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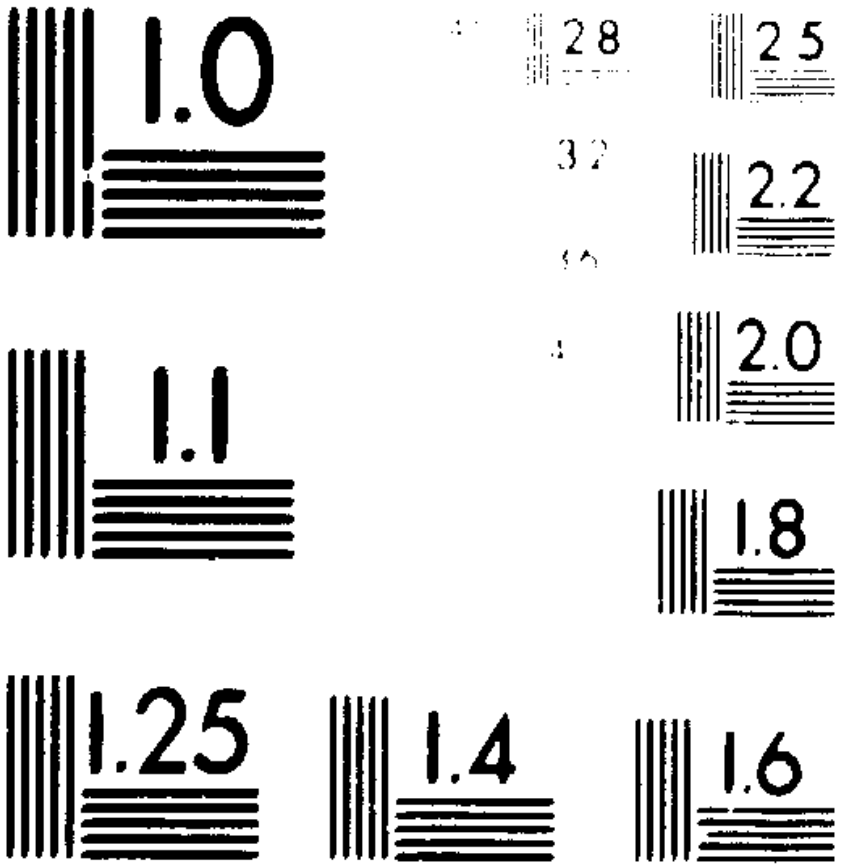

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FURTHER STRUCTURAL CHANGES IN THE INDUSTRY OF THE EUROPEAN CMEA COUNTRIES*

Karel Zeman
Mojmir Kasalicky

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TABLE OF CONTENTS

	Page
Preface	vi
Introduction	vii
I. Main factors influencing the structural adjustment of industry in European CMEA countries at the beginning of the 1980s	1
II. Position of industry in the structure of the national economy	17
III. Structural changes in industry output and inputs	26
IV. Development of factor productivity in industry	41
V. Economic policy for structural adjustment of the industry	59
VI. Future perspectives of structural change in industry	65
VII. Structural adjustment in industry and new possibilities in the division of labour between the European CMEA countries and the developing countries	80
VIII. General findings and conclusions	94
Appendix A	97
Appendix B	151

LIST OF TABLES

Chapter I

Page

Table 1. Changes in agriculture-industry ratios 1960-1980 2
Table 2. Development of the agriculture-industry ratios 1960-1980 3
Table 3. Shares of light and heavy manufacturing shares ratios 1970-1981 5
Table 4. Shares of light and heavy manufacturing in output of industry by economic groupings of countries 6
Table 5. Share of centrally planned economies in world industry value added 8
Table 6. Changes in growth by production factors in industry 10
Table 7. Export-NMP ratios in centrally planned economies 13
Table 8. Export elasticity 14

Chapter II

Table 9. The weight of industry in the material sphere of economy 19
Table 10. Structural shifts in industrial investment and employment allocations within the material sphere 21
Table 11. Average ratios of industry factor inputs and NMP share in material sphere 24

Chapter III

Table 12. Shares of fuel and energy base in total industry 28
Table 13. Shares of light and heavy manufacturing in total industry 31
Table 14. Share of engineering in total industry 36
Table 15. Structure of engineering gross output by major sub-branches 37
Table 16. Inter-branch specialization in industry in CMEA European member countries at the beginning of the eighties 39

Chapter IV

Table 17. Growth rates of labour productivity and its contribution to the growth of industrial output 42

Page

Table 18. Dynamics of labour productivity 1981-1985 45
Table 19. Growth rate of labour productivity in industry 46
Table 20. Ratios of gross output and employment shares in total industry 48
Table 21. Growth rate of capital intensity in industry 50
Table 22. Growth rate ratios of labour productivity and capital intensity in industry 50
Table 23. Ratio of net to gross industrial output 53
Table 24. Relations of dynamics of the consumption of energy and the NMP 55
Table 25. Productivity indicators in industry 57
Table 26. Total productivity percentage shares in gross output of industry 58

Chapter VI

Table 27. Average annual percentage change in gross output of selected industrial branches 69
Table 28. Shares of selected branches in gross output of industry 70
Table 29. Average annual percentage change in gross output by selected branches of industry 73
Table 30. Percentage distribution of gross output by branches of manufacturing 74
Table 31. Projected branch shares of gross output in industry 77

Chapter VII

Table 32. Change in foreign trade value of the European CMEA countries with developing countries 81
Table 33. Forecast of the commodity structure of trade between CMEA countries and the developing countries 83
Table 34. Forecast of the commodity structure of trade between the developing countries and the European CMEA countries 90
Table 35 Projected trade flows between the developing countries and the European CMEA countries in 1990 under the assumptions of the DD III scenario of the UNITAD model 93

LIST OF APPENDIX TABLES

APPENDIX A

		Page
Table 1.	Average shares of industry in gross fixed capital formation in the material sphere	98
Table 2.	Average annual percentage change of gross fixed capital formation	99
Table 3.	Growth of NMP and industrial production	100
Table 4.	Composition of manufacturing output by end use and by income elasticities	101
Table 5.	Growth of industrial production by economic groupings of countries	102
Table 6.	Growth rate of labour productivity and capital intensity in industry	103
Table 7.	Trade growth of centrally planned economies	104
Table 8.	Ratios of annual percentage change of foreign trade and industrial production	105
Table 9.	Composition of Export-Import commodity groups in the centrally planned economies	106
Table 10.	Changes in the volume of trade, by region	108
Table 11.	Change in foreign trade value, volume, unit values and terms of trade, by major partner regions	109
Table 12.	Changes in the terms of trade (in terms of dollars) by region	110
Table 13.	Changes in the commodity structure of foreign trade by major regions	111
Table 14.	The breakdown of total industry into component branches according the CMEA branch classification of industry	113
Table 15.	Growth of NMP and gross industrial production at the beginning of the 1980s	114
Table 16.	Ratios of average annual percentage change of NMP and industrial production	115
Table 17.	Average annual percentage change of gross fixed capital formation in industry and national economy	116
Table 18.	Ratios of average annual percentage change of NMP, employment and gross fixed capital formation of industry	117
Table 19.	Average annual percentage change of employment in industry and national economy	118
Table 20.	Average annual percentage change of labour productivity in industry and material sphere	119
Table 21.	Contribution of changes in productivity and sector branch allocation of employment and fixed assets to NMP	120
Table 22.	Growth elasticity of gross output by branches	121
Table 23.	Growth elasticity of employment by branches	123
Table 24.	Growth elasticity of gross investment by branches	124
Table 25.	Structural shift in gross output allocation within industry	125
Table 26.	Structural shift in employment allocation within industry	126
Table 27.	Structural shift in investment allocation within industry	127
Table 28.	Shares of metallurgy and chemicals in total industry	128

Page

Table 29. Shares of non-metallic mineral products in total industry 130
Table 30. Shares of wood and wood-processing in total industry 131
Table 31. Shares of textile and leather-processing in total industry 133
Table 32. Shares of food-processing in total industry 135
Table 33. Branch specialization of industry - gross output 136
Table 34. Branch specialization of industry - employment 137
Table 35. Branch specialization of industry - gross investment 138
Table 36. Contribution of labour productivity to the growth of industrial output 139
Table 37. Labour productivity changes in relation to the growth of industrial output 140
Table 38. Ratio of gross investment and employment shares in total industry 141
Table 39. Contribution of changes in the post-1970 levels, productivity and branch allocation of fixed assets to industrial output changes 142
Table 40. Growth rate of electricity intensity in industry 143
Table 41. Growth industrial output for fulfilment of the 1981-1985 plan target 144
Table 42. The pattern of specialization at the selected level of manufacturing 145
Table 43. The pattern of specialization at the branch level of manufacturing 146
Table 44. Change in foreign trade value of the selected European CMEA countries with developing countries 147
Table 45. The commodity structure of trade between the selected European CMEA countries and developing countries 148
Table 46. Forecast of the commodity structure of trade between the individual European CMEA countries and the developing countries 149
Table 47. Average annual growth rate of trade between the developing countries and the European CMEA countries 150

APPENDIX B

Chart 1 Annual percentage changes of growth in output and productivity of industry 152

PREFACE

This study was undertaken in the framework of the research programme of UNIDO on industrial redeployment and structural change.

Main factors influencing the structural adjustment of industry in European CMEA countries at the beginning of the 1980s are characterized in the first chapter. In the second chapter the development of industry in the national economies of the European CMEA countries is being analyzed. The third chapter contains detailed analyses of structural change in industry output and inputs during the period 1976-1981. Development of factor productivity in industry in the second half of the 1970s and in the beginning of the 1980s are analyzed in the fourth chapter. In the fifth chapter main features of economic policy for structural adjustment of the European CMEA countries industry are described. Future perspectives of structural change in the European CMEA countries industry during the 1980s are analyzed in the sixth chapter. The structural adjustment in industry and new possibilities in the division of labour between the European CMEA countries and developing countries are discussed in the seventh chapter.

The study was carried out by Karel Zeman, with assistance from Mojmír Kasalicky, Senior Researchers at the Research Institute of Planning and Management of National Economy, Prague, as UNIDO consultants in co-operation with the UNIDO Secretariat, following a request by UNIDO to Polytechna, CSSR.

INTRODUCTION

Background of the study

Within the framework of the research programme of the Division for Industrial Studies of UNIDO studies were undertaken on analyzing the process of industrial structure development in different countries from the standpoint of its past development, basic determinants of structural changes and expected developments in the future.

The basic objective of this research programme consists of identifying the following:

- developing trends of industrial structure adaptation in developed countries in the process of economic growth, reflecting changes in internal and external economic conditions;
- influence of this adaptation process on the participation of developed countries in the international division of labour, especially with developing countries.

In this research programme studies were carried out to identify the industrialization process of the European CMEA countries in the second half of the 1970s, and the challenges these countries were facing with the rapidly changing world economy, with a particular view to the trade and possibilities of division of labour with the developing countries. It was suggested that research be continued in order to continuously survey adjustment policies and the further structural changes in the industry of the European CMEA region also in the 1980s. In this study, relationship of the plans to the results achieved in the first two years of the present five-year plan is to be analyzed if the tendencies perceptible are complying or diverging with the established aims, enabling thereby UNIDO to provide more up-to-date information on the development of the European CMEA countries to assist in formulation for industrial plans of the developing countries.

Basic aim of the study

The primary aim of the study which has been prepared under the mentioned research programme is to analyze structural adaptation in the industry of the individual European CMEA countries and of the region as a whole, in the period 1980-1982 against the medium-term plans for the period 1981-1985 and the long-term strategical goals of structural changes during the 1980s by presenting:

- main factors influencing the structural adjustment of European CMEA countries industry at the beginning of the 1980s;

- the basic features of structural changes in industry output and inputs and development of factor productivity

- future perspectives of structural adjustment in industry and its influence on the division of labour between the European CMEA countries and the developing countries during the 1980s.

1. MAIN FACTORS INFLUENCING THE STRUCTURAL ADJUSTMENT OF INDUSTRY IN EUPOPEAN CMEA COUNTRIES[1/] AT THE BEGINNING OF THE 1980s

In the 1960s and 1970s the formation of basic structural proportions of the industry in European CMEA countries was governed by the priority of socialist industrialization within the economy. Until 1975 the development of industry was based on sufficient, relatively cheap resources of raw materials and energy, and on relatively easily available manpower resources. Raw material and energy imports (from the USSR) were repaid by exports of manufactured goods. Such a "model" could function relatively smooth under the conditions of cheap energy. Changes in conditions in the 1970s, however, required urgent adjustments in the structure of industry.

Level of industrial development

During the last two decades priority of industrialization was the strategic element of economic development of the European CMEA countries, and that was reflected also in investment policies of these countries. Industry shared around fifty per cent in investments into material production (see Appendix A, Table 1). Priority development of the industry as the basic condition for industrialization has been preserved in these countries for the period of the beginning of the 1980s, too (with exception of Hungary and Poland), with, however, a marked slow-down in the dynamics of overall investment activities in the 1981-1985 plans (see Appendix A, Table 2).

The consistent stress on priority of industrial development in the European CMEA countries is reflected in continuous lead of net material product (NMP) produced in industry over the overall dynamics of the NMP (see Appendix A, Table 3). This development results in mutual adjustment and equalization of the economic and industrial level among the European CMEA countries. The process of industrialization reflects significant changes in the relations of production and principal production factor inputs between agriculture and industry during the 1960s and 1970s (see Table 1).

1/In this report, Eastern Europe comprises Bulgaria, Czechoslovakia, German Democratic Republic, Hungary, Poland, Romania.

European CMEA countries - Eastern Europe + USSR

Table 1.

Changes in "Agriculture - Industry" ratios in 1960-1980

	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Gross production							
1960	0.47	0,23	0,39	0.43	.	.	0,49
1970	0,22	0,18	0.25	0,28	.	.	0,30
1980	0,16	0,15	0,16	0,25	.	.	0.19
Net production							
1960	0,85	0,30	0,33	1,00	1.04	1,38	0,75
1970	0.52	0.19	0.22	0,49	0.47	0,39	0,45
1980	0,20	0.12	0,15	0,32	0,19	0,20	0,25
Fixed assets							
1960	0.67	0.25	0.22	0.52	0,64	0,52	0.54
1970	0.39	0.27	0.22	0.49	0.49	0.30	0.41
1980	0.30	0.27	0.20	0.45	0.54	0.28	0.43
Employment							
1960	2.45	0.64	0.41	1.38	1.70	4.26	1.56
1970	1.17	0.45	0.30	0.69	1.17	2.13	0.85
1980	0.67	0.35	0.27	0.61	0.82	0.85	0.67

Sources : Structural changes in the centrally planned economies in 1960-1980 and some implications for future economic growth. EC.AD.(XIX)/R.3/Add.1, 28.12.1982

Table 2. The development of the agriculture-industry ratios 1960-1980, 1960 - 100

	Bulgaria	CSSR	GDR	Hungary	Poland	Romania	USSR
Gross production	34	65	41	58	-	-	39
Net production	23	40	45	32	18	14	33
Fixed assets	45	108	91	86	84	54	80
Employment	27	55	66	44	48	20	43
Average[a/]	32	67	61	55	50	29	49

Source: Table 1

a/ Arithmetic mean

From the average dynamics of the development of agriculture-industry ratios it is possible to establish rather strong indirect ties between the level of industrialization in the beginning of the period (1960) and the dynamics of their development in 1960-1980 (see Table 2): the countries at relatively lower stages of industrial development indicate higher dynamics of the development and vice versa. It may be assumed that during the 1980s and 1990s, when these countries will have achieved a relatively higher level of industrial development, the dynamics of agriculture-industry ratios will slow down; in some countries it will stabilize.

The process of mutual adjustment and equalization of the level of industrial development among the European CMEA countries may also be characterized by the ratios in shares of the light and heavy manufacturing industries (see Table 3).

As the economic and industrialization level of a country grows, the ratios of shares of the quoted branches change in favour of the heavy manufacturing industry. Though the evolution and the level of ratios of the value indicators may be distorted due to differences in prices (gross production, net production, investments), their development may still serve as a basis for the conclusion that a certain "lead" of these structural proportions in the industry over the achieved level of economic and industrialization development exists, e.g. in Romania, in the beginning of the 1980s. Future changes in internal and external economic conditions of the industrialization process may demand that the strategy of economic policy in these countries be more markedly orientated towards balanced development which necessitates the adjustment of these structural proportions to economic possibilities.

In the course of the seventies and in the early eighties the ratio of shares of the light and heavy manufacturing industries of the CMEA countries became similar to that of the EEC countries and it can be assumed that the adaptation of this structural proportion will tend towards its stabilization during the eighties even more markedly[1/] (see Table 4).

1/ With higher level of industrialization a tendency occurs toward stabilizing the relations between the shares of the light and heavy manufacturing industries at the level of 0.5 (see e.g. Batchelor, R.A., R.L. Major and A.D. Morgan: Industrialization and the basis for trade, Cambridge, Cambridge University Press, 1980, p. 131).

Table 3.

Changes in light and heavy manufacturing shares[a] ratios in 1970 - 1981

	Bulgaria[b][d]	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union[c][d]
Gross output							
1970	1.24	0.63	0.66	0.43	0.75	0.48	1.19
1975	0.92	0.56	0.64	0.39	0.63	0.36	0.91
1978	0.76	0.53	0.60	0.34	0.60	0.30	0.78
1980	0.76	0.51	0.57	0.36	0.57	0.29	0.68
1981	0.72	0.49	0.55	0.35	0.60	0.28	0.72
Investment							
1970	0.45	0.59	.	0.34	0.31	0.35	0.29
1975	0.48	0.61	.	0.48	0.36	0.29	0.25
1978	0.29	0.55	.	0.55	0.26	0.22	0.23
1980	0.26	0.53	.	0.43	0.29	0.19	0.26
1981	0.21	0.53	.	0.48	0.39	0.21	0.26
Employment							
1970	1.01	0.54	0.65	0.92	0.81	0.93	.
1975	0.88	0.54	0.52	0.89	0.78	0.79	.
1978	0.81	0.52	0.49	0.83	0.67	0.73	.
1980	0.79	0.51	0.48	0.88	0.78	0.70	.
1981	0.78	0.51	0.47	0.88	0.81	0.69	.

Sources: CMEA Statistical Yearbook

a) CMEA branch classification of industry; ratio of light and heavy manufacturing shares in gross output investment and employment of industry; the breakdown into light and heavy manufacturing groups of branches see table A.14
b) Without non-ferrous metallurgy
c) Without metallurgy
d) Light manufacturing without miscellaneous industry

Table 4.

Shares of light and heavy manufacturing in output of industry[a]
by economic groupings of countries

		Centrally planned economies	Developed market economies		Developing market economies	World b)
			Total	EEC		
Shares, percentage						
Light manufacturing c)	1970	34,2	29.8	28,4	23.1	29.6
	1980	29.0	29.9	27.0	24.1	27.6
	1981	29.4	30.0	26.8	24.7	27.5
Heavy manufacturing d)	1970	52.0	56.3	51.0	23.7	51.1
	1980	59.2	58.3	52.8	31.7	54.4
	1981	59.1	58.5	52.9	31.2	54.5
Ratios of shares (light/heavy manufacturing)						
	1970	0.66	0.53	0.56	0.97	0.58
	1980	0.49	0.51	0.51	0.76	0.51
	1981	0.50	0.51	0.51	0.79	0.50

Sources : Monthly Bulletin of Statistics XXXVI, 1982. No.8

a) The value added in constant U.S.dollars classified according to divisions, major groups or combinations of major groups of ISIC.
b) Excluding Albania, China, Democratic People's Republic of Korea
c) ISIC groups: 31-33, 342. 355-356, 39
d) ISIC groups: 341, 351-354, 36-38

As the economic and industrialization level grows, the structure of demand (for domestic market and for exports) changes from production of consumer non-durables to capital goods and for consumer durables. By the end of the 1970s the share of capital goods and of consumer durables in the structure of the output of the manufacturing industry in the European CMEA countries was only slightly lower (43.8 per cent) than that of the developed market economies (45.5 per cent). Only the share of goods for consumer non-durables continues to be higher in the European CMEA countries, while the share of intermediates is still lower (see Apppendix A, Table 4). Adaptation of these structural proportions in these countries will probably develop in the direction of continued fall in the share of consumer non-durables and adjustments of proportions between the share of intermediates and capital goods in favour of intermediates.1/

The relatively high level of industrialization along with relatively high dynamics of the industrial production in the European CMEA countries in the 1970s (with a slow-down of its dynamics in the second half of the decade (see Appendix A, Table 5), improved their position in the world industrial production (see Table 5). Especially high is the increase shown in their share of the world output of heavy manufacturing (from 24.7 per cent to 33.7 per cent), mainly due to the engineering products (from 26.1 per cent to 37.6 per cent).

Changed conditions in substitution of factor inputs

In the process of economic growth the adjustment of the structure of industry and its participation in the international division of labour is subject to changes in the substitution of factor inputs. During the long-term development of the structure of industry and of its participation in the international division of labour in both the developed market economies and

1/ In all European CMEA countries the plans for the period of 1981-1985 call for elimination of the disproportion between the output of capital goods and the output of intermediates.

Table 5.

Share of centrally planned economies in world industry value added[a)]
(Percentage)

Branch	ISIC	1970	1975	1980
Mining	2	25.05	29.00	29.25
Electricity, gas and water	4	11.33	12.00	12.10
Manufacturing	3	24.14	29.74	31.64
Light manufacturing	31-33,342,355-356, 39	22.99	26.25	27.36
Heavy manufacturing	341,351-354,36-38	24.74	31.50	33.70
Food, beverages, tobacco	31	26.63	28.58	28.09
Textiles	321	21.86	25.44	26.81
Wearing apparel, leather and footwear	322-324	24.70	27.39	30.60
Wood products	33	22.75	26,83	27.30
Paper, printing and publishing	34	9.30	11.94	11.95b)
Chemicals, petroleum, coal and rubber	35	19.38	23.82	23.82
Non-metallic mineral products	36	32.40	37.03	36.72
Basic metals	37	24.13	29.35	30.11
Metal products	38	26.14	33.80	37.61
Industrial production	2-4	23.46	28.58	30.35

Sources : The Growth of World Industry 1968 Edition, Volume I
Yearbook of Industrial Statistics 1979, 1980 Edition, Volume I

a) At constant prices
b) 1978

the European CMEA countries the structure of industry has been changed from low qualified labour production to highly qualified labour-intensive and to capital-intensive, i.e. to production with high demands on technological progress embodied in fixed assets, production technology and skilled labour.[1/]

In the course of the 1970s and in the beginning of the 1980s in all the European CMEA countries emphasis has been laid on structural changes in industry through improved effectiveness of factor inputs. During this period, significant changes occurred in all European CMEA countries in the dynamics and substitution of factor inputs (see Table 6). Up to the mid-1970s the relatively high increase of manpower had a very positive effect on the dynamics of the increase of industrial production. Since then, the dynamics of employment in industry markedly slowed down in the majority of these countries, reflecting the influence of the demographic factors and the changes in the structure of employment in favour of non-material sphere.[2/]

1/ See e.g.: Structure and change in European industry, United Nations, New York, 1977; Changes in the structure of West European manufacturing industry in the 1970s, in: Economic Survey of Europe in 1980, United Nations, New York, 1981; Structural changes of the Czechoslovakian industry and prospects of international division of labour with developing countries, UNIDO, 1981; Structural changes in manufacturing industries of East European CMEA countries and patterns of trade in manufacture between CMEA countries and developing countries, UNIDO, 1981.

2/ Average annual rates of growth of population employed in national economy (in per cent):

	Bulgaria	CSSR	GDR	Hungary	Poland	Romania
Material sphere						
1971-1975	0.1	1.1	0.1	0.1	2.6	0.3
1976-1980	-0.3	0.0	0.9	-0.6	-1.4	0.1
Non-material sphere						
1971-1975	4.5	2.8	2.4	2.3	1.2	2.9
1976-1980	1.5	0.1	-0.5	2.6	4.2	2.1

Sources: CMEA Statistical Yearbook

Table 6.

Changes in growth by production factors in industry[a)]

(Average annual percentage change)

		1971-1975	1976-1980	1979	1980	1981	1982
Bulgaria	Employment	2.2	0.9	1.3	1.3	1.8	0.8
	Gross fixed capital formation	6.0	5.6	0.0	8.6	10.8	
	Fixed assets	9.4	9.4	3.8	12.8	8.1	
Czechoslovakia	Employment	1.1	0.5	0.5	-0.4	0.1	0.5
	Gross fixed capital formation	7.0	4.4	6.3	3.5	-1.1	
	Fixed assets	5.5	5.5	6.4	5.4	6.9	
German Dem. Rep.	Employment	4.7	0.9	0.7	0.9	0.3	0.6
	Gross fixed capital formation	4.2	5.5	4.0	3.9	3.1	
	Fixed assets	6.3	6.1	5.5	5.8	6.0	
Hungary	Employment	0.0	-1.1	-1.6	-2.7	-2.2	-2.0
	Gross fixed capital formation	6.2	3.6	-2.2	-11.5	-9.3	
	Fixed assets	7.9	8.7	9.5	7.2	6.3	
Poland	Employment	2.6	0.2	-0.4	-0.2	-1.0	-4.8
	Gross fixed capital formation	21.1	-7.1	-14.1	-21.1	-26.1	
	Fixed assets	10.4	10.5	9.0	5.9	4.4	
Romania	Employment	6.3	3.5	3.9	3.2	2.0	1.6
	Gross fixed capital formation	12.3	10.2	8.0	2.5	-6.2	
	Fixed assets	12.3	10.4	9.6	10.0	9.1	
Soviet Union	Employment	1.5	1.6	1.3	1.1	0.9	0.7
	Gross fixed capital formation	6.8	3.7	0.0	4.4	4.8	
	Fixed assets	8.6	7.5	7.4	6.9	9.9	

Sources : CMEA Statistical Yearbook 1979, 1980
Economic Survey of Europe 1982...., table 3.3.2
Economic Survey of Europe 1979...., table 3.1

a) State and cooperative industry

The substitution process among the factor inputs in the industry of the European CMEA countries is characterized by a markedly high dynamics of gross fixed capital formation and fixed assets as compared to that of employment (see Table 6). By the end of the 1970s and in the beginning of the 1980s conditions have been developing for a general slow-down of the dynamics of gross fixed capital formation. The relatively high dynamics of fixed assets (as compared to employment) made room in this period (1980-1982), too, for the continuation of the substitution process between manpower and fixed assets. However, the comparison between the labour productivity and the level of capital intensity indicated a continuous deterioration of the results of this substitution process (see Appendix A, Table 6).

The slow-down of the dynamics of industrial production, while maintaining the high dynamics of fixed assets, is reflected in low capital productivity (output - capital ratio) which, in its turn, affects the evolution of labour productivity in the industry of the countries analyzed: a general tendency is observed towads capital intensive growth of the industrial production (see Appendix A, Table 6).

Up to the first half of the 1970s, the substitution process among the factor inputs in the European CMEA countries evolved under the conditions of ample and relatively cheap sources of energy. This development reflected in the substition between the factor inputs of economic growth and energy. Particularly labour was substituted by energy, both directly and indirectly (in fixed assets). The substitution process since 1975 is orientated towards energy savings and effectiveness in using raw materials. The implementation of this aim is influenced by the existing structure of industry and by the level of specific energy consumption in individual industrial branches. The adaptation process takes place not only in the product structure, but also in the structure of the national economic demand and in the participation of these countries' industries in the international division of labour.

Changed external economic conditions

In the beginning of the 1980s, the structural adjustment of the industry in European CMEA countries has been affected not only by the internal economic conditions, but also by the evolution of external economic conditions.

The dependence of the structural adjustment of industry in the European CMEA countries on external economic conditions is determined by their participation in the international division of labour. During the 1970s it was generally increasing as can be seen from exports - NMP ratios (see Table 7).

A very intensive export-oriented policy characterized the early 1980s in these countries as it is seen from Appendix A, Tables 7 and 8. As far as the commodity structure of foreign trade is concerned, the manufactured exports in overall exports is amounting of 60-66 per cent in Poland, CSSR, GDR, 42-54 per cent in Romania, Hungary and Bulgaria and to about 20 per cent in the USSR. In the overall imports amount to 40-46 per cent in Bulgaria, CSSR, USSR, and 28-39 per cent in Romania, Hungary, GDR, and Poland (see Appendix A, Table 9).

In the beginning of the 1980s the structure of adjustment of industry in the European CMEA countries has been affected not only by the slow-down of world economy's growth but also by the decline of the dynamics of the international trade. This feature of development is characteristic of all the three groups of countries (developed market economies, developing countries, and planned economies)(see Appendix A, Table 10). The said development of world trade is tied to the overall reduction of world demand as a result of lower rates of economic growth. Of considerable importance in this respect are elements of the restrictive policies applied in the majority of developed market economies[1/] as well as the priority of restoring the external balance in the economic policy in the European CMEA countries. These impacts are reflected in a profound change in the dynamics of imports of the majority of developed market economies as well as that of individual European CMEA countries too. The USSR alone records a relatively high dynamics of imports.

At the turn of the 1970/1980s production of the manufacturing industry continues to be the dynamic element of the world trade. As a result of a rather marked decline in the dynamics of production, exports of the manufacturing industry all over the world have kept high export elasticity (See Table 8).

1/ S.A.B. Page has estimated that the managed share of world trade (i.e. trade that is subject to some non-tariff control by exporter, importer or both) in manufacturing has risen from 13 per cent in 1974 to almost 24 per cent in 1980. Since then new barriers have raised this share even further. Page S.A.B.: The revival of protectionism and its consequences for Europe, Journal of Common Market Studies, Vo. XX, September 1981, pp. 17-40.

Table 7.

Export - NMP ratios in centrally planned economies
(Percentage shares, based on constant prices)
*

	1960	1965	1970	1975	1980	1981
Bulgaria	17.4	25.9	30.8	33.8	46.1	47.4
Czechoslovakia	18.4	23.6	26.1	27.4	30.7	31.4
German Dem. Republic	17.1	21.0	23.9	28.5	31.6	33.2
Hungary	25.4	26.4	39.2	44.7	52.7	53.2
Poland	8.0	11.9	15.9	16.6	18.9	18.1
Romania	.	.	.	.	31.5	35.1
Soviet Union	6.1	6.8	7.5	8.0	8.2	8.2

Sources : Changes in trends and conditions for economic growth in the 1970's and their long-term implications: centrally planned economies. EC.AD.(XVIII)/R.3, p.19, 1981.
Economic Survey of Europe in 1982, United Nations, New York 1983, pp. 104-105,249

* Figures presented in this table are calculated on the basis of estimated ratios for a single year by countries and indices of the export and NMP in national currencies; constant prices.

Table 8. Export elasticity (average annual rate of growth, in per cent)

	1963-1973	1974-1981	1978	1979	1980	1981
Exports[a]:						
all commodities	8.3	3.5	5.5	5.5	1.5	0.0
manufacturing	11.0	5.0	5.0	5.0	4.5	4.5
Production :						
all commodities	6.0	3.0	4.0	3.5	1.5	1.0
manufacturing	7.0	3.5	4.5	5.0	1.0	1.0
Ratios (E/P) :						
all commodities	1.4	1.2	1.4	1.6	1.0	0.0
manufacturing	1.6	1.4	1.1	1.0	4.5	4.5

Sources : Economic Survey of Europe in 1982, table 4.1.9

a) Volume

Also European CMEA countries with the exception of Poland and Romania, have kept a relatively high elasticity of overall exports as against industrial production, this being the consequence of the implementation of the above mentioned economic policy orientated towards restoring the external economic balance (see Appendix A, Table 8). From the evolution of these macro-economic indicators and on the basis of information related to the development of the volume of foreign trade in these countries (see Appendix A, Table 11)[1/] one can assume that considerably intensive structural adaptation is taking place in these countries reacting to changes in the external economic conditions.

The complex character of the adaptation process has been affected, in the beginning of the 1980s, by the terms of trade change among six European CMEA countries (except the USSR), all of them being net importers of fuels and energy (see Appendix, Table 12). Compared to the development of terms of trade of this group of countries during the second half of the 1970s, their accelerated decline during the period of 1980-1982 reflected the delay in the increase of prices on fuel and energy within the CMEA.

Orientation towards the balanced economic development of these countries as a basic precondition for structural adaptation of the national economy and especially industry is evident from a marked lead of the dynamics of exports to both markets over the dynamics of imports (See Appendix A, Tables 7 and 11). In the beginning of the 1980s only the USSR continued high dynamics of imports.

Significant changes in the external economic conditions and the implemtation of the policy in CMEA countries aimed at stimulating the adaptation process are also reflected in the commodity structure of foreign trade of the European CMEA countries (See Appendix A, Tables 9 and 13). Exports of machinery and equipment, especially to CMEA countries, continue to play the key role in the exports commodity structure from the six European CMEA countries.

1/ These estimates of real changes in the directions and commodity patterns of trade were obtained by deflating national value data on exports and imports in the two trading directions and five commodity classes with the aid of price or unit value indices obtained primarily from Hungarian statistics, supplemented with Polish and UN price data.

This commodity group fulfills an important function in the relations connected with implementing the international specialization and co-operation of production among the European CMEA countries. In relation to market economies the dynamics of export (partly as a result of the high dynamics of exports to the developing countries) increased substantially during the period of 1976-1980, yet the dynamics of imports in this commodity group stagnated. Possibilities for accelerating the dynamics of imports of these products from the developed market economies are limited by balance of payment difficulties. The relatively high dynamics of imports of fuels and energy to the six smaller European CMEA countries during 1976-1980 demonstrates the complexity of the adaptation process.

Comprehensive assessment of the European CMEA countries' foreign trade activities indicates that the economic policy objectives implemented in the early 1980s were aimed at improving the balance of external economic relations as a major macro-economic precondition. This creates conditions for more active participation in the international division of labour, thereby accelerating structural adjustment in the industry for the benefit of their national economies.

II. POSITION OF INDUSTRY IN THE STRUCTURE OF THE NATIONAL ECONOMY

The long-term strategic goal adopted in the mid-seventies, i.e. to increase substantially the efficiency of the national economy dur ng the next 10-15 years determined the role of the industry in the European CMEA countries also in the early 1980s. The implementation of this goal represents a starting point in the adaptation process of these countries to the changing internal and external conditions during the coming period.

Though the development plans for the period 1981-1985 envisaged lower dynamics of growth in the majority of countries as compared with their long-term average growth[1/], the rather complex internal and external economic conditions in the beginning of the eighties were reflected in a still more marked slow-down of the dynamics of the NMP produced and gross output of industry than originally stipulated in the five-year plans (see Appendix A, Table 15). Nevertheless, the relatively lower rate of the slow-down in the NMP and gross output of industry dynamics in 1982 indicates that a gradual positive turn occurs in this development. Policies to accelerate economic growth have been adapted in practically all European CMEA countries for 1983 (see Appendix A, Table 15).[2/]

Structural proportions of production

The priority of industry in the economic growth has been preserved in the early 1980s. The lead of dynamics of industry has been affected by the decline of production growth (see Appendix A, Table 16). It is possible to assume that along with the changes in conditions of factor inputs substitution and, in the external economic conditions, the standing factors, particularly the achieved level of economic and industrial development are also a consequence of this period.

1/ Except the GDR where higher dynamics of growth of the NMP was planned for the period of 1981-1985 as against the period 1976-1980.

2/ See e.g. the results of analysis in the Economic Survey of Europe in 1982, op. cit., pp. 159-167.

The strategy of the industrial development in 1983 proceeds from the assumption that all the European CMEA countries (except Hungary where lower dynamics planned in gross output reflects the considerable uncertainty as regards development of the internal and external economic conditions) have accepted some acceleration in industrial growth rates compared with 1982 (see Appendix A, Table 15). It can be expected that a similar strategy will be applied to the preparation of the actual plan for the period 1984-1985. The achievement of this target will, however, depend greatly on reaching the planned savings in fuels, energy and raw materials, together with improving activities of these countries in the international division of labour. That is why acceleration of the absorption of the scientific and technological progress, intensification of the international specialization and co-operation in production within the CMEA, development of mutually advantageous co-operation with countries outside the CMEA, together with implementation of the appropriate necessary changes in the systems of management of individual CMEA countries, represent the decisive elements of the industrial policy for the period 1983-1985.

However, the changing conditions have raised considerable obstacles for development of such type characterized by rapid growth of industry. This factor is reflected in the development of the average share of industry in the NMP produced since 1976. Extrapolation of data records an overall stagnation, in Bulgaria and Poland even a moderate decline (see Table 9).

Structural adaptation should assist in finding the optimum share of industry in the structure of NMP produced. In Bulgaria, structural adjustment of the national economy continues the industrialization of the country. The share of industry in the structure of NMP produced in the period 1980-1985 increased by 13 per cent, i.e. according to the CMEA statistics (Statistical Yearbook 1982) it should rise from 51.0 per cent to 57.6 per cent in the given period.[1/] During the first half of the present decade, the position of the industry in Czechoslovakia is determined by its role in intensifying the participation in the international division of labour

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1/ See Economic Survey of Europe in 1981 ...., p. 141.

The weight of industry in the material sphere of economy
(3-year moving average of shares in percentage)

Indicators	Time period	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
NMP (different constant prices)	1976-1978	53.8	63.5	62.3	46.7	52.2	57.7	51.5
	1977-1979	55.3	62.3	65.1	47.2	52.5	58.7	51.4
	1978-1980	54.7	63.6	67.4	48.7	53.3	59.2	51.5
	1979-1981	52.3	64.2	68.5	49.5	50.1	58.9	51.4
Indices 1979-1981	(1976-1978 = 100)	97	101	110	106	96	102	100
NMP (1975 prices) a)	1976-1978	53.8	65.5	59.5	46.4	60.4	58.4	52.9
	1977-1979	53.3	65.5	59.5	46.8	60.2	58.4	52.9
	1978-1980	52.6	65.9	59.7	47.3	60.2	58.4	52.9
	1979-1981	51.9	65.9	59.5	47.0	59.4	58.4	53.1
Indices 1979-1981	(1976-1978=100)	95	101	100	101	98	100	100
Active population in industry	1976-1978	41.0	47.6	53.4	42.3	36.6	37.2	37.8
	1977-1979	41.4	47.5	53.6	42.1	37.6	38.3	38.1
	1978-1980	41.8	47.4	53.6	41.8	38.7	39.3	38.3
	1979-1981	42.2	47.4	53.7	41.3	38.3	40.4	38.4
Indices 1979-1981	(1976-1978=100)	103	100	101	98	105	109	102
Wage and salary earners engaged	1976-1978	42.1	56.3	61.5	53.7	53.1	55.6	46.5
	1977-1979	42.2	56.1	61.5	53.4	53.0	55.8	46.5
	1978-1980	42.2	56.0	61.4	53.2	53.0	56.0	46.4
	1979-1981	42.2	56.0	61.4	52.9	53.1	56.5	46.2
Indices 1979-1981	(1976-1978=100)	100	100	100	99	100	102	99
Gross fixed capital formation	1976-1978	55.1	51.6	64.6	51.8	55.0	57.1	48.0
	1977-1979	55.7	51.9	66.1	52.3	53.7	58.6	47.7
	1978-1980	56.8	52.5	67.8	50.7	51.9	59.6	47.6
	1979-1981	57.5	53.8	69.1	48.9	50.1	60.3	47.6
Indices 1979-1981	(1976-1978=100)	104	104	107	94	91	106	99

Sources : CMEA Statistical Yearbook

a) The weight of industry in 1975 extrapolated by ratios of indices (NMP in industry : NMP total) 1975=100

(promoting export performance, reducing import demand through import substitution), in substantially modernizing the production base, and in keeping and improving the living standard. Following the intentions of the five-year plan only moderate increases in the share of industry can be forecasted in the structure of the NMP produced. According to the 1981-1985 plan in the German Democratic Republic, the dynamics of the NMP produced in the industry (5.5 per cent) will have a lead over the overall dynamics of the NMP produced (5.1 per cent) which will mean a slight increase in its share from 68.7 per cent in 1980 (according to the CMEA Statistical Yearbook 1982) to 69.4 per cent in 1985. In Hungary, too, the intentions of the five-year plan do not count on substantial changes in the industry's share in the NMP produced. Similar to Czechoslovakia and the GDR it can be assumed that the industry share will stabilize. The role of industry in the structure of the national economy in Romania as reflected in the five-year plan for 1981-1985 proceeds from the results of the second half of the seventies, i.e. Romania's transformation into an industrial-agrarian country. The NMP dynamics in industry can be assessed on the basis of the plan for the period 1981-1985. Thus, the share of industry in the NMP produced would grow from 59.3 per cent in 1980 to 63.6 per cent in 1985. In the USSR, acceleration of dynamics faster than the NMP produced (4.7 per cent) is expected during the same period. The implementation of this target would mean an increase of the industry share in the NMP produced from 51.5 per cent in 1980 to 55.0 per cent in 1985.[1/]

Structural proportions of factor inputs

Priority of industry is reflected in the structure and dynamics of investment notwithstanding the general slow-down of the dynamics of investment into the material sphere and in the whole national economy (see Appendix A, Tables 17 and 18). A continuous increase of industry in the structure of investments into the material sphere was characteristic during the period of 1976-1981 (see Table 10) and it may be assumed that orientation towards the modernization and reconstruction of the existing production capacities in the CMEA countries will further strengthen this trend also in the present decade.

1/ See Economic Survey of Europe in 1981 ...., p. 156
CMEA Statistical Yearbook

Table 10.

Structural shifts[a] in industrial investment and employment allocations within the material sphere (Percentage points)

	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Investment							
1979/1976-1980	0.2	0.5	1.5	0.1	-1.5	2.1	-0.7
1980/1976-1980	2.7	1.3	3.2	-2.3	-3.6	1.6	0.1
1981/1976-1980	1.5	2.9	3.9	-4.0	-4.6	2.4	0.3
Employment - active population							
1979/1976-1980	0.4	-0.1	0.2	-0.2	1.2	1.2	0.4
1980/1976-1980	0.7	-0.2	0.1	-0.7	1.6	2.2	0.4
1981/1976-1980	1.4	0.0	0.3	-1.1	-0.4	3.0	0.5
Employment - wage and salary earners							
1979/1976-1980	0.2	-0.2	0.0	-0.4	-0.1	0.1	0.0
1980/1976-1980	-0.1	-0.3	-0.2	-0.4	0.1	0.5	-0.2
1981/1976-1980	0.2	-0.2	0.0	-0.7	0.0	1.3	-0.3

Sources : CMEA Statistical Yearbook

a) Shares in 1979, 1980, 1981 minus aritmetic average of shares during 1976-1980

The comparison of links between the share of industry in the investments into the material sphere and the achieved level of economic development and its size in the beginning of the eighties (see Table 9) makes it possible to identify the specific priorities of the economic development. The high share of industry in the investment structure into the material sphere reflects the continuous intensive industrialization in Romania, even after a relatively high level of economic development has been achieved. The GDR together with Bulgaria and the CSSR is among the countries with a lower share of this branch in the investments; yet both Bulgaria and the CSSR kept the increasing trend of its share even in the period 1979-1981. Hungary, Poland and the USSR are among the countries with the lowest share of industry in the investments into the material sphere tending to its further fall or stagnation (see Table 10).

An even slower growth of employment in the material sphere since 1976 (see Appendix A, Table 19) maintains a lead of the dynamics of employment in industry over that in the material sphere in Bulgaria, the GDR, Hungary and Romania, and in the national economy as a whole in Bulgaria, Hungary, and Romania (see Appendix A, Table 18). This development is reflected in preserving the increment of the share of industry in the overall employment in the material sphere in Bulgaria, the GDR, Romania, and the USSR in the period 1979-1981, compared to the mean share in the period 1976-1980 (see Table 10). As a result of this development, the share of industry in the employment in the material sphere has stabilized in most European CMEA countries during the period of 1976-1981 (see Table 9), while a modest increment of the share is recorded only in Romania. Under these circumstances, ie. coping with a relative shortage of manpower, the importance of the labour productivity for securing the increase of the industrial production is growing.

Relative efficiency of factor inputs

The structural proportions of the factor inputs have an impact on the efficiency of the whole reproduction process depending on their allocation to the individual branches, and to the higher or lower efficiency of their utilization. Comparison between the shares in the NMP produced and the shares

of the factor inputs of industry proves that, in the majority of countries except Hungary and Poland (using the indicator of employment = wage and salary earners), the industry has preserved its position as a branch with a higher than average level of the labour productivity (see Table 11). Allocation of manpower to industry has brought greater effects than the allocation to the other branches of the material sphere. The development of the labour productivity in the industry and in the material sphere indicates that, the slow-down of dynamics since 1976 notwithstanding, industry has preserved the lead in dynamics in a number of countries (see Appendix A, Table 20).

Similarly, it may be stated that, based on the comparison of shares in the NMP produced in the industry and investments into this branch, the relative demand for additional investments of the increment of production in the industry has been increased (see Table 11) in the majority of countries since 1976, i.e. the share of industry in the investments into the material sphere has grown faster than that in the NMP produced. This development has obviously been a result of a considerable effect of the re-allocation of investments into the fuel and energy base in most European CMEA countries as an expression of the structural adjustment of industry to changing conditions in the energy supply.

The identification of the impact caused in the growth of the NMP by the branch re-allocation of employment and fixed assets in the material sphere[1/] during the 1970s suggests that the growth of labour productivity had a decisive influence on the dynamics of the increase of the NMP (see Appendix A, Table 21). The impact of the employment level was more marked in the USSR, CSSR and GDR (Poland not counted). Though in the second half of the 1970s the impact

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1/ In order to sort out the effects of both productivity and structural changes, actual growth outcomes have been compared to what they might have been if, in the first place, sector branch productivity remained at 1970 levels, while structures were held constant and vice versa. It is thus possible to show successively the contribution of changes in the level productivity and sector (branch) structure of each of the two factors of production (fixed assets and employment) to total growth.
Source: Economic Survey of Europe in 1981 ..., pp. 255-256.

Table 11.

Average ratios of industry factor inputs and NMP share in material sphere
(3-year moving average)

Indicators	Period	Bulgaria	Czechoslovakia	German Dem. Rep.	Hungary	Poland	Romania	Soviet Union
NMP in industry[a] / Active population	1976-1978	1.31	1.33	1.17	1.10	1.43	1.55	1.36
	1977-1979	1.34	1.31	1.22	1.12	1.40	1.53	1.35
	1978-1980	1.31	1.34	1.26	1.17	1.38	1.51	1.35
	1979-1981	1.24	1.35	1.28	1.20	1.31	1.46	1.34
NMP in industry[a] / Employment b)	1976-1978	1.28	1.13	1.01	0.87	0.98	1.04	1.11
	1977-1979	1.31	1.11	1.06	0.88	0.99	1.05	1.11
	1978-1980	1.30	1.14	1.10	0.92	1.01	1.06	1.11
	1979-1981	1.24	1.15	1.12	0.94	0.94	1.04	1.11
NMP in industry[c] / Active population	1976-1978	1.31	1.38	1.11	1.10	1.65	1.57	1.40
	1977-1979	1.29	1.38	1.11	1.11	1.60	1.53	1.43
	1978-1980	0.80	1.39	1.11	1.13	1.56	1.49	1.38
	1979-1981	1.23	1.39	1.11	1.14	1.55	1.45	1.38
NMP in industry[c] / Employment b)	1976-1978	1.28	1.16	0.97	0.86	1.14	1.05	1.14
	1977-1979	1.26	1.17	0.97	0.88	1.14	1.05	1.14
	1978-1980	1.25	1.18	0.97	0.89	1.14	1.04	1.14
	1979-1981	1.23	1.18	0.97	0.89	1.12	1.03	1.15
NMP in industry[a] / GFCF	1976-1978	0.98	1.23	0.96	0.90	0.95	1.01	1.07
	1977-1979	0.99	1.20	0.99	0.90	0.98	1.00	1.08
	1978-1980	0.96	1.21	0.99	0.96	1.03	0.99	1.08
	1979-1981	0.91	1.19	0.99	1.01	1.00	0.98	1.08
NMP in industry[c] / GFCF	1976-1978	0.98	1.27	0.92	0.90	1.10	1.02	1.10
	1977-1979	0.96	1.26	0.90	0.90	1.12	1.00	1.11
	1978-1980	0.93	1.26	0.88	0.93	1.16	0.98	1.11
	1979-1981	0.90	1.23	0.86	0.96	1.19	0.97	1.12

Sources : CMEA Statistical Yearbook

a) Different constant prices
b) Wage and salary earners engaged
c) The weight of industry in 1975 extrapolated by ratios of indices (NMP in industry: NMP total), 1975=100
d) GFCF = gross fixed capital formation

of the branch allocation of employment was generally weakening, it may be assumed that - in view of the relative level of labour productivity in industry - the share in the structure of employment in the material sphere affected positively the increment in the NMP.

The impact of branch allocation of fixed assets in the material sphere on the increments in NMP was more important than that of the branch allocation of employment (see Appendix A, Table 21). The positive influence of this factor accompanied with a favourable impact of the growth of the volume of fixed assets (as a result of the increased capital intensity) was, nevertheless, to a considerable degree depreciated through the unfavourable development of the efficiency of fixed assets in all the European CMEA countries during the period 1976-1982.

III. STRUCTURAL CHANGE IN INDUSTRY OUTPUTS AND INPUTS

In the beginning of the 1980s, the development of the branch structure of the industry in the European CMEA countries has been affected by:

- long-term factors, i.e. by the achieved level of economic and industrial development, endowment of natural resources of each respective country, basic factor inputs of the economic growth (fixed assets and manpower), scientific and technological capacities, and the participation of countries in the international division of labour; and
- specific factors of this period, especially by the already mentioned changes in the substitution of factor inputs and particularly by the course of the implementation of the strategy aimed at a marked transition of the national economy towards intensification in the individual CMEA member countries.

The principal features of this adaptation process may be characterized by the development of the industry branch structure in European CMEA countries, i.e. by the development of:

- fuel and energy base (energy production)
- material base (metallurgical, chemical and non-metallic minerals processing industries)
- wood processing (wood processing, pulp and paper, printing)
- textiles and hides processing (textile, clothing and leather industries)
- food processing
- engineering.

As to the methodology used, long- and short-term characteristics of the adaptation process of the branch dynamics, structure of production and factor inputs in the industry of the European CMEA countries are identified by the statistical data in the CMEA Statistical Yearbook. For the purposes of this study, published data from this Yearbook on the industrial gross output structure of CMEA countries have been recalculated, using the structure in national currencies, with either 1960 as a base for long-term adjustment analyses (1960-1980) or 1970, for adjustment analyses at the beginning of the 1980s, and multiplying with available annual indices (1960=100, 1970=100, respectively) at constant prices. The industrial gross investment structure of CMEA countries have been recalculated, using the structure in CMEA branch

classification of industry in national currencies with either 1960 or 1970 as a base, multiplying with available annual physical volume indices (1960=100, 1970=100, respectively). Employment represents the average annual number of wages and salary earners engaged in the enterprise of a given branch in CMEA branch classification.

Since the mid-1970s, development of output of the individual branches has been influenced by many factors both on the supply side (such as slow down of the dynamics of energy and numerous raw materials together with limited possibilities for acquiring them from imports, and the decline of the dynamics of investments and employment) and, on the demand side, the marked decrease in the external demand. Differences in the absolute level of the dynamics in the production of individual branches have been preserved in the European CMEA countries; however, the differences in growth elasticity have substantially narrowed (see Appendix A, Tables 22, 23, 24).

Development of the fuel and energy base in structural adjustment of industry

The share of the fuel and energy base in the industrial structure of the majority of European CMEA countries has been declining (see Table 12, and Appendix A, Table 25) as a result of the lowering dynamics of fuel production and of the scientific and technological progress and of improving the specific use of raw materials, energy and fuels.

Development plans of the individual countries envisage an accelerated adaptation process through the implementation of energy rationalization programmes which have been co-ordinated also in the CMEA by adoption of long-term programmes in the related fields.

The intensity of this structural adaptation and creation of conditions for intensifying the whole reproduction process may be judged from the ratios of the shares of the two branches of the fuel and energy base (see Table 12). In the beginning of the 1980s, the most favourable structural relation in the production of the fuel and energy base is shown by the German Democratic Republic (1.00), Hungary (0.84) and Romania (0.81). In the other countries it is substantially lower, ranging from 0.46 to 0.63. One can assume that in the eighties this adaptation process will be accelerated by a more pronounced orientation towards the intensification of the economic growth.

Table 12.

Shares of fuel and energy base in total industry[a] (Percentage share)

	Electricity and heating			Fuel			Ratios		
	Gross output b)	Employment c)	Gross investment b)	Gross output b)	Employment c)	Gross investment b)	Gross output b)	Employment c)	Gross investment b)
	1	2	3	4	5	6	7	8	9
Bulgaria 1976-1980d)	2.4	1.9	13.7	4.3	3.9	8.5	0.56	0.49	1.61
1979	2.4	2.0	14.2	4.4	3.8	8.7	0.55	0.53	1.63
1980	2.6	2.2	13.5	4.5	4.0	9.2	0.58	0.55	1.47
1981	2.7	2.4	12.4	4.3	4.1	9.1	0.63	0.59	1.36
Czecho- 1976-1980d)	2.7	1.8	14.6	6.0	6.1	10.8	0.45	0.30	1.35
slovakia 1979	2.6	1.8	14.7	5.9	6.2	13.1	0.44	0.29	1.12
1980	2.7	1.9	14.8	5.7	6.2	12.4	0.47	0.31	1.19
1981	2.7	1.9	14.7	5.6	6.2	13.1	0.48	0.31	1.12
German 1976-1980d)	5.3	2.7	.	5.5	5.7	.	0.96	0.47	.
Dem. 1979	5.4	2.8	.	5.4	5.7	.	1.00	0.49	.
Rep. 1980	5.3	2.7	.	5.4	5.7	.	0.98	0.47	.
1981	5.3	2.7	.	5.3	5.8	.	1.00	0.47	.
Hungary 1976-1980d)	5.8	2.2	16.4	7.9	6.8	14.4	0.73	0.32	1.14
1979	5.8	2.2	17.7	7.8	6.8	14.4	0.74	0.32	1.23
1980	6.0	2.1	20.8	7.6	6.8	16.2	0.79	0.31	1.28
1981	6.1	2.1	20.2	7.3	6.8	17.1	0.84	0.31	1.18
Poland 1976-1980d)	2.3	1.7	10.2	5.8	9.0	13.5	0.40	0.19	0.76
1979	2.3	1.8	11.0	5.8	9.4	13.6	0.40	0.19	0.81
1980	2.4	1.7	13.9	5.6	9.0	21.6	0.43	0.19	0.64
1981	2.6	1.7	13.2	5.7	9.1	20.8	0.46	0.19	0.63
Romania 1976-1980d)	2.4	1.4	11.8	3.1	3.5	12.4	0.77	0.40	0.95
1979	2.3	1.4	10.7	2.9	3.5	11.3	0.79	0.40	0.95
1980	2.2	1.3	10.9	2.8	3.7	12.6	0.79	0.35	0.87
1981	2.2	1.3	13.4	2.7	3.6	14.4	0.81	0.36	0.93

Table 12 cont.

		1	2	3	4	5	6	7	8	9
Soviet Union	1976-1980d)	2.9	.	8.8	6.0	.	20.9	0.48	.	0.42
	1979	2.9	.	8.5	5.8	.	22.0	0.50	.	0.39
	1980	2.9	.	9.4	5.8	.	23.0	0.50	.	0.41
	1981	2.9	.	8.8	5.7	.	25.0	0.51	.	0.35
European CMEA countries d)	1976-1980d)	3.4	2.0e)	12.6f)	5.5	5.8e)	13.4f)	0.62	0.34e)	0.94f)
	1979	3.4	2.0e)	12.8f)	5.4	5.9e)	13.9f)	0.63	0.40e)	0.42f)
	1980	3.4	2.0e)	13.9f)	5.3	5.9e)	15.8f)	0.64	0.40e)	0.82f)
	1981	3.5	2.0e)	13.8f)	5.2	5.9e)	16.6f)	0.67	0.34e)	0.83f)

Sources : CMEA Statistical Yearbook

a) CMEA branch classification of industry
b) At "constant" prices (1970)
c) Wage and salary earners engaged
d) Arithmetic average
e) Excluding Soviet Union
f) Excluding German Dem.Rep.

The share of the fuel and energy base in the structure of the employment in the industry in most countries registers stabilization or a modest increase (see Appendix A, Table 26), only Bulgaria registers a more marked increase in these branches. More pronounced are the changes of the share of the fuel and energy base in the structure of industrial investments (see Table 12, and Appendix A, Table 27), which has sharply increased in all the countries. During the period 1975-1981 the average share of the fuel and energy base in investments into the industry of the European CMEA countries increased from 24.3 per cent to 30.4 per cent.

Structural change in basic manufacturing patterns

The principal structural proportion which characterized the long-term tendencies of the adaptation process in industrial output was the share of the light and heavy manufacturing industries that developed in favour of the branches of the heavy manufacturing industry (see Table 13). In the process of economic growth the structure of the manufacturing output has been changed from production of labour-intensive goods towards production of goods demanding high technology and skilled labour. This tendency is also expressed, although not very clearly, in the structural proportions of the factor inputs. At the turn of the 1970s and 1980s the ratio of the shares of the light and heavy manufacturing industries in the overall employment in the industry displayed a stability and, in some countries (Hungary and Poland) a modest growth in favour of the light manufacturing industry. In the majority of the European CMEA countries the share of the sub-complex of the light manufacturing industry in industrial investments has been declining. But as a result of the fall of the share of the heavy manufacturing industry in a number of countries (in the CSSR, Hungary, Poland and the USSR), this structural proportion has been changing in favour of the light manufacturing industry in this period.

This process indicates that, in the majority of the European CMEA countries, attention has turned towards seeking optimum proportions between the sub-complexes of the heavy and light manufacturing industries and/or between the output of means of production (A) and consumer goods (B). At the turn of

Table 13.

Shares of light and heavy manufacturing in total industry[a] (Percentage share)

		Light manufacturing b)			Heavy manufacturing c)			Ratios		
		Gross output d)	Employment e)	Gross investment d)	Gross output d)	Employment e)	Gross investment d)	Gross output d)	Employment e)	Gross investment d)
		1	2	3	4	5	6	7	8	9
Bulgaria[i] [j]	1976-1980f)	37.5	36.1	16.1	47.9	43.7	51.4	0.78	0.83	0.31
	1979	36.4	35.3	12.3	48.6	44.2	53.5	0.75	0.80	0.23
	1980	35.2	34.8	13.8	50.6	44.3	53.0	0.70	0.79	0.26
	1981	36.1	34.6	12.0	50.3	44.3	56.2	0.72	0.78	0.21
Czechoslovakia	1976-1980f)	31.4	31.7	26.2	59.8	60.5	48.4	0.53	0.52	0.54
	1979	31.1	32.1	24.7	60.4	60.8	47.5	0.51	0.53	0.52
	1980	31.0	31.2	25.1	60.6	60.7	47.7	0.51	0.51	0.53
	1981	30.2	31.1	25.1	61.5	60.8	47.1	0.49	0.51	0.53
German Dem. Rep.	1976-1980f)	33.5	29.8	.	55.7	61.8	.	0.60	0.48	.
	1979	32.9	29.8	.	56.3	61.7	.	0.58	0.48	.
	1980	32.5	29.6	.	56.8	62.0	.	0.57	0.48	.
	1981	31.6	29.4	.	57.8	62.1	.	0.55	0.47	.
Hungary	1976-1980f)	28.7	41.5	22.8	57.6	49.6	46.4	0.50	0.84	0.49
	1979	28.2	41.1	22.3	58.2	49.9	45.6	0.48	0.82	0.49
	1980	28.9	42.6	19.0	57.5	48.5	44.0	0.50	0.88	0.43
	1981	28.6	42.6	20.4	58.0	48.5	42.3	0.49	0.88	0.48
Poland	1976-1980f)	34.0	36.7	17.0	57.9	52.7	59.3	0.59	0.70	0.29
	1979	33.7	35.5	16.2	58.2	53.3	59.2	0.58	0.67	0.27
	1980	33.4	39.0	14.5	58.6	50.3	50.0	0.57	0.78	0.29
	1981	34.4	39.8	18.6	57.3	49.4	47.4	0.60	0.81	0.39
Romania	1976-1980f)	33.0	40.2	14.3	61.5	54.9	61.5	0.54	0.73	0.23
	1979	32.3	39.4	12.1	62.5	55.7	65.9	0.52	0.71	0.18
	1980	32.0	39.1	12.2	63.0	55.9	64.3	0.51	0.70	0.19
	1981	31.9	38.8	12.7	63.2	56.3	59.5	0.50	0.69	0.21
Soviet Union [j] [k] [l]	1976-1980f)	34.2	.	13.4	44.0	.	47.3	0.78	.	0.28
	1979	31.4	.	13.1	44.9	.	46.9	0.70	.	0.28
	1980	31.3	.	13.2	46.0	.	44.8	0.68	.	0.29
	1981	33.0	.	12.7	46.9	.	44.3	0.70	.	0.29

Table 13. cont.

		1	2	3	4	5	6	7	8	9
European CMEA countries f)	1976-1980f)	33.2	36.0g)	18.3h)	54.9	53.9g)	42.4	0.60h)	0.67g)	0.43h)
	1979	32.3	35.5g)	16.8h)	55.6	54.3g)	53.1	0.58h)	0.65g)	0.39h)
	1980	32.0	36.1g)	16.3h)	56.2	53.6g)	50.6	0.57h)	0.67g)	0.38h)
	1981	32.3	36.1g)	16.9h)	56.4	53.6g)	49.5	0.57h)	0.67g)	0.34h)

Sources : CMEA Statistical Yearbook

a) CMEA branch classification of industry
b) See table A.14
c) See table A.14
d) At constant prices (1970)
e) Wage and salary earners engaged
f) Aritmetic average
g) Excluding Soviet Union
h) Excluding some branches in GDR
i) Without non - ferrous metallurgy
j) Light manufacturing without miscellaneous industry
k) Without metallurgy
l) Without printing

the 1970s and the 1980s the share of consumer goods in the structure of gross industrial output stabilized or grew even slightly in a number of countries.1/

The basic structural proportion of the material base is formed by the relation of shares of the metallurgical and chemical industries in the structure of the industry of the European CMEA member countries (see Appendix A, Table 28). In the beginning of the 1980s, this structural proportion has been stabilized in favour of the chemical industry in the majority of the countries. A higher share is registered for the metallurgical industry in the CSSR in all three indicators, in Hungary in the indicators of employment and investments, and in Poland in the indicators of production. Since 1980 the majority of the countries register a general decline of the share of the metallurgical industry and an increase of the share of the chemical industry in the structure of output, a modest (with the exception of the GDR and Romania) increase of the two branches in the structure of employment and a general decline of the share of the chemical industry in the structure of industrial investments (see Appendix A, Tables 25, 26, 27).

The group of branches of processing of non-metallic minerals, i.e. the industry of construction materials, glass, china and ceramics registers, for the majority of countries, a decline of the share in the structure of all three indicators (see Appendix A, Tables 25, 26, 27, 29). The evolution of the share of both these branches, especially of construction materials, has been affected by reduced dynamics of investment activities in all the countries in the early 1980s.

1/ Share of consumer goods (B) in the structure of gross output (in per cent):

	Bulgaria	CSSR	GDR	Hungary	Poland	Romania	USSR
1975	41.4	35.4	34.5	35.3	34.9	27.8	26.3
1979	39.2	32.0	33.8	35.3	35.3	26.4	26.0
1980	38.0	31.9	33.6	35.5	36.3	25.7	26.2
1981	34.8	31.9	33.5	36.2	36.5	26.7	26.3

Sources: CMEA Statistical Yearbook

Wood processing branches register a modest decline or stabilization in all three indicators (see Appendix A, Tables 25, 26, 27, 30). The level of the shares of these industrial branches in the structure of industry are determined partly by each country's natural conditions stimulating their development and by the degree of the intensification of their exploitation.

The branches of the textile, clothing and leather industries and the food processing industry (see Appendix A, Tables 25, 26, 27, 31, 32) register a development characteristic of higher levels of economic and industrialization development: their shares had been permanently falling in all countries. In view of the role of these branches in the improvement of the living standards, the decline of their shares in the structure of production (and in the structure of investments) in a number of countries has become slower, or they have even registered a slight increase (e.g. in Romania and the clothing industry in the USSR) in the early eighties. In some countries these branches played a major role in the pattern of specialization within the CMEA area. The worsening conditions for the development of these branches in the countries under analysis (shortage of manpower, the present technological level of the production base and difficulties in the adjustment process, owing to low dynamics of investment growth in the 1980s) suggest that further development of these branches can be achieved only through a much bolder utilization of international specialization and co-operation among the CMEA member countries and of the international division of labour with the developing countries.

The evolution of the share of the food industry reflects tendencies characteristic of the growth of the economic and industrialization level (see Appendix A, Table 32) and displays a permanent decrease within the structure of industry as a whole. In the early eighties, this branch registered a modest increase in some countries which reflects the role of the food processing industry in keeping the living standards and in increasing export possibilities in some countries.

Position of engineering in structural development of industry

The engineering industry has kept the leading position in the structure of industry in the European CMEA countries also in the beginning of the 1980s (see Table 14). Its share both in the structure of production and in the structure of factor inputs registers a continuous increase in the majority of countries (see Appendix A, Tables 25, 26, 27). Hungary is the only country displaying a stable share of the engineering industry in the overall structure of industrial production. Bulgaria, Hungary and Poland register an absolute fall of the share in the structure of employment in the industry in this period. The role of the engineering industry in most of the European CMEA countries continued to increase in importance also in the transitory period of the intensification process by supplying equipment for technological innovations of other branches of the economy and, by providing exports to cover the expenses for imports necessary for development.

The growing importance of specialization and co-operation of production in the engineering industry within CMEA, particularly the transition from inter-branch specialization to intra-branch specialization, calls for a more effective participation in the international division of labour, when attention must be paid to the innovative role of the engineering industry, to changes in the imports capacity of the individual CMEA countries, and to changes in the conditions of the world economy, e.g. the role - among others - of the newly industrialising countries (NICs) entering the world markets with their engineering products.

The development of the share of the engineering in the structure of industry in the European CMEA countries is accompanied by an adaptation of its inner structure in favour of the electrotechnical industry (see Table 15). The adjustment can be characterized by ratios of the shares of the electrotechnical industry and of machinery output in the engineering production as shown in 1/ below:

1/ Ratios of shares of electrotechnical industry and of machinery output in the engineering production (based on data of Table 15)

	Bulgaria	CSSR	GDR	Hungary	Poland	Romania
1975	0.81	0.25	0.46	0.72	0.38	0.31
1980	0.98	0.27	0.50	0.84	0.42	0.33
1981	1.12	0.27	0.49	0.86	0.42	0.33

Table 14.

Share of engineering in total industry[a)]
(Percentage share)

		Gross output b)	Employment c)	Gross investment b)
Bulgaria	1976-1980d)	29.0	26.5	23.0
	1979	29.5	26.5	24.0
	1980	30.1	26.3	27.3
	1981	30.7	26.1	30.6
Czechoslovakia	1976-1980d)	34.4	39.4	21.4
	1979	35.1	39.6	21.1
	1980	35.5	39.6	21.5
	1981	36.4	39.6	22.6
German Dem.Rep.	1976-1980d)	32.2	41.2	21.1
	1979	32.9	41.1	22.0
	1980	33.8	41.6	22.9
	1981	34.9	41.6	26.3
Hungary	1976-1980d)	31.2	31.2	18.0
	1979	31.7	31.4	17.5
	1980	30.5	30.5	17.0
	1981	31.3	30.5	15.9
Poland	1976-1980d)	33.1	33.6	25.5
	1979	34.0	34.2	26.3
	1980	34.2	32.4	23.0
	1981	33.6	31.8	24.7
Romania	1976-1980d)	33.8	34.4	25.8
	1979	35.0	35.2	27.3
	1980	36.0	35.6	29.9
	1981	36.0	35.7	27.4
Soviet Union	1976-1980d)	31.1	.	24.6
	1979	32.2	.	24.6
	1980	33.1	.	25.0
	1981	33.9	.	25.0
European CMEA countries d)	1976-1980d)	32.1	34.4e)	22.8
	1979	32.9	34.7e)	23.3
	1980	33.3	34.3e)	23.8
	1981	33.8	34.2e)	24.6

Sources : CMEA Statistical Yearbook

a) CMEA branch classification of industry
b) At constant prices (1970)
c) Wage and salary earners engaged
d) Arithmetic average
e) Excluding Soviet Union

Table 15.

Structure of engineering gross output[a] by major sub-branches[b] (Percentage share)

	Bulgaria	Czechoslo-vakia	German Dem. Rep.	Hungary	Poland	Romania	Soviet Union
			Machinery				
1975	45.9	67.5	59.3	51.5	61.2	60.6	92.9 d)
1980	43.5	68.1	58.8	49.3	59.7	59.7	94.4d)
1981	40.1	67.8	58.5	49.0	51.9	58.7	94.2 d)
			Electrotechnical industry c)				
1975	37.0	17.1	27.5	37.0	23.0	19.0	.
1980	42.8	18.4	29.2	41.4	25.1	19.6	.
1981	44.8	18.0	28.9	42.2	25.0	19.5	.
			Metal products				
1975	16.9	14.2	13.1	11.4	15.7	13.2	7.1
1980	13.5	13.3	11.7	9.2	15.2	12.7	6.4
1981	13.7	13.3	11.1	8.7	15.1	12.9	5.2

Sources : Hospodářské noviny 1983, No. 10, p. 8
Narodnoje chozjajstvo stran SEV - Statističeskij sbornik, SEV Moskva 1979
Narodnoje chozjajstvo stran SEV v 1981 godu, Statističeskij sbornik, SEV Moskva 1982, p.75

a) Multiplying the structure of gross output in 1970 with ratios of annual physical volume indices (1970 = 100)
b) CMEA branch classification of industry
c) Including electronics
d) Including electrotechnical industry

Specialization pattern of industry

The broad and increasing similarity of national branch structures in the development pattern of the Europear CMEA countries' industry has, in the early 1980s, not precluded some differences following from their national specialization. The comparison of the structural patterns of the branch specialization (characterized by the ratios of shares of the branches in the individual countries against the simple arithmetic average[1/] of their shares for the seven countries analyzed[2/] makes it possible to state (see Appendix A, Tables 33, 34, 35) that the structure of the industry in these countries reflects the orientation towards branches that developed under impact of favourable internal natural conditions and of preceding historical development of the individual countries (see Table 16).

Such influence affected the development of shares of the food industry in Bulgaria and Hungary, wood processing and paper industries in the CSSR and Romania, non-ferrous metallurgy in Hungary and Poland, textile, clothing and leather industries in Bulgaria, CSSR, Romania and the USSR, and the glass industry in the CSSR and Hungary. As a consequence of favourable conditions for imports of metallurgical raw materials and energy from the USSR and of the needs of the intensive investment construction the specialization pattern of industry in the CSSR was characterized by its orientation also towards steel and iron metallurgy.

Comparison of the indicators of the branch specialization suggests that no CMEA country of those analyzed has a definite orientation towards the engineering production (i.e. it does not reach the coefficient of 1.20). The evolution of indicators of relative specialization (especially in gross output) confirms the orientation of the structural pattern of industry towards inter-branch specialization in the European CMEA member countries.

1/ Using the simple arithmetic average makes for the possible distortion caused by the structure of big countries (e.g. the USSR).

2/ The indicator used is similar to that e.g. in Structural Change in European Industry, UN New York 1977, p. 33; Ecomic Survey of Europe in 1980, UN New York 1981, pp. 207-209. In this paper, the achievement of a relative specialization coefficient equal or higher than 1.20 is considered as marked specialization in the production in the given branch.

Table 10.

Inter-branch specialization [a] of industry in CMEA European member countries at the beginning of the Eighties

	Gross output	Employment	Investment
Bulgaria	construction mat., textiles, clothing, food processing	electricity, construction mat., food processing	engineering, construction mat.
Czechoslovakia	ferrous metallurgy, wood, paper, glass, leather, footwear	ferrous metallurgy, paper, glass, leather, footwear, printing	wood, paper, glass, textiles, clothing, leather, footwear
German Dem. Rep.	electricity, paper	electricity, engineering, chemicals, paper	
Hungary	electricity, fuel, non-ferrous met., chemicals, glass, printing	printing, food processing	electricity, ferrous m t., non-ferrous met., clothing, leather, footwear, food processing
Poland	non-ferrous met., glass	fuel	fuel, clothing, food processing
Romania	ferrous met., construction mat., wood, clothing	non-ferrous met., wood, textiles, clothing,	ferrous met., chemicals, textiles
Soviet Union	construction mat., textiles, clothing		fuel, wood

Sources : Tables A.35, A.36, A.37

a) Ratios = 1.20 (ratios of individual countries shares to arithmetic average shares of CMEA countries)

Therefore it it was necessary to build up a universal engineering complex capable of covering imports of energy and raw materials, partly by the export of its products.

In the beginning of the 1980s, the achieved level of economic development in the European CMEA countries and the structure of their industries orientate their structural adjustment towards a more marked utilization of the intra-branch specialization, both within the CMEA countries and without. The emphasis put on the development of the intra-branch specialization of the industrial structure policies provides favourable conditions also for the development of co-operation in manufacturing with the developing countries in the coming years.

IV. DEVELOPMENT OF FACTOR PRODUCTIVITY IN INDUSTRY

The balanced development of the national economy of the European CMEA countries in the changing internal and external economic conditions depends on the intensification[1/] of their reproduction processes. The adaptation and systematic adjustment of the structure of industry of these countries constitute the basic prerequesite for intensifying the output, i.e. for putting the main emphasis on intensive[2/], rather than extensive[3/], methods of economic growth.

Relative levels and growth of labour productivity

Since the mid-1970s the high dynamics of the labour productivity in the industry of the European CMEA countries has always been a decisive prerequisite of economic growth. This objective was reflected both in the plans for the periods 1971-1975 and 1976-1980. Failure to meet the planned targets in the period of 1976-1980 reflects the deterioration of domestic and external economic conditions of the individual countries. The policy objectives of the five-year plans for 1981-1985 envisage an increase in the share of labour productivity in the increment of industrial gross output in all the countries compared to the second half of the seventies (see Table 17). The growth of its share in the increment of industrial gross output will be the decisive factor of accelerating the growth of gross production in 1983. A comparison of the average share of labour productivity in the

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1/ Intensification is usually explained as a process whereby total productivity gains provides an increasing contribution to output growth. It is difficult to measure the size and share of the contribution of intensification to production growth. Results depend on the assumptions and methods used. Any comprehensive approach, however, requires analysis of the main production inputs of labour, fixed assets and material inputs, and measurement of their effectiveness.

2/ Intensive growth is characterized by the predominant role of factor productivity.

3/ Extensive method of economic growth is characterized by the predominant role of expansion of all production inputs (labour, fixed assets and material inputs) in relation to output.

Growth rate of labour productivity[a] and its contribution to the growth of industrial output

	Bulgaria	Czecho-slovakia	German Dem. Rep.	Hungary	Poland	Romania	Soviet Union
Average annual percentage change							
1976-1980	5.2	4.1	4.6	4.4	4.4	6.8	3.0
1979	4.2	3.2	4.0	5.0	2.9	5.2	2.0
1980	2.9	3.1	4.5	1.2	0.0	4.4	2.6
1981	2.8	1.8	4.3	4.1	-10.1	2.6	3.2
1982	3.8	0.5	2.6	4.1	0.8	-0.5	2.1
1981-1985 Plan[b]	4.6	2.2-3.2	4.6	4.5-5.0	.	7.0	4.2
Contribution to the growth of industrial output (percentage shares)							
1976-1980	85	88	89	133	96	68	67
1979	79	86	91	161	116	63	56
1980	73	86	94	-67	-	67	74
1981	57	106	93	164	90	108	94
1982	121	50	81	205	-20	-45	75
1981-1982	89	78	87	185	35	32	85
1981-1985 Plan	89	79-94	89	132-127	.	91	88

Sources : CMEA Statistical Yearbook
Table A.6
Economic Survey of Europe in 1982...., table 3.3.3

a) Gross output per employee in state and co-operative industry

b) Derived from planned output data and rough estimates of employment growth

increment of gross output during the first two years of the five-year plan (see Table 17) reveals that the majority of the countries, except Poland and Romania, is implementing this objective.

The continuing slow-down of the dynamics of labour productivity growth in the industry during 1981-1982 which occurred in a number of countries, is a result of a whole range of factors on the input side of resources for the production growth. The ever more limited sources of energy, raw materials and other material inputs in the production process constitute a significant group of factors taking into account the existing level of the effectiveness of their use and the already mentioned slow-down of the dynamics of the growth of employment. The restrictive investment policies directly affecting the dynamics of growth of production for investment construction have a considerable impact, too. Reductions on the side of investment and material inputs have a retroactive direct impact on the growth of the productivity of labour, limiting the possibilities of achieving the economies of scale.

The results of the analyses point also to a considerable importance of the links between the dynamics of the growth of production and the labour productivity.[1/] This link is based on the assumption that high dynamics of the growth of gross output creates favourable conditions for optimum utilization of economies of scale which has a direct stimulative impact on the growth of labour productivity. The degree of dependence of employment on the changes in the production is also a factor influencing the labour productivity: in conditions of lower sensitiveness of these links there is a tendency towards close accord in the dynamics of both labour productivity and of production.

The close links between the dynamics of the growth of production and of the labour productivity in industry of these countries (Chart 1) - the dynamics of the labour productivity being rather markedly dependent on the dynamics of production - is a reflection of the fact that the adaptation of the structure

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1/ See e.g. Economic Survey of Europe in 1982, Chapter 3.6, p. 216.

of employment to changes in the structure of production proceeds rather slowly and, also, of the existence of a situation dictated by the objective target of full employment in these countries, under which the changes in the dynamics of the growth of production are not accompanied by corresponding changes in the dynamics of employment.

This analysis suggests that the implementation of the objectives of the five-year plans for the period 1981-1985 will be very difficult in all the countries of this region. Assuming that analogous relations between the dynamics of production and the labour productivity in the industry (as established in regressive analysis) continue to prevail during 1981-1985, as they did during 1971-1980[1/], the dynamics of labour productivity for this period can be estimated as shown in Table 18.

Development of labour productivity in the individual industrial branches at the turn of the 1970s and of the 1980s (see Table 19) testifies also to the general tendency of falling dynamics in the majority of branches. A considerable lead over the overall dynamics of labour productivity in the industry has been maintained in the engineering industry in all countries (with the exception of Hungary) during the period 1976-1981. Besides this branch, a marked long-term lead of labour productivity dynamics has been registered during 1976-1980 also for the chemical industry, construction materials and printing in Bulgaria, for the chemical industry, wood processing industry, glass and ceramic industries in the CSSR, for the textile and leather industries in the GDR, for the generation of electricity, non-ferrous metallurgy, chemical, paper, glass and printing in Hungary, for the wood processing, glass and printing industries in Poland, for the chemical industry, the industry of building materials, textile and clothing industries in Romania and for the chemical, glass, textile and leather industries in the USSR. In the early 1980s a marked deceleration of the dynamics of labour productivity growth has been recorded in a number of countries in the metallurgical industry, especially iron and steel (in the CSSR, Hungary and the USSR), for the chemical industry (in Bulgaria, the CSSR, the GDR, Hungary, Romania) and in some branches of the light manufacturing industries.

1/ See: Economic Survey of Europe in 1982 .... Chapter 3.6

Table 18.

Dynamics of labour productivity 1981-1985 (average annual rates of growth in per cent)

	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hunga-ria	Poland	Roma-nia	Soviet Union
1981-1985 Estimated	4.3	2.7	4.6	4.9	.	4.8	3.0
1976-1980 Actual	4.9	3.9	4.4	4.5	4.2	5.8	2.8
1981-1985 Plan - gross output	5.1	2.7-3.4	5.1	3.5-4.0	.	7.6	4.7

Sources: Economic Survey of Europe in 1982, table 3.6.4

Growth rate of labour productivity[a] in industry[b] (Annual average growth rate in percentage)

		Branches														
		Electricity	Fuel	Ferrous metallurgy	Non ferrous metallurgy	Engineering	Chemicals	Construct. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria	1976-80	1.6	4.1	5.5	.	7.9	7.0	6.4	5.7	-0.2	4.7	5.4	2.3	3.5	8.3	3.
	1980	-2.7	0.5	6.7	.	5.8	6.2	7.5	5.9	3.1	3.3	3.8	-0.7	6.1	4.0	-0.6
	1981	0.9	-3.9	4.7	.	5.5	0.5	2.1	2.2	3.0	1.3	4.3	2.8	3.8	1.9	3.1
Czecho-slovakia	1976-80	2.3	1.7	2.5	1.9	5.5	5.2	3.9	5.1	3.7	5.1	4.1	4.5	3.7	4.2	2.3
	1980	5.5	-1.5	1.4	0.0	3.8	4.4	3.8	4.2	1.9	3.0	3.8	3.0	2.6	2.7	1.4
	1981	-0.7	-1.6	1.4	0.7	3.7	1.0	1.8	1.1	1.3	2.3	2.5	2.4	1.9	3.3	1.4
German	1976-80	3.2	3.2	3.2	3.9	5.9	4.6	1.6	3.4	4.7	4.6	5.1	4.1	5.1	2.7	1.2
Dem.	1980	0.0	4.4	2.0	5.9	7.5	2.9	-1.4	0.0	5.2	4.6	4.8	4.6	5.9	5.2	2.3
Rep.	1981	2.4	1.4	5.1	8.0	6.4	3.4	1.4	0.7	1.9	5.0	4.0	1.9	3.7	0.0	1.5
Hungary	1976-80	6.7	3.4	1.9	4.1	4.1	8.6	4.4	7.0	5.5	6.8	4.9	2.8	0.0	6.8	3.2
	1980	3.9	-1.7	-4.8	2.6	-2.2	3.1	1.3	2.6	4.4	9.0	6.5	5.6	-6.5	8.9	3.8
	1981	4.8	-1.2	-0.7	6.2	8.0	5.2	1.9	3.5	8.5	6.0	4.2	6.1	4.7	9.6	2.9
Poland	1976-80	4.9	0.4	2.5	2.1	5.9	4.6	3.4	5.9	4.9	9.0	4.7	4.2	4.2	7.7	2.5
	1980	3.1	-5.1	1.3	-1.7	0.0	0.0	1.2	4.3	7.2	4.6	1.2	3.5	1.9	-2.6	-3.3
	1981	-7.3	-10.7	-17.1	-18.5	-10.1	-18.2	-14.0	-3.6	-11.7	-3.5	-9.4	-8.5	-4.4	-2.1	-10.3
Romania	1976-80	4.7	0.2	5.9	4.7	8.2	7.7	8.0	6.3	6.5	8.0	7.8	5.9	6.5	4.7	5.4
	1980	2.7	-6.1	-6.3	4.4	6.5	6.6	4.2	4.2	4.8	10.2	7.1	5.3	5.4	2.8	3.4
	1981	-25.7	-7.3	3.0	-9.6	2.4	0.5	2.0	2.9	3.4	9.2	6.0	8.6	2.3	-0.7	5.9
Soviet	1976-80	2.7	1.4	0.8	6.2	6.2	4.2	1.7	1.9	0.9	4.4	2.5	4.6	3.7	.	1.2
Union	1980	2.7	1.3	0.0	.	5.2	4.1	0.7	2.9	0.7	4.5	2.9	6.3	3.6	.	0.5
	1981	0.7	0.0	0.0	.	4.4	5.0	1.4	2.8	3.6	4.9	2.1	3.3	1.4	.	1.5

Sources : CMEA Statistical Yearbook

a) Gross output per employee
b) CMEA branch classification of industry

The impact of links between the dynamics of labour productivity and the dynamics of production and employment has been projected into the development of the share of labour productivity in the increment of production of the individual industrial branches during the period of 1976-1981 (see Appendix A, Table 36): a more marked decrease in the dynamics of production against that of employment results in a falling share of labour productivity in the increment of production in a number of branches. This influence has been felt in the majority of the countries in the branches of the fuel and energy base and in metallurgy, in a number of countries in the engineering industry (in Bulgaria, the GDR, the USSR), in the majority of countries in the chemical industry and in a number of branches of the light manufacturing industry.

As far as the development of the relative level of labour productivity in the individual branches is concerned (the level of labour productivity in the industry = 1.00, Table 20), there are no substantial changes during the period under review. The relatively highest level has been maintained in the majority of countries by the following branches: electricity, metallurgy, chemicals and food industry (the markedly higher relative level of labour productivity in the food industry is also a result of the method of gross output calculation: most of the raw materials and some other materials enter the calculation twice). In the engineering industry of most of the countries the relative level of labour productivity registered a modest increase which brought this branch closer to the average level of productivity for the whole industry (it was surpassed only in Bulgaria).

A whole range of factors projects into differences between the countries compared in the relative level of labour productivity in the individual branches (see Table 20). From this point of view a substantially higher relative level of labour productivity (markedly higher than the general average for the industry as a whole) is being displayed in the generation of electricity in Hungary and the GDR, iron and steel industry in Poland and Romania, non-ferrous metallurgy in Poland, chemical industry in Hungary and in the food industry in the GDR.

The dynamics and the level of labour productivity in the industry of the European CMEA countries reflect not only the productivity increase but also

Ratios of gross output[a] and employment[b] shares in total industry[c]

	Branches														
	Electricity	Fuel	Ferrous metallurgy	Non ferrous metallurgy	Engineering	Chemicals	Construct. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria															
1976-1980d)	1.26	1.10	1.23	.	1.09	1.50	0.83	0.47	0.79	0.47	0.80	0.80	0.63	0.56	1.75
1980	1.18	1.13	1.16	.	1.14	1.65	0.83	0.48	0.71	0.45	0.83	0.76	0.61	0.56	1.67
1981	1.13	1.05	1.16	.	1.18	1.49	0.80	0.48	0.79	0.45	0.84	0.78	0.65	0.56	1.75
Czechoslovakia															
1976-1980d)	1.50	0.98	1.39	1.33	0.87	1.67	0.87	0.88	1.06	0.50	0.58	0.43	0.59	0.50	1.71
1980	1.42	0.92	1.32	1.43	0.90	1.69	0.85	0.90	1.06	0.50	0.59	0.45	0.61	0.50	1.69
1981	1.42	0.90	1.32	1.43	0.92	1.69	0.85	0.89	1.00	0.50	0.60	0.45	0.61	0.50	1.68
German Dem.Rep.															
1976-1980d)	1.96	0.96	1.36	1.50	0.78	1.31	0.67	0.79	1.00	0.55	0.78	0.53	0.70	0.64	2.14
1980	1.96	0.95	1.31	1.53	0.81	1.29	0.66	0.76	1.00	0.55	0.77	0.52	0.68	0.64	3.59
1981	1.96	0.91	1.30	1.60	0.84	1.28	0.62	0.72	0.94	0.55	0.77	0.53	0.68	0.55	3.38
Hungary															
1976-1980d)	2.64	1.16	1.49	1.57	1.00	2.08	0.68	0.83	0.90	0.53	0.62	0.53	0.43	0.83	1.32
1980	2.86	1.12	1.43	1.57	1.00	2.26	0.70	0.94	1.00	0.63	0.65	0.54	0.39	0.92	1.35
1981	2.90	1.07	1.33	1.65	1.03	2.27	0.67	0.91	1.00	0.63	0.66	0.54	0.42	1.00	1.32
Poland															
1976-1980d)	1.35	0.64	1.84	2.57	0.99	1.38	0.66	0.83	1.00	0.53	0.71	0.73	0.56	0.36	1.41
1980	1.41	0.62	1.92	2.50	1.06	1.47	0.68	0.88	1.00	0.61	0.74	0.79	0.58	0.40	1.45
1981	1.53	0.63	1.75	2.54	1.06	1.48	0.69	0.98	1.00	0.67	0.76	0.82	0.63	0.40	1.49
Romania															
1976-1980d)	1.71	0.89	2.16	1.00	0.98	1.73	0.78	0.43	0.92	0.31	0.62	0.79	0.47	0.33	1.79
1980	1.69	0.76	1.95	1.00	1.01	1.70	0.86	0.43	1.00	0.29	0.63	0.79	0.47	0.17	1.85
1981	1.69	0.75	1.86	1.00	1.01	1.69	0.86	0.44	0.91	0.35	0.64	0.85	0.49	0.17	1.89

Sources : CMEA Statistical Yearbook

a) At constant producer prices b) Wage and salary earners engaged c) CMEA branch classification of industry
d) Arithmetic average

the impact of the development ratios of the individual branches, i.e. the impact of the development of the industrial structure during the period 1976-1981. Even in the case of unchanged productivity by branches there will be a certain development of the overall labour productivity in the industry depending on the inter-branch migrations of labour (i.e. if the growth, or decrease in the level of employment occurs in branches with a relatively lower or higher level of labour productivity).

Capital productivity

Assessment of the development of the labour productivity and its share in the production increment of the individual industrial branches in the period 1976-1981 suggests that it also encompassed a high dynamics of capital intensity, equipping manpower with fixed assets (see Table 21). The highest dynamics of labour force equipment with fixed assets is registered in this period by Hungary. A comparison of the ratios of the growth of labour productivity and that of the manpower equipment with fixed assets indicates that any growth in labour productivity is generally becoming increasingly more intensive of fixed assets increments (see Table 22). This development tendency became apparent even in the course of the period of 1976-1980, in comparison to first half of the 1970s (see Appendix A, Table 37).

The increase in demands put by the growth of labour productivity on the intensity of fixed assets increment is reflecting not only the growth in the fixed assets intensity of the growth of the industrial output (see Appendix A, Table 38), but, especially, the relatively lower effectiveness of fixed assets which is falling strikingly during the 1976-1981 period (related to a relatively speedy dynamics of the growth of fixed assets and to the deceleration of the dynamics of the industrial production). This development can be traced also by means of disaggregating the impacts of the development of fixed assets (of their level, productivity and branch allocation) on the gross output increment in the European CMEA countries during 1971-1980 (see Appendix A, Table 39).

Table 21.

Growth rate of capital intensity[a] in industry[b] (Annual average growth rate in percentage)

		Industry total	Branches: Engineering	Chemicals	Construction materials	Textile	Food
Bulgaria	1976-1980	6.7	7.4	4.7	8.2	7.6	8.2
	1980	1.5	21.3	2.9	6.4	-3.5	4.7
	1981	6.6	2.8	2.3	7.4	2.6	7.6
Czechoslovakia	1976-1980	5.7	6.3	5.4	7.3	6.2	5.9
	1980	4.9	11.9	1.2	5.4	3.2	4.9
	1981	5.8	1.7	5.7	6.6	6.8	5.8
German Dem.Rep.	1976-1980	5.5	5.4	5.5	5.9	5.1	3.7
	1980	5.5	5.6	6.2	5.4	5.5	3.6
	1981	4.6	6.5	4.1	5.7	4.7	4.2
Hungary	1976-1980	10.0	11.1	9.3	10.0	9.6	11.1
	1980	11.5	12.0	8.8	17.8	7.7	14.7
	1981	8.2	8.6	3.5	9.5	4.0	8.8
Poland	1976-1980	9.0	10.5	8.0	9.4	8.4	9.3
	1980	4.5	4.9	4.7	4.2	4.1	5.1
	1981	5.2	7.5	4.5	5.4	6.1	2.9
Soviet Union	1976-1980	6.3	7.4	7.4	6.3	6.5	5.5
	1980	6.0	6.9	8.9	5.3	6.6	5.6
	1981	7.3	7.9	8.7	5.5	7.7	5.9

Sources : CMEA Statistical Yearbook

a) Fixed assets per employee
b) CMEA branch classification of industry

Table 22.

Growth rate ratios of labour productivity[a] and capital intensity[b] in industry[c]

		Industry total	Engineering	Chemicals	Construction materials	Textile	Food
Bulgaria	1976-1980	0.76	1.07	1.49	0.78	0.71	0.48
	1980	1.93	0.27	2.14	1.18	-1.09	-0.13
	1981	0.42	1.96	0.22	0.28	1.65	0.41
Czechoslovakia	1976-1980	0.72	0.87	0.96	0.53	0.66	0.48
	1980	0.63	0.32	3.67	0.70	1.19	0.29
	1981	0.31	2.18	0.18	0.27	0.37	0.24
German Dem.Rep.	1976-1980	0.84	1.09	0.84	0.27	1.00	0.32
	1980	0.82	1.34	0.47	-0.26	0.87	0.64
	1981	0.94	0.99	0.83	0.25	0.85	0.36
Hungary	1976-1980	0.44	0.37	0.93	0.44	0.51	0.29
	1980	0.10	-0.18	0.35	0.07	0.84	0.26
	1981	0.50	0.93	1.49	0.20	1.05	0.33
Poland	1976-1980	0.49	0.56	0.58	0.36	0.56	0.27
	1980	0.00	0.00	0.00	0.29	0.29	-0.65
	1981	-1.94	-1.35	-4.04	-2.59	-1.54	-3.55
Soviet Union	1976-1980	0.48	0.84	0.57	0.27	0.39	0.22
	1980	0.43	0.75	0.46	0.13	0.44	0.14
	1981	0.44	0.56	0.58	0.26	0.27	0.25

Sources : CMEA Statistical Yearbook

a) Gross output per employee
b) Fixed assets per employe
c) CMEA branch classification of industry

It may be assumed that the marked fall in the investment activity since the end of the 1970s (see Appendix A, Table 17)) will gradually cause deceleration of the dynamics of fixed assets growth. That kind of development, together with the expected acceleration of the gross output dynamics of the industry in the years 1983-1985, could bring about a better productivity of fixed assets. Adjustment measures in planning and management of the national economy which have been adopted in all the countries are meant also to increase the productivity of fixed assets in the industrial reproduction during the first half of the eighties.[1/]

The material intensity of industrial production

The development plans of all the European CMEA countries for the period 1981-1985 envisage producing increments of industrial output with falling increments of material inputs. Certain positive tendencies of this development can be seen in the comparison of the ratios of the dynamics of the gross and net output (see Table 23). The lead of the dynamics of net production has been accelerating since 1981 in the majority of the countries which suggests that there is a tendency towards cutting the material inputs per unit of increment of gross output.[2/] In all the plans measures were taken to orientate the national economies of the individual countries towards lowering their specific consumption. The achievement of these goals is one of the basic prerequisites for the intensification of the economic growth.

1/ Especially to increase the utilization of the existing production capacities, the rate of amortization, intensification of the absorption of the scientific and technological progress.

2/ In this context it is, however, necessary to bear in mind that the relations of gross and net production dynamics are also, to a certain extent, influenced by changes in the co-operative links between the enterprises as well as changes in the branch structure.

Table 23.

Ratio of net to gross industrial output

		Bulgaria	Czechoslovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Average annual percentage change								
Gross output	1971-1975	9.1	6.7	6.5	6.4	10.4	12.9	7.4
	1976-1980	6.0	3.5	4.9	3.4	4.7	9.5	4.4
	1979	5.5	3.4	4.8	3.0	2.7	7.6	3.4
	1980	4.2	3.5	4.7	-1.6	0.0	6.5	3.6
	1981	4.9	2.1	5.1	2.4	-10.8	2.5	3.4
Net output	1971-1975	9.3	6.1	5.8	7.5	10.8	14.4	7.8
	1976-1980	6.8	3.5	5.0	3.8	2.6	8.9	4.9
	1979	5.4	3.5	4.7	4.3	-1.7	7.6	3.7
	1980	0.4	2.5	5.5	-2.2	-4.1	8.9	3.8
	1981	5.6	1.1	5.5	2.9	-16.0	4.1	3.8
Ratio net to gross industrial output								
	1971-1975	1.02	0.91	0.89	1.17	1.04	1.12	1.05
	1976-1980	1.13	1.00	1.02	1.12	0.55	0.93	1.11
	1979	0.98	1.03	0.98	1.43	-0.63	1.00	1.09
	1980	0.09	1.19	1.17	1.37	.	1.37	1.06
	1981	1.14	0.52	1.08	1.21	1.48	1.64	1.12

Sources : Economic Survey of Europe in 1981 ...., .224
Economic Survey of Europe in 1982 ...., table 3.3.5
CMEA Statistical Yearbook 1982 ...., p.55

A rather pronounced tendency has begun to assert itself in a number of countries towards lowering the energy consumption as may be seen from the relations of the dynamics of the consumption of energy and the NMP in Table 24. A similar tendency is evident in the slower dynamics of the growth of electrical energy consumption per worker in the industry (see Appendix A, Table 40).

The programmes of rationalizing energy consumption represent the decisive component of the developing strategy in all the countries. E. g., in the GDR the economy is supposed to save energy equivalent to 70 million tons of brown coal in five years. In the CSSR, the savings should reach roughly 12 million tons of the coal equivalent around 1985. The USSR intends to economize during the period of the five-year plan 200 million tons of coal equivalent. Sizeable savings in energy should be attained through the long-term programme of international co-operation of the CMEA countries in the field of energy.

Considerable attention is being paid in the European CMEA countries to increasing the effectiveness of metal consumption, especially of steel.[1/] In the iron and steel industry of the USSR alone the savings of metals reached 1.8 million tons in 1981 as against 1970. It is envisaged that the coefficient of the utilization of metal will raise from 0.71-0.72 attained in the year of 1981 to 0.79 in 1985. In the other European CMEA countries, too, considerable savings have been achieved in ferrous metals. During 1971-1980 the consumption of steel per unit of the NMP was falling annually on the average by 4.8 per cent in Bulgaria, 2.2 per cent in the CSSR, 3.9 per cent in the GDR, 3.5 per cent in Hungary, 0.6 per cent in Poland, and 2.5 per cent in Romania. It is envisaged that during 1981-1985 the specific consumption of rolled products in the engineering industry of the GDR will be lower on the average by 7.3-7.5 per cent annually. The normatives of metal consumption in the engineering industry of Romania are supposed to be lowered during the current five-year plan by 20-23 per cent. In the CSSR, metal savings are envisaged at a minimum rate of 4.5-5.0 per cent per year. It is envisaged that the average dynamics of the growth of consumption of steel in the six European CMEA countries (except the USSR) will lower fom 3.4 per cent annually in the years 1971-1980 to 2.0 per cent in the years 1981-1990.

1/ The quoted data are based on the following sources: Planovoye khozyaystvo 1983, No. 5, and Izvestiay Akademiyi nauk SSSR, Seriya ekonomitsheskaya, 1982, No. 4.

Table 24.

Relations of the dynamics of the consumption of energy and the NMP

	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hun-gary	Poland	Roma-nia	Soviet Union
1976-1980	0.84	0.65	0.56	1.21	2.50	0.56	0.74
1978	1.02	0.59	0.53	1.62	1.53	0.92	0.29
1979	0.85	0.90	0.63	0.58	-1.52	0.26	1.66
1980	1.79	0.12	0.69	-4.36	.	1.31	0.54

Sources: Economic Survey of Europe in 1982. Chapter three, p.157

Total productivity

The indicator of the total productivity has been used (see Table 25) for assessing the overall contribution of labour productivity and of fixed assets productivity related to the growth of gross industrial output in the European CMEA countries. At the turn of the 1970s and the 1980s the majority of the countries registered a deceleration of the dynamics of the overall productivity in industry. The main cause of this development trend rests with the continuing fall in the capital (fixed assets) productivity. A certain tendency towards a positive turn may be noted in Bulgaria and Hungary in 1981 which resulted in accelerating the dynamics of the total productivity in both countries. In the first half of the 1980s the fundamental prerequesite of increasing the share of intensive factors (i.e. the share of the total productivity) in the increment of the industrial output will rest with keeping the relatively high dynamics of its growth together with increasing the degree of utilization of the existing fixed assets (see Table 26).

Considering the reduced investment activities and a marked orientation towards achieving a more even trade balance one can hardly expect a substantial acceleration of the CMEA reproduction processes. The key role in the intensification process will be played by the improvement of planning and management, by activating the existing production apparatus towards the challenges of the changing indigenous and external conditions of the economy.

Table 25.

Productivity indicators in industry (Average annual percentage change)

Indicator	Period	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Labour productivity	1976-1980	4.4	4.0	4.5	4.6	4.3	5.8	2.8
	1979	4.1	3.1	4.0	4.3	2.6	3.9	2.2
	1980	3.1	2.8	4.5	0.6	-0.2	4.1	2.5
	1981	3.2	1.6	3.8	4.7	-10.4	0.2	2.5
	1982	3.8	0.5	2.6	4.1	0.8	-0.5	2.1
Capital intensity b)	1976-1980	8.4	5.3	5.4	9.2	8.9	6.7	5.9
	1979	6.8	5.3	5.1	11.3	7.8	5.5	6.1
	1980	9.0	5.2	5.7	10.9	5.6	7.5	6.0
	1981	6.5	5.9	5.0	8.3	4.1	6.5	6.4
	1982	.	.	4.5	.	6.9		6.5
Capital productivity c)	1976-1980	-3.6	-1.5	-1.0	-4.3	-4.2	-0.8	-2.9
	1979	-2.5	-2.1	-0.9	-6.0	-4.9	-1.5	-3.9
	1980	-5.4	-2.5	-0.8	-9.4	-5.5	-3.5	-3.3
	1981	-3.0	-4.0	-0.8	-3.5	-13.9	-6.0	-3.7
	1982			-1.8	.	5.7		-4.2
Total productivity d)	1976-1980	2.0	2.3	2.8	1.9	1.7	3.8	1.1
	1979	2.1	1.5	2.5	1.2	0.3	2.9	0.4
	1980	0.5	1.2	2.9	-2.4	-1.7	1.8	0.8
	1981	1.3	-0.1	2.4	2.2	-11.5	0.0	0.6
	1982	.	.	1.3	.	-1.1		0.2

Sources: Economic Survey of Europe in 1982. Chapter three..., pp.112,113

a) Gross output per employee; b) Fixed assets per employee; c) Gross put - fixed assets ratio;

d) The figures for total productivity were obtained by combining the growth rates of labour productivity and capital productivity with weights; 0.7 in the case of former and 0.3 in the case of the latter. The relationship approximates that between the wage fund, imputed capital charge and allowance for depreciation of fixed assets.

Table 26.

Total productivity percentage shares in gross output of industry

	Bulgaria	Czechoslovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
1976-1980	30.8	46.5	53.6	51.1	34.1	35.7	22.8
1979	38.2	40.5	54.3	40.0	11.1	35.8	11.8
1980	11.9	34.3	61.7	120.0	-	27.7	22.2
1981	27.1	-4.8	51.1	76.6	109.5	-	17.6
1982	.	.	40.6	.	27.5	.	7.1

Sources : Economic Survey of Europe in 1982, Chapter three..., pp.155; Table 3.1.1

V. ECONOMIC POLICY FOR STRUCTURAL ADJUSTMENT OF THE INDUSTRY

The aims of econonmic mechanisms introduced at the turn of the 1970s and the 1980s have been subordinated in the individual CMEA countries to specific economic and policy conditions of the development of their national economies. Implementation of those goals can be achieved only through the intensification of national economy which necessitates also changes in planning and management mechanisms.

Economic policy aims in the conditions of adjustment of national economic structures

The co-ordination of long-term economic[1/], scientific and technological policy has been a very important means of the socio-economic development of the European CMEA countries. In the programme of co-ordination of the national economic plans which was adopted at the 36th session of CMEA, the role of a co-ordinated economic policy of long-term economic development was underlined. The programme envisages also multilateral co-ordination of technical and economic policies in the major branches and production activities within the framework of CMEA bodies and in the international economic organizations.

The achieved level of economic development in the CMEA countries provides conditions also for a co-ordinated structural policy. The need for such an integration policy has also grown from the similar level of the achieved development of production structures.[2/]

1/ By economic policy here is understood a system of economic measures orientated towards securing a dynamic and proportionate development of the national economy according to the long-term socio-economic objectives in the given period.

2/ See e.g. Report of the Research Seminar on Structural Changes in European CMEA Countries. Budapest, 1982. ID/WG.357/11.

The increased number of the elements of co-ordination in the economic development of the European CMEA countries is gradually reflecting in the structural adjustment of the industrial branches. Yet, is is necessary to note that the close similarity of economic structures in the European CMEA countries causes an obstacle to the development of the international division of labour. That is why the structural adaptation is being accomplished on the micro-level rather than the macro-level.

Ways and means are being sought for narrowing the ouput profile in the individual branches of the national economy and for creating structures that complement each other. In this context, forms of co-operation in establishing joint economic projects among member countries are of high importance.

Principal tendencies of industrial structural policy during the 1980s

The co-ordination of structural policy forms also an important instrument of strengthening the economic and technological independence of the European CMEA countries. This is creating conditions for a co-ordinated choice of production, the need of which can be covered, at an economic advantage, through imports from countries outside the CMEA. In this context it is possible to make use of the co-ordination of the structural policies of the European CMEA countries facilitating the long-term development of co-operation with the developing countries.

A key role is being played in the co-ordination of the structural policies of the European CMEA countries by the ties of national structural policies to the aims of the structural policy in the USSR. The national economy of the USSR plays a specific role in other CMEA countries' economy, especially from the point of view of the economic, scientific and technological potential, availability of natural resources, and the size of the domestic market. For these reasons, the development of the USSR branch structure of industry and its participation in the international division of labour, especially within the CMEA, exercise an ever growing influence on the development of industrial structures in the other East European countries. The course of the adaptation of the branch structures of industry and the formulation of the national goals

of the industrial structural policy depend on long-term strategy of socialist economic integration of the CMEA community and particularly on the role of the Soviet Union in its implementation.

Since the mid-1970s, th CMEA members have been elaborating "Target Programmes" that were directed at improving regional co-operation and increasing the level of production to satisfy as much as possible region-wide demand in the following areas: energy, fuels and raw materials; agriculture and foodstuffs; machinery and equipment; manufactured consumer goods; and transportation. These five overall programmes comprise some 340 projects, the majority of which will commence during the current medium-term planning period as specified in the Second Concerted Plan, which was endorsed by the 35th CMEA session in July 1981.

The CMEA co-operation programmes are designed to yield significant volume increases in exports of manufactured goods, mostly from Eastern Europe, in exchange for fuels and primary goods, largely from the USSR also in the 1980s. East European CMEA members will be governed by comprehensive 10-year sectoral specialization agreements concluded primarily with the USSR, the five Long-Term Target Programmes of Economic Co-operation, the Second Concerted Plan of Integration Measures, medium-term trade agreements, particularly in the field of scientific and technological advancement and their incorporation into production.

The five Target Programmes represent a collective effort to redress the currently prevailing imbalances in some member countries, to support buoyant growth in the CMEA area, to secure greater regional self-sufficiency in many producer and consumer goods, and to expand and modernize the transportation sector. Although all programmes will contribute to strengthening regional growth, a particularly important role in maintaining relatively dynamic expansion and accelerating regional co-operation has been accorded to the Target Programme for fuels, electrical energy and raw materials. Some key objectives of this programme are the restructuring of the CMEA members' energy balance on the basis of the accelerated development of nuclear power and the wider utilization of solid fuels; the adoption of strenuous conservation measures; increased domestic output of fuels and minerals; and the location of energy- and raw-material intensive production facilities closer to sources of supply, thus promoting regional specialization.

Simultaneously with the elaboration of the Target Programmes, CMEA members have designed long-term production specialization agreements, especially for products from the engineering and chemical industries. All Eastern European countries have signed such agreements with the USSR, and several have concluded similar agreements among themselves. Though there is some overlapping between these agreements and the Target Programmes, the bilateral specialization agreements in several respects endeavour to advance regional co-operation beyond the variety an intensity of measures included in the Target Programme.

Basic features of management and planning systems for implementing the structural policy

The course of implementing the principal objectives of structural policy in the industry of the European CMEA countries depends on the corresponding adjustment of the systems of management and planning. In this respect, all the five-year plans for 1981-1985, and even more so the "guidelines" documents and presentations of the plans call for, as a consequence of the transition from extensive to intensive type of economic development, substantial improvements at all levels of planning and also of the day-to-day management of industry.

Economic mechanisms which proved to be satisfactory during the period of extensive development does not appear effective enough in the period of intensification. In all the European CMEA countries, there are common long-term issues related to structural changes to be solved, such as:

- optimal rate of growth of industry
- fostering structural changes at macro-level
- improving the harmonization of the interest of production units with the aims of the national economy
- establishing of an improved planning system in order to stimulate more effective production
- exploring uncovered reserves of international division of labour
- strengthening wider participation of workers in the management

Certain administrative methods are gradually being replaced with economic methods and more attention is being paid to the quality and efficiency of production. In planning, there has been an increase in the role of long-term programmes and five-year plans, qualitative indicators and modern techniques. The economic autonomy of the production units is increasing on a cost-accounting principle and changes in the pricing, financing, credit and taxation systems are envisaged. Payments and incentives will rather depend on the real contribution of the producers to increasing net incomes. Appropriate institutional changes in organizational structure of national economies are being undertaken to simplify economic relations and to make management more effective. It is expected that these improvements in management (and increased human motivation) will substantially raise labour productivity and intensify production.

As far as the institutional structure of the CMEA industry is concerned, countries are striving to optimize management both below and above enterprise level. Within enterprises, therefore, smaller and more compact organizational units have gradually been taking responsibility for implementing the plan targets. Labour remuneration has increasingly depended on performance. Above the enterprise level many forms of association were created, including the concentration of several similar enterprises - a good deal of which may cover a substantial part of a whole branch; large "circles" of vertically integrated enterprises belonging to different branches; or joint management of all enterprises situated in particular locations - a solution aimed at overcoming the shortcomings due to breakdowns at the level of interbranch transactions, etc.

The essential common feature of improvements in management and planning of industry is the introduction of the cost-accounting principle on an increasing scale at all organizational levels of production. In most countries a further trend to reduce the number of obligatory indicators of enterprise performance can be observed. This is accompanied by a pronounced shift in some countries from both physical and value gross indicators to net value (nominal) indicators, such as net normative output, income and profit.

In the European CMEA countries, more or less pronounced changes have been introduced in order to align internal price formation with world market prices - in particular for energy and other material inputs. For wholesale prices - and to some degree for retail prices - new measures are being taken in all European CMEA countries.

In all countries the general requirements for both a higher degree of planning discipline (i.e. conformity with the plan targets) and increasing socialist entrepreneurship and intitiative have been proclaimed, calling for a strong improvement of the style of economic activity and of the economic mentality, of planning methods and the management system.

Developments in improvements of national economic mechanisms in the European CMEA countries are neither simultaneous nor acting in the same direction and with the same methods. This is, however, understandable since the historical development and economic conditions of the individual countries are differing. Nonetheless, it should be noted that the Communiqué of the 35th session of the CMEA, held in 1981, includes a principal in which member countries accepted the further perfectioning of methods and forms of co-operation, including reinforcement of exchange of experience in planning and management, and taking into consideration possible convergence of the structures of national economic mechanisms. The remaining years of the current five-year period will show to which extent the changes introduced, and also those envisaged in management and planning, would be sufficient for the successful implementation of the planned strategies of structural adjustments in industry, or whether more fundamental changes in line with the chosen path of an intensive economic development should required.

VI. FUTURE PERSPECTIVES OF STRUCTURAL CHANGE IN INDUSTRY

The structural adjustment of industry in these countries is subject to the achievement of the long-term objective, i.e. a marked intensification of the national economy in the coming 10-15 years. The realization of this long-term aim is affected by the need to improve the trade balances and to achieve a more balanced development of the industry (both from the standpoint of the internal and external economic conditions), and also by the emphasis put on the securing of the social aims of development during this period.

Implementing the necessary changes in the structure of industry in conditions of a lower dynamics of growth[1/] is becoming still more complex by virtue of a very slow increase of the industrial output during 1981-1983 as compared to the plans for the period of 1981-1985 in the majority of the European CMEA countries (see Appendix A, Table 41). In order to achieve the dynamics originally envisaged it would have to be markedly accelerated in the majority of the countries during 1984-1985, which is hardly attainable under the present conditions.

All plans stress that industrial growth must be generated primarily from increased factor inputs productivity, which accounts for at least four fifths of the targeted output gains. Whereas earlier medium-term plans emphasized the need for rapid autonomous structural change in breadth and devoted much attention to new construction projects, current plans reflect greater concern for adjusting industrial structures in depth to changing internal and external development conditions, curtailing the number of new projects, and complementing investment projects with minimum delays. In that light, the

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1/ A lower dynamics of growth is usually accompanied by a lower dynamics of structural adaptation.

plans reflect the view that desirable further changes in the macro-economic structure of some economies should not be pursued vigorously under the prevailing austere development conditions and that, in other countries, the post-war period of important macro-economic changes has come to an end and further growth will have to be secured by concentrating resources. Policies are therefore oriented predominantly towards intra-branch modernization and better utilization of available capacities. New projects could be initiated only to round off industrial structures or to cope with supply constraints in energy or important raw materials.

Country plans and projections show that the branch structure of industry will be modified in several directions. All countries give explicit priority to further development of fuels, mining and basic processing branches, from internal resources and in co-operation with other CMEA members. Nearly all countries aim at reducing the gap between the rates of growth of heavy industry ("sector A") and light and food industries ("sector B"), although on the average the share of sector A in total industrial output will increase further. In some countries, including the USSR, heavy industry will expand more slowly as output of consumer goods is to be accelerated. Growth in the production of intermediate goods, on the other hand, is to be eased without necessarily affecting production levels in user sectors as a result of efforts to economize material inputs. Finally, engineering continues to be the prime industrial branch, as in the recent past, and its growth is planned to surpass that for the industry as a whole.

Structural changes in industry in the first half of the eighties

An important priority stressed in nearly all plans for the period of 1981-1985 and dominant in the attendant policy discussions is the need for saving essential material inputs throughout the economy, especially in industry and construction.[1/] In view of internal and external supply bottlenecks and rising costs, the relatively energy- and material-intensive economic structure

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1/ The following sources were mainly used:
Keyfets, B.A.: Tendentsii strukturnoy politiki stran SEV...., op. cit.
Vávra, O., and A. Kachlík: Lehky a drevozpracující prumysl evropskych clenskych statu RVHP. In: Plánované hospodárství, 1983, no. 6.
UNIDO: Salient features of structural changes in European CMEA countries, op. cit.

of the planned economies had posed crucial problems in the late 1970s. The 1976-1980 annual plans of several countries already incorporated ambitious policy steps designed to reduce the specific material/energy intensity of industrial output in particular, as mentioned previously.

The objective envisaged was two-pronged. Either countries sought to strengthen their import substitution strategy or, in some cases, to promote exports, particularly to convertible currency partners. Measures to save fuel and materials were also embraced to stress the drive towards raising average productivity levels. Both objectives have been maintained, and all current plans emphasize the crucial role of reducing material intensity of production in further economic development. Savings are anticipated as a result of major systematic conservation efforts, adjustments in the economic structure away from energy- and raw-material intensive branches, and input substitution.

Nearly all plans disclose explicit targets for the desired reduction of the economy's intensity in material inputs or energy. In some cases, these aims are very ambitious but appear feasible if plant and equipment modernization supplements organizational and managerial efforts directed at conserving inputs. Conservation goals therefore impose a number of restrictions on the distribution of investment funds as well as on the volume and composition of imports. The importance attached to these medium-term conservation goals has been reinforced in recent policy debates, and planners have stressed that further economizing measures have to be embraced if domestic output lags behind plan targets or if external goals are not attained.

Input substitution and shifts in the composition of industrial output are also expected to contribute to the slow-down in requirements, especially of imported fuels and raw materials. All countries, individually and in concert within the context of joint CMEA strategies, have adopted ambitious programmes directed at shifting the energy balance in favour of coal, natural gas and, especially, nuclear power. While it is estimated that total fuel production will increase by less than 2 per cent per year, the output of electrical energy will grow by roughly 4 per cent annually. The latter will be increasingly procured from nuclear power stations and for most countries this factor will become particularly important in the second half of the decade.

Available data on the planned dynamics of gross production of the manufacturing branches for the period of 1981-1985 make it possible to conclude that, due to the need of securing the absorption of the scientific and technological progress by the national economies of the individual European CMEA countries continue to maintain, in the majority of them, a substantial lead in the dynamics of production (see Tables 27 and 28).

The role of the engineering industry output is reflected also in the positions preserved by its products in the structure of exports from these countries (see Appendix A, Table 9) and in the emphasis being put on increasing the role of engineering products in the final consumption by the population. The dynamics of growth of the engineering industry is in a decisive measure influenced also by the role of its products in the modernizing machinery fixed assets. Most countries envisage an acceleration of this process during the 1980s, especially in view of the objective to increase the share of labour productivity in the output increment, while lowering the specific consumption of energy and raw materials.[1/]

In Bulgaria, for example, it is expected that in the engineering industry, at an average annual rate of dynamics of gross output of 8.4 per cent, the dynamics of production in the electronics, manufacture of instruments, automation tools, medical equipment and communication equipment will reach about 10-15 per cent. The dynamics of production of automatic technological models and lines should reach about 51 per cent annually, that of industrial robots and manipulators 38 per cent, of high performance machine tools 43 per cent.[2/]

In the German Democratic Republic, at an annual average rate of dynamics of production growth of 7.1 per cent for the engineering industry as a whole, a mean annual dynamics of growth should reach, according to the plan, 9.3 - 9.6 per cent in the electrotechnical industry, no less than 14.9 per cent in the production of micro-electronic parts, 32 per cent in integrated circuits, 9.9-10.5 per cent in machine tools and 9.6-9.9 per cent in the forming

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1/ In this context, emphasis is put on modernizing the energy-producing and/or consuming industrial equipment.

2/ Data in: Kheyfets, B.A.: Tendentsii strukturnoey politiki.... op. cit. p. 66

Table 27.

Average annual percentage change in gross output of selected industrial branches

Branches[a]	Period	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Romania	Soviet Union
Average annual percentage change							
Engineering	1976-1980	9.2	6.7	7.0	3.2	12.7	8.2
	1981-1985b)	8.4	5.1-5.9	7.1	5.5-6.0	8.9	7.0
Chemicals	1976-1980	9.7	5.8	4.9	7.8	9.6	5.6
	1981-1985b)	7.7	2.3	5.9-6.2	4.7-5.2	10.3	5.7
Light manufacturing c)	1976-1980	4.0	3.4	3.8	1.5	9.7	3.1
	1981-1985b)	4.6	2.3-2.8	4.7-5.1	1.9-2.3	7.6	3.5
Wood and wood processing	1976-1980	3.1	5.7	4.2	4.4	6.2	1.4
	1981-1986b)	.	1.9	5.9-6.2	2.3	5.7	3.2-3.5
Food processing	1976-1980	2.8	2.7	2.7	3.4	6.0	1.5
	1981-1985b)	3.7	2.3	2.5-2.8	3.0-3.4	7.1	4.2
Total industry	1976-1980	6.0	4.6	5.0	3.4	9.5	4.4
	1981-1985b)	5.1	2.7-3.4	5.5	3.5-3.9	7.6	4.6
Growth elasticity by branches d)							
Engineering	1976-1980	1.53	1.46	1.40	0.94	1.34	1.86
	1981-1985b)	1.65	1.89-1.74	1.29	1.57-1.54	1.17	1.52
Chemicals	1976-1980	1.62	1.26	0.98	2.29	1.01	1.27
	1981-1985b)	1.51	0.85-0.68	1.07-1.13	1.34-1.33	1.36	1.24
Light manufacturing c)	1976-1980	0.67	0.74	0.76	0.44	1.02	0.70
	1981-1985d)	0.90	0.85-0.82	0.85-0.93	0.54-0.59	1.00	0.76
Wood and wood processing	1976-1980	0.52	1.24	0.84	1.29	0.65	0.32
	1981-1985b)	.	0.70-0.56	1.07-1.13	0.66-0.59	0.75	0.70-0.76
Food processing	1976-1980	0.47	0.59	0.54	1.00	0.63	0.34
	1981-1985b)	0.73	1.00-0.68	0.45-0.51	0.86-0.87	0.93	0.91

Sources : CMEA Statistical/ Yearbook Izvestija Akademii nauk SSSR, Serija ekonomičeskaja 1983, No.3, p.67
Plánované hospodářství 1983, No.6, p.51

a) CMEA branch classification of industry; b) Planned figures; c) Textiles, clothing, leather; weighted arithmetic average; d) Ratios of average annual percentage change in gross output of selected branches and total industry

Table 28.

Shares of selected branches in gross output of industry (Percentage share)

Branches a)	Period	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Romania	Soviet Union
Engineering	1980	30.1	35.5	33.8	30.5	36.0	33.1
	1981	30.7	36.4	34.9	31.3	36.0	33.9
	1985b)	35.2	39.8-40.1	36.5	33.6-33.9	38.2	37.1
Chemicals	1980	10.9	8.6	11.0	13.1	11.7	8.0
	1981	10.0	8.6	10.9	13.4	11.8	8.2
	1985b)	12.3	8.4	11.2-11.3	13.9-14.0	13.2	8.5
Light manufacturing c)	1980	13.3	8.8	8.7	8.4	13.8	12.7
	1981	13.5	8.9	8.6	8.5	14.4	13.6
	1985b)	13.0	8.6-8.5	8.4-8.5	7.7-7.8	13.8	12.1
Wood and wood processing	1980	2.7	4.2	3.0	2.9	4.3	3.5
	1981	2.7	4.3	3.1	2.9	4.2	3.3
	1985b)	.	3.7-4.2	3.1-3.1	2.7-2.7	3.9	3.3-3.3
Food processing	1980	18.7	13.2	15.6	15.2	11.4	15.3
	1981	19.4	13.1	15.2	15.1	11.0	16.2
	1985b)	17.6	12.9	13.4-13.7	14.7-14.9	11.2	15.0

Sources: table 27; CMEA Statistical Yearbook

a) CMEA branch classification of industry

b) Shares of selected branches in gross output of industry in 1980 multiplied by ratios of planned indices of gross output 1985 (1980=100)

c) Textiles, clothing, leather

machines. Fifty per cent of the total production of machine tools is to be equipped with electronic control in 1985. 45,000-50,000 industrial robots should be produced during 1981-1985 (in the beginning of 1983 there were 9,300 robots operating in the national economy.[1/]

As stipulated in the CSSR five-year plan for the period 1981-1985, a considerable lead over the overall dynamics of the engineering industry (5.1-5.9 per cent) is expected in the production of the electronic industry (14.7 per cent), electrotechnical industry (7.7 per cent) and especially in the output of components for the two branches (24 per cent)[2/]. A very high dynamics of development is also envisaged in the output of equipment for nuclear power stations, the production of which has become a distinctive CSSR speciality within the CMEA. This is why the lead of the dynamics of the engineering industry production over that of the industry as a whole is most marked in Czechoslovakia.

All the countries analyzed should, with the exception of the CSSR, register a lead also in the dynamics of the chemical industry as a decisive branch for the modernization of the material base.

The relative acceleration of the growth of the branches of the light manufacturing industry and of the food industry in the majority of countries reflects the intention of better meeting the demands of the population as compared to the period 1976-1980. The exports of these branches were to cover expenses in most countries for the imports of raw materials. This aspect is becoming even more important in connexion with the increase of prices of energy and some raw materials in all the European CMEA countries. In the second half of the 1970s, the exports of light industry were expanded to developed market economies.

The development of branch specialization (see Appendix A, Table 42) envisaged for the first half of the 1980s within the CMEA will require an increased participation of the individual countries in the international division of

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1/ Quoted from Kheyfets, B.A.: Tendentsii strukturnoy politiki..., op. cit. p. 66

2/ See data in: Structural changes in the CSSR industry and prospects of international division of labour with developing countries, UNIDO, ID/WG.357/1, pp. 81-82

labour. The implementation of this requirement creates also a potential room for utilizing co-operative ties with the developing countries (especially in the branches of the light manufacturing industry and in selected output fields of the engineering industry).

Long-term projection of structural changes in industry

The projection of branch structure of production in the industry based on results of time regressive analysis of production tendencies (1966-1979)[1/] envisages a marked slow-down of the dynamics of gross production in the majority of branches of the manufacturing industry[2/] of the European CMEA countries during the period 1980-1990 as compared with the preceding period (1966-1979, or 1976-1980 - see Table 29). Although engineering and chemical industries will continue to occupy the position of most dynamically developing branches, the projection envisages to reduce the lead of their dynamics over the dynamics of the whole manufacturing industry output. Other branches should achieve lower dynamics of gross production than the average for the manufacturing industry as a whole, yet keeping the slow-down of their development at a lower pace than that of the overall production in the manufacturing industry.

This development in the growth elasticity of the individual branches is reflected in the envisaged structure of the manufacturing industry in the individual countries (see Table 30). A growth of the shares of the engineering and chemical industries is envisaged in all the countries, though proceeding at a slower pace than was the case in the preceding period. The majority of the rest of the branches should register stability, or a moderate

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1/ Tuitz, G.: Structural chnges and productivity.... op. cit.;
Grosser, I. and G. Tuitz: Structural change in manufacturing industries in the European CMEA area and patterns of trade in manufacture between CMEA countries and developing countries, ID/WG. 357/5, UNIDO, 1982.

2/ According to the CMEA classification of industrial branches which is being applied (see Appendix A, Table 14), the manufacturing industry includes all industrial branches, except generation of electricity, fuels industry and metallurgy.

Average annual percentage change in gross output by selected branches of industry

		Enginne-ring	Chemi-cals	Construc-tion mater.	Wood and wood process.	Pulp and paper	Glass and china	Textiles	Cloth-ing	Leather	Prin-ting	Food
					B r a n c h e s a)							
Bulgaria	1976-1980	9.2	9.7	7.5	3.1	4.2	6.5	5.0	2.8	2.1	10.6	2.8
	1980-1990b)	5.0	4.9	4.2	.1	4.4	4.2	3.8	3.7	4.0	3.5	3.2
Czechoslovakia	1976-1980	6.7	5.8	4.3	5.7	4.3	5.2	3.5	3.4	3.3	4.0	2.7
	1980-1990b)	4.1	4.3	3.5	3.4	3.5	3.7	3.1	3.0	3.2	3.5	2.7
German Dem. Rep.	1976-1980	7.0	4.9	2.3	4.2	4.5	5.4	3.9	2.8	4.7	2.4	2.7
	1980-1990b)	3.8	3.8	3.5	3.6	3.1	3.7	2.9	2.9	3.4	2.6	2.8
Hungary	1976-1980	3.2	7.8	3.0	4.4	4.2	7.0	2.2	2.5	-2.0	6.3	3.4
	1980-1990b)	3.7	4.6	2.3	3.4	3.7	4.1	2.1	2.6	2.7	3.9	2.9
Poland	1976-1990	7.0	4.3	1.2	4.8	1.7	9.9	3.0	3.7	4.2	6.9	2.4
	1980-1990b)	4.9	4.6	3.6	4.2	3.3	4.7	3.8	4.2	3.3	3.7	3.5
Romania	1976-1980	12.7	9.6	12.8	6.2	7.3	9.6	10.7	8.5	9.0	5.8	6.0
	1980-1990b)	5.4	5.3	4.9	3.6	4.4	5.0	4.8	5.0	2.6	4.3	3.8
Soviet Union	1976-1980	8.2	5.6	1.8	1.4	2.2	6.5	2.7	5.0	3.8	.	1.5
	1980-1990b)	4.6	4.4	3.5	2.7	3.6	4.4	3.0	3.6	2.9	.	2.9

Sources : CMEA Statistical Yearbook; / Tuitz,G: Structural changes and productivity ...., op.cit., p.76

a) CMEA branch classification of industry

b) Projected branch growth rates

Table 29.

Table 30.

Percentage distribution of gross output[a] by branches of manufacturing[b]

		Branches[c]										
		Engineering	Chemicals	Construction mater.	Wood and wood process.	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
Bulgaria	1979	36.2	11.6	5.0	3.3	1.3	1.1	10.0	4.7	1.7	0.6	24.5
	1990d)	39.1	12.5	5.0	2.9	1.3	1.1	9.5	4.4	1.6	0.6	22.0
Czechoslovakia	1979	45.9	11.1	4.3	4.5	2.3	2.0	6.3	2.2	3.0	0.8	17.6
	1990d)	47.9	11.7	4.2	4.4	2.3	2.0	5.9	2.0	2.8	0.8	15.9
German Dem.Rep.	1979	42.2	14.5	2.6	3.9	2.0	1.4	7.2	2.3	2.0	0.8	20.7
	1990d)	44.0	15.0	2.6	4.0	1.9	1.4	6.8	2.2	2.0	0.8	19.3
Hungary	1979	42.3	17.0	2.5	3.9	1.1	1.4	5.8	3.0	2.1	1.3	19.5
	1990d)	43.0	19.0	2.0	3.8	1.1	1.5	4.9	2.7	1.9	1.4	18.4
Poland	1979	43.6	11.7	3.2	4.6	1.2	1.3	8.6	4.0	2.3	0.5	19.2
	1990d)	46.1	12.0	2.9	4.5	1.1	1.3	8.1	3.9	2.1	0.5	17.4
Romania	1979	42.6	14.3	4.5	5.1	1.3	0.6	8.7	5.8	2.1	0.2	14.7
	1990d)	44.7	14.9	4.5	4.4	1.2	0.6	8.6	5.9	1.9	0.1	13.1
Soviet Union	1979	40.5	9.8	4.7	4.2	0.9	0.6	10.2	5.2	1.9	0.5e)	21.4
	1990d)	43.8	10.4	4.5	3.7	0.9	0.7	9.3	5.0	1.7	0.6	19.4
Mentioned countries f)	1979	41.9	12.9	3.8	4.2	1.4	1.2	8.1	3.9	2.2	0.7	19.7
	1990d)	44.1	13.6	3.7	4.0	1.4	1.2	7.6	3.7	2.0	0.7	17.9

Sources : Tuitz, G.: Structural changes and productivity...., op.cit., p.76,89-90

a) Calculated, using the percentage distribution of 1980 as a base
b) Total manufacturing = sum of 11 branches
c) CMEA branch classificatinn of industry
d) Projection
e) Estimated
f) Unweighted average

fall of the share than was the case in preceding periods[1/], especially in the branches of the light manufacturing and the food industry. A model used for the elaboration of this projection takes into account the consequences of a structural policy orientated also towards the realization of social objectives beginning as early as the mid-seventies.

A comparison of mutual relations of the shares of the branches in the individual countries against their average share for the European CMEA countries reveals the structure of branch specialization of national complexes of the manufacturing industry. A share above the average for the CMEA countries is registered in the indidivual branches in 1990 by the following countries (beginning with the highest and ending with the lowest ratio, see Appendix A, Table 43): engineering: CSSR; chemicals: Hungary, GDR, Romania; construction materials: Bulgaria, Romania, USSR; wood and wood processing: Poland, CSSR, Romania; pulp and paper: CSSR, GDR; glass and china: CSSR, Hungary, GDR; textiles: Bulgaria, USSR, Romania; clothing: Romania, USSR, Bulgaria; leather: CSSR; printing: Hungary, CSSR, GDR; food: Bulgaria.

The quoted type of branch specialization, e.g. the continuing rather strong orientation towards the chemical industry in Hungary, the German Democratic Republic and Romania, or to the wood processing and pulp and paper industry, glass industry, china and ceramics and the leather industry in Czechoslovakia, to the food industry in Bulgaria, is the result of not only the preceding

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1/ Providing that ties estimated to have taken place during 1966-1979 will also apply in the period 1980-1990.

historical development[1/] and of the availability of advantageous natural conditions, but it also reflects intentions and aims of the structural policy for the 1980s.

An analytically proved assumption concerning mutual ties between the branch structure of industrial output and the achieved level of economic development (which is characterized by an internationally comparable indicator of the economic level: GDP per capita) was used to work out an alternative projection of the branch structure of gross output in the European CMEA countries during the period up to 1995.[2/]

The alternative elaboration of the projection makes it possible to register influences of the ties of long-term development trends in the branch structure and of the economic level (alternative A - model interpolation for the period of 1960-1980) and influences of changes within these ties during the 1970s (alternative B - model interpolation for the period 1970-1980).

Proceeding from the results of this forecast[3/], the structural proportions of gross output in the industry of the European CMEA countries should be developing along the following lines (see Table 31):

1/ The contemporary structure of the branch specialization of the industry in the European CMEA countries has been shaped by the structural policies of the 1950s and 1960s. The restructuring of industry corresponding to the needs of industrialization had been completed in the first half of the 1960s. Modifications of the branch specialization in the following period are a result of an increased impact of the growth of the participation by the individual countries in the international division of labour.

2/ A model of these ties was built with the use of the following sources:
Chenery, H., and M. Syquin: Patterns of development 1950-1970, Oxford University Press, 1975;
Fels, C., W. Schatz and F. Walter.: Der Zusammenhang zwischen Produktionsstruktur und Entwicklungsniveau. In: Weltwirtschaftliches Archiv 106, 1971, No. 2;
Scheper, W., and H. Reichenbach.: Die Entwicklung der Anteile der Wirtschaftsbereiche am Bruttolandesprodukt. In: Weltwirtschaftliches Archiv 109, 1973, No. 2.

3/ Provided that analogical ties will take place between the variables of the model during the time of projection as in the period of interpolation (alternatives A, B).

Projected branch shares of gross output[a] in industry (Percentage)

Branches b)	Period	Variants c)	Bulgaria	Czecho-slovakia	German DemRep.	Hungary	Poland	Romania	Soviet Union
Fuel and energy base	1980d)		7.1	9.3	11.3	12.5	7.7	5.1	7.2
	1985	A	8.1	9.4	11.0	12.0	8.1	5.0	7.2
		B	6.3	8.8	10.8	12.3	8.1	4.5	7.0
	1990	A	8.3	9.1	10.7	11.8	8.2	4.4	7.1
		B	5.9	8.4	10.4	12.2	8.1	3.8	6.8
	1995	A	8.6	8.7	10.5	11.6	7.7	4.1	7.0
		B	5.6	7.8	10.1	12.1	7.5	3.4	6.6
Manufacturing	1980d)		92.9	90.7	88.7	87.5	92.3	94.9	92.8
	1985	A	91.9	90.6	89.0	88.0	91.9	95.0	92.8
		B	93.7	91.2	89.2	87.7	91.9	95.5	93.0
	1990	A	91.7	90.9	89.3	88.2	91.8	95.6	92.9
		B	94.1	91.6	89.6	87.8	91.9	96.2	93.2
	1995	A	91.4	91.3	89.5	88.4	92.3	95.9	93.0
		B	94.4	92.2	89.9	87.9	92.5	96.6	93.4
Heavy manufacturing	1980d)		55.1	61.0	57.6	58.3	63.3	70.0	56.3
	1985	A	57.7	62.5	60.0	60.3	61.6	73.2	56.9
		B	58.3	62.5	59.2	59.8	61.3	72.8	58.6
	1990	A	60.2	63.9	62.1	61.7	61.6	76.4	59.0
		B	61.0	64.0	61.0	61.0	61.2	75.8	61.3
	1995	A	62.8	65.9	63.7	63.1	64.2	78.3	61.0
		B	64.0	66.1	62.4	62.2	63.1	77.6	64.1
Metallurgy	1980d)		7.8	11.8	7.3	9.8	7.6	6.1	7.1
	1985	A	7.5	11.7	6.9	9.3	8.0	5.6	7.1
		B	8.1	11.4	7.4	9.2	8.1	6.0	6.9
	1990	A	7.4	11.2	6.6	8.5	8.0	5.0	6.7
		B	8.2	10.9	7.2	8.5	8.1	5.5	6.3
	1995	A	7.2	10.5	6.4	7.8	7.4	4.6	6.3
		B	8.2	10.1	7.1	7.7	7.5	5.2	5.8

Table 31.

Branches b)	Period	Variants c)	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Chemicals and rubber	1980d)		10.5	9.2	11.7	13.2	12.4	15.8	8.4
	1985	A	11.1	10.0	12.5	14.1	12.7	19.4	8.9
		B	10.3	9.8	12.8	13.9	12.5	16.8	8.8
	1990	A	11.7	10.5	13.0	15.4	12.6	20.8	9.3
		B	10.6	10.3	13.5	15.0	12.5	16.9	9.0
	1995	A	12.4	11.3	13.3	16.7	13.1	21.6	9.6
		B	11.0	10.9	14.0	16.2	12.6	16.8	9.2
Engineering	1980d)		31.6	35.2	35.6	32.3	40.0	43.8	36.3
	1985	A	34.3	36.0	37.3	34.2	37.5	44.3	36.1
		B	34.9	36.4	35.8	33.9	37.3	46.3	38.4
	1990	A	36.4	37.3	39.3	35.1	37.4	47.0	38.3
		B	37.3	38.0	37.1	34.7	37.1	50.0	41.6
	1995	A	38.7	39.3	40.8	36.0	40.3	48.6	40.6
		B	39.9	40.3	38.0	35.5	39.6	52.3	44.9
Light manufacturing	1980d)		37.8	29.7	25.7	29.1	29.0	24.9	36.5
	1985	A	34.3	28.1	23.9	27.6	30.2	21.8	35.9
		B	35.5	28.6	24.6	27.9	30.6	22.6	34.4
	1990	A	31.5	27.0	22.3	26.5	30.3	19.2	33.9
		B	33.1	27.6	23.2	26.8	30.7	20.4	31.9
	1995	A	28.6	25.3	21.0	25.3	28.1	17.7	32.0
		B	30.4	26.2	22.2	25.7	29.4	19.0	29.3

Sources : CMEA Statistical Yearbook
Plánované hospodářství 1982, No.1, pp. 32-47
Ekonomický časopis 1983, No.10

a) At "constant" prices (1960)
b) CMEA branch classification of industry; see Appendix B.1
c) A-interpolation of model 1960-1980; B-interpolation of model 1970-1980
d) Actual

Table 31 cont.

- The share of fuel and energy base continues to decline though at a very modest pace in some countries. Restructuring of the fuel and energy base during the period up to 1985 should be reflected in an increment and/or stability of its share in a number of countries.
- Moderate increase or even stability in the complex of branches of the manufacturing industry should occur.
- The continued progress of higher phases of industrialization in the European CMEA countries should reflect in an increase of the share of the heavy manufacturing industry and in a decrease of the share of the light manufacturing industry. The emphasis put on the orientation towards the realization of social tasks in the structural policy in the period up to 1995 would reflect in a deceleration of the fall of the share of branches of the light manufacturing industry (following alternative B).
- The engineering industry continues to keep a dominant position in the structure of the industrial output and it registers a continuous growth of the share in the majority of countries (at a more moderate dynamics according to alternative B). In some countries, however, the continuation of the fast development is not likely after higher economic and industrialization levels have been reached (e.g. in Romania following both alternatives). A tendency towards stabilizing its share is more likely (see e.g. the forecast of the development in the GDR, in the CSSR and in Hungary after 1990).
- A general decline of the share of the metallurgical industry and a growth of the share of the chemical industry according to both alternative projections reflects the absorption of the scientific and technological process by the material base of the industry and in the whole national economy.

All these developments forecasted point to the necessity of an internationally co-ordinated and mutually interconnected structural policy which would make possible the effective adaptation of the industrial structure. Essentially improved conditions should be created within the CMEA for a comprehensive transition from inter-branch specialization towards intra-branch specialization, to enable a much higher utilization of international specialization and co-operation of production.

VII. STRUCTURAL ADJUSTMENT IN INDUSTRY AND NEW POSSIBILITIES IN THE DIVISION OF LABOUR BETWEEN THE EUROPEAN CMEA COUNTRIES AND DEVELOPING COUNTRIES

Development plans of the European CMEA countries for the period 1981-1985 envisage maintaining the exisiting level of their participation in the international division of labour (see Table ., and Appendix A, Table 8). The external econmic relations, both within the CMEA and with other countries, play an important role in solving national economic and social problems. Special attention is devoted to the further expansion and deepening of external ties with the developing countries. These relations as embodied in their external trade and other forms of co-operation have been, in the beginning of the 1980s, affected by specific conditions of the individual member countries of the CMEA and by their efforts to attain well-balanced external economic relations.

Division of labour in the beginning of the 1980s

In contrast to the rather poor dynamics of trade between other groups of countries in the world, in 1979-1981 the trade between the European CMEA countries and the developing countries marked an increase (see Table 32). In 1981, it was attributable to a 25.5 per cent increase in exports to developing countries and a 11.9 per cent growth in imports of CMEA countries from the former. The balance of trade continued to show a surplus of the socialist countries, some of which, owing to their overall balance of payments position, made considerable efforts to increase their exports and, whenever possible, to pursue a policy of reducing imports.

In 1981 a high rate of growth in exports to the developing countries (see Appendix A, Table 44) was achieved by Romania (44 per cent) with the largest increase in manufactured goods (chemicals, fertilizers, industrial consumer goods, machinery and transport equipment), followed by Bulgaria (43 per cent) with the largest increase in machinery and equipment, and Hungary (23 per cent) with the largest increase in agricultural and food products. The USSR achieved in 1981 a considerable expansion of its exports (by 26 per cent) and particularly its imports (by 52.7 per cent) - with the largest increase in imports of machinery and equipment and agricultural and non-agricultural raw materials (see Table 32).

Table 32.

Change in foreign trade value[a] of the European CMEA countries with developing countries[c]

		Average annual growth rate in % Commodity groups					Total
		A	B	C	D	E	
			E x p o r t s				
Eastern Europe[b]	1976-1980	20.4	17.0	17.4	16.6	17.1	17.5
	1979	40.6	10.7	39.0	9.6	11.6	18.1
	1980	40.8	19.0	27.5	23.3	30.0	28.3
	1981	0.4	22.0	30.4	26.2	30.5	24.8
Soviet Union	1976-1980	22.7	3.8	17.1	-0.3	12.0	15.7
	1979	89.2	15.2	-0.8	-3.6	11.0	9.9
	1980	41.1	26.4	2.1	-7.9	4.7	9.2
	1981	24.0	21.7	32.9	16.3	11.6	26.2
European CMEA countries	1976-1980	21.8	12.7	17.1	14.9	15.2	16.6
	1979	66.3	11.7	4.8	8.4	11.4	13.4
	1980	41.0	20.8	6.9	20.6	20.4	17.7
	1981	14.6	21.9	32.3	25.6	24.3	25.5
			I m p o r t s				
Eastern Europe[b]	1976-1980	34.2	17.1	8.9	11.1	-4.1	25.0
	1979	53.7	17.8	7.7	14.8	130.8	34.2
	1980	63.0	14.5	33.9	22.8	-34.8	40.6
	1981	-27.2	-7.9	8.1	-6.9	-49.1	-19.4
Soviet Union	1976-1980	8.6	11.9	16.9	8.7	17.5	11.2
	1979	0.3	19.3	41.2	2.8	-1.2	12.7
	1980	13.1	85.3	30.9	98.1	-1.4	59.7
	1981	36.6	61.4	0.1	56.9	108.8	52.7
European CMEA countries	1976-1980	25.6	13.8	13.2	9.3	8.6	17.8
	1979	33.9	18.5	28.6	4.5	25.1	24.6
	1980	49.2	48.4	27.5	75.3	-13.7	48.3
	1981	-13.8	33.5	-2.8	43.7	65.1	11.9

Sources: CMEA Statistical Yearbook

a) Value in terms of roubles; in CMEA commodity classification of foreign trade ;

b) Bulgaria, Czechoslovakia, German.Dem.Rep., Hungary, Poland, Romania; c) Without Yugoslavia

A - Mineral fules and metals; B - Agricultural and non-agricultural raw materials and food products; C - Chemicals, fertilizers, rubber, construction and other materials; D - Industrial consumer goods; E - Machinery and transport equipment

Machinery and transport equipment have been dominating the commodity structure of exports of the CMEA countries towards developing countries, and mineral fuels, metals, agricultural and raw materials and food products the commodity structure of their imports from developing countries (see Table 33 and Appendix A, Table 45). This structure of trade between the CMEA and developing countries is a result of implementing the long-term goals of the economic development of both groups of countries which provide a high level of complementarity of their national economic demand. The developing countries' endeavour to stabilize export markets for their mineral and agricultural products is complementary to the efforts by the European CMEA countries to secure stable supply sources of these products.

The intents of the developing countries aiming at the development of the primary phase of the processing of domestic raw materials complement the needs of the socialist countries which endeavour to delete from their production programmes the lowest phases of manufacture. The structural adjustment of the industry in all the small European CMEA countries having inadequate internal sources of raw materials and energy is orientated towards lowering the share of branches or production phases which put high demand on these inputs.

The need of the CMEA countries to acquire a prospective strong complementing manufacturing base corresponds to the endeavour of the developing countries to secure stable customers for the output of their new production capacities. The planned character of the development of the industry in the European CMEA countries creates a basic prerequisite for the necessary stability in the economic relations with developing countries. The endeavour of the newly industrializing countries (NICs) to secure consistent sales of some products of their manufacturing industry corresponds also to the needs of the European CMEA countries trying to establish optimum scales of production through exploiting mutually advantageous production co-operation with these countries.

A considerable part of the trade has been generated by various agreements and projects in economic co-operation. This is particularly true in the case of exports of the CMEA countries, a sizeable portion of which consists of equipment and machinery for the use in various development projects in the

Forecast of the commodity structure[a] of trade between CMEA countries and the developing countries[b] (Percentage shares)

			Exports					Imports				
			A	B	C	D	E	A	B	C	D	E
Eastern Europe c)	1975c)		11.6	15.3	17.0	10.8	45.3	42.9	46.0	6.0	4.2	0.9
	1980c)		13.1	15.0	16.9	10.4	44.6	61.2	33.2	3.1	2.3	0.2
	1981c)		10.5	14.7	17.6	10.5	46.6	55.3	37.9	3.5	3.2	0.1
	1990	A	9.8	13.2	18.7	10.1	48.3	66.6	25.2	3.6	4.3	0.3
		B	9.0	13.8	22.4	10.3	44.5	69.2	24.6	3.4	2.5	0.3
Soviet Union	1975c)		13.9	8.1	52.3	1.4	24.3	23.7	62.1	4.4	9.2	0.6
	1980c)		18.9	4.7	55.4	0.7	20.6	21.1	64.2	5.7	8.2	0.8
	1981c)		18.3	4.6	58.3	0.6	18.2	18.9	67.9	3.7	8.4	1.1
	1990	A	7.7	2.6	75.2	0.5	14.0	50.1	34.6	3.3	9.6	2.4
		B	15.4	2.1	68.8	0.4	13.3	39.4	50.0	3.5	5.0	2.1
European CMEA countries	1975c)		12.8	11.5	35.8	5.8	34.1	31.7	55.3	5.1	7.1	0.7
	1980c)		15.9	9.7	36.7	5.4	32.2	43.8	46.6	4.2	4.9	0.5
	1981c)		14.6	9.4	38.7	5.4	31.9	33.7	55.7	3.6	6.3	0.7
	1990	A	8.7	7.7	47.9	5.2	30.5	56.8	30.8	3.5	7.4	1.5
		B	12.3	7.7	46.4	5.2	28.4	51.5	39.7	3.4	4.0	1.4

A - Mineral fuels and metals
B - Agricultural and non- agricultural raw materials and food products
C - Chemicals, fortilizers, rubber, construction and other materials
D - Industrial consumer goods
E - Machinery and transport equipment

Sources : tables A. 45, A. 46

a) CMEA commodity classification of foreign trade; value in terms of roubles
b) Without Yugoslavia
c) Bulgaria, Czechoslovakia, German Dem.Rep., Hungary, Poland, Romania
d) Actual

Table 33.

developing countries. By 1982 almost all the European CMEA countries, and in particular the Soviet Union, have developed their economic links in the form of technical co-operation. The number of projects in the developing countries assisted by these countries is constantly rising and according to the latest estimates it is approaching the figure of 6,400 by 1982.[1/] The Soviet Union alone reported that about 1,500 projects had been built using equipment supplied by the USSR.

The increase in the scope of economic co-operation between the two groups of countries has been greatly facilitated by an ever-growing network of various intergovernmental agreements. Thus, the CMEA countries are reported to enter each year into about 100 such agreements with the developing countries. There is a tendency for more long-term agreements in the network of these intergovernmental agreements. Up to now the European CMEA countries have various kinds of economic co-operation agreements with more than 70 developing countries.

Co-operation between developing and CMEA countries concentrates mainly on the so-called key industries, in particular energy production, the development of natural resources, in particular oil production and mining. Some examples: the USSR is assisting Afghanistan in building a new power transmission line of about 120 km. In Ethiopia, the USSR and CSSR are helping in setting up a power generation station of about 150,000 kW. The USSR is examining the possibility of a hydro-electric scheme in Viet Nam which will include a 280,000 kW hydro-electric plant. Specialists from the USSR will assist Algeria in building a 630,000 kW thermal power station. In Latin America, besides the already planned Olos hydro-electric plant in Peru, the USSR is working out plans for another hydro-electric complex in Argentina. It was reported that by 1981 over 40 power stations with a total installed capacity of 7,400 mW had been built with the assistance of the USSR in African and Asian developing countries, and a number of stations totalling 8,400 mW are under construction. In the field of crude oil production the USSR assisted

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1/ Review of trends and policies in trade between countries having different economic and social systems. TD/B/912, UNCTAD Geneva, 1982.

Libya, Syria, Algeria and some other countries in setting up new facilities in the oil sector, the installed capacities for oil refining reaching about 50 million tonnes. Mexico and Romania agreed on co-operation for the intensive recovery of oil from deposits and other projects in crude oil production. New agreements signed included one between Czechoslovakia and Mozambique for the prospection of iron ore, gold, chromium, lead and other minerals in three north-western provinces of Mozambique. This agreement is part of the programme of multilateral co-operation between Mozambique and the CMEA countries. An agreement was concluded between India and Romania under which the two countries collaborate in building a 3-million ton iron ore pelletization plant. A separate agreement was signed with an Indian public sector company for the purchase of technology on pelletization of the iron ore concentrates. In 1981 the USSR and Laos signed a memorandum on co-operation in the setting up of a tin refinery in the latter country. Several mines and collieries have been planned and built in India with the close collaboration of the USSR, etc.

Important parts of co-operation are also the feasibility studies and the exploratory work made by CMEA countries at the request of developing countries. Parallel to the implementation of projects, the European CMEA countries co-operate with many developing countries in training of engineers and other experts. The GDR, for example, has concluded an agreement with Zambia for training about 1,000 Zambian nationals during 1981-1985. With the assistance of the USSR, more than 450 training and educational establishments have been built in Afghanistan, Algeria, Burma, Cuba, Egypt, Ethiopia, India, Tunisia and many other countries.

Co-operation has been spreading recently between the enterprises of partner countries, usually taking the form of mixed companies and joint ventures. This kind of institutionalized co-operation is acquiring significance in the developing countries who expect to get more assistance from the CMEA countries in this way. CMEA countries have recently shown growing interest in joint companies in the field of industrial production. Such companies have been set up in the engineering, electrical engineering, chemical and light

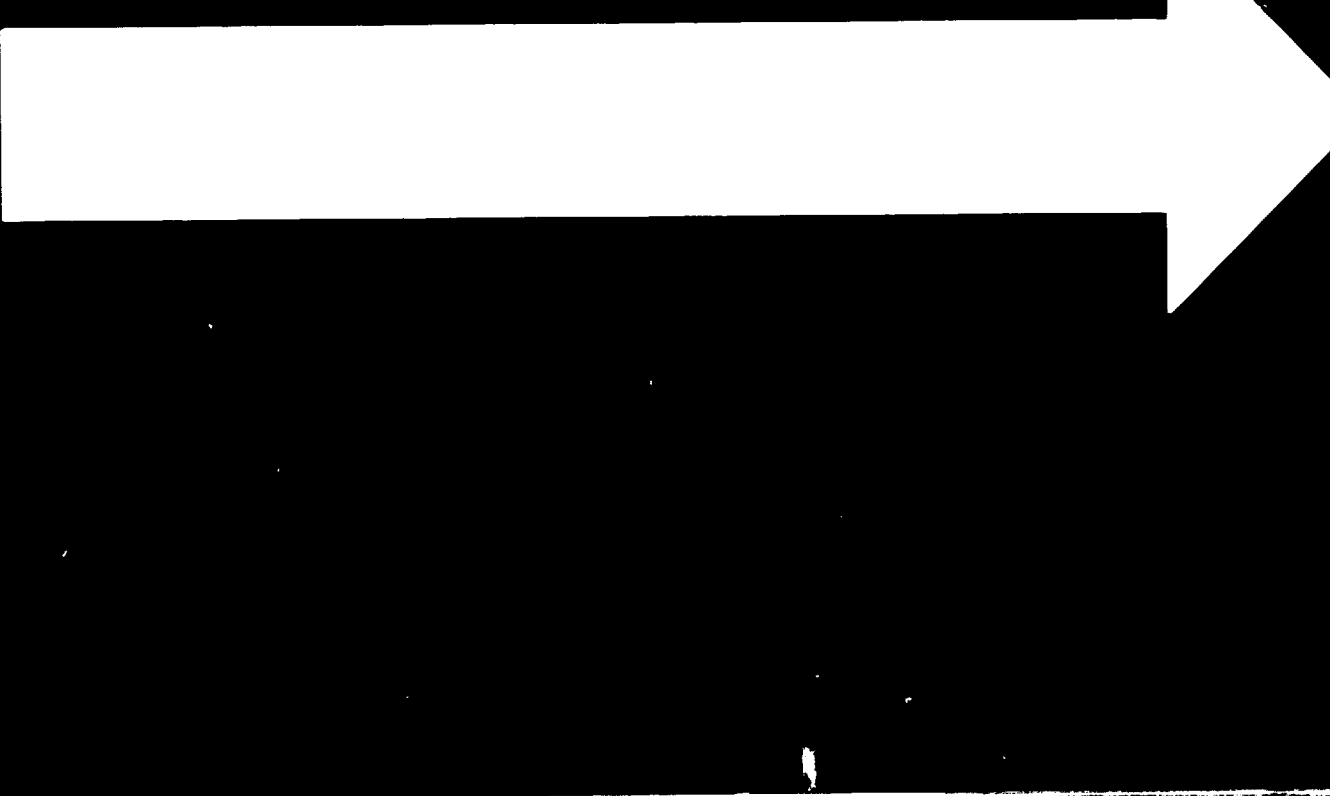
industries.[1/] To a certain degree this is a new trend, since the European CMEA countries have participated in mixed companies predominantly in trade and marketing, mining, fishing, transport and some other service activities.

In the beginning of the 1980s it is possible to identify several factors contributing to the future changes in the structure of exports of developing countries in the European CMEA countries:[2/]

- industrial capacity of developing countries has been increased as a result of the establishment of various export-orientated industries, including those set up with the financial and technical assistance of the European CMEA countries (in fact, many CMEA countries import a part of the products of these industries);
- developing countries explicitly included more manufactured goods in their various agreements with the CMEA countries, thus creating new possibilities for diversifying their export structure;
- export patterns of developing countries (especially NICs) have been diversified partly as an answer to the protectionist measures of the developed market economies;
- export patterns of CMEA countries are being changed due to structural adjustments following the intensification of industrial production in these countries.

1/ Some examples: Le Moped Marocain set up by the Bulgarian organization Balkancar and the Moroccan firm Melann and Zeman, assembles Bulgarian mopeds. The Polish-Nigerian Motor Assembly Co. assembles cars from parts brought from Poland. A Czechoslovak-Indian company assembles Zetor 2011 tractor from Czechoslovak parts. Hungary and India are establishing a joint assembly works for the production of telecommunication equipment partly for export. The Bulgarian-Indian firm Kureval Ltd. has been producing gammaglobulin and albumin from Indian raw materials. The joint firm Imarsel Chemical Industry Ltd. produces vitamin B.12 in Nigeria following Hungarian technology.
Source: TD/B/912, UNCTAD Geneva, 1982, op. cit.

2/ Patterns and prospects for East-South trade in the 1980s. IS.335, UNIDO 1982.
Dobozi: Factors Affecting Hungary's Economic Relations with the Third World until 2000. Paper presented at the round table discussion on Yugoslav and Hungarian experiences in economic co-operation with developing countries, Budapest, 1983.



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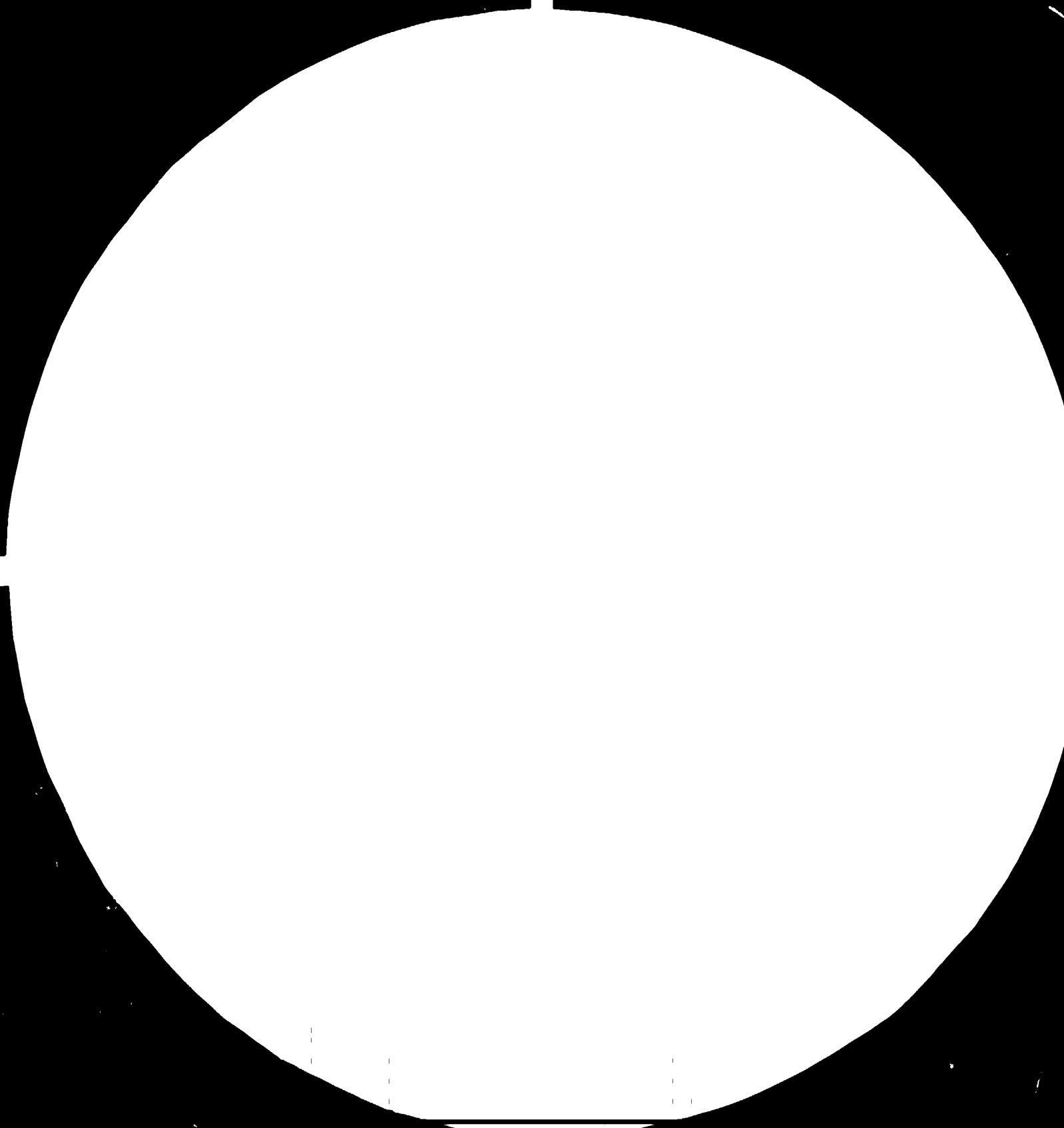

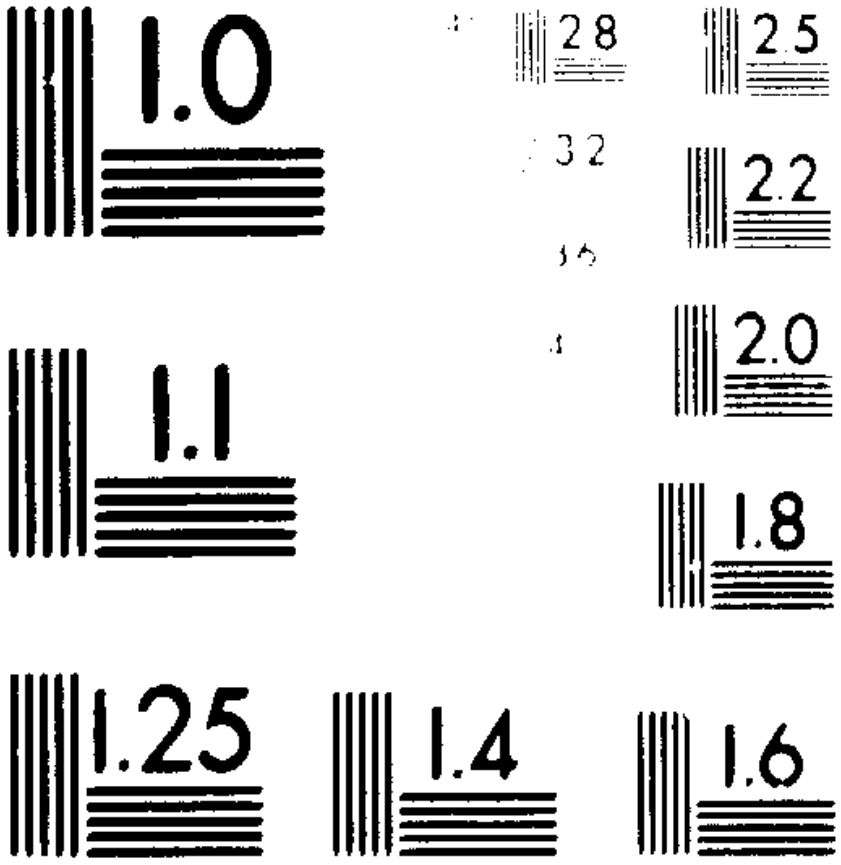

On the basis of the above factors, such development in the pattern of trade can be envisaged in which the developing countries should participate by co-operation agreements with CMEA countries in the mineral and fuel extraction industries, in developing processing industries for which European CMEA countries could provide technologies and equipment, in manufacturing industries in which developing countries have a comparative advantage and which would release scarce domestic resources in the European CMEA countries, particularly labour and energy.

Such type of long-term co-operation between the European CMEA countries and the developing countries would increase the volume of investment funds, assist developing countries in their attempts to develop processing industries, and help with a successful transition from inter-sectoral to intra-sectoral trade or from a complementary to a more competitive pattern of trade between these groups of countries.[1/]

This pattern of trade transition between the CMEA and developing countries may increase manufactured exports from developing countries to CMEA countries in the following commodities:[2/]

- processing of natural resources, such as non-ferrous metals or petroleum products, which would increase value added before export;
- domestic resources based manufactures, such as wood products, leather goods, textiles and processed foods;
- labour-intensive manufactured goods, such as clothing, carpets, travel goods, footwear, toys, sports goods, simple electronic products, metal manufactures, etc.

For the oil producing and exporting countries, the prospects of trade with the European CMEA countries are bright because of the latter's need for oil imports sources diversification. For the newly industrializing countries (NICs) in Latin America, South Asia and South East Asia the complementarities between the NICs and CMEA as a source of trade expansion are limited, rather,

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1/ Deepak Nayyar: Some reflections on East-South trade and the division of labour. UNIDO, ID/WG.357/7, 1982.
Patterns and prospects for East-South trade in the 1980s. IS.335, UNIDO, 1982.

2/ Deepak Nayyar op. cit., pp. 11-12

competition between these groups on markets of industrialized countries occurs as great challenge for structural adjustment. A diversification of trade patterns with a possibility to increase exports of labour-intensive and domestic resource based manufactured goods from the NICs may prove essential. For the remaining developing countries in Africa, Asia or Latin America, the complementarities of trade might remain an important force and the processing of natural resources in the developing countries holds the greatest promise for diversification.

Possible scenarios for trade between the European CMEA countries and developing countries

For identification of the impact of long-term development trends of trade patterns between the European CMEA countries and developing countries[1/] on the structure of foreign trade a similar approach may be used for the 1980s as for projecting the structure of industrial output in Chapter VI. The results of this trend scenario indicate (see Table 33 and Appendix A, Table 46) that in the 1980s machinery and transport equipment will continue to occupy a predominant position in the structure of exports from the six smaller East European countries to the developing countries (for Romania, also the chemical products). In the imports from the developing countries raw materials and fuels will prevail, and the share of machinery and transport equipment would be marginal in the total imports from developing countries according to this trend scenario.

In the structure of the USSR exports to developing countries a high share should be preserved of chemical products, building materials and other materials followed by raw materials, fuels and machinery and transport equipment. In the structure of imports from developing countries to the USSR a predominant position continues to be held by commodity groups of fuels, metals (according alternative A) and of agricultural and non-agricultural raw materials, including foodstuffs (according alternative B). A considerable increase should be registered in the share of machinery and transport equipment in the structure of the USSR imports from the developing countries (from 1.1 per cent in 1981 to 2.1-2.4 per cent in 1990).

1/ Based on the model for the period 1964-1981 (Alternative A) and for the period 1970-1981 (Alternative B).

The development of co-operative ties between CMEA and developing countries will create conditions of intra-sectoral trade increasing thereby the share of the manufacturing industry output in the structure of imports to the CMEA countries from the developing countries, yet the existing commodity structure continues to be determinant in trade between the two groups of countries even in the 1980s.

In a quantitative scenario of trade patterns between developing countries and CMEA countries for the 1980s published in 1981[1/] it was suggested that international relations during the 1980s would be more favourable for co-operation between these groups of countries. The main feature of structural changes of trade envisaged further development of the complementarity between the two economic groupings. The complementarity should include not only light unskilled labour-intensive manufactures but also some branches of engineering and chemicals as well as some raw material intensive products, whereas the European CMEA countries would concentrate on more capital-intensive goods with high technology content. According to the authors' view comprehensive long-term agreements of co-operation for 10-15 years at the branch and intra-branch level will have to be important elements of stability in the international division of labour.[2/]

The major conclusions of this projection are:

- Trade between the European CMEA countries and the developing countries will grow about twice as rapidly over the 1980s as world trade overall, and significantly faster than even the overall trade of the European CMEA countries; the trade surplus of the European CMEA countries vis-a-vis the developing countries will disappear, with the account being balanced at best (see Appendix A, Table 47).
- The pattern of trade forecast (see Table 34) shows that machinery and equipment will be the fastest growing component of CMEA exports to the developing countries and fuel imports will make up nearly one half of the total import of CMEA from these countries. According to these results the concentration in the branch structure of CMEA manufacturing exports would rise as high as 80 per cent.

1/ Dobozi, István and Inotai: Prospects of economic co-operation between CMEA countries and developing countries. In: C.T. Saunders, East-West-South (London: Macmillan, 1981), pp. 48-65.
2/ Ibid, p. 58

Table 34.

Forecast of the commodity structure of trade between the developing countries and the European CMEA countries (Percentage shares)

SITC	Commodities	Exports by the European CMEA countries		Imports by the European CMEA countries	
		1977a)	1990	1977a)	1990
0+1	Food etc.	11.3	10	49.3	20-25
2+4	Materials	6.1		18.9	10-12
3	Fuels	13.7	10	20.5	35-45
5+6+8	Other manufactures	26.8	25	11.0	20-25
7	Machinery, vehicles	42.2	55	0.3	

Sources : Dobozi, I., Inotai, A.: "Prospects of economic co-operation between CMEA countries and developing countries". In: Saunders, C.T.: East - West - South, London: Macmillan, 1981, pp.48-65; Patterns and prospects for for east - south trade in the 1990, UNIDO/ IS 335, 30.8.1982, pp.33

a) Actual

The main condition for attaining the forecasted structural adjustment of trade between the European CMEA countries and developing countries is the development of intra-branch specialization on manufacturing production in CMEA countries and incorporation of manufacturing capacities of developing countries into this specialization process.

According to another scenario of trade flows between the European CMEA countries and the developing countries prepared by UNIDO in connexion with the United Nations International Development Strategy for the Third Development Decade (see Table 35) the average annual growth rate of the European CMEA countries would be over twice as much as that of CMEA imports from these countries. This development would ensure a relatively massive surplus for the CMEA.[1/] The projected patterns of CMEA exports to the developing countries show that as in the trend scenario of trade structure (A,B) and as in the scenario prepared by Dobozi and Inotai, machinery and equipment will continue to occupy a predominant position. In total imports of CMEA from developing countries this commodity group would have a diminishing share.

The projected very fast average annual growth rate of energy exports from CMEA countries to the developing countries (over fifteen per cent per year) reflects the very optimistic assumption of a successful policy in the CMEA of developing and exporting natural gas, maintaining high levels of oil production, conserving energy in the domestic economy, and exploiting new sources of energy and, in particular, nuclear energy. Also a sharp increase of the absolute volume of agricultural exports from the CMEA to the developing countries is based on an appreciably optimistic projection.

In this forecast (Table 35), despite the high overall growth rate of trade, little change occurs in the branch structure of the CMEA exports to the developing countries (except in the energy sector). For CMEA imports from these countries the change in the commodity structure is somewhat more marked. The diminishing share of energy is a result of a suggested positive development of the energy savings in CMEA countries. The falling shares of agricultural products, raw materials and energy in the CMEA imports from

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1/ In the previous scenario (Appendix A, Table 48) the major increase in the growth rates was for CMEA imports.

developing countries leave room for a positive development of developing countries exports of manufactured goods to the European CMEA countries (Table 35) but only in intermediate products and consumer non-durables.

These three scenarios of the trade pattern development between the European CMEA countries and the developing countries in the 1980s reflect and illustrate the complexity of changes of these relations both from the standpoint of intensifying the industry in the European CMEA countries and of the industrialization process in the developing countries. The best way for implementing mutually advantageous adjustment of economic relations between these two groups of countries during the 1980s may be an internationally co-ordinated programme of industrial restructuring which would reflect the willingness and ability of all countries involved to adapt their industrial structure to the new economic conditions of the 1980s and, in particular, the socio-economic needs and aims of the developing countries.

Table 35.

a)
Projected trade flows between the developing countries and the European CMEA countries in 1990 under the assumptions of the DD III scenario of the UNITAD model

Commodity groups	1976 - 1990 Average annual growth rate (%) CMEA exports	CMEA imports	Share in total CMEA exports (%) 1975	1990	Share in total CMEA imports (%) 1975	1990
Agriculture	7.7	4.2	13.5	12.3	51.1	55.6
Agro-food industry	11.7	3.6	0.7	1.1	4.8	4.8
Energy	15.2	-3.7	6.2	15.6	6.5	1.0
Intermediate products	6.8	7.9	18.8	15.1	11.3	20.7
Consumer non-durable	3.2	8.1	6.1	3.0	5.3	10.0
Equipment	8.4	-1.6	48.3	48.4	8.5	3.6
Consumer durables	5.9	-2.4	6.3	4.5	12.4	4.2
Total	8.4	3.6	100.0	100.0	100.0	100.0

Sources: Patterns and prospects for east-south trade in the 1980s, UNIDO/IS.335, 1982, pp.36,38

a) In 1970 prices

VIII. GENERAL FINDINGS AND CONCLUSIONS

The structural adjustment of industry in the European CMEA countries is influenced by preserving the priority development of the industry in these countries in the beginning of the 1980s. This process is characterized by the further equalization of the level of industrial development and mutual adjustment of the structural pattern among the European CMEA countries. The basic structural proportion of the industry in the CMEA countries approaches the structure of the developed market economies. The adaptation of structural proportions of industry in these countries is subject to changes in the substitution of factor inputs during the 1970s and in the beginning of the 1980s. In all the European CMEA countries emphasis is being laid on speedy adaptation of the reproduction process in the industry through creating conditions for increasing the effectiveness of factor inputs. The substitution process is oriented towards energy savings and effectiveness in using raw materials.

The structural adjustment takes place not only in the product structure but also in the structure of demand and in the pattern of participation of the European CMEA countries industries in the international division of labour.

The influence of external economic conditions on the structural adjustment of industry in these countries is determined by the growth of their participation in the international division of labour and by the terms of trade deterioration among the six smaller East European countries, all of them being net importers of fuels and energy during the 1970s and in the 1980s.

The adaptation of the structure of industry is affected not only by the slow-down of the dynamics of growth of the world economy but also by priority of restoring the external balance in the economic policy in the European CMEA countries. Together with the policy for austerity of all inputs, the participation in the international division of labour aimed at improving this balance are the major macro-economic preconditions for structural adjustment of the European CMEA countries' industry during the 1980s.

The adjustment process of the industrial structure in the European CMEA countries has been characterized by elements of continuity from the preceding development and by elements of breaks creating new proporticns in the structure of both the output and the factor inputs.

The declining share of the fuel and energy base in the structure of industry is a result of the scientific and technological progress and improving economies of energy and fuels consumption. In the period of the 1980s this process will be accelerated by a more pronounced orientation towards the intensification of the economic growth. The growing share of the fuel and energy base in investment into the industry is the result of orientation towards development of indigenous fuel resources in the 1980s.

Further increase in the share of heavy industries and the deceleration of the fall of the light manufacturing share indicate the attention which has been turned towards seeking optimum proportions between these two sub-complexes of manufacturing industry in the early 1980s.

Engineering industry has kept the leading position in the European CMEA countries' industry. Its share, both in the structure of production and in the structure of factor inputs, registers a continuous increase in the majority of the countries. The importance of its productions increases as major suplier of machine tools and equipment for implementation of technological innovation and also in view of its role in the structure of exports.

The structural proportions of the material base which is formed by the relations of shares of the metallurgical and chemical industries in the structure of the industry have been developed in favour of the chemical industry in the majority of CMEA countries in the beginning of the 1980s.

The branches of textile, clothing, leather and food industries register the characteristics of a higher level economic development: their shares have been permanently falling in all CMEA countries since the early 1980s.

The declining share of construction materials, glass, china and ceramics registerd in the majority of CMEA countries has been effected by slower dynamics of investment activities in the recent years. The decline or stabilization of the wood processing branches' share has been determined partly by each country's endowment of natural conditions.

National branch structures of the individual European CMEA countries become more and more similar. This similarity suggests the utilization of a more marked intra-branch specialization in assisting structural adjustment.

Various agreements and projects will serve as the basic tools for further expansion and deepening of external ties of the European CMEA countries with developing countries. Economic co-operation will concentrate mainly on key industries, in particular energy production, in manufacturing of domestic natural resources and also in engineering, chemical and light industries.

Structural adjustment in the industry of the European CMEA countries orientated in the beginning of the 1980s towards intra-manufacturing co-operation with the industries of developing countries. The network of long and short-term trade agreements between these two groups of countries is oriented to an increasing extent towards production co-operation in manufacturing industries. It is suggested that in the course of the long-term and medium-term planning the European CMEA countries should take into account, to the extent possible, the sound endeavour of the developing countries to participate in their export and international co-operation not only with raw materials and fuel but also with manufactured goods. Further, it seems to be a prospective activity to lay emphasis on establishing more joint ventures between factories and trading firms of East-Eurpean and developing countries. This development would help to a transition from a complementary to a more competitive pattern of trade between the European CMEA countries and developing countries during the 1980s.

The quantitative scenarios for trade patterns between the European CMEA countries and developing countries in the 1980s illustrate that this transition may be a long-lasting process.

A P P E N D I X A

Table 1

Average shares of industry in gross fixed capital formation in the material sphere

(Five year average percentage shares at constant prices)

	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
1961-1965	54,9	58,1	63,3	54,2	55.1	59.2	53,5
1966-1970	58.5	53,2	61.1	50.1	51,2	59.5	50.3
1971-1975	54.3	52.1	64.7	49.4	55.4	59.9	48.0
1976-1980	56.1	52.2	65.7	52.2	54.2	59.8	47,3
1979	56.4	52.7	67.2	52.0	51.9	61.7	46.8
1980	58.4	53.1	69.0	50.2	51.3	61.2	47.4
1981	57.4	53.7	69.3	50.9	49.9	61.0	48.6
1979-1981 b)	57.4	53.2	68.5	51.0	51.0	61.3	47.6
Structural shifts in investment allocations within the material sphere (percentage points) a)							
1979/1976-1980	+0.3	+0.5	+1.5	-0.2	-2.3	+1.9	-0.5
1980/1976-1980	+2.3	+1.1	+3.3	-2.0	-2.9	+1.4	+0.1
1981/1976-1980	+1.3	+1.5	+3,6	-1.3	-4.3	+1.2	+0.6

Sources : Structural changes in the centrally planned economics in 1960-1980 and some implications for future economic growth. EC.AD.(XIX)/R.3/Add.1, table 5.1 Economic Survey of Europe in 1982. UN New York 1983, Table 3.4.7

a) Shares compared with the period 1976-1980

b) Three year average

Table 2

Average annual percentage change of gross fixed capital formation

	Bulgaria a)	Czecho-slovakia b)	German Dem.Rep. a)	Hungary b)	Poland b)	Romania a)	Soviet Union c)
National economy total							
1976-1980	4.1	4.1	4.7	4.4	-0.4	9.8	3.9
1979	-2.3	1.8	1.4	1.1	-7.9	4.1	0.7
1980	7.6	1.4	0.3	-6.7	-12 .3	3.0	2.4
1981	10.4	-4.6	1.3	-6.7	-22.7	-7.1	3.8
1982	-10.4	-4.0	-1.6	-2.5	-16.0	-2.5	1.6
1983 Plan	-4.0	-1.7	-13.4	-10.0	1.6	0.7	2.7
1981-1985 Plan	0.9	-1.7	-0.5	0.5	.	4.4	1.5
Industry d)							
1976-1980	5.6	4.4	5.5	3.6	-7.1	10.2	3.7
1979	0.0	6.3	4.0	-2.2	-14.1	8.0	0.0
1980	8.6	3.6	3.9	-11.5	-21.1	2.5	4.4
1981	10.8	-1.1	3.1	-9.3	-26.1	-6.2	4.8

Sources: Economic Survey of Europe in 1982 ...., table 3.3.2, 3.4.1; CMEA Statistical yearbook 1982, p.142

a) Constant 1980 prices national economy total
b) Constant 1977 prices national economy total
c) Constant 1976 prices national economy total
d) State and co-operative industry; constant prices

Table 3

Growth of NMP and industrial production

		Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Average annual percentage change								
NMP	1961-1970	7.6	4.4	4.4	5.4	6.0	8.3	7.2
	1971-1975	7.9	4.6	5.4	6.5	9.7	11.4	5.7
	1976-1980	6.1	3.7	4.1	3.4	1.2	7.0	4.3
	1981	5.1	-0.6	5.0	2.5	-13.0	2.5	3.1
Industrial	1961-1970	10.4	4.9	5.2	7.2	8.3	14.4	9.4
production	1971-1975	8.7	6.0	5.7	7.6	10.5	13.4	7.8
a)	1976-1980	6.8	3.5	5.0	3.8	2.6	8.9	4.9
	1981	5.6	0.6	5.3	1.6	-16.8	4.1	3.7
Ratios of annual percentage change								
IP/NMP	1961-1970	1.37	1.11	1.18	1.33	1.38	1.73	1.31
	1971-1975	1.10	1.30	1.06	1.17	1.08	1.18	1.37
	1976-1980	1.11	0.95	1.22	1.12	2.17	1.27	1.14
	1981	1.10	-1.00	1.06	0.64	-1.29	1.64	1.19

Surces : Economic Survey of Europe in 1982, table 3.1.1

National statistics
CMEA Statistical Yearbook

a) Net output

Table 4

Composition of manufacturing output[a] by end use and by income elasticities

(Percentage)

	Centrally planned economics			Developed market economics			Developing market countries		
	1963	1973	1979	1963	1973	1979	1963	1973	1979
Classification by end use									
Consumer non-durables	48.1	41.6	38.4	37.0	31.4	30.8	51.9	40.1	37.6
Industrial intermediates	16.3	18.4	17.8	19.4	22.7	23.7	27.3	31.5	31.2
Capital goods b)	35.6	40.0	43.8	43.6	45.9	45.5	20.8	28.4	31.2
Classification by income elasticities									
Early industries c)	29.9	23.1	19.6	19.6	16.1	15.7	38.9	29.8	28.3
Middle industries d)	15.0	14.6	13.3	15.6	15.8	15.7	25.7	27.0	26.2
Late industries e)	53.2	59.7	64.2	62.9	66.4	66.9	33.6	41.9	44.1

Sources : UNIDO data base and data supplied by the United Nations Statistical Office

a) The value added in constant U.S.dollars classified according to divisions, major groups or combinations of major groups of ISIC

b) Including consumer durables

c) ISIC groups : 311/2, 313, 314, 321, 324

d) ISIC groups : 331, 332, 352, 353, 354, 355, 361, 362, 369

e) ISIC groups : 322, 323, 341, 342, 351, 356, 371, 372, 381, 382, 383, 384, 385

Table 5

Growth industrial production by economic groupings of countries
(Average annual percentage change)

Branch	ISIC	Centrally planned economies			Developed market economies					
					Total			EEC		
		1971-1975	1976-1980	1981	1971-1975	1976-1980	1981	1971-1975	1976-1980	1981
Mining	2	5.6	3.0	-0.1	0.6	4.4	2.7	-0.8	6.5	0.9
Electricity, gas and water	4	7.1	4.9	1.8	5.1	4.2	1.4	6.2	4.7	0.6
Manufacturing	3	9.0	5.9	3.4	2.1	4.1	0.5	1.7	3.2	-2.3
Light manufacturing	31-33,342,355-356, 39	6.2	4.2	4.3	1.9	3.0	-1.0	1.2	2.3	-2.7
Heavy manufacturing	341,351-354,36-38	10.0	6.7	3.0	2.1	4.6	1.0	1.2	3.0	-2.0
Food, beverages, tobacco	31	5.6	2.8	3.0	3.1	3.0	1.7	2.6	2.5	1.4
Textiles	321	5.9	3.4	0.3	0.8	1.7	-3.5	-0.4	1.2	-5.8
Wearing apparel, leather and footwear	322-324	5.6	4.4	3.2	1.0	0.4	-3.5	0.6	-1.2	-5,2
Wood products	33	6.8	3.4	2.4	1.7	2.6	-4.5	2.6	2.8	-7.3
Paper, printing and publishing	34	6.9	3.1	2.0	0.6	4.6	0.2	-0.1	4.5	-2.0
Chemicals, petroleum, coal and rubber	35	9.7	5.4	-1.0	3.3	5.4	0.5	2.6	3.9	-3.2
Non-metalic mineral products	36	7.7	3.9	2.3	1.7	4.1	-3.2	1.1	3.4	-6.1
Basic metals	37	6.2	3.5	-1.0	-0.4	2.3	-1.0	-1.7	1.9	-4.0
Metal products	38	11.5	8.2	4.6	2.6	4.9	2.0	1.7	3.2	-1.1
Industrial production	2-4	8.7	5.5	3.1	2.1	4.2	0.7	1.7	3.2	-1.9

Sources : Yearbook of Industrial Statistics 1980 Edition, Volume I
Monthly Bulletin of Statistics XXXVI, 1982, No.8

Table 6

Growth rate of labour productivity and capital intensity in industry

(Average annual percentage change)

		1971-1975	1976-1980	1979	1980	1981
Bulgaria	Labour productivity	6.8	5.2	4.2	2.9	2.8
	Capital intensity	7.4	6.7	6.6	1.5	6.6
	Ratios	0.92	0,78	0.64	1,93	0.42
Czechoslovakia	Labour productivity	6.0	4.1	3.2	3.1	1.8
	Capital intensity	5.4	5.7	5.8	4.9	5.8
	Ratios	1.11	0.72	0.55	0.63	0.31
German Dem. Rep.	Labour productivity	5.4	4.6	4.0	4.5	4.3
	Capital intensity	5.9	5.5	5.8	5.5	4.6
	Ratios	0.92	0.84	0.69	0.82	0.94
Hungary	Labour productivity	6.3	4.4	5.0	1.2	4.1
	Capital intensity	7.7	10.0	11.8	11.5	8.2
	Ratios	0.82	0.44	0.42	0.10	0.50
Poland	Labour productivity	7.6	4.4	2.9	0.0	-10.1
	Capital intensity	6,5	9.0	9.2	4.5	5.2
	Ratios	1.17	0.49	0.32	0.00	-1.94
Romania	Labour productivity	6.4	6.8	5.2	4.4	2.6
	Capital intensity	5.6	6.6	5.5	6.6	7.0
	Ratios	1.14	1.03	0.95	0.67	0.37
Soviet Union	Labour productivity	6.0	3.0	2.0	2.6	3.2
	Capital intensity	7.3	6.3	6.4	6.0	7.3
	Ratios	0.82	0.48	0.31	0.43	0.44

Sources : CMEA Statistical Yearbook

a) State and cooperative industry

Table 7

Trade growth of European CMEA member countries
(Volume of foreign trade[a] annual percentage change)

	Bulgaria	Czecho-slovakia	German Dem.Rep.b)	Hungary	Poland	Romania b)	Eastern Europe	Soviet Union	Eastern Europe and the Soviet Union
				Exports					
1966-1970	12.6	9.0	8.6	9.1	9.5	.	9.4	9.9	.
1971-1975	10.0	6.3	9.1	9.4	10.7	11.0	9.2	5.0	.
1976-1980	12.8	6.3	5.3	7.0	4.0	5.7	6.4	4.8	5.7
1980	12	5	1	1	-4	4	2	2	2
1981	8	2	10	3	-19	14	2	-	1
1982b)	5	5	7	5	9	-7	4	5	5
				Imports					
1966-1970	9.7	8.0	12.1	11.1	9.0	.	10.0	6.4	.
1971-1975	14.3	6.5	7.2	7.3	15.3	8.1	9.6	10.4	.
1976-1980	3.2	2.9	5.1	3.9	1.7	8.4	2.3	5.7	4.7
1980	4	-2	4	-1	-2	6	1	7	4
1981	9	-7	-	-	-17	-7	-5	8	1
1982b)	1	2	-3	-2	-16	-24	-6	8	-

Sources : Economic Survey of Europe in 1981. Chapter three: Recent economic developments and five-year plans in eastern Europe and the Soviet Union, table 3.6.1

Economic Suvey of Europe in 1982, table 4.3.2

a) National statistics or secretariat estimates based on national value data and international price data

b) Secretariat estimates

Table 8

Ratios of annual percentage change of foreign trade[a] and industrial production[b]

	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Export/Industrial production							
1971-1975	1.10	0.94	1.40	1.47	1.03	0.85	0.68
1976-1980	2.13	1.80	1.08	2.06	0.85	0.52	1.09
1980	2.86	1.43	0.21	-0.63	.	0.62	0.56
1981	1.63	0.95	1.96	1.25	1.76	5.60	-
1982	1.09	5.00	2.19	2.50	4.50	-6.36	1.79
Import/Industrial production							
1971-1975	1.57	0.97	1.11	1.14	1.47	0.63	1.41
1976-1980	0.53	0.83	1.04	1.15	0.36	0.88	1.30
1980	0.95	-0.57	0.85	-0.63	-	0.92	1.94
1981	1.84	-3.33	-	-	1.57	-2.80	2.35
1982	0.22	2.00	-0.94	-1.00	8.00	-21.82	2.86

Sources : CMEA Statistical Yearbook
Economic Survey of Europe in 1981 ..... table 3.6.1
Economic Survey of Europe in 1982 ..... table 4.3.2

a) Volume
b) Gross output

Table 9

Composition of Export-Import commodity groups in the centrally planned economies (percentage shares)

A - Machinery and transport equipment
B - Mineral fuels and metals
C - Agricultural and non-agricultural raw materials and food products
D - Industrial consumer goods
E - Chemicals, fertilizers, rubber, construction and other materials

	Exports					Imports				
	A	B	C	D	E	A	B	C	D	E
Bulgaria										
1960	12.9	9.2	56.4	17.9	2.8	43.9	24.3	16.7	7.6	7.4
1970	29.0	8.1	43.4	14.7	4.5	40.6	29.1	15.9	5.7	8.4
1975	40.7	7.8	33.8	10.3	6.7	41.4	33.5	12.7	5.1	6.3
1980	44.4	15,0	24.4	8.8	6.2	35.5	42.9	9.7	4.4	7.0
1981	45.8	14.7	22.8	9.2	5.8	33.5	44.4	10.2	4.7	6.7
Czechoslovakia										
1960	45.7	19.1	10.4	20.4	4.4	21.7	27.9	37.1	3.7	9.9
1970	50.4	18.6	7.3	16.6	7.1	33.4	23.5	24.1	8.5	10.5
1975	48.0	19.3	7.2	18.2	7.3	36.1	27.8	17.4	7.7	11,0
1980	50.3	17.2	8.6	15.9	9.0	36.6	31.7	16.1	5.9	9.7
1981	52.3	14.9	8.0	16.7	8.1	34.6	36.2	14.8	9.3	9.1
German Democratic Republic										
1960	49.0	15.7	5.9	15.1	14.3	12.7	38.5	39.2	5.3	4.3
1970	51.7	10.1	7.4	20.2	10.6	34.2	27.6	28.1	4.5	5.6
1975	50.7	12.1	9.1	15.6	12.5	30.8	30.5	22.6	5.6	10.5
1980	51.3	14.8	6.4	14.8	12.7	30.8	36.7	18.9	5.0	8.6
1981	48.9	16.8	7.4	14.1	12.6	32.0	36.8	17.9	4.9	8.4
Hungary										
1960	38.6	12.8	27.4	17.8	3.4	28.5	27.7	29.2	5.1	9.5
1970	32.6	14.4	26.7	21.3	5.0	30.9	23.6	24.4	7.7	13.4
1975	37.0	11.9	25.2	20.4	5.5	32.2	27.3	19.0	7.1	14.4
1980	32.2	14.4	26.1	17.4	9.9	30.7	27.0	18.6	7.7	16.0
1981	31.4	12.6	28.2	17.2	10.6	29.7	26.7	18.4	8.7	16.5
Poland										
1960	28.3	37.0	23.1	10.1	4.5	27.1	25.3	33.9	5.5	8.2
1970	38.5	23.9	16.9	16.1	4.6	36.2	26.6	21.4	6.4	9.4
1975	39.1	29.1	11.5	14.6	5.7	37.4	30.0	17.8	5.3	9.5
1980	44.5	25.5	9.9	15.3	4.9	32.7	31.1	20.9	6.4	8.9
1981	50.1	21.4	8.2	15.6	4.7	30.9	31.6	23.9	6.0	7.6
Romania										
1960	16.7	36.9	35.9	5.8	4.7	33.6	34.3	18.4	5.2	8.5
1970	22.8	22.7	26.8	18.1	9.6	40.3	30.4	15.6	5.5	8.2
1975	25.3	22.3	22.6	16.1	13.7	34.7	38.2	15.7	3.8	7.6
1980	24.9	29.5	17.5	16.2	11.9	24.6	50.3	14.7	3.0	7.4
1981	29.0	27.8	16.1	15.7	11.4	23.6	48.6	17.3	3.5	7.0
Soviet Union										
1960	20.7	37.6	27.3	2.9	11.5	31.1	20.0	23.7	16.9	8.3
1970	21.5	38.1	19.5	2.7	18.2	35.5	11.8	24.9	18.3	9.5
1975	18.7	48.3	14.1	3.1	15.8	33.9	15.9	29.1	12.9	8.2
1980	15.8	57.2	8.3	2.5	16.2	33.9	14.0	30.4	12.2	9.5
1981	13.7	59.5	7.6	1.8	17.4	30.2	13.9	33.7	12.9	9.3

Table 9 (continued)

Sources : Ratvitie Economiki stran - chlenov SEV za 1971-1980 godi
Economico-statisticheskyi obzor, Moscow 1981, p. 143-146

Changes in trends and conditions for economic growth in the 1970s and their long-term implications: centrally planned economies.
EC.AD.(XVIII)/R.3/Add.1, table 20
CMEA Statistical Yearbook.

Table 10

Changes in the volume of trade, by region
(Percentage change over previous year)

	1977	1978	1979	1980	1981	1982
Export						
Eastern Europe	9	6	8	3	2	4
Soviet Union	10	4	1	2	-	5
European CMEA member states	9	5	5	2	1	5
Developed market economies	5	6	7	4	2	-1
Developing market economies	0	4	8	-5	-6	-6
Total above	4	5	7	2	1	-2
Imports						
Eastern Europe	5	5	2	1	-5	-6
Soviet Union	1	14	2	7	6	8
European CMEA member states	3	9	2	4	-	-
Developed market economies	4	5	8	-1	-3	-
Developing market economies	8	8	2	5	7	-
Total above	4	6	7	1	-	-

Sources : Economic Survey of Europe in 1982...., table 4.1.2

Table 11

Change in foreign trade value, volume, unit values and terms of trade, by major partner regions (in per cent)

	Exports					Imports				
	1976-1980	1979	1980	1981	1982	1976-1980	1979	1980	1981	1982
Eastern Europe										
Total trade										
Value a)	12.3	17.1	12,2	0.5	3.5	10.9	13.1	12.2	-3.1	-4.1
Volume	6.7	8	2	2	4	4.1	2	1	-5	-6
Unit values a)	5.4	9	10	-1	-1	6.7	11	11	2	3
Terms of trade	-1.2	-2	-1	-3	-4	..	..	..	..	..
of which :										
Trade with socialist countries :										
Value b)	10.5	10.8	5.9	8.4	11.1	10.8	7.5	8.8	11.1	8.8
Volume	4.1	7	-2	-	4	2.7	2	-	-1	-2
Unit values b)	6.2	4	8	8	7	8.0	6	9	12	10
Terms of trade	-1.7	-2	-1	-4	-3	..	..	..	..	..
Trade with developed market economies and developing countries										
Value a)	16.1	25.2	22.0	0.1	-3.2	11.5	18.5	15.6	-13.1	-19.8
Volume	6.0	2	8	3	4	2.7	-1	2	-11	-14
Unit values a)	9.6	22	13	-3	-7	8.6	20	14	-2	-7
Terms of trade	0.8	2	-1	-1	-1	..	..	..	..	..
Soviet Union										
Total trade										
Value a)	18.1	23.6	18.2	3.8	8.3	13.2	13.9	18.6	6.8	7.1
Volume	4.9	0.6	1.6	0.4	5	5.9	1.0	7.3	8.2	8
Unit values a)	12.6	22.8	16.3	3.4	3	7.0	12.7	10.5	-1.3	-
Terms of trade	5.4	8.9	5.3	4.8	3	..	..	..	..	..
of which :										
Trade with socialist countries										
Value b)	13.0	11.2	13.9	15.9	9.1	11.1	3.4	10.3	13.1	16.2
Volume	3.7	3.2	4.0	-1.1	-3	3.7	-1.2	3.4	4.9	9
Unit values b)	8.9	8.2	9.5	17.2	12	7.0	4.6	6.7	7.8	7
Terms of trade	1.7	3.4	2.7	8.7	5	..	..	..	..	..
Trade with developed market economies and developing countries										
Value a)	21.8	34.4	22.2	2.8	8.6	12.7	23.6	27.9	12.2	-1.1
Volume	5.2	-3.3	-1.4	4.0	15	4.9	4.6	11.7	10.6	6
Unit values b)	15.7	40.1	23.9	-1.1	-6	7.6	18.2	14.5	1.4	-7
Terms of trade	7.6	18.5	8.2	-2.5	1	..	..	..	..	..

Sources : Economic Survey of Europe in 1981 ....., table 3.6.3
Economic Survey of Europe in 1982 ....., table 4.3.3

a) In terms of US dollars
b) In terms of transferable roubles

Table 12

Changes in the terms of trade (in terms of dollars), by region

(1975 = 100)

	1977	1978	1979	1980	1981	1982a)
Eastern Europe	98	97	95	94	91	88
Soviet Union	110	113	123	131	132	136
European CMEA member states	103	104	107	109	108	108
Developed market economies	98	100	98	90	89	92
Developing market economies	106	100	109	124	128	126

Sources : Economic Survey of Europe in 1982 ..., table 4.1.6

a) Jan - Sept.

Table 13

Changes in the commodity structure of foreign trade[a)] by major region
(Average annual growth rates and shares, in per cent)

Country group and commodity category	Trade with socialist countries				Trade with market economies			
	Volume growth rate 1976-1980	Share in total 1980			Volume growth rate 1976-1980	Share in total 1980		
		1975	Prices of: 1975	1980		1975	Prices of: 1975	1980
1	2	3	4	5	6	7	8	9
			Eastern Europe					
Exports								
Machinery and equipment	5.8	50	54	56	9,1	19	22	21
Fuels and energy	-7.0	7	4	6	-0.1	18	13	18
Raw materials and semi-finished products	1.3	17	15	14	6.1	27	28	28
Foodstuffs	4.3	11	11	10	3.1	19	16	19
Consumer goods	5.2	15	16	14	10.0	17	21	19
Total	4.0	100	100	100	6.0	100	100	100
Imports								
Machinery and equipment	2.9	37	37	37	-0.7	29	24	23
Fuels and energy	2.1	21	21	27	10.1	8	12	17
Raw materials and semi-finished products	3.0	28	28	24	1.1	46	42	41
Foodstuffs	-0.3	7	6	6	6.9	12	15	13
Consumer good	3.2	7	8	6	7.4	5	7	6
Total	2.6	100	100	100	2.6	100	100	100

Table 13 (continued)

1	2	3	4	5	6	7	8	9
	Soviet Union							
Exports								
Machinery and equipment	5.4	24	26	23	5.1	11	11	8
Fuels and energy	8.0	26	32	40	7.5	40	44	55
Raw materials and semi-finished products	0.2	31	26	22	3.4	19	18	14
Foodstuffs	-10.6	5	3	2	-6.4	3	2	1
Consumer goods	4.2	3	3	3	9.2	3	3	2
Unspecified	3.1	11	10	10	3.6	24	22	20
Total	3.7	100	100	100	5.2	100	100	100
Imports								
Machinery and equipment	5.7	39	43	44	-0.3	29	22	23
Fuels and energy	-12.9	3	1	2	-5.1	5	3	5
Raw materials and semi-finished products	3.7	11	11	10	5.1	31	32	31
Foodstuffs	1.6	21	19	18	10.1	25	32	31
Consumer goods	2.3	19	18	18	6.7	6	6	5
Unspecified	7.0	7	8	8	9.7	4	5	5
Total	3.8	100	100	100	5.0	100	100	100

Sources : Economic Survey of Europe in 1981... table 3.6.4

a) The volume growth rate for 1976-1980 and the commodity structure in 1980 at 1975 prices are secretariat estimates obtained by deflating national data on trade in each commodity category and trade direction with the aid of rouble and non-rouble trading area prices statistics for Hungary, supplemented by similer Polish data and, for the deflation of Soviet exports of fuels and energy to market economies, an index of unit values for EEC country imports in this commodity class (UN Month y Bulletin of Statistics. March 1981, table E).

Table 14

The breakdown of total industry into component branches according the CMEA branch classification of industry

Branch

1. Electricity and heating
2. Fuel
3. Ferrous metalurgy
4. Non-ferrous metalurgy
5. Engineering and metal working
6. Chemicals and rubber
7. Construction materials
8. Wood and Wood processing
9. Pulp and paper
10. Glass and china
11. Textiles
12. Clothing
13. Leather, fur and footwear
14. Printing
15. Food processing
16. Other manufacturing industries

Light manufacturing: branches No. 8,11 - 15,16

Heavy manufacturing: branches No. 3,4,5,6,7,9,10

Table 15

Growth of NMP and gross industrial production at the beginning of the 1980's
(Average annual percentage change)

	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Eastern Europe	Soviet Union	European CMEA countries
NMP									
1976-1980	6.1	3.7	4.2	3.2	1.1	7.3	3.9	4.3	4.2
1979	6.6	3.1	4.0	1.9	-2.3	6.2	2.5	2.2	2.3
1980	5.7	2.9	4.4	-0.8	-6.0	2.9	0.7	3.9	2.9
1981	5.0	-0.4	4.8	2.0	-12.1	2.2	-1.1	3.3	2.0
1982	4.0	-0.4	3.0	1.5-2.0	-8.0	2.6	-0.1	2.9a)	1.8
1982 Plan	3.6	0.5	4.8	1.0-1.5	-1.6	5.5	2.4	3.0	2.8
1983 Plan	3.8	2.0	4.2	0.5-1.0	2.0-2.5	5.0	3.3	3.3	3.3
1981-1985 Plan	3.7	2.0-2.6	5.1	2.6-3.2	3.5-5.6	7.1	3.8	3.4	3.5
Gross industrial production									
1976-1980	6.0	4.7	5.0	3.4	4.7	9.5	5.6	4.5	4.8
1979	5.5	3.7	4.6	3.0	2.7	8.1	4.5	3.4	3.7
1980	4.2	3.5	4.7	-2.0	0.0	6.5	3.0	3.6	3.4
1981	4.8	2.1	4.7	2.8	-10.5	2.6	-0.5	3.4	2.2
1982	4.6	1.0	3.2	2.0	-4.0	1.1	0.6	2.8	2.2
1982 Plan	4.5	0.6	4.6	2.0-2.5	0.6	4.7c)	2.8	4.7	4.2
1983 Plan	4.8	2.4	3.8	1.0-2.0	3.7-4.0b)	6.6c)	4.1	3.2	3.4
1981-1985 Plan	5.1	2.7-3.4	5.1	3.5-4.0	3.8-5.4	7.6	.	4.7	.

Sources : Economic Survey of Europe in 1982 ...., table 3.1.1

a) NMP used
b) Sales in constant prices
c) Commodity production

Table 16

Ratios of average annual percentage change of NMP and industrial production

	Bulgaria	Czecho-slovakia	German DemRep.	Hungary	Poland	Romania	Soviet Union
NMP industry : NMP - total material sphere							
1961-1965 a)	1.34	2.00	1.38	1.71	1.44	1.49	1.38
1966-1970 a)	1.42	0.89	1.10	1.06	1.31	1.65	1.25
1971-1975 a)	1.19	1.09	1.09	1.12	1.10	1.16	1.37
1976-1980a)	1.28	0.95	1.24	1.34	2.07	1.52	1.19
1981	1.10	-1.00	1.06	0.64	1.29	1.64	1.19
Gross industrial production : NMP - total material sphere							
1971-1975	1.15	1.22	1.20	0.98	1.24	1.05	1.30
1976-1980	0.98	1.27	1.19	1.06	4.27	1.30	1.05
1979	0.83	1.19	1.15	1.58	-1.17	1.31	1.54
1980	0.74	1.21	0.94	2.50	-	2.17	1.09
1981	0.96	-5.25	0.98	1.40	0.87	1.18	1.03
1982	1.15	-	1.07	1.33-1.00	0.50	0.42	0.97
1983 P	1.26	1.20	0.90	2.00-2.00	1.85-1.60	1.32	0.97
1981-1985 P	1.38	1.35-1.31	1.00	1.35-1.25	1.09-0.96	1.07	1.38

Sources : CMEA Statistical Yearbook
Economic Survey of Europe in 1982 ...., table 3.1.1

a) 5-year moving average

Table 17

Average annual percentage change of gross fixed capital formation in industry and national economy (3-year moving average)

		Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Industry	1976-1978	6.8	4.1	6.9	11.6	0.3	13.9	4.8
	1977-1979	6.3	4.1	5.5	8.1	-5.7	14.9	3.1
	1978-1980	3.3	4.6	4.3	-3.5	-12.5	10.2	3.2
	1979-1981	6.4	2.9	3.7	-7.7	-20.4	1.4	3.1
Material sphere	1976-1978	5.2	3.8	4.7	7.2	1.3	13.2	5.1
	1977-1979	5.0	3.5	2.9	6.8	-2.5	11.4	3.8
	1978-1980	1.4	2.6	1.4	-0.7	-6.9	8.2	3.2
	1979-1981	5.3	2.5	1.6	-4.9	-15.1	1.3	2.3
National economy	1976-1978	5.3	3.7	5.3	6.0	2.6	12.1	4.8
	1977-1979	4.3	2.8	3.4	6.4	-0.4	10.6	3.5
	1978-1980	2.0	2.5	1.9	-0.1	-5.3	7.6	3.0
	1979-1981	5.2	-0.6	1.8	-3.7	-13.4	0.0	2.2

Sources : CMEA Statistical Yearbook

Table 18

Ratios of average annual percentage change of NMP, employment and gross fixed capital formation of industry
(3-year moving average)

		Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
NMP of industry to NMP total	1976-1978	1.57	0.93	1.21	1.04	1.28	1.26	1.14
	1977-1979	1.43	0.84	1.20	1.20	1.45	1.31	1.20
	1978-1980	1.20	1.06	1.32	2.10	0.47	1.41	1.20
	1979-1981	0.91	1.22	1.21	2.23	1.06	1.58	1.27
Employment in industry to material sphere	1976-1978	0.29	0.56	0.91	0.75	0.86	1.00	1.00
	1977-1979	1.13	0.63	1.00	1.50	1.00	1.13	0.89
	1978-1980	2.20	0.29	1.13	1.40	1.00	1.14	0.88
	1979-1981	3.00	0.20	1.50	1.38	1.00	1.50	0.85
Employment in industry to national economy	1976-1978	0.35	0.42	0.83	-0.16	0.60	1.03	0.90
	1977-1979	1.80	0.45	0.38	-0.30	0.13	1.16	0.80
	1978-1980	2.20	0.20	0.89	7.00	-1.00	1.14	0.74
	1979-1981	2.14	0.11	0.86	2.75	-2.50	1.30	0.69
GFCF in industry to material sphere	1976-1978	1.31	1.08	1.47	1.61	0.23	1.05	0.94
	1977-1979	1.26	1.17	1.90	1.19	2.28	1.31	0.82
	1978-1980	2.36	1.77	3.07	5.00	1.81	1.24	1.00
	1979-1981	1.21	1.16	5.30	1.57	1.35	1.08	1.35
GFCF in industry to national economy	1976-1978	1.28	1.11	1.30	1.93	0.12	1.15	1.00
	1977-1979	1.47	1.46	1.62	1.27	14.25	1.41	0.89
	1978-1980	1.65	1.84	2.26	3.50	2.36	1.34	1.07
	1979-1981	1.23	-4.83	2.06	2.08	1.52	1.40	1.41

Sources : CMEA Statistical Yearbook
a) GFCF = gross fixed capital formation

Table 19

Average annual percentage change of employment in industry and national economy
(3-year moving average)

		Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Industry	1976-1978	0.7	0.5	1.0	-0.3	0.6	3.5	1.9
	1977-1979	0.9	0.5	0.9	-0.6	0.3	3.6	1.6
	1978-1980	1.1	0.2	0.8	-1.4	-0.3	3.3	1.4
	1979-1981	1.5	0.1	0.6	-2.2	-0.5	3.0	1.1
	1981	1.8	0.1	0.3	-2.2	-1.0	2.0	0.9
Material sphere	1976-1978	2.4	0.9	1.1	-0.4	0.7	3.5	1.9
	1977-1979	0.8	0.8	0.9	-0.4	0.3	3.2	1.8
	1978-1980	0.5	0.7	0.6	-1.0	-0.3	2.9	1.6
	1979-1981	0.5	0.5	0.4	-1.6	-0.5	2.0	1.3
	1982	.	0.2	0.5	-0.5	-4.0	0.2	0.6
National economy	1976-1978	2.0	1.2	1.2	1.9	1.0	3.4	2.1
	1977-1979	0.5	1.1	2.4	2.0	2.3	3.1	2.0
	1978-1980	0.5	1.0	0.9	-0.2	0.3	2.9	1.9
	1979-1981	0.7	0.9	0.7	-0.8	0.2	2.3	1.6
	1982	.	0.4	0.7	-0.2	-1.8	1.0	0.8

Sources : CMEA Statistical Yearbook
Economic Survey of Europe in 1982 ...., tables 3.1.2, 3.3.2

Table 20

Average annual percentage change of labour productivity[a] in industry and material sphere

		Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland	Romania	Soviet Union
Industry	1971-1975	6.4	5.5	5.4	7.4	7.6	6.4	6.2
	1976-1980	5.5	3.0	4.5	5.1	2.2	4.9	3.3
	1981	3.7	5.0	5.0	3.9	-7.6	2.1	2.8
Material sphere	1971-1975	7.6	5.4	5.2	6.4	7.7	11.0	4.3
	1976-1980	6.1	3.2	3.7	3.5	1.7	7.0	3.2
	1981	4.2	-0.9	4.8	4.4	-12.7	1.9	2.0
Ratios	1971-1975	0.84	1.02	1.04	1.16	0.99	0.58	1.44
	1976-1980	0.90	0.94	1.22	1.46	1.29	0.57	1.03
	1981	0.88	-5.66	1.04	0.89	0.60	1.11	1.40

Sources : CMEA Statistical Yearbook
Economic Survey of Europe in 1982 ...., table 3.1.3

a) NMP produced

Table 21

Contribution of changes[a] in productivity and sector branch allocation of employment and fixed assets to NMP
(Percentage of actual output growth)

Output (NMP) growth due to changes in		Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Poland b)	Romania	Soviet Union
Employment								
Level	1975-1970	2.2	4.9	1.0	-2.1	14.8	1.8	21.6
	1980-1975	0.3	7.9	7.6	-15.2	24.8	1.7	17.9
Productivity	1975-1970	84.8	88.6	98.9	98.5	76.9	72.6	77.6
	1980-1975	93.2	88.0	92.1	115.3	-106.2	79.3	80.1
Sectoral allocation	1975-1970	13.1	6.5	0.1	3.6	8.3	25.6	0.8
	1980-1975	6.5	4.4	0.3	-0.1	-18.6	19.0	2.0
Fixed assets								
Level	1975-1970	116.1	101.6	111.6	109.4	85.9	105.6	163.2
	1980-1975	143.2	180.1	147.0	242.2	-718.5	155.0	213.9
Productivity	1975-1970	-39.2	-14.3	-19.3	-24.7	0.7	-9.2	-68.7
	1980-1975	-56.3	-97.4	-58.0	-143.4	721.2	-63.5	-125.6
Sectoral allocation	1975-1970	23.1	12.7	8.7	15.3	13.4	3.6	5.5
	1980-1975	13.1	17.3	11.2	1.2	-42.7	8.5	11.7

Sources : Economic Survey of Europe in 1981 ...., p.257

a) Changes in post - 1970 levels; five sectors of material sphere

b) Because of the decline in the absolute level of production in the year 1980 as compared with 1975, the figures for Poland appear with their signs reversed; they should be interpreted as if signs were opposite to those shown

Table 22

Growth elasticity of gross output[a] by branches[b] (Total industry = 1.00)

	Branches														
	Electricity	Fuel	Ferrous metallurgy	Non ferrous metallurgy	Engineering	Chemicals	Construct. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria															
1976-1980	1.45	0.90	1.22	.	1.53	1.62	1.25	0.52	0.70	1.08	0.83	0.47	0.35	1.77	0.47
1980	2.83	1.48	0.73	.	1.55	2.93	0.95	1.18	1.35	1.15	0.85	1.45	1.73	1.03	-0.48
1981	1.47	0.20	1.06	.	1.39	0.88	0.92	0.92	1.51	0.39	1.12	1.12	1.45	0.41	1.76
1982	1.43	.	0.52	.	1.89	0.28	0.13	0.78		.		0.65		.	0.87
Czechoslovakia															
1976-1980	1.04	0.59	0.59	0.67	1.46	1.26	0.93	1.24	0.93	1.13	0.76	0.74	0.72	0.87	0.59
1980	2.11	-0.19	0.39	0.19	1.25	1.36	1.19	1.31	1.00	0.97	0.92	0.94	0.92	0.94	0.39
1981	0.71	0.00	0.82	0.00	2.53	1.12	1.06	-0.65	1.00	1.00	1.88	1.53	1.12	1.59	0.82
1982	1.60	1.40	-0.40		2.90	-0.30	-1.50	3.50	4.00	.		1.60		.	-0.80
German Dem.Rep.															
1976-1980	1.18	0.70	0.76	0.84	1.40	0.98	0.46	0.84	0.90	1.08	0.78	0.56	0.94	0.48	0.54
1980	0.63	1.04	0.65	1.31	1.63	0.69	-0.13	0.00	0.96	0.94	0.69	0.44	0.90	0.92	0.44
1981	0.65	0.59	1.30	0.54	1.70	0.80	-0.13	0.26	0.41	1.17	0.57	0.15	0.78	-0.17	0.43
Hungary															
1976-1980	1.74	0.62	0.29	0.85	0.94	2.29	0.88	1.29	1.24	2.06	0.65	0.74	-0.59	1.85	1.00
1980	-1.22	1.83	3.50	-0.39	3.06	-0.50	1.17	-0.61	-0.33	-4.89	-1.28	-5.06	5.50	-3.94	-0.78
1981	1.44	-0.56	-1.52	1.52	2.12	1.72	-0.88	0.44	2.04	2.08	0.88	1.40	1.72	3.24	0.80
1982	-0.30	0.70	0.40		1.85	0.90	0.45	.	.	.	.	.	.	.	2.20
Poland															
1976-1980	1.17	0.52	0.70	0.78	1.52	0.93	0.26	1.04	0.37	2.15	0.65	0.80	0.91	1.50	0.52
1980	-10.40	6.40	0.00	0.80	-0.80	-1.00	1.20	-4.00	-8.40	-9.80	2.40	-8.00	-7.00	5.00	5.60
1981	0.49	-0.90	1.63	1.43	1.13	0.90	1.48	0.73	1.07	0.32	1.15	0.33	0.60	0.26	0.68

Table 22 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Romania															
1976-1980	0.48	0.44	0.94	0.61	1.34	1.01	1.35	0.65	0.77	1.01	1.13	0.89	0.95	0.61	0.63
1980	0.30	0.09	0.12	0.98	1.52	0.98	0.80	0.77	0.86	1.55	1.41	1.33	1.38	0.55	0.17
1981	1.67	-0.79	1.92	0.21	1.00	1.42	-0.13	1.38	0.38	4.13	2.67	2.50	1.75	-0.29	-0.42
Soviet Union															
1976-1980	1.14	0.64	0.52	.	1.86	1.27	0.41	0.32	0.50	1.47	0.61	1.14	0.86	.	0.34
1980	1.51	0.57	0.00	.	1.80	1.69	0.37	0.66	0.74	1.46	0.83	1.91	0.83	.	0.00
1981	0.65	0.38	0.41	.	1.74	1.65	0.56	0.88	1.12	1.29	0.41	1.12	0.62	.	0.62
1982	1.01	0.71	0.32		1.79	1.07	0.32	1.86	1.71	.		0.07		.	1.43

Sources : **CMEA Statistical Yearbook**

a) At "constant" prices
b) CMEA branch classification of industry

Table 23

Growth elasticity of employment[a] by branches[b] (Total industry = 1.00)

	Electricity	Fuel	Ferrous metallurgy	Non ferrous	Branches Engineering	Chemicals	Construct. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leathor	Printing	Food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria															
1976-1980	7.00	1.40	4.10	.	1.20	2.30	1.20	-2.50	4.20	1.60	-0.40	0.00	-1.40	2.30	-0.40
1980	11.15	4.00	2.15	.	0.54	3.69	1.00	-0.77	1.31	1.54	-0.62	2.54	0.23	0.69	-0.54
1981	3.89	3.28	0.67	.	0.56	2.06	1.61	1.00	2.22	0.22	0.50	0.94	1.72	0.50	-0.33
Czechoslovakia															
1976-1980	6.75	2.00	1.00	2.00	2.25	1.00	1.00	2.00	1.50	-	-1.25	-3.00	-2.25	-1.00	-
1980	-5.25	-1.00	-0.25	9.00	1.50	-0.50	1.25	-2.25	-3.75	1.00	1.25	2.00	0.50	8.50	3.75
1981	16.00	7.00	0.00	3.00	2.00	4.00	-1.00	-1.00	11.00	-6.00	-2.00	-5.00	0.00	-6.00	0.00
German Dem.Rep.															
1976-1980	2.38	0.75	1.00	1.50	1.50	1.00	0.75	0.50	0.75	1.75	-1.00	-1.50	-0.75	-0.25	3.38
1980	-1.00	1.89	0.22	0.00	1.78	1.56	-0.78	-1.00	0.89	-2.56	0.44	-0.89	0.33	1.89	-0.33
1981	-4.33	4.33	14.00	0.00	2.67	0.00	-2.33	7.00	-5.33	3.67	-5.33	-5.33	-4.00	-17.00	-3.67
Hungary															
1976-1980	0.60	1.20	1.00	1.40	0.80	0.80	1.20	2.30	1.20	0.00	2.30	0.40	2.10	0.40	-0.20
1980	0.59	0.33	0.56	0.52	1.07	0.70	1.07	1.30	1.63	0.11	1.48	-1.19	1.37	0.74	0.52
1981	0.64	0.45	1.32	2.86	1.09	0.14	2.18	1.05	1.18	0.41	1.05	1.23	0.45	0.45	0.45
Poland															
1976-1980	0.67	3.17	1.33	2.33	2.00	-0.67	-3.50	-1.67	-5.00	1.33	-2.83	-0.67	-0.33	-1.00	-0.33
1980	-9.50	-9.00	8.00	-9.00	0.00	-2.00	10.50	10.50	16.50	-1.00	10.00	0.00	-6.50	0.00	-0.50
1981	-2.30	0.00	1.70	8.40	2.50	1.50	3.10	4.50	0.40	0.30	3.00	-5.10	2.00	1.50	-1.10
Romania															
1976-1980	0.34	1.17	1.80	0.46	1.54	0.91	0.46	0.00	0.40	1.63	1.17	0.71	0.91	0.06	0.34
1980	-0.22	2.78	3.28	0.72	1.31	0.13	-0.28	0.09	0.16	1.63	1.31	1.16	1.41	0.31	-0.25
1981	1.35	-0.20	3.80	1.05	1.10	1.70	0.60	0.55	-0.16	2.60	2.05	-0.30	2.40	-0.50	-1.95

Sources : **CMEA Statistical Yearbook**

a) Wage and salary earners engaged

b) CMEA branch classification of industry

Table 24

Growth elasticity of gross investment[a] by branches[b] (Total industry = 1.00)

	Branches														
	Electricity	Fuel	Ferrous metallurgy	Non ferrous	Engineering	Chemicals	Construct. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria															
1976-1980	1.11	2.50	2.57	.	2.20	-0.27	1.07	-0.11	-	-2.05	-2.59	-3.75	-1.21	-2.23	-0.18
1980	0.33	1.69	3.90	.	2.79	-2.84	-0.51	5.06	2.23	3.43	0.40	2.36	4.70	-6.56	3.07
1981	0.20	0.88	1.90	.	2.21	2.91	-2.69	-1.82	4.68	3.08	5.92	5.92	1.16	-3.08	-1.63
Czechoslovakia															
1976-1980	1.45	2.77	0.50	6.14	1.11	-0.93	-0.55	0.25	5.11	0.34	-	1.91	-0.82	-0.66	0.02
1980	1.11	-0.50	-7.17	2.47	1.56	2.11	1.50	1.72	17.25	0.22	-0.28	-3.39	-0.36	19.47	0.00
1981	1.36	-3.73	8.91	14.82	-3.45	-9.64	16.27	-10.64	16.91	-13.45	7.64	-36.36	0.64	54.82	9.73
German Dem.Rep.															
1976-1980	0.85	1.60	3.62	2.87	1.33	0.64	0.44	0.04	-0.91	0.38	-0.24	0.73	-1.45	-1.02	0.07
1980	1.62	0.92	5.31	15.67	2.15	-2.49	2.08	-4.72	7.41	4.44	-2.41	-0.38	-0.90	-9.44	-1.23
1981	-0.94	-3.39	-1.81	-0.84	5.90	3.00	-0.29	-2.84	1.45	9.06	-0.55	-2.00	4.68	193.55	-0.19
Hungary															
1976-1980	3.08	1.42	4.28	3.31	1.25	-2.39	-0.97	-0.94	-5.83	1.06	-2.28	1.25	1.97	0.58	0.92
1980	-0.33	0.05	-0.14	1.11	1.23	1.77	2.72	1.63	2.78	2.39	-1.77	-1.64	1.74	2.23	2.23
1981	1.26	0.46	1.97	1.16	1.62	-0.86	2.98	-0.42	-0.31	2.91	-0.42	-0.49	-0.40	-0.45	1.12
Poland															
1976-1980	-0.82	-0.66	1.90	2.54	1.15	0.89	2.96	2.82	0.11	-0.31	2.54	0.72	1.39	3.10	1.48
1980	0.08	-1.11	1.42	1.76	1.51	1.92	1.27	1.51	1.88	2.10	1.70	1.11	0.64	0.36	1.21
1981	1.45	1.10	1.96	1.57	0.80	1.05	1.14	0.35	1.51	1.68	1.05	0.25	0.96	0.99	0.04
Romania															
1976-1980	0.45	0.86	1.07	0.60	1.93	0.85	0.73	-0.33	0.44	1.96	1.35	-0.45	0.20	0.33	0.16
1980	2.04	5.92	2.00	-1.92	4.84	-7.32	-1.88	-5.24	-6.08	-7.88	9.44	-5.80	-4.92	20.40	-1.16
1981	-2.48	-1.21	3.60	1.65	2.26	0.10	3.81	0.15	1.97	5.44	3.32	2.29	0.87	-4.42	-2.82
Soviet Union															
1976-1980	1.08	2.30	-0.03	.	1.14	0.27	0.11	0.14	-0.16	-1.38	1.27	-	-0.68	1.57	0.51
1980	3.00	2.57	-2.34	.	1.36	-2.00	-0.80	-0.20	-2.23	1.57	1.77	1.66	1.25	1.98	0.86
1981	-0.29	2.42	1.50	.	1.29	-0.75	0.77	1.44	1.85	-0.46	1.25	2.25	2.15	0.56	-0.29

Sources : CMEA Statistical Yearbook

a) Physical volume growth rate

b) CMEA branch classification of industry

Table 25

Structural shift in gross output[a] allocation within industry[b] (Percentage points)

1979,1980,1981 compared with average 1976-1980	Branches														
	Electricity	Fuel	Ferrous metallurgy	Non ferrous	Engineering	Chemicals	Construct. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria															
1979	0.0	0.1	0.1	.	0.5	0.1	0.1	-0.1	-0.1	0.0	-0.1	-0.2	-0.1	0.0	-0.6
1980	0.2	0.2	0.0	.	1.1	1.6	0.1	-0.1	-0.1	0.0	-0.1	-0.2	-0.1	0.0	-1.8
1981	0.3	0.0	0.0	.	1.7	0.7	0.0	-0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	-1.1
Czechoslovakia															
1979	-0.1	-0.1	-0.1	0.1	0.7	0.0	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
1980	0.0	-0.3	-0.3	0.0	1.1	0.1	-0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.3
1981	0.0	-0.4	-0.3	0.0	2.0	0.1	-0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	-0.4
German Dem.Rep.															
1979	0.1	-0.1	-0.1	-0.1	0.7	0.1	0.0	0.1	0.0	0.0	-0.1	0.0	0.0	0.0	-0.3
1980	0.0	-0.1	-0.2	-0.1	1.6	-0.1	-0.1	-0.1	0.0	0.0	-0.2	-0.1	-0.1	0.0	-0.7
1981	0.0	-0.2	-0.1	0.0	2.7	-0.2	-0.2	-0.2	-0.1	0.0	0.0	-0.1	-0.1	-0.1	-1.1
Hungary															
1979	0.0	-0.1	-0.1	-0.1	0.5	0.4	0.0	0.0	-0.1	0.0	-0.2	-0.2	0.0	0.0	0.2
1980	0.2	-0.3	-0.4	0.0	-0.7	0.8	0.0	0.2	0.0	0.2	0.0	0.1	-0.2	0.1	0.4
1981	0.3	-0.6	-0.9	0.0	0.1	1.1	-0.1	0.1	0.0	0.2	0.0	0.1	-0.1	0.2	0.3
Poland															
1979	0.0	0.0	-0.1	-0.1	0.9	-0.1	-0.2	-0.2	-0.1	0.0	-0.2	-0.1	0.0	0.0	-0.1
1980	0.1	-0.2	-0.1	-0.1	1.1	0.0	-0.2	-0.1	-0.1	0.1	-0.3	0.0	0.0	0.0	-0.5
1981															
Romania															
1979	-0.1	-0.2	0.1	-0.1	1.2	-0.4	0.2	-0.1	0.0	0.0	-0.1	-0.1	0.0	0.0	-0.3
1980	-0.2	-0.3	-0.4	-0.1	2.2	-0.4	0.2	-0.2	0.0	0.0	0.1	-0.1	0.0	-0.1	-1.0
1981	-0.2	-0.4	-0.2	-0.1	2.2	-0.3	0.1	-0.2	-0.1	0.1	0.4	0.1	0.1	-0.1	-1.4
Soviet Union															
1979	0.0	-0.2	.	.	1.1	0.0	-0.2	-0.2	-0.1	0.0	-0.2	0.2	0.0	.	0.0
1980	0.0	-0.2	.	.	2.0	0.2	-0.2	-0.2	-0.1	0.0	-0.2	-0.6	-0.2	.	-1.7
1981	0.0	-0.3	.	.	2.8	0.4	-0.3	-0.3	-0.1	0.0	-0.4	0.3	0.0	.	-0.8

Sources : CMEA Statistical Yearbook a) At constant prices (1970) b) CMEA branch classification of industry

Table 26

Structural shift in employment[a] allocation within industry[b] (Percentage points)

1979,1980,1981 compared with average 1976-1980	Branches														
	Electricity	Fuel	Ferrous metallurgy	Non ferrous	Engineering	Chemicals	Construct. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria															
1979	0.1	-0.1	0.2	.	0.0	0.1	0.1	-0.2	0.0	0.1	-0.2	-0.1	-0.1	0.0	-0.2
1980	0.3	0.1	0.2	.	-0.2	0.4	0.1	-0.3	0.0	0.1	-0.4	0.0	-0.1	0.0	-0.5
1981	0.5	0.2	0.2	.	-0.4	0.5	0.2	-0.3	0.0	0.1	-0.5	0.0	-0.1	0.0	-0.6
Czechoslovakia															
1979	0.0	0.1	0.1	0.0	0.2	0.0	0.0	-0.1	0.0	0.0	-0.1	-0.2	-0.1	0.0	0.0
1980	0.1	0.1	0.1	-0.1	0.2	0.0	0.0	0.0	0.0	0.0	-0.1	-0.2	-0.1	0.0	-0.1
1981	0.1	0.1	0.1	-0.1	0.2	0.0	0.0	-0.1	0.1	0.0	-0.1	-0.2	-0.1	0.0	-0.1
German Dem.Rep.															
1979	0.1	0.0	0.0	0.0	-0.1	0.0	0.0	0.1	0.0	0.0	-0.2	-0.1	0.0	0.0	0.2
1980	0.0	0.0	0.0	-0.1	0.4	0.0	-0.1	0.0	0.0	0.0	-0.2	-0.1	-0.1	0.0	0.1
1981	0.0	0.1	0.1	-0.1	0.4	0.0	-0.1	0.1	0.0	0.0	-0.3	-0.2	-0.1	0.0	-0.1
Hungary															
1979	0.0	0.0	0.0	0.0	0.2	0.1	0.0	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.2
1980	-0.1	0.0	-0.1	0.0	-0.7	-0.1	-0.1	-0.2	-0.1	0.0	-0.4	0.1	-0.1	0.0	0.1
1981	-0.1	0.0	-0.1	-0.1	-0.7	0.0	-0.1	-0.2	-0.1	0.0	-0.5	0.1	-0.1	0.0	0.2
Poland															
1979	0.1	0.4	0.1	0.0	0.6	0.0	-0.1	-0.1	0.0	0.0	-0.1	0.0	0.0	0.0	0.0
1980	0.0	0.0	-0.2	0.0	-1.2	-0.4	-0.4	-0.4	-0.1	-0.1	-0.8	-0.3	-0.1	-0.1	-0.6
1981	0.0	0.1	-0.2	-0.1	-1.8	-0.4	-0.6	-0.6	-0.1	-0.1	-1.1	-0.1	-0.2	-0.1	-0.4
Romania															
1979	0.0	0.0	0.0	-0.1	0.8	0.1	-0.1	-0.4	0.0	0.1	-0.1	-0.1	0.0	0.0	-0.2
1980	-0.1	0.2	0.2	-0.1	1.2	-0.1	-0.2	-0.6	-0.1	0.1	0.0	-0.1	0.0	0.0	-0.4
1981	-0.1	0.1	0.5	-0.1	1.3	0.0	-0.3	-0.7	-0.1	0.1	0.2	-0.3	0.1	0.0	-0.8

Sources : CMEA Statistical Yearbook

a) Wage and salary earners engaged
b) CMEA branch classification of industry

Table 27

Structural shift in investment[a] allocation within industry[b] (Percentage points)

1979,1980,1981 compared with average 1976-1980	Branches														
	Electricity	Fuel	Ferrous metallurgy	Non ferrous metallurgy	Engineering	Chemicals	Construct. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria															
1979	0.5	0.2	0.5	.	1.0	-0.1	0.8	-0.9	0.1	-0.2	-1.1	0.0	0.0	0.2	-0.2
1980	-0.2	0.7	1.6	.	4.3	-4.1	-0.3	-0.3	0.2	-0.1	-1.2	0.0	0.1	-0.1	-0.8
1981	-1.3	0.6	2.2	.	7.6	-2.4	-3.3	-0.9	0.7	0.0	-0.2	0.1	0.1	-0.2	-3.0
Czechoslovakia															
1979	0.1	2.3	1.2	0.4	-0.3	-2.2	-0.5	-0.2	0.5	0.0	-0.1	0.0	0.1	-0.3	-0.4
1980	0.2	1.6	-1.5	0.5	0.1	-1.9	-0.4	-0.2	2.5	0.0	-0.3	0.0	0.0	0.0	-0.6
1981	0.1	2.3	-2.1	0.2	1.2	-1.2	-1.1	0.2	1.5	0.2	-0.5	0.2	0.0	-0.5	-1.2
German Dem.Rep.															
1979	.	.	.	.	0.9	-0.2	0.0	.	.	.	0.1	.	.	.	-0.9
1980	.	.	.	.	1.8	-1.8	0.1	.	.	.	-0.3	.	.	.	-1.4
1981	.	.	.	.	5.2	-1.2	0.0	.	.	.	-0.4	.	.	.	-1.6
Hungary															
1979	1.3	0.0	1.4	0.7	-0.5	-2.3	-0.1	-0.1	-0.2	0.2	-1.0	-0.1	-0.1	0.3	0.7
1980	4.4	1.8	2.6	0.7	-1.0	-3.1	-1.1	-0.1	-0.4	-0.1	-1.3	0.1	-0.2	0.0	-1.7
1981	3.8	2.7	1.7	0.6	-2.1	-1.7	-1.8	0.0	-0.4	-0.4	-0.9	0.2	-0.1	0.2	-1.8
Poland															
1979	0.8	0.1	-1.8	-0.3	0.8	1.4	-0.9	-0.6	0.3	0.4	-0.4	0.0	-0.2	0.0	0.2
1980	3.7	8.1	-2.7	-1.0	-2.5	-1.7	-1.1	-0.8	-0.3	0.0	-0.9	0.0	-0.1	0.0	-0.2
1981	3.0	7.3	-5.5	-1.6	-0.8	-1.9	-1.2	-0.4	-0.7	-0.2	-1.0	0.1	-0.1	0.0	2.7
Romania															
1979	-1.1	-1.1	0.3	-0.4	1.5	2.4	0.2	-0.4	0.2	0.2	-0.3	-0.1	0.0	0.0	-0.8
1980	-0.9	0.2	0.6	-0.6	4.1	-1.2	-0.1	-0.8	0.0	0.0	0.4	-0.1	-0.1	0.0	-1.0
1981	1.6	2.0	-1.4	-0.7	1.6	-0.4	-0.9	-0.7	-0.1	-0.1	-0.2	-0.2	-0.1	0.0	0.0
Soviet Union															
1979	-0.3	1.1	0.1	.	0.0	-0.2	-0.1	-0.1	-0.1	0.1	-0.1	0.0	-0.1	0.0	0.0
1980	0.6	2.1	-0.7	.	0.4	-1.4	-0.4	-0.2	-0.3	-0.1	0.0	0.0	-0.1	0.1	0.0
1981	0.0	4.1	-0.6	.	0.4	-2.1	-0.4	-0.2	-0.2	-0.1	0.0	0.0	-0.1	0.0	0.4

Sources : CMEA Statistical Yearbook

a) At "constant" prices (1970); b) CMEA branch classification of industry

Table 28

Shares of metallurgy and chemicals in total industry [a] (Percentage share and rubber)

	Ferrous metallurgy			Non-ferrous metallurgy			Chemicals and rubber			Ratios		
	Gross output b)	Employ-ment c)	Gross invest-ment b)	Gross output b)	Employ-ment c)	Gross invest-ment b)	Gross output b)	Employ-ment c)	Gross invest-ment b)	Gross output b)	Employ-ment c)	Gross invest-ment b)
	1	2	3	4	5	6	7	8	9	10	11	12
Bulgaria												
1976-1980d)	3.7	3.0	4.7	.	.	.	9.3	6.2	13.3	2.51	2.07	2.83
1979	3.8	3.2	5.2	.	.	.	9.4	6.3	13.2	2.47	1.97	2.54
1980	3.7	3.2	6.3	.	.	.	10.9	6.6	9.2	2.95	2.06	1.46
1981	3.7	3.2	6.9	.	.	.	10.0	6.7	10.9	2.70	2.09	1.58
Czechoslovakia												
1976-1980d)	8.2	5.9	8.3	2.0	1.5	1.7	8.5	5.1	8.1	0.83	0.69	0.81
1979	8.1	6.0	9.5	2.1	1.5	2.1	8.5	5.1	5.9	0.83	0.68	0.51
1980	7.9	6.0	6.8	2.0	1.4	2.2	8.6	5.1	6.2	0.87	0.69	0.69
1981	7.9	6.0	6.2	2.0	1.4	1.9	8.6	5.1	6.9	0.87	0.69	0.85
German Dem.Rep.												
1976-1980d)	5.3	3.9	.	2.4	1.6	.	11.1	8.5	12.5	1.44	1.55	.
1979	5.2	3.9	.	2.3	1.6	.	11.2	8.5	12.3	1.49	1.55	.
1980	5.1	3.9	.	2.3	1.5	.	11.0	8.5	10.7	1.49	1.57	.
1981	5.2	4.0	.	2.4	1.5	.	10.9	8.5	11.3	1.43	1.55	.
Hungary												
1976-1980d)	7.0	4.7	6.8	3.3	2.1	3.9	12.3	5.9	10.5	1.19	0.87	0.98
1979	6.9	4.7	8.2	3.2	2.1	4.6	12.7	6.0	8.2	1.26	0.88	0.64
1980	6.6	4.7	9.4	3.3	2.1	4.6	13.1	5.8	7.4	1.32	0.85	0.53
1981	6.1	4.6	8.5	3.3	2.0	4.5	13.4	5.9	8.8	1.43	0.89	0.68
Poland												
1976-1980d)	7.0	3.8	10.9	3.6	1.4	3.8	9.4	6.8	11.7	0.89	1.31	0.80
1979	6.9	3.9	9.1	3.5	1.4	3.5	9.3	6.8	13.1	0.89	1.28	1.04
1980	6.9	3.6	8.2	3.5	1.4	2.8	9.4	6.4	10.0	0.90	1.28	0.91
1981	6.3	3.6	5.4	3.3	1.3	2.2	9.5	6.4	9.8	0.99	1.31	1.29

Table 28 (continued)

	1	2	3	4	5	6	7	8	9	10	11	12
Romania												
1976-1980d)	8.0	3.7	11.1	2.5	2.5	3.0	12.1	7.0	15.4	1.15	1.13	1.09
1979	8.1	3.7	11.4	2.4	2.4	2.6	11.7	7.1	17.8	1.11	1.16	1.27
1980	7.6	3.9	11.7	2.4	2.4	2.4	11.7	6.9	14.2	1.17	1.10	1.01
1981	7.8	4.2	9.7	2.4	2.4	2.3	11.8	7.0	15.0	1.16	1.06	1.25
Soviet Union												
1976-1980d)	.	.	6.3	.	.	.	7.8	.	10.1	.	.	1.60
1979	.	.	6.4	.	.	.	7.8	.	9.9	.	.	1.55
1980	.	.	5.6	.	.	.	8.0	.	8.7	.	.	1.55
1981	.	.	5.7	.	.	.	8.2	.	8.0	.	.	1.40
European CMEA countries d)												
1976-1980d)	6.5e)	4.2e)	8.0f)	2.8e)h)	1.8e)h)	3.1efh)	10.1	6.6e)	11.7	1.55	1.57	1.46
1979	6.5e)	4.2e)	8.3f)	2.7e)h)	1.5e)h)	3.2efh)	10.0	6.6e)	11.5	1.55	1.57	1.39
1980	6.3e)	4.2e)	8.0f)	2.7e)h)	1.8e)h)	3.0efh)	10.4	6.6e)	9.5	1.65	1.57	1.19
1981	6.2e)	4.3e)	7.1f)	2.7e)h)	1.7e)h)	2.7efh)	10.3	6.6e)	10.1	1.66	1.53	1.42

Sources : CMEA Statistical Yearbook

a) CMEA branch classification of industry
b) At "constant" prices (1970)
c) Wage and salary earners engaged
d) Arithmetic average
e) Excluding Soviet Union
f) Excluding German Dem. Rep.
h) Excluding Bulgaria

Table 29

Shares of non-metalic mineral products in total industry[a)]
(Percentage share)

		Construction materials			Glass and china		
		Gross output b)	Employment c)	Gross investment b)	Gross output b)	Employment c)	Gross investment b)
Bulgaria	1976-1980d)	3.9	4.7	8.5	0.9	1.9	0.9
	1979	4.0	4.8	9.3	0.9	2.0	0.7
	1980	4.0	4.8	8.2	0.9	2.0	0.8
	1981	3.9	4.9	5.2	0.9	2.0	0.9
Czechoslovakia	1976-1980d)	3.4	3.9	4.7	1.5	3.0	1.3
	1979	3.3	3.9	4.2	1.5	3.0	1.3
	1980	3.3	3.9	4.3	1.5	3.0	1.3
	1981	3.3	3.9	3.6	1.5	3.0	1.5
German Dem.Rep.	1976-1980d)	2.0	3.0	3.6	1.1	2.0	.
	1979	2.0	3.0	3.6	1.1	2.0	.
	1980	1.9	2.9	3.7	1.1	2.0	.
	1981	1.8	2.9	3.6	1.1	2.0	.
Hungary	1976-1980d)	1.9	2.8	4.6	1.0	1.9	1.5
	1979	1.9	2.8	4.5	1.0	1.9	1.7
	1980	1.9	2.7	3.5	1.2	1.9	1.4
	1981	1.8	2.7	2.8	1.2	1.9	1.1
Poland	1976-1980d)	2.7	4.1	3.9	1.0	1.9	1.0
	1979	2.5	4.0	3.0	1.0	1.9	1.4
	1980	2.5	3.7	2.8	1.1	1.8	1.0
	1981	2.4	3.5	2.7	1.2	1.8	0.8
Romania	1976-1980d)	3.5	4.5	4.4	0.5	1.6	0.6
	1979	3.7	4.4	4.6	0.5	1.7	0.8
	1980	3.7	4.3	4.3	0.5	1.7	0.6
	1981	3.6	4.2	3.5	0.6	1.7	0.5
Soviet Union	1976-1980b)	3.9	.	4.5	0.5	.	0.4
	1979	3.7	.	4.4	0.5	.	0.3
	1980	3.7	.	4.1	0.5	.	0.3
	1981	3.6	.	4.1	0.5	.	0.3
European CMEA countries d)	1976-1980d)	3.0	3.8e)	4.9	0.9	2.1e)	1.0f)
	1979	2.8	3.8e)	4.8	0.9	2.1e)	1.0f)
	1980	3.0	3.7e)	4.4	1.0	2.1e)	0.9f)
	1981	2.9	3.7e)	3.6	1.0	2.1e)	0.9f)

Sources : CMEA Statistical Yearbook

a) CMEA branch classification of industry
b) At constant prices (1970)
c) Wage and salary earners engaged
d) Arithmetic average
e) Excluding Soviet Union
f) Excluding German Dem.Rep.

Table 30

Shares of wood and wood processing in total industry[a] (Percentage share)

		Wood and wood processing			Pulp and paper			Printing		
		Gross output b)	Employment c)	Gross investment b)	Gross output b)	Employment c)	Gross investment b)	Gross output b)	Employment c)	Gross investment b)
		1	2	3	4	5	6	7	8	9
Bulgaria	1976-1980d)	2.8	5.9	2.6	1.1	1.4	1.0	0.5	0.9	0.4
	1979	2.7	5.7	1.7	1.0	1.4	1.1	0.5	0.9	0.6
	1980	2.7	5.6	2.3	1.0	1.4	1.2	0.5	0.9	0.3
	1981	2.7	5.6	1.7	1.1	1.4	1.7	0.5	0.9	0.2
Czechoslovakia	1976-1980d)	4.2	4.8	3.0	1.8	1.7	2.9	0.6	1.2	0.8
	1979	4.3	4.7	2.8	1.8	1.7	3.4	0.6	1.2	0.5
	1980	4.3	4.8	2.8	1.8	1.7	5.4	0.6	1.2	0.8
	1981	4.2	4.7	3.2	1.8	1.8	4.4	0.6	1.2	0.3
German Dem.Rep.	1976-1980d)	3.0	3.8	.	1.6	1.6	.	0.7	1.1	.
	1979	3.1	3.9	.	1.6	1.6	.	0.7	1.1	.
	1980	2.9	3.8	.	1.6	1.6	.	0.7	1.1	.
	1981	2.8	3.9	.	1.5	1.6	.	0.6	1.1	.
Hungary	1976-1980d)	2.9	3.5	1.1	0.9	1.0	1.1	1.0	1.2	1.3
	1979	2.9	3.4	1.0	0.8	1.0	0.9	1.0	1.2	1.6
	1980	3.1	3.3	1.0	0.9	0.9	0.7	1.1	1.2	1.3
	1981	3.0	3.3	1.1	0.9	0.9	0.7	1.2	1.2	1.5
Poland	1976-1980d)	3.8	4.6	2.2	1.1	1.1	2.5	0.4	1.1	0.3
	1979	3.6	4.5	1.6	1.0	1.1	2.8	0.4	1.1	0.3
	1980	3.7	4.2	1.4	1.0	1.0	2.2	0.4	1.0	0.3
	1981	3.9	4.0	1.8	1.0	1.0	1.8	0.4	1.0	0.3
Romania	1976-1980d)	4.3	10.1	2.5	1.1	1.2	1.2	0.2	0.6	0.1
	1979	4.2	9.7	2.1	1.1	1.2	1.4	0.2	0.6	0.1
	1980	4.1	9.5	1.7	1.1	1.1	1.2	0.1	0.6	0.1
	1981	4.1	9.4	1.8	1.0	1.1	1.1	0.1	0.6	0.1

Table 30 (continued)

		1	2	3	4	5	6	7	8	9
Soviet Union	1976-1980d)	3.5	.	2.8	0.8	.	1.4	.	.	0.4
	1979	3.3	.	2.7	0.7	.	1.3	.	.	0.4
	1980	3.3	.	2.6	0.7	.	1.1	.	.	0.5
	1981	3.2	.	2.6	0.7	.	1.2	.	.	0.4
European CMEA	1976-1980d)	3.5	5.5e)	2.4f)	1.2	1.3e)	1.7f)	0.6e)	1.0e)	0.6f)
	1979	3.4	5.3e)	2.0f)	1.1	1.3e)	1.8f)	0.6e)	1.0e)	0.6f)
	1980	3.4	5.2e)	2.0f)	1.1	1.3e)	2.0f)	0.6e)	1.0e)	0.6f)
	1981	3.4	5.2e)	2.0f)	1.1	1.3e)	1.8f)	0.6e)	1.0e)	0.5f)

Sources : CMEA Statistical Yearbook

a) CMEA branch classification of industry
b) At "constant" prices (1970)
c) Wage and salary earners engaged
d) Arithmetic average
e) Excluding Soviet Union
f) Excluding German Dem. Rep.

Table 31

Shares of textile and leather processing in total industry[a] (Percentage share)

		Textile			Clothing			Leather, fur and footwear		
		Gross output b)	Employment c)	Gross investment b)	Gross output b)	Employment c)	Gross investment b)	Gross output b)	Employment c)	Gross investment b)
		1	2	3	4	5	6	7	8	9
Bulgaria	1976-1980d)	8.2	10.2	3.2	4.0	5.0	0.3	1.5	2.4	0.3
	1979	8.1	10.0	2.1	3.8	4.9	0.3	1.4	2.3	0.3
	1980	8.1	9.8	2.0	3.8	5.0	0.3	1.4	2.3	0.4
	1981	8.1	9.7	3.0	3.9	5.0	0.4	1.5	2.3	0.4
Czechoslovakia	1976-1980d)	4.8	8.3	3.8	1.7	4.0	0.5	2.3	3.9	0.9
	1979	4.8	8.2	3.7	1.7	3.8	0.5	2.3	3.8	1.0
	1980	4.8	8.2	3.5	1.7	3.8	0.5	2.3	3.8	0.9
	1981	4.9	8.2	3.3	1.7	3.8	0.7	2.3	3.8	0.9
German Dem. Rep.	1976-1980d)	5.7	7.3	2.8	1.8	3.4	.	1.6	2.3	.
	1979	5.6	7.1	2.9	1.8	3.3	.	1.6	2.3	.
	1980	5.5	7.1	2.5	1.7	3.3	.	1.5	2.2	.
	1981	5.4	7.0	2.4	1.7	3.2	.	1.5	2.2	.
Hungary	1976-1980d)	4.5	7.3	3.6	2.4	4.5	0.6	1.6	3.7	0.8
	1979	4.3	7.2	2.6	2.2	4.5	0.5	1.6	3.7	0.7
	1980	4.5	6.9	2.3	2.5	4.6	0.7	1.4	3.6	0.6
	1981	4.5	6.8	2.7	2.5	4.6	0.8	1.5	3.6	0.7
Poland	1976-1980d)	7.0	9.8	3.5	3.3	4.5	0.5	1.8	3.2	0.6
	1979	6.8	9.7	3.1	3.2	4.5	0.5	1.8	3.2	0.4
	1980	6.7	9.0	2.6	3.3	4.2	0.5	1.8	3.1	0.5
	1981	6.6	8.7	2.5	3.6	4.4	0.6	1.9	3.0	0.5
Romania	1976-1980d)	7.2	11.6	3.8	4.9	6.0	0.4	1.7	3.6	0.4
	1979	7.1	11.5	3.5	4.8	6.1	0.3	1.7	3.6	0.4
	1980	7.3	11.6	4.2	4.8	6.1	0.3	1.7	3.6	0.3
	1981	7.6	11.8	3.6	5.0	5.9	0.2	1.8	3.7	0.3

Table 31 (continued)

		1	2	3	4	5	6	7	8	9
Soviet Union	1976-1980d)	8.3	.	2.6	3.9	.	0.3	1.5	.	0.5
	1979	8.1	.	2.5	4.1	.	0.3	1.5	.	0.4
	1980	8.1	.	2.6	3.3	.	0.3	1.3	.	0.4
	1981	7.9	.	2.6	4.2	.	0.3	1.5	.	0.4
European CMEA countries d)	1976-1980d)	6.5	9.1e)	3.3	3.1	4.6e)	0.4f)	1.7	3.2e)	0.6f)
	1979	6.4	9.0e)	2.9	3.1	4.5e)	0.4f)	1.7	3.2e)	0.5f)
	1980	6.5	8.8e)	2.8	3.0	4.5e)	0.4f)	1.6	3.1e)	0.5f)
	1981	6.4	8.7e)	2.9	3.2	4.5e)	0.5f)	1.7	3.1e)	0.5f)

Sources : CMEA Statistical Yearbook

a) CMEA branch classification of industry
b) At "constant" prices (1970)
c) Wage and salary earners engaged
d) Arithmetic average
e) Excluding Soviet Union
f) Excluding German Dem. Rep.

Table 32

Share of food processing in total industry[a)]
(Percentage share)

		Gross output b)	Employment c)	Gross investment b)
Bulgaria	1976-1980d)	20.5	11.7	9.3
	1979	19.9	11.5	7.3
	1980	18.7	11.2	8.5
	1981	19.4	11.1	6.3
Czechoslovakia	1976-1980d)	13.5	7.9	7.0
	1979	13.4	7.9	6.6
	1980	13.2	7.8	6.4
	1981	13.1	7.8	5.8
German Dem.Rep.	1976-1980d)	16.3	7.6	6.7
	1979	16.0	7.8	5.8
	1980	15.6	7.7	5.3
	1981	15.2	7.5	5.1
Hungary	1976-1980d)	14.8	11.2	14.3
	1979	14.6	11.4	15.0
	1980	15.2	11.3	12.6
	1981	15.1	11.4	12.5
Poland	1976-1980d)	15.4	10.9	8.6
	1979	15.3	10.9	8.8
	1980	14.9	10.3	8.4
	1981	15.6	10.5	11.3
Romania	1976-1980d)	12.4	7.3	5.3
	1979	12.1	7.1	4.5
	1980	11.4	6.9	4.3
	1981	11.0	6.5	5.3
Soviet Union	1976-1980d)	17.0	.	6.8
	1979	17.0	.	6.8
	1980	15.3	.	6.8
	1981	16.2	.	6.4
European CMEA countries	1976-1980d)	15.7	9.4e)	8.3
	1979	15.5	9.4e)	7.8
	1980	14.8	9.2e)	7.5
	1981	15.1	9.1e)	7.5

Sources : CMEA Statistical Yearbook

a) CMEA branch classification of industry
b) At constant prices (1970)
c) Wage and salary earners engaged
d) Arithmetic average
e) Excluding Soviet Union

Table 33

Branch specialization[a] of industry[b] - gross output[c]

	Branches														
	Electricity	Fuel	Ferrous metallurgy	Non-ferrous metallurgy	Engineering	Chemicals	Constr. materials	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
Bulgaria															
1976-1980d)	0.71	0.78	0,57	.	0.90	0.92	1.30	0.80	0.92	1.00	1.26	1.29	0.88	0.83	1.31
1980	0.76	0.85	0.59	.	0.90	1.05	1.33	0.79	0.91	0.90	1.25	1.27	0.88	0.83	1.26
1981	0.77	0.83	0.60	.	0.91	0.97	1.34	0.79	1.00	0.90	1.27	1.22	0.88	0.83	1.28
Czechoslovakia															
1976-1980d)	0.79	1.09	1.26	0.71	1.07	0.84	1.13	1.20	1.50	1.67	0.74	0.55	1.35	1.00	0.86
1980	0.79	1.08	1.25	0.74	1.07	0.83	1.10	1.26	1.64	1.50	0.74	0.57	1.44	1.00	0.89
1981	0.77	1.08	1.27	0.74	1.08	0.83	1.14	1.24	1.64	1.50	0.77	0.53	1.35	1.00	0.87
German Dem.Rep.															
1976-1980d)	1.56	1.00	0.82	0.86	1.00	1.10	0.67	0.86	1.33	1.22	0.88	0.58	0.94	1.17	1.04
1980	1.56	1.02	0.81	0.85	1.02	1.06	0.63	0.85	1.45	1.10	0.85	0.57	0.94	1.17	1.05
1981	1.51	1.02	0.84	0.89	1.03	1.06	0.62	0.82	1.36	1.10	0.84	0.53	0.88	1.10	1.01
Hungary															
1976-1980d)	1.71	1.44	1.08	1.18	0.97	1.22	0.63	0.83	0.75	1.11	0.69	0.77	0.94	1.67	0.94
1980	1.76	1.43	1.05	1.22	0.92	1.26	0.63	0.91	0.82	1.20	0.69	0.83	0.88	1.83	1.03
1981	1.74	1.40	0.98	1.22	0.93	1.30	0.62	0.88	0.82	1.20	0.70	0.78	0.88	2.00	1.00
Poland															
1976-1980d)	0.68	1.06	1.08	1.29	1.03	0.93	0.90	1.09	0.92	1.11	1.08	1.07	1.06	0.67	0.98
1980	0.71	1.06	1.10	1.30	1.03	0.90	0.83	1.09	0.91	1.10	1.03	1.10	1.13	0.67	1.01
1981	0.74	1.10	1.02	1.22	0.99	0.92	0.83	1.15	0.91	1.20	1.03	1.13	1.12	0.67	1.03
Romania															
1976-1980d)	0.71	0.56	1.23	0.89	1.05	1.20	1.17	1.23	0.92	0.56	1.11	1.58	1.00	0.33	0.79
1980	0.65	0.53	1.21	0.89	1.08	1.13	1.23	1.21	1.00	0.50	1.12	1.60	1.06	0.17	0.77
1981	0.63	0.52	1.26	0.89	1.07	1.15	1.24	1.21	0.91	0.60	1.19	1.56	1.06	0.17	0.73
Soviet Union															
1976-1980d)	0.85	1.09	.	.	0.97	0.77	1.30	1.00	0.67	0.56	1.28	1.26	0.88	.	1.08
1980	0.85	1.09	.	.	0.99	0.77	1.23	0.97	0.64	0.50	1.25	1.10	0.81	.	1.03
1981	0.83	1.10	.	.	1.00	0.80	1.24	0.94	0.64	0.50	1.23	1.31	0.88	.	1.07

Sources: CMEA Statistical Yearbook

a) Ratios of individual countries shares to arithmetic average shares of CMEA countries

b) CMEA branch classification of industry c) At constant producer prices d) Arithmetic average

Table 34

Branch specialization[a] of industry[b] - employment[c]

	Branches														
	Electricity	Fuel	Ferrous metallurgy	Non-ferrous metallurgy	Engineering	Chemicals	Constr. materials	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
Bulgaria															
1976-1980d)	0.95	0.67	0.71	.	0.77	0.94	1.24	1.07	1.08	0.90	1.12	1.09	0.75	0.90	1.24
1980	1.10	0.68	0.76	.	0.77	1.00	1.30	1.08	1.08	0.95	1.11	1.11	0.74	0.90	1.22
1981	1.20	0.69	0.74	.	0.76	1.02	1.32	1.08	1.08	0.95	1.11	1.11	0.74	0.90	1.22
Czechoslovakia															
1976-1980d)	0.90	1.05	1.40	0.83	1.15	0.77	1.03	0.87	1.31	1.43	0.91	0.87	1.22	1.20	0.84
1980	0.95	1.05	1.43	0.78	1.15	0.77	1.05	0.92	1.31	1.43	0.93	0.84	1.23	1.20	0.85
1981	0.95	1.05	1.40	0.82	1.16	0.77	1.05	0.90	1.38	1.43	0.94	0.84	1.23	1.20	0.86
German Dem.Rep.															
1976-1980d)	1.35	0.98	0.93	0.89	1.20	1.29	0.79	0.69	1.23	0.95	0.80	0.74	0.72	1.10	0.81
1980	1.35	0.97	0.93	0.83	1.21	1.29	0.78	0.73	1.23	0.95	0.81	0.73	0.71	1.10	0.84
1981	1.35	0.98	0.93	0.88	1.22	1.29	0.78	0.75	1.23	0.95	0.80	0.71	0.71	1.10	0.82
Hungary															
1976-1980d)	1.10	1.17	1.12	1.17	0.91	0.89	0.74	0.64	0.77	0.90	0.80	0.98	1.16	1.20	1.19
1980	1.05	1.15	1.10	1.17	0.89	0.88	0.73	0.63	0.69	0.90	0.78	1.02	1.16	1.20	1.23
1981	1.05	1.15	1.07	1.18	0.89	0.89	0.73	0.63	0.69	0.90	0.78	1.02	1.16	1.20	1.25
Poland															
1976-1980d)	0.85	1.55	0.90	0.78	0.98	1.03	1.08	0.84	0.85	0.90	1.08	0.98	1.00	1.10	1.16
1980	0.85	1.53	0.86	0.78	0.94	0.97	1.00	0.81	0.77	0.86	1.02	0.93	1.00	1.00	1.12
1981	0.85	1.54	0.84	0.76	0.93	0.97	0.95	0.77	0.77	0.86	1.00	0.98	0.97	1.00	1.15
Romania															
1976-1980d)	0.70	0.60	0.88	1.39	1.00	1.06	1.18	1.84	0.92	0.76	1.27	1.35	1.13	0.60	0.78
1980	0.65	0.63	0.93	1.33	1.04	1.05	1.16	1.83	0.85	0.81	1.32	1.36	1.16	0.60	0.75
1981	0.65	0.61	0.98	1.41	1.04	1.06	1.14	1.81	0.85	0.81	1.36	1.31	1.19	0.60	0.71

Sources : CMEA Statistical Yearbook

a) Ratios of individual countries shares to arithmetic average shares of CMEA countries
b) CMEA branch classification of industry
c) Wage and salary earners engaged
d) Arithmetic average

Table 35

Branch specialization[a] of industry[b] - gross investment[c]

	Branches														
	Electricity	Fuel	Ferrous metallurgy	Non-ferrous metallurgy	Engineering	Chemicals	Constr. materials	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
Bulgaria															
1976-1980d)	1.09	0.63	0.59	.	1.01	1.14	1.74	1.08	0.59	0.75	1.07	0.60	0.50	0.20	1.08
1980	0.97	0.58	0.79	.	1.15	0.97	1.86	1.15	0.60	0.73	0.80	0.60	0.80	0.15	1.10
1981	0.90	0.55	0.97	.	1.24	1.08	1.44	0.85	0.94	0.90	1.15	0.80	0.80	0.11	0.81
Czechoslovakia															
1976-1980d)	1.16	0.81	1.04	0.55	0.94	0.69	0.96	1.25	1.71	1.08	1.27	1.00	1.50	0.40	0.81
1980	1.06	0.78	0.85	0.73	0.90	0.65	0.98	1.40	2.70	1.18	1.40	1.00	1.80	0.40	0.83
1981	1.07	0.79	0.87	0.70	0.92	0.68	1.00	1.60	2.44	1.50	1.27	1.40	1.80	0.16	0.74
German Dem.Rep.															
1976-1980d)					0.93	1.07	0.74				0.93				0.78
1980					0.96	1.13	0.84				1.00				0.69
1981					1.07	1.12	1.00				0.92				0.65
Hungary															
1976-1980d)	1.30	1.08	0.85	1.26	0.79	0.90	0.94	0.46	0.65	1.50	1.09	1.50	1.33	0.17	1.72
1980	1.50	1.03	1.18	1.53	0.71	0.78	0.80	0.50	0.35	1.27	0.92	1.40	1.20	0.65	1.64
1981	1.46	1.03	1.20	1.67	0.65	0.87	0.78	0.55	0.39	1.10	1.04	1.60	1.40	0.79	1.60
Poland															
1976-1980d)	0.81	1.01	1.36	1.23	0.99	1.00	0.80	0.92	1.47	1.00	1.06	1.25	1.00	0.50	1.04
1980	1.00	1.37	1.03	0.93	0.97	1.05	0.64	0.70	1.10	0.91	1.04	1.00	1.00	0.15	1.09
1981	0.96	1.25	0.76	0.81	1.00	0.97	0.75	0.90	1.00	0.80	0.96	1.20	1.00	0.16	1.45
Romania															
1976-1980d)	0.94	0.93	1.39	0.97	1.13	1.32	0.90	1.04	0.71	0.60	1.15	1.00	0.67	0.17	0.64
1980	0.78	0.80	1.46	0.80	1.26	1.49	0.98	0.85	0.60	0.55	1.68	0.60	0.60	0.05	0.56
1981	0.97	0.87	1.37	0.85	1.11	1.49	0.97	0.90	0.61	0.50	1.38	0.40	0.60	0.05	0.68
Soviet Union															
1976-1980d)	0.70	1.56	0.79	.	1.08	0.86	0.92	1.17	0.82	0.40	0.79	0.75	0.83	0.67	0.82
1980	0.68	1.46	0.70	.	1.05	0.92	0.93	1.30	0.55	0.33	0.93	0.75	0.80	0.83	0.91
1981	0.64	1.51	0.80	.	1.02	0.79	1.14	1.30	0.67	0.33	0.90	0.60	0.80	0.80	0.85

Sources: CMEA Statistical Yearbook

a) Ratios of individual countries shares to arithmetic average shares of CMEA countries

b) CMEA branch classification of industry; c) At constant prices (1970); d) Arithmetic average

Table 36

Contribution of labour productivity[a] to the growth of industrial output (Percentage shares)

		Branches b)													
		Electricity	Fuel	Ferrous metallurgy	Non ferrous metallurgy	Engineering	Chemicals	Construct. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	[illegible]
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria	1976-80	15	73	74	.	84	68	82	200	-4	70	107	80	173	74	149
	1980	-24	8	231	.	94	53	197	126	57	72	112	-12	88	98	39
	1981	12	-390	90	.	81	12	47	49	40	68	78	51	53	95	36
Czecho-slovakia	1976-80	46	64	93	63	82	88	91	88	87	97	116	139	118	105	107
	1980	72	214	100	.	84	90	88	89	53	86	115	88	79	79	100
	1981	-58	00	100	00	86	53	100	-100	77	135	78	92	100	122	100
German Dem. Rep.	1976-80	52	90	81	91	83	93	67	78	104	83	133	147	108	105	43
	1980	0	88	65	94	96	88	233	.	113	102	146	219	137	118	110
	1981	77	52	85	320	82	92	-233	58	100	93	154	271	103	00	75
Hungary	1976-80	115	164	200	147	129	111	150	167	135	98	246	115	91	108	84
	1980	177	52	76	371	40	344	-62	236	733	102	283	62	66	125	271
	1981	133	86	18	163	151	121	-86	318	107	115	191	174	109	119	145
Poland	1976-80	90	15	77	58	83	109	300	127	300	90	163	115	100	113	100
	1980	60	159	.	425	.	.	-200	215	171	94	-100	88	54	93	.
	1981	133	94	93	53	80	81	84	44	98	97	73	224	66	72	136
Romania	1976-80	104	4	62	79	59	78	57	103	88	81	70	66	69	79	88
	1980	135	-1017	-788	68	65	102	79	82	84	100	76	60	59	78	31
	1981	-643	384	65	-19	100	15	-667	88	378	93	94	143	55	100	-590
Soviet Union	1976-80	50	47	33	.	73	74	100	143	46	65	93	89	95	75	67
	1980	51	65	0	.	83	70	54	126	27	88	100	94	124	.	.
	1981	32	00	00	.	75	89	74	93	95	111	150	87	67	71	94

Sources : CMEA Statistical Yearbook

a) Gross output per employee
b) CMEA branch classification of industry

Table 37

Labour productivity changes in relation to the growth of fixed assets in industry
(Indices of labour productivity growth divided by indices of fixed asset growth)

Average 1976-1980 (average 1971-1975=100)	Bulgaria	Czechoslovakia	Hungary	Poland	Soviet Union
Energy	70.0	75.7	93.0	90.5	86.5
Fuel	103.5	85.0	94.0	80.7	81.4
Metallurgy	116.5	99.2	94.9	75.5	82.8
Engineering	97.9	101.4	91.7	75.3	88.1
Chemicals	97.1	100.9	91.9	92.6	84.7
Construction materials	81.5	87.8	87.6	89.5	79.1
Wood, paper	88.1	84.5	.	85.4	83.7
Textiles	89.3	94.6	93.4	84.4	82.7
Other light industry	76.8	93.5	83.6	85.2	83.0
Food	77.5	87.9	73.6	76.7	80.2
Total industry	90.9	94.3	89.2	81.7	83.2

Sources: Economic Survey of Europe in 1981 ...., p. 250

Table 39

Ratios of gross investment[a] and employment[b] shares in total industry

	Branches[c]														
	Electricity	Fuel	Ferrous metallurgy	Non ferrous	Engineering	Chemicals	Construc. mater.	Wood, wood processing	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Bulgaria															
1976-1980d)	7.21	2.18	1.57	.	0.87	2.15	1.81	0.44	0.71	0.47	0.31	0.06	0.13	0.44	0.79
1980	6.14	2.30	1.97	.	1.04	1.39	1.71	0.41	0.86	0.40	0.20	0.06	0.17	0.33	0.76
1981	5.17	2.22	2.16	.	1.17	1.63	1.06	0.30	1.21	0.45	0.31	0.08	0.17	0.22	0.57
Czechoslovakia															
1976-1980d)	8.11	1.77	1.41	1.13	0.54	1.59	1.21	0.63	1.71	0.43	0.46	0.13	0.23	0.67	0.89
1980	7.79	2.00	1.13	1.57	0.54	1.22	1.10	0.58	3.18	0.43	0.43	0.13	0.24	0.67	0.82
1981	7.74	2.11	1.03	1.36	0.57	1.35	0.92	0.68	2.44	0.50	0.40	0.18	0.24	0.25	0.74
German Dem.Rep.															
1976-1980d)					0.51	1.47	1.20				0.38				0.88
1980					0.55	1.26	1.28				0.35				0.69
1981					0.63	1.33	1.24				0.34				0.68
Hungary															
1976-1980d)	7.45	2.12	1.45	1.86	0.58	1.78	1.64	0.31	1.10	0.79	0.49	0.13	0.22	1.08	1.29
1980	9.90	2.38	2.04	2.19	0.56	1.28	1.30	0.30	0.78	0.74	0.33	0.15	0.17	1.08	1.12
1981	9.62	2.51	1.85	2.25	0.52	1.49	1.04	0.33	0.78	0.58	0.40	0.17	0.19	1.25	1.10
Poland															
1976-1980d)	6.00	1.50	2.87	2.71	0.76	1.72	0.95	0.48	2.27	0.53	0.36	0.11	0.19	0.27	0.79
1980	8.18	2.40	2.28	2.00	0.71	1.56	0.76	0.33	2.20	0.56	0.29	0.12	0.16	0.30	0.82
1981	7.76	2.29	1.50	1.69	0.78	1.53	0.77	0.45	1.80	0.44	0.29	0.14	0.17	0.30	1.08
Romania															
1976-1980d)	8.43	3.54	3.00	1.20	0.75	2.20	0.98	0.25	1.00	0.38	0.33	0.06	0.11	0.17	0.73
1980	8.38	3.41	3.00	1.00	0.84	2.06	1.00	0.18	1.09	0.35	0.36	0.05	0.08	0.17	0.62
1981	10.31	4.00	2.31	0.96	0.77	2.14	0.83	0.19	1.00	0.29	0.31	0.03	0.08	0.17	0.82

Sources : CMEA Statistical Yearbook

a) At constant prices (1970); b) Wage and salary earners engaged; c) CMEA branch classification of industry;
d) Arithmetic average

Table 39

Contribution of changes in the post-1970 levels, productivity and branch allocation of fixed assets to industrial output changes a)

Countries	Periods	Output growth due to changes in		
		Levels	Productivity	Branch allocation
Bulgaria	1970-1975	100.6	-5.9	5.3
	1975-1980	133.0	-45.9	12.9
Czechoslovakia	1970-1975	82.4	12.5	5.1
	1975-1980	130.6	-31.5	0.9
German Dem.Rep.	1970-1975	102.7	-6.7	4.0
	1975-1980b)	103.0	-4.1	1.1
Hungary	1970-1975	131.9	-34.4	2.5
	1975-1980	262.1	-175.0	12.9
Poland	1970-1975	93.2	-3.1	9.9
	1975-1980	255.1	-169.5	14.4
Soviet Union	1970-1975	118.6	-20.1	1.5
	1975-1980	185.8	-79.1	-6.7

Sources : Economic Survey of Europe in 1981, p.257

a) Gross output; the level of disaggregation: 10 branches
b) 1976/1975

Table 40

Growth rate of electricity intensity[a] in industry [b]

(Annual average growth rate in percentage)

		Industry total	Engineering	Chemicals	Construction materials	Textile	Food
Bulgaria	1976-1980	6.7	6.7	4.9	7.3	7.0	8.3
	1980	6.3	4.8	1.2	2.2	-1.4	3.3
	1981	-13.5	.	-3.5	39.4	-14.4	-4.6
Czechoslovakia	1976-1980	2.3	1.4	1.7	2.7	3.7	2.5
	1980	1.1	5.2	-0.2	5.8	2.7	4.1
	1981	-0.8	4.1	1.6	2.1	3.4	2.9
German Dem.Rep.	1976-1980	1.6	1.2	1.2	0.6	1.7	1.4
	1980	2.5	.	1.7	-1.2	.	-2.4
	1981	.	1.7	-1.0	0.7	2.1	3.8
Hungary	1976-1980	5.1	4.6	6.2	6.7	4.2	4.9
	1980	.	.	.	.	.	.
	1981	3.8	4.8	-2.4	4.0	2.0	7.1
Poland	1976-1980	3.0	0.2	0.8	4.4	3.5	3.2
	1980	1.8	-7.2	-2.1	7.6	4.5	-5.7
	1981	-6.8	-5.2	-2.5	-20.5	-7.1	-4.6
Romania	1976-1980	0.6	-0.8	-0.2	-2.1	0.8	-1.7
	1980	3.4	1.6	2.1	7.0	.	2.8
	1981	0.8	1.9	3.7	-2.4	-1.8	3.3
Soviet Union	1976-1980	1.7	1.2	0.4	1.6	2.1	1.4
	1980	1.7	0.6	0.4	1.8	1.9	.
	1981	1.5	.	1.6	0.7	1.4	.

Sources : CMEA Statistical Yearbook

a) Electricity consumption per employee
b) CMEA branch classification of industry

Table 41

Growth of industrial output for fulfilment of 1981 - 1985 plan target (Average annual percentage change)

	Actual		Plan	Growth for fulfilment of 1981-1985 plan target	Plan
	1981	1982	1983	1984-1985	1981-1985
Bulgaria	4.8	4.6	4.8	5.6	5.1
Czechoslovakia	2.1	1.0	2.4	3.7-5.5	2.7-3.4
German Dem.Rep.	4.7	3.2	3.8	6.9	5.1
Hungary	2.8	2.0	1.0-2.0	6.0-6.8	3.5-4.0
Poland	-10.5	-4.0	3.7-4.0a)	.	.
Romania	2.6b)	1.1b)	6.6b)	13.9	7.6
Soviet Union	3.4	2.8	3.2	7.0	4.7

Sources : Economic Survey of Europe in 1982, Chapter three, p.p. 106-107

a) Sales

b) Marketable production

Table 42

The pattern of specialization[a] at the selected branch level of manufacturing

Branches [b]	Period	Bulgaria	Czecho-slovakia	German Dem.Rep.	Hungary	Romania	Soviet Union
Engineering	1980	0.91	1.07	1.02	0.92	1.08	1.00
	1981	0.91	1.07	1.03	0.92	1.06	1.00
	1985c)	0.96-0.96	1.08-1.09	0.99-0.99	0.92-0.92	1.04-1.04	1.01-1.01
Chemicals	1980	1.03	0.81	1.04	1.24	1.10	0.75
	1981	0.95	0.82	1.04	1.28	1.12	0.78
	1985c)	1.09-1.09	0.74-0.74	0.99-1.00	1.23-1.24	1.17-1.17	0.75-0.75
Light manufacturing d)	1980	1.21	0.80	0.79	0.76	1.25	1.15
	1981	1.19	0.79	0.76	0.75	1.27	1.20
	1985c)	1.23-1.23	0.81-0.80	0.79-0.80	0.73-0.74	1.30-1.30	1.14-1.14
Wood and wood processing	1980	0.79	1.24	0.88	0.85	1.26	1.03
	1981	0.79	1.26	0.91	0.85	1.24	0.97
	1985c)	.	1.09-1.24	0.91-0.91	0.79-0.79	1.15-1.15	0.97-0.97
Food processing	1980	1.26	0.89	1.05	1.02	0.77	1.03
	1981	1.29	0.87	1.01	1.01	0.73	1.08
	1985c)	1.25-1.24	0.91-0.91	0.95-0.96	1.04-1.05	0.79-0.79	1.06-1.06

Sources : table 27, page 69

a) Ratio of percentage share of branches in individual countries to the unweigted average of share in group of mentioned countries

b) CMEA branch classification of industry

c) Planned figures

d) Textiles, clothing, leather

Table 43

The pattern of specialization[a] at the branch level of manufacturing gross output

		Engineering	Chemicals	Construction mater.	Wood and wood process.	Pulp and paper	Glass and china	Textiles	Clothing	Leather	Printing	Food
					B r a n c h			[b]				
Bulgaria	1979	0.86	0.90	1.32	0.79	0.93	0.92	1.23	1.21	0.77	0.86	1.24
	1990c)	0.89	0.92	1.35	0.73	0.93	0.92	1.25	1.19	0.80	0.86	1.23
Czechoslovakia	1979	1.10	0.86	1.13	1.07	1.64	1.67	0.78	0.56	1.36	1.14	0.89
	1990c)	1.09	0.86	1.14	1.10	1.64	1.67	0.78	0.54	1.40	1.14	0.89
German Dem.Rep.	1979	1.01	1.12	0.68	0.93	1.43	1.17	0.89	0.59	0.91	1.14	1.05
	1990c)	1.00	1.10	0.70	1.00	1.36	1.17	0.89	0.59	1.00	1.14	1.08
Hungary	1979	1.01	1.32	0.66	0.93	0.79	1.17	0.72	0.77	0.95	1.86	0.99
	1990c)	0.98	1.40	0.54	0.95	0.79	1.25	0.64	0.73	0.95	2.00	1.03
Poland	1979	1.04	0.91	0.84	1.10	0.86	1.08	1.06	1.03	1.05	0.71	0.97
	1990c)	1.05	0.88	0.78	1.13	0.79	1.08	1.07	1.05	1.05	0.71	0.97
Romania	1979	1.02	1.11	1.18	1.21	0.93	0.50	1.07	1.49	0.95	0.29	0.75
	1990c)	1.01	1.10	1.22	1.10	0.86	0.50	1.13	1.59	0.95	0.14	0.73
Soviet Union	1979	0.97	0.76	1.24	1.00	0.64	0.50	1.26	1.33	0.86	0.71	1.09
	1990c)	0.99	0.76	1.22	0.93	0.64	0.58	1.22	1.35	0.85	0.86	1.08

Sources : table 30, page 71

a) Ratio of percentage share of branches in individual countries to the unweighted average of share in European CMEA countries
b) CMEA branch classification of industry
c) Projection

Table 44

Change in foreign trade value[a] of the selected European CMEA countries with developing countries[b]
(Average annual growth rate in %)

		Exports						Imports					
		Commodity groups					Total	Commodity groups					Total
		A	B	C	D	E		A	B	C	D	E	
Bulgaria	1976-1980	30.8	19.7	14.5	13.2	19.0	19.5	14.8	0.2	24.8	-17.9	33.0	8.5
	1979	86.8	13.2	56.7	46.1	-15.4	13.1	7.1	7.1	14.3	38.1	-50.0	7.8
	1980	31.8	31.7	7.9	44.0	58.6	38.0	19.4	22.7	68.0	31.0	2400.0	26.2
	1981	48.1	21.9	49.3	29.1	51.8	43.3	66.3	1.3	7.9	194.7	-74.0	40.7
Czechoslovakia	1976-1980	8.4	16.7	12.1	9.4	12.5	11.8	15.2	9.6	1.8	6.0	9.6	9.6
	1979	23.5	3.6	14.0	5.5	-4.2	1.9	-2.4	16.6	31.7	-8.0	100.0	13.4
	1980	33.6	58.4	54.5	15.5	24.5	28.9	67.7	4.7	22.7	39.6	-5.0	18.9
	1981	-18.5	-22.7	8.5	32.6	30.4	15.6	-11.2	3.6	-7.8	-15.5	-47.4	-2.3
German Dem.Rep.	1976-1980	32.1	25.2	24.3	22.4	19.9	21.6	27.7	11.6	12.6	3.8	-29.5	18.0
	1979	-8.3	-2.3	38.9	16.6	6.8	11.2	9.8	16.1	16.6	38.1	14.3	14.6
	1980	34.7	64.2	42.2	45.4	34.7	38.3	150.5	-5.9	-1.8	-18.2	0.0	44.7
	1981	12.1	-37.0	10.5	7.4	16.9	11.9	-58.4	-4.0	16.3	-7.8	4.2	-34.1
Hungary	1976-1980	41.3	34.9	55.9	28.7	28.9	34.2	22.2	28.4	22.1	33.9	36.1	26.5
	1979	68.3	-0.1	122.2	-0.3	45.1	32.1	10.3	-7.0	21.1	-10.1	256.0	-0.3
	1980	35.2	-0.2	31.4	19.0	33.7	24.4	37.6	27.9	32.9	41.2	-68.5	29.4
	1981	3.9	41.6	17.5	22.0	25.6	22.6	-32.8	-3.3	19.8	54.5	-48.2	-7.5
Poland	1976-1980	20.4	4.1	-10.8	7.5	15.7	11.5	29.2	18.2	5.9	5.5	-15.6	21.9
	1979	35.0	-4.0	-9.0	-7.0	24.9	16.7	87.8	44.5	-24.8	38.6	0.0	57.0
	1980	71.2	-11.1	16.5	13.6	21.6	25.8	50.2	8.9	8.3	62.2	57.1	28.7
	1981	-28.1	-35.6	-37.1	4.3	25.1	2.8	-66.7	-11.2	-44.9	-57.9	-66.7	-42.5
Romania	1976-1980	2.1	13.7	21.5	17.2	12.3	15.1	45.4	21.9	6.9	3.3	0.0	39.5
	1979	13.1	26.1	33.2	29.5	24.3	27.4	75.9	49.1	30.7	26.8	100.0	70.5
	1980	8.8	21.7	27.3	24.4	19.6	22.5	62.6	38.9	22.3	15.4	50.0	58.5
	1981	28.0	43.4	49.1	46.2	40.9	44.2	-16.2	-28.1	-37.8	-40.0	-33.3	-18.0

Sources : CMEA Statistical Yearbook

a) Value in terms of roubles; in CMEA commodity classification of foreign trade

b) Without Jugoslavia

A - Mineral fuels and metals; B - Agricultural and non- agricultural raw materials and food products;
C - Chemicals, fertilizers, rubber, construction and other materials; D - Industrial consumer goods; E - Machinery and transport equipment

Table 45

The commodity structure[a] of trade[b] between the selected European CMEA countries and the developing countries[c]
(Percentage shares)

A - Mineral fuels and metals; B - Agricultural and non-agricultural raw materials and food products; C - Chemicals, fertilizers, rubber, construction and other materials; D - Industrial consumer goods; E - Machinery and transport equipment

		Exports					Imports				
		A	B	C	D	E	A	B	C	D	E
Bulgaria	1975	10.0	21.3	18.2	6.2	44.3	43.5	45.3	4.3	6.2	0.7
	1980	15.7	21.5	14.7	4.7	43.4	57.5	30.4	8.6	1.5	2.0
	1981	16.2	18.3	15.3	4.2	46.0	68.0	21.8	6.6	3.2	0.4
Czechoslovakia	1975	16.4	8.8	6.2	15.0	53.6	19.7	59.6	16.3	4.1	0.3
	1980	14.1	10.9	6.3	13.4	55.3	25.2	59.7	11.3	3.5	0.3
	1981	9.9	7.3	5.0	15.4	62.4	22.9	63.3	10.6	3.0	0.2
German Dem.Rep.	1975	3.1	4.2	17.1	9.8	65.8	37.8	51.3	3.3	3.8	3.8
	1980	4.7	4.8	19.1	10.1	61.3	56.2	38.9	2.6	2.0	0.3
	1981	4.7	2.7	18.9	9.7	64.0	35.5	56.6	4.6	2.8	0.5
Hungary	1975	13.9	15.8	6.4	19.3	44.6	34.8	55.1	4.8	4.9	0.4
	1980	18.0	16.2	13.5	15.7	36.6	29.4	59.5	4.0	6.6	0.5
	1981	15.3	18.7	12.9	15.6	37.5	21.3	62.2	5.2	11.0	0.3
Poland	1975	16.0	10.3	18.8	8.6	46.3	37.3	54.4	4.8	3.1	0.4
	1980	23.6	7.3	6.2	7.2	55.7	52.2	42.4	1.9	3.4	0.1
	1981	16.5	4.6	3.8	7.3	67.8	30.2	65.4	1.8	2.5	0.1
Romania	1975	8.3	25.7	25.3	9.7	31.0	70.2	24.5	4.2	1.0	0.1
	1980	4.5	24.2	33.2	10,7	27.4	36.2	12.5	1.1	0.2	0.0
	1981	4.0	24.1	34.2	10.8	26.8	88.1	10.9	0.8	0.2	0.0

Sources : CMEA Statistical Yearbook
a) CMEA commodity classification of foreign trade
b) Value in terms of roubles
c) Without Yugoslavia

Table 46

Forecast of the commodity structure[a] of trade[b] between the individual European CMEA countries and the developing countries[c]
(Percentage shares)

A - Mineral fuels and metals; B - Agricultural and non - agricultural raw materials and food products; C - Chemicals, fertilizers, rubber, construction and other materials; D - Industrial consumer goods; E - Machinery and transport equipment

		Exports					Imports				
		A	B	C	D	E	A	B	C	D	E
Bulgaria	1981d)	16.2	18.3	15.3	4.2	46.0	68.0	21.8	6.6	3.2	0.4
	1990 A	12.4	17.4	17.5	1.8	50.9	81.4	11.1	4.4	2.9	0.2
	B	13.7	15.1	14.8	2.7	53.7	77.8	16.7	3.9	1.3	0.3
Czechoslovakia	1981d)	9.9	7.3	5.0	15.4	62.4	22.9	63.3	10.6	3.0	0.2
	1990 A	14.8	7.5	5.7	12.5	59.5	21.3	62.8	10.8	4.9	0.2
	B	12.0	9.3	6.4	15.3	57.0	36.3	49.5	11.0	3.1	0.1
German Dem.Rep.	1981d)	4.7	2.7	18.9	9.7	64.0	35.5	56.6	4.6	2.8	0.5
	1990 A	2.5	3.4	14.7	6.5	72.9	74.0	13.5	6.8	5.0	0.7
	B	3.4	3.3	22.2	7.3	63.8	73.9	15.1	9.0	1.0	1.0
Hungary	1981d)	15.3	18.7	12.9	15.6	37.5	21.3	62.2	5.2	11.0	0.3
	1990 A	13.3	19.0	9.4	14.5	43.7	36.4	45.7	4.4	12.9	0.6
	B	10.1	24.8	11.0	15.9	38.2	44.1	45.0	3.0	7.4	0.5
Poland	1981d)	16.5	4.6	3.8	7.3	67.8	30.2	65.4	1.8	2.5	0.1
	1990 A	18.6	10.5	9.6	9.2	52.1	32.3	57.9	3.5	5.9	0.4
	B	18.4	10.8	9.4	9.3	52.1	33.0	58.1	3.3	5.2	0.4
Romania	1981d)	4.0	24.1	34.2	10.8	26.8	88.1	10.9	0.8	0.2	0.0
	1990 A	2.5	15.3	37.3	13.3	31.6	97.0	2.4	0.5	0.1	0.0
	B	1.8	14.6	47.9	10.9	24.8	96.6	3.1	0.3	0.0	0.0

Sources : CMEA Statistical Yearbook
a) CMEA commodity classification of foreign trade
b) Value in terms of roubles
c) Without Yugoslavia
d) Actual

Table 47

Average annual growth rate of trade between the developing countries and the European CMEA countries
(In constant 1977 prices, in %)

	1979 - 1990			
	CMEA exports		CMEA imports	
	total	developing countries	total	developing countries
Bulgaria	7	9	7	17
Czechoslovakia	8.0-10.0	10-13	7-9	14-16
German Dem.Rep.	7-8	10.5-14.5	6.5-7.5	11-14
Hungary	10-11	13-15	8-10	10.5-12.0
Poland	9-10	12-13	8.5-9.5	16-18
Romania	9-10	11-14	8-10	12.5-15.0
Soviet Union	7	8-9	7.5-6.5	14-15.5
European CMEA countries	8-8.5	9.5-11.0	7.5-8.0	14-15.5

Sources : Dobozi and Inotai, op.cit.
Pattern and prospects for east - south trade in the 1980s, UNIDO/IS.335, op.cit.,p.32

A P P E N D I X B

CHART 1

ANNUAL PERCENTAGE CHANGES OF GROWTH IN OUTPUT (Q) AND PRODUCTIVITY (P) OF INDUSTRY (Gross output basis)

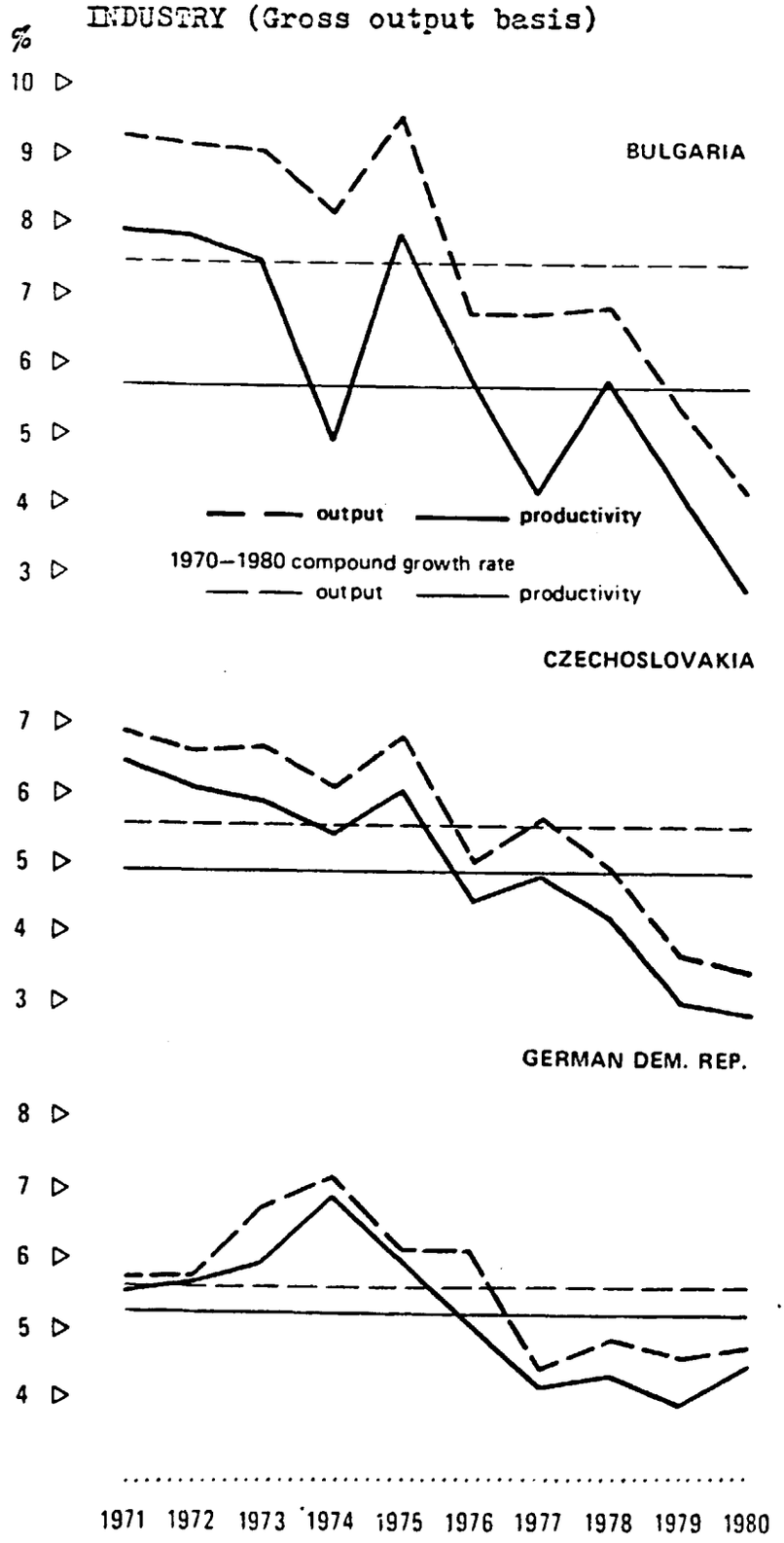


CHART 1

ANNUAL PERCENTAGE CHANGES OF GROWTH IN OUTPUT (Q) AND PRODUCTIVITY (P) OF INDUSTRY (Gross output basis)

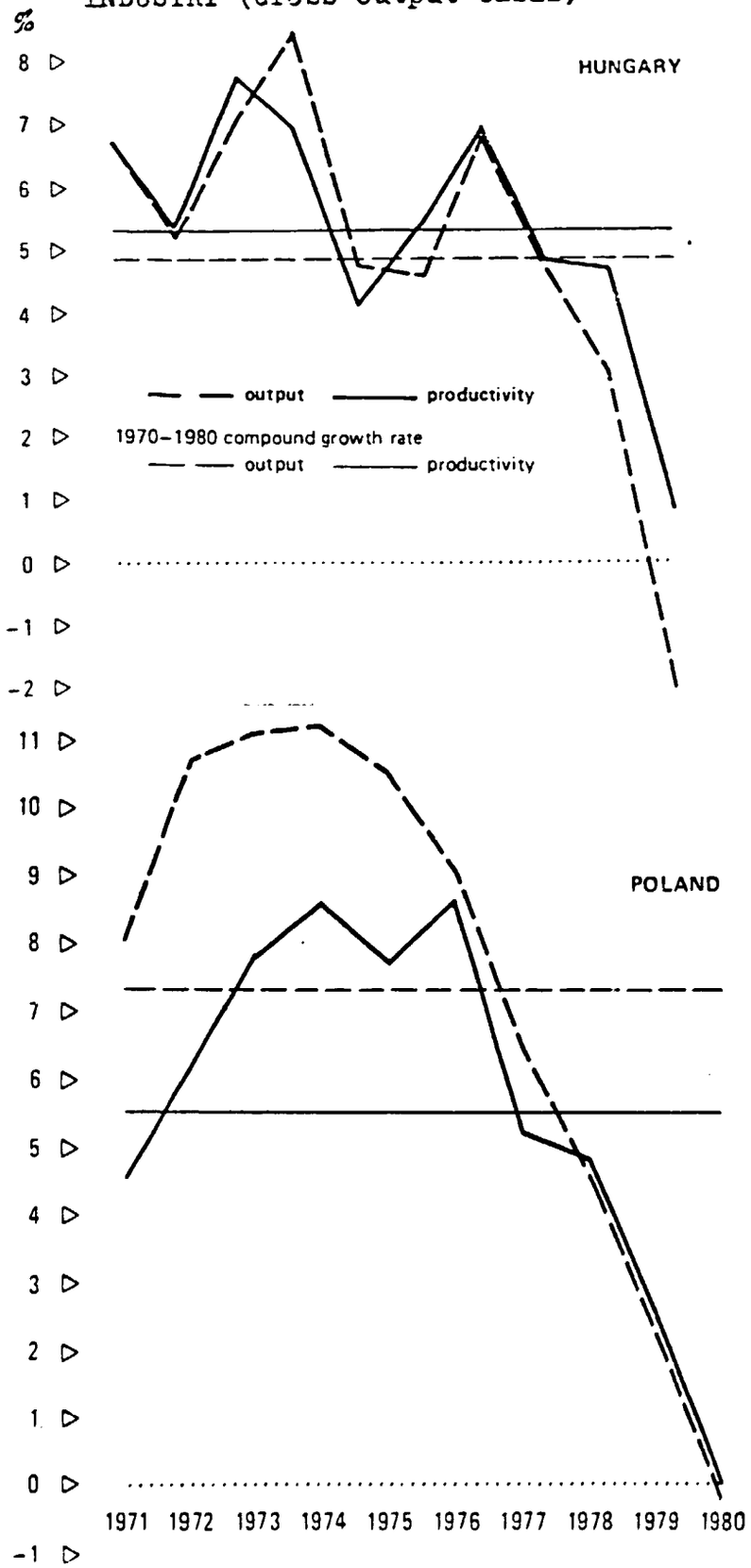
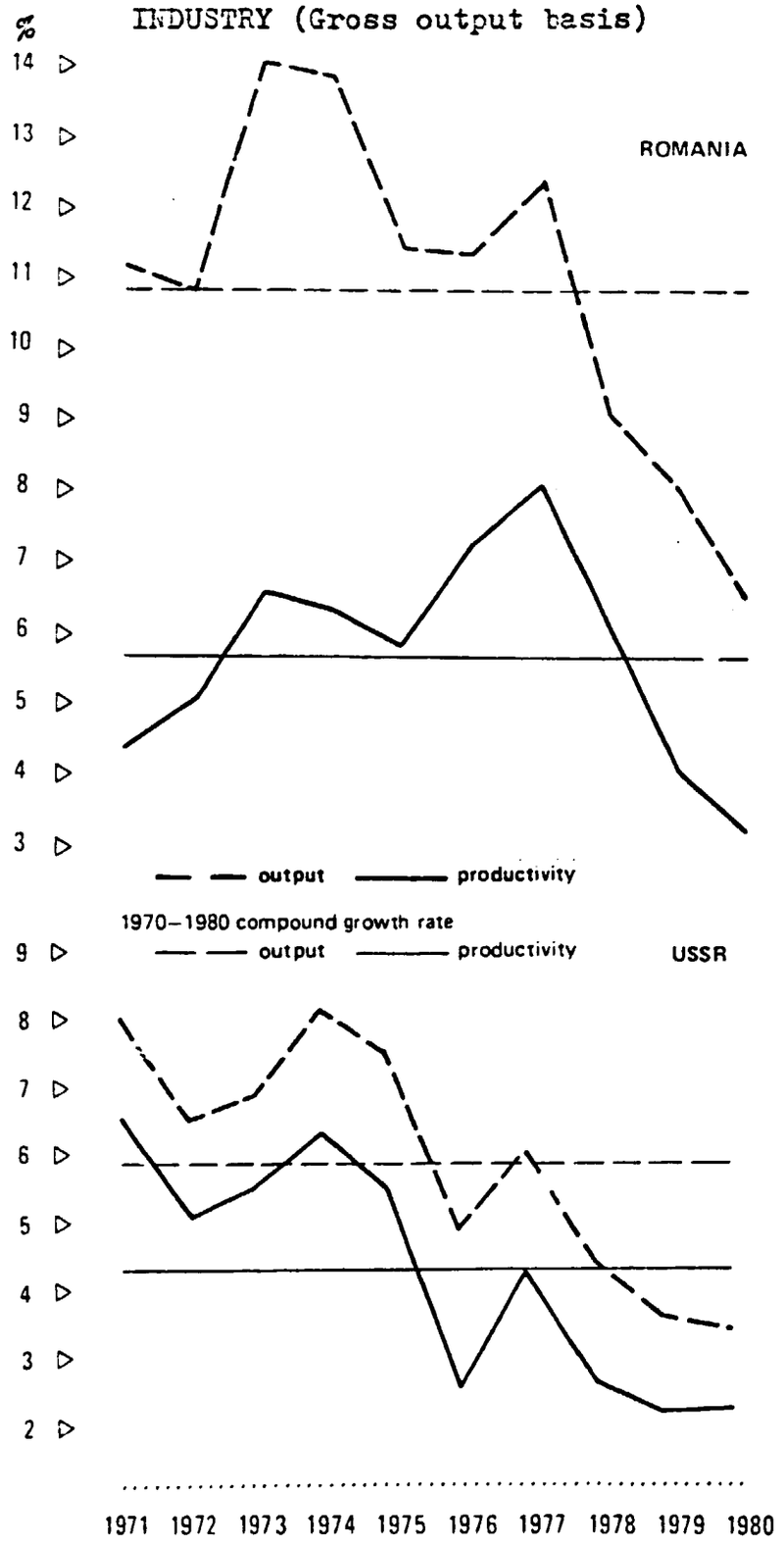


CHART 1

ANNUAL PERCENTAGE CHANGES OF GROWTH IN OUTPUT (Q) AND PRODUCTIVITY (P) OF INDUSTRY (Gross output basis)



Source: Economic Survey of Europe in 1982. Chapter three..., chart 3.6.1