprise shall be submitted, shall be responsible for the further development privatization proposal.

(2) The privatization plan for an enterprise shall, as a rule, be prepared by the enterprise concerned. If the privatization plan is prepared by the promoter or by a third person, the enterprise concerned will have to be consulted and its views taken into account.

(3) The promoter can impose upon the enterprise the manner in which privatization plan is to be further developed.

(4) The enterprise shall inform the competent labour union organ of the privatization plan.

Article 8

(1) The promoter shall evaluate all privatization plans for enterprises submitted to him and shall submit them with his own comments, without unnecessary delay, for the approval of

a) the Federal Ministry of Finance, if the promoter is a body of the federal government;
b) the competent authority of the government of the Republic concerned in all other cases.

(2) The promoter shall also submit the privatization plans for the enterprises under Paragraph 1 of the present Article which have not been recommended by him for implementation, with an appropriate explanation.

Article 9
Privatization Plans for Enterprises with State Participation

(1) In the case of enterprises with State participation at the Federal level, the Federal authority representing the State shall be responsible for preparing the privatization of the State's holding within the time frame established by the Government of the Czech and Slovak Federative Republic, and shall submit the completed privatization plan to the Federal Ministry of Finance.

(2) In the case of enterprises with State participation at the level of the Republic or the municipality, the authority of the government of the Republic or municipality representing the State shall be responsible for preparing the privatization of the State's holding within the time frame established by the Government of the Czech Republic or the Government of the Slovak Republic (hereinafter referred to as "Governments of the Republics" only), and shall submit the completed privatization plans to the competent authority of the Republic concerned.

(3) The plans for the privatization of State holdings in enterprises (hereinafter referred to as "privatization plans for State shareholdings" only) shall take into account the requirements of the privatization plans of the enterprise concerned.

(4) The privatization plans for State shareholdings shall be prepared principally by the legal person concerned. The procedures listed under Articles 7 and 8 shall be applied.

Article 10
Approval to Privatization Plans

(1) The privatization plans for State enterprises and the privatization plans for State shareholdings shall be approved and published by
a) the Federal Ministry of Finance, if this is the promoter of the enterprise or if the rights of the State in the enterprise are exercised by the Federal government;
b) the competent authority of the Governments of the Republics in all other cases.

(2) The Government of the Czech and Slovak Federal Republic or the Governments of the Republics reserve the right of approval of the privatization plans for State enterprises and the privatization plans for State shareholdings.

(3) The privatization plans shall require approval under Paragraph 2 hereof, whenever they involve a direct sale without public competition or public auction.

Part Three
Transfer of the Privatized Property to Funds and the Use of the Funds' Property

Article 11

(1) In conformity with the approved privatization plans for State enterprises the promoter shall wind up the enterprise concerned without liquidation, or shall detach a part of the property of the enterprise.

(2) In cases when the Federal government is the promoter, the privatized property shall be transferred to the Federal Fund of National Property established by Article 27 of this Act (hereinafter referred to as "Fund" only) on the date of the winding up of an enterprise or the detachment of part of its property. This shall not apply to cases under Article 42.

(3) If the government of a Republic or a municipality is the promoter, the privatized property

shall be transferred to the Fund of the National Property of the Czech Republic or to the Fund of the National Property of the Slovak Republic (hereinafter referred to as "Funds of the Republics" only) on the date of the winding up of the enterprise or the detachment of part of its property; the Funds of the Republics shall be established by Acts of the National Councils of the Republics.

(4) The following items shall be transferred to the competent Fund of the Republic under Paragraph 3 hereof:
   a) that part of privatized property being located on the territory of the Republic concerned;
   b) the financial assets, rights and obligations of those organizational components of an enterprise located on the territory of the Republic concerned;
   c) the financial assets, rights and obligations of an enterprise not connected with the activity of any of its organizational components according to the shares of the value of the privatized property transferred to the corresponding Fund of the Republic under Letter a) and b) hereof.

(5) Prior to the transfer of the property according to Paragraphs 2 and 3 the enterprise shall dispose of its unusable property (Article 6, Paragraph 1, Letter c) in accordance with the approved privatization plan.

(6) The promoter shall not detach from the enterprise those parts of its property linked to its industrial or intellectual property rights (Article 6, Paragraph 1, Letter j). These rights may only be transferred by contract.

(7) If the entire property of an enterprise is transferred to the Fund and/or the Funds of the Republics, the formation of a commercial company or the sale of this property shall coincide with the winding up of the enterprise without liquidation.

(8) On the date set by the approved privatization plan for a State shareholding the Federal Government shall transfer the rights connected with this shareholding to the Fund, and the authorities of the Governments of the Republics and communities shall do the same to the corresponding Fund of the Republic.

Article 12

(1) The property of the Fund and the Funds of the Republics (hereinafter referred to as "Funds" only) shall not form a part of the State budgets and may only be used for the purposes specified by this Act.

(2) The property of the Funds may only be used in conformity with the approved privatization plans for the following methods of privatization:
   a) the foundation of a joint-stock or other commercial company and the disposal of the State's shareholdings in these companies;
   b) the sale of the property of the enterprise or its components;
   c) the transfer of the privatized property to municipalities,
   d) the transfer of the privatized property to pension and health insurance funds.

(3) No further approval shall be required for the use of the property under Paragraph 2 hereof.

(4) Legitimate claims of other persons may be covered from the property of the Funds.

(5) The property of the Funds may be used to meet the obligations of the enterprises earmarked for privatization.

Article 13

No preferential treatment can be given for the sale of the property of the Funds. For the sale of shares only preferential treatment permitted by the Act on Joint-Stock Companies can be given.

Article 14

(1) The Funds shall sell the property to be privatized on the basis of a contract concluded with a buyer or in a public auction. If the sale is accomplished in public auction, an adequate procedure shall be employed according to special rules of law.

(2) Where the proceeds from the sale of the property to be are to be invested in a commercial company, the Funds shall proceed in accordance with special rules of law.

Article 15

(1) As a result of the sale of property to be privatized or the investment of its proceeds in a commercial company, the ownership of the assets, rights and obligations of the privatized property shall be transferred to the buyer on the date of the sale.
(2) In all other respects the transfer of financial claims shall be governed by the appropriate legal procedures and regulations.
(3) The approval of the creditor shall not be required for the transfer of an enterprise's obligations, but the Fund shall guarantee that the buyer of the privatized property will meet these obligations.
(4) The buyer shall notify the creditors of the acquisition of the obligations without undue delay.

Article 16

The rights of industrial and other intellectual property shall be transferred to the buyer by means of a separate contract concluded between him and the enterprise.

Article 17

The rights and obligations ensuing from labour legislation to the employees of the enterprise or its business unit to be privatized shall be transferred to the buyer.

Article 18

If all of the property of an enterprise is being privatized and unless otherwise prescribed by the contract or other relevant laws, the buyer shall have the right to use the commercial name of the enterprise he has acquired. This transfer shall not be prevented by a change of the complement of the commercial name specifying the legal form of the enterprise.

Article 19

(1) The Fund shall transfer and the buyer shall take over the privatized property on the date on which the contract comes into effect. A minute of this transfer shall be made and signed by both parties.
(2) With the transfer of the property the buyer shall acquire ownership over it and assume responsibility for damage to it.
(3) The acquisition of immovable assets will have to be registered according to the appropriate rules of law.

Article 20

(1) The minutes of the transfer (Article 19, Paragraph 1) shall make specific reference to any missing or defective goods. Unless otherwise agreed in the contract, the missing goods shall be deemed not to have been transferred to the buyer even though they formally constitute a part of the transferred property. When assessing the extent to which some of the transferred property may be defective, account will have to be taken of the extent to which the property in question is able to serve its function and for how long it has been in use.
(2) Unless otherwise agreed in the contract, the buyer shall apply for an adequate rebate for the missing or defective goods included into the minutes of the transfer.
(3) The buyer may offset his claim for a price rebate against the obligations transferred to him.

Article 21

During the transfer of the property and the preparation of the minutes of the transfer the Fund shall be represented by persons authorized to act on behalf of the enterprise. During this activity these persons shall be responsible to the Fund.

Part Four
Investment Coupons
Article 22

(1) For the purposes of this Act the investment coupon (hereinafter referred to as "coupon" only) shall be deemed to be a security (consolidated paper) giving the right to purchase shares specified for sale against coupons. The coupon shall not be transferable and the rights attached to it may only be transferred to heirs.
(2) The coupon cannot be amortized.

Article 23

(1) The text of the coupon shall contain at least the following:
   a) the name and birth statistical number of the citizen;
   b) the name of the authority having issued the coupon;
   c) the purchase price;
   d) the period of validity;
   e) the date of issue.
(2) The issuer of the coupons shall be the Federal Ministry of Finance.
(3) The net revenue accruing from the sale of the coupons shall be transferred to the Fund of the Republic in which the buyers of the coupons have their permanent residence on the date of the acquisition of these coupons.

Article 24

These coupons may be acquired by any Czechoslovak citizen with permanent residence in the territory of the Czech and Slovak Federative Republic aged 18 years or more on the date of issue of the coupons.

Article 25

(1) The coupons can be used for
   a) the purchase of shares in any joint-stock company included for this purpose in the list of enterprises to be privatized, as long as the citizen makes valid his claim within the period specified in this list,
   b) the acquisition of shares in commercial companies founded especially for this purpose, after the previous approval of the competent authority of the Republic.
(2) The methods specified in Paragraph 1 hereof can be employed in parallel.

Article 26

When using his coupons the owner may be represented by another natural or legal person on the basis of a written proxy.

Part Five
Federal Fund of National Property

Article 27

(1) The Federal Fund of National Property shall be established as a legal person. The Fund shall be entered in the Register of Companies.

(2) The organs of the Fund shall consist of a presidium, an executive board and a supervisory board.

(3) The property of the Fund shall be derived from the property transferred to it under Article 11, Paragraph 2 hereof and from the profit generated by its participation in the entrepreneurial activity of commercial companies.

(4) Details concerning the organizational structure of the Fund and its activities shall be specified by a statute approved by the presidium of the Fund.

Article 28

(1) The Fund shall conclude contracts on its own behalf in accordance with the approved privatization plans and shall conduct other legal operations. It shall, in particular,
   a) establish joint-stock and other commercial companies or shall participate in their establishment, and shall invest in them funds to which it has committed itself;
   b) acquire shares on the basis of its participation in the entrepreneurial activities of joint-stock companies and execute its shareholder's rights, including participation in general meetings;
   c) execute its partnership rights arising from its participation in companies other than joint-stock companies;
   d) participate in the economic results of the commercial company in which it participates, and bear the consequences of this activity in the form of profit and losses;
   e) sell its shares in companies other than joint-stock companies;
   f) participate in the liquidation of the companies that become unviable;
   g) conclude contracts on the sale of enterprises or parts thereof and initiate public competitions (invitations) for this purpose;
   h) lease its assets for a definite period of time until they are privatized.

(2) The Fund shall employ experts whose remuneration shall be approved by the presidium.

Article 29

While performing the activities specified under Article 28 the Fund shall acquire rights and assume obligations. The Fund shall be authorized to sue for the fulfilment of its rights in a court of law or demand the fulfilment of its rights through other appropriate channels. It may also be sued for being in default of its obligations, for the fulfilment of which it shall have unlimited liability.

Article 30

The highest organ of the Fund shall be the presidium consisting of 9 members. The chairman, vice-chairman and the members of the presidium shall be elected by the Federal Assembly on the recommendation of the Government of the Czech and Slovak Federal Republic for a period of five years. Members of the Government of the Czech and Slovak Federal Republic, of the Government of the Czech Republic and the Government of the Slovak Republic, members of the Federal Assembly, members of the Czech National Council and of the Slovak National Council cannot be members of the presidium.

Article 31

(1) The presidium shall have the power to
   a) nominate and manage the executive board and supervise its activities;
   b) approve the statutes of the Fund;
   c) approve the remuneration of the members of the executive board;
   d) draft the Fund's budget for submission to the Government of the Czech and Slovak Federal Republic;
   e) approve the rules of procedure of the presidium and the executive board;
   f) prepare the Fund's annual financial report for submission to the Government of the Czech and Slovak Federal Republic;

g) prepare an annual report on the activity of the Fund by 30 April for each preceding year.

(2) After the draft budget and annual financial report have been discussed by the Government of the Czech and Slovak Federal Republic, the Fund shall submit them to the Federal Assembly for approval.

Article 32

(1) The presidium shall be quorate if its meeting is attended by the majority of its members including its chairman and vice-chairman. For its decisions to be carried, the approval of the majority of the present members shall be required. In case the vote is evenly balanced, the chairman shall have the casting vote.

(2) The chairman, and in his absence the vice-chairman, shall sign documents on behalf of the presidium.

Article 33

(1) The activity of the Fund shall be governed by its executive board (hereinafter referred to as "board" only) in accordance with the instructions of the presidium.

(2) The board shall act on behalf of the Fund within the extent specified by its statutes. The statutes shall specify which written legal operations shall require the signatures of two members of the board. In addition, the statute shall specify when and to what extent the members of the board shall act on behalf of the Fund, or appoint a proxy to act on behalf of the fund. The members of the board authorized to act on behalf of the Fund shall be entered in the Register of companies.

Article 34

(1) The board shall consist of nine members nominated by the presidium for a period of five years. The presidium may discharge any member of the board prior to the conclusion of this term if he violates his duties or is unable to perform his functions.

(2) The members of the board shall elect from among themselves a chairman and a maximum of two vice-chairmen.

(3) The members of the board shall be employees of the Fund.

Article 35

(1) The supervisory board of the Fund (hereinafter referred to as "supervisory board" only) shall supervise the activity and management of the Fund, its presidium and board.

(2) The presidium shall discuss the draft budget and the annual financial report with the supervisory board prior to their submission to the Government of the Czech and Slovak Federal Republic.

Article 36

(1) The supervisory board shall consist of five members elected by the Federal Assembly for the period of five years. The Federal Assembly may discharge any member of the supervisory board prior to the conclusion of this term. The members of the supervisory board shall be elected and discharged by secret ballot.

(2) The members of the supervisory board cannot be the employees of the Fund.

Article 37

(1) The members of the supervisory board shall elect from among themselves a chairman and a vice-chairman.

(2) The provisions of Article 32 shall be applied analogously.

Article 38

The functions of the members of the presidium, board and supervisory board shall be incompatible.

Article 39

The members of the presidium, board and supervisory board, and the employees of the Fund may not perform activities which conflict with the interests of the Fund. In particular, they may not have an interest in joint-stock companies in which the Fund has a shareholding. The members of the presidium, board and supervisory board may not acquire the property of the Fund except through the purchase of coupons.

Article 40

The Fund shall cover the costs incurred by its activities from its property within the limits of its budget approved by the Federal Assembly.

Part Six
Special, Transitional and Final Provisions

Article 41

(1) The Government of the Czech and Slovak Federal Republic and the Governments of the Republics shall specify the procedures to be employed for the implementation of the privatization programme by means of coupons within three months from the date when this Act comes into effect. On the basis of these regulations the competent authorities shall submit lists of State enterprises or enterprises with a State shareholding to be included in the privatization programme to the relevant Government for approval.

(2) The lists of enterprises submitted for approval shall include the name and address of the enterprise and the promoter, an evaluation of their property and the number of their employees. The lists of enterprises with a State shareholding submitted for approval shall also include the name and legal form of the enterprise, the activity of the enterprise and the extent of the State's shareholding.

(3) The Government of the Czech and Slovak Federal Republic and the Governments of the Republics shall set down the terms for the preparation of the privatization plans.

Article 42

(1) The property of foreign trade enterprises, specialized foreign trade organizations and State banking institutes with the exception of the State Bank of Czechoslovakia and the State saving institutes founded prior to the date on which this Act comes into force shall be transferred to the Fund of the National Property of the Republic where the enterprise to be privatized is located.

(2) If the property of the enterprise to be privatized is transferred to the Fund of the National Property of the Czech Republic, this Fund shall transfer one third of the shares after the foundation of a joint-stock company into the Fund of the National Property of the Slovak Republic. If the property of the enterprise to be privatized is transferred to the fund of the National Property of the Slovak Republic, this Fund shall transfer two thirds of the shares after the foundation of the joint-stock company into the Fund of the National Property of the Czech Republic.

(3) Where the property of the enterprises specified in Paragraph 1 have been transferred to joint-stock companies before the date on which this Act comes into force or have been founded as joint-stock companies, two thirds of the State shareholding shall be transferred to the Fund of the National Property of the Czech Republic and one third of the State shareholding shall be transferred to the Fund of the National Property of the Slovak Republic on the date of the approval of the privatization plan.

Article 43

The provisions of this Act concerning the authorities of the Federal Government shall be applied analogously to the State Bank of Czechoslovakia.

Article 44

The evaluation of the property of the enterprise included in the approved privatization plan shall replace the evaluation of the non-monetary investment in the capital stock of the joint-stock company made by an authorized expert under the requirements of other laws.

Article 45

(1) Enterprises cannot conclude contracts on the transfer of ownership and cannot dispose of or acquire shareholdings in the entrepreneurial activities of other legal persons.

(2) Exemptions from the provisions of Paragraph 1 may be granted by the competent Government in justified cases. The approved exemptions shall replace the approvals granted under special laws.

(3) The State's shareholding in the entrepreneurial activity of legal persons may be disposed of only in accordance with the approved privatization plan for that shareholding.

(4) The provisions of Paragraphs 1 and 2 hereof shall not be applicable to legal persons specified in Article 1, Paragraph 2 hereof and to organizations financed or subsidized from the State budget.

Article 46

(1) The legal relations of the Funds of the Republics, their activities and the permitted use of their property shall be specified by Acts of National Councils, which shall also specify in which cases the property of the funds of the Republics can be used for purposes other than for privatization.

(2) In agreement with the Governments of the Republics the Government of the Czech and Slovak Federal Republic shall specify by an Ordinance the procedure for the issuance of the investment coupons, the various types of coupons to be issued, the purchase price of the coupons, and the manner in which the coupons are to be used and exchanged for shares.

Article 47

(1) In case the owners of the enterprise or business unit to be privatized have been dispossessed in the manner specified in Article 2, Paragraph 3 of Act No. 87/1991 on out-of-court restitutions, a legal claim shall be lodged in favour of the legitimate persons in accordance with the mentioned Act. The manner in which the claim is to be settled shall be specified in the privatization plan for that property.

(2) The legitimate person shall lodge his claim with the competent authority according to Article 10, Paragraph 1 hereof within six months from the date on which this Act comes into force, otherwise the claim shall lapse. At the same time the legitimate person shall notify this authority of the enterprise possessing the goods. The competent Fund of National Property shall settle the claim in accordance with Paragraph 1 hereof and the time schedule for the implementation of the privatization plan, but at the latest within one year from the date of the approval of the privatization plan.

(3) In other respects the provisions of Act No. 87/1991 on out-of-court restitutions shall be applied for the settlement of the claims under Paragraphs 1 and 2 hereof.

Article 48

The following laws are hereby repealed:

1. Article 28 of Act 111/1990 on State Enterprises.
2. Legal Measure No. 364/1990 on the Disposal of Property Entrusted to State Enterprises.

Article 49

This Act shall come into force on 1 April 1991.

1/ The text presented here is not an official translation of the Act, and does not provide a full transcription of the detailed definitions, stipulations, exceptions and annotations contained in the original document. It is intended to be used merely as a guide, and readers proposing to base business decisions on this Act are urged to take legal advice in Czechoslovakia. UNIDO cannot be held liable for any errors or omissions contained in this text.

ANNEX C

CONTACT POINTS FOR INVESTORS

ANNEX C: ADDRESSES OF SELECTED FEDERAL AND REPUBLIC BODIES

1. Federal Bodies

(Czechoslovakia, Prague phone numbers: 42 2 ...)

Federal Agency for Foreign Investment
Federal Ministry of Economy
nábř.kapt. Jaroše 1000
170 32 Praha 7
Telephone: 389 28 23
Fax: 37 60 63

Federal Ministry of Economy
nábř.kapt. Jaroše 1000
170 32 Praha 7
Telephone: 289 11 11

Federal Ministry of Finance
Letenská 15
118 10 Praha 1
Telephone: 514 11 11

Federal Ministry of Foreign Trade
Politických vězňů 20
112 49 Praha 1
Telephone: 2126 11 11

Federal Ministry of Transportation
nábř. L. Svobody 12
125 02 Praha 1
Telephone: 2891

Czechoslovak State Bank
Na Příkopě 28
110 03 Praha 1
Telephone: 2112

2. Czech Republic Bodies

Agency for Foreign Investment and Cooperation
Ministry for Economic Policy and Development of the Czech Republic
Vršovická 65
101 60 Praha 10
Telephone: 712 11 11

Ministry of National Property Administration and
Privatization of the Czech Republic
Senovážné nám. 32
110 00 Praha 1
Telephone: 236 20 65-082

Ministry of Finance of the Czech Republic
Letenská 15
118 10 Praha 1
Telephone: 514 11 11

Ministry of the Interior of the Czech Republic
Strojnická 27
170 89 Praha 7
Telephone: 335 11 11

Agency for Foreign Investment and Development
of Czech Republic
Konviktská 5
Praha 1
Telephone: 226 751
Fax: 262 095

3. Slovak Republic Bodies
(Czechoslovakia, Bratislava phone number: 42 7 ...)

Slovak Government Agency for Foreign Investment
Tomášikova 32
821 01 Bratislava
Telephone: 22 45 75

Ministry of Finance of the Slovak Republic
Štefanovičova 5
813 08 Bratislava
Telephone: 49 69 61

Ministry of National Property Administration and
Privatization of the Slovak Republic
Drieňova 27
811 05 Bratislava
Telephone: 23 43 32

Ministry of the Interior of the Slovak Republic
Martanovičova 2
812 72 Bratislava
Telephone: 206 11 11

Slovak National Agency for Foreign Investment
and Development
Petržalka, Mánesovo nám. 2
Bratislava
Telephone: 07.847 219
Fax: 07/849 806

4. Chambers and Associations

Czechoslovak Chamber of Commerce and Industry
Argentinská 38
Praha 7
Telephone: 8724 111, 875 344
Telex: 121 862

Association of Czechoslovak Entrepeneurs
Staroměstké nám. 6
Praha 1
Telephone: 2897 760 or 232 03 74
Fax: 232 07 52

Association of Slovak Entrepreneurs
Cukrova 14
Bratislava
Telephone: 07/570 71-9
Fax: 07/490 872

Industry Confederation of the Czech Republic
Mikulandská 7
Praha 1
Telephone: 296 849
Fax: 297 896

Industry Confederation of the Slovak Republic
Drieňova 24
Bratislava
Telephone: 07/233 356, 07/235 727
Fax: 07/233 542

ANNEX D

ECONOMIC FORECASTS

ANNEX D. ECONOMIC FORECASTS

A. SHORT TERMS MACROECONOMIC PROSPECTS

A quantitative assessment of the short term outlook for the Czechoslovak economy has been prepared for this Review by the Institute of Informatics and Statistics (Infostat) at Bratislava in collaboration with the Federal Statistical Office (FSO). It is based on a new quarterly model of the Czechoslovak economy specifically designed by Infostat to take account of the impact and implications of the current transition from a centrally planned to a market oriented economic system. In preparing this forecast, particular attention has been given to two principal determinants expected to influence the development of the Czechoslovak economy during the transition period:

- the pace and efficiency of the implementation of the government's economic reform programme to transform Czechoslovakia from a centrally planned to a market-based economy; and

- the prospects for global economic growth and Czechoslovakia's ability to integrate its economy into the world economy.

In view of the considerable uncertainties currently prevailing with regard to both of these questions, this forecast has been produced in four variants according to the following combinations of domestic and external assumptions:

- Variant 1 This is the base variant, assuming favourable developments both within and outside Czechoslovakia;

- Variant 2 This variant anticipates a less favourable external environment, resulting in reduced export possibilities and increased import prices;

- Variant 3 This variant posits a slower implementation of the domestic reform programme in general and a slowing down of the privatization programme in particular, with unfavourable effects on investment activity, the inflow of foreign capital and the rationalization of production;

- Variant 4 This variant assumes a simultaneous deterioration of both external and internal conditions.

The results of this forecast are presented in Annex Table D-1. These projections suggest that an economic recovery is likely in the second half of 1992, with the rapid growth of output implied by variants 1 and 2 possibly even causing some overheating of the economy and resulting in a temporary correction during the early months of 1993. An overall GDP growth rate of 3-9 per cent in real terms is forecast for 1993 as a whole, however, depending upon the particular combination of assumptions employed, with the most favourable variant indicating a recovery in real GDP (measured in constant 1984 korunas) almost to the level prevailing in early 1991. The forecast also suggests that unemployment will continue to rise in 1992, but should peak at about 900,000 persons, or 12 per cent of the labour force, by the end of the year. The more rapid drop in employment levels than GDP during 1992 and the slower growth of employment than GDP in 1993, imply an increase in labour productivity. This development, though painful in the short term, does nevertheless offer some hope for a steady increase in real wages and consumption, and hence in overall GDP, over the medium term.

In addition, the forecast predicts an annual inflation rate of some 9.5-15.5 per cent in 1992 and about 6.0-7.0 per cent in 1993. This implies a substantial reduction from the rate of 57.9 per cent recorded in 1991, which caused a sharp upward revaluation of the koruna. Thus, the koruna's real

Annex Table D-1. **Forecast of the basic macroeconomic indicators**
(Annual growth rates, percentage)

Indicator[a/]	Actual		Forecast							
			1992				1993			
	1990	1991	Variant 1	Variant 2	Variant 3	Variant 4	Variant 1	Variant 2	Variant 3	Variant 4
Gross domestic product	-1.7	-15.9	-3.0	-5.5	-6.8	-9.1	8.8	7.6	4.3	3.1
Gross material product	-2.3	-16.5	-3.4	-5.8	-7.2	-9.5	8.2	7.1	3.7	2.5
Gross material output	-3.2	-20.3	-8.1	-10.4	-9.7	-11.9	4.8	3.7	0.4	-0.8
Industrial production	-3.7	-23.1	-7.0	-9.3	-8.6	-10.9	5.7	4.5	1.3	0.1
Private consumption	1.1	-27.6[e/]	-0.6	-2.0	-5.3	-6.6	7.7	6.4	2.6	1.3
Personal consumption	0.8	-33.1	-2.5	-3.9	-7.1	-8.4	6.0	4.6	0.9	-0.4
Retail turnover	1.2	-39.2	-5.6	-7.0	-10.1	-11.3	5.7	4.3	0.6	-0.7
Retail turnover in current prices	11.9	-2.2	-1.9	2.2	0.4	0.8	11.7	10.8	7.0	6.2
Government consumption	3.4	-11.0[e/]	-4.1	-5.6	-4.6	-6.1	6.8	5.1	2.0	0.2
Gross fixed investment	7.7	-33.8	4.4	2.5	-7.4	-9.2	9.5	8.2	6.8	5.4
Export	-13.6	-16.5[e/]	5.1	-3.9	-3.3	-11.6	10.2	10.0	7.9	7.7
Imports	-1.2	-33.7[e/]	20.4	13.7	9.9	3.4	12.5	11.0	7.4	5.6
Exports in current prices[b/]	-8.1	-9.0	12.6	3.7	3.7	-4.5	16.7	17.1	12.8	13.2
Imports in current prices[b/]	0.6	-25.0	26.6	23.8	15.5	13.0	16.8	15.2	11.6	10.0
Balance of trade, billion current Kcs[c/]	-22.9	27.5	-19.1	-38.4	-14.6	-32.6	-22.6	-38.3	-12.6	-26.4
Gross external debt, billion $[c/d/]	8.1	9.4	10.5	11.2	11.1	11.7	11.9	13.2	13.2	14.3
Consumer price index	10.1	57.9	9.5	11.4	13.4	15.4	5.8	6.3	6.2	6.9
Average nominal wages	3.9	16.4	10.0	9.6	4.6	4.2	11.8	11.2	4.0	3.6
Average real wages	-5.5	-24.3	0.5	-1.5	-7.6	-9.5	5.6	4.5	-2.3	-3.5
Total household income, nominal	8.0	14.5	10.1	9.7	7.8	7.5	13.1	12.3	6.9	6.2
Real disposable household income	-1.0	-25.6	0.6	-1.4	-4.8	-6.5	6.0	4.8	0.0	-1.2
Number of employees	-2.5	-4.4[e/]	-6.0	-7.1	-4.0	-5.0	1.7	1.3	0.9	0.5
Unemployment, thousand persons[c/d/]	77.0	523.7	822.0	888.0	683.0	750.0	602.0	678.0	540.0	622.0
Unemployment rate, percentage[c/d/]	1.0	6.6	10.8	11.7	9.0	9.9	7.9	8.9	7.0	8.1
Average interest rate, percentage[c/]	5.8	14.5	12.4	12.4	12.4	12.4	9.3	9.3	9.3	9.3
Money supply, billion current Kcs[c/d/]	550.8	698.2	727.2	708.7	736.7	718.2	827.9	803.5	781.8	806.7

Sources: Federal Statistical Office, Prague; INFOSTAT, Bratislava.

a/ In constant 1984 prices unless otherwise indicated.
b/ Adjusted for changes in exchange rates.
c/ Absolute values in given measure units.
d/ End of period.
e/ Estimate.

exchange rate in terms of its 1990 purchasing power increased from Kcs 28 per dollar to Kcs 19 per dollar between the beginning and the end of 1991 even though its nominal exchange rate remained unchanged at Kcs 28 per dollar throughout the year. This revaluation, combined with the increased import needs arising from the economic transformation process currently in progress, are likely to cause the emergence of significant trade deficits in 1992-1993. Despite the likelihood of a substantially increased inflow of investment capital, this deterioration in Czechoslovakia's trade performance is almost certain to result in an increase in the country's external indebtedness. The present forecast thus anticipates an increase in Czechoslovakia's overall foreign debt from $9.4 billion in 1991 to approximately $10.5-11.5 billion in 1992 and $12.0-14.5 billion in 1993.

B. MEDIUM-TERM PROSPECTS FOR INDUSTRIAL GROWTH AND RESTRUCTURING

A medium-term forecast of likely developments in Czechoslovakia's industrial sector consistent with the short term economic forecast presented above been prepared by the FSO on the basis of an econometric model developed by I. Sujan and D. Strauch.[1/] This assumes that the shares of individual industries in total industrial production and the productivity of industrial labour depend primarily on the level of economic development and the size of a country, which are measured by per capita GNP and total GNP respectively. These relationships have been estimated using long term time series for a selection of ten developed market economies, comprising five large countries (United States, Japan, Federal Republic of Germany, France and Italy) and five small countries (Belgium, Sweden, Finland, Austria and Denmark).

Based on these findings, and substituting Czechoslovakia's economic level and size into the model, the likely structure and labour productivity that would have prevailed in Czechoslovakia's industrial sector under a market-based economic system has been computed. The results of these calculations are presented in Annex Table D-2. Since the Czechoslovak economy has not operated under market conditions for the past four decades, it is not surprising that the actual data for Czechoslovakia correspond neither to the average of selected small countries nor to the conjectural data computed by the model, although a modest shift towards these hypothetical figures can be observed between 1987 and 1990.

In the belief that the Czechoslovak economy will henceforth behave in a market-related manner, the econometric model has been used to predict the prospects for growth and structural change in the industrial sector. To this end, four separate trajectories to 1995 have been estimated for GDP growth, the main exogenous variable employed by the model, based on the same four combinations of domestic and external assumptions used in the short term macroeconomic forecast described above. In addition, several other parameters expressing the step-by-step adjustment of Czechoslovakia's industrial sector to a market-based structure and productivity pattern have also been set up for each of the four scenarios.

The forecast results suggest a strong likelihood of a recovery in industrial production by 1995, as shown in Annex Table D-3. It will not be possible, however, to maintain the present share of industry in GDP or the proportion of industrial employment, both of which are excessive at approximately 50 per cent and 40 per cent respectively.[2/] The forecast also suggests that the rational behaviour of enterprises during the transition period will produce significant changes in the industrial structure of production and employment, as shown in Annex Tables D-4 and D-5. The most dramatic of these changes would be a decline in the shares of non-electrical machinery and mining in the total volume of industrial production, mainly in favour of some light industries.

At the same time, the forecast indicates an increase in labour productivity in all industries over the transition period, as shown in Annex Table D-6. These changes depend significantly on the speed of economic reform and volume of exports to the Czechoslovakia's traditional markets in eastern Europe, as well as such factors as the inflow of foreign capital into local industries. Labour productivity in Czechoslovak industry cannot, however, be expected to approach the level prevailing in developed market economies during the transition period.

Annex Table D-2. Structure of industrial production (value added), 1980, 1987 and 1990
(Percentage)

Industry	Average of 5 small countries 1987	Computed data for CSFR 1987	Actual data for CSFR 1980	1987	1990
Mining and quarrying	1.5	1.1	7.50	6.30	5.26
Food, beverages, tobacco	13.0	13.8	7.93	7.15	8.22
Textiles	2.7	6.2	5.54	5.24	5.18
Wearing apparel	1.4	2.9	1.36	1.35	1.40
Leather and products	0.2	0.5	0.47	0.44	0.48
Footwear	1.1	1.1	1.51	1.29	1.35
Wood products	2.9	1.5	1.95	1.93	2.31
Furniture, fixtures	2.4	3.2	1.06	1.02	1.15
Paper and products	5.6	3.4	1.97	2.07	2.27
Printing, publishing	4.9	3.8	0.68	0.68	0.74
Chemical/rubber products	11.9	12.6	11.69	10.77	11.62
Non-metal products	3.5	6.2	6.24	5.66	5.92
Iron, steel, other metals	5.0	7.5	10.48	9.23	9.82
Metals products	6.8	6.3	3.99	3.94	3.93
Non-electrical machinery	9.2	7.7	17.39	20.04	17.91
Electrical machinery	7.4	6.4	4.30	6.30	6.49
Transport equipment	7.0	5.1	8.45	9.25	8.31
Professional goods	1.2	0.8	0.47	0.46	0.51
Other manufacturing	1.0	1.1	1.12	1.05	1.15
Electricity, gas, etc.	11.3	8.8	5.90	5.83	5.98
Total	**100.0**	**100.0**	**100.00**	**100.00**	**100.00**

Source: Federal Statistical Office, Prague.

Annex Table D-3. Forecast of selected aggregated indicators

Indicator	Actual 1990	Forecast 1995 Variant 1	Variant 2	Variant 3	Variant 4
Gross domestic product (Billion $ 1980)	99.6	108.0	97.7	95.4	86.1
Population (Million persons)	15.6	15.8	15.8	15.8	15.8
GDP per capita (thousand $ 1980)	6.4	6.8	6.2	6.0	5.5
Share of industry in GDP (Percentage)	35.2	32.1	31.1	31.4	30.3
Share of employment in industry in total population (Percentage)	17.7	14.1	13.4	13.9	13.1
Industrial production (Billion $ 1980)	35.0	34.7	30.4	29.9	26.1
Employment in industry (Million persons)	2.8	2.2	2.1	2.2	2.1
Labour productivity in industry (Thousand $ 1980 per employee)	12.6	15.6	14.3	13.7	12.7

Source: Federal Statistical Office, Prague.

Annex Table D-4. **Forecast changes in the structure of manufacturing value added** (Percentage)

Industry	Actual		Forecast 1995			
	1985	1990	Variant 1	Variant 2	Variant 3	Variant 4
Mining and quarrying	6.54	5.26	3.93	4.10	4.77	4.72
Food, beverages, tobacco	7.37	8.22	8.74	8.58	8.22	8.04
Textiles	5.31	5.18	5.85	5.21	6.33	5.88
Wearing apparel	1.37	1.40	2.23	2.00	1.94	1.65
Leather and products	0.43	0.48	0.53	0.47	0.55	0.50
Footwear	1.39	1.35	1.90	1.63	1.96	1.65
Wood products	1.94	2.31	2.09	2.17	2.07	2.15
Furniture, fixtures	1.00	1.15	1.68	2.15	1.22	1.61
Paper and products	2.06	2.27	2.76	2.77	2.37	2.38
Printing, publishing	0.67	0.74	1.27	1.41	0.81	0.90
Chemical/rubber products	11.36	11.62	12.48	12.13	11.99	11.70
Non-metal products	5.74	5.92	5.30	6.19	5.63	6.62
Iron, steel, other metals	9.39	9.82	8.81	8.84	9.97	10.10
Metals products	4.00	3.93	4.83	4.81	4.19	4.19
Non-electrical machinery	19.36	17.91	12.94	12.64	14.45	14.11
Electrical machinery	5.53	6.49	7.10	7.22	6.17	6.35
Transport equipment	9.10	8.31	8.76	8.82	9.33	9.31
Professional goods	0.46	0.51	0.57	0.50	0.47	0.41
Other manufacturing	1.07	1.15	1.18	1.17	1.18	1.18
Electricity, gas, etc.	5.91	5.98	7.05	7.19	6.38	6.55

Source: Federal Statistical Office, Prague.

Annex Table D-5. **Forecast changes in the industrial structure of employment** (Percentage)

Industry	Actual		Forecast 1995			
	1985	1990	Variant 1	Variant 2	Variant 3	Variant 4
Mining and quarrying	6.71	6.69	5.15	5.68	6.64	6.97
Food, beverages, tobacco	7.51	7.70	8.54	8.20	7.80	7.44
Textiles	7.62	7.09	7.95	7.06	8.54	7.87
Wearing apparel	3.65	3.58	5.48	4.72	4.61	3.72
Leather and products	0.95	0.91	0.84	0.70	0.82	0.70
Footwear	2.46	2.41	2.67	2.19	2.60	2.09
Wood products	2.28	2.20	2.10	2.13	1.99	2.02
Furniture, fixtures	2.18	2.08	2.72	3.25	1.88	2.27
Paper and products	1.72	1.67	2.12	2.14	1.81	1.83
Printing, publishing	1.02	1.02	1.75	1.85	1.06	1.11
Chemical/rubber products	6.67	6.62	7.71	7.39	7.20	6.90
Non-metal products	6.00	5.88	5.55	6.62	5.97	7.20
Iron, steel, other metals	6.95	7.80	7.28	7.34	8.17	8.34
Metal products	5.76	5.58	6.51	6.45	5.65	5.59
Non-electrical machinery	19.14	19.09	13.96	13.89	15.85	15.76
Electrical machinery	5.75	5.98	6.47	6.82	5.82	6.21
Transport equipment	8.95	8.79	7.59	7.95	8.39	8.74
Professional goods	0.53	0.65	0.74	0.69	0.66	0.62
Other manufacturing	1.69	1.59	1.62	1.58	1.59	1.55
Electricity, gas, etc.	2.46	2.68	3.22	3.36	2.95	3.10

Source: Federal Statistical Office, Prague.

Annex Table D-6. **Forecast changes in labour productivity per employee**
(Thousand dollars, constant 1980 prices)

Industry	Actual		Forecast 1995			
	1985	1990	Variant 1	Variant 2	Variant 3	Variant 4
Mining and quarrying	10.26	9.95	11.88	10.34	9.81	8.58
Food, beverages, tobacco	10.32	13.51	15.93	15.01	14.40	13.69
Textiles	7.33	9.24	11.44	10.59	10.13	9.46
Wearing apparel	3.94	4.93	6.34	6.09	5.76	5.61
Leather and products	4.82	6.64	9.73	9.53	9.13	9.06
Footwear	5.96	7.09	11.06	10.67	10.30	10.01
Wood products	8.94	13.31	15.48	14.63	14.17	13.47
Furniture, fixtures	4.85	6.97	9.59	9.50	8.90	9.00
Paper and products	12.57	17.13	20.23	18.51	17.90	16.46
Printing, publishing	6.95	9.18	11.30	10.99	10.45	10.31
Chemical/rubber products	17.93	22.21	25.18	23.55	22.76	21.47
Non-metal products	10.07	12.74	14.86	13.42	12.88	11.65
Iron, steal, other metals	14.22	15.93	18.85	17.28	16.67	15.34
Metal products	7.31	8.90	11.54	10.69	10.13	9.49
Non-electrical machinery	10.65	11.87	14.42	13.06	12.46	11.34
Electrical machinery	10.10	13.73	17.07	15.18	14.47	12.96
Transport equipment	10.70	11.96	17.96	15.91	15.20	13.49
Professional goods	9.29	10.06	11.99	10.29	9.79	8.43
Other manufacturing	6.67	9.18	11.33	10.65	10.15	9.65
Electricity, gas, etc.	25.29	28.20	34.05	30.72	29.55	26.77

Source: Federal Statistical Office, Prague.

NOTES TO ANNEX D

1/ Sujan, I. and Strauch, D., *Ekonometrická analýza vývoja štruktúry priemyslu vo vispelých kapitalistických krajinách a v ČSSR*, Ekonomicko-matematický obzor, 26, 1990, no. 2, pp. 121-143.

2/ The share of industry in GDP shown in Annex Table D-2 is derived from volume data in United States dollars. This share differs from that derived in korunas as the conversion from korunas to dollars was made on the basis of different exchange rates for industrial and non-industrial components of GDP, with the latter being significantly undervalued.

ANNEX E

INDUSTRIAL FIRMS SCHEDULED FOR LARGE-SCALE PRIVATIZATION

ANNEX E. List of the selected[a/] Czech and Slovak industrial firms entering into the first wave of large-scale privatization, 1992

Czech Republic

ISIC	Name and address of the firm	Number of shares
210	SHD-KOMES, s.p. Most	308,000
220	Moravské naftové doly, s.p. Hodonín	514,589
290	Rašelina, s.p. Soběslav	235,000
290	Severokámen Liberec, s.p. Liberec I	289,000
311/2	Cukrovary Olomouc, s.p. Olomouc 2	335,000
311/2	Čokoládovny, a.s. Praha 4 - Modřany	396,000
311/2	Lacrum Brno, s.p. Brno	290,000
311/2	Masný průmysl Ostrava Ostrava-Martinov	226,000
311/2	Milo Olomouc, s.p. Olomouc	511,000
311/2	Mlýny Olomouc, a.s. Olomouc	380,000
311/2	Obchodní sladovny, a.s. závod Kroměříž Kroměříž	600,000
311/2	Pražská cukerní společnost, a.s. Praha 9 - Čakovice	569,000
311/2	Průmysl mléčné výživy, a.s. Hradec Králové	143,000
313	Pivovar Radegast, a.s. Nošovice	247,000
313	Pivovary České Budějovice, s.p. České Budějovice	165,000
313	Plzeňské pivovary, s.p. Plzeň	804,000
313	Starobrno, s.p. Brno	124,000
314	Tabák, a.s. Kutná Hora	337,000
321	JUTA, s.p. Dvůr Králové nad Labem	422,732
321	MILETA, bavlnářské závody Horrce v Podkrkonoší	274,000
321	TECHNOLEN, a.s. Lomnice nad Popelku	385,889
321	TEPNA, s.p. Náchod	207,234
321	TEXLEN, a.s. Trutnov	410,000
321	TOSTA, s.p. Aš	227,000
321	VEBA, bavlářské závody, s.p. Broumov VI	478,000
321	TYLEX, tov.krajek a tylů, a.s. Letovice	228,088
322	TONAK, a.s. Nový Jičín	257,694
323	TANEX, a.s. Jaromer III	608,701
331	SOLO Sušice, s.p. Sušice	242,114
331	Středočeské dřevařské závody, a.s. Praha 7	245,000
331	Západočeský dřevařský průmysl, a.s. Mariánské lázně	417,000
331	Závody na překližky a dýhy, s.p. Hodonín	441,000

332	Spojené UP závody, a.s. Rousínov	144,484
341	BIOCEL, s.p. Paskov	3,026,609
341	Krkonošské papírny, s.p. Hostinné	837,000
341	Severočeské papírny, s.p. Štětí	2,667,234
342	SVOBODA, grafické závody, a.s. Praha 10 - Malešice	506,431
351	Moravské chemické závody, A.S. Rájec-Jestřebí	730,000
351	Spolana, s.p. Neratovice	2,020,000
351	TOMASO-továrna na sodu, s.p. Ústí nad Labem 5 - Neštěmice	673,772
354	DEZA, a.s. Valašské Meziříčí	848,208
355	Fatra, A.s.	578,435
356	Napajedla	
361	Karlovarský porcelán Karlovy Vary	493,000
362	Bižuterie, A.S. Jablonec nad Nisou	240,000
382	Moravia GLASS, a.s. Kyjov	413,000
362	Osvětlovací sklo Valašské Meziříčí	1,322,000
362	SKLÁRNY KAVALIER, a.s. Sázava č. 359	604,039
362	SKLO UNION, a.s. Teplice 3	2,562,000
362	VERTEX, a.s. Litomyšl	1,062,990
369	Cement Hranice, a.s. Hranice na Moravě	417,000
369	Cementárny a vápenky Prachovice, a.s. Prachovice	851,652
369	CEVA Králův Dvůr, a.s. Beroun 7 - Král. Dvůr	493,159
369	Čížkovická cementárna a vápenice, a.s. Čížkovice	481,980
369	Moravské šamotové a lupkové závody, a.s. Velké Opatovice	690,000
369	Pragocement, a.s. Praha 5 - Radotín	259,000
369	Prefa Pardubice, s.p. Pardubice	321,000
369	Rakovnické keramické závody, a.s. Rakovník	506,907
369	Západočeské keramické závody, s.p. Horní Bříza	625,000
371	KOVOHUTĚ MNÍŠEK, s.p. 372 Mníšek pod Brdy	447,607
371	TRINECKE ZELEZARNY, a.s. Trinec	1,178,000
372	SAFINA, s.p. Jesenice u Prahy	473,000
381	FERONA Praha, s.p. Praha 1	917,000
381	SFINX smaltovny a závody na kovové zboží České Budějovice	160,000
381	SIGMA Dolní Benešov, s.p. Dolní Benešov	761,000
381	SIGMA Česká Třebová, s.p. Česká Třebová	325,000
382	Minerva Boskovice, a.s. Boskovice	254,000
382	Agrostroj Pelhřimov, a.s. Pelhřimov	404,000
382	Agrostroj Prostějov, s.p. Prostějov	355,166
382	BUZULUK, s.p. Komárov y Horovic	390,608
382	ČDK Dukla, a.s. Praha 8 - Karlín	278,000

382	CDK Praha sís Praha 9	2,328,000
382	Čs. zbrojovka Uh. Brod, s.p. Uherský Brod	459,000
382	Královopolská strojírna Brno, s.p. Trutnov	380,000
382	Ostroj, s.p. Opava	555,228
382	Pilana Hulín, a.s. Hulín	215,000
382	První brněnská strojírna Brno, a.s. Brno	740,000
382	Přerovské strojírny, a.s. Přerov 2	808,603
382	ROMO Fulnek, a.s. Fulnek	240,238
382	SIGMA Hranice, s.p. Hranice na Moravě	347,000
382	Slatina Brno, s.p. Brno	365,000
382	Slovácké strojírny, a.s. Uherský Brod	533,000
382	Sokolovské strojírny, s.p. Sokolov	270,000
382	ŠKODA Praha, Smíchov, a.s. Praha 5 - Smíchov	365,000
382	Škoda, koncern Plzeň, a.s. Plzeň	4,430,000
382	Šmeralovy závody, s.p. Brno	206,000
382	Továrny mlýnských strojů, s.p. Parduvice - Černá za Bory	657,000
382	Uničovské strojírny, s.p. Uničov	576,000
382	Závody přesného strojírenství Zlín, a.s. Zlín	1,003,000
382	Zbrojovka Vsetín, a.s. Vsetín, Jasenice	854,359
382	ZVU Hradec Králové, s.p. Hradec Králové	731,000
382	Zďárské strojírny a slévárny, s.p. Zďár nad Sázavou	1,537,6-4
383	ELEKTRO-PRAGA Hlinsko, a.s. Hlinsko v Čechách	594,323
383	Lustry, a.s. Kamenický Šenov	183,000
383	MEZ Brumov, s.p. Brumov-Bylnice	280,245
383	TESLA Hradec Králové, a.s. Hradec Králové	348,000
383	TESLA Jihlava, s.p. Jihlava	332,000
383	TESLA Karlín, s.p. Praha 8 - Karlín	685,000
383	TESLA Lanškroun, a.s. Lanškroun	624,000
383	TESLA Liberec, s.p. Liberec	265,000
383	TESLA, a.s. Praha 9 - Hloubětín	330,000
384	AERO, a.s. Praha 9 - Letňany	2,097,000
384	Brandýské strojírny a slévárny, s.p. Brandýs nad Labem	250,000
384	TRANSPORTA, s.p. Chrudim	1,064,846
385	Meopta Přerov, a.s. Přerov	523,573
3211	Primona, a.s. Česká Třebová	150,000
3211	SLEZAN, bavlnářské závody, s.p. Frýdek Místek	667,000
3825	METRA Blansko, a.s. Blansko	405,000
3825	Podnik výpočetní techniky Praha 8	676,396

3825	ZPA Jinonice, s.p. Praha 5 - Jinonice	385,090
3843	ČZ Strakonice, a.s. Strakonice	1,566,000
3843	Desta Děčín, a.s. Děčín	637,000
3843	LIAZ, s.p. Jablonec nad Nisou	264,000
3843	TATRA, kombinát Koprivnice	4,248,134

Slovak Republic

220	Nafta, š.p. Gbely	1,541,647
220	SLOVNAFT, š.p. Bratislava	3,381,456
311/2	Cukrovar, š.p. Trnava	238,419
311/2	Figaro Bratislava, š.p. Bratislava	180,850
311/2	Košická mliekáreň, š.p. Košice	221,375
311/2	Mlyn, š.p. Košice	321,090
311/2	Potravinársky kombinát, š.p. Trebišov	806,816
311/2	Saint Nicolaus, š.p. Liptovský Mikuláš	248,492
321	BCT-Bratislavská cvernová továreň, a.s. Bratislava	266,507
321	Merina, š.p. Trenčín	597,657
322	LUKO, š.p. Stará Ľubovňa	224,137
322	Ozeta, a.s. Trenčín	637,754
322	Tatrasvit, š.p. Svit	364,938
323	Koželužne, š.p. Bošany	751,654
331	Bučina, š.p. Zvolen	1,006,310
331	Bukoza, š.p. Vranov n. T.	1,658,049
331	Drevoindustria, š.p. Žilina	423,640
331	Drevokombinát Šariš, š.p. Prešov	436,737
331	Preglejka, š.p. Žarnovica	499,340
331	Smrečina, š.p. Banská Bystrica	524,344
332	TATRA nábytok š.p. Pravenec Pravenec	538,277
332	Západoslovenské nábytkárske závody, a.s. Bratislava	282,081
341	Grafobal, š.p. Skalica	273,090
341	Harnanecké papierne a.s. Harnanec	536,290
341	Juhoslovanské celulózky a papierne, š.p. Štúrovo	1,404,117
351	Chenalak, š.p. Smolenice	486,571
351	Slovenské lúčobné závody, š.p. Hnišťa	398,570
356	Plastika a.s. Nitra	671,968
369	Prefa, š.p. Martin	270,678
369	Severoslovenské tehelne, š.p. Žilina	174,947
369	Západoslovenské cementárne a vápenky, š.p. Rohožník	533,600

369	Západoslovenské tehelne, š.p. Pezinok	319,554
382	Vihorlat, š.p. Snina	1,687,910
382	Vzduchotechnika a.s. Nové Mesto n/V.	467,730
382	Závody ťažkého strojárstva, š.p. Bardejov	563,430
382	Závody ťažkého strojárstva Vikanová, š.p. Vikanová	257,450
382	Závody valivých ložísk, š.p. Kysucké Nové mesto	1,070,,570
382	Zemplínske strojárne, š.p. Michalovce	347,110
382	ZTS Strojárne Námestovo, š.p. Námestovo	261,300
382	ZTS, š.p. Topoľčany	254,300
382	ZVL a.s. Skalica	278,390
382	ZVL, š.p. Dolný Kubín	382,470
382	ZVL, š.p. Prešov	460,300
383	MEZ, š.p. Michalovce	384,630
383	Tatramat a.s. Poprad	357,790
384	VAB Bánovce nad Bebravou, š.p. Bánovce nad Bebravou	779,800
385	Chirana a.s. Stará Turá	1,003,100
3522	Biotika, š.p. Slovenská Ľupča	439,576
3522	Slovakofarma, š.p. Hlohovec	271,122
3825	Závody výpočtovej techniky, š.p. Banská Bystrica	438,020
3832	Tesla a.s. Liptovský Hrádok	329,800
3832	Tesla Orava, š.p. Nižná	564,545
3832	Tesla, š.p. Piešťany	1,660,182
3841	Slovenské lodenice, š.p. Komárno	607,517
3843	Trnavské automobilové závody, š.p. Trnava	821,257

Source: The Center of Coupon Privatization of the Federal Ministry of Finance, magazin *Kuponová privatizace*, No. 5 of 14/4/1992.

a/ Selection criteria - general - importance of the firm in the total industrial structure - supporting - number of shares and where available, volume of sales, employment and fixed assets.

ANNEX F

TRADE AGREEMENTS WITH THE EUROPEAN COMMUNITY AND THE EUROPEAN FREE TRADE ASSOCIATION

ANNEX F. Principal features of Czechoslovakia's trade agreements with the European Community (EC) and the European Free Trade Association (EFTA)

A. Association Agreement with the EC

An association agreement between Czechoslovakia and the European Community (EC) was signed in Brussels on 16 December 1991. At the same time, similar agreements with the EC were also signed by Hungary and Poland. These agreements, known popularly as "Europe Agreements", establish the framework for future cooperation in all fields - political, economic, social and cultural - between the EC and the three former CMEA countries.

A particularly important role is given to the formalization of trade relations between the EC and the three partner countries. Because the main agreements include elements requiring ratification by the individual EC governments, which may take a year or more to achieve, separate interim agreements covering the trade-related issues contained in them were also signed on December 16, 1991. These came into force on 1 March 1992, and will remain valid until the main treaties are ratified.

The agreement between the EC and Czechoslovakia provides for most industrial exports from Czechoslovakia to be granted unhindered access to EC markets, with almost all existing restrictions being removed in stages within the next 6 years. An important feature of this agreement is its asymmetry in favour of Czechoslovakia, with the opening of EC markets preceding a corresponding opening of Czechoslovak markets for EC exports. In spite of the preferential character of this agreement, its provisions are in full accord with the General Agreement on Tariffs and Trade (GATT).

All quantitative restrictions on industrial imports from Czechoslovakia not covered by separate regulations were lifted by the EC on the day that the agreement came into force. The main exceptions to this wide-ranging removal of quantitative limits were textiles and coal. In the case of textiles a separate protocol attached to the agreement provides for a reduction in the number of textile categories subject to quotas from 43 to 25 in 1992, and for the schedule of further reductions to be linked to the outcome of the current Uruguay Round of GATT negotiations, but not before 1 January 1998. In the case of coal all such restrictions are to be removed within the first year of the agreement becoming operative, except in Spain and Germany, which are granted a four year transition period (although imports into the territory of the former German Democratic Republic remain unrestricted).

Tariffs imposed by the EC on most industrial imports from Czechoslovakia are to be phased out within six years. For the vast majority of products such duties were lifted on the day the agreement became effective, and most other tariffs are to be removed within the first year of its coming into force. By that time almost 85 per cent of Czechoslovakia's exports to the EC will be granted duty free access into the Community, with the remaining tariffs being lifted in approximately equal instalments over the following five years.

Because of its special sensitivity, the issue of trade in agricultural and food products is treated separately in the Europe Agreements. In general, the treaties provide for a 60 per cent reduction in tariffs over the coming three years and a 50 per cent increase in quotas over the next five years for most basic agricultural commodities. In the case of processed foods, the duty imposed on value added is to be removed progressively, although the implicit duty on the raw material contents of these foods will be retained in the case of Czechoslovakia.

Czechoslovakia imposes virtually no quantitative restrictions on imports from the EC, with uranium, uranium ore, waste paper and scrap metal being the only major product categories subject to such control. In its treaty with the EC, Czechoslovakia has therefore concentrated on the abolition of tariffs on EC imports into the country. Under this agreement, tariffs were

removed on about 20 per cent of Czechoslovakia's imports from the EC on the day it came into effect. Tariffs on a further 60 per cent of these imports are to be reduced within five years, and on an additional 10 per cent within nine years. The remaining ten per cent covers imports of agricultural products and tax free imports.

On Czechoslovakia's initiative the agreement permits the imposition of export controls on products in short supply in the domestic market or not intended for export. Czechoslovakia has, however, committed itself to a continuation of the economic reform process with a view to ensuring the elimination of all State subsidies in order to permit proper competition between Czechoslovak enterprises and their EC counterparts. After a transition period of three years, Czechoslovak enterprises will thus be required to comply with the rules of the Treaty of Rome on economic competition, and with the principles of the final document of the Conference on Security and Cooperation in Europe concluded in Bonn in April 1991.

The determination of rules of origin form an important element of the Europe Agreements. Under the terms of these agreements, modest levels of further processing within the EC or in Hungary or Poland would not affect the recognition of a predominantly Czechoslovak product as originating from Czechoslovakia. This flexibility of interpretation of the rules of origin allows for joint production within Czechoslovakia, Hungary and Poland and in this sense supports a closer regional integration between these three countries.

B. Free trade agreement with the EFTA states

A free trade agreement between Czechoslovakia and the states of the European Free Trade Association was initialled in Geneva on 3 March 1992. The principal objective of this agreement is the progressive elimination of "substantially" all trade barriers between Czechoslovakia and the EFTA states by 30 June 2002. This process is to be carried out in accordance with the General Agreement on Tariffs and Trade while ensuring that fair conditions of competition for trade are maintained.

The agreement applies to products covered in chapters 25 to 97 of the Harmonized Commodity Description and Coding System, except for a number of specific products listed in a separate annex. It thus relates to most manufactured goods, including processed agricultural products. In addition, it also covers a variety of fish and other marine products.

Under the terms of this agreement, all contracting parties commit themselves not to introduce any new customs duties, or charges having an equivalent effect, on imports or exports between Czechoslovakia and the EFTA states. The agreement also provides for the immediate abolition of most existing import and export duties on goods traded between Czechoslovakia and the EFTA states on the date when it comes into force. Exceptions are only made for a number of clearly defined commodities, in the case of which the prevailing duties are to be abolished progressively in accordance with provisions spelt out in an annex of the agreement. In this connection, the agreement stipulates that the basic duty for each product to which the successive reductions are to be applied should be the Most Favoured Nation rate of duty applicable on 1 October 1991 in the case of the EFTA states and the Most Favoured Nation rate of duty applicable on 1 January 1992 in the case of Czechoslovakia.

As in the case of customs duties, the agreement also requires that no new quantitative restrictions are imposed on trade between the EFTA states and Czechoslovakia, and that existing quantitative restrictions are abolished when the agreement comes into force. Exceptions are again made only for a small number of specified commodities listed in separate annexes.

A particular concern of the agreement is to ensure that trade between the EFTA states and Czechoslovakia is conducted in an equitable manner and the procedures governing this trade do not provide either side with an unfair advantage. To this effect the agreement requires all State or State-sponsored monopolies engaged in trade to conform to a set of clearly defined conditions,

and also provides clear guidelines for the protection of intellectual property rights, the prevention of dumping, the regulation of internal competition between undertakings and the provision of State aid to enterprises.

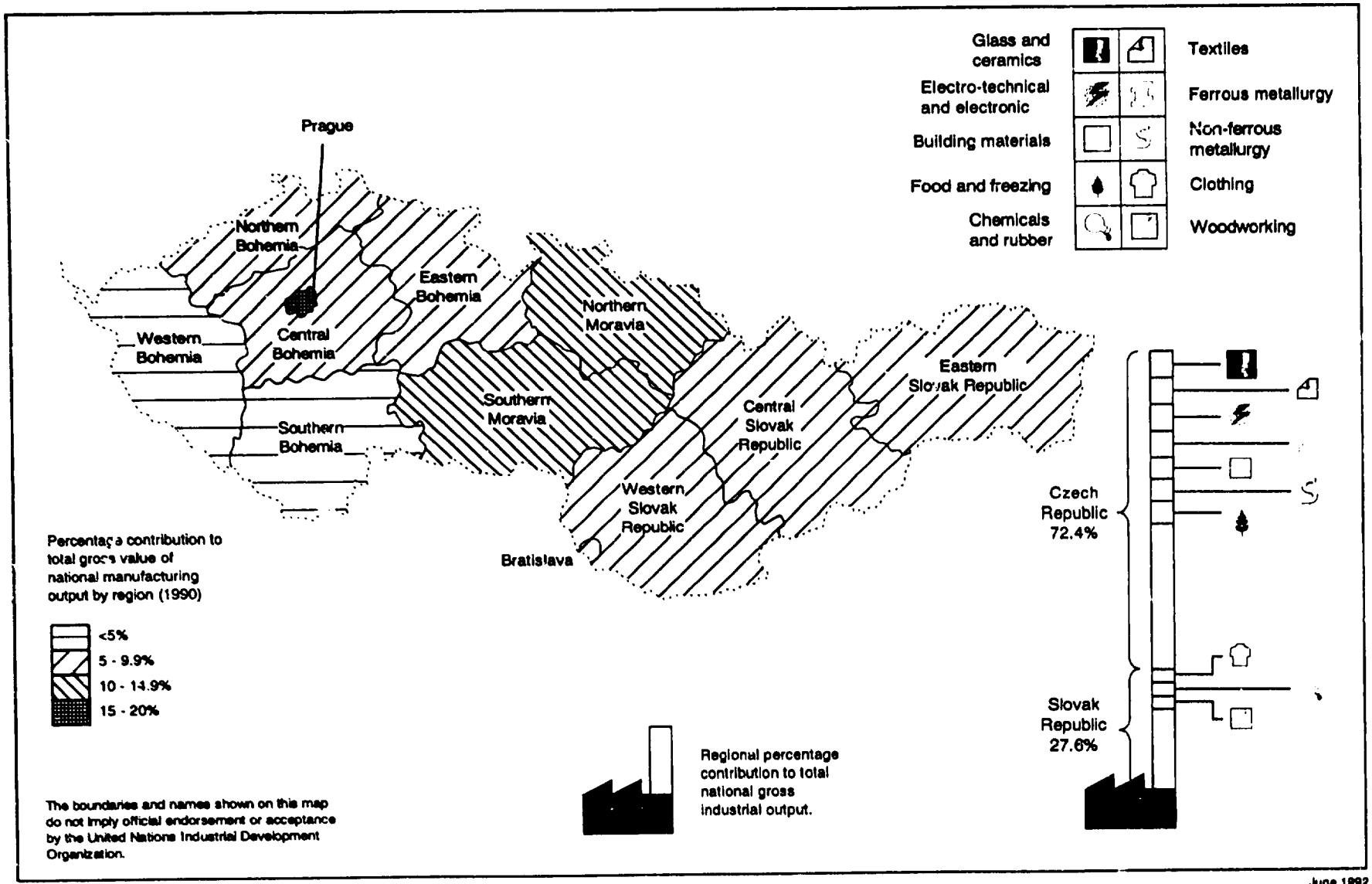
In addition, the agreement proclaims the liberalization of public procurement markets to be a "desirable and important" objective, and grants companies from Czechoslovakia the right to participate in contract award procedures in the EFTA states as soon as it comes into effect. In deference to the process of economic restructuring currently in progress in the country, the agreement does not require Czechoslovakia to reciprocate immediately, but stipulates that it shall "gradually ensure that companies from the EFTA states have access on the same principles to contract award procedures on its public procurement market". In any event, it calls for a full balance of rights and obligations between the contracting parties to be established by the end of the transitional period on 30 June 2002.

In a similar recognition of Czechoslovakia's particular circumstances, a separate article of the agreement also permits it to take "exceptional measures of limited duration" in the form of increased customs duties to protect infant industries, or sectors undergoing restructuring or facing serious difficulties, especially where these difficulties produce important social problems. The use of these measures is clearly regulated, however, with the agreement stipulating that the customs duties imposed in this context may not exceed 25 per cent ad valorem and shall maintain an element of preference for products originating in the EFTA states. They may also be levied on only a maximum of 15 per cent of the value of industrial imports from the EFTA states, and may not be applied for a period of more than five years unless specifically extended by mutual agreement. They shall in any case cease to apply at the end of the transitional period.

With regard to trade related international payments, the agreement stresses that all restrictions on the transfer of such payments should be removed. In particular, it specifies that the parties concerned shall refrain from any exchange or administrative restrictions on the granting, repayment or acceptance of short and medium term credits covering commercial transactions between Czechoslovakia and the EFTA states. Until a full convertibility of the koruna within the meaning of Article VIII of the International Monetary Fund has been introduced, however, the agreement grants Czechoslovakia the right to apply some exchange restrictions connected with the granting and taking up of short and medium term credits as long as they are permitted by Czechoslovakia's status under the IMF and are applied in a non-discriminatory manner.

While aiming for a progressive relaxation of trade restrictions between the contracting parties, the agreement nevertheless provides the usual safeguards for restrictions on the import, export or transit of goods on the grounds of public morality, public policy, or public security; the protection of health and life of humans, animals or plants and the environment; the protection of national treasures, etc. In addition, it also permits the contracting parties to take any measures it deems necessary for the protection of its legitimate security interests. In the case of a contracting party experiencing serious balance of payments difficulties, it is also permitted to adopt temporary measures to restrict trade in accordance with the provisions of the General Agreement on Tariffs and Trade.

INDUSTRIAL MAP OF CZECHOSLOVAKIA



Map prepared for UNIDO by the Cartography Dept., School of Geography, University of Oxford.

June 1992

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