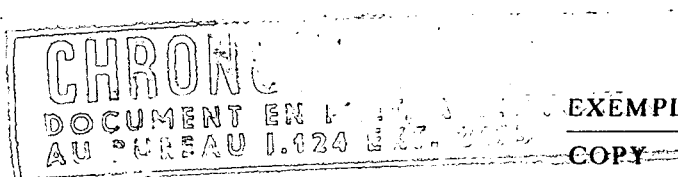


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ECONOMIC COMMITTEE

THE CZECHOSLOVAK ECONOMY

Note by the French Delegation

This document includes: 44 Annexes

N A T O R E S T R I C T E D

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CONTENTS

	<u>Paragraphs</u>	<u>Pages</u>
<u>BACKGROUND</u>		<u>4 - 9</u>
Geographical Features	1 - 4	4
Population	5	7
Conclusion	6	8
<u>ECONOMIC DEVELOPMENT</u>		<u>9 - 22</u>
Features of the Economy	7	9
Economic Organization	8	10
Planning	9 - 11	11
National Accounts and Standard of Living	12 - 13	15
Outlook	14	21
<u>PRODUCTION SECTORS</u>		<u>22 - 46</u>
<u>Industrial Production</u>	15	22
Iron and Steel	16	22
Non-ferrous Metallurgy	17	23
Mineral Output	18	26
Engineering	19	26
Chemical Industry	20	27
Electronic and Computer Industry	21	28
Armaments Industry	22	35
Building Materials Industry and the Building Industry	23	38
Other Industries	24	41
<u>Energy and Transport</u>	25	41
<u>Rural Economy</u>	26 - 27	43

N A T O R E S T R I C T E D

AC/127-D/479

-3-

	<u>Paragraphs</u>	<u>Pages</u>
<u>FOREIGN TRADE</u>		<u>47 - 60</u>
Background	28	47
Foreign Trade in the context of the National Economy	29	48
Trade Balance	30	50
Trade Balance in Convertible Currencies	31	51
Trade with Socialist Countries	32	52
Arms Trade with COMECON	33	53
Trade with particular Socialist Countries	34	53
Trade with advanced Capitalist Countries	35	58
Outlook for Czechoslovakia's Foreign Trade	36	60
<u>CONCLUSIONS</u>		<u>60 - 61</u>

Annexes (Maps and Statistical Tables) 1-44

GENERAL

BACKGROUND

Geographical features

1. Position

Czechoslovak geographers, when describing their country, frequently speak of it as the "focus of Europe". It is in fact 290 km from the frontier to the Baltic, 236 km to the Adriatic, 569 km to the North Sea and 637 km to the Black Sea: Prague is 500 km from Strasbourg, Trieste and Warsaw and 1,000 km from Avignon, London and Minsk.

In contrast, Czechoslovakia is one of the Western marches of the Council of Mutual Economic Aid countries.

The elongated shape of the country makes for borders with a number of states; its longest axis is 751 km while at the centre it is only 143 km wide. The ratio between the length of its frontiers, 3,472 km, and its total area of 127,877 sq.km is high: 2.8 km of frontier for every 100 sq.km of territory. Czechoslovakia has common borders with the Federal Republic of Germany, Austria, Hungary, the USSR, Poland and the German Democratic Republic (see Annex 1: map).

In terms of size, Czechoslovakia, with one-fifth of the area of France, ranks fourteenth in Europe and is followed by 19 other states. Among the COMECON countries, it follows behind the USSR, Poland, Rumania and the GDR.

Its population of 14,526,268 inhabitants is the eleventh largest in Europe and in terms of density with 112 inhabitants per sq.km it ranks thirteenth.

2. Administrative divisions

Since 1969, Czechoslovakia has been a Federal Republic comprising the Czech Socialist Republic with 78,863 sq.km and 9,902,306 inhabitants, and the Slovak Socialist Republic with 49,014 sq.km and 4,623,962 inhabitants.

For administrative purposes, the country is divided into 10 regions (KRAJ) and 2 autonomous regions: Prague and Bratislava, the capitals of the Czech and Slovak Republics respectively. Prague is also the capital of the Federation.

Each region is sub-divided into districts (OKRES) of which there are 112.

AC/127-D/479

-5-

The Czech Republic has seven regions, the Slovak Republic three.

3. Physical Geography (See Annex-1: Relief map)

(a) Relief

Four-fifths of the territory lies at an altitude between 200 and 800 metres.

Czechoslovakia can be divided into three regions: Bohemia, Moravia-Silesia, Slovakia.

The Bohemian quadrilateral is bound to the North-West by the Krusne Hory, which turns eastwards into the Stredohory; these run into the Krkonose, which include the highest peak in Bohemia, the Snezka (1,603 m). To the West is the Cesky Les, prolonged by the Sumava. The Czecho-Moravian Heights (Cesko-Moravska Vrchovina) which run from South-East to North-West form the fourth side of the quadrilateral.

All these ranges slope gently down towards a central plain, the Polabi, which is 100 km long and 30 km wide. Prague lies at the southern end of this plain. The Polabi runs westward into the Ohre depression which ends abruptly at the Krusne Hory.

The Moravian plain, 100 km wide, lies between the Czecho-Moravian hills and the Carpathian mountains. It is closed off to the West by the Hruby range, but connects with Silesia and Poland through the Odra Valley. To the South, Moravia opens out onto Austria across the Marchfeld plain.

Slovakia comprises a series of parallel mountain chains running West-East, from North to South they are: the Beskids, the Tatna, rising to 2,663 m, the Low Tatna and the Slovak ore mountains. Lower Slovakia is formed by the alluvial plain of the Danube.

(b) Hydrography

There are three main rivers:

- the Elbe, which drains off the Bohemian quadrilateral; it rises in the Krkonose, crosses the Polabi and its tributaries are the Moldau and the Ohre.
- The Danube, which runs 171 km through Czechoslovakia and forms the boundary with Hungary and Austria; it drains off most of the Moravian and Slovak rivers, particularly the Morava, the Vah and the Hron.

- The small Czechoslovak basin of the Odra drains off the Moravian rivers, particularly the Opava, before flowing into Poland. It is separated from the Morava River basin by a watershed at Novy Jicin.

Both Bohemia and Moravia have a large number of lakes.

(c) Climate and vegetation

Czechoslovakia has a continental climate which is determined by the country's geographical features and by its mountain barriers: average yearly rainfall is 717 mm. The average yearly temperature is 9.6°. The daily average ranges from -0.8° in January to 19.9° in July.

In Bohemia, the uplands are covered with forest: beeches up to a height of 800 m and conifers up to 1,200 m; higher still are clusters of stunted pines and mountain pastures.

The central plain is open with beech woods in places.

The landscape of Moravia is extremely varied, depending on the altitude and the degree of exposure to the south. The heights above 700 m are covered with pine forest.

In Slovakia the slopes ranging between 600-700 m and 1,300-1,600 m are heavily timbered; above, great blocks of stone lie cheek by jowl with alpine meadows or bleak moorland.

4. Natural resources

Czechoslovakia is poor in natural resources:

(a) Agriculture: the soil in Bohemia and Moravia is of a heavy clay type which requires drainage and is better suited to beet than to grain. Potatoes do well. There is extensive market gardening in the Polabi. Cattle to be profitable have to be raised in stables.

Slovakia is suitable for livestock breeding only. Vegetable crops and grains are grown in the Danube valley but there are drainage problems.

Overall, agricultural resources are inadequate.

(b) Energy: Czechoslovakia's wealth lies in its coal and lignite which provided the basis for the industrialisation of the country in the 19th century. It has no hydrocarbons and the potential for hydro-electric power, which falls short of

N A T O R E S T R I C T E D

AC/127-D/479

-7-

requirements, has been harnessed to the full. Hydro-electrical output accounted for 2,810 m KWH out of a total output of 51,402 m KWH in 1972.

(c) Ores and minerals (see Annex 2: map of ores and minerals)

While minerals as a whole, including that is, clays, sands, lime and salts are adequate, there is a serious shortage of ores, particularly iron ore and bauxite. There are supplies of pyrites, tungsten, tin, lead and strategic metals such as germanium and wolfram but the quantities available are insufficient.

5. Population

(a) Size and composition

The population of Czechoslovakia totalled 14,526,268 on 31st December, 1972 of which 7,451,842 were women.

The population density was 112 inhabitants per square kilometre which puts Czechoslovakia on the same footing as Denmark (111) and Hungary (111).

The urban element of the population rose from 51% in 1950 to 63% in 1970. However, there has been little change in the population of the main cities. People leaving the country have gone either to the old towns or to newly created ones.

Main cities: (population in December 1972)

Prague	1,086,000 habitants
Brno	350,000 habitants
Bratislava	318,500 habitants
Ostrava	287,500 habitants
Kosice	158,000 habitants
Plazen	151,000 habitants

The birth rate has fallen over the past 20 years, more particularly in Bohemia-Moravia.

The aging population is also causing concern (see Annex III: age pyramid, forecasts for 1976). In 1973 however there were 275,000 births, 24,000 more than in 1972 (see Annex IV, demographic growth).

The Czechoslovak economy is hampered by a shortage of manpower and the maximum use is made of available resources. The total labour force was 8,677,000 in 1972 (see Annex 5: supply of labour and its utilisation). It is admitted that 60,600 persons

N A T O R E S T R I C T E D

-7-

are included who are not in the working age group. These are mainly people who have already retired. The proportion of women among the employed is increasing constantly. It rose from 42.8% in 1960 to 47.4% in 1972.

(b) Ethnic groups

The population of Czechoslovakia is heterogeneous although the population movements which followed the Second World War have produced a more rational situation.

Administratively speaking, a distinction is made between citizenship (Czechoslovak) and nationality (Czech or Slovak). The Magyars are represented as a nation although they do not enjoy separate nationality.

In 1972 the Czechoslovak population, according to ethnic groups, was as follows:

	Thousand	%
Czechs	9.405	66.0
Slovaks	4.294	27.9
Magyars	582	3.9
Ukrainians)	59	0.4
Russians)		
Poles	68	0.5
Germans	80	1.0
Others (mainly gypsies)	38	0.3

The five last groups are shrinking in size.

Czech and Slovak, which are closely akin, are the two official languages of the Czechoslovak Republic. There are, however, striking differences in the behaviour patterns and in the mentality of the two major ethnic groups.

Ethnic diversity, the consequence of a long historical process, produced grave problems in the past, not all of which have been overcome.

Some three million Sudetan Germans were forcibly expelled from Czechoslovakia in 1945, and with the cession of Sub-Carpathian Ruthenia, the majority of Ruthenians became Soviet citizens.

6. Conclusion

Czechoslovakia has few raw materials and its agricultural output falls short of the country's needs. It must therefore import what it lacks and balance this by improving its

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AC/127-D/479

-9-

manufacturing capacity which depends on specialised labour - unfortunately labour too has long been scarce. Over a long period Czechoslovakia's geographical position in the heart of Europe helped to foster the necessary trading patterns. This was disrupted in 1948 by the advent of the new political regime. It is planned to create a new equilibrium through integration within the framework of COMECON.

ECONOMIC DEVELOPMENT

7. Features of the Economy

When the Communists came to power in Czechoslovakia in 1948 they found an advanced, industrialised and, above all, a going economy unlike those in the other European Socialist countries. There was, however, a certain lack of balance between an industrial Bohemia-Moravia on the one hand and a rural Slovakia on the other. This imbalance, the heritage of ten centuries of separate development, had been somewhat alleviated during the First Republic but was increased by the Third Reich which aimed to make Bohemia-Moravia the arsenal of the German war economy.

By and large, the Czech economy can be compared with that of the United Kingdom or Japan in as much as it is based first and foremost on manufacturing industries supplying finished and sophisticated goods. The national energy base is coal, the rôle of which until recently had been declining on a world scale, being replaced by other sources of energy, particularly hydro-carbons.

The departure of the Sudetans, with their advanced industrial skills, was sorely felt after 1945. The regime that came to power in February 1948 not only continued the policy of nationalising and socialising the economy as a whole, it also introduced rigid planning on the Soviet model, with priority for development of Sector A (means of production) and more particularly for iron and steel. These policies were ill-suited to the role for which Czechoslovakia was best fitted, namely the production of finished goods requiring specialist skills. The consequence was a state of continuing crisis which proved to be the decisive factor in the chain of events which led to the "Prague Spring".

The Soviet economic reformer, Liberman, had an opposite number in Czechoslovakia namely, Ota Sik. Their way of thinking though fundamentally Marxist favoured the introduction of more liberal trends in economic development and of self-management, measures which could not fail to add to the distortion, particularly as regards the relationship between supply and demand. Inflation became rampant.

After 1969 when Mr. Husak and his team came to power, political "normalisation" was matched by a gradual return to extremely strict orthodoxy. Nonetheless, the fifth five-year-plan (1971-1975) took account of the lessons of 20 years or so of latent crisis and paved the way for integration and specialisation within COMECON. The main aims of the plan are to raise the standard of living - the impact of internal political preoccupations can be felt here - and to improve the transformation of industry, particularly certain engineering and chemical sectors. The implementation of this plan in itself constitutes a break with the economic aims which had been pursued since the early 1950s.

Generally speaking, results are satisfactory. Czechoslovakia is consolidating what has been achieved so far, taking the planning targets as reference point.

8. Economic Organization

This is based on an amended Soviet model and centres round a series of ministries, national and federal.

(a) Decision making

The "leading rôle of the Party" provided for in the Constitution is exercised both when it comes to major decisions and in matters of detail. In practice, the men who wield power in the Party are the same as the men who hold the top posts in the executive. This means that there can be no conflict over policy.

There can, however, be overlapping areas of responsibility between ministries when several of these are concerned with one and the same type of production. In December 1973, the need for ministerial specialisation and for a clear definition of responsibilities led to the division of the Ministry of Metallurgy and Engineering into two separate federal ministries: Metallurgy and Heavy Engineering on the one hand and Mechanical Engineering on the other. (See Annex 6: list of federal and national ministries of economic significance).

(b) Industrial and Agricultural Structures

The basic unit of production, the enterprise, may cover one or more factories and is grouped horizontally or vertically with others to form trusts. Trusts engaged on the same type of work form branches. At trust and at branch level there is a certain measure of autonomy as regards production, investment and labour policy.

AC/127-D/479

-11-

The workers, who are bound by contract, must belong to the Revolutionary Trade Union Movement, the one and only trade union.

Agriculture is also organized on the basis of a modified Soviet model:

- the State sector is made up of farms with a manager and salaried workers along the lines of the sovkhozes;
- the co-operative sector is the equivalent of a kolkhoz except that the land belongs legally to the co-operative workers. However, ownership cannot be assigned. The peasants would appear to have been encouraged to form unified agricultural co-operatives (JZD);
- the private sector is small and is localised in mountainous districts where the amalgamation of farms is impossible;
- machine and tractor stations, run like industrial enterprises, do part of the repairs on agricultural machinery belonging to the State farms as well as the JZD. These stations also rent out equipment.

9. Planning

(a) Principles

Planning is directly inspired by the fundamental laws of Marxism. It is the subject of a State law (Article 145/70 of the Code). Planning is highly centralized and controlled. The Soviet model was used for many years as the pattern for Czechoslovakia but was not suited to an economy already developed, all the more so since self-sufficiency in the case of Czechoslovakia does not make economic sense.

In the system of integration and specialization for which COMECON provides, planning at national level would be crowned by planning at international level to co-ordinate national arrangements and to make them compatible, at least in theory.

Macro-economic state planning would be matched at production level by micro-economic planning.

The preparation and control of planning is under the close supervision of the Planning Commission.

(b) Type of Plans

Classification is both chronological and sectorial. Chronologically speaking, there are three forms of planning:

- the long-term plan (ten or fifteen years) which lays down general aims. In 1974, planning will cover the time scale 1975-1990;
- the five-year plan which is the main plan. It reflects medium term prospects but is also concerned with short term implementation;
- the yearly plan which is mainly implementary and a particular part of the five-year plan. The yearly plans can be adjusted to secure the implementation of the five-year plan targets.

Sectorial planning falls into six categories:

- (i) The State national economical development plan which covers both the federal and the two national, Czech and Slovak, sectors.
- (ii) Financial planning: budgets
monetary planning
foreign currency planning
- (iii) The Higher Echelon Plans which concern the technical ministries and directorates.
- (iv) The "Economic Organization Plans" which are mainly concerned with the enterprises and municipalities.
- (v) The regional plans: Kraj and Okres.
- (vi) Special plans: forces, State security, research and development and so on.

10. The 5th Five-Year Plan 1971-1975

The targets were discussed and approved by the 14th Congress of the Czech Communist Party. They aim to be realistic and are based on the results obtained in 1970 (see Annex 7: main developments scheduled in the 5th Five-Year Plan, and Annex 8: basic data (1970) used in the preparation of the 5th Five-Year Plan).

The "Five-Year Plan directives" are explicit: the plan is designed "to raise the standard of living, to be

AC/127-D/479

-13-

implemented within the framework of COMECON integration, to consolidate the international position held by the Czechoslovak Socialist Republic, and to contribute to economic growth in all the countries of the Socialist camp".

The main aim is to raise the standard of living in a manner compatible with the Socialist way of life and thus to "demonstrate the advantages of the humanitarian aspects of Socialist society as compared with Capitalist society". This target implies that the greatest emphasis must be placed on Sector B (consumer goods). The key to development must be sought in higher productivity rather than in the expansion of productive capacity.

Targets for industrial expansion have also been set. These cover "advanced forms of energy", sophisticated engineering and the chemical industry.

In the agricultural sector the long-term aim, oddly enough, is self-sufficiency. This aim is in conflict with what is feasible in Czechoslovakia and with integration and specialization within the COMECON.

As regards housing, an essential aspect of the standard of living, it is planned to build 500,000 new units (65% in Bohemia-Moravia and 35% in Slovakia) and to ensure that each person gets the living space which is the legal minimum norm i.e. 8 sq.m which will subsequently be increased by 5%.

Emphasis is placed on the removal of disparities between Bohemia-Moravia and Slovakia. This will be achieved by selective development (see Annex 9: geographical distribution of the development targets).

The system of planned management bears the stamp of orthodoxy but this is tempered by a participation concept which has survived from the Ota Sik reform. The leading rôle of the Party is strongly underlined.

11. Results

Results as a whole can be regarded as good in terms of implementation of planning forecasts. This state of affairs is borne out by the statistics.

(The figures relating to the different plans show the average yearly rate of growth envisaged, while the figures relating to results show changes (in percentage) compared with the previous year.)

	Net National Product	Industrial Output	Agricultural Output	Construction	Household Consumption	Investment	Exports	Imports
1971/1975 plan	5.1	6.0	2.5	6.7	5.0	6.2- 6.5	6.3	9.6- 7.0
1971 plan	5.2	5.9	4.1	8.5	6.0	4.3- 5.5	6.8- 7.2	9.2- 10.5
1971 results	5.2	6.9	2.8	9.6- 9.7	5.0	7.2- 7.4	9.9	8.7
1972 plan	5.0	5.3	5.0	7.0	6.2	5.0	5.7	8.4
1972 results	5.5- 5.8	6.4	3.6	9.4	5.5	8.3	5.9	4.6
1973 plan	5.1- 5.3	5.8	4.3	3.8- 4.0	5.0- 5.3	6.8	9.4	9.4
1973 results	5.2	5.8	3.8	7.5	not given	not given	not given	not given

The plan is not too ambitious, as success was all-important; the planners, concerned with setting realistic targets, under-estimated the true capacity of the country.

In addition, bottlenecks have appeared in two sectors.

The first is in construction and buildings. Czech technology has not been able to cope with projects involving investments of over Kcs 1.5 million. A number of projects have had to be put back and requests made for Soviet assistance.

The second concerns the quality of consumer goods. The Czech consumer, now more demanding, is no longer content with quantity. This situation is particularly acute in the consumer durable sector which explains the strong demand for Western goods.

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AC/127-D/479

-15-

12. National Accounts and Standard of Living

The national currency

The parity between the national and other currencies, particularly the currencies of the countries with market economies is artificial. The rate does not reflect equality in terms of purchasing power but only provides a rough guide, to be used with caution.

The Czech Crown (abbreviated to Kcs) is linked to the gold standard, like all other socialist currencies, but the gold parities do not provide equal purchasing power for the same quantity of gold which theoretically should be the case.

In terms of gold, the Crown is worth 0.123426 grammes of fine gold.

There are several official rates of exchange for transactions involving convertible currency. In their dealings with foreign countries, the Czechs use the Valuta Crown, a money of account whose parity with the Crown varies according to the transaction. As from 1st February, 1973 for example, the official exchange rate for a 100 French franc note was fixed at 111 Valuta Crowns which meant that French tourists and businessmen got 194.25 Crowns for every 100 francs instead of 289.12 before 31st December, 1973. This rate is subject to slight monthly variations only, depending on the rate of the French franc in Zurich.

For the purposes of the present report, 1 Crown is equivalent to 0.515 centimes.

Social product and national income

These two figures are a measure of total economic output and can be compared, very approximately, with gross national product and net national product. In fact, however, as aggregates they differ from those of the market economy. They cover only material production. Services, which in some advanced market economies account for up to 40% of the GNP are entirely excluded.

Progress is satisfactory and in accordance with the plan. (See Annex 10: increase in the social product and in national income.)

Budget

(See Annex 11: budget breakdown.)

The budgetary system is the main element in the control of expenditure. It coincides entirely with annual planning which it reflects fully in monetary terms. Over half of the national income is allocated to and distributed through the budget. Since 1969, and in accordance with the terms of Article 143/68 of the Code, it has been divided into five major chapters: the federal budget, the two national budgets, Czech and Slovak, and the budgets of the two National Committees (municipalitive). Once adopted, the budget has force of law.

In principle, the budget is either balanced or in surplus. Surplus federation revenue for the years 1969 to 1972, Kcs 5.4 milliard in all, were used to make good budget deficits of before 1968 and to increase the State's financial reserves.

Budgetary military expenditure is stabilized at about 7.7% of total expenditure. It is unlikely however that this figure reflects the true situation. The military and civil sectors are closely dovetailed and considerable military expenditure, for example on data processing, research and development, military instruction, and training of reserves is charged to the civil sector. The major items in this military budget are also unknown. There is reason to believe that a large proportion of operating costs are paid for by the civilian departments (see paragraph on the armaments industry).

Investments

(See Annexes 12 and 13: investment by sector.)

This activity is regarded as sufficiently important to warrant a separate ministry: the Ministry of Technical Development and Investment.

Investments are financed, either from the budget or through enterprises funds within strict limits laid down in the plan. Budgetary funds account for the greater part of the sums invested. In value terms these have exceeded plan forecasts: delays in competing projects have entailed extra outlay (technical updating, financial expenses and so on). This means overfulfilment in value terms and underfulfilment in real terms which is a source of inflation.

The situation was stabilized in 1970 but only at the cost of deferring certain projects which must affect economic growth.

AC/127-D/479

-17-

In 1973 projects deferred in this way related primarily to:

- the East Slovakian steel works;
- the Istébné metal works;
- the Dimitrov chemical works at Bratislava;
- the Krauci Hory TV transmitter;
- the Tusimice and Otrokovice power station

The annual rate of growth of investments, in current prices has been as follows:

<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
+9.8%	+16.6%	+6.3%	+5.1%	+8.4%	+7.1%

Investments by branch have not kept up with planning targets except in the case of agriculture where an effort was probably made to compensate for the poor weather conditions in 1972.

	1970	5th Plan Forecast	1971	1972	1973
	(% of total)				
Agriculture	12.1	10.5	11.8	12.1	11.6
Industry and building	42.2	39.9	39.4	39.0	39.2
Other branches	45.7	49.6	48.8	48.9	49.2

The decline in investment in "industry and building" in 1972 was due to deferment of work on some of the big development sites (petrochemical complexes at Zaluži, Neratovice and Bratislava).

An analysis of growth in "industry and building" shows that internal adjustments had to be made to achieve the overall figure and to stave off a repetition of the errors of 1969.

(In % terms)	1970	5th Plan Forecasts	1971	1972	1973
	(% of total)				
Fuel and energy	21	30.4	24.6	28.5	29.2
Metallurgy- mechanical engineering	26	21.3	25.2	23.4	22.2
Chemicals	18.2	16.4	17.9	15.3	17.1
Consumer industries	15.1	11.6	12.1	11.5	10.8
Food industry	8.2	7.2	7.5	7.4	7.1
Building	11.5	13.1	12.7	13.9	13.6

13. Standard of Living

The principal aim of the Fifth Plan is to achieve a genuine rise in the standard of living. Prices were frozen as from 1st January, 1970 and consumer purchasing power has been protected from inflation at that level. New products only - but not their components - are exempt from the 1970 freeze.

Developments have been as follows:

	1968/1967	1969/68	1970/69	1971/70	1972/71
	Previous year = 100				
Retail prices of goods and services	101.3	104.0	101.7	99.7	99.7
Cost of living	101.2	103.6	101.7	99.6	99.6

The change in retail prices from one year to the next, has been as follows:

<u>1968/1967</u>	<u>1969/68</u>	<u>1970/69</u>	<u>1971/70(1)</u>	<u>1972(2)/71</u>
+13%	+11.9%	+2.2%	-0.3%	-0.3

1st half 1973/1st half 1972

-0.1

- (1) Manufactured items - 0.9%: foodstuffs - 0.4%
 (2) Manufactured items - 0.3%: foodstuffs - 0.2%

Sources: Rude Pravo, dated 29.1.71 for 1970
 Economic studies on Europe 1969 - Part II
 Economic Commission for Europe 1968 and 1969
 CTK for the full period

AC/127-D/479

-19-

The fall in prices achieved by the Federal Prices Bureau has been obtained by allowing retail prices to benefit from increased productivity.

The volume of retail trade has not expanded as prices have dropped, and this is particularly true of the consumer durable sector. Supply is becoming adequate but consumers are demanding better quality:

<u>1970/1969</u>	<u>1971/70</u>	<u>1972/71</u>
100 = previous year		
+102.3%	+105.2%	+105.6%

The Plan however provides for a yearly increase of 6.6%.

The public has preferred to put its money into the savings banks. Deposits at 31st October, 1973 were near the Kcs 100 milliard mark which is equivalent to three months salary per person. While this propensity to save undoubtedly reflects confidence in the currency it also indicates a potential imbalance.

The wage spread in Czechoslovakia is the smallest known: 1 to 4.

Salaries are made up of two components: the basic salary and supplementary benefits.

The amount of the basic salary is clearly laid down in a document which sets out the rates for each skill and qualification.

At 1st January, 1971, the average monthly basic salary (in Crowns) was Kcs 2,066 and in 1973 Kcs 2,090, equivalent at the prevailing exchange rates to Fr. 805.74 and Fr. 1,076.35. These figures illustrate the caution which has to be exercised in making monetary comparisons. Judging by figures converted into francs, it might be deduced that the purchasing power of an average salary had risen by some 25% between 1971 and 1973 which is far from being the case. These figures must therefore be taken simply as an indication of trends.

	National economy	Industry	Building
Average	2,066	2,143	2,344
Workers		2,080	2,312
Engineers		2,717	3,069
Employees		1,737	1,878
In 1973			
Average	2,090	2,170	2,397

Supplementary benefits are paid out of a fund which comes from enterprise profits. This explains why remuneration varies from one enterprise to the other. The supplementary salary is never more than Kcs 1,000 per quarter.

The salary structure favours manual workers and those who produce material goods to the detriment of intellectuals and non-productive workers(1) as a whole. This policy is characteristic only of the socialist state but also of the specific worker mentality of the Czechoslovaks.

Social arrangements are such that every person must work. The average household therefore has two salaries.

Increases in purchasing power have been achieved mainly through higher direct social benefits such as family allowances, salaries for women at home and so on. There have also been improvements in indirect benefits such as lower charges for cultural entertainment, State subsidies for school children and students, more doctors (one for every 400 inhabitants), free medical care, trade union rest centres for holidaymakers and so on.

The organization of working life leaves plenty of scope for jobs on the side. It is impossible to evaluate the extent of such activity but it should not be disregarded.

All in all, the monthly income of a Czechoslovak household can be estimated at about Kcs 6,000.

(1) In the Marxist sense of the term

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AC/127-D/479

-21-

How far this will go is illustrated by the fact that the cheapest car, the Skoda 100 Standard costs Kcs 45,000 (about 8 months income for a household).

- 1 kg of pork meat costs Kcs 39;
- 1 litre of milk costs Kcs 3.

The principal impediment to a better standard of living lies in the housing situation. Although no urban rent is greater than Kcs 400 per month, the housing crisis is acute in all cities, particularly Prague. It is usual for several generations in a family and even unrelated persons to live together.

It is difficult to gauge the Czechoslovak standard of living on the basis of indicators which would permit a valid comparison with the standard of living in the West. Allowing for the inevitable subjectivity involved in an evaluation of this kind, it can be estimated that the Czechoslovak standard of living is 20% to 25% lower than in France or Germany. It is rising steadily however and is comparable with the standard of living in the GDR, i.e. the highest in the COMECON.

14. Outlook

With autarchy a sure road to national ruin, the COMECON market has provided an alternative to the Western(1) and Chinese(2) markets which Czechoslovakia lost as a result of political developments.

The process of integration and specialization is bound to benefit the economy and long-term planning must be seen in this light.

The 6th Five-Year Plan continues the major options of the Fifth and provides for the following annual growth rates:

Industrial production:	5%
Mechanical engineering:	6.1%
Building:	6%
Chemical industry:	9%
Agriculture:	1.8%-2.2%

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- (1) After the Communist coup d'état in February 1948 and the new political line followed from 1948 to 1950
 - (2) After the Sino-Soviet break, i.e. at the very beginning of the sixties

The effects of the bottleneck caused by inadequacies in the building industry could be reduced - more easily as regards housing than as regards industrial construction. But improving the quality of housing conditions will be more difficult, and it is unlikely that this will be achieved before the end of the 6th Five-Year Plan provided, that is that no new obstacle turns up to hamper progress in this field.

PRODUCTION SECTORS

Industry, building and agriculture regularly represent 80% of national income (see Annex 14: sector contribution to the national income). Industry, with some 60%, provides the lion's share. With a population amounting to only 0.4% of that of the world, Czechoslovakia accounts for some 2% of world industrial output.

15. Industrial production

The Five-Year Plan gave priority to mechanical engineering (+42%) and the chemical industry (+55%). The share of the latter in 1975 should reach 11% of overall production.

The lack of natural resources coupled with technological progress have given labour, and especially highly qualified labour, a prime rôle in industrial development.

The current shortage of manpower is a serious problem which cannot be overcome for the moment, since there are limits to increased productivity, while bringing in labour constitutes a political risk which Prague, mindful of recent events, is not prepared to take.

16. Iron and steel

The iron and steel industry forms the basis of the economy. With 12.7 million tons of steel in 1972, Czechoslovakia occupies the third place in the world for steel consumption per head (624 kilos), coming after Sweden (733 kilos) and the FRG (683 kilos), in front of Japan (603 kilos), and roughly on a par with the United States (629 kilos).

The iron ore deposits in Bohemia and Slovakia are very limited. Output which reached a ceiling of 3,477 million tons in 1962, has been falling since and now hardly meets 6% of demand. The metal content of the ore is low.

Imports are essential, supplies coming from the Soviet Union, Western countries and the Third World. In 1972 imports covered 37% of requirements (see Annex 15: production and imports of iron ore).

AC/127-D/479

-23-

The collection and reprocessing of scrap (7 million tons in 1973) covers the remaining requirements. It is planned to raise this figure to 12 million tons in 1990.

The production centres are mainly in Bohemia and North Moravia, along the Polish and East German frontiers (see Annex 16: ferrous metallurgy).

Nearly 90% of the pig-iron produced is used in the steelworks (conversion pig). At 1st January, 1974 there were 18 blast furnaces with steadily increasing output. Most of the latter is used in Czechoslovakia. The average metal content in the blast furnaces is 48.4%. The consumption of coke for one ton of pig-iron is 566 kilos and it is planned to bring this figure down to 530 kilos in 1975.

Production reached 8,360 million tons in 1972. The target for 1975 is 8.8 million tons. Since national output is inadequate, however, 802,000 tons were imported in 1972 of which 798,000 tons came from the Soviet Union (see Annex 17: iron and steel production).

Steel production reached 12,727 million tons in 1972. Most of the steel produced is open-hearth steel.

Through an all-out effort at rationalization, it is planned to reduce the number of blast furnaces to 13 or 14 in 1990, which will bring down coke consumption to 400 kilos per ton. There are also plans to reduce the number of open-hearth furnaces in favour of oxygen converters.

17. Non-ferrous metallurgy

Here also, since natural resources are extremely limited, imports are necessary.

Output represents only 23% of metallurgical activity and this proportion is destined to go down further since Czechoslovakia has stopped making zinc semi-products and imports them from Bulgaria and Poland. The same applies to magnesium and titanium. No more copper wire-drawing works are being built.

A certain level of national production must, however, be maintained. The production centres are spread throughout the country, although Slovakia is less favoured than other areas (see Annex 18: non-ferrous metallurgy).

Aluminium

Imported bauxite is processed in a single complex situated at Ziar nad Hronom in Slovakia. Output in 1973 was 42,700 tons (see Annex 19: non-ferrous metals).

Antimony

The natural reserves are such as to make the achievement of self-sufficiency a possibility. Production of white metal amounted to 1,800 tons in 1971.

Tin and tungsten

National output is negligible and covers only 1/400th of the requirements (see Annex 19).

The Cinovec mine (North West of Usti nad Labem) produces less than 50,000 tons of ore, while that of Krasno (North West Bohemia) has an output of around 100,000 tons. There is another deposit at Kpupka a few kilometres from Teplice. This deposit also has wolfram. The ore is processed on the spot; in 1974, new tin and wolfram reserves were discovered in North Bohemia.

Zinc

The output of this metal is fairly small; 25% of the requirements are covered from the mines situated at Stribro, Kutna Hora, Pribram and Honin Benesov. The ore is associated with that of lead.

In 1972 18,525 tons were extracted in all.

Lead

1972 production covered 65% of the requirements (see Annex 19). The richest deposits are in Bohemia around Pribram and at Stribro. Other deposits are worked in Moravia at Horni Benesov (North East of Ostrava) and in Slovakia around Banska-Bystrica to Banska Stiavnica.

The metallurgical plants are at Banska Stiavnica, Pribram, Olomouc and Bilina-Chuderic. The overall theoretical production capacity cannot exceed 20,000 tons a year.

Copper

The main deposits are in Slovakia (at Slovinsky) and in Bohemia (at Mlynky). The other deposits are in the region of Nove-Mestro pod Smrkem, at Jivka Horni Vernerovice (North West of Hradec Kralove), near Kraslice-Tisova (South West of Chomutov) and at Banska Hodrusa in Slovakia.

AC/127-D/479

-25-

The production of metal (electrolytic and pulverulent copper) is only 18,000 tons and is carried out by the "Kovohuty Krompachy" firm in the Krompachy factory in Slovakia near Slovinky. The factory has a theoretical production capacity of 25,000 tons and also produces electrolytic manganese and zinc and nickel sulphates.

The concentration of the ore is carried out at Slovinky, Jivka-Horni Vernerovice and Banska Hodrusa.

In 1974, prospecting near the village of Sobotine, in Moravia, is nearly finished and there is the prospect of working a new deposit.

Nickel

The "Niklova Huta Sered" firm (NHS) at Sered in Slovakia produces some 2,000 tons of this metal annually from ferro-nickel ores and raw materials containing nickel.

Germanium

There is a germanium deposit near Vintirov (7 km North West of Sokolov, in Bohemia) among brown coal workings, but its output is negligible for an industrialized country.

Mercury

Output, which is inadequate for national needs, rose from 166 tons in 1970 to 228 tons in 1972.

Gold

Prospecting, led by Russians, has produced some results. However, output remains very low at some 40 kilos a month. The deposits are at Jilove u Prany, in Bohemia and at Kremnica in Slovakia.

Pyrites

Only small traces of pyrites have been discovered. Large-scale imports are necessary: 63,000 tons in 1972, of which 60,000 came from the Soviet Union and 3,000 from Yugoslavia.

Cobalt, zirconium, molybdenum

National output is negligible. As for all ferro-alloys there are only small traces. Imports are indispensable and come mainly from Russia.

18. Mineral output

The existing infrastructure makes it possible to process minerals near the point of extraction. National production meets requirement as regards clays, sands, feldspar, hard-pan, bentonite, kaolin and rock salt. Asbestos, however, has to be imported and in 1972 out of a total of 38,220 tons imported, 20,873 came from Russia, 685 from Austria, 128 from Finland and 2,552 from Canada.

19. The engineering industries

Since 14th December, 1973, this sector has come under the Ministry of Mechanical Engineering. There is a trend towards concentration. It employs one-third of the total industrial labour force and accounts for nearly half of the country's exports.

The geographical distribution of the industry is again unfavourable to Slovakia (see Annex 20: map of the engineering industry centres). The main centres are Prague, Pilsen, Brno and along the North Bohemian frontier from Karvina to Liberec. 80% of the 800 factories or so are located in Bohemia-Moravia.

In the large and medium-scale engineering industry the very large range of products manufactured makes Czechoslovakia one of the world's leading producers (see Annex 21: development of heavy and medium machinery production). The technological excellence, particularly the welding processes used, put Czechoslovakia some way ahead where the construction of large boilers is concerned. The construction of steam turbines, alternators and power units is making rapid strides and Czechoslovak industry is concentrating on ever larger units. Among other things, it is studying the construction of 1,000 MW units to replace those of 400 to 600 MW. The other main activities in this area are the production of textile machinery and diesel engines and shipbuilding in Prague (transoceanic merchant ships, port dredgers, barges and river patrol boats, which are assembled either on the spot or in the GDR or Poland).

The machine-tool industry is likely to expand considerably since it has a high priority in the 5th and 6th Five-Year Plans. The already high output (see Annex 22: machine-tool production) represents one-tenth of all mechanical engineering activities.

The production of agricultural machinery (see Annex 22: agricultural machinery production) continues to increase in value, although not in volume, because of the COMECON specialization agreements. Thus, the production of tractors, which is limited to 80 to 140 hp wheeled vehicles, is carried out in conjunction with Poland and marketed under the Zetor label.

AC/127-D/479

-2.-

The automobile industry

Czechoslovakia has an old-established motor industry. All production is controlled by the CAZ organization (Ceskoslovenske Automobilive Zavody) which encompasses 25 enterprises and 3 research institutes employing 140,000 persons. Private cars, lorries and commercial vehicles are produced under the Skoda, Tatra, Praga and Avia labels. Production in 1972 was as follows:

Heavy vehicles	25,631
Light cars	154,454
Buses	2,894

Under COMECON agreements Czechoslovakia supplies spare parts and complete components to its partners. Lorries and buses are exported to the COMECON countries.

20. The chemical industry

The chemical industry has long been the Cinderella of the Czech economy but it has been given high priority in the 5th Five-Year Plan. Its expansion has a direct effect on many basic industries such as fuel and power and the steel industry.

The administrative structure has been decentralized. Since 1st January, 1971, the Czech and Slovak National Ministries for Industry have had responsibility for the chemical industry. At federal level there remains only a co-ordinating bureau attached to the Prime Minister's Office.

The chemicals industry is concentrated mainly along the Elbe. The chief centres are Zaluži, Most, Kralupy and Usti nad Labem. Another important area centres around Bratislava and benefits from the oil pipeline from Russia. This latter region is therefore likely to expand rapidly and this will offset the imbalance between Slovakia and Bohemia-Moravia. A third area, based on the coking plants, is centred around Ostrava (see Annex 23: chemical industry centres).

Production covers the whole range of chemical goods required for the economy and there is a surplus available for export. (See Annex 24: main products of the chemical industry.)

The COMECON policy of specialization and co-operation is especially important in the chemical industry. The Usti nad Labem complex was built in co-operation with the Poles and will be run in partnership with the East Germans.

21. The electronic and computer industry

This area comes under the Federal Ministry of Mechanical Engineering. Little is known of production, except that it is highly concentrated, since most activities in this area are subject to defence secrecy. The industry has developed rapidly since the early sixties. In accordance with the COMECON policy of specialization, the Czechoslovak computer industry is highly specialized.

Specialization: the RYAD Plan - the ES 1021 computer

Czechoslovakia set up a national computer industry between 1962 and 1967. Consequently, when in 1968 COMECON decided to promote a uniform system in this field, Czechoslovakia had certain hesitations over the plan since it spelt the end of any national programme. It even sought to maintain its own production.

This is not the only case of this kind within COMECON. An intergovernmental commission, set up in 1968, laid down the fields in which Bulgaria, Hungary, the GDR, Poland, the Soviet Union and Czechoslovakia should specialize, but Rumania refused to take part.

The Bulgarian, East German, Hungarian, Polish, Czechoslovak and Russian research centres employ some 18,000 specialists.

The RYAD system (RYAD means series) or ESEVM (uniform electronic computer system) started in 1968, organized the manufacture of third generation computers. Later on, in 1970, the Russians extended the initial programme to a full-scale telecomputer system comprising, among other things, data transmission lines. The whole system was adapted to Moscow's conception of the Soviet bloc. The system is made up of six third generation computers equipped with integrated circuits. It includes units capable of working at speeds ranging from 10,000 to 2 million operations a second.

The plan is to form a hierarchical computer system centred on Moscow and encompassing all the COMECON industrial, political and military fields. This is an ambitious project and to carry it out it is planned to have recourse to the West. However, production and planned imports in 1973 were clearly behind schedule.

AC/127-D/479

-29-

Moscow has entrusted Czechoslovakia with the study of software adapted to military requirements and the development of the R20 computer or the ES 1021 computer, which is an improved version of the R20. It is generally considered that the R20A was developed from the ZPA 6000/20 which is a purely Czech machine. The Czechoslovaks consider that the ES 1021 is a success both technically and as regards reliability.

In addition, Czechoslovakia has developed 35 additional apparatus which extend the operating scope of the ES 1021 and include, for instance, an advanced photo-electric reader, a "consul" electric typewriter and a plotting table for preparing diagrams, plans and maps. These products are being exported with success.

Production of the R30, of Polish design, also started in 1973 and the ZPA 6000/30, which is not part of the plan, is still being made.

Status of Czech computer science

On the basis of the ratio of computers to population, Czechoslovakia is in a good position within COMECON although it is well behind Western standards.

COMECON as a whole	13.7
of which, Czechslovakia	27.3
USSR	25
Western Europe	90
USA	390
China	0.1

The position is less favourable as regards third generation equipment.

Government Decree No. 355 of 1964 authorized the importation of computers from the West.

Moreover, an agreement with the Soviet Union and Poland covers the procurement of Minsk 22 and Odra equipment. All this has led to a big increase in the number of facilities used. It was, of course, surprising that an industrialized country like Czechoslovakia should have only:

- 12 systems installed in 1961
- 18 systems installed in 1962
- 23 systems installed in 1963
- 30 systems installed in 1974

On 1st January, 1972, Czechoslovakia had 392 computers (see Annex 25: types of computers in the possession of Czechoslovakia at 1st January, 1972).

80% of the facilities are in Bohemia-Moravia and 20% in Slovakia. However, the overall operational capacity is only 54% employed. The highly diversified pattern of the system, with more than 50 different models, creates staff training problems (see Annex 26: computer locations in Czechoslovakia at 1st January, 1972).

There are 120 computer centres used by industry, advanced professional training colleges, research institutes and the armed forces. Some 5,500 persons are employed in the following categories:

- 11% computer specialists
- 54% engineers and technicians
- 35% academics.

In addition to the problem of adapting staff to the equipment used, the powers that be in Czechoslovakia are not yet fully "computer minded".

There is no programming institute and hardware and software are insufficiently developed.

Mention should be made, however, of the establishment in 1969 in Bratislava of a time-sharing centre (simultaneous use by several users) which is the first in Eastern Europe. The system is a Control Data Corporation CDC 3,300 installed by the United States Computer Research Centre.

A second IBM 370 computer came into service at the Ostrava mines in December 1972. This computer, used for the administration of the coal basin, cost more than Kcs 40 million and is the first of its type in the Eastern countries. Similar facilities first came into operation in France in July 1972.

The 5th and 6th Five-Year Plan forecasts

In 1969 the Ministry for Industry made plans to equip the country with computers within the 1980 timeframe. It was decided to acquire 969 computers during the two Five-Year Plans. Added to those already existing and allowing for write-offs for obsolescence, this would give a total of 1,200 computers in 1980. This is probably too ambitious and a total of 1,000 computers would seem more realistic.

AC/127-D/479

-31-

Estimated trend in the number of computers during the 5th Five-Year Plan

	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Number of computers	333	392	460	540	620	720
Value in millions \$	125	149	175	200	230	275

(Source: 21st Century Research (1972))

In 1974, however, the Czechoslovaks announced that the number of computers in service at the end of 1975 would be 500.

The 5th and 6th Five-Year Plans provide for the following development in the different categories:

Type of computer	1971-1975	1976-1980
Small systems	245	390
Medium-sized systems	105	202
Large systems	7	20
Total	357	612

(Source: Ekonomicky Casopis, May 1971)

The small systems are by far the most numerous; they are used in the administration of companies.

The following table showing installed systems by origin at the beginning of each year demonstrates the extent to which Czechoslovakia depends on COMECON, but also on the market economy countries.

Origin	1966		1970		1972	
	number	%	number	%	number	%
Imported from the West	33	31.5	70	31.0	140	36.0
Produced at home	20	19.0	69	29.3	132	33.5
Imported from COMECON	52	49.5	90	39.7	120	30.5
Total	105	100.0	229	100.0	392	100.0

(Source: United States studies of Czechoslovak press reviews)

The decline in the share of imports from the Eastern countries and the increase in home production stem from a desire to retain some degree of national autonomy as much as from improved production.

The 5th Five-Year Plan provides for a rise in the annual production of computers from a value of Kcs 818 million in 1970 to Kcs 4 milliard in 1975. It is planned to increase exports tenfold during the same period, mainly to the COMECON countries.

National output

National production was sponsored by Antonin Svoboda and started with the construction of the SAPO computer in 1956. This equipment was followed by the first generation EPOSI in 1958 which was developed by the ARITMA company. It had been planned to make 98 computers between 1966 and 1970; in 1969, 68 were operational. The 1970 goal of 64 new installations was not achieved either.

Acquisition of a licence from Bull for the gamma 140/145 in 1968 was designed to fill the gap. This machine is made in Czechoslovakia under the name of TESLA 200. In 1968 Czechoslovakia became integrated in the RYAD plan.

Characteristics of Czechoslovak computers

Computer	Year	Word length (in bits)	Operation time Operation/S	Memory Capacity	Cycle Time	Comments
EPOSI	1958		18,000			first computer made
MEDAT	1960					second generation
MSP2	1966					small computer for scientific use
ARITMA DP 100	1966					card system
TESLA 200	1968	octet		128k	1.7	licence gamma 140/145
ZPA 200						unknown

DECLASSIFIED/DECLASSIFIEE - PUBLIC DISCLOSED/MISE EN LECTURE PUBLIQUE

AC/127-D/479

-33-

Computer	Year	Word length (in bits)	Operation time Operation/S	Memory Capacity	Cycle Time	Comments
ZPA 600/601	1970	60	40,000	40k	3.0	second generation-medium
ZPA 6000/20	1972					third generation RYAD (?)
ARITMA 1010	1971	8	50,000		2.0	Small system
TESLA RPP 16	1971					third generation
ES 1021		4 octets				RYAD

(Source: 21st Century Research)

Foreign trade of the electronic and computer industries

This is mainly the concern of the "Kovo" organization although other bodies like "Strojimport" and "Strojexport" also play a rôle. In the field of general electronics, Czechoslovakia has a balance of payments surplus although it must be pointed out that the published statistics are very incomplete since they cover only the main articles. Moreover, most of them are covered by defence secrecy.

Most of the country's trade is with the Eastern countries. Trade with the West is confined to very advanced equipment. Czechoslovakia is mainly interested in importing technology (see Annex 27: development of exports and imports of electronic equipment).

Imports of computers from the West were estimated on 1st January, 1972 at \$60,500,000 or 40.5% of the value of capacity, while on the same date imports from the Eastern countries totalled \$25 million or 16.9% of capacity and those from the Soviet Union \$30 million or 20.1% of capacity (see situation table).

In February 1973 Prague concluded a contract to purchase Russian computers (makes and characteristics unknown) to an amount of Kcs 1 milliard. The first five were due to be delivered during 1973 and the next 48 in 1974 and 1975. This agreement shows a desire to push ahead but it increases the degree of dependence.

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Czechoslovak imports, at least until 1972, show that the country was comparatively behind. In 1971 an agreement was concluded with the Russians. Czechoslovakia delivered office machinery and computers to the Soviet Union and ordered 9 Minsk 32 computers, second generation equipment to be delivered in 1971 and 1972. This shows that even in 1972 the Czechs were still using second generation computers at a time when third generation equipment was currently being used in the West.

The Czechs are aware of the fact that they are behind and are making strenuous efforts to push ahead. The second meeting of the Science Commission of the Socialist countries on computer technology was held in Prague in May 1972 at the same time as a symposium on mathematical and economical models. Shortly before this, the Swedish SAAB-SCANIA firm had been invited to arrange a symposium, again in Prague, on the DATA system of electronic computers.

Outlook for the electronic and computer industries

Although the electronics industry is expanding rapidly in close conjunction with the COMECON countries, its prospects do not appear good. There are reasons for believing that after the initial effects of the RYAD plan, the COMECON countries, and particularly Czechoslovakia, will incline towards industrial co-operation with the market economy countries. Czechoslovak technology is in advance in certain spheres.

The 5th Five-Year Plan provides for a 50% increase in output. The studies for the 6th Plan (1976-1980) provide for a similar increase.

The long-term plans for the 1970-1990 timeframe foresee an increase of 15,219% as regards micro-electronic devices, 1,008% as regards semi-conductors, 975% for electronic measuring instruments, 518% for automation equipment and 426% for line communications.

However, there are certain obstacles which will be difficult to overcome in the computer field in the short and medium-term. There are more than 50 different models for a total of some 400 machines. This creates a servicing problem in addition to dependence on foreign industries many of which are not within COMECON.

The equipment was badly distributed. In 1970, 83 computers were allocated to industry and only 2 were available to the transport sector, 42 were allocated to education and culture and 2 were being used in connection with banking and insurance. The geographical distribution (80% in Bohemia-Moravia and 20% in Slovakia) raises the problem of Slovakia's underdevelopment in the computer field which is bound to increase the imbalance that Prague was striving to eliminate.

AC/127-D/479

-35-

The lack of qualified staff, particularly analysts and programmers (unlike the situation in Rumania and Poland) will certainly make itself felt, especially since the diversification of equipment complicates training.

Czechoslovakia's backwardness in the field of computers is a non-negligible factor which will hold up development for some time to come.

22. The armaments industry

Characteristics and location

This sector is subject to the strictest security and each factory working for national defence is protected by a particularly effective security apparatus.

Czechoslovakia has the most important armaments industry in the Soviet bloc after the USSR. It is based on two factors: a highly industrialized country and a long tradition. Bohemia-Moravia was the arsenal of the Austro-Hungarian army. National production was easily sufficient to cover the needs of the Czech army under the First Republic, with French co-operation. Nazi Germany set up a large number of armament factories. The Communist régime took over the whole complex intact and further developed it. No political events, not even in 1968, held up this development.

Arms production is closely linked with civilian production and this is not a characteristic peculiar to Czechoslovakia; the same is true of all the Communist countries. This leads to a geographical spreading of the industry - a desirable feature from the tactical standpoint (see Annex 28: map showing centres of the armaments industry).

The weapons industry belongs to branches which have always been given priority. As a result, they are technologically ahead of other non-priority industries. Czechoslovakia is able to develop its arms industry with less disadvantage for the economy as a whole than is the case in the West. The transfer of an economic unit from a non-priority, and therefore less technologically advanced industry, is felt less severely than in the West because of its lower level of efficiency. In the West, all economic units have roughly the same level of efficiency.

However, the arms industry was not being used to full capacity in 1973. Its capacity could be increased in a matter of days.

Co-operation with the Communist countries

Arms production, like all economic activities, is integrated into overall Soviet bloc planning.

The COMECON framework

Meeting in Moscow on 16th November, 1972, the Standardization Committee of COMECON decided to lay down a general, uniform system for the production of military equipment known as Voystand (military standards).

The aim is to prepare uniform standards for the production of all military equipment and then to implement them within a period of seven years.

The most important industrial countries in the bloc, the Soviet Union, the GDR and Czechoslovakia, are to make a major contribution to the definition of these standards. The Soviet Union has special responsibility for codifying basic products, including steel, in accordance with Soviet, Czechoslovak and East German standards. This codification takes in the entire military field including rockets and missiles. It also covers light metal products, ceramics and special alloys. Czechoslovakia is concerned with machine components, semi-finished products and insulation material. The GDR, in conjunction with the Soviet Union and Czechoslovakia, must determine standards for screws, nuts, steel sections and sheet metal.

The decisions taken in November 1972 represent a transitional stage between "the standardization recommendations" which are to be formulated between 1971 and 1975 and "the establishment of mandatory standards for the COMECON", which are to become effective after examination and approval by the standing committees and the COMECON Standardization Institute.

National design and co-operation with the Soviet Union

Czechoslovak production is nationally designed or manufactured under Soviet licence, often in conjunction with other Communist countries. Output covers all army and air force weapons and is surplus to needs. The Warsaw Pact armies, including the Soviet army, use Czech equipment and it is also exported to the Third World (see chapter on Foreign Trade).

Guns of up to 100 mm calibre are generally of national design; above that calibre they are of Soviet design. Infantry equipment, and generally speaking the different types of rocket launchers, are Czech made. But at design level there is often

AC/127-D/479

-37-

very close Soviet-Czech co-operation. A classic example is the 120 mm 40-tube rocket launcher with a reserve salvo mounted on a modified TATRA 813 chassis, which has the same launching system as the Soviet BM 21. However, it is highly probable that the reloading equipment was designed by the Czechs.

The trend, however, is towards standardization of weapons and specialization, in accordance with the standards laid down in the complex COMECON programme. It seems likely that the 122 mm rocket launcher will be supplied to all Warsaw Pact armies and it is in this light that the dropping of the Czech-designed OT 64 troop transport vehicle and its replacement by the BMP 67 should be seen.

The Czechs are familiar with all types of military equipment. They also produce nationally-designed light weapons (with the same performance characteristics as Soviet weapons) designed to use Soviet-type ammunition and in some cases NATO 7.62 ammunition. The situation is similar with regard to military electronics; Soviet-Czech co-operation was evident in the Czech products developed under the "Lunoxhod" programme. Heavy and medium lorries are manufactured under a planned integration programme within the COMECON context.

The aircraft industry produces nationally-designed aircraft like the L29 or L39 trainer and also carries out full maintenance, and the manufacture of the major components and elements, of MIG and SU aircraft. The twin turboprop L410 transport aircraft is also Czech-designed.

All production is under Soviet control, which often takes the visible form of Russian technicians working on the spot.

The organization of production

Arms production is in excess of needs and makes an appreciable contribution to exports (see the chapter on Foreign Trade).

Generally speaking the weapons industry is controlled by three organizations for army equipment:

- SKODA (Pilsen)
- ZBROJOVKA (ZBR Brno)
- CESKY KOLBENDANERK (CKD Prague);

one organization for aeronautics:

- AERO (Prague); and

one organization for electronics:

- TESLA (Prague).

In all, it is estimated that 200,000 persons work for these different organizations.

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23. The building materials industry and the building industry

This heading covers an industrial sector producing building materials and which is part of basic industrial production, and an industrial branch, the building industry, which uses the basic material provided by the former.

The building materials industry

The building materials industry is recognized as being of capital importance although the annual growth of this sector rose only from 2.2% in 1948 to 3% in 1972. In 1972 it employed 4.5% of the industrial workers or 79,445 persons. Although output is rising regularly it is not sufficient and it is necessary to import certain materials. (See Annex 29: building materials)

The building industry

This branch covers all essential activities connected with construction, research, projection and geological surveys connected with building.

These activities are carried out primarily by the building firms but also by units controlled by industrial firms, agricultural co-operatives, private building associations and repair firms. This branch is also concerned with the work of foreign firms. Two national Ministries direct the building industry in their respective geographical areas.

Production

The 5th Five-Year Plan envisages a rise in output of 38% (to be achieved 90% by increased productivity) the increase in investments to be 38.7%, that in repair work 35.2%. Repairs will mainly affect housing (increase of 42%). If the Plan is adhered to on the whole, or even exceeded, it will still not satisfy requirements (see Annex 30: the building industry).

75% of building is carried out by the firms and 25% by co-operatives or individual initiatives of the "CASTOR" type.

The value of the output of the building firms was Kcs 53.4 milliard in 1971 and Kcs 58.7 milliard in 1972.

The situation of the building industry is unsatisfactory. In 1973, 792 work sites were earmarked for priority. Of this number, 38 were started. While the Plan has been fulfilled as regards the volume of work, the preparation of sites leaves a lot to be desired. In July 1973, out of 35 major projects which were

AC/127-D/479

-39-

to have been started before the end of the year, it was found that 9 would not in fact be started. Out of 48 projects due to be terminated in 1974, 22 are going according to plan, but 26 were behind schedule at the end of 1973, and the completion date for 16 has been postponed from September 1973 to some time in 1975.

The priority projects in 1974 are, by order of importance: the Treboradice thermal power station, the Vojany II power station, the Stramberk cement works, the new Kosice metallurgical workshops, the Olomouc iron foundry, the "Steti II" and "Sturovo II" paper and cellulose works, the "1st May" rubber factories at Puchov, the Solode Susice car inner tube factory, the Turna cement works and the Tomasovce ceramics plant.

There is no certainty that these programmes, even when they have priority, will be fulfilled, because they entail a big investment effort (see Annex 30).

The picture as regards housing is no brighter. Although the rate at which flats are being built has increased, it remains inadequate:

	Number of flats completed
1951-1955	196,000
1956-1960	314,000
1961-1965	409,000
1966-1970	435,000
1971-1975	500,000 envisaged of which 375,000 are to be in Bohemia- Moravia

The 1970 census recorded 4,300,000 dwellings, including 200,000 weekend cottages. Since there were 4,700,000 families, at least 350,000 of them must be living with relatives or with strangers. Legally each family has the right to a flat with 12 sq.m per person, plus a hall, a bathroom, and an extra 6 sq.m. This standard has not been reached.

Half the homes were built before the 1939 war and the Czechoslovak population is paying for decades of neglect and lack of foresight.

During the first two years of the 5th Five-Year Plan, 135,600 homes were built. In 1973, 117,000 were built. This brings the total for the first three years of the Five-Year Plan to 252,600. It is possible that the Plan will just be fulfilled, since the speed at which homes are built will probably rise, but the approved living space standards will not be met and the Plan in itself will not satisfy the demand for housing.

Prague is the worst hit in spite of the efforts being made. In any case the targets of the plan are inadequate to meet requirements.

The Plan aims to make 8,737 new homes available to the inhabitants of the capital in 1974; this is 1,000 more than in 1973.

Among other major projects, the metro remains the most important in 1974; it is aimed to dig 3 km of underground tunnels. In spite of the contribution of Soviet technology, the project has already run into difficulties. The building of the Prague motorway is also being continued, with the work concentrated on the section between the main railway station and Hlavka. It is also planned to build a new hospital containing a modern university urologic clinic and a polyclinic.

The building industry, like the building materials industry, co-operates actively with the armed forces, to a degree which it is very difficult to determine with accuracy. Military engineer units take part in the building of motorways and even of homes. Similarly, civilian companies participate in the building of airfields and military installations. Apparently, this entails no financial transactions. Consequently, a large part of the activities of the building industry and the building materials industry constitutes an invisible item on the military budget. This question is subject to defence secrecy.

Outlook

The outlook is bleak and there is unlikely to be any real improvement before the 1980s.

Shortcomings in the industrial construction field are seriously hampering industrial expansion. Priority in one sector holds up others. The construction of homes cannot be increased sufficiently. The Government has finally started to show concern about a situation which is bound adversely to affect production and the birth rate. The Plan gives high priority to building; the aim is to build 500,000 homes at the rate of 100,000 a year. Even if this programme is fulfilled it

AC/127-D/479

-41-

will not solve the problem, especially in Prague where the situation is well-nigh catastrophic. Only 40,000 new homes are forecast for Prague between 1971 and 1975, although in 1971 there was a shortfall of 50,000 and 20,000 new couples were expected to be wanting homes. It will take one or two Five-Year Plans before a proper solution is found (i.e. not before 1980).

The quality of the accommodation built is poor and this has an effect on its maintenance. The Czech Press has often taken up public protests at the failings of the national committees responsible for the upkeep of buildings.

24. The other industries

The other industries, particularly the textile, clothing, leather and consumer goods industries are well represented and occupy a prominent place. The leather, textile and glass industries enjoy a long tradition. The food industry is one of the least advanced sectors although part of its output is exported. Because agriculture cannot supply all the national needs, foodstuff raw materials have to be imported. This fact highlights Czechoslovakia's rôle as a processing centre for all sorts of goods.

25. Energy and transport

Energy

Coal is still the main source of energy; coal and lignite cover 75% of the energy requirements of Czechoslovakia, which is the world's 7th largest producer of these fuels. The output of coal has been going down since 1970 (28.8 million tons). It should be only 28.0 million tons in 1975 and 24 million tons in 1980, unless the world oil crisis upsets these plans.

The output of brown coal and lignite, on the other hand, is going up every year: 81.7 million tons in 1970, 85.5 million tons in 1972 and 92 million tons forecast for 1975.

The Ostrava Karvina deposit is the source of 85% of the coal output followed by the Kladno and the Trutnov fields. Brown coal and lignite come chiefly from North West Bohemia.

The level of exports is fairly low: 4.5 million tons in 1972. The main customers are the GDR, Austria, Hungary and Rumania.

Czechoslovakia has very little oil (191,000 tons in 1972) and imports almost 95% of its crude from the Soviet Union via the "Druzhba" pipeline (67 million tons over the period 1971 to 1975). The remaining supplies come from Iran. After 1974, Czechoslovakia is to get some 5 million tons a year from the Middle East and North Africa through the "Adria" pipeline.

Natural gas plays an increasing rôle, 13.3% in 1970, 15.7% in 1975, but comes well behind coal and oil. Since national output is very low (about 1 milliard cu.m a year) the gas is imported from Russia via the "Bratstvo" and "International" gas pipelines.

As for electricity, the system is based on thermal power stations producing about 95% of the country's electricity supply, and which nearly all operate on brown coal and coal (85%).

The BOHONICE I. atomic power station (150 MW) has been operating since 25th December, 1972. A second atomic power station is scheduled to go on stream in 1982/1983 (440 MW) and it is planned to provide between 8,000 and 12,000 atomic MW by 1990. Imports of electricity amount to about 4 milliard kilowatts a year (from Russia, Rumania, Poland and Yugoslavia) and the 1971-1975 Five-Year Plan provides for total imports of 5.4 milliard kilowatts of Soviet electricity.

Transport

Railways

The Czechoslovak railway network is dense: 13,299 km, 2,650 of which are electrified. This represents 104 km of track per 1,000 sq.km and puts Czechoslovakia in the 5th place among the European nations. Well looked after on the whole and up-to-date (nearly 10,000 km taking an axle weight of 20 tons), the Czechoslovak railway system (CSD) is one of the best in Central Europe. In 1973 the traffic was 57.2% electrified, 34.6% diesel and only 8.9% steam (the last steam locomotives are due to go in 1975).

The railways still carry 80% of the freight traffic in ton/kilometres (69% in 1975) which represented 82,694 million ton/km in 1972. The intensive use of the network (some lines are worked to 96% of their capacity) obviously creates difficulties at certain times of the year and can give rise to serious traffic problems.

A Soviet railway line (1,524 mm gauge) runs from Velke Kapusany to Haniska, a distance of 92 km. This line makes it possible to bring iron ore from Krivoi Rog to the Slovakian iron-works. This is the only wide gauge railway line entering a satellite country outside the transshipment zones.

AC/127-D/479

-43-

The transfer of cargo from the Russian to the Czech trains takes place at Cierna nad Tisou, where the transshipment facilities can handle at least 50,000 tons a day.

The road network

The total length of the road network is 125,400 km, of which 73,000 km are suitable for motor traffic.

The density of traffic has increased by 60% over the last 5 years; improvements are being made and others are under study. 85 km of motorway near Prague-Brno and Bratislava are already open. The motorway system will be about 1,700 km long when completed. As an important crossroads, Czechoslovakia cannot allow the motorways in neighbouring countries to stop at its frontiers.

Certain routes have already been improved by road-widening and the provision of by-passes.

The Czech air network covers 110,000 km. Czechoslovakia has Soviet IL 62s, TU 104s, TU 124s, 134s, 154s, YAK 40s on hire and nationally-built Turbolets. In 1973 the Czech airline (CSA) carried 1,660,000 passengers.

The Czech aeronautical industry has a tradition and experience which goes back some 60 years. It has produced 247 different types of aircraft. It does not build long-distance aircraft, since this would not be cost-effective, but it has a good reputation for the manufacture of light, training and special aircraft and it is the world's second exporter of aircraft of these types, after the United States.

- Trener aircraft
- L 29 Delfin trainers
- L 23 Delfin trainers
- L 410 twin turbojet Turbolets
- Z 37 for agriculture.

The rural economy

26. The physical and human basis

As in all industrialized countries, the share of agriculture in the Czechoslovak economy is declining. Agriculture now accounts for only 10% of national income. The situation might be compared with that of France. Although self-sufficiency is aimed at, Czechoslovakia has to import to meet demand (see Annex 34: share of agriculture in the social product and national income).

With 7,103,000 hectares of agricultural land, Czechoslovakia (127,820 sq.km) occupies only 0.2% of the world's agricultural land. 17.4% of the land is unsuitable for agriculture, 40% (5 million hectares) is arable and the remainder is made up of grassland and grazing land (8%) and forests (34.6%). (See Annex 31: geographical distribution of agricultural production)

Collectivisation is practically complete either in the form of state farms or collectives. Private farming, which is decreasing, is confined to mountain areas where there is no alternative (see Annex 32: distribution of agricultural enterprises at 1st January, 1971).

In 1973 the agricultural population represented around 20% of the working population or a little under 1,200,000 persons. There is a manpower shortage, made worse because of the relatively high average age of the agricultural population (see Annex 33: agricultural population by age groups).

The only way out is to use volunteers (servicemen, schoolchildren, students and intellectuals), a process which is in line with the avowed aim of achieving a classless society.

The level of mechanization is high, and even excellent judging by statistics (see Annex 33(bis): mechanization of agriculture in Czechoslovakia). There may even be a tendency towards over-equipment. In 1970, for instance, there were 30 tractors for 1,000 inhabitants (as against 17 in France), 6 combine harvesters, 10 potato-lifters and 19 beet pullers. In actual fact, however, the lack of spares and a standard of maintenance which probably leaves much to be desired, mean that a large part of the agricultural equipment is out of service. Automation is necessary in addition to mechanization. The bulk of investments are directed at this aim, with the accent on pig and poultry raising. Most of the facilities are imported.

However, modern facilities are not enough, it is also necessary to use them rationally. The answer lies with the agricultural worker and the problem is one of bringing him to adopt an almost industrial mentality. This was the aim of the appeal launched by Jan Baryl, Secretary of the Central Committee of the Czechoslovak Communist Party, on 7th February, 1974 at the 10th National Conference of Czechoslovak Youth.

The use of fertilizers has been hampered by the low level of national output but in 1973 it was comparable to that of Western Europe, although the Czechoslovak Press continued to report shortages.

AC/127-D/479

-45-

The trend has been as follows:

Use of Fertilizer (kg per hectare)

<u>1950/51</u>	<u>1960/61</u>	<u>1965/66</u>	<u>1968/69</u>	<u>1969/70</u>	<u>1972/73</u>
28.2	68.3	126.1	158.5	168.6	200

27. Output

Efforts have brought results, although owing to agrarian reform and the priority enjoyed for so long by heavy industry the pre-war level was not reached until the 1960s. The pace of progress has quickened since then. On the whole, the forecasts of the 5th Five-Year Plan look like being fulfilled. In 1972 the yearly plan was not fulfilled, but it was in 1971 and 1973 (see Annex 34: gross agricultural output of agriculture in the Social Product and National Income).

Crop production

Cereals are the key problem, and this is the most vulnerable sector, as will be seen from an analysis of the 1971 and 1972 results.

	Results in Millions of Kcs		Annual Growth		1972 Planned Growth	1972 Result
	1971	1972	$\frac{1971}{1970}$	$\frac{1972}{1971}$		
Gross agricultural output	69,627	71,764	103.7	103.1	104.6	99.0
crops	31,294	32,530	102.8	104.0	108.3	96.0
livestock	37,973	39,324	103.5	103.6	101.6	101.7

The crop production target was only 96% reached in 1972. The trend in crop output confirms the findings and shows that cereal output was responsible (see Annex 35: output of main crops).

Constant efforts have been made and have taken the form of an increase in the area sown, greater use of fertilizers and the continued sowing of Russian varieties of wheat. The 1973 harvest was satisfactory and provided 8.7 million tons. A surplus of 100,000 tons was obtained but the storage facilities have not kept pace with the improved yields.

The good 1973 results were mainly due to an increase in yields (see Annex 36: yields per hectare).

N A T O R E S T R I C T E D

-46-

AC/127-D/479Livestock

At the 1972 congress of the co-operatives, Mr. Strougal recalled that the increase in the consumption of meat and other livestock products, resulting from the rise in the standard of living provided for in the Five-Year Plan, entailed a rise in production if large-scale imports were to be avoided.

The livestock holdings went down between 1960 and 1970 and the trend has only been reversed by the 5th Five-Year Plan (see Annex 37: livestock in Czechoslovakia), bearing in mind that the continued drop in the number of horses, ponies and donkeys is directly related to mechanization.

The Plan has been fulfilled as regards livestock production. Progress is due mainly to increased yields (see Annex 38: livestock yields and Annex 39: livestock output). However, the results are still well below those of many Western countries.

Balance sheet

The deficit (on agricultural account) becomes greater as the standard of living rises. There was some improvement in 1972, in accordance with the aims of the Government; however, only the results in subsequent years will show whether or not these are being achieved.

Trade in agricultural products (in millions of Crowns)

	1965	1966	1967	1968	1969	1970	1971	1972
Total imports	3,267	3,467	3,475	3,844	4,050	4,136	4,199	4,074
Total exports	898	795	735	910	1,142	1,036	1,306	1,338
Deficit	-2,396	-2,672	-2,540	-2,934	-2,908	-3,100	-3,893	-3,336

The country is not self-sufficient, a situation which does not change much; there is every reason to believe that the basic facts in 1970 will remain substantially the same throughout the period of the 5th Five-Year Plan and probably during the period of the 6th Five-Year Plan.

The increase in exports, which is roughly geared to the deficit, indicates official intention to improve the situation.

N A T O R E S T R I C T E D

-46-

AC/127-D/479

-47-

FOREIGN TRADE (see Annexes 40 to 44)

General

Most of the figures quoted in this study have been taken from Czech statistics. A comparative analysis of these figures can be rewarding but because of differences in statistical methods they only provide a rough guide in comparisons with corresponding data for other countries, particularly in the West.

In addition, the currencies of the Eastern countries being non-convertible, their real value (actual purchasing power) in relation to convertible currencies is difficult to gauge. The official exchange rates probably contain an inbuilt over-evaluation.

For the purpose of comparison of monetary units, the following exchange rates have been adopted(1):

1 Czech Valuta Crown = 0.17 dollars = 0.12 roubles

1 Soviet Valuta rouble =

1 COMECON transferable rouble = 1.4 dollars

28. Background

Czechoslovakia has a long history of trade and manufacturing. Over a long period of years, Bohemia - highly industrialized despite an almost total lack of natural resources - provided the link, both economic and commercial between East and West, buying, transforming and selling to satisfy the requirements of neighbouring economies.

In 1946, Czechoslovakia to which the liberalization of world trade was of vital importance, was a party to the creation of GATT(2). At the time, its trade relations with East and West were roughly equal in volume.

As from February 1948 however when the Communist Party came to power, transactions with the capitalist West began to decline and by the '60s only accounted for about 20% of overall trade; this is the situation today.

(1) Rate calculated on the basis of the Soviet State Bank's scale - September 1973

(2) General Agreement on Tariffs and Trade

Trade with the COMECON on the other hand rose to the "conventional" level of 70%, 30% being with the USSR.

State trade has become a State monopoly. It is handled by the Federal Ministry of Foreign Trade which supervises a number of "foreign trade agencies", which specialize in given activities. Only a very few large industrial enterprises have been authorized to deal directly with foreign customers.

Czechoslovakia which, for the past 25 years, has had to subordinate its trading activities to the COMECON aim of self-sufficiency, could once again become a crossroads in East/West trade "to the advantage of both parties" if business were allowed to develop without ideological constraints.

However, bridgebuilding towards the West would imply a considerable effort to increase competitiveness, an effort which Czechoslovakia has so far been spared owing to the steadiness of demand from the COMECON. The West for its part would have to help oil the wheels by offering appropriate arrangements.

A development of this kind, while at first sight in the Czechoslovak interest, would however make the country more vulnerable to the economic crises of the capitalist world inasmuch as the unreliability of forecasts (import and export prices) would strike at the very roots of economic planning. The future development of Czechoslovak foreign trade is still therefore very much an open question.

29. Foreign trade in the context of the national economy

Size (Annex 40)

Foreign trade accounts for over 20% of the Czechoslovak social product. In 1971 it amounted to \$10 milliard and in 1972 \$10.8 milliard, i.e. an increase of 8%.

Czechoslovakia is among the leading trading nations, approximately on a par with Italy.

Foreign trade transactions represented:

\$458 per capita in 1969

\$517 per capita in 1970

\$565 per capita in 1971

In contrast, the corresponding figures for the USSR were:

\$ 92 in 1969

\$101 in 1970

\$107 in 1971

AC/127-D/479

-49-

Czechoslovakia's standing as a trading nation is reflected in particular world-wide by the reputation of the BRNO trade fairs. There were over 6,000 participants at the 16th Mechanical Engineering Fair in September 1973, and Czechoslovakia signed contracts to a value of Kcs 20.5 milliard (\$3.5 milliard), of which Kcs 17.8 milliard worth (\$3 milliard) were placed by the socialist countries. The BRNO fairs, originally restricted to industrial goods, now cover other sectors, notably consumer goods.

Overall results

The balance of trade has traditionally been favourable to Czechoslovakia but in fact results look better than they actually are. A clear distinction must be made in this connection between the three areas in which Czechoslovak trade operates since there is practically no offset between them. Adverse balances in the different areas (socialist countries, advanced capitalist countries and developing countries) are offset by credits and can only be liquidated in the areas in which they have arisen. Only a small percentage of the trading deficit of the developing countries with Czechoslovakia is settled up in hard currencies. Most of the remainder is funded in bilateral agreements.

A balance sheet in which all the items are expressed in one and the same currency and in which the addition of all these items shows a surplus is therefore a rather artificial one, even if inevitable for statistical reasons. The surplus from the socialist area is not convertible into hard currencies and cannot therefore be used to offset the deficit in trading with the advanced capitalist area which means that Czechoslovakia must resort to credit.

On the other hand, if results are gauged not in monetary terms but in real terms (exchange of goods) and on the assumption that the exchange rates used to convert the currencies used in transactions with the different zones into Valuta Crowns genuinely mirror the price ratios, then it would seem, from the trade accounts, that the value of Czechoslovak goods exported is greater than of goods imported.

30. The trade balance

(1) in millions of Valuta Crowns

(2) in millions of US \$

	1960		1968		1969		1970		1971		1972	
	1	2	1	2	1	2	1	2	1	2	1	2
Total	+820	+140	-517	- 88	+182	+ 31	+700	+120	+1,125	+208	+1,676	+285
With socialist countries	+725	+123	-635	-109	-578	- 98	+826	+141	+1,039	+176	+1,568	+265
With capitalist countries	-161	- 27	-555	- 94	-123	- 21	-959	-162	-1,052	-179	- 809	-138
With the developing countries	+256	+ 43	+673	+114	+883	+150	+833	+142	+1,238	+210	+ 917	+156
Trade balance with the non-socialist countries	+ 95	+ 16	+118	+ 20	+760	+130	-126	- 20	+ 186	+ 31	+ 108	+ 18

In 1968 there was a small deficit, following the political upheavals. In 1969, deliveries from socialist countries were greater than Czechoslovak exports to the COMECON. This situation probably arose for two reasons, the first being the desire to satisfy the material needs of the population after a difficult year and the other to mop up sizeable earlier surpluses in unconvertible currencies.

The positive balance of overall trade can be traced therefore exclusively to a large surplus in transactions with the developing countries. In 1970, the balance with the socialist countries was in surplus once again but in deficit with the non-socialist countries as a whole(1) particularly because of a big jump in the deficit with the capitalist countries following imports of machinery and equipment. In 1971, the total surplus reached record levels by comparison with previous years (and this record was beaten in 1972). The underlying causes are primarily a substantial surplus on trade with the socialist countries and a positive balance in transactions with the development countries(1).

(1) It is obviously inappropriate to lump together the capitalist countries and the developing countries and it is done so here for statistical purposes only

In 1972, an extremely satisfactory year in general, the above tendency was maintained, namely a heavy surplus with the socialist bloc, offset by a less satisfactory balance with the other countries. The deficit with the capitalist countries which had been rising steadily since 1969 is now shrinking but the profitability of trade with the developing countries has fallen by 25%.

31. Balance of trade in convertible currencies

The balance of trade with the capitalist countries which produce technologically advanced equipment is permanently in deficit.

As far as invisible earnings are concerned, the Czechoslovak tourist industry is probably in surplus in terms of Western currencies. It is difficult to gauge the situation with any degree of accuracy: in 1972 900,000 Western tourists visited Czechoslovakia. Assuming that every tourist spent about \$200 during his stay, earnings can be estimated at approximately \$180 million. During the same period, 140,000 Czechoslovaks visited the West which, using the same yardstick, would indicate a currency outflow of \$48 million. On this basis, the surplus on tourism would have been about \$132 million. The overall balance of invisible trade is probably lower however in view of outgoings for the repayment of credits, the servicing of interest and the payment of services in hard currencies. No official figures are available in this area.

All in all, Czechoslovakia could well have incurred a currency deficit of about \$50 million on current account over the period 1965-1969. It would have had no difficulty however in making good this deficit from credits obtained through the Western banking system (capitalist banks, Soviet banks in Western financial centres and the Czechoslovak Zivnostenska Banka in London).

A new form of settlement has been used in the COMECON since 1973. Under this system, the Peoples' Democracies ask the Soviet Union to pay for part of its imports from them in convertible currencies (on a proportional basis or by some other method) when these deliveries include goods purchased by them in the West for convertible currencies. In Czechoslovakia, this system is being applied to chemicals (to part of the deliveries in excess of the yearly protocol) and constitutes an additional source of currency.

Czechoslovakia has been less willing than other Eastern countries to raise medium and long-term loans in the capitalist countries to finance purchases, particularly capital equipment, in the industrialized West. At the end

of 1969, credits granted amounted to \$261.3 million, i.e. almost two and a half times as high as the 1964 figure; whereas Rumania over the same period had agreed to increase its borrowings sevenfold and Bulgaria, the least Westward looking of the COMECON countries, threefold.

Czechoslovakia's refusal to increase its indebtedness beyond a certain point, may, if pursued, lead to the under-equipment and ageing of the means of production which could be harmful in the long-term to the competitiveness of the Czechoslovak economy and of its exports.

32. Trade with the socialist countries (see Annexes 41 and 42)

Trade under this heading is mainly with the COMECON(1); transactions with the other socialist countries which are not full members of that organization are, with the exception of Yugoslavia, negligible.

Within the COMECON, the largest volume of trade is with the USSR.

General structure

The COMECON accounts for about 70% of Czechoslovakia's foreign trade. 75% of Czechoslovakia's exports of machinery and equipment go to it and 68% of its imports of machinery and equipment come from it. 66% of Czechoslovakia's exports of consumer goods, including 79% of leather shoe exports and 80% of furniture exports, go to the COMECON which in turn supplies 75% of its raw materials and foodstuffs (79% of its oil, 93% of its iron ore).

In the framework of the "international socialist division of labour" and co-operative production, Czechoslovakia is party to several thousand bilateral or multilateral agreements covering the whole range of industry. In this context there has been a significant increase in co-operation with the GDR.

Deliveries within the framework of co-operation in production and specialization are accounting for a growing proportion of Czechoslovak foreign trade and are playing an increasingly decisive rôle in its structure. Czechoslovakia, like the GDR, appears as the "COMECON workshop", but other member countries have also developed certain sectors of the technologically advanced industries. The co-operation and specialization agreements therefore fall into two main groups:

(1) Council for Mutual Economic Assistance

AC/127-D/479

-53-

- (1) With the GDR, to a very large extent and with other members of COMECON, in the areas in which they have specialized, the agreements cover the exchange of machinery and equipment; the main advantage of these agreements is the reduction in the number of types of equipment manufactured in Czechoslovakia and the extension of the production runs. Up till 1970, the country was producing almost 75% of the items on the international list of engineering items (as compared with 25% for France).
- (2) The second group of agreements provides for the delivery on credit by Czechoslovakia of machinery, equipment and knowhow for the prospective exploitation and initial processing of natural resources in other COMECON countries, repayment to take the form of delivery to Czechoslovakia of the goods produced (oil, gas, metals and raw materials, electricity and so on).

33. The arms trade with the COMECON (see Annex 43)

Czechoslovakia is a supplier of arms to the COMECON but it also imports large quantities of the types which it does not itself produce. A high degree of specialization has been achieved in this area.

Between 1961 and 1971 its exports to the COMECON totalled \$798,000,000 (USSR, \$760,000,000, Poland \$380,000). During the same period it imported armaments to the value of \$1,029,000,000 (USSR 97,000,000; Poland 55,000,000).

Overall, taking into account its trade with the developing countries, Czechoslovakia exports more armaments than it imports and this is in keeping with its engineering tradition. In 1971 armament exports accounted for 2.4% of its total exports.

34. Trade with particular socialist countries

Trade with the USSR (See Annex 44)

The USSR has been Czechoslovakia's main trading partner since 1952, and about 30% of its total foreign transactions are with the Soviet Union.

Czechoslovakia ranks third in the list of trading partners of the USSR, coming after the GDR and Poland, and accounting for about 10% of the total.

The pattern of trade clearly reflects the part played by Czechoslovakia as the "Soviet workshop". Thus 65% of imports from the USSR comprise raw materials and fuels and about 65% of Czech exports to the USSR are in the form of machinery and equipment.

In terms of total articles exported, the Soviet Union takes one-fifth of Czechoslovak machine tools, 40% of its excavators, half of its motor cycles, two-thirds of its shoes and ready-to-wear clothing, a third of its porcelain and ceramics, and a number of large Czechoslovak enterprises work mainly for the Soviet market (CKD: 35%; Skoda, Pilsen: 55%; Komarno shipyards: 85%).

Conversely, the Soviet Union supplies Czechoslovakia with the following percentages of its total imports:

Machinery 25%, oil 90%, iron ore 90%, timber for planks 90%, grains 80%, cotton 66%, sulphur and phosphates 50%, non-ferrous metals 50%.

The pattern of trade is changing however: Czechoslovakia is benefitting increasingly from Soviet industrial and technological progress. Thus, 20% of imports from the USSR now comprise machinery and equipment. Czechoslovakia has also expanded its consumer goods industries and has increased its exports in this field (20% of exports to the USSR).

(a) The Five-Year Plan 1971-1975

Trade between Czechoslovakia and the Soviet Union is governed by the agreements entered into on the basis of the Five-Year Plan 1971-1975. The Plan provides for a shift of trade towards the East and in particular towards the USSR, and this change of emphasis is matched by a tendency towards greater specialization.

It is anticipated that the total value of this trade will be 13.5 milliard roubles (\$19 milliard), an increase of 43% over the five-year period 1966-1970 and, what is more, an increase which is proportionally greater than the increase in Czechoslovak trade with the COMECON as a whole.

Czechoslovak exports to the USSR are expected to total 6.9 milliard roubles (\$9.7 milliard); it is thus anticipated that there will be a surplus of 300,000 roubles (\$400,000,000) in favour of Czechoslovakia.

AC/127-D/479

-55-

Main trade items (Five-Year Plan) from the USSR:

- two 840 MW atomic power stations;
- 65,000,000 tons of crude oil;
- 12 milliard cu.m of natural gas;
- 5 milliard KW hours of electricity;
- 15,000,000 tons of coal.

(This last figure is relatively small and relates to quantities of coal not available in Czechoslovakia. Apart from coal, which it produces in large quantities, Czechoslovakia depends almost entirely on the USSR for its energy supplies.)

- 4.35 million tons of pig-iron;
- 106,000 tons of chromium, 242,000 tons of manganese, 500,000 tons of aluminium, 196,000 tons of copper, 125,000 tons of lead;
- 31,000,000 tons of iron ore;
- approximately 5,000,000 tons of grains;
- 310,000 tons of cotton;

and, among finished goods:

- four factories for the production of prefabricated panels for building;
- machinery for producing paper and cellulose;
- 215,000 automobiles (20,000 Volgas, 70,000 Moskovitches, 125,000 Jigoulis);
- 2,500 combine harvesters, 6,800 machine tools, 1,586 excavators, 1,866 bulldozers, 97,000 mainline electric and diesel locomotives (2,000 and 3,000 HP), 6,353 heavy tractors, 17 transport aircraft (including 1 TU 144, and several TU 134A, Yak 40 and TU 154) diesel engines of over 2,000 HP;
- computers;
- television sets, transistors, cameras, watches, electrical appliances.

Exports to the USSR

- 2,750 tramcars;
- 5,600 trucks (Tatra, 12 tons and over);
- 1,900 trolley buses;
- 250 electric locomotives and 1,125 diesel locomotives for shunting as well as 1,350 HP diesel engines;
- several dozen rivercraft (up to 5,000 tons) and other floating equipment (dredgers, for example);
- 4,500 machine tools;
- computers;
- foundry and pressing (rolling) plant;
- plant for the chemical industry;
- plant for the food industry (in particular 38 breweries);
- electro-technical and telecommunications equipment;
- consumer goods: 300,000 motor cycles, underclothing, shoes, furniture, glass, porcelain, crystal, foodstuffs (including 20,000 HL of beer).

(b) Czechoslovak-Soviet trade in 1972

The protocol for 1972 was fully implemented: 2.5 milliard roubles (\$3.5 milliard), an increase of 12% over 1971 (see Annex 44).

Imports of primary products

- 1,000,000 KW/h of electricity;
- 1.9 milliard cu.m of natural gas;
- 9,000,000 tons of iron ore;
- 3,000,000 tons of coal;
- 12 million tons of crude oil;
- 1.3 million tons of grains;

representing 75% of the total value of imports.

(c) The protocol for 1973

The protocol provides for trade to the value of 2.7 milliard roubles (\$3.8 milliard), or an increase of 8% over 1972. Composition by product is in line with the Five-Year Plan with relative increases in machinery, equipment and consumer goods. During the first half of 1973, the planning goals were about 50% completed.

N A T O R E S T R I C T E D

AC/127-D/479

-57-

(d) Trade within the framework of the co-operative programmes

The main feature of trade within the framework of the co-operative programmes is the supply of equipment to the USSR. The contracts provide for the supply of plant to be paid for in kind once the facilities have come on-stream. The exact terms of the agreement are not known and it is consequently difficult to say whether they are in the genuine interest of both parties.

The programmes provide for:

- the creation in the USSR of additional capacity in the mining industry and in the non-ferrous metallurgy industry (complete plant and machines from Czechoslovakia in exchange for aluminium, copper, lead, zinc and iron ore);
- oil and gas: Czechoslovak assistance and equipment (gas and oil pipelines) in exchange for deliveries in kind;
- Czechoslovak contribution to Soviet automobile production (Togliati);
- in 1973 this was in the form of two lines for the production of polished chromium plate in exchange for part of future output;
- Czechoslovak contribution to the Ust-Ilimsk cellulose complex;
- Czechoslovak contribution to the construction of the Kiembraev asbestos combine (delivery of 105 ton waggons).

The USSR for its part contributes to the equipment of Czechoslovakia in the form of:

- nuclear energy: commissioning of three nuclear power stations during the period of the Five-Year Plan;
- Soviet technological assistance and supply of equipment (carriages) for the Prague underground;
- agriculture: Soviet deliveries of seed grain and assistance with the development of Slovak agriculture.

N A T O R E S T R I C T E D

(e) Trade with the other socialist countries

The GDR is Czechoslovakia's second largest foreign trading partner (12% of the total). Trade between these two industrialized countries is in the form of a two-way flow of machinery and equipment (70%) and manufactured consumer articles (20%).

Co-operation between the GDR and Czechoslovakia is close particularly in the fields of engineering, chemistry and textiles. Trade in 1972 totalled 1.27 milliard dollars which is 6.3% up on the 1971 figure (an increase of over 10% is planned for 1973).

Poland ranks third among Czechoslovakia's trading partners (with 8.5%) and exchanges between the two countries are expanding rapidly (21% in 1972): a 23% increase is planned for 1973 and a 60% increase for the five-year period 1971-1975. Czechoslovak imports of primary products from Poland (coal, copper, sulphur) are tending to fall.

Hungary accounts for 5.5% of its trade, is Czechoslovakia's fourth largest trading partner, and is approximately on the same level as the German Federal Republic.

Rumania (4.4% of foreign trade)

Bulgaria (3.9%) and Cuba (1%) are less important. Trade with Rumania which increased by 10% in 1972 and about 17% in 1973, and with Bulgaria (which went up by 14% in 1972) is developing strongly while trade with Cuba has been dwindling for a number of years (1972: -14%).

Trade with Yugoslavia accounts for about 4% of total trade, and Yugoslavia ranks seventh among Czechoslovakia's trading partners.

35. Trade with the advanced capitalist countries (See Annex 41)

For over ten years now trade with the advanced capitalist countries has accounted for about 20% of total foreign transactions. After 1948 (45%) there was a systematic reduction and the present level dates from about 1960.

General structure (See Annex 42)

Machinery and equipment only account for 17% of Czechoslovak exports to the advanced capitalist countries (as compared with 49.5% of total Czechoslovak exports). Fuels, raw materials and semi-finished goods account for 48% (as compared with 27.6% of the total), foodstuffs 13% (as compared with 4.3% of the total).

AC/127-D/479

-59-

Imports consist of fuels, raw materials, semi-finished goods and chemicals (38%), machinery and mechanical equipment (38%), foodstuffs (16%) and manufactured consumer goods (8%).

Trade with the EEC countries

The nine EEC countries account for 61% of Czechoslovak trade with the capitalist countries and for 13% of its total foreign trade valued in 1972 at \$1.4 milliard.

The German Federal Republic, the main capitalist trading partner, and fifth partner overall, accounts for 27% of Czechoslovak trade with the capitalist countries for over 41% of its trade with the EEC and for 6% of its total foreign trade. In 1972 imports and exports were approximately equal (imports: \$292 milliard, exports to the Federal Republic: \$286 milliard).

The United Kingdom ranks third among the capitalist trading partners (after Austria) and tenth overall. Trade in 1972 totalled \$230 million.

Italy is the fourth largest capitalist trading partner and the eleventh overall (\$197 million in 1972).

Trade with other advanced capitalist countries

Austria is Czechoslovakia's second most important capitalist trading partner and it ranks ninth overall. In 1972 the trade flows were about equal (imports from Austria \$125 million: exports to Austria \$122 million).

Trade with the USA is rising fast (\$100 million in 1972 which was 61% greater than in 1971).

Japan is still not very important as a trading partner (\$54.4 million in 1972) but expects to improve its position in the future.

36. Trade with the developing countries

Trade with the developing countries accounts for 8% of Czechoslovakia's overall foreign trade (within the context of COMECON trade with those countries, Czechoslovakia ranks second (10.8%) after the Soviet Union (58.8%)).

Czechoslovakia's main trading partners in this category are Egypt (which ranked 12th in 1972, with \$164 million), India, Iran and Iraq.

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Imports consist mainly of raw materials (Egyptian cotton, Indian ore, etc.), exports of machinery and equipment (generators, machinery for public works etc.).

Oil imports from these countries are small (less than 10% of total Czechoslovak oil imports) but Czechoslovakia, prompted by the Soviet Union, is negotiating for more oil from the Middle East.

36. Outlook for Czechoslovakia's foreign trade

The Five-Year Plan 1971-1975 provides for an increase in trade with the socialist zone (plus 43%) which will be greater proportionately than the total increase in foreign trade (plus 40%). This means that by 1975 trade with the socialist bloc should account for 73.6% of the total as compared with 71.3% in 1972. The share of the advanced capitalist countries in Czechoslovak trade is therefore expected to dwindle despite the increase in absolute terms (plus 25%).

It should be borne in mind, however, that in the past plans of this kind have not been strictly carried out.

The socialist zone provides Czechoslovakia with a steady flow of primary goods and with reliable outlets. It would seem that Czechoslovakia accepts the political dependency which inclusion in this zone implies and it would be as well not to over-estimate the wish to escape from the situation. The accumulation of trade surpluses (about 4,000 million roubles at the end of 1972) should, in any case, lead to a rise in imports rather than a fall in exports, hence overall trade should increase.

The development of trade with the advanced capitalist countries is hampered by the adverse trade balance, and Czechoslovakia is reluctant to borrow. Czechoslovak exports to the industrialized countries are restricted by the fact that the goods on offer are not very competitive. As regards imports, however, the modernization of industry implies a greater inflow of Western and Japanese technology.

In short, trade with the industrialized capitalist countries should remain around the 20% mark with perhaps a slight downward tendency.

CONCLUSIONS

For Czechoslovakia both economic self-sufficiency and political independence are unattainable. The problem is not exactly new. Indeed it has cropped up repeatedly in the history of Czechoslovakia or indeed since a Czech entity existed. Czechoslovakia is in fact one of these countries where economic and political issues most overlap.

AC/127-D/479

-61-

A purely national solution to the Czechoslovak economic problem is impossible. Since the Middle Ages the Czech monarchs had to rely on German colonists to get the economy going. The Dual Monarchy opened its markets to the Czech economy which otherwise would have remained at the handicraft stage, the Little Entente offered an alternative when the Habsburg market disappeared, with capital from Schneider-Le Creusot replacing that of Vienna.

The COMECON is the most recent of international systems into which the Czechoslovak economy has had to fit itself from time to time.

Political choices where they exist are in line with economic options and it may be difficult sometimes to decide which is the main motive force. At the moment it does seem however that the political factor is the more important.

In 1948 the Czechoslovak leaders tried to retain for their country the rôle of bridge between the East and the West. To cover up the divergence between this attitude and a policy which would mean complete subjection to Moscow, Prague spoke of national characteristics within the socialist market. However, as a result of the condemnation of the Yugoslav heresy and the Slansky trials a full realignment was established.

The Prague Spring which to start with involved a new economic trend ended up with political normalization and a retreat to economic orthodoxy.

The outlook at present is none too bright because of the many difficulties and internal contradictions.

There is a shortage of manpower, and productivity is low.

Foreign trade has to be kept within the COMECON pattern whereas to raise the standard of living and to maintain the rate of growth, which in fact is quite moderate, greater recourse to Western technology is indicated. Hence the Czechoslovak leaders remain prudent in the choice of medium and long-term objectives.

In the framework of COMECON specialization, Czechoslovakia is a key element.

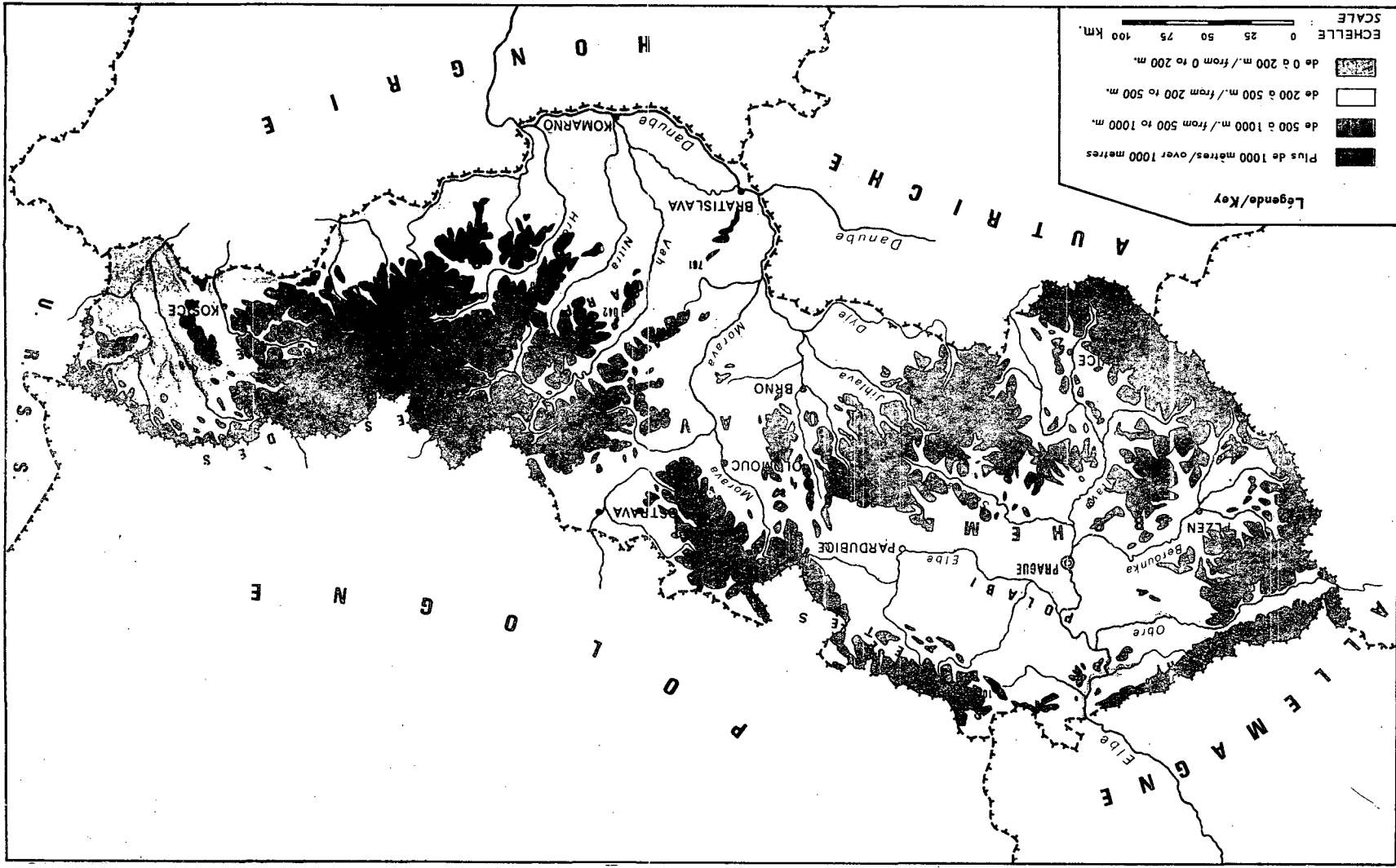
If however the country were to play its rôle more efficaciously it would be necessary to diminish its reliance on the USSR.

The far-reaching mutual dependence between Czechoslovakia and the COMECON economies, each one's development affecting that of the others, keeps freedom of manoeuvre to a minimum.

TCHECOSLOVAQUIE / CZECHOSLOVAKIA

Carte physique / Relief map

ANNEXE 1

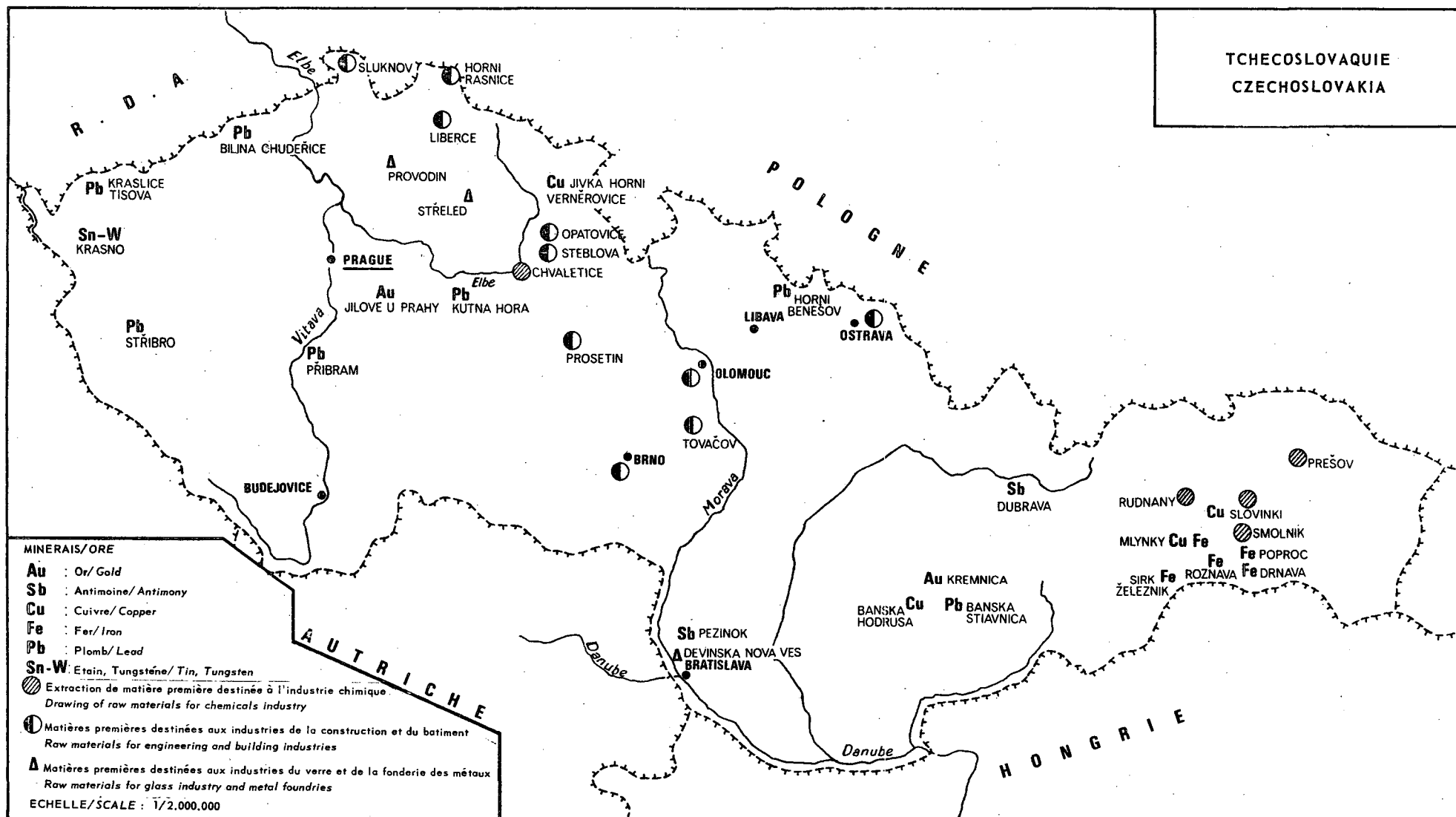


Legende/Key

SCALE :
ECHELLE : 0 25 50 75 100 km.

CARTE DES MINERAIS ET MINERAUX / MAP OF MINERALS AND ORES

ANNEXE 2

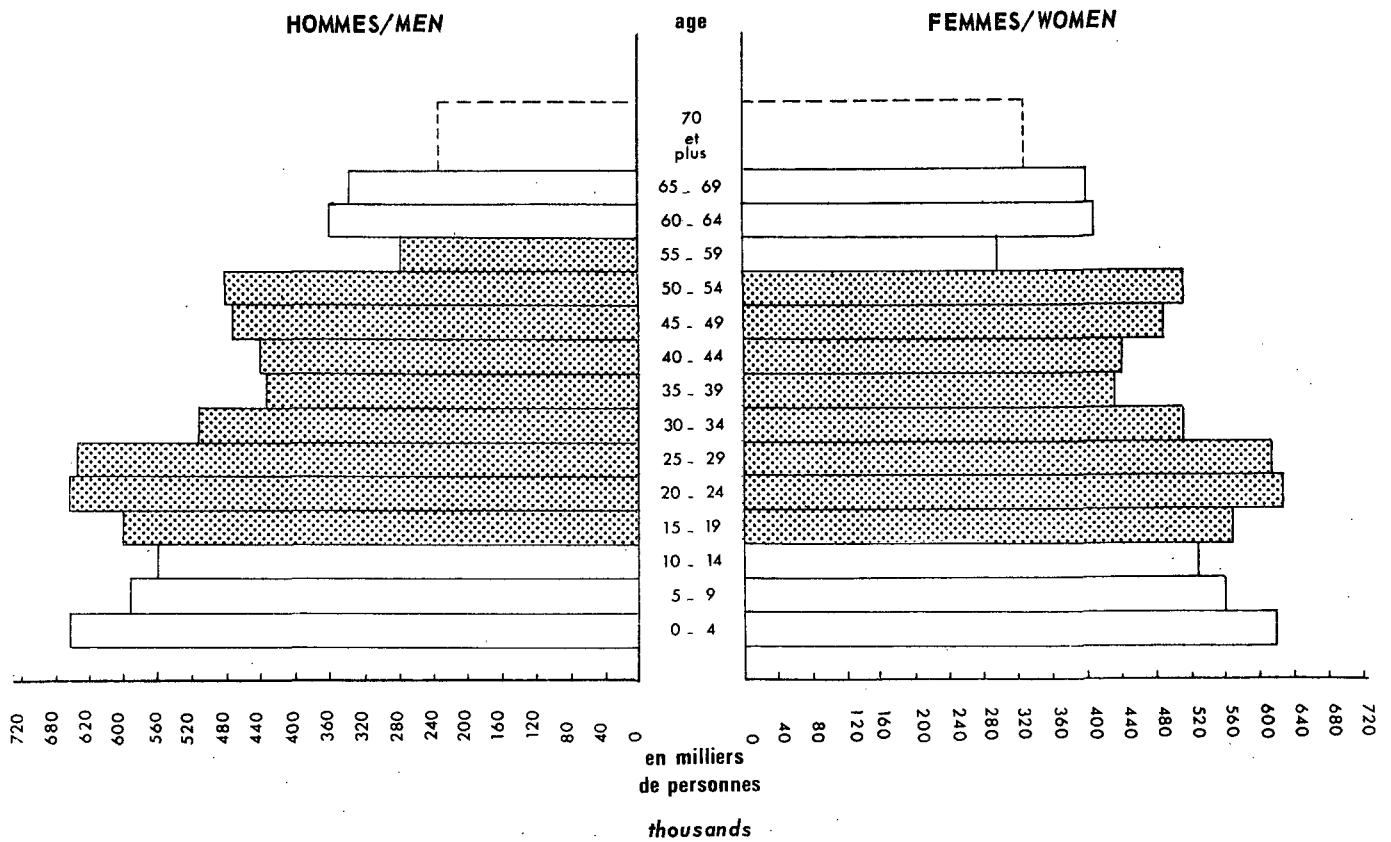


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TCHÉCOSLOVAQUIE / CZECHOSLOVAKIA

PYRAMIDE DES AGES DE LA POPULATION / POPULATION AGE PYRAMID

(Prévisions pour 1976 / Forecasts for 1976)



 Population en âge de travailler / Population of working age

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CZECHOSLOVAKIA

STATISTICAL TABLES
GROWTH IN POPULATION

YEAR	POPULATION (in thousands)	BIRTH RATE per thousand	DEATH RATE per thousand	INCREASE per thousand
1950	12,389	23.3%	11.5%	11.8%
1955	13,093	20.3%	9.6%	10.7%
1960	13,654	15.9%	9.2%	6.7%
1965	14,159	16.4%	10.0%	6.4%
1970	14,444	15.9%	11.6%	4.3%
1972	14,526	17.3%	11.1%	6.3%
<u>Forecasts</u>				
1975	14,780	16.3%	11.6%	4.7%
1980	15,100	15.6%	12.0%	3.6%
1985	15,340	14.5%	12.1%	2.4%
1990	15,520	14.0%	11.7%	2.3%

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CZECHOSLOVAKIA

STATISTICAL TABLES

Labour Resources and Use of Labour Force
(in thousands)

	<u>1965</u>	<u>1971</u>	<u>1972</u>
A. Total labour force (I + II)	8,356	8,610	8,677
I. Population of working age	7,725	7,989	8,071
II. Older workers	631	621	606
.....			
B. Use of labour force I + II + III	8,356	8,610	8,677
I. Workers in the national economy	6,477	7,115	7,179
1. Productive sectors	5,170	5,552	5,596
Industry	2,480	2,694	2,758
Building	521	624	639
Agriculture	1,262	1,167	1,097
Forestry	104	103	99
Transport	192	218	221
Telecommunications	43	52	52
Supply of technical equipment	49	57	58
Trade and catering	460	568	595
Purchase of agricultural produce	38	43	47
Other unlisted productive activities	21	26	30

ANNEX 5 to
AC/127-D/479

-2-

	<u>1965</u>	<u>1971</u>	<u>1972</u>
2. Non-productive sectors	1,307	1,563	1,583
Transport	140	157	154
Telecommunications	43	52	52
Science and research	148	166	167
Community services	135	169	151
Housing	60	77	81
Health and social welfare	215	284	295
Schools, culture, training	380	432	459
Administration and courts of law	112	134	138
Finance and insurance	34	36	36
Social organizations	23	33	24
Other unlisted non-productive activities	17	23	26
II. Students and pupils	832	823	818
1. College students	483	490	482
Higher education colleges	91	102	103
Technical schools	191	216	208
Common education	101	107	117
Basic education	100	65	54
2. Pupils	349	333	336
III. Other members of working age including those not working in the socialist economy.	1,047	672	680

(Source: STATISTICKA ROCENKA 1973: p.114)

CZECHOSLOVAKIA

STATISTICAL TABLES

List of the Ministries concerned with the Economy

Federal Government	Czech Government	Slovak Government
Defence		
Finance	Finance	Finance
Engineering		
Foreign trade		
Telecommunications		
Power		
Iron and steel industry and heavy engineering industry		
Labour and social welfare	Labour and social welfare	Labour and social welfare
Technical development and investment	Equipment and technology	Equipment and technology
Transport		
Agriculture	Agriculture Inland waterways and forestry	Agriculture Inland waterways and forestry
Federal planning commission	Czech planning commission	Slovak planning commission
Federal price office	Building industry Industry Domestic trade	Building industry Industry Domestic trade

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CZECHOSLOVAKIA

STATISTICAL TABLES

CSSR: Fifth Five-Year Plan - Main Data

		<u>1970</u>	<u>1975</u>
Industrial production (1948 = 100)		666	892-905
of which			
chemicals (%)		7.1	8.5
engineering (%)		28.9	31.1
<u>Output:</u>			
electricity	milliard Kwh	45.1	62-63
coal	million tons	28	28
lignite	" "	78	88
steel	" "	11.4	14
rolled metals	" "	7.9	7.9
tubes	" "	1.1	1.3-1.4
tractors	thousand units	18.4	35
cars	" "	142.8	not given
lorries	" "	24.4	not given
machine tools	" "	85	125
cement	million tons	7	8.5
synthetic fibres	" "	30	60
refined oil	" "	9.5	17-18
plastics	thousand tons	245	500
tyres	million units	2.5	4.2
paper and cardboard	thousand tons	825	1,200
cellulose	" "	not given	735
<u>Agricultural output</u>			
total output	milliard crowns	320.3	363.7
cereal output	million tons	34.9	41 - 42
slaughter animals	thousand tons	5,116	4,926
poultry	" "	385	634
milk	milliard litres	17	20.8
eggs	milliard units	8.5	10.1
investments	milliard crowns	43.2	52.2

ANNEX 7 to
AC/127-D/479

-2-

Annual production of the following items should be:

Rolling stock: 190 electric locomotives (149 in 1970)
 1,000 diesel locomotives (not given for 1970)
 100 railcars (not given for 1970)

Vehicles: 60,000 lorries (24,462 lorries in 1970)
 10,000 buses (2,602 in 1970)

430,000 more telephones will be installed (there were 2,003,000 in 1970 of which 1,899,000 were linked to the automatic system) + 21 new television relay stations.

Investment over the 5 years will total 520 milliard crowns.

Wages and incomes

		<u>1970</u>	<u>1975</u>
average monthly wage	crowns	1,938	2,380
wage fund	milliard crowns	148.2	178.2
retail trade	" "	163	210.3
car sales	units	79,904	120,000
building material	milliard crowns	4,689	7,033
meat per head of population	kg	72	78
homes per year	units	87,840	100,000
gross National Income (excluding services)	will increase by 400 milliard Kcs to 1,800 milliard Kcs		

Foreign trade:

	<u>1948</u>	<u>1970</u>	<u>1975</u>
total	100	522	710-720
socialist countries	100	921.2	1,317-1,336
capitalist countries	100	259.4	310-315
socialist countries' share in the total	39.7%	70%	73.6%

CZECHOSLOVAKIA

STATISTICAL TABLES

Basic 1970 data used in the preparation of the
5th Five-Year Plan

social product: 676.9 milliard crowns
national income: 281.0 " "

<u>Investment</u> million Kcs (1967 prices)	<u>CSSR</u>	<u>Slovakia</u>
Industry	33,565	10,453
building	3,233	979
agriculture and forestry	9,449	3,204
transport and communications	10,947	3,382
trade and catering	3,111	999
science, research and development	1,135	290
housing	15,835	5,016
health and social welfare	1,856	725

<u>Annual output</u>		<u>CSSR</u>	<u>Slovakia</u>
electricity	million Kw/h	45,163	10,155
coal	million tons	28,053	none
brown coal	" "	78,007	3,486
lignite	" "	3,776	1,634
coke	" "	10,262	none
iron-ore	" "	1,606	1,516
steel	" "	11,480	2,444
iron	" "	7,548	1,770
rolled metals (excluding tubes)	" "	7,934	1,556
sulphuric acid	" "	1,100	
nitrate fertilizers	" "	323,882	
phosphate fertilizers	" "	322,354	
electric locomotives	units	149	

ANNEX 8 to
AC/127-D/479

-2-

<u>Annual output</u>		<u>CSSR</u>	<u>Slovakia</u>
lorries	units	24,462	
cars	"	142,856	
tractors	"	18,465	
radios	"	356,219	
television sets	"	383,176	
cement	thousand tons	7,402	2,710
bricks (25 x 12 x 6.5 cm)	" "	2,222	
paper	" "	606	132,263
woven and unwoven textiles in cotton	thousand metres	499,563	33,245
woven and unwoven textiles in linen	" "	73,298	12,145
woven and unwoven textiles in wool	" "	48,661	10,446
silk material	" "	119,370	
leather footwear	thousand pairs	56,406	22,461
rubber footwear	" "	14,339	
other footwear	" "	46,433	
meat	tons	630,815	178,712
butter (milk)	"	86,948	20,674
pasteurised milk	thousand litres	1,017,525	304,844
bacon	tons	78,601	22,747
tinned meat	"	31,803	7,991
refined sugar	"	875,130	190,156
edible vegetable fats and oil	"	133,861	32,139
wheat, flour and semolina	"	1,219,457	429,088
<u>Gross agricultural output</u>	million crowns	67,143	21,549
crop produce	" "	30,441	10,009
animal produce	" "	36,702	11,532
Total surface area of:			
farming land	thousand hectares	7,092	
arable land	" "	4,998	
cattle	thousand head	4,288	1,330
cows	" "	1,881	578
pigs	" "	5,530	2,107
poultry	" "	37,187	13,196

		<u>CSSE</u>	<u>Slovakia</u>
Crop yield per hectare			
wheat	quintals	29.5	28.5
rye	"	20.7	17.3
barley	"	28.4	25.8
maize	"	40.9	41.1
sugarbeet	"	369.6	380.1
potatoes	"	142.1	85.0
livestock production	tons of meat on the hoof	1,233,941	
milk production	hectolitres	46,498	
egg production	thousands	3,733	
Delivery of agricultural machinery			
wheeled tractors	units	7,678	
tracked tractors	"	652	
wheat combine harvesters	"	1,500	
beetroot combine harvesters	"	639	
Bus routes		5,631	1,752
length	km	210,877	78,990
Domestic air routes	km	5,549	
International air routes	km	91,203	
Goods transport:			
by rail	thousand tons	236,876	
by road	" "	226,011	70,259
by river	" "	4,464	1,852
by air	" "	24	
Telephones	thousands	2,003	482.6
on automatic system	"	1,899	466.2
Number of population for each doctor		419	464
Number of hospital beds per 1,000 persons		13.4	10.1

(Sources: Federal Statistics Institute, Statisticka Rocenka 1973)

CZECHOSLOVAKIA

STATISTICAL TABLES

Geographic Pattern of Development

To achieve a better balance between the Czech and Slovak Republics, the 5th plan envisages different rates of sector growth in the two regions as follows:

	<u>CSC</u>	<u>SLOVAKIA</u>
Social Product(1)	25%	40%
Industrial Output	27%-29%	55%-57%
Engineering	40%	60%
Chemicals	50%	80%
Consumer goods	25%	50%
Agricultural Output	13%	15%

(Source: Guidelines for the 5th Five-Year-Plan approved by the XIVth Congress of the Czechoslovak Communist Party)

(1) In both cases as a result of labour productivity

CZECHOSLOVAKIA

STATISTICAL TABLES

Social Product and National Income
(millions of Crowns, at current prices)

	1966	1968	1969	1970	1971	1972	1973
Social product including balance of foreign credits	443,966	610,754	674,336	726,093	767,013	809,740	
Inputs	248,390	354,574	384,424	419,293	477,443	473,527	
National Income	195,576	257,797	293,717	312,345	327,915	345,952	
Annual growth rate of national income			6.8%		4.7%	5.7%	5.2% (1)

(Source: Federal Statistics Institute)

(1) Figures provided in a report by Mr. Strougal at the C.C. on 27th November, 1973.

N A T O R E S T R I C T E DANNEX 11 to
AC/127-D/479CZECHOSLOVAKIASTATISTICAL TABLESBudget Figures

Total Revenue and Expenditure in the State Budgets and the Budgets of the National Committees
(Kcs millions and %)

	1964	1968	1969	1970	1971	1972	1973
<u>I. REVENUE</u>							
From the economy	103,193 85.1%	127,473 82.8%	149,592 81.1%	171,494 83.3%	181,762 83.0%	184,190 82.4%	
Taxes, charges and contributions from the population	13,579 11.2%	20,138 13.1%	22,529 12.2%	23,736 11.5%	25,056 11.4%	26,519 11.9%	
Other revenue	4,471 3.7%	6,295 4.1%	11,418 6.2%	10,220 5.0%	12,203 5.6%	12,794 5.7%	
Monies received as a result of re-distribution between organizations from the Czech Rep. public	-	-	890 0.5%	410 0.2%	-	-	-
<u>REVENUE</u>	121,243 100%	153,906 100%	184,429 100%	205,860 100%	219,021 100%	223,503 100%	

N A T O R E S T R I C T E D

N A T O R E S T R I C T E D

CZECHOSLOVAKIA

ANNEX 11 to
AC/127-D/479

II.

EXPENDITURE	1964		1968		1969		1970		1971		1972		1973
National economy	59,546	50.0%	68,413	45.2%	78,122	44.2%	87,648	45.1%	101,755	47.8%	97,150	44.9%	
Cultural and social measures	46,665	39.2%	66,068	43.6%	80,403	45.4%	87,467	45.0%	90,565	42.6%	97,955	45.2%	
DEFENCE and SECURITY	10,217	8.6%	13,189	8.7%	14,268	8.1%	14,919	7.7%	15,943	7.5%	16,770	7.7%	16,700(1)
Admin-istration	2,645	2.2%	3,723	2.5%	4,149	2.3%	4,279	2.2%	3,996	1.9%	4,291	2.0%	
Arbitrations adjud-ications, procurement	-	-	-	-	-	-	-	-	373	0.2%	403	0.2%	
TOTAL EXPENDITURE	119,073	100%	151,393	100%	176,942	100%	194,313	100%	212,632	100%	216,569	100%	

Source: Federal Statistics Institute - STATISTICKA ROCENKA 1973

(1) Source: Military balance (1973) - Strategic Institute of London.
The figure is probably under-estimated by between 7% and 10%

N A T O R E S T R I C T E D

CZECHOSLOVAKIA

STATISTICAL TABLES

Investment by Sector

(Fixed and Working Capital)

(Kcs millions, prices as of 1.1.67)

	1967	1968	1969	1970	1971	1972
Industry	28,346	27,369	31,815	33,565	35,110	36,133
Building trade	2,355	2,841	3,045	3,233	3,292	3,873
Agriculture & Forestry	7,729	9,818	9,954	9,449	10,005	10,936
Forestry alone	476	738	678	636	722	757
Transport & Telecommunications	10,427	12,402	12,491	10,947	12,915	14,919
Trade & catering	1,828	2,561	2,830	3,111	2,923	2,923
Science & research development	936	1,166	1,417	1,135	1,133	1,244
Housing & maintenance	9,527	10,432	12,161	15,835	16,556	17,981
Public health & social welfare	1,196	1,369	1,545	1,856	1,858	1,860
Teaching, culture	3,015	2,965	3,241	3,534	4,064	4,823
Mass education & physical culture	3,015	2,965	3,241	3,534		
Investment growth 1948 = 100	578	625	685	725	766	833
for building	486	522	564	581	630	700
(machinery & equipment)	856	935	1,054	1,133	1,179	1,237

(Source: Federal Statistics Institute
STATISTICKA ROCENKA 1973)

CZECHOSLOVAKIA

STATISTICAL TABLES

Investment by sphere of activity

(Kcs millions)

<u>Year</u>	<u>Productive Sphere</u>	<u>Non-productive Sphere</u>
1948	8,295	3,902
1950	13,627	5,559
1960	41,338	15,288
1970	61,845	26,630
1971	65,786	27,698
1972	70,445	31,196

(Source: Federal Statistics Institute
STATISTICKA ROCENKA 1973)

CZECHOSLOVAKIA

STATISTICAL TABLES

SECTOR CONTRIBUTION TO NATIONAL INCOME

(expressed as a percentage, on the basis of current prices)

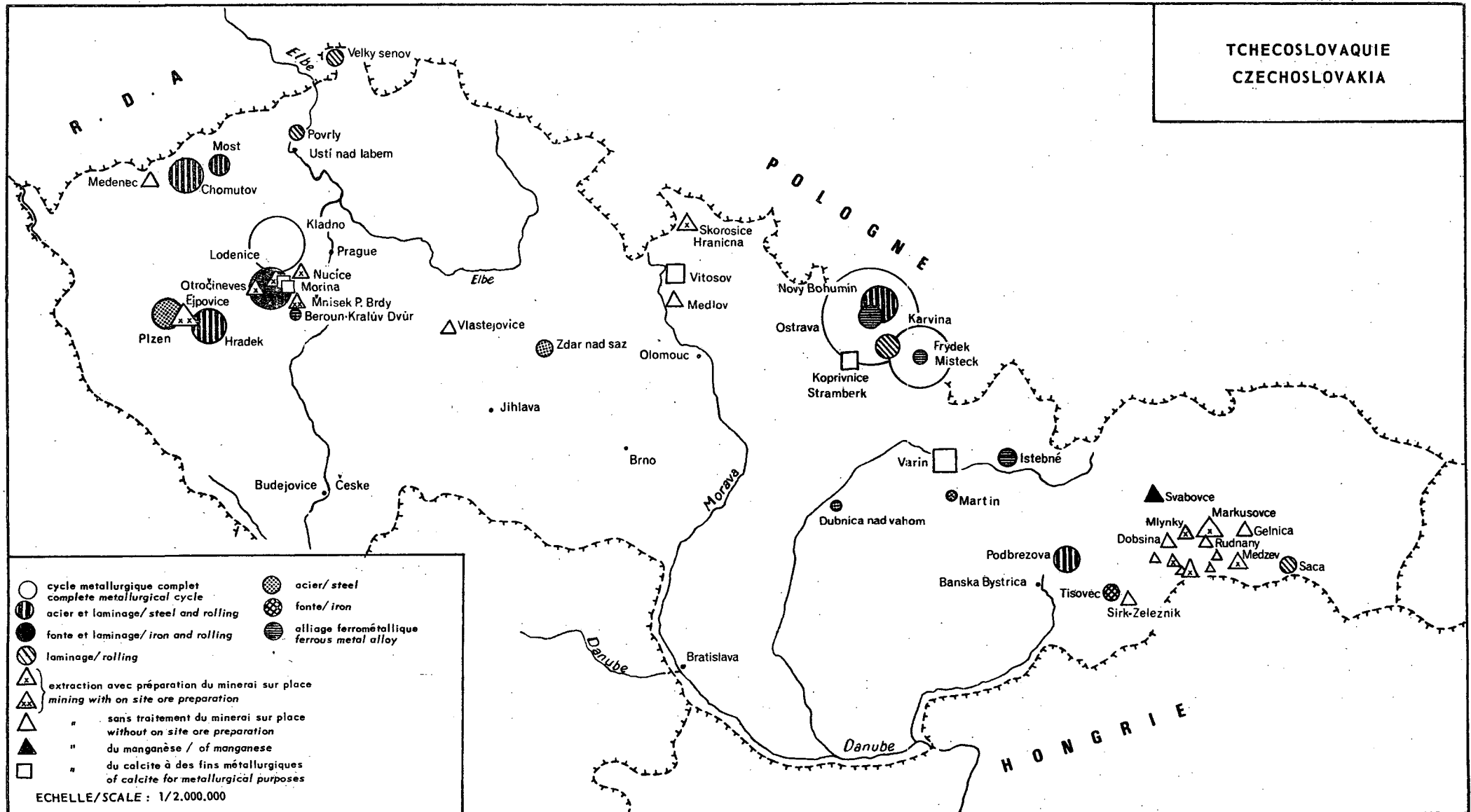
Sectors	1960	1969	1970	1971	1972
National Income	100	100	100	100	100
Contribution by:					
industry	62.3	59.1	61.0	61.0	60.3
building	10.6	11.2	11.2	11.6	12.1
agriculture	14.6	11.3	10.1	10.3	10.0
forestry	1.2	1.1	1.2	1.2	1.1
Goods transport	3.2	3.8	3.7	3.9	3.9
productive					
telecommunications	0.5	0.4	0.5	0.5	0.5
equipment	0.3	1.3	1.6	1.3	1.3
trade & catering	6.0	10.2	9.1	9.3	9.9
purchases	0.6	0.6	0.6	0	0
other sectors of material production	0.7	1.0	1.0	0.9	0.9

N A T O R E S T R I C T E DANNEX 15 to
AC/127-D/479CZECHOSLOVAKIASTATISTICAL TABLESProduction and Import of Iron Ore (1,000 tons)

YEAR	1960	1962	1965	1966	1967	1968	1969	1970	1971	1972
PRODUCTION	3,120	3,477	2,572	2,237	1,914	1,573	1,568	1,606	1,609	1,581
<u>IMPORTS</u>	7,211	8,319	9,553	9,336	10,366	11,147	10,716	12,724	12,592	13,152
from:										
USSR	5,019	5,947	7,965	7,662	8,670	9,502	9,100	10,838	10,968	11,393
INDIA	710	783	733	776	942	986	810	708	651	785
BRAZIL	491	576	356	355	328	228		168	198	279
SWEDEN	162	233	152	206	187	241	372	481	402	368
CHINA	187	-	-	-	-	-	-	-	-	-
MOROCCO	69	159	121	152	146	99	151	183	141	178

N A T O R E S T R I C T E D

METALLURGIE DES METAUX FERREUX / FERROUS METALLURGY



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CZECHOSLOVAKIA

STATISTICAL TABLES
IRON AND STEEL PRODUCTION

(1,000 tons)

(thousand tons)

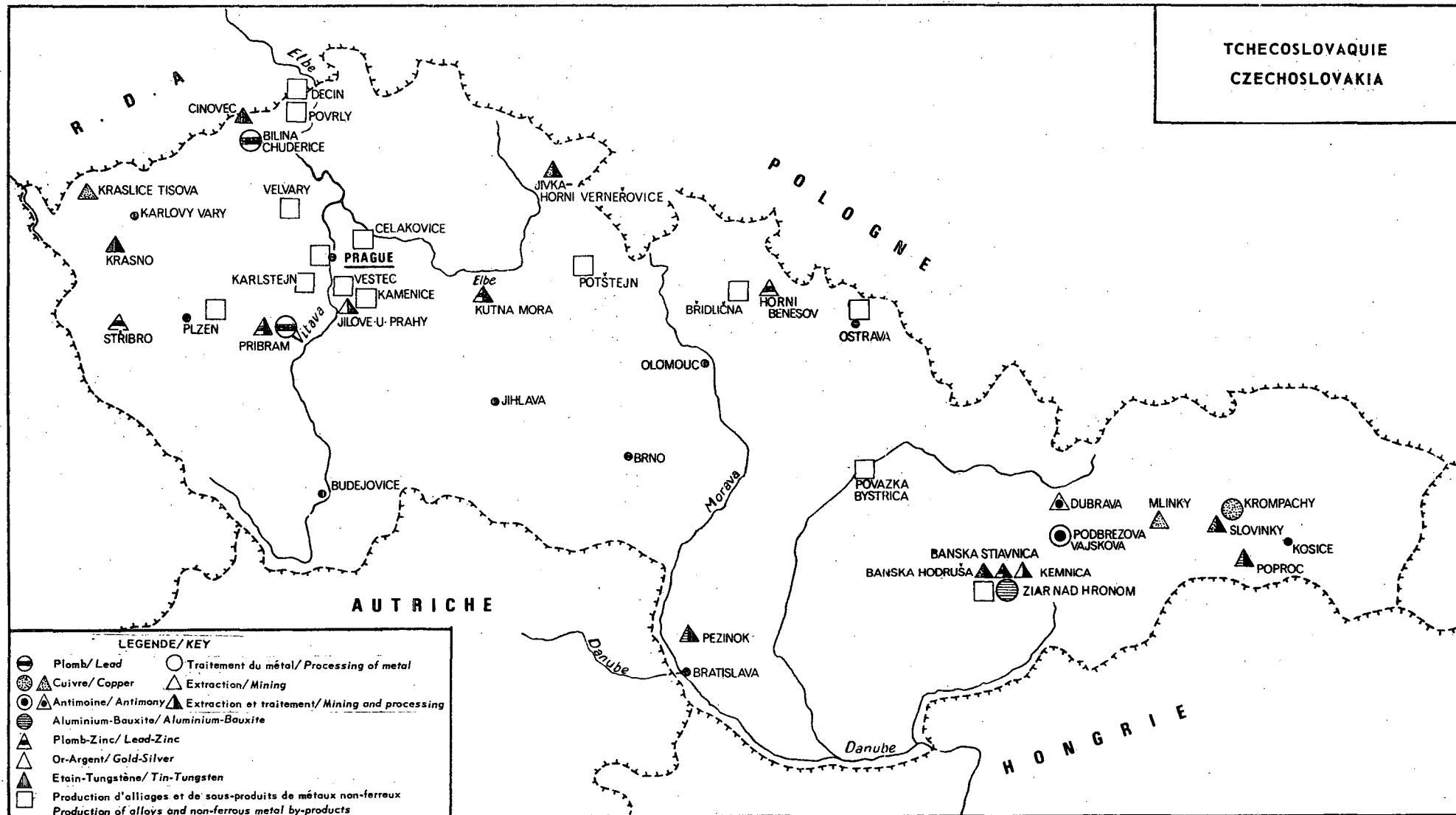
	1948	1960	1965	1966	1967	1968	1969	1970	1971	1972
Iron	1,645	4,696	5,869	6,269	6,822	6,920	7,010	7,548	7,961	8,360 + 5%
Crude steel(1)	2,621	6,768	8,598	9,128	10,002	10,555	10,802	11,480	12,064	12,727 +5.3%
Rolled metals - total	1,776	4,481	6,094	6,518	7,115	7,511	7,479	7,933	8,317	8,711
fine steels only			714			857		945	1,023	(+4.7%)
Sheet metals			1,153	1,427	1,800	2,013	2,170	2,273	2,445	N.D.
Tubes: total		629	896	976	1,012	1,047	1,086	1,133	1,208	1,300
welded only						316		346	362	422
unwelded only						757		787	846	878

(1) Most of the steel is produced in MARTIN furnaces. Production in 1970 was as follows:

MARTIN furnaces	9,149 thousand tons (69.7%)
oxygen furnaces	2,251 thousand tons (21.6%)
electric furnaces	1,434 thousand tons (6.9%)
Thomas furnaces	230 thousand tons (1.8%)
Total	12,064 thousand tons

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METALLURGIE DES METAUX NON FERREUX / NON-FERROUS METALLURGY



CZECHOSLOVAKIA

STATISTICAL TABLES

NON-FERROUS METALS

	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
<u>Aluminium</u> (thousand tons)				
National consumption	106	110	115	not given (approx. 150)
National production	34.7	30.8	37	42.7
Imports	71.3	79.2	83	not given
from USSR	57.9	70.6	75.9	88.6

	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>
<u>Antimony</u> (in tons)				
Recoverable metal content	700	700	600	600
Production of white metal	1,400	1,300	1,300	1,800

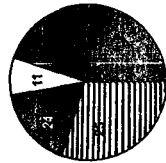
	<u>1970</u>	<u>1971</u>	<u>1972</u>
<u>Tin</u> (in tons)			
Mining production	166	169	not given
Metallurgical production	65	80	90
Consumption	3,480	3,450	not given

	<u>Average</u> <u>1935/38</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
<u>Lead</u> (in tons)						
Mining production	6,000	8,100	7,700	9,473	8,502	8,195
Metallurgical production	5,000	17,000	18,300	17,600	17,609	18,163
Consumption	23,000	47,000	44,000	50,000	50,000	50,000

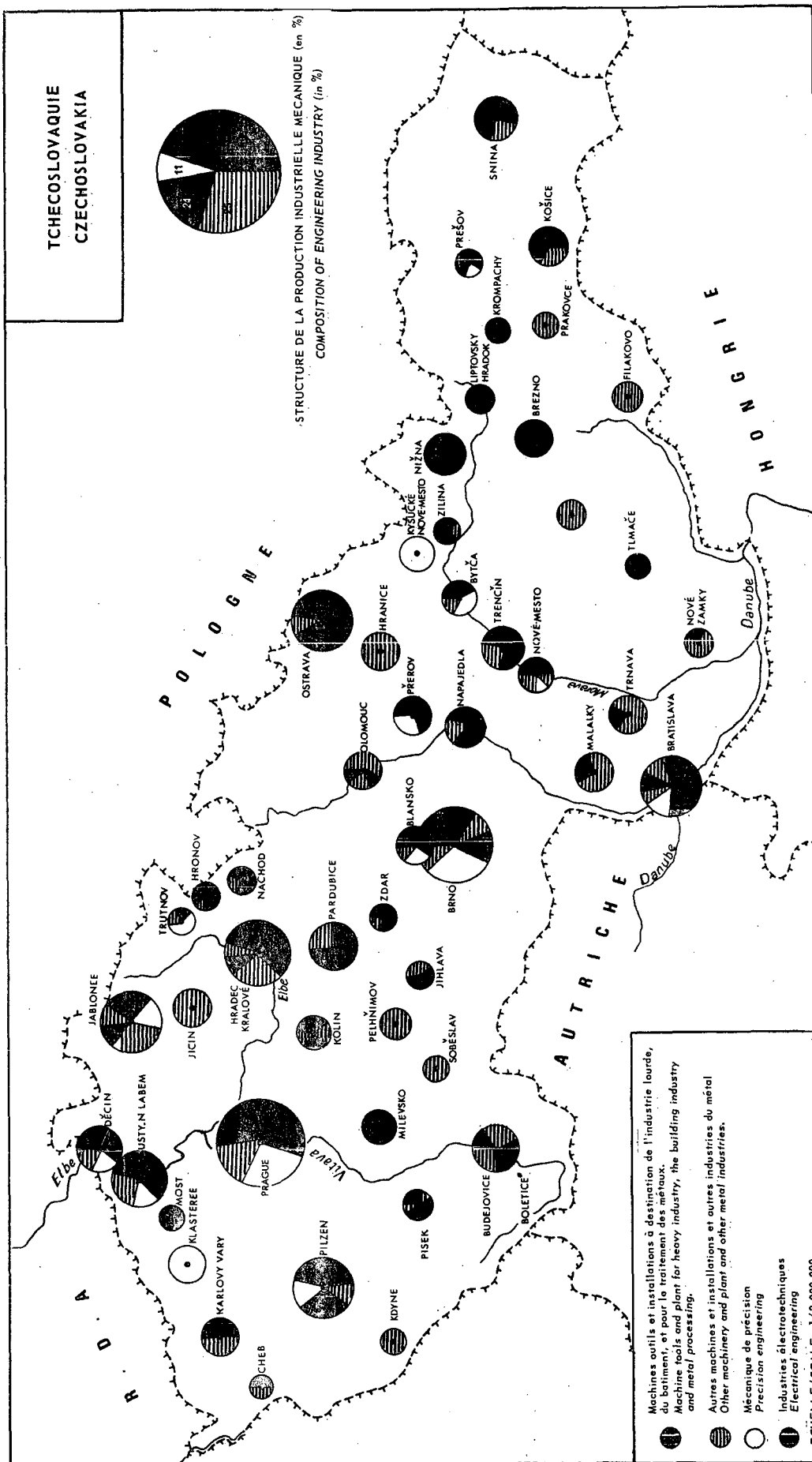
	<u>1970</u>	<u>1971</u>	<u>1972</u>
<u>Copper</u> (in tons)			
Ore	663,000	651,000	673,000
Concentrate	27,863	30,673	30,709
Metallurgical copper	16,723	17,196	18,068

INDUSTRIES MECANQUES / ENGINEERING INDUSTRIES

TCHECOSLOVAQUIE
CZECHOSLOVAKIA



STRUCTURE DE LA PRODUCTION INDUSTRIELLE MECANIQUE (en %)
COMPOSITION OF ENGINEERING INDUSTRY (in %)



CZECHOSLOVAKIA

STATISTICAL TABLES

OUTPUT OF THE HEAVY AND MEDIUM ENGINEERING INDUSTRY

(Source: Czechoslovak Statistical Year Book 1973)

	UNIT	1955	1960	1966	1970	1971	1972
Industrial steam boilers	units	272	145	185	235	200	292
	tons of steam per hour	5,852	5,437	7,690	6,967	3,984	3,232
Steam turbines	units	214	167	91	83	45	83
	thousands of Kw	-	1,089	1,240	1,813	1,340	1,402
A.C alternators (excluding high frequency alternators and steam turbine alternators)	units	3,046	4,456	4,937	1,808	4,450	3,655
Diesel generating plant and electricity produced by them	units	2,323	2,893	2,281	1,971	2,290	2,233
	thousands of Kw	163	290	402	533	562	573
Electric engines and their potential electric output	thousands of Kw	690	1,079	1,728	2,683	2,999	2,887
Cables and conductors	thousands	203	1,423	3,971	3,919	4,393	4,446
	thousand tons	not given	not given	128	143	157	163
Steelworks plant	tons	441	2,164	7,796	5,284	5,072	6,453
Blast furnace plant	tons	203	1,423	5,173	4,717	3,814	2,218
Cokeworks plant and machinery	tons	1,651	3,398	5,744	1,910	3,505	4,632
Cement works equipment	tons	not given	not given	not given	6,452	6,218	11,791
Foundry plant and machinery	tons	2,124	7,367	7,181	7,174	6,468	6,752
Industrial electric furnaces	units	446	486	487	2,302	2,034	1,625

ANNEX 21 to
AC/127-D/479

-2-

	UNIT	1955	1960	1966	1970	1971	1972
Equipment for leather and footwear industry	million Crown	74	147	156	283	316	355
Equipment for food industry	million Crown	136	501	277	503	527	553
Looms - total	units	8324	368	4,288	5,041	5,272	5,773
shuttleless only	units	30	380	2,480	3,408	3,659	4,279
Diesel engines	units	10,474	18,742	6,878	8,746	8,177	6,134
potential output	thousands of HP	797	1,059	494	395	334	324
Cranes	units	1,536	1,642	2,048	2,668	2,636	2,822
Tracked excavators	units	408	346	448	547	574	578
Civil engineering machinery	million Crown	79	269	319	850	1,067	1,137
including:							
road rollers	units	133	155	454	632	903	924
cement mixers	units	not given	not given	3,108	12,656	8,170	8,762

CZECHOSLOVAKIA

STATISTICAL TABLES

MACHINE TOOL PRODUCTION

	1955	1960	1966	1968	1970	1971	1972
<u>Metal-working machine tools</u>	18,940	30,233	27,604	34,874	35,186	39,568	36,843
centre lathes	3,965	5,002	5,229	4,867	5,833	6,141	6,372
capstan lathes	385	1,085	845	545	706	706	544
automatic lathes	284	1,556	1,143	1,407	1,431	1,447	1,530
drills	3,944	7,307	7,307	6,995	6,167	5,853	5,024
including:							
horizontal drills	290	558	721	656	582	580	594
planes (total)	794	474	237	157	171	248	166
milling machines (total)	1,827	3,288	2,040	2,351	2,894	3,149	3,185
grinding machines (total)	1,248	5,156	8,819	13,120	13,581	17,238	16,968
<u>Metal-forming machine tools</u>	5,992	5,476	5,846	7,086	9,156	7,662	7,528
presses	708	1,072	1,090	1,139	1,501	1,253	1,532
forging machines	48	44	34	53	47	44	41
power hammers	132	728	231	201	43	33	66
<u>Woodwork machinery</u>	4,440	10,245	18,344	18,242	22,217	24,425	33,532

PRODUCTION OF TRACTORS AND AGRICULTURAL MACHINERY

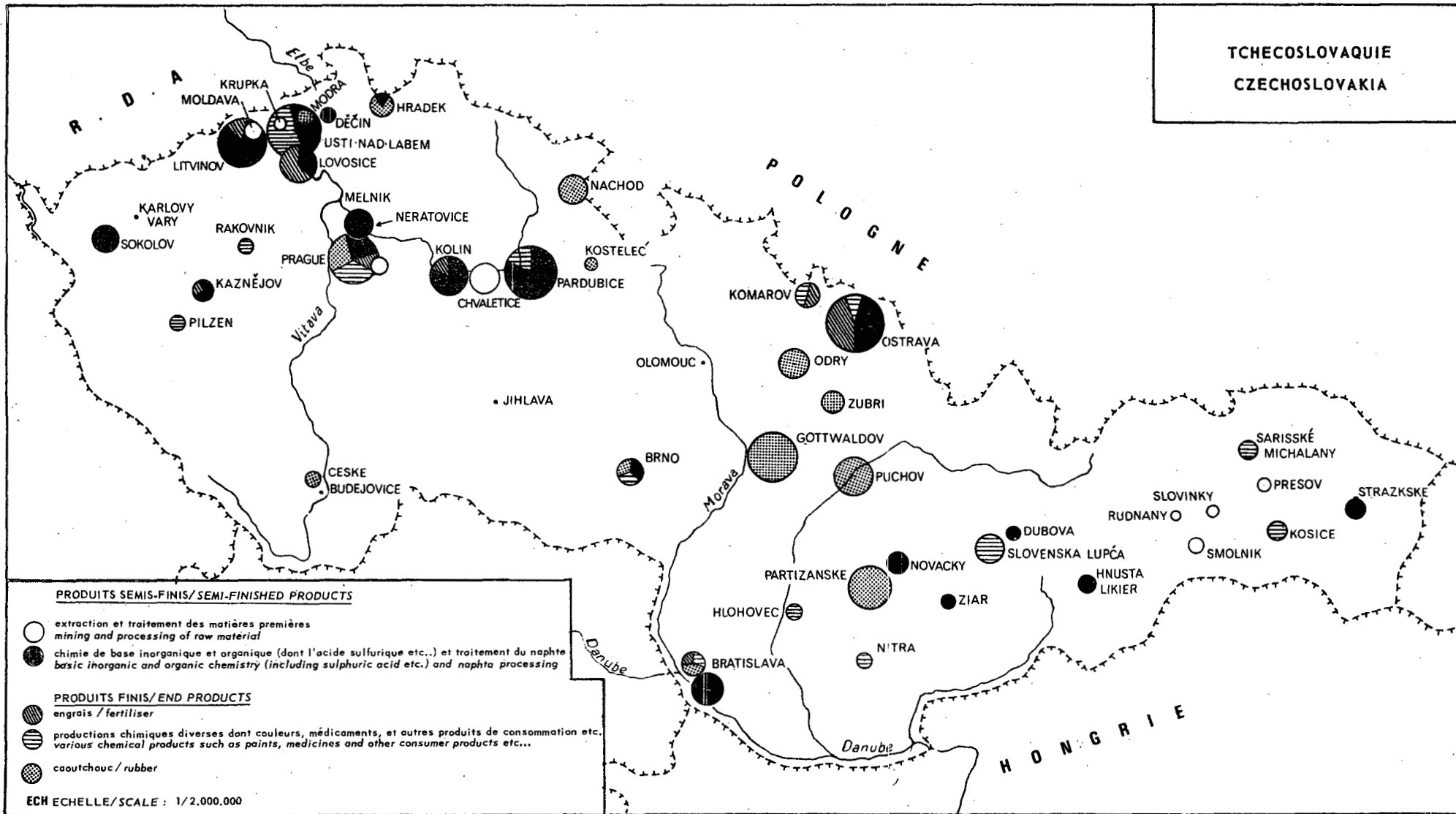
	1955	1960	1966	1968	1970	1971	1972
<u>TRACTORS:</u>	12,570	32,492	28,164	24,424	18,480	21,794	22,253
total							
wheeled	12,357	32,492	27,909	24,424	18,480	21,794	22,253
tractor ploughs	9,955	20,831	6,875	6,814	3,238	4,422	6,213
beetroot harvesters	-	13	650	923	915	1,140	1,410
combine harvesters	-	2,507	3,903	1,278	920	2,350	1,470
sprayers	-	1,115	1,265	764	1,023	170	95
milking machines	120	2,370	1,692	1,605	2,055	2,240	1,020
<u>Total agricultural machinery</u> (in millions of Crown)	540	821	459	854	1,024	1,215	1,269

(Source: Czechoslovak Statistical Year Book 1973)

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INDUSTRIE CHIMIQUE / CHEMICAL INDUSTRY

ANNEXE 23



CZECHOSLOVAKIA

STATISTICAL TABLES

MAIN PRODUCTS OF THE CHEMICAL INDUSTRY

	UNIT	1970	1971	1972
Nitrate fertilizer	1,000 tons	297	317	344
Phosphate fertilizer P2 O5	"	322	331	334
Sulphuric acid (at 100%)	"	1,110	1,162	1,176
Hydrochloric acid (at 32%)	"	134.1	145.8	161.4
Calcium soda hydroxide (100%)	"	189.4	202	211.7
Soda Ash	"	104	113	120.3
Calcium carbide	"	151.8	156.4	159.9
Methanol	"	77	84	97.5
Paints and lacquers	"	92.8	100.3	105.6
Synthetic fibres	"	101	109	117
Plastics:	"	245	270	297
including:				
phenoplasts	"	14.8	15.6	16.9
aminoplasts	"	1.9	2.2	2.1
P.V.C.	"	40.9	43.3	45.8
polyamides	"	2.1	2.2	2.5
epoxy resins	"	7.3	8.2	8.6
Tyres:				
car	1,000 items	1,583	1,886	2,317
lorry	"	930	1,007	1,197
Photographic film	1,000 sq.m	5,434	5,877	5,824

CZECHOSLOVAKIA

STATISTICAL TABLES

TYPES OF COMPUTER IN THE POSSESSION OF CZECHOSLOVAKIA
AT 1ST JANUARY, 1972

Make	Number of computers	Value in thousands of dollars	%
I.C.L.	20	18,000	12
I.B.M.	10	10,000	6.7
UNIVAC	44	8,500	5.7
HIS (including Bull)	36	8,000	5.4
Siemens	10	6,000	4.0
DATASAAB	6	3,500	2.3
C.D.C.	2	2,000	1.4
N.C.R.	2	1,000	0.7
Others (CII, DEC, etc.)	10	3,500	2.3
Total: West	140	60,500	40.5
ARITMA (Czech)	75	10,000	6.7
Z P A (")	25	15,000	10.1
Tesla 200 (Czech)	16	4,000	2.7
Others (")	16	4,500	3.0
ODRA (Poland)	45	22,500	15.2
ROBOTRON (D.R.G.)	5	2,500	1.7
Total: Democratic Republics	182	58,500	39.4
MINSK (USSR)	66	29,000	19.4
URAL (USSR)	4	1,000	0.7
Total USSR	70	30,000	20.1
Total COMECON	252	88,500	59.5
Grand Total	392	149,000	100

(Source: 21st century Research)

CZECHOSLOVAKIA

STATISTICAL TABLES

TABLE SHOWING LOCATION OF COMPUTERS INSTALLED IN
CZECHOSLOVAKIA AT 1ST JANUARY, 1972

Enterprise or Trust and location	Computer	Purpose	Date of entry into service
Nuclear electric power station (Bohunice)	ZPA 600	Nuclear energy	1971
AZNP (Mlada Boloslav)	IBM 360/30		1969
ADAMOUSKE STROJIRNY (Blansko and other towns)	ODRA 1013 ZPA 600	This engineering industries' trust manufacturers many military items (<u>see armaments industry</u>)	1968 1970
BARUM Rubber Products trust - GOTTWALDOV CKD, (Blansko)	IBM 360/20		1969
Czechoslovak rail- ways	ICL leo 360	Stock checking	1965
KOLORA (Senily) Manufacture of cotton-type synthetic materials CK (?)	ROBOTRON 100 ICL 1905		1968
CHEPOS (BRNO) Mechanical engineer- ing	ARITMA DP 100		1969
CHEMOPETROL (Zaluzi) Oil Refining	TESLA 200		1970
DREVARSKI PRUMYSC Wood working industry	ICL 1901	Stock checking	1969

ANNEX 26 to
AC/127-D/479

-2-

Enterprise or Trust and location	Computer	Purpose	Date of entry into service
ELEKTROSVIT (Nové Zámky) Manufacture of electrical equipment	MINSK 22 M		1968
ENERGETICKY DISPONCIK	ELLIOT 803	Network calculations	1962
FATRA (Nápojedla and GOTTWALDOV)	IBM 360/30		1971
Geophysical Institute (Prague - Bratislava)	EMR 6050	Study of data on natural gas	1972
	ZPA 600	Geophysical calculations	1970
Steel works	TESLA 200	Control of operations	1970
ZUL (Zilina) Ballbearing factories	TESLA 200		1970
SOKOLOUSKE STROJIRNY (Sokolov) Trust for repair and manufacture of mining plant	MINSK 22	Calculations for coal mines	1970
HYDROSTAV (Bratislava) Trust for industrial building	TESLA 200	Production-scheduling calculations	1970
INORGA (Prague) Institute of Automated Management in industry	IBM 1410	Training, management studies	1970
	ARGUS 500 L	Control of production	1969
KABLO (Kladno) Trust for the manufacture of high tension cables and conductors	ODRA 1013		1968

Enterprise or Trust and location	Computer	Purpose	Date of entry into service
KANCELARSKE STROJE (Prague) Planning of projects and sale of data processing equipment	ICL 503 ZPA 600 ODRA 1304	Office computer	1965 1971
Klement GOTTWALD Factories (Vitkovice)	ICL 360 ICL KDF 7	Control of steel production	1966 1967
KSNP (Prague)(?)	ROBOTRON 100 MINSK 23		1969 1969
KSNP (Aradec Kraloué)(?)	MINSK 22 M ODRA 1204		1969 1969
Ministry of Foreign Trade (Prague)	ICL 1904 E	Administration Statistics	1970
MJO (?)	ZPA 600 TESLA 200 ARITMA DP 100		1969 1969
MOTOTECKNA (?) Mechanical Engineer- ing Trust	IBM 360/40		1969
MOTORLET (Prague - Jinovice) Manufacture of air- craft engines & hydraulic equipment	GAMMA 10		1968
SVIT (GOTTWALDOV) Manufacture of footwear	NCR 315	Stock checking	1967
OZSTS (?)	ARITMA DP 100		1968
OKD (Ostrava)	ICL 1905	Data control for coal mines	1968
PRUMSTAV (Bratislava)(?)	ODRA 1013		1968

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ANNEX 26 to
AC/127-D/479

-4-

Enterprise or Trust and location	Computer	Purpose	Date of entry into service
PAL-MAGNETON (KROMERIZ) Automobile equipment trust	ROBOTRON 100		1968
PUT (Prague)(?) Prague Faculty of Economics	MINSK 22 M ELLIOT 4120	Computer for studies	1969 1969
Ministry of Works	ROBOTRON 100	Management of cement & lime factories	1968
SHD (?) (SOKOLOV)	MINSK 22 M		1968
SHD (?) (Prague)	ICL 1901	Data control for coal mines	1967
	ICL 1901		1971
SIGMA (Prague ?) Trust manufacturing pumping equipment the general management of which is at OLOMOUC	ICL 803 B	Production-scheduling research	1970
SKODA, PLZEN Heavy mechanical engineering	ELLIOTT 803 B	Data processing centre	1961
	ELLIOTT 803 A	Car design office	1962
Statut Rogistovna (?)	GAMMA 10		1968
SKODA (PLZEN) Heavy engineering industry	ICL 1905	Control of production	1967
SPOTANA (NERATOVICE) Industrial chemistry	ZPA 600		
SLOVNAFT (Bratislava) Petrochemical industry	ARCH 8000 NCR 315	Data acquisition, payment of wages, stock checking	1963 1965
Steel Research Institute (Prague)	ICL SIRIUS	Technical research	1962

Enterprise or Trust and location	Computer	Purpose	Date of entry into service
Statut Banka (Prague) State Bank	ICL 1904	Management, payments, international money transfers	1967
SUSZ (Prague) Social Welfare	ICL leo 326	Administration management	1968
United Nations (Bratislava)	CDC 3300	Time-sharing centre	1969
UVTA (Prague) CSAV Calculating Techniques Institute	ICL 4-50	Automation research	1969
UEOS (Bratislava) Institute of Economics and of Engineering Organization	ICL 4-50	Engineering - use of PERT	1969
UPZT (BRNO LISEN) Central agricultural technology enterprise - central management	ICL 4-50	Agricultural machinery stock	1970
VUTECHP (Prague) Stepanské 15, Institute for Technical Research and Economics of the Chemicals Industry	ELLIOTT 803 B	Computer service	1963
<p>- This Institute was founded in 1956. Its activities comprise: applied research, management, data processing, organization of seminars, calculation service for the Institute and for outside organizations belonging to the chemicals industry, on IBM 360/40 and IEM 360/20(1).</p>			

(1) Information obtained from Czechoslovak Industrial Yearbook

ANNEX 26 to
AC/127-D/479

-6-

Enterprise or Trust and location	Computer	Purpose	Date of entry into service
VZEG (Ostrava) "Klement GOTTWALD" steelworks at VITKOVICE. The concern comprises 9 factories at Ostrava-Vitkovice and 1 research institute at Ostrava where the Head Office is situated.	ICL 4-50	Assessment	1968
VSZ (Kosice)(?) TST (?)	GAMMA 10 DATASAAB	Machine tool production	1969
TESLA -- Trust manufacturing electronic equipment (cf. paragraph on manufacturing firms in the relevant chapter)	TESLA 200	Production	1971
TATRA (Kopřivnice) Firm manufacturing lorries (the firm manufactures both civilian and military vehicles)	SIEMENS 4004/35	Control of production	1963
Unknown	ARGUS 500	Manufacturing control	1970
ZELEČARNÝ & DRATOVNÝ rolled and extruded metals, boilers, radiators. (Head Office at Bohunice, 2 firms at Kamewa (and Bohumin) and at Bolrumin	ODRA 1013		1968
<p>Sources: 21st Century Research using Czechoslovak, United Kingdom and Polish sources. Location: Czechoslovak Industrial Yearbook</p>			

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Enterprise or Trust and location	Computer	Purpose	Date of entry into service
In addition:			
Ministry for the Services (Prague)	"ZPA 600"		1970
Centre used jointly for statistics on the economic organizations of the COMECON countries	MINSK 32		1972
OSTRAVA mines	IBM 370	Management of mining basin	1972

(Source: Czechoslovak press)

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CZECHOSLOVAKIA

STATISTICAL TABLES

EXPORT AND IMPORT OF ELECTRONIC PRODUCTS

Valuta Kcs - thousands (1 Kcs = 0.78 francs)
(fob Czechoslovak frontier)

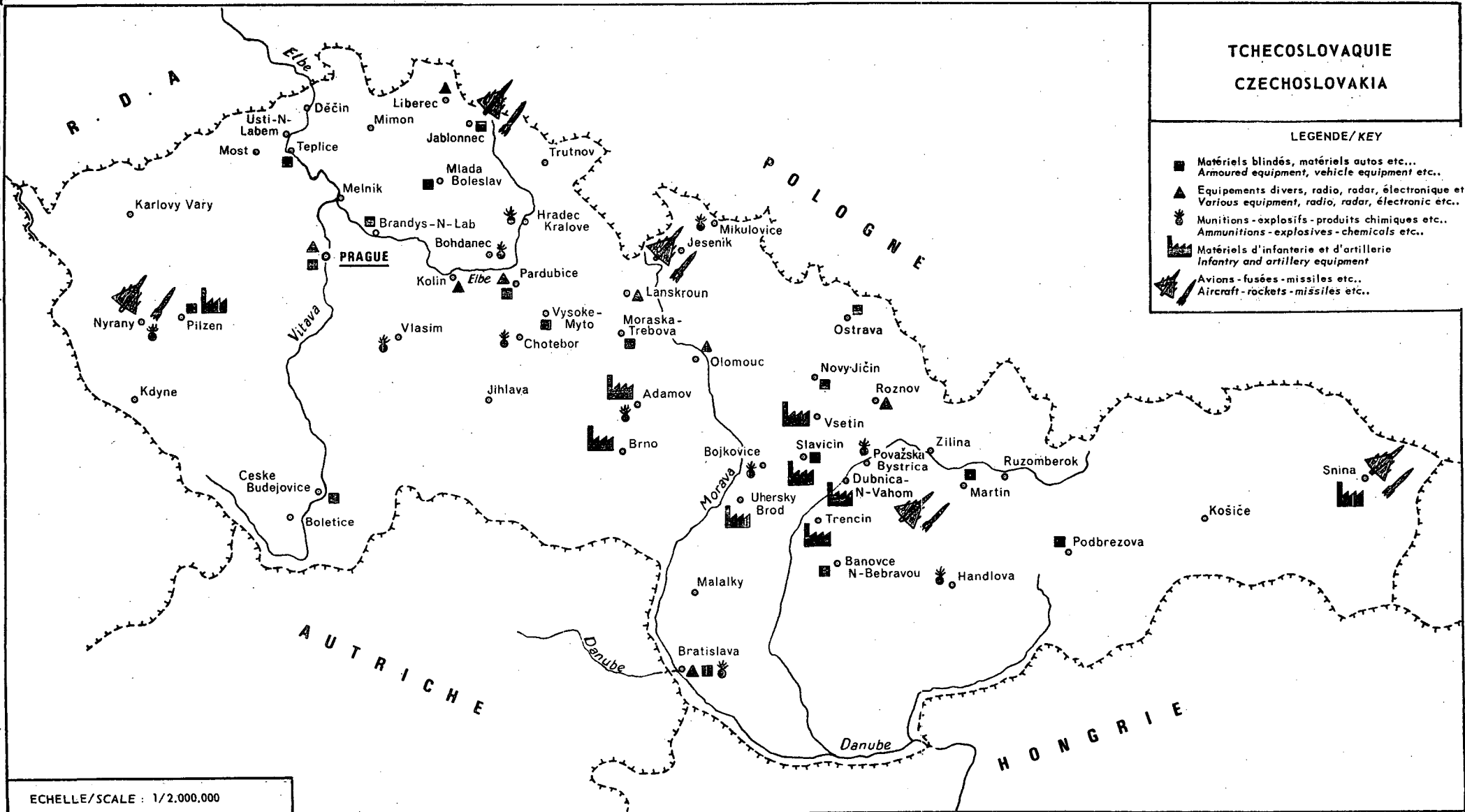
	Export			Import		
	1970	1971	1972	1970	1971	1972
Electronic tubes (semi-conductors excepted)	91,564	98,234	10,896	44,705	48,608	41,098
Socialist countries	86,251	90,811	90,228	42,753	46,246	38,018
Capitalist countries	5,313	7,423	18,768	1,952	2,362	3,080
Telecommunications equipment (wire)	379,649	359,889	364,371	116,237	82,488	86,168
Socialist countries	374,614	352,995	357,016	114,724	78,330	76,481
Capitalist countries	5,035	6,894	7,355	1,513	4,158	9,687
Industrial radio and TV equipment (excluding TV sets)	87,781	130,063	156,982	37,266	55,441	69,062
Socialist countries	81,184	118,745	147,661	18,631	22,964	39,500
Capitalist countries	6,597	11,318	9,321	18,635	32,477	29,562
Radio sets and television sets and sound reproduction equipment	86,743	123,535	115,542	174,560	150,876	141,070
Socialist countries	75,535	112,557	100,276	155,388	131,561	114,480
Capitalist countries	11,208	10,978	15,266	19,172	19,315	26,590

(Source: Federal Statistics Institute)

INDUSTRIE D'ARMEMENT / ARMAMENTS INDUSTRY

ANNEXE 28

DECLASSIFIED/DECLASSIFIEE - PUBLIC DISCLOSED/MISE EN LECTURE PUBLIQUE



CZECHOSLOVAKIA

STATISTICAL TABLES

BUILDING MATERIALS PRODUCTION

		1948	1960	1970	1971	1972
Cement	thousand tons	1,658	5,051	7,402	7,956	8,045
Lime	thousand tons	924	2,307	2,148	2,254	2,420
Fired bricks	thousand units	1,200	2,595	2,224	2,381	2,324
Fibro-cement roofing materials	thousands of sq.m (0.48 cm)	-	24,166	27,354	29,014	29,443
Prefabricated elements in concrete, reinforced concrete and prestressed concrete	thousands of cu.m	-	1,846	4,550	4,828	5,052
Drawn flat glass	thousands of sq.m 4/4	-	29,148	37,735	34,765	37,467

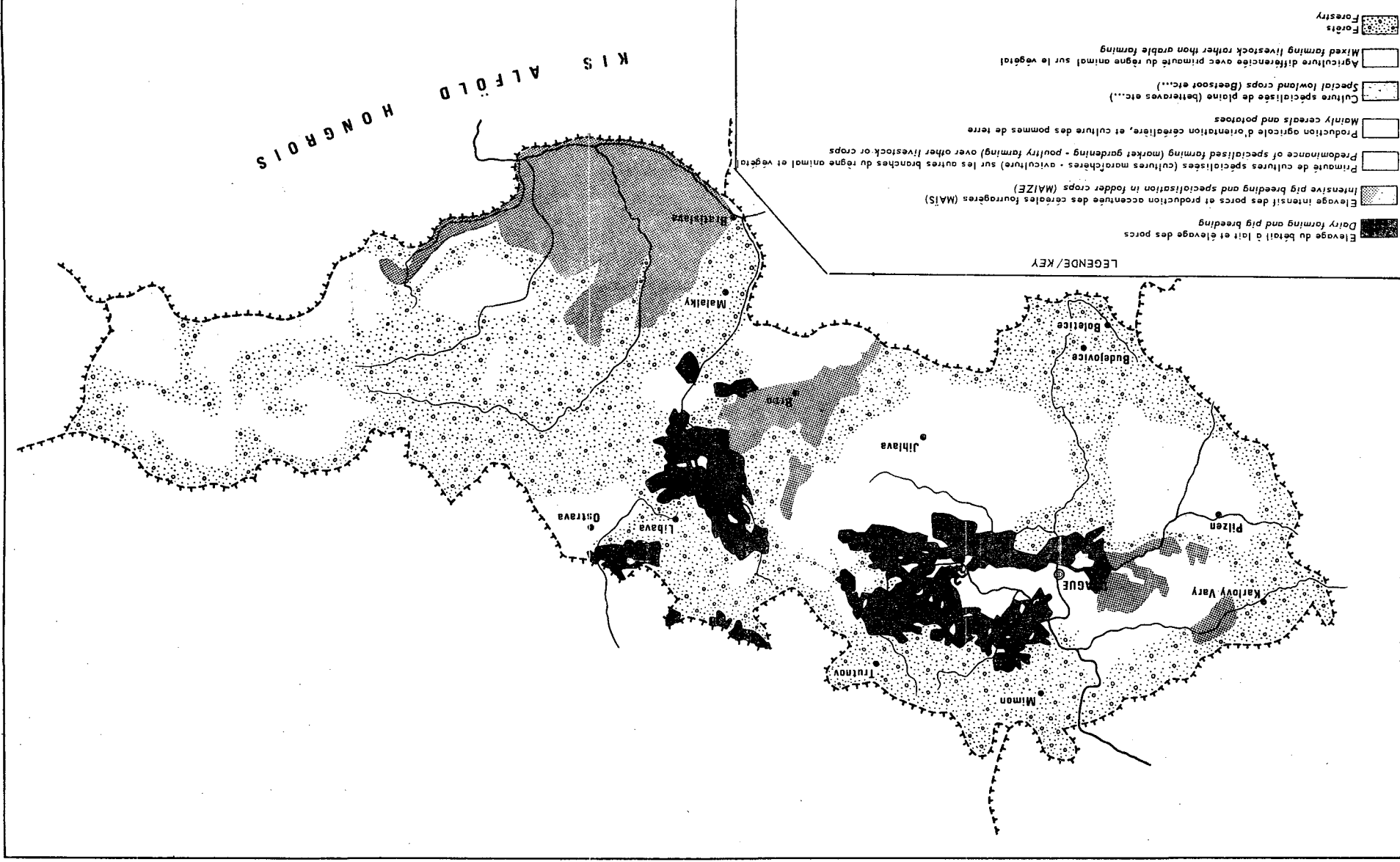
CZECHOSLOVAKIA

STATISTICAL TABLES

THE BUILDING INDUSTRY

(Kcs millions, at current prices)

	1960	1970	1971	1972
<u>Social Product</u>	342,005	726,093	767,013	809,740
Contribution of building industry	35,791	76,836	83,297	91,315
<u>Input</u>	189,145	419,952	447,443	473,527
by building industry	18,561	41,804	45,408	49,158
<u>National income</u>	162,956	312,345	327,915	345,952
Contribution of building industry	17,230	35,032	37,889	41,997
Share of building industry on social product (%)	10.4%	10.5%	10.7%	11.2%
Growth of the social product (1960 = 100)	100	165.7	175.1	185.7
Growth of the building industry (1960 = 100)	100	163.9	178.9	196.7



CZECHOSLOVAKIA

STATISTICAL TABLES

AGRICULTURAL ENTERPRISES ACCORDING TO TYPE (1.1.1971)

<u>Public Sector</u>	<u>Number of Enterprises</u>	<u>Area</u>
State enterprises	786	515,939
State farms	331	1,432,830
Agricultural schools	134	47,728
Research centres etc.	36,708	87,095
<u>Co-operative Organizations</u>		
Enterprises	6,200	3,952,881
Co-operative workers' plots	655,858	289,323
Total		4,243,000
<u>Private Enterprises</u>		
Less than $\frac{1}{2}$ hectare	624,270	158,153
More than $\frac{1}{2}$ hectare	194,300	476,509
<u>Other</u>	1,981	70,741

CZECHOSLOVAKIA

STATISTICAL TABLES

AGRICULTURAL WORKERS BY AGE GROUP

	15 to 19 years	20 to 39 years	40 to 49 years	Over 50	Total
State farms	5.7%	43.2%	24.5%	26.6%	100%
Co-operatives (JZD)	2.8%	29.9%	22%	41.8%	100%
Independent farmers	1.5%	5.1%	34.5%	58.9%	100%
Agriculture as a whole	3.4%	31.4%	24.6%	40.4%	100%
Average for the total population	13%	34%	18%	35%	100%

ANNEX 33 to
AC/127-D/479

-2-

CZECHOSLOVAKIA

STATISTICAL TABLES

MECHANIZATION OF AGRICULTURE IN CZECHOSLOVAKIA

(at the end of the year, in units)

	1950	1960	1970	1972
Tractors (15 HP) - total	25,970	94,297	213,016	236,175
wheeled only	-	-	166,256	191,736
tractor ploughs, (including those with universal plough share)	25,419	59,071	58,401	60,017
Sowing machines	23,435	72,788	37,806	31,219
Threshers	25,809	36,128	10,311	5,324
Combine harvesters	392	6,326	16,433	18,235
Beetroot harvesters	-	892	2,887	3,094
Tractor weeding machines	-	13,002	17,503	15,607
Tractor reapers	-	26,812	31,986	29,663
Combine ensilage machines	-	9,340	28,790	28,276
Combine flax machines	-	260	636	707

(Source: Federal Institute of Statistics - Statisticka Rocenka 1973)

CZECHOSLOVAKIA

STATISTICAL TABLES

GROSS AGRICULTURAL OUTPUT

	millions of Kcs	1936	1960	1970	1971	1972(1)
		Gross agricultural output				
Constant prices, 1967		54,896	54,645	67,143	69,267	71,764
Crops		29,287	27,632	30,441	31,294	32,530
Livestock		25,609	27,013	36,702	37,973	39,234
Growth of gross agricultural output (1936 = 100)		100	99.5	122.3	126.2	130.7
Crops		100	94.4	103.9	106.9	111.1
Livestock		100	105.5	143.3	148.3	153.2

The share of agriculture and forestry in the social product and national income is as follows(2):

	<u>1971</u>	<u>1972</u>		<u>1960</u>	<u>1965</u>	<u>1971</u>	<u>1972</u>
<u>Social product</u>	775,358	819,479	Share of agriculture and forestry in the social product				
agriculture	92,555	95,666					
forestry	5,686	5,697					
<u>Production consumption</u>	447,443	473,527	agriculture forestry	15.3%	14.7%	11.9%	11.7%
agriculture	58,635	61,025		0.8%	0.8%	0.7%	0.7%
forestry	1,856	1,928					
<u>National income</u>	327,915	345,952	Share of agriculture and forestry in the national income				
agriculture	33,920	34,641		14.6%	11.9%	10.3%	10.0%
forestry	3,830	3,769		1.2%	1.4%	1.2%	1.1%

(Sources: Federal Institute of Statistics)

- (1) Estimates
(2) In millions of Kcs, current prices

CZECHOSLOVAKIA

STATISTICAL TABLES

OUTPUT OF MAIN CROPS
(in thousands of tons)

	<u>1965</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
Wheat	1,922	3,257	3,174	3,878	4,017
Rye	822	687	454	619	634
Barley	1,399	2,499	2,280	2,851	2,651
Oats	630	969	776	902	726
Sugarbeet	5,662	5,809	6,644	5,832	6,884
Potatoes	3,678	5,180	4,793	4,621	5,058
Fodder plants (hold)	2,135	3,336	3,272	2,326	2,790
Fodder plants (crops)	6,724	7,007	8,050	7,293	8,263
Hay	3,058	2,850	2,946	2,908	3,150

CZECHOSLOVAKIA

STATISTICAL TABLES
YIELD PER HECTARE
(quintals per hectare)

	Average 1934-38	1955	1968	1969	1970	1972
Wheat	17.1	20.4	21.6	31	29.5	40
Barley	17	20.1	29.8	32.1	28.4	31.2
Sugarbeet	285.8	285.1	417.9	321.6	369.6	374.2
Potatoes	134.8	127.3	175.6	159	142.1	154.5

CZECHOSLOVAKIA

STATISTICAL TABLES

LIVESTOCK IN CZECHOSLOVAKIA
(thousands; as of 1st January)

	<u>Average</u> 1934-1938	1948	1961	1970	1971	1972	1973
Horses	-	630	330	144	131	118	100
Cattle	4,296	3,275	4,387	4,223	4,288	4,349	4,466
Pigs	3,144	2,566	5,962	5,037	5,530	5,935	6,093
Sheep	458	386	646	977	981	932	889
Poultry	39,675	13,478	28,157	34,870	39,187	38,238	39,170
Hens	17,794	10,976	24,972	21,159	22,681	22,429	22,168

CZECHOSLOVAKIA

STATISTICAL TABLES

LIVESTOCK YIELDS

		1955	1970	1971	1972
Annual milk production per cow	litres	1,616	2,488	2,553	2,643(1)
Annual egg production	units	95.3	174.9	182	189
Meat production (liveweight)					
beef	Kg	378.8	480.6	484.7	485.9
veal	Kg	54.6	112	107.3	95.8
pork	Kg	112.3	117.2	113.2	111.9

(1) Production figures are markedly lower than those obtained in France (annual milk production per cow: 3,300 litres).

CZECHOSLOVAKIA

STATISTICAL TABLES

LIVESTOCK OUTPUT

	UNIT	1955	1970	1971	1972	1973
<u>Meat</u> (live weight)	thousands of tons	767	1,234	1,305	1,370	1,411
Beef	"	293	506	534	552	
Veal	"	40	47	42.6	32.4	
Pork	"	462	684	728	785	
<u>Milk</u>	millions of litres	3,100	4,650	4,749	4,969	5,066
<u>Eggs</u>	millions of units	1,600	3,733	3,996	4,120	4,253

CZECHOSLOVAKIA

STATISTICAL TABLES

CZECHOSLOVAK FOREIGN TRADE

Volume (billiards of US \$)

Annual growth rates

	TOTAL	Growth	IMPORTS	Growth	EXPORTS	Growth
1960	4.56		2.21		2.35	
1970	9.15		4.52		4.65	
1971	10.00	+ 9.4	4.90	+ 8.7	5.1	+ 10.0
1972	10.75	+ 7.5	5.25	+ 7.2	5.55	+ 7.8
1973 (projection on the basis of the first eight months)	12	+ 12%	6	+ 14%	6	+ 8.1

CZECHOSLOVAKIA

STATISTICAL TABLES

GEOGRAPHICAL DISTRIBUTION OF CZECHOSLOVAK FOREIGN TRADE

(1) in millions of crowns
(2) in millions of \$ US

YEAR	TOTAL									IMPORT									EXPORT								
	Socialist			Capitalist			DC(1)			Socialist			Capitalist			DC(1)			Socialist			Capitalist			DC(1)		
	1	2	%	1	2	%	1	2	%	1	2	%	1	2	%	1	2	%	1	2	%	1	2	%	1	2	%
1960	19,357	3,303	71.9	4,793	815	17.8	2,814	479	10.3	9,316	1,590	71	2,477	421	19	1,279	217	10	10,041	1,713	73	2,316	394	16.5	1,535	262	10.5
1970	37,750	6,421	70	12,069	2,050	22.5	4,091	694	7.5	18,462	3,140	69.4	6,514	1,106	24.4	1,629	276	6.2	19,288	3,281	70.5	5,555	5,944	20.5	2,462	418	9
1971	41,181	6,998	70	13,240	2,244	22.4	4,544	770	7.6	20,071	3,411	69.9	7,146	1,203	24.6	1,653	280	5.5	21,110	3,587	70	6,094	1,041	20.3	2,891	490	9.7
1972	45,280	7,665	71.3	13,565	2,306	21.4	4,655	792	7.3	21,856	3,700	70.3	7,187	1,222	23.2	1,869	318	6.5	23,424	3,965	71.9	6,378	1,084	19.6	2,786	474	8.5

(1) Developing countries

CZECHOSLAVAKIA

STATISTICAL TABLES

EXPORTS AND IMPORTS BY PRODUCT GROUP

		Exports	Imports	Balance
		%	%	\$ million
Machinery and equipment	1960	45.1	21.6	-
	1970	50.2	33.3	+ 820
	1971	49.6	33.1	+ 910
	1972	49.4	33.8	+ 955
Fuels Raw materials	1960	29.2	52.8	-
	1970	29.4	43.1	- 585
	1971	28.1	44.6	- 745
	1972	27.6	54.2	- 840
Livestock	1960	0.1	0.1	-
	1970	0.1	0.3	- 7.5
	1971	0.1	0.2	- 5.1
	1972	0.2	0.2	- 1.7
Food products	1960	5.2	22.1	-
	1970	3.8	14.8	- 490
	1971	4.2	14.3	- 485
	1972	4.1	13	- 455
Table beers	1960	20.7	3.4	-
	1970	16.5	8.5	+ 385
	1971	18	7.8	+ 535
	1972	18.7	7.8	+ 625

CZECHOSLOVAKIA

STATISTICAL TABLES

CZECHOSLOVAK TRADE IN ARMAMENTS(1)

In millions of \$ US

<u>Year</u>	<u>Exports</u>	<u>Imports</u>
1961	43	79
1962	58	82
1963	70	84
1964	127	137
1965	161	123
1966	172	100
1967	200	96
1968	77	82
1969	109	82
1970	109	82
1971	122(2)	82
Total	1,248	1,029

Distribution according to country: (1961-1971)

Exports: COMECON 798 (USSR 760, Poland 38)

Developing countries: 450

(India 113; Indonesia 89; Egypt 75; Iraq 70; Syria 44; Morocco 20;
Libya 10; Afghanistan 7; Nigeria 5; Uganda 4; Ghana 4;
Yugoslavia 4; Latin America 2; Cuba 2; Cyprus 1; Sudan 1; Yemen 1.)

Imports: USSR 974
Poland 55

-
- (1) Source: US Arms Control and Disarmament Agency,
January 1973: An interim report to Congress
(2) i.e. 2.4% of total Czechoslovak exports

CZECHOSLOVAKIA

STATISTICAL TABLES

CZECHOSLOVAK-SOVIET TRADE SHOWING AMOUNT AND VARIATION

	TOTAL			EXPORTS		IMPORTS	
	Millions of \$	Growth	% of CS Foreign Trade	Millions of \$	% of CS Exports	Millions of \$	% of CS Imports
1960	1,539			805	34.1	770	34.7
1969	2,740		33.7	1,370		1,350	
1970	2,990	+9.1%	32.4	1,490	32.2	1,480	32.7
1971	3,290	+10%	32.9	1,620	31.7	1,660	33.9
1972	3,500	+6.4%	32.4	1,790	32%	1,710	32.5
1973 (proto- col)	3,790	+8.3					