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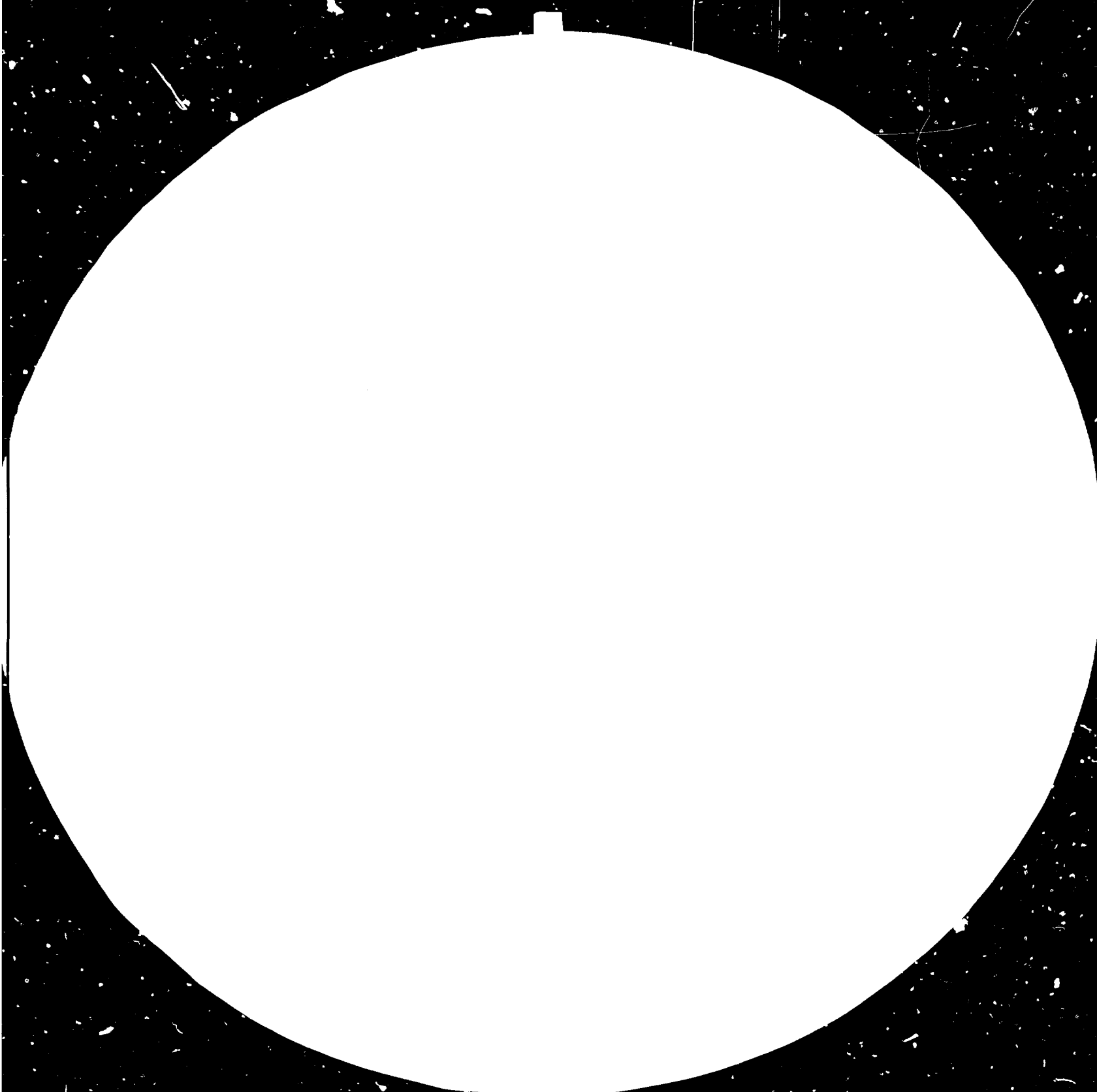
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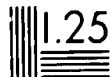
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Z. Román:

Industrial development in the European
CMEA-countries in the seventies

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Introductory remarks

This paper deals with the seven European member countries of the Council of Mutual Economic Aid: Bulgaria, Czechoslovakia, GDR, Hungary, Poland, Romania, USSR. This group cover the European centrally planned economics except Albania with 2.5 million inhabitants from the total near to 400 million population of the complete group. The population of the 3 non-European member-countries of the CMEA /Cuba, Mongolia, Vietnam/ amounts to 67 million but their share in economic potential and industrial output is much lower.

All statistical data quoted in this paper if not otherwise indicated are taken from the official publications of the CMEA Secretariat. In these statistics some concepts, definitions, classifications differ from those used in the United Nations publications. If needed for adequate comparison or interpretation, special reference to these differences will be given.

First of all it should be mentioned that the CMEA countries measure economic growth according to their MPS accounts by the increase of total or per capita national income originated in the material sphere of production, i.e. they exclude services which are not related to the production and distribution of goods. Estimates on their growth rates of per capita GDP according to the SNA definitions seldom show significant differences while recalculations of other types aiming at corrections of price deflators and other basic components of the index numbers might lead to greater divergences. On the other hand, in the MPS framework industrial output is seen as amounting for a larger proportion of total economic activity

and makes comparisons with western economies difficult.

The CMEA countries are publishing index numbers of industrial production on the industry as a whole both on the basis of the national income originated /NMP/ and of the gross value of output, but on sectors only of the second type. Usually it is assumed that these latter index numbers show higher growth rates than national income data but this is not a rule, there are often differences with opposite sign. Data will be published only for the total industry and not separately for manufacturing, usually covering only the socialist sector /state-owned enterprises and co-operatives/. These data do not include the industrial activities of the small private firms /mostly craftsmen/ and that of the productive units classified into other sectors of the economy /agriculture, construction, etc/. The first item amounts only to a few percentages of the total industrial output, the second one has in particular in some branches /e.g. building materials, food industries/ greater share and importance.

In the CMEA statistics the classification of branches differs from ISIC, first of all in the principle that mining and manufacturing activities aiming at the same final products are combined. Finally it should be noted that the comparisons between countries based on data calculated at national prices are significantly influenced by the diverging relative prices of the individual economies.

The slow-down of economic and industrial growth

The rate of growth of the world production from 1964-1973 to 1974-80 dropped from 6.0 to 3.0 percentage per annum. According to the estimated figures /see GATT International Trade 1980/1981/ a similar slow-down occurred in the rate of growth of the volume of world trade: from 8.5 to 4.0 per cent p.a., with an absolute decline/-1.0 resp. - 3.0 per cent/ in 1975 in both index numbers. This indicated the end of the post-war "golden epoch" of the developed market economies. Instead of an average rate of growth about 5 per cent the different forecasts for the next decade/s/ calculate not more than 3 per cent.

The rates of growth of the CMEA countries in international comparison appeared to be both in the 50's and the 60's outstandingly high though not unique. As a group until the mid-seventies they exceeded the growth both of the developed market economies and the developing countries. In the last two decades /1961-1980/ national income resp. GDP increased in the CMEA countries by 6.1, in the developed market economies by 4.0, in the developing economies by 5.2 per cent p.a. Per capita figures show of course lower rates in particular for the developing countries. While the growth rates in the developed marked economies sharply declined in the early 70's, this happened in CMEA countries although /up till now/ not at the same extent in the late 70's /see Table 1/.

Table 1. Rates of growth p.a. /%/ of national income generated in five-years period

Country	1961-1965	1966-1970	1971-1975	1976-1980	Plan for 1981-1985
Bulgaria	6.7	8.8	7.8	6.1	3.7
Czechoslovakia	1.9	6.9	5.5	3.7	2.0-2.6
GDR	3.5	5.2	5.4	4.1	5.1
Hungary	4.1	6.8	6.5	3.4	2.7-3.2
Poland	6.2	6.0	9.8	1.2	.
Romania	9.1	7.7	11.4	7.0	7.1
USSR	6.5	7.8	5.7	4.2	3.4 ^{x/}
Unweighted average	5.4	7.0	7.4	4.3	4.1

x/ National income distributed.

The slow-down in Czechoslovakia, the USSR /and Hungary/ started already in the early 70's, in the other 4 countries only in the second half of this decade in particular from 1978 or 1979 on /see Table 2/. Only GDR shows resp. plans a recovery from 1981 on. The unweighted average rate of growth of the 7 countries shows a continuous slow-down except year 1977. The plans for the five-year period 1981-85 compared to the figures of 1980-1981 foresee some improvement.

All countries recorded a lower growth of national income distributed in 1976-1980. The difference compared to the national income generated was relatively small in the case of the USSR and GDR /both 0,4 percentage points/, greater in the other countries /Bulgaria 0,9, Hungary 1,3, Poland 1,4, Chechoslovakia 1,6; no data published on Romania/. This shift of resources aimed at mainly the counterbalancing of the trade deficit /see later/.

Table 2. Rates of growth p.a. /%/ of national income generated in the years 1976-1982

Country	1976	1977	1978	1979	1980	1981	Plan for 1982
Bulgaria	6.5	6.3	5.6	6.6	5.7	5.0	3.6
Czechoslovakia	4.1	4.4	4.1	3.0	3.0	-0.4	0.5
GDR	3.5	5.1	3.7	4.0	4.4	4.8	4.8
Hungary	3.0	8.2	4.5	2.3	-0.6	2.1	1.0-1.5
Poland	6.8	5.0	3.0	-2.3	-6.0	-13.0	.
Romania	10.1	8.7	7.5	6.1	3.0	2.2	5.5
USSR	5.9	4.5	5.1	2.2	3.9	3.3	3.0 ^{x/}
Unweighted average							
with Poland	5.7	6.0	4.8	3.1	1.9	0.6	.
without Poland	5.5	6.2	5.1	4.0	3.2	2.8	2.7

x/National income distributed

In the European CMEA-countries industry is the major determinant of economic growth. This is due first of all to the fact that according to the MPS figures of these countries about 50 to 70 per cent of the national income will be generated in the industry /see Table 3/. /Note that in these data only contributions of the material sphere of production are included and the sectors' shares depend very much on relative prices./ The share of the industry at current prices from 1960 to 1970 increased in Bulgaria, Hungary, Poland and Romania; decreased in GDR and not significantly in Czechoslovakia and the USSR. From 1970 to 1975 in all countries an increase can be observed, from 1975 to 1980 the picture is mixed again, but only GDR shows a significant increase. In 1981 the share of industry in national income dropped in each country by 0.3-2.3 percentage points, in Poland by 12.4. /For international comparisons do

not forget that these are Net Material Product figures, SNA data have a wider scope./

Table 3. The share /%/ of industry and other major sectors in the national income generated

Country	Industry				Construc- tion	Agri- culture	Other sectors	
	1960	1970	1975	1980				
								1981
Bulgaria	47.3	51.1	52.1	51.0	49.3	9.4	19.6	21.7
Czechoslovakia	63.4	62.1	65.7	65.0	62.7	10.1	6.3	20.9
GDR	62.7	57.7	59.1	68.7	68.1	6.0	8.5	17.3
Hungary	37.6	44.1	46.2	50.8	49.2	10.9	14.8	31.1
Poland	46.9	54.6	59.6	54.9	42.5	7.1	29.9	20.5
Romania	42.1	59.1	57.1	59.3	58.0	8.9	17.1	16.0
USSR	52.3	51.1	52.6	51.5	51.2	10.1	14.7	24.0

In addition the contribution of agriculture to national income did not increase in the last decades in these countries significantly. While the gross value of agricultural output grew in the 70's by an /unweighted/ average of 2.4 per cent p.a. /similarly as in the 60's/, the national income originated in agriculture increased less than 1 percentage /which is somewhat more than the achievement in the previous decade/.

The national income generated in industry continued to grow in the early seventies with a very high rate in all CMEA-countries though in Bulgaria and the USSR this rate compared to the previous decade somewhat declined /see Table 4/. In the late seventies our index numbers clearly indicate a slow-down in all countries, between the two five-year period of this decade in average approximately in the same range /3.2 percentage points/ as total national

income /3.1 points, see Table 1/. The difference in the changes of these two rates of growth was in each country below 1 per cent except the USSR where the slow-down in total national income was 1.4, in industry 3.0/.

Table 4. Rates of growth p.a. /%/ of national income generated in industry

Country	1961-1970	1971-1975	1976-1980	1971-1980
Bulgaria	10.4	8.7	7.6	8.3
Czechoslovakia	4.9	6.0	3.5	4.8
GDR	5.3	5.7	5.1	5.4
Hungary	7.2	7.6	4.7	6.2
Poland	8.3	10.8	2.7	6.8
Romania	13.2	13.4	9.3	11.4
USSR	9.4	7.9	4.9	6.4
Unweighted average	8.4	8.6	5.4	7.0

More complete data are published in the CMEA-countries on the production index numbers based on the gross value of industrial output /see Table 5/. These figures show the same slow-down between 1971-1975 and 1976-1980 as national income data - in average and in case of Hungary and the USSR; more marked slow-down in case of Bulgaria and the GDR, less in case of the other three countries. The planned figures for the next five-year period /1981-1985/ are near to the last performance data and significantly below the growth rates of the sixties and early seventies. The fulfillment of these industrial growth targets - taking into account the actual growth in 1981 and assuming the perfect realization of the plans

Table 5.

Table 5. Rates of growth p.a. /%/ of gross value of industrial output

Country	1961- 1965	1966- 1970	1971- 1975	1976- 1980	Plan for 1981- 1985	1976	1977	1978	1979	1980	1981	Plan for 1982
Bulgaria	11.7	10.9	9.1	6.0	5.1	6.8	6.8	6.9	5.4	5.2	4.9	4.5
Czechoslovakia	5.2	6.7	6.7	4.6	2.7-3.4	5.5	5.6	5.0	3.7	3.5	2.0	0.4
GDR	5.8	6.5	6.5	4.9	5.1	5.9	4.8	4.7	4.5	4.7	5.1	4.6
Hungary	7.5	6.2	6.4	3.4	3.5-4.1	4.6	6.6	4.9	3.0	-1.8	2.4	2.0- 2.5
Poland	8.4	8.3	10.4	4.7	.	9.3	6.9	4.9	2.7	0	-10.8	.
Romania	13.8	11.9	12.9	9.6	7.6	11.5	12.7	9.0	8.2	6.5	2.5	4.7
USSR	8.6	8.5	7.4	4.4	4.7	4.8	5.7	4.8	3.4	3.6	3.4	4.7
Unweighted average with Poland	8.7	8.4	8.5	5.2	.	6.9	7.0	5.7	4.4	3.1	1.0	.
without Poland	8.7	8.4	8.2	5.1	4.9	6.5	5.7	5.6	4.7	2.9	3.0	3.5

for 1982 - requires for 1983-1985 an annual growth rate of 5.2 per cent in Bulgaria, 4.2 in Czechoslovakia, 5.2 in GDR, 4.6 in Hungary, 10.3 in Romania and 5.1 in the USSR. This would necessitate a significant acceleration of growth in most of these countries!

The UN production index numbers for the European CMEA-countries show similar tendencies though with some differences by years. This can be attributed partly to the fact that these are weighted average figures depending dominantly on the USSR data /while those quoted in Tables 4 and 5 unweighted/, partly to the different methods of calculation. Compared to the developed and developing market economies industrial growth in the CMEA-countries was in the years under review /except in 1976 and 1979/ and also in average higher but the differentials decreased.

Table 6. UN production index numbers by regions, rates of growth p.a. /%/

Region	1971-1975	1976	1977	1978	1979	1980	1981	1976-1981
European CMEA-countries	8.6	6.5	6.6	5.6	4.3	4.6	3.1	5.1
Developed market economies	3.5	8.5	3.6	4.1	5.0	-0.5	0.6	3.5
Developing market economies	5.2	9.7	5.8	5.8	2.9	-0.7	-0.4	3.5
World total	4.1	8.2	4.6	4.2	4.9	0.7	1.1	3.9

Source: Monthly Bulletin of Statistics. UN, August 1982.

Foreign trade

In the seventies foreign trade increased in the European CMEA-countries - both intra-trade and trade with the other groups of countries - significantly and consequently its importance, its impact on economic and industrial growth, efficiency and equilibrium, too. The data quoted in Table 7 are calculated on the basis of current prices, so these growth rates reflect changes both in volumes and prices, ~~in the last periods the same or~~ ~~actually more increase in~~ prices than in volumes. Nevertheless the comparison between regions clearly indicate that the growth of foreign trade /except some single years/ was lower in the CMEA-countries than in the rest of the world, in particular in 1979 and 1980. As a consequence their share in the world trade decreased from 10.5 per cent in 1965 to 7.8 per cent in 1980 /the share of the USSR from 4.1 to 3.3 per cent/. Between these two points of time beyond a transitional increase /in the early 70's: 72 per cent/ the share of the developed market economies remained about the same, 69 per cent, that of the developing countries /and territories/ grew from 19 to 21.9 per cent /but in 1960 it amounted to 22.2, in 1950 to 16.7 per cent/.^{x/}

^{x/} Data of the UNCTAD volume, quoted as source of Table 7, p. 27.

Table 7. Annual growth rates /%/ of the value of exports and imports

Region	1961-1970	1971-1974	1975	1976	1977	1978	1979	1980	1971-1980
<u>Exports</u>									
European CMEA-countries	8.7	21.5	19.5	8.8	16.4	14.4	19.9	15.7	18.1
Developed market economies	10.0	25.2	6.5	11.2	13.5	19.7	23.0	17.6	18.8
Developing countries	7.2	39.8	-6.1	20.8	13.3	4.3	38.7	33.2	26.0
World total	9.3	27.9	4.1	13.3	13.7	15.4	26.4	21.5	20.3
<u>Imports</u>									
European CMEA-countries	8.1	23.4	29.9	5.0	9.5	17.2	13.2	14.9	18.4
Developed market economies	10.2	26.8	0.4	14.5	13.2	15.7	28.3	21.0	19.5
Developing countries	6.4	29.5	15.6	10.8	20.0	14.9	20.6	29.8	23.9
World total	9.2	27.1	6.1	12.2	14.2	15.9	25.3	22.5	20.2

Source: UNCTAD Supplement 1981. Handbook of International Trade and Development Statistics, UN 1982. pp. 14-20.

Looking at the individual countries /see Table 8/, in the 60's Bulgaria showed an over-average, Czechoslovakia, GDR and the USSR a below-average increase of foreign trade, in the 70's Romania's and the USSR's growth was above and Czechoslovakia's and the GDR's unvariably below the average. The foreign trade intensity is the highest in Hungary, the lowest in the USSR /which can be explained at a great extent by the huge size of this country/.

Table 8. Intensity and growth of foreign trade in the European CMEA-countries

Country	Share in total foreign trade /1980/	Per capita foreign trade /1980/	Annual rates of growth /%/ of foreign trade /at current prices/		
			1961-1970	1971-1980	1961-1980
Bulgaria	6.1	128	12.3	14.4	13.4
Czechoslovakia	5.3	113	7.2	11.6	9.4
GDR	11.9	131	7.9	11.8	9.9
Hungary	9.6	166	10.1	14.5	12.3
Poland	11.4	60	9.8	14.5	12.2
Romania	7.9	66	10.8	17.3	14.1
USSR	43.5	31	8.2	15.6	11.9
Total/Un-weighted average	100.0	100.0	9.5	14.2	11.9

In the foreign trade of the CMEA-countries the share of the intra-trade decreased in the seventies remarkably. The decrease in the exports was from 64.4 per cent /in 1969-1971/ to 53.6 per cent /in 1980/, while the share of the developed market economies increased from 24.6 to 33.6, that of the developing countries from 9.2 to 11.1 per cent. The figures concerning the imports were as follows: 59.8-50.9, 23.2-31.2 and 12.1-15.2.^{x/} In 1980 the share of the intra-CMEA trade /see Table 9/ was the lowest /33.8 per cent/ in Romania, the highest in Bulgaria /72.7 per cent/.

^{x/} Data of the UNCTAD volume quoted, pp. 68-73.

Table 9. The shares of the intra-CMEA trade and of the trade with all centrally planned economies in 1980 /%/

Country	Intra-CMEA trade			Trade with all CPE's		
	Exports	Imports	Total	Exports	Imports	Total
Bulgaria	68,8	77,1	72,8	70,8	78,9	74,7
Czechoslovakia	65,1	65,9	65,5	69,6	70,2	69,9
GDR	65,4	60,2	62,7	68,7	63,3	65,9
Hungary	51,5	47,8	49,6	55,1	51,1	53,0
Poland	53,3	53,3	53,3	55,9	55,6	55,7
Romania	37,0	31,3	34,0	43,5	37,8	40,6
USSR	65,1	65,9	65,5	54,5	53,2	53,7

Intra-CMEA trade is based at a great extent on five-year or even longer-term agreements. The Complex Programme of the further development of the co-operation and the socialist economic integration of the CMEA member-countries - adopted in Bucuresti, 1971 - stated that the system of economic and scientific-technical co-operation of the CMEA member-countries is based on the combination of the co-ordination of planning as the fundamental method of co-operation and of the broader use of commodity and financial relationships. The co-operation in planning includes inter alia the co-ordination of the national five years and long-term plans. On the basis of these negotiations and the deals on specialization and co-operation bilateral or multilateral, the ministries of foreign trade come to agreements on mutual deliveries and from year to year they revise and fix the contingents either in quantities /as e.g. in case of fuels, raw materials, basic foodstuffs and consumer goods/ or in value terms. Then civil law contracts of the respective enterprises specify the

Table 10. Trade balance: value and as per cent of imports

Region	1969- 1971	1972- 1974	1975	1976	1977	1978	1979	1980
	Value in million of U.S. dollars							
European CMEA-countries	-367	-3367	-13800	-11500	-6700	-10600	-4400	-4000
Developed market economics	-12100	-34700	-35600	-60100	-65500	-46700	-105800	-164000
Developing countries	-267	25967	23600	47500	39800	14900	72600	103300
	As per cent of imports							
European CMEA-countries	-1.2	-6.5	-15.0	-11.9	-6.3	-8.5	-3.1	-2.5
Developed market economics	-5.1	-7.7	- 5.8	-8.5	-8.2	-5.1	-9.0	-11.5
Developing countries	-0.5	23.4	12.5	22.7	15.8	5.2	20.8	22.7

Source: UNCTAD volume quoted, p. 29.

concrete conditions of the deliveries, making use of the general regulation of these conditions /adopted in 1968 and revised in 1975/.

In 1970 five comprehensive long-term target-oriented programmes were adopted on 1/ energy, fuels and raw materials, 2/ mechanical engineering, 3/ agriculture and food supplies, 4/ manufacturing consumer goods, and 5/ transport and communication. The preparation and implementation of these programmes, however, required more time than expected and their results remarkably will materialize only in the coming years.

The overwhelming part of the intra-CMEA trade is based on intergovernmental agreements, on counter-deliveries which are known and accounted for some years advance. Changes are negotiated through current trade agreements; balances will be adjusted by agreed reverse commodity flows in succeeding years or will be financed by credits. This procedure moderates but does not eliminate annual ups and downs in the mutual trade, these problems appear at greater extent when the trade balance or domestic supply tensions in the individual countries sharpen.

Many measures aiming at improving and strengthening the role of the monetary and financial instruments CMEA co-operation had been taken and are being prepared. Bilateral contacts still have a dominant role though the so called transferable rouble as a common accounting unit had been introduced already in 1964. Studies on the possibilities of convertibility of currencies are in progress. Special attention will be paid to the problems of pricing. From 1975 on the prices in the intra-CMEA trade will be adjusted to the world market level with a five-year time-lag. Since the commodity composition of trade varies among countries, these adjustments effect their terms-of-trade differently,

actually in these years in favour of the main fuel and raw material supplier of the region, the USSR /between 1975-1981 with about 12 per cent/. The deficits in the balance-- of - payments of the other CMEA-member countries vis-á-vis the USSR have been financed by medium-terms loans as a rule at low interest rates with changing conditions but the details of these arrangements are not publicized. According to the estimates of the Secretariat of the Economic Commission of Europe /see Economic Survey of Europe in 1981, UN 1982, p. 285./ the cumulative trade balance for 1976-1981 showed for the USSR 26 billion US dollars surplus, for the other six countries 33 billion deficit. From these amounts approximately 10 billions are of intra-CMEA character.

Looking at the aggregate figures of the UNCTAD statistics /See Table 10/ the trade deficit in the CMEA-countries was high in 1975, 1976 and 1978 and in the next years subsequently decreased, both its value and as per cent of imports. /Due to different approaches the statistics of the ECE and that of the UNCTAD cannot be put together./

The East-West trade increased from the late sixties spectacularly due to the favourable political climate and survived even the first oil-stock in the developed market economies. This trade was supported by substantial credits which led however to a growing indeptedness of the CMEA-countries. East-West trade helped the modernization of their production capacities although often not at the extent as expected and at the same time made them more sensitive to business cycles and other movements in the world economy. Except the USSR the changes of the relative prices and a slow adaptation to these resulted in a deterioration of their terms - of-trade.

The CMEA-countries planned to increase their export at a higher rate than their imports in order to compensate the terms-of-trade losses and to cover the debt-service. The recession in the developed market economies, the growing competition of the NIC's, some discriminative measures made difficult to implement these targets. For the Soviet Union the favourable terms-of-trade permitted the continuation of a more rapid expansion of import volume than export volume.

Although a number of on-going and new intergovernmental long-term trade and economic co-operation agreements and quite a number of strong and lasting business contacts testify the interest in East-West economic relations on both sides, in general the overall economic slow-down and some political considerations of western governments have led to declining East-West trade in the last years. At the same time high unemployment, low capacity utilization, difficulties of certain firms, industries or regions motivate to maintain and if possible enlarge western exports to the east but this is constrained by continuing balance-of-payments deficits.

East-west financial relationships had been based initially on credits from western suppliers, commercial banks and on official export credits for individual deals. Later on the role of other forms as untied bank loans and borrowing on the euro-currency markets increased. A large part of the credits were accumulated in 1976-1978 when nominal interest rates were relatively low /5-6 per cent/. In the next few years these nominal interest rates doubled. This increased the western surplus on the invisibles account from about 3 billion in 1979 to 5-6 billion in 1980 and 1981, a major source of the total current account surplus amounting to 5-6 billions in 1979 and 1980, and estimated to 10 billion in 1981 according to western data, and 8-9

billion and 11 billion resp. according to eastern data /see Economic Survey of Europe in 1981, p. 300/.

The total net debt of the European CMEA-countries to the developed market economies according to the ECE Secretariat estimates /See Table 11/ increased from 65 billion US dollars in 1979 to 81 billion at the end of 1981. From the seven countries under review Poland and Romania seem to be in the most delicate, Bulgaria and Czechoslovakia in a relatively easier position but the balance-of-payments problems are for each country of primary importance. In their industrial policy /see later/ the major targets are derived at a great extent from the need of improving their trade balance.

Table 11. Estimated net debt of the European CMEA-countries to the developed market economies /End of years, billions of US dollars/

Country	1979	1980	1981 /preliminary/
Bulgaria	3,7	3,2	2,3
Czechoslovakia	3,1	3,5	3,6
GDR	8,1	9,6	11,3
Hungary	7,3	7,4	7,8
Poland	20,1	22,1	22,4
Romania	6,9	9,1	9,6
USSR	12,1	13,5	19,5
CMEA banks	4,0	4,0	4,2
Total	65,3	72,4	80,7

Source: Economic Survey of Europe in 1981, UN. 1982. p. 311.

Factors of production and sources of growth

Employment and in particular industrial employment increased fast in all CMEA-countries until the beginning or the middle of the seventies. According to the unweighted average figures from the 8.5^{per cent} growth of industrial output nearly one third /3 per cent/ could be attributed to the growth in employment and two thirds to the growth in labour productivity /5.6 per cent p.a./. Industrial employment in 1971-1975 increased only by 2.1 per cent but a higher growth of labour productivity /see Table 12/ still compensated this deceleration. The increase of employment in industry in 1976-1981 dropped below 1, that of labour productivity around 4 per cent, industrial output grew about 5 per cent /see Table 5/. Figures on total employment and on labour productivity of the total economy /see Table 13/ show similar trends. That means, the slow-down of economic and industrial growth in these countries can be explained by the diminishing contribution of the increase of employment /labour input/ and also - though not in this extent - by the deceleration of productivity growth. With variations not significant all countries show this pattern.

The small increase in employment is due to demographic factors and to the fact that these countries reached already in the fifties and maintain full employment. In addition the share of industry in total employment also reached or is near to its upper limit. This situation is recognized in these countries as the exhaustion of the extensive factors of growth and the pressing need for the better use of the intensive factors, for "intensification".

Table 12. Rates of growth p.a. /%/ of labour productivity * in the economy

Country	1961-1965	1966-1970	1971-1975	1976-1980	1976	1977	1978	1979	1980	1981
Bulgaria	7,1	8,3	7,7	6,1	7,0	7,0	5,5	5,7	5,5	5,9
Czechoslovakia	1,3	5,6	4,6	3,3	3,6	3,9	3,6	2,5	2,7	-0,4
GDR	4,0	5,0	5,3	3,7	2,9	4,5	3,3	3,6	4,3	4,4
Hungary	2,4	4,7	6,0	4,3	3,8	7,9	4,7	3,3	1,5	3,0
Poland	4,6	4,1	8,2	1,9	7,7	5,0	3,3	-1,5	-4,5	.
Romania	9,2	7,5	11,1	6,9	9,6	8,1	7,8	6,0	3,0	1,8
USSR	6,1	6,8	4,5	3,3	4,7	3,3	3,8	1,4	3,2	2,5
Unweighted average										
with Poland	5,0	6,0	6,8	4,2	5,6	5,7	4,6	3,0	2,2	.
without Poland	5,0	6,3	6,4	4,7	5,3	5,7	4,8	3,8	3,4	4,4

*/ National income generated per active earners.

Table 13. Rates of growth p.a. /%/ of labour productivity ^{*}/ in industry

Country	1961- 1965	1966- 1970	1971- 1975	1975- 1980	1976	1977	1978	1979	1980	1981
Bulgaria	6.8	6.9	6.7	5.3	6.5	6.6	6.2	4.1	2.7	2.9
Czechoslovakia	3.5	5.4	6.0	4.0	5.1	5.1	4.4	3.1	2.7	2.0
GDR	5.6	5.7	5.4	4.5	5.3	4.5	4.3	4.0	4.4	4.0
Hungary	4.9	3.7	6.3	4.5	5.5	6.7	4.9	4.6	0.7	4.4
Poland	5.1	4.9	7.6	4.3	8.9	5.1	4.9	2.8	0	10.3
Romania	7.7	7.3	6.4	6.7	8.4	8.8	6.7	5.7	4.2	2.4
USSR	4.6	5.8	6.0	4.0	3.3	4.0	3.6	2.4	2.6	2.7
Unweighted average										
with Poland	5.5	5.7	6.3	4.8	6.1	5.8	5.0	3.8	2.6	1.3
without Poland	5.5	5.8	6.1	4.7	5.7	5.2	5.0	3.9	2.9	3.0

^{*}/ Gross value of output at constant prices per employee .

The deceleration of the growth in labour productivity is not so easy to explain. Referring to the Verdoorn-law some part of it can be attributed to the lower rates of growth of output which again - in order to avoid the vicious circle of self-explanation - is to be correlated with the lower growth rates of employment and investments. According to the data available /see Table 14/ the share of accumulation in the national income generated compared to 1975 became smaller in each country. The rates of growth of investments /see Table 15/, in 1966-1975 compared to the previous five-year period increased remarkably, according to the unweighted average of these countries from 6.4 to 9.5 per cent, then decreased in 1976-1981 below 3 per cent p.a. - with significant variations by years /the decrease was particularly marked from the late seventies/ and also by countries.

Table 14. The share of accumulation in the national income generated %/

Country	1960	1970	1975	1980	1981
Bulgaria	27.4	29.2	32.5	24.9	26.9
Czechoslovakia	17.7	27.0	29.2	26.2	20.2
GDR	18.0	24.2	22.2	22.7	22.7
Hungary	20.5	24.9	27.7	23.1	22.2
Poland	24.0	25.1	34.1	17.9	9.8
Romania	20.1	27.9	35.4	.	.
USSR	26.8	29.5	26.6	23.9	23.9
Unweighted average					
with Poland	23.5	26.8	29.9	23.1	20.9
without Poland	24.1	27.1	29.3	24.2	23.1

The share of the industry in total investments did not change significantly, it amounted to around one third in Hungary, Poland and the USSR, about 40 per cent in Bulgaria and Czechoslovakia, 51 per cent in Romania, 55 in the GDR. Nevertheless the overall reduction of investments meant less resources available for the industry and an addition with the exception of the GDR the share of the fuel and energy sectors in the investments in the industry increased in each country /between 1975 and 1981 by 1 to 8 percentage points to 21-36 per cent/.

Table 15. Rates of growth p.a. /%/ of investments

Country	1961-1965	1966-1970	1971-1975	1976-1980	1975	1977	1978	1979	1980	1981
Bulgaria	7.9	12.5	8.6	4.0	0.6	14.2	0.6	-2.2	7.5	10.5
Czecho-slovakia	2.0	7.3	8.0	2.8	3.6	2.8	4.3	1.6	1.6	-4.8
GDR	4.8	10.0	4.8	3.4	7.4	5.6	2.8	1.4	0.3	2.7
Hungary	5.6	11.7	7.0	2.4	-0.1	13.0	5.0	1.0	-5.8	-6.3
Poland	6.8	8.1	17.5	-3.0	1.0	3.1	2.1	-7.9	-12.3	-22.7
Romania	11.3	11.2	11.5	8.5	8.5	11.7	16.0	4.1	3.0	-7.0
USSR	6.2	7.6	7.0	3.4	4.5	3.7	6.0	0.7	2.3	3.8
Unweighted average										
with Poland	6.4	9.8	9.2	3.1	3.6	7.7	5.3	-0.2	-0.5	-3.3
without Poland	6.3	10.0	7.7	2.6	3.5	7.3	5.0	-0.9	1.3	-0.1

The stock of the productive fixed assets in the CMEA-countries increased also in the second half of the seventies at a relatively high rate, the reduction of investments will be felt only in the coming years. Since the slow-down of the national income generated started earlier, capital/output ratios increased, that means "capital productivity" decreased remarkably /see Table 16./

Table 16. Rates of growth p.a. /%/ of the stock of the productive fixed assets and of the capital/output ratio

Country	Stock of the productive fixed assets at constant prices				Stock of fixed assets per unit of national income generated			
	1961-1965	1966-1970	1971-1975	1976-1980	1961-1965	1966-1970	1971-1975	1976-1980
Bulgaria	9.8	11.0	8.9	8.1	2.9	2.0	1.0	1.9
Czechoslovakia	4.6	4.2	5.6	5.7	2.6	-3.5	0.0	1.9
GDR	6.0	4.9	5.9	5.7	2.5	-0.3	0.5	1.5
Hungary	4.9	5.7	6.6	6.7	0.8	-1.0	0.0	3.2
Poland	4.6	5.9	8.1	7.2	-1.5	0.0	-1.5	5.9
Romania	7.9	10.8	11.8	10.3	1.1	3.0	0.1	3.1
USSR	9.6	8.1	8.7	7.3	2.9	0.3	2.8	2.9
Unweighted average with Poland	6.9	7.2	7.9	7.3	1.8	0.1	0.4	2.9
without Poland	7.1	7.5	7.9	7.3	1.3	0.1	0.7	2.4

Similar trends can be observed in the industry too. The data quoted from the "Economic Survey of Europe in 1981" indicate in the second half of the seventies a definite increase in the capital/output ratio in some countries in the range of 3-4 per cent per annum /see Table 17/. The unweighted average in 1971-1975 was around 0 /as a consequence of small changes with different signs/, in 1976-1980 including Poland -2.6, calculated without Poland -2.0.

The lower growth rates of total factor vs labour productivity are not surprising, all calculations of this type /in the CMEA-countries called often assessment of the "efficiency of production"/ measure according to a smaller scale but the differences are relatively large. The deceleration of the productivity growth in percentage points are in both cases approximately in the same range /2-3 per cent, except Romania where 0.5 only / but compared to the lower figures of the total factor productivity this shows a more marked slow-down.

Table 17. Productivity indicators in industry
/average annual percentage change/

Country	Labour productivity ^{a/}		Capital productivity ^{b/}		Total factor productivity ^{c/}	
	1971-1975	1976-1980	1971-1976	1976-1980	1971-1975	1976-1980
Bulgaria	6.2	4.4	-0.6	-3.6	4.2	2.0
Czechoslovakia	5.9	3.7	1.1	-1.5	4.5	2.1
GDR	6.2	4.4	0.1	-1.0	4.4	2.8
Hungary	6.1	4.5	-1.5	-4.3	3.8	1.8
Poland	7.3	4.3	1.0	-4.2	5.4	1.7
Romania	6.2	5.8	-0.3	-0.8	4.3	3.8
USSR	5.8	2.8	-1.1	-2.9	3.7	1.1
Unweighted average with Poland	6.2	4.3	-0.2	-2.6	4.3	2.2
without Poland	6.1	4.3	0.2	-2.0	4.2	2.3

Source: Economic Survey of Europe in 1981 /UN, 1982/, p. 221.

^{a/} Gross value of output per employee, ^{b/} Gross value of output per unit of the value of fixed assets at constant prices, ^{c/} Weighted average of the growth rates of labour and capital productivity with weights 0.7 and 0.3 resp.

Illustrated by the unweighted average figures, these indicate in labour productivity a one third loss in the growth rates /6.2 - 4.3/, in total factor productivity its half /4.3 - 2.2/. Looking from this angle labour + capital are the extensive factors of growth, the increase of total factor productivity

is the intensive factor. Compared to the analysis of labour input and labour productivity only, in this more comprehensive assessment the share of growth attributed to the extensive factors appears to be higher, the need for increasing the role of the intensive factors even more pressing.

A number of factors contributed to this decline of capital productivity and notable slow-down of total factor productivity in the industry, among others the need to substitute scarce labour by fixed assets, environmental protection expenditures, under-utilization of existing capacities, the increasing share of the capital intensive energy sector. The substantially lower rates of growth of industrial investments in 1981-1985 will force enterprises to use their capacities more efficiently and if a lasting slow-down of growth can be avoided these trends can be reversed at least partially.

There are not adequate global indicators to measure the relative level of and the changes in the per unit use of energy and materials. Since these countries with the exception of the Soviet Union are very dependent on imported energy and raw materials and the relative price increases of these commodities have significant impact on their balance-of-payments, they are making efforts to reduce the material intensity of their production. The ratio of the gross and net value of output, resp. of their growth rates can be considered as a rough indicator of these efforts. A comparison of the annual growth rates of the national income generated in industry /see Table 4/ and those of the gross value of industrial output /see Table 5/ hints to some improvements but the reservations concerning the comparability of these figures and the many other factors influencing these growth rates /e.g. the structural changes/ do not allow to make definite conclusions.

Changes in the pattern of production and trade

The UN value added weights by ISIC divisions and branches for 1963 and 1975 /published in the Monthly Bulletin of Statistics/ show more or less similar changes in the CMEA-countries as in the developed market economies. The share of mining both in the centrally planned and the developed market economies from 1963 to 1970 declined, then to 1975 due to the relative price changes increased approximately to the level of 1963. The share of mining in the developing countries between 1963 and 1970 did not change, then to 1975 increased from 23,0 to 44.5 per cent /that of oil mining from 16.8 to 40.7 per cent/, the shares of the branches of the manufacturing sector decreased, within the manufacturing sector the share of chemicals and metal products from 1963 to 1975 grew /15.7-22.0, resp. 15.1-22.0/, that of foodstuffs and textiles decreased /27.1-19.9, resp. 13.7-10.0/.

Comparing the changes in the CMEA countries and in the developed market economies, from 1963 to 1975 the most apparent differences are as follows:

growth in the share of textiles and clothing in the CMEA-countries /9.2-11.4/, its decrease in the other group /9.0-7.2/;

decrease in the share of the food and wood industries in the CMEA-countries /17.7-14.7/, no changes in the other group;

in the CMEA-countries greater increase of the chemicals /7.6-9.7 vs. 12.0-12.7/, somewhat less one of the metal products /34.0-34.5 vs. 32.5-33.7/ which results in smaller differences in the absolute levels.

The changes between 1975 and 1981 show some marked dissimilarities compared to 1963-1975 and some reversed

trends /see Table 18/. These should be looked at against a background of the growth of industrial output in this period in the CMEA-countries by 35 and in the developed market economies and in the developing countries by 23 per cent. The share of manufacturing and of electricity, gas and water in the developing countries remarkably increased in harmony with their industrialization targets, at the cost of mining. The changes in these aggregates in the other two groups of countries were not significant except the contracting share of mining in the CMEA-countries /in particular in coal and metal mining/ and the increasing share of crude petroleum and natural gas in the developed market economies.

Within the manufacturing sector in all groups the share of the heavy manufacture somewhat increased like in the previous periods. In 1976-1981 in the CMEA-countries the share of metal products unvariably increased /now more than in the other two groups of countries/ but the share of chemicals declined /while in the other two groups continued to grow/. All other branches of the manufacturing sector in the CMEA-group showed a below average rate of growth.

Table 18. Relative growth coefficients by ISIC divisions and branches, 1976-1981

Division, branch	World	CMEA-countries	Developed market economies	Developing countries
Mining	0.92	0.86	1.04	0.88
Manufacturing	1.01	1.02	1.00	1.08
Light manufacturing	0.96	0.95	0.94	1.05
Heavy manufacturing	1.04	1.06	1.03	1.10
Electricity, gas and water	1.03	0.96	1.01	1.34
Coal	0.86	0.76	0.90	1.15
Crude petroleum and natural gas	0.93	0.95	1.23	0.87
Metal mining	0.82	0.73	0.81	0.92
Food, beverages, tobacco	0.97	0.88	0.96	1.18
Textiles	0.87	0.88	0.85	0.88
Wearing apparel, leather and footwear	0.88	0.95	0.80	0.96
Wood products, furniture	0.90	0.90	0.89	1.08
Paper, printing, publishing	1.00	0.88	1.02	1.11
Chemicals, petroleum, coal and rubber products	1.04	0.96	1.06	1.09
Non-metallic mineral products	0.96	0.92	0.95	1.09
Basic metals	0.93	0.88	0.91	1.22
Metal products	1.08	1.15	1.05	1.06
Industry	1.00	1.00	1.00	1.00

Source: Monthly Bulletin of Statistics, UN, July 1982.

Vis-à-vis the developed market economies in the CMEA-countries further significant differences are the decrease of the share in paper, printing, publishing, the larger decrease of food, beverages, tobacco, and the smaller decrease of wearing apparel, leather and footwear. The major divergences vis-à-vis the developing countries can be characterized by the fact that except textiles and clothing industry the share of all other branches of the manufacturing sector increased, in particular basic metals and food, beverages and tobacco.

The value added weights for different regions used to the calculation of production index numbers, elaborated by the UN Statistical Office, can be considered as measures of the shares of ISIC divisions and branches. The last weights had been derived from the data of the year 1975. If we adjust these weights by the relative growth rates of Table 18 we get a new set of weights for 1981 calculated at the prices of 1975. Comparing these two sets of figures /See Table 19/ both the changes in these weights and the structural pattern of the industry can be compared by the three groups of countries. The most remarkable differences of the CMEA-countries can be listed as follows, vis-à-vis the developed market economies

a higher share of mining manufacturing, heavy manufacturing; coal crude petroleum and natural gas; textiles, clothing, non-metallic mineral products, metal products;

a lower share of electricity, gas and water; wood products, furniture; paper, printing, publishing; chemicals.

The great differences vis-à-vis the developing countries emerge

as a higher share of manufacturing, in particular heavy manufacturing; coal mining; clothing, wood products, non-metallic mineral products, basic metals and in particular metal products, and

as a lower share of mining /other than coal/; electricity, gas, and water; food, beverages, tobacco; paper, printing, publishing; and chemicals.

Table 19. The share of the ISIC divisions and branches based on the value added weights of the UN statistics and their adjustment in 1975 and 1981.

Division, branch	World		CMEA-countries		Developed market economies		Developing economies	
	1975	1981	1975	1981	1975	1981	1975	1981
Mining	13.1	12.0	10.4	9.1	6.2	6.4	44.5	41.3
Manufacturing	81.1	82.0	86.9	88.6	86.2	85.9	51.8	54.2
Light manufacturing	28.8	27.5	30.9	29.4	29.3	28.4	23.4	24.8
Heavy manufacturing	52.3	54.5	56.0	59.2	56.9	57.5	28.4	29.4
Electricity, gas and water	5.8	6.0	2.7	2.3	7.6	7.7	3.7	4.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Coal	1.8	1.6	3.0	2.3	1.6	1.4	0.4	0.5
Crude petroleum and natural gas	8.9	8.3	4.5	4.3	2.7	3.3	40.7	37.1
Metal mining	1.1	0.8	0.9	0.7	0.9	0.7	2.1	2.2
Food, beverages, tobacco	10.8	10.5	11.9	10.4	10.6	10.1	10.3	11.8
Textiles	4.5	3.9	5.7	5.0	3.8	3.2	5.2	4.6
Wearing apparel, leather and footwear	3.8	3.4	5.7	5.4	3.4	2.7	2.6	2.5
Wood products, furniture	3.0	2.7	2.8	2.5	3.4	3.0	1.7	1.8
Paper, printing, publishing	5.0	5.0	1.7	1.5	7.0	7.1	2.3	2.5
Chemicals, petroleum, coal and rubber products	11.7	12.2	9.7	9.3	12.7	13.5	11.4	12.4
Non-metallic mineral products	4.0	3.9	5.7	5.2	3.6	3.4	2.7	2.9
Basic metals	6.2	5.7	7.1	6.2	6.6	6.0	3.3	4.0
Metal products	30.5	33.0	34.5	39.5	33.7	35.4	11.4	12.1

Source: Monthly Bulletin of Statistics, UN, November 1979. pp. XIV-XIX. adjusted according to the figures of Table 18.

Based on the data available the changes in the pattern of production in the individual CMEA-countries can be studied by two approaches: i/ on the basis of the changes in the shares of the branches /at current prices/ and ii/ on the basis of the relative growth rates of the branches /calculated at constant prices/. In the first case changes both in volumes and relative prices, in the second case only changes in volumes will be taken into account. First the percentage shares of branches in 1970 and 1981 are presented in Table 20 and a rough overview of the changes in Table 21 /according to the CMEA branch classification/.

Table 21. An overview of the major changes in the shares of branches between 1970 and 1981

Branch	Bulgaria	Checho-slovakia	GDR	Hungary	Poland	Romania	USSR
Electricity	++	+		+		-	
Fuel	++	-	-	-	-	++	-
Iron and steel	+	-	+	--	--	-	.
Non-iron metals	.					+	.
Engineering industries	+	+	+	+	++	++	++
Chemicals	+	+		++			+
Building materials	+		-		-		-
Wood					-		-
Paper	+				-		
Glass	.			+		+	
Textiles	--		-	-	-		
Clothing	--		-	-	+	-	
Leather and shoe	--		-	-	+	-	
Printing							
Food	-		-	-	-	--	-

Note: + indicates increase, ++ significant increase, - decrease, -- significant increase in the share of the branch.

The most characteristic features of these changes are the increase of the shares of the engineering industries in all and of the chemicals in most countries and the decrease of the share of textiles, clothing, leather and shoe and food industries in most countries. The major dissimilarities in the pattern of production measured by the shares of the different branches at national prices compared to the unweighted average of the shares can be seen in Table 22. These deviations may be attributed to a not negligible extent to the differences in relative national prices and also in industrial organization /since these figures are calculated from the gross value of output of the enterprises/, therefore the dissimilarities indicated in Table 22 in some cases can, in other cases cannot be explained by more substantial, economic factors like differences in level of development, specialization, foreign trade.

Table 23. Annual growth rates /%/ by branches, 1966-1975 /A/ and 1976-1980 /B/
in the state-owned and cooperative industry

Branch	Bulgaria		Czechoslovakia		GDR		Hungary		Poland		Romania		USSR	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Electricity	9,8	8,7	6,7	4,8	5,5	5,9	7,9	5,9	6,8	5,4	13,2	4,6	8,1	5,0
Fuel	11,9	5,4	4,1	2,7	4,7	3,5	5,5	2,1	6,3	2,4	5,7	4,2	5,5	2,8
Iron and steel	15,2	7,3	4,9	2,7	5,6	3,8	4,4	1,0	6,6	3,2	11,8	8,9	5,9	2,3
Non-iron metals	.	.	7,6	3,1	7,7	4,2	7,0	2,9	12,6	3,6	11,7	5,8	.	.
Engineering industries	15,1	9,2	8,9	6,7	7,4	7,0	7,8	3,2	13,4	7,0	17,0	12,7	11,6	8,2
Chemicals	16,2	9,7	9,9	5,8	7,7	4,9	11,5	7,8	12,6	4,3	15,8	9,6	11,1	5,6
Building materials	9,7	7,5	6,8	4,3	6,4	2,3	3,7	3,0	7,5	1,2	11,6	12,8	7,7	1,8
Wood	5,3	3,1	5,1	5,7	6,6	4,2	5,5	4,4	8,2	4,8	6,5	6,2	5,0	1,4
Paper	13,6	4,2	6,2	4,3	5,5	4,5	8,4	4,2	5,9	1,7	11,9	7,3	7,9	2,2
Glass	10,8	6,5	6,6	5,2	5,6	5,4	9,2	7,0	10,2	9,9	13,5	9,6	10,7	6,5
Textiles	8,0	5,0	5,4	5,5	4,8	3,9	3,0	2,2	7,5	3,0	11,7	10,7	6,0	2,7
Clothing	10,5	2,8	5,3	3,4	4,7	2,8	5,2	2,5	10,2	3,7	15,0	8,5	8,4	5,0
Leather and shoe	8,3	2,1	6,0	3,3	6,1	4,7	5,0	-2,0	7,1	4,2	9,4	9,0	5,3	3,8
Printing	8,0	10,6	7,9	4,0	4,4	2,4	8,6	6,3	7,4	6,9	4,5	5,8	.	.
Food	6,0	2,8	4,4	2,7	4,7	2,7	5,9	3,4	5,9	2,4	7,0	6,0	5,6	1,5
Industry	10,0	6,0	6,7	4,6	6,5	5,0	6,4	3,4	9,5	4,6	12,5	9,5	8,0	4,4

Table 22. The major dissimilarities in the pattern of production in 1981 /measured by the shares of the branches at national prices/

Branch	Bulgaria	Checho-slovakia	GDR	Hungary	Poland	Romania	USSR
Electricity		-	+	+	-	-	-
Fuel	+	-	+		-	+	-
Iron and steel	-	+		-	-	+	.
Non-iron metals	.	-				+	.
Engineering industries	--	+	+	+	+	+	-
Chemicals	-	-	+	++	-		+
Building materials	+	+	--	--	-	+	+
Wood		+	-	-		+	
Paper		+	+	-			+
Glass		+					-
Textiles	-	-	-	--	+	+	++
Clothing	-	-	-		+	+	+
Leather and shoe	-	+			+		
Printing				+		-	.
Food	++	-	-	-	+	--	+

Note: + indicates higher, ++ remarkably higher, - smaller, -- remarkably smaller share than the unweighted average.

One may assume that the lower share of the engineering industry and the higher share of textiles, clothing and food industries in the Soviet Union is due to a great extent to the specific Soviet price structure. The relatively high share of the food industry in Bulgaria seems to be in harmony with the development of the agriculture in this country while the lower share of this branch in Hungary

besides the impact of the relative prices possibly can be explained by the fact the development of food processing is somewhat lagging behind the well known achievements in its agriculture. The chemical industry has the highest share in Hungary in spite of the lack of indigenous raw materials which can be attributed probably to the high demand for chemicals in agriculture and to the importance of the pharmaceutical industry. The relatively high share of leather and glass industries in Chechoslovakia is a reflection of long traditions.

In the intra-CMEA trade the Soviet Union is the main supplier of fuels and raw materials which will be compensated mainly by food, chemicals and machinery deliveries /see Table 24/. Apart from this, intra-branch specialization is the predominant feature within the European CMEA-countries. Specialization is most advanced in the engineering industries, more by products than by sub-branches. Altogether about 10.000 products of the engineering industry will be delivered accounting to bilateral or multilateral agreements but the specialization and co-operation in the production of parts and components still is felt not sufficient.

In Table 23 the comparative annual growth rates by branches and by countries are presented for the periods 1966-1975 and 1976-1980. The ranking order of the countries according to the overall slow-down of industrial growth is as follows:

by the absolute by the relative
decrease of the growth rate of the industrial output

GDR	/-1.5/	GDR	/-23 %/
Czechoslovakia	/-2.1/	Romania	/-24 %/
Romania		Czechoslovakia	/-31 %/
Hungary	/-3.0/	Bulgaria	/-40 %/
USSR	/-3.6/	USSR	/-45 %/
Bulgaria	/-4.0/	Hungary	/-47 %/
Poland	/-4.9/	Poland	/-52 %/

From the 102 pairs of branch growth rates in Table 23 only 6 show an increase from 1966-1975 to 1976-1980 /not concentrated in special branches/ and 96 indicate decrease. Looking at the several branches - comparing their growth rates to the average industrial growth in the two periods under review - engineering industry and chemicals remained "growth industries" with a few exceptions: in 1976-1980 in the engineering industry the growth rate was below average in Hungary, in the chemicals in the GDR and Hungary. In textiles, leather and shoe and food industries the growth rates were below average - except Romania in textiles, Hungary in food. Though the variations in the relative branch rates of growth are not negligible, a more or less similar pattern can be observed in most other branches as well. Beside the branches mentioned already at least 5 of the 7 countries show an above-average growth in 1976-1980 in electricity and glass, a below-average growth in fuel, iron and steel, non-iron metals, building materials and paper.

Table 24. The share of intra-CMEA trade by commodity groups, 1978 /in percentages/.

Commodity group	From total exports		From total imports	
	intra-trade	of which: to USSR	intra-trade	of which: from USSR
Food	45.6	25.5	23.7	2.2
Crude materials	45.3	3.8	44.2	35.2
Mineral fuels	43.1	2.4	79.6	67.7
Chemicals	53.3	25.3	38.9	6.7
Machinery and transport equipment	73.6	32.6	68.2	15.1
Other manufactured goods	52.2	16.8	48.3	17.9
Total	55.6	18.6	56.6	22.5

Source: Monthly Bulletin of Statistics UN, July 1980. pp. XXIV.-XXXIX.

These changes reflect both general trends and some specific characteristics of the development and trade of these countries. Tables 24 and 25 may elucidate the commodity composition of the European CMEA-countries' trade in the year 1978. Vis-à-vis the developed market economies they had a substantial surplus in mineral fuels and crude materials which had been used predominantly to import machinery and transport equipment. Vis-à-vis the developing countries they had surplus just in this latter commodity group and in the "other items not specified" and this had been used first of all for food import. The role of the intra-CMEA trade by the same commodity groups can be seen from Table 24 and this shows also the special assymmetric position of the USSR within this region.

Table 25. The commodity composition of the CMEA trade with the developed market economies and the developing countries, 1978 /in percentages/

Commodity group	Developed market economies			Developing countries		
	Exports	Imports	Difference	Exports	Imports	Difference
Food	8.3	12.4	-4.1	7.7	53.9	-46.2
Crude materials	12.5	6.5	6.0	3.5	16.7	-13.0
Mineral fuels	38.1	1.0	37.1	8.5	19.0	-10.5
Chemicals	5.0	12.2	-7.2	4.5	1.2	3.3
Machinery and transport equipment	10.7	36.8	-26.1	29.1	0.1	29.0
Other manufactured goods	23.4	30.3	-7.1	10.8	9.0	1.8
Other items not specified	2.0	0.8	1.2	35.7	0.1	35.6

Source: Monthly Bulletin of Statistics UN, July 1980. pp. XL-LXXXIII.

Due to the great differences in the increase of the exports and imports by commodity groups /see Table 26/ the pattern of foreign trade changed though not basically but remarkably both in the Soviet Union and in the other 6 countries of the region. According to our data on the volume of trade, in the Soviet exports to the socialist countries fuels and energy /and also machinery and equipment/ have a higher, raw materials and semi-finished products a lower share, while in the exports to the market economies the share of fuels and energy continued to grow from 40 to 44 per cent and the

Table 26. Rates of growth p.a. /%/ of the volume of foreign trade in 1976-1980.

Country and commodity group	Machinery and equipment	Fuels and energy	Raw materials and semi-finished products	Foods-tuffs	Consumer goods	Un-specified	Total
<u>Eastern Europe</u>							
<u>Exports to</u>							
socialist countries	5.8	-7.0	1.3	4.3	5.2	-	4.0
market economies	9.1	-0.1	6.1	3.1	10.0	-	6.0
<u>Imports from</u>							
socialist countries	2.9	2.1	3.0	-0.3	3.2	-	2.6
market economies	-0.7	10.1	1.1	6.5	7.4	-	2.6
<u>Soviet Union</u>							
<u>Exports to</u>							
socialist countries	5.4	8.0	0.2	-10.6	4.2	3.1	3.7
market economies	5.1	7.5	3.4	-6.4	9.2	3.6	5.2
<u>Imports from</u>							
socialist countries	5.7	-12.7	3.7	1.6	2.3	7.0	3.8
market economies	-0.3	-5.1	5.1	10.1	6.7	9.7	9.7

Source: Economic Survey of Europe in 1981. UN, 1982. p. 288.

Note: Eastern Europe denotes the European CMEA-countries without the Soviet Union.

Table 27. The commodity structure of the foreign-trade in 1975 and 1980 /percentage shares at the prices of 1975/.

Country and commodity group	Machinery and equipment	Fuels and energy	Raw materials and semi-finished products	Foods-tuffs	Consumer goods	Un-specified	Total
<u>Eastern Europe</u>							
<u>Exports to</u>							
socialist countries	50-54	7-4	17-15	11	15-16	-	100
market economies	19-22	18-13	17-28	19-16	17-21	-	
<u>Imports from</u>							
socialist countries	37	21	28	7-6	7-8	-	100
market economies	29-24	8-12	46-42	12-15	5-7	-	100
<u>Soviet Union</u>							
<u>Exports to</u>							
socialist countries	24-26	26-32	31-26	5-3	3	11-10	100
market economies	11	40-44	19-18	3-2	3	24-22	100
<u>Imports from</u>							
socialist countries	39-43	3-1	11	21-19	19-18	7-8	100
market economies	29-22	5-3	31-32	25-32	6	4-5	100

Source and Note: see Table 26.

"Unspecified" item has invariably a high share /22 per cent, see Table 27/. In the Soviet imports the share of machinery and equipment from the other socialist countries increased, from the market economies decreased and in this relation the

share of the import of foodstuffs grew from 25 to 32 per cent.

The shares of the exports and imports by commodity groups and by countries show some remarkable changes between 1975 and 1980 first of all in two commodity groups /see Table 28/. Concerning the group machinery and equipment Romania transformed its negative trade balance to a small surplus, Bulgaria its small "deficit", Poland its small surplus to a larger surplus. The exports to the developed market economies in this commodity group were not significant, besides the intra-CMEA trade the exports to the developing countries had a greater role. The imports from the developed market economies after years of increase contracted in particular in Poland and also in the Soviet Union connected with the slowing of investment growth after 1978. In the commodity group fuels, minerals, metals the USSR's surplus substantially increased, the net import in the other countries increased, except Hungary /primarily avoiding the increase of the imports/. The next commodity group /including raw materials, semi-finished products and foodstuffs/ is too complex for a simple interpretation, and in the remaining two groups no significant changes can be observed. Data of Table 27 indicate a rapid rise in the volume of foodstuffs imports from outside the region, largely imports of fodder grains necessitated by a succession of several poor harvests. The Soviet Union in 1980 had the largest net import vis-à-vis the market economies in foodstuffs /30 per cent/ and the largest positive balance in fuels /41 per cent/.

In 1981 in the Soviet Union the volume of exports decreased by 3 per cent /mainly due to the weak fuel market/, the volume of imports increased by 10 per cent; the value data show a 4 resp. 7 per cent increase, and still favourable changes in the terms-of-trade. In its trade balance the surplus vis-à-vis the market economies disappeared: its trade balance

Table 28. The share of the exports and imports by commodity groups and by countries in 1975 and 1980.

Country	Machinery and equipment	Fuels, minerals, metals	Raw materials, semifinished products, foodstuffs	Consumer foods	Chemicals, other products
<u>Bulgaria</u>					
Exports	40,7-44,4	7,8-15,0	33,8-24,4	10,3-8,8	6,7- 6,2
Imports	41,4-35,4	33,5-42,9	12,7- 9,7	5,1-4,4	6,3- 7,0
Difference	-0,7/9,0	-25,7/-27,9	21,1/14,7	5,2/4,4	0,4/-0,8
<u>Czechoslovakia</u>					
Exports	48,0-50,3	19,3-17,2	7,2-8,6	18,2-15,9	7,3- 8,0
Imports	36,1-36,6	27,8-31,7	17,4-16,1	7,7- 5,9	11,0- 9,7
Difference	12,1/13,7	- 8,5/14,5	-10,2/-7,5	10,5/10,0	-3,7/-1,7
<u>GDR</u>					
Exports	50,7-51,3	12,1-14,8	9,1- 6,4	15,6-14,8	12,5-12,7
Imports	30,8-30,8	30,5-36,7	22,6-18,9	5,6- 5,0	10,5- 8,6
Difference	19,9/20,5	-18,4/-21,9	-13,5/-12,5	10,0/9,8	2,0/ 4,1
<u>Hungary</u>					
Exports	37,0-32,2	11,9-14,4	25,2-26,1	20,1-17,4	5,5 - 9,9
Imports	32,2-30,7	27,3-27,0	19,0-18,6	7,1- 7,7	14,4-16,0
Difference	5,0/-1,5	-15,4/12,6	6,2/ 7,5	13,0/9,7	-8,9/-6,1
<u>Poland</u>					
Exports	39,1-44,4	29,1-25,5	11,5- 9,9	14,6-15,3	5,7 - 4,9
Imports	37,4-32,7	30,0-31,1	17,8-20,9	5,3-6,4	9,5- 3,9
Difference	1,7/ 11,3	-0,9/-5,6	- 6,3/-11,0	9,3/ 8,9	-3,8/-4,0
<u>Romania</u>					
Exports	25,3-26,2	22,3-29,5	22,6-16,6	16,1-15,5	13,7-12,2
Imports	34,7-24,6	38,2-50,3	15,6-14,7	3,8- 3,0	7,7- 7,4
Difference	-9,4/1,6	-15,9/20,8	7,0/1,9	12,3/12,5	6,0/4,8
<u>USSR</u>					
Exports	18,7-15,8	48,3-57,2	14,1-8,3	3,1-2,5	15,8-16,2
Imports	33,9-33,9	15,9-14,1	29,1-30,4	12,9-12,1	8,2 - 9,5
Difference	-24,8/22,1	32,4/43,1	-15,0/-22,1	-9,8/-9,6	7,6/7,3

the 1.2 billion US dollars deficit vis-à-vis the developed market economies had been just compensated by a surplus of the same magnitude vis-à-vis the developing countries and the large surplus /6.2 billion/ originated in the essentially rouble-dominated trade with the socialist countries. For the coming next years the terms-of-trade movements in the convertible-currency trade most probably will not be as favourable as they have been in the previous years and a substantial Soviet import expansion in volume terms cannot be expected.

In the other 6 countries in 1981 both the volume of exports and imports decreased, by 2, resp. 6 per cent. Import expansion was in all cases held below export growth in order to improve the trade balance, to hold down or reverse the growth of external debt. Poland shows the most remarkable absolute contraction /in value terms 22 resp. 20 per cent/, without Poland these countries would have produced a small increase in exports. The trade balance of the 6 countries in 1981 is estimated with the market economies 1 billion, in the intra-trade 2.2 billion deficit, in the first relation and in total less, in the intra-trade more than in the previous years. The changes in the terms-of-trade vis-à-vis the market economies remained neutral, those vis-à-vis the Soviet Union deteriorating. These will necessitate further steps in structural adjustment.

Industrial policies

The slow-down of economic /and industrial/ growth in the CMEA-countries will be attributed mainly to three factors: /i/ the exhaustion of the extensive factors of growth, /ii/ shortcomings in the system of economic guidance and /iii/ unfavourable changes in the external economic relations. These factors appear and will be judged differently in the several countries depending on their specific situation and also on the points of view how they evaluate the determinants of their situation. Industrial policy will be formulated seldom explicitly as a bundle of goals, means, measures but the medium-term plans set targets and programmes for implementation at the present time predominantly on the three lines mentioned above.

The distinction between intensive and extensive factors is based on the well-known growth equations where the output is the product of the two groups of factors: /i/ the volume of inputs /or resources/ and /ii/ the output per unit of inputs that means the efficiency of the use of the inputs /or resources/. Consequently, the extensive factors are labour input /measured by the number of active earners, employees, or man-hours/, capital input /according to the stock concept or to the flow concept, i.e. investments/, the quantity of energy and materials used. The intensive factors will be quantified by productivity or efficiency indicators but include a large number of factors resisting separate quantification as e.g. management, motivation, economic policy, politics, etc.

In the CMEA-countries plans and other documents often distinguish the extensive and the intensive stage of growth. The demarcation of these two stages is based on the relative role of the changes in employment and labour productivity

measured usually by their percentage contribution to the aggregate growth. There are not precise rules, however, what is the minimum share of the contribution of the increase of employment /in the industry or in the economy as a whole/ where the end of the extensive stage can or should be stated. Since the growth of capital productivity and the productivity in the use of energy and materials in most cases is relatively small compared to the increase of the volume of these two factors of production /except the case of a very low rate of growth/ - the differentiation between intensive and extensive stages from these angle is less convincing. This does not mean, however, that the shortage of capital, energy, material, the increase of their relative prices would not necessitate additional efforts in order to promote higher efficiency in their use.

Actually all CMEA-countries experience a decrease of the contribution of employment to the growth of industrial output and this can be compensated only by a higher increase in labour productivity. This is one of the major targets in their industrial development plans, needed also for the competitiveness of the products independently from the situation whether vacant jobs are waiting or not for the now redundant manpower. Full employment is unvariably a basic goal of economic policy in these countries and in a period of slow growth the harmonization of these two goals is a very difficult task.

The maintenance of the achieved full employment situation by an increasing productivity necessitates more rapid structural adjustment and greater mobility of resources /including labor resources/ - and these are indeed basic targets in industrial development in these countries.

Labour productivity will be conceived and handled now in a broader interpretation than up till now. The most often used indicator - gross value of output per employee or man-hour - is judged as too narrow, since the gross value data and this ratio do not reflect changes in "embodied labour inputs", capital, energy, materials used. Therefore other, more comprehensive indicators will be recommended, as value added, net value of output, total factor productivity /complex efficiency/ etc. This should lead not only to a renewal of measurement but also to a reorientation as far as the factors of productivity increase are concerned: beside the substitution of labour by capital more emphasis will be laid on the not capital-intensive methods.

In the manufacturing industry all CMEA-countries face a shortage of capital due partly to the same, partly to differing circumstances. A common factor is the ^oinfrastructure in a period of slower growth when total accumulation declines. In countries with substantial debt service burden part of the national income generated must be used for this purpose which again reduces the resources available for the investments in manufacturing. All these led to programme, aiming at better use of existing capacities and particular attention to appropriate project evaluation and implementation.

All CMEA-countries have programmes for substantial savings in the use of energy and materials. These are motivated by the increase of relative prices of these factors of production and necessitated by constraints of the available quantities. These constraints come either from the limits of increasing domestic production or by the limits of increasing imports. The second component is not valid for the Soviet Union but the first one is: the ^oneed for investments in the fuel and energy sector and in the

unfavourable geographic distribution of its huge natural resources involves higher costs both of exploitation and transportation.

When the CMEA-countries emphasize the need for intensification, this means now a package of programs and measures aiming at a better utilization of all factors of production. The major means to achieve these goals are faster technical progress, improvement of planning, management and organization both at the macro- and micro level and in the 6 "Eastern European countries" better structural adjustment /i.e. this is less relevant for such a large country as the Soviet Union, where instead of that the problems of regional development are of utmost importance/.

The CMEA-countries, first of all the USSR, have a huge potential for research and development. They have a large network of academic and industrial research institutes, the share of the highly qualified manpower in the population is outstanding at international standards. These countries utilize the possibilities of central planning for launching big projects with the concentration of intellectual and material resources. They are strong in fundamental research but they recognized that less efficient in the rapid application and dissemination of the research findings; their recent efforts are aiming now at strengthening these innovative activities.

Innovation and diffusion of new technologies require also improvements in management and organization. From the mid-sixties all CMEA-countries implemented many programmes and projects in this field. Networks of management training centres, institutes and enterprises for consultancy in management and organization had been established.

Computers found wide application in enterprises, research laboratories, in design, planning and control. At the same time it has been recognized that in order to increase the efficiency of the management of the enterprises there is a need for more autonomy of the enterprises, for a greater role of prices, markets, finances, material and moral incentives.

All CMEA-countries have plans for improving their system of economic guidance but it is different how far they identify shortcomings in this system as a source of the slow-down of growth and what significance they attribute to the improvements foreseen. In general it is recognized that the traditional system of central planning and management at the higher level of development and with the greater internationalization and interdependence in the world economy should be up-dated. For instance, macroeconomic plans are unvariably considered as basic policy documents for determining and guiding the major stream of socio-economic development but certain elements of flexibility are allowed for the optimalization of solutions under changing circumstances not foreseen at the time of elaborating the plan. Time horizons, modifications of the original targets, micro-economic plans are dealt with less rigidly. There is a tendency to give more freedom for action and initiatives for the enterprises which will be limited, however, in cases when pressing supply and balance problems necessitate rapid short-term solutions. Hungary and Bulgaria are in the fore-front of the economic reforms while other countries are satisfied with smaller modifications.

Industrial organization in the countries under review show a high concentration compared to the market economies /see Table 29 /. This concentration is in

particular high in Czechoslovakia, Romania and Hungary. This originates not so much from large plant-sizes but from the dominance of multiplant firms. The large economic units with different names /association, trust, concern, etc./ are composed mostly of many plants often with thousands of employees and are considered as basic intermediate links in the chain of control. Recently the need for more flexible small and medium sized enterprises had been identified and in Hungary the tendency for decentralization prevails.

Table 29. Percentage distribution of workers by enterprise size-classes, 1981

Country	-500 workers	501-1000	1001-3000	3001-5000	5001-10000	more than 10000	Total
Bulgaria	26.2	21.0	37.3	4.8	6.6	3.1	100.0
Czechoslovakia	1.1	7.5	42.5	23.1	15.0	17.4	100.0
GDR	25.9	16.2	33.5	10.8	9.1	4.6	100.0
Hungary	14.3	12.3	30.8	15.9	12.7	14.0	100.0
Poland	20.3	16.1	31.5	14.3	12.1	5.7	100.0
Romania	4.6	10.8	37.3	48.9	18.8	9.6	100.0
USSR	17.1	12.2	25.0	13.3	15.0	17.4	100.0

As the third factor of the slow-down of economic growth the unfavourable changes in the external economic relations had been mentioned. Many aspects of these changes have been dealt with in the previous parts of this paper, differentiated by countries, in particular between the Soviet Union net exporter of fuels, with a relatively low share of foreign trade and the other 6 countries with opposite characteristics. Here the policy implications of these past changes and their consequences will be dealt with briefly.

Aiming at the rapid modernization of their production potentials in the first half of the seventies the CMEA-countries' imports from the Western economies grew much faster than their exports. The year-to-year trade deficits piled up an increasing debt which they were not able to compensate in the period of the Western recession and protectionist measures. Aggravated in most CMEA-countries by a deterioration of their terms-of-trade, government decisions had been taken to brake the growth of indebtedness by export promotion and import restrictions. They applied both strategies combined and with temporary changes in emphasis. The increase of exports often encountered difficulties of trade barriers and/or lack of competitiveness, slow structural adaptation, import restrictions proved to be constraints of growth. They are going to elaborate balanced, combined strategies.

The trade between the CMEA and the developing countries shows great fluctuations. Slackenings in expansion are often followed by recoveries; high growth rates by deceleration due to problems of supply, absorption, availability of credits. Notwithstanding, there are good possibilities of a mutually advantageous international division of labour between these countries mostly different both in factor endowment and level of development. This is reflected also in intergovernmental agreements which include implementation of large investments projects, programmes for scientific, technical and economic co-operation, training, and other forms of assistance.

It should be noted, however, that the differentiation within the group "developing countries" is growing and the CMEA-countries' relationships with their various subgroups should be differentiated accordingly. While some /the "4th world"/ countries need urgently assistance of any form and

the pattern of specialization and co-operation is given for quite a number of years ahead, others are approaching the level of "medium development" and become in many areas competitors of the CMEA-countries. In these latter cases only an intra-industry specialization is feasible. In addition differences in financial situation, relationships with MNCs, traditions and political attitudes have their strong impacts too. The world's trading structures have become deeply unbalanced; the CMEA-developing countries trade and co-operation is to be fitted into the whole restructuring process ahead of us.

Also some problems of the intra-CMEA trade necessitate a reconsideration of the actual achievements and future targets of the structural adjustment process, of course again primarily in the 6 Eastern European countries.

Looking for the common features, in the guidelines which they take into account in shaping the pattern of their production, the main directives can be summarized as follows:

/i/ identification and utilization of the comparative advantages owing to the natural endowment, past experience and skills;

/ii/ increasing specialization within the country, the CMEA and by the world-wide international division of labour, aiming at both economies of scale on the cost side and better performance as far as the quality and the parameters of the products are concerned;

/iii/ as reaction to the increase of the energy and raw material prices, the development of the extractive industries /if justified by economic considerations/, introduction and dissemination of energy and material saving technologies, preference for products of this character, higher processing of the materials if possibly.

The planned structural changes in manufacturing seldom affect seriously the shares of the branches, they reflect mostly the increase in the intra-industry specialization. The need for improvements in the balance of foreign trade brought into the fore the possibilities of import substitution, nevertheless this does not overshadow the pressing necessity for export promotion and as its precondition: better competitiveness and structural adaptation. In case of standardized products low wage countries' advantages should be compensated by higher productivity or it is better to withdraw. Sophisticated quality products require high standards of technology and management, R&D and innovation, therefore the less advanced countries like most members of the CMEA, have to concentrate their efforts and resources within the country and by help of international cooperation, otherwise they have not chance for success.

Structural changes are often accompanied by social tensions and they involve substantial risks. In the centrally planned economies emerging social tensions will be eased and eliminated as much as possible with particular attention to employment and assistance to retraining and mobility.

Finally it must be stressed again that devoting more space to present the common features in the goals and instruments of the CMEA countries' national policies this should not overshadow the differences in approaches, strategies, targets and methods. All these countries consider industry as the most dynamic sector of the economy and are aiming at possibly high rates of industrial growth but they are at different level of industrial maturity and there are variations how they are going to integrate and harmonize the development of industry,

agriculture and services. Industrial policy will be co-ordinated in all countries with other social objectives /cultural, regional, ecological, humanitarian etc./ but content and ranking of these objectives might differ. All countries focus on intensification in the use of resources, on the increase of efficiency, improvement of quality, faster progress in technology, management and organization. International co-operation, in particular CMEA integration are prime objectives equally - strategies, the judgement of the possibilities, priorities may vary depending on a number of circumstances.

There are great many common elements in the means of implementation, like central planning, optimal combination of state intervention and enterprise initiatives, the use of moral and material incentives, the need for better utilization of the financial instruments, improvements in industrial organization, etc. The methods, the preferences, the mix, however, how these instrument are combined how they actually operate as well as the system of decision making, the degree of centralization and delegation show ample differences.

Trends in selected industrial branches

Trends in the following selected branches will be dealt here briefly: iron and steel /including metal mining, according to the CMEA-classification/, engineering industries, chemicals, textiles and clothing, food industries. From these branches in 1976-1981 only the engineering industries showed an above industrial average growth rate /54 per cent compared to 35 per cent of the total industry/, gross value of output increased in all other branches with a below average rate. This is valid for the chemicals too due to the slowing down

of its growth in the last years. A comparison with the developed market economies and the developing countries had been presented in Table 18 and 19 and in the analysis following these tables.

In the next pages a set of tables show the country by country figures, index numbers of output and labour productivity. These data indicate some remarkable features which can be explained by the differences in factor endowment, level of development, pattern of foreign trade. Nevertheless some common trends can be identified. In iron and steel the constraints for investments /and exports/ as well as the targets to economize the use of metal should result in a preference of the qualitative rather than the quantitative aspects of the development of this branch. Structural changes go in the direction of raising the share of quality steels.

The engineering industries are considered as the most important source for the technical equipment and modernization of all sectors of these economies. At the same time both the intra-CMEA trade and the trade with the developed market economies /with net import/ and with the developing countries /with net export/ are treated as of great importance. The share and the growth of this branch is higher than in the other regions but also for this branch technological progress, modernization, increased specialization are the prime targets for the future. Production and application of electronics, robots, machine systems for automation and complex mechanization will have a higher share in the pattern of production and technology in each country, accompanied with stronger specialization in parts and components and also by end products for specific uses.

The rate of growth and the share of the chemical industry is lower in the CMEA-countries than in the other regions. The acceleration of the development of this branch needs a reorientation of its pattern taking better into account the availability and the relative prices of the raw materials as well as the world market situation. The textile and clothing industry as well as the food industries most probably will grow below the industrial average but with moderated difference since special attention will be paid to satisfy the high domestic demand. In the pattern of production of international division of labour with the developing countries will play a growing role.

Iron and steel industry /including metal mining/ /state-owned and cooperative industry/

Index numbers of gross value of output at constant prices /1970=100/

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	13	175	197	212	225	241	248	261
Czechoslovakia	62	129	134	138	144	146	148	150
Greece	67	139	148	154	159	163	168	178
Hungary	64	125	129	134	137	142	133	126
Poland	54	145	151	159	170	169	169	138
Romania	33	171	190	220	240	259	261	273
USSR	49	131	138	141	146	146	146	148

Index numbers of labour productivity /1970=100/x/

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	42	147	163	168	171	180	192	201
Czechoslovakia	72	128	133	136	141	142	144	146
Greece	71	133	141	146	149	153	156	164
Hungary	69	125	131	137	140	146	137	136
Poland	69	135	139	143	150	150	152	126
Romania	46	148	159	179	195	208	197	203
USSR	62	127	133	134	139	132	132	132

x/ Gross value of output at constant prices per employee.

Engineering industries/state-owned and cooperative industry/

Index numbers of gross value of output at constant prices /1970=100/

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	21	197	218	250	277	289	307	328
Czechoslovakia	47	150	163	175	186	198	207	216
Greece	46	138	148	157	167	179	193	208
Hungary	43	146	154	165	175	182	172	180
Poland	29	196	222	245	259	274	275	240
Romania	22	230	258	298	340	379	417	427
USSR	32	172	188	205	223	239	254	269

E-2. Index numbers of labour productivity / 1970=100/^{x/}

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	42	162	177	197	214	223	236	249
Czechoslovakia	58	144	155	164	173	182	189	196
Greece	55	129	137	144	151	160	172	183
Hungary	62	144	152	162	171	181	177	190
Poland	49	163	183	195	206	217	217	195
Romania	41	143	154	170	186	199	204	213
USSR	51	154	162	172	183	194	204	213

^{x/}Gross value of output at constant prices per employee.

Chemical industry /state-owned and cooperative industry/

Index numbers of gross value of output at constant prices /1970=100/

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	17	174	183	206	227	248	277	289
Czechoslovakia	38	161	174	186	197	203	213	217
Greece	50	150	160	167	177	184	190	197
Hungary	25	161	180	196	220	233	235	244
Poland	29	176	196	204	212	217	218	196
Romania	13	207	240	274	301	307	327	338
USSR	31	164	176	188	199	204	216	228

Index numbers of labour productivity /1970=100/^{x/}

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	41	135	143	159	170	178	189	190
Czechoslovakia	53	148	159	169	179	183	191	193
Greece	53	142	152	158	166	172	177	183
Hungary	42	152	170	188	210	225	232	242
Poland	44	155	169	179	189	194	194	178
Romania	31	145	166	185	201	197	210	211
USSR	52	146	154	164	170	172	179	188

x/ Gross value of output at constant prices per employee.

Textile industry /state-owned and cooperative industry/

Index numbers of gross value of output at constant
prices /1970=100/

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	50	142	149	156	166	175	181	191
Czechoslovakia	68	133	136	140	147	153	158	163
Greece	73	129	136	141	146	150	155	159
Hungary	67	122	127	131	132	131	134	139
Poland	56	147	161	170	175	173	171	149
Romania	36	178	206	230	249	270	295	314
USSR	61	126	130	134	139	140	144	146

Index numbers of labour productivity /1970=100/^{x/}

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	60	125	131	138	148	156	162	169
Czechoslovakia	69	134	137	144	151	157	163	167
Greece	54	137	146	153	161	168	176	183
Hungary	79	130	139	146	148	153	163	172
Poland	66	135	148	158	166	168	170	154
Romania	56	125	139	149	158	170	182	193
USSR	69	124	128	131	135	136	140	143

^{x/} Gross value of output at constant prices per employee.

Clothing industry /state-owned and cooperative industry/

Index numbers of gross value of output at constant prices /1970=100/

Country.	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	36	144	147	149	152	156	165	174
Czechoslovakia	62	133	136	140	147	153	158	163
Greece	76	129	136	141	146	150	155	159
Hungary	61	122	127	131	132	131	134	139
Poland	41	147	161	170	175	173	171	149
Romania	30	178	206	230	249	270	295	314
USSR	52	133	136	140	147	153	158	163

Index numbers of labour productivity /1970=100/^{x/}

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	43	129	138	141	145	146	145	149
Czechoslovakia	69	136	143	150	157	165	170	174
Greece	65	131	137	139	145	153	160	163
Hungary	85	115	117	118	121	126	133	140
Poland	60	144	158	163	168	171	177	162
Romania	60	148	158	167	175	187	197	214
USSR	72	121	126	131	136	142	151	156

x/ Gross value of output at constant prices per employee.

Food industries /state-owned and cooperative industry/

Index numbers of gross value of output at constant prices /1970=100/

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	45	133	147	145	150	155	152	165
Czechoslovakia	71	126	126	134	139	142	144	146
Greece	72	130	134	138	141	145	148	151
Hungary	57	128	129	142	143	148	150	154
Poland	70	153	161	167	174	177	172	159
Romania	48	143	157	175	176	190	192	190
USSR	53	130	126	134	137	140	140	143

Index numbers of labour productivity /1970=100/^{x/}

Country	1960	1975	1976	1977	1978	1979	1980	1981
Bulgaria	60	134	150	151	160	163	162	167
Czechoslovakia	74	124	126	132	137	140	142	144
Greece	72	126	128	129	130	130	133	135
Hungary	74	118	119	130	129	133	138	142
Poland	87	128	134	139	145	150	145	130
Romania	72	117	123	131	136	147	152	161
USSR	67	124	123	127	129	130	131	133

^{x/} Gross value of output at constant prices per employee.

