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by

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I. INTRODUCTION

The Yugoslav external sector has undergone vast changes, in value and composition, during the first two decades in which the system of workers' self-management has been operative. This paper examines the growth and structural change of foreign trade at various levels of aggregation. While imports are examined to some extent, the major concern is with exports. To provide a general perspective of the changes that have occurred, the current account of the balance of payments is examined in the following section. This is followed by an analysis of structural change at the one-digit SITC level and in terms of the Yugoslav broad classifications of exports and imports according to end use and stage of production. Structural change at this level of aggregation has been more pronounced in the export sector than has been the case with imports. The manufactured export share of total exports has grown rapidly, as have the shares of capital goods exports and exports of more highly-processed goods. Imports of manufactured goods have also grown more rapidly than primary goods imports. Supply bottlenecks have stimulated imports of the intermediate goods, especially in the latter half of the period.

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Structural change on the export side is also examined on a more disaggregated level in terms of the twenty branches of the industrial sector of the economy. The industrial export structure is analyzed from three standpoints: export specialization according to the share of industry branches in total industrial exports, net exports by industrial branch,and the contribution of the various industry branches to the incremental value of industrial exports. The factor intensities of the various industry branches were calculated and related to the export structure. The industrialization strategy of emphasizing the development of industries producing finished and highly-processed goods relative to the primary and industrial supply industries is reflected in the structure of exports. A somewhat mixed picture develops when the composition of exports is related to the factor intensiveness of production. A constant-market-shares analysis of the growth of exports during 1961-1965 and 1965-1972 reveals that increasing competitiveness contributed more to export growth in the first period than in the second.

In the penultimate section of the paper direct and indirect import components of production for twenty-nine economic sectors are shown. These data point towards an increasing import requirement of production. This tendency is especially evident in the case of industrial exports and investment. Following the analysis of import requirements, exports on a value-added basis of the twenty-nine sectors are calculated. The value added measure of exports provides important insights concerning the supply-orientation of export earnings and the net balance of payments effects of exports by industry branch. The geographical structure of exports is examined in the final section. Exports to eastern Europe are shown to be more volatile than exports to the EEC. Manufactured goods weigh more heavily in exports to eastern Europe and the developing countries than in exports to the EEC.

II. BALANCE OF PAYMENTS

A useful introduction to the foreign sector of the Yugoslav economy is provided by the nation's balance of payments.[1] It is not surprising to find that the merchandise trade balance has been negative in every year from 1946 to 1973 (Table 1); the needs of a relatively underdeveloped country for imports of capital goods and primary and intermediate materials during the course of rapid industrialization are well-known.[2] In only three postwar years have merchandise exports exceeded 75 percent of imports. In contrast to the trade balance, the balance on services and unilateral transfers has been positive throughout the postwar period. This positive balance has occasionally outweighed the trade deficit to produce a current account surplus.

Remittances from emigrants and workers abroad and tourist earnings have been especially dynamic in the last decade. The surplus on the emigrants and workers abroad account increased from $ 48 million in 1961 to $ 964 million in 1972. This rapid growth of net earnings resulted mainly from a rapid rise in worker remittances beginning in the mid-sixties. The value of these remittances was about $ 900 million in 1972 and exceeded $ 1.25 billion in 1973. The net receipts from foreign travel reached $ 350 million in 1973, having risen from $ 44 million in 1963. Because of a slowing down in the tempo of economic activity in western Europe, where approximately one million Yugoslavian workers are employed, and a world-wide downturn in tourism these sectors cannot be expected to maintain their buoyancy, at least in the near term.

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[1] We glance briefly only at the current account of the balance of payments in this section, i.e., at the part of the balance of payments which is directly related to current national income.

[2] During the interwar period the balance of trade was consistently in surplus.

Table I

YUGOSLAVIA BALANCE OF PAYMENTS ON CURRENT ACCOUNT, 1938-1972

m. U.S. Dollars

	1938	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
Trade Balance	4	-211	-106	-55	-140	-124	-246	-140	-229	-120	-204	-166	-275	-236
Exports, f.o.b.	103	58	173	323	193	165	192	234	192	247	266	329	401	469
Imports, c.i.f.	-99	-269	-279	-378	-333	-289	-438	-394	-421	-367	-470	-495	-674	-699
Services and Unilateral Transfers	5	239	123	72	46	42	281	134	165	124	138	170	164	147
Emigrant and Worker Remittances														
Official Transfers	0	225	98	54	21	25	187	102	139	90	83	92	56	44
Current Account Balance	9	28	17	17	-94	-82	35	-6	-64	4	-66	4	-111	-89
Export-Import Ratio	1.04	.22	.62	.85	.58	.57	.44	.59	.46	.67	.57	.66	.59	.67

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Trade Balance	-275	-269	-346	-199	-278	-433	-195	-351	-454	-532	-660	-1194	-1439	-990
Exports, f.o.b.	487	576	583	701	802	895	1094	1225	1253	1265	1475	1680	1814	2237
Imports, c.i.f.	-704	-845	-929	-900	-1080	-1328	-1289	-1576	-1707	-1797	-2135	-2874	-3253	-3227
Services and Unilateral Transfers	138	147	129	151	198	230	265	312	379	426	552	854	1115	1284
Emigrant and Worker Remittances			48	57	102	106	59	98	118	149	249	500	711	964
Official Transfers	49	55	34	25	5	20	30	11	12	11	2	1	5	
Current Account Balance	-79	-122	-217	-48	-80	-203	70	-39	-75	-106	-108	-340	-324	294
Export-Import Ratio	.69	.68	.63	.78	.75	.68	.85	.77	.73	.70	.69	.58	.56	.69

Sources: Statistika Spoljne Trgovine SFRY; OECD Economic Survey of Yugoslavia, 1973; National Bank of Yugoslavia, Quarterly Bulletin, No. 4, October 1973; Vladimir Pertot, "Long-Term Tendencies in Development of the Yugoslav Balance of Payments," Medunarodni problemi, No. 2, 1970, annexed table.

An approximately 80 percent increase in imports in the first seven months of 1974 compared to the same period in 1973, along with a 50 percent rise in exports has produced a visible trade deficit of about $ 2 billion in the seven month period. Faced with this large trade deficit, and no doubt influenced by the diminishing prospects of the service account, Yugoslavia has recently introduced an import deposit scheme and tightened up on foreign exchange allotments.

III. STRUCTURAL CHANGE ACCORDING TO SITC SECTIONS AND YUGOSLAV END USE AND STAGE OF PRODUCTION CLASSIFICATIONS

Rather dramatic structural changes have taken place with respect to Yugoslavian exports and imports during the course of the last two decades. In this section these changes are examined at a highly aggregrative level. Structural changes of exports and imports classified according to SITC sections are examined first. Following this, the Yugoslav end use and stage of production classifications serve as the basis for the examination of broad structural change.

1. Structural Change in the Composition of Foreign Trade: Classification According to SITC Sections

As industrialization proceeds certain structural changes in foreign trade can be expected to take place. The historical evidence indicates that the share of manufactured exports in total exports is positively associated with per capita income and the degree of industrialization.[3] The bases of the relationship are well known (e.g. changes in the composition and supply of factors of production,

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[3] See for example, Alfred Maizels, Industrial Growth and World Trade, National Institute of Economic and Social Research, Cambridge University Press, Cambridge, 1963; Simon Kuznets, "Quantitative Aspects of the Economic Growth of Nations: IX. Level and Structure of Foreign Trade: Comparisons for Recent Years", Economic Development and Cultural Change, Vol. XIII, No. 1, Part II, 1964; and R. Banerji, "Major Determinants of the Share of Manufactured Exports: A Cross-Section Analysis and Case Study of India", Weltwirtschaftliches Archiv, Band 108, Heft 3, 1972.

scale, learning and technology factors and spillover effects) and will not be dealt with here. Structural changes within the manufactured exports sector can also be expected to accompany industrialization. The share of finished manufactures in total manufactured exports tends to rise while the share of exports of semi-finished goods tends to fall.

In so far as the structure of imports is concerned, the hypothesis is advanced that the share of manufactured imports in total imports rises with industrial development. While the historical evidence concerning the association between industrialization and import structure is somewhat mixed, Yugoslavia's rather small domestic market provides a relatively large scope for manufactured imports in contrast to countries with large domestic markets in which the efficient production of a wider range of goods is more likely.

For information on what has actually happened to the structure of Yugoslav exports we turn to Table 2 and Graph 1-A. The shares of manufactured goods (SITC 5-8) and primary commodities (SITC 0-4) in total Yugoslav exports were completely reversed by 1970 as opposed to 1952 and thus have moved in the hypothesized direction. Whereas manufactured goods accounted for 29.1 percent and primary commodities 69.9 percent of total exports in 1952, the respective shares were 72.9 and 26.6 percent in 1973. The Yugoslav share of world exports of SITC 5-8 rose from 0.20 percent in 1952 to 0.60 percent in 1972. The Yugoslav share of total world exports during the same period increased from 0.31 to 0.54 percent.[4] The increasing importance of manufactures in Yugoslav exports is reflective of the policy of increasing per capita income via industrialization and the concomitant effect on exports and of manufactured export promotion measures.[5] Consistent

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[4] The share was about 0.57 in both 1938 and 1948. Total exports declined in 1949 and did not again reach the level of 1948 until 1956. A peak of 0.60 percent of world exports was reached in 1966. The Yugoslav share of world manufactured exports reached 0.63 percent in 1965.

[5] The share of industry in the social product rose from 22.0 percent in 1952 to 38.1 percent in 1972 (measured in 1966 prices). The proportion of industrial output (including the energy branches) exported was 4.6 percent in 1952 and in 1972 had reached 13.9 percent (see Table 6).

Table 2

Structure of Exports by SITC Sections, 1952-1973 in Current Value

(Percent of total Exports)

SITC	Description	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
0	Food and Live Animals	38.2	18.4	29.7	23.5	25.7	24.7	29.5	26.4	28.9	29.7	23.3	25.4	23.7	21.2	20.4	22.8	17.3	16.7	15.2	14.2	14.9	14.0
1	Beverages and Tobacco	4.0	3.8	4.3	7.7	8.1	6.8	8.6	4.9	4.7	3.9	4.3	4.9	5.6	4.5	3.9	4.1	3.3	2.9	3.5	3.4	2.6	2.1
2	Crude Material, Inedible, except Fuels	26.2	37.7	29.7	29.3	23.7	20.8	16.9	15.9	15.7	14.8	13.8	14.2	13.2	10.1	8.8	8.5	10.0	9.7	9.4	8.2	8.2	9.6
3	Mineral Fuels etc.	1.6	1.2	1.3	1.0	1.3	1.6	1.3	1.0	0.9	1.2	2.5	2.0	1.4	1.0	1.7	1.8	1.0	1.0	1.2	1.1	0.8	0.8
4	Animal and Vegetable Oils and Fats	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.2	0.2	0.1	0.2	0.1	0.1
5	Chemicals	4.0	5.3	4.4	5.5	4.5	4.9	3.3	3.3	4.0	3.6	3.1	3.2	4.2	5.5	5.7	5.9	6.1	6.2	5.8	7.1	6.4	6.2
6	Manufactured Goods Classified by Material	24.4	29.4	24.8	27.5	27.6	27.3	23.1	24.9	23.7	22.8	22.7	21.4	22.9	22.7	23.2	22.4	25.6	29.2	29.3	27.2	27.0	28.5
7	Machinery and Transport Equipment	0.0	1.6	3.4	1.8	4.6	6.8	10.7	17.4	15.0	16.5	22.8	19.5	17.0	23.5	24.6	20.3	21.9	20.4	22.7	24.5	24.4	24.7
8	Miscellaneous Manufactured Articles	0.6	1.6	1.9	2.8	3.6	5.5	5.6	6.1	6.8	7.4	7.3	9.2	11.8	11.5	11.7	13.9	14.6	13.7	12.7	14.0	15.2	13.4
9	n.e.s.	1.0	1.1	0.5	0.9	0.9	1.6	1.0	0.1	0.1	0.1	0.1	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.5	0.6
0-4		69.9	61.1	65.0	61.5	58.8	53.9	56.3	48.2	50.4	49.6	44.0	46.5	43.9	36.8	34.8	37.4	31.8	30.5	29.4	27.1	26.6	26.6
5-8		29.1	37.9	34.5	37.6	40.3	44.5	42.7	51.7	49.5	50.3	55.9	53.3	55.9	63.2	65.2	62.5	68.2	69.5	70.5	72.8	73.0	72.9

Continued ....

Table 2 (Continued)

Structure of Imports by SITC Sections, 1952-1973 in Current Value

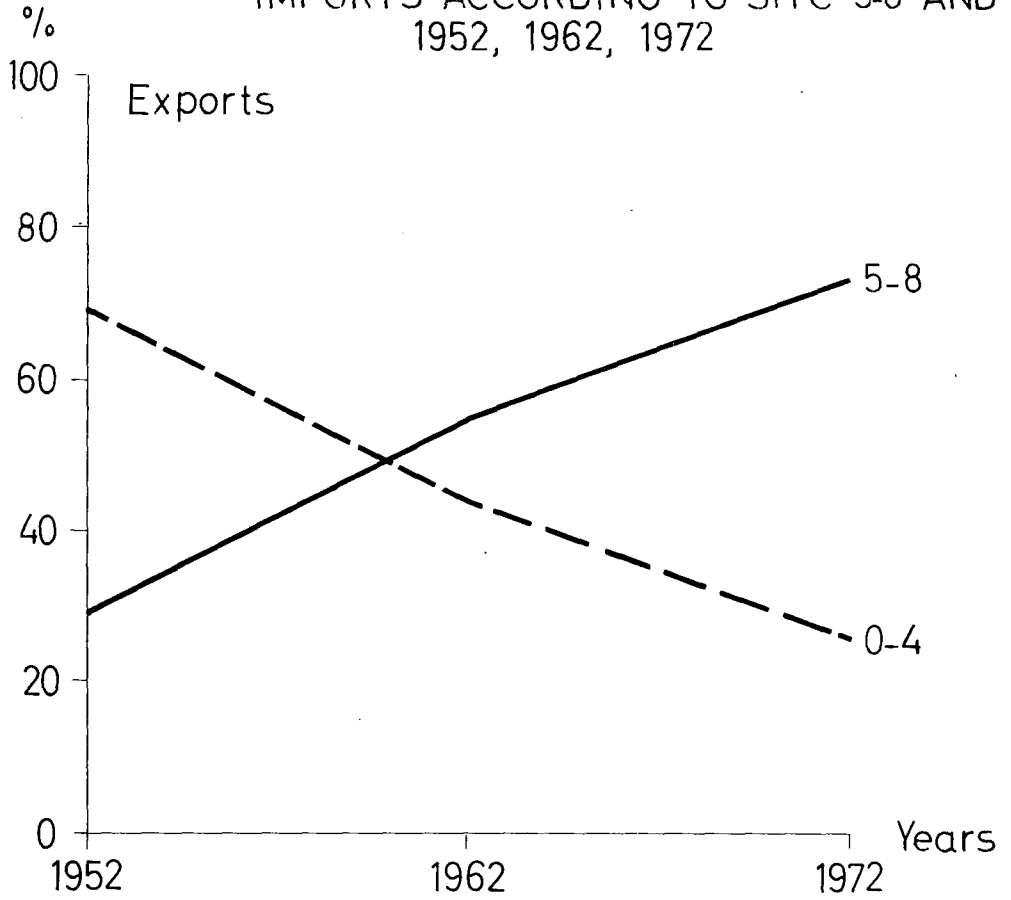
(Percent)

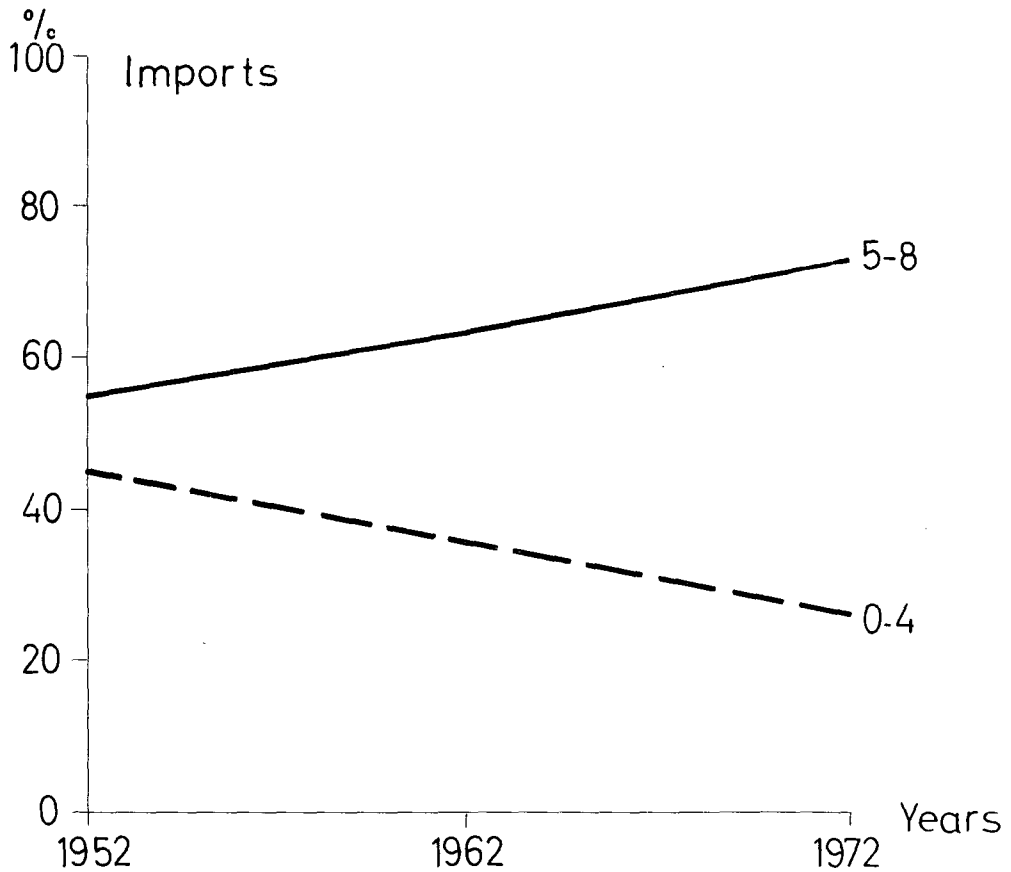
SITC	Description	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
0	Food and Live Animals	21.8	28.2	24.3	27.5	31.8	22.2	19.1	19.3	9.2	13.2	14.3	18.4	12.6	14.7	14.7	10.2	6.9	6.6	7.0	8.9	9.3	11.1
1	Beverages and Tobacco	0.0	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.1	0.4	0.7	0.2	0.0	0.4	0.4	0.2	0.3	0.2	0.2	0.2	0.2
2	Crude Material, Inedible, except Fuels	13.9	12.7	15.0	17.6	15.9	14.7	12.3	14.0	14.3	14.3	14.9	15.0	15.8	16.8	13.5	11.7	11.0	12.4	10.9	9.6	10.4	10.8
3	Mineral Fuels etc.	7.8	7.8	8.8	8.3	9.9	9.9	6.0	6.6	5.4	4.4	5.4	4.4	5.0	5.6	5.2	5.0	5.5	4.9	4.8	5.9	5.5	7.9
4	Animal and Vegetable Oils and Fats	1.2	1.3	1.8	1.2	1.2	2.0	2.1	2.3	1.4	1.7	1.6	1.0	1.1	1.0	0.6	1.8	1.1	0.3	0.7	1.5	1.3	0.5
5	Chemicals	4.7	4.4	6.1	6.7	7.0	7.3	9.8	10.9	8.6	7.0	8.8	10.5	10.4	9.2	9.5	9.8	10.5	10.3	9.3	9.1	10.8	10.0
6	Manufactured Goods Classified by Material	17.7	12.7	15.2	11.5	12.2	15.7	15.8	15.7	20.8	20.3	18.4	17.7	21.0	21.7	23.5	23.5	23.8	25.5	28.8	28.2	26.1	24.0
7	Machinery and Transport Equipment	31.4	31.8	26.8	25.3	19.9	25.3	31.5	27.9	36.9	35.6	33.1	29.0	30.1	27.6	29.1	33.5	35.9	33.2	33.3	31.3	31.5	31.4
8	Miscellaneous Manufactured Articles	1.5	1.3	1.7	1.6	2.1	2.2	3.0	3.0	3.3	3.4	3.1	3.2	3.8	3.4	3.5	4.1	5.1	5.8	5.0	5.2	4.7	4.1
9	n.e.s.	0.0	0.0	0.1	0.1	0.0	0.5	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2
0-4		44.7	49.9	49.9	54.9	58.8	49.0	39.5	42.2	30.3	33.7	36.6	39.5	34.7	38.1	34.4	29.1	24.7	24.5	23.6	26.1	26.7	30.5
5-8		55.3	50.1	49.8	45.1	41.2	50.5	60.1	57.5	69.6	66.3	63.4	60.4	65.3	61.9	65.6	70.9	75.3	74.8	76.4	73.8	73.1	69.4

Source: Statistika Spoline Trgovine, various years.

Totals may not add to 100 because of errors due to rounding.

Graph 1 - STRUCTURE OF YUGOSLAV EXPORTS AND IMPORTS ACCORDING TO SITC 5-8 AND 0-4 1952, 1962, 1972





Source: Table 2.

with the above hypothesis that the growth of exports of finished manufactures outpaces that of semi-finished manufactured exports is the marked increase in the shares of SITC sections 7 and 8 in contrast to the movement of the shares of sections 5 and 6.

While the shift in the structure of Yugoslav exports appears dramatic, it is not untypical for industrializing nations. In Table 3 are found the shares of manufactures (SITC 5-8) in total exports of five southern European semi-industrialized countries in 1953 and 1971.

Table 3

SHARES OF MANUFACTURES IN TOTAL EXPORTS AND VALUE-ADDED IN MANUFACTURING AS PERCENTAGE OF VALUE-ADDED IN COMMODITY PRODUCTION OF FIVE SOUTHERN EUROPEAN COUNTRIES

Country	Share of SITC 5-8 in Total Exports (%)		Gross value-added in manufacturing as % of value-added in Commodity Production	Manufactured Exports as % of Merchandise Exports[b]
	1953	1971	1970	1969
Greece	9.6	38.1	45.3	49.79
Portugal	38.3	66.4	65.4	79.55
Spain	15.6	61.4	61.9	62.29
Turkey	3.9	12.6	31.9[a]	12.28
Yugoslavia	37.9	72.8	58.0	74.41

Notes: [a] 1968

[b] UNCTAD Total A.

Source: Columns 1-2, United Nations, Yearbook of International Trade Statistics, 1956, 1971. Columns 3-4, D. Morawetz, "Employment Implications of Industrialization in Developing Countries: A Survey", Economic Journal, Vol. 84, No. 335, September 1974, Table 1.

When viewed in relation to the other countries in the table the structural change in Yugoslav exports in terms of manufactures and non-manufactures does not appear as enormous.

The export structure of Yugoslavia is tilted more towards manufactures than is its commodity production. A comparison of column 3 in Table 3 with either column 2 or 4 (the definition of manufactured exports in these 2 columns is not identical) reveals that Yugoslavia's manufactured export performance in relation to its degree of industrialization compares favorably with this group of countries. Whether this success is primarily the result of skilled policy-making or luck (e.g. in terms of resource base and location) is an important and difficult question; it is hoped that our study on Yugoslavia, of which this paper is a part, will provide some answers to it.

As was hypothesized, structural changes on the import side have been less dramatic than has been the case with exports. The direction of change has followed that of exports, i.e., imports of manufactured and more highly fabricated goods have increased in relative importance. The share of SITC sections 5-8 in total imports stood at 69.9 percent in 1973, after being 55.3 percent in 1952. The big gainer here was imports of processed industrial supplies. Nevertheless, Yugoslav industrial enterprises here frequently suffered from shortages of supplies; economic policy which worked to the disadvantage of industries producing industrial supplies has contributed to these bottlenecks.

2. Structural Change in the Composition of Foreign Trade: End Use and Stage of Production Classifications

We turn now to an examination of the structure of foreign trade according to end use and stage of production.[6] Looking first at exports

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[6] Yugoslavia publishes data on exports and imports classified according to end use (intermediate, capital and consumer goods) and stage of production (crude, simply transformed and more elaborately transformed articles). These classifications differ from those of the United Nations; they are presented here as another way of observing broad structural changes in Yugoslav foreign trade.

classified by end use, we find that exports of capital goods, after being less than one-tenth of one percent of total exports in 1952 (as well as in 1951, the first year in which these goods were exported in any quantity) reached a peak of 18 percent in 1962 and 1966 (Table 4). Since 1966, exports of intermediate goods have increased somewhat in relative importance at the expense of both consumer and capital goods exports. This tendency seems to have approximately coincided with the reforms of the mid-Sixties, in which an export structure more closely reflecting the nation's comparative advantages was stressed as a policy objective.

The major category of capital goods exports is transport equipment (ships, automobile products and railway vehicles are the leading export items in this group) followed by electrical and non-electrical machinery. Among the developing countries, Yugoslavia is one of the principal exporters of capital goods. The share of capital goods in total manufactured exports is greater in Yugoslavia than in six other southern European industrializing nations, included in which are both capitalist and socialist economies.[7] The rise in importance of exports of capital goods reflects the relatively favorable attention this industry has received from economic policy-makers.[8] Moreover, the metal-using sector, especially the automotive industry, is where the bulk of industrial cooperation agreements and joint ventures have taken place.

When exports are classified according to stage of production, it is again clear that a vast change in composition has taken place. The shift from exports of crude articles to more elaborately transformed goods has been particularly extensive. This trend reflects the

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[7] United Nations, Economic Bulletin for Europe, Vol. 20, No. 2, 1968, p. 48. The countries included in the comparison, in addition to Yugoslavia, are Greece, Portugal, Spain, Turkey, Romania and Bulgaria.

[8] See for example the author's paper, "The Industrialization of Yugoslavia Under the System of Workers' Self-Management: Institutional Change and Rapid Growth", Kieler Arbeitspapier (Kiel Working Paper) No. 26, Kiel, January 1975, mimeo.

Table 4

Structure of Exports and Imports by use of Products and Stage of Production, 1939, 1946-1972
(Percentages)

	1939	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958
Exports														
Intermediate Goods	78	62	67	50	64	70	77	56	68	57	61	54	53	44
Capital Goods	-	-	-	-	-	-	-	-	1	3	1	3	4	8
Consumer Goods	22	38	33	50	36	30	23	44	31	40	37	43	44	48
Imports														
Intermediate Goods	49	74	73	73	72	73	53	65	45	52	51	51	55	52
Capital Goods	28	5	18	17	20	20	16	25	26	22	20	14	18	24
Consumer Goods	33	21	9	10	8	7	31	10	29	26	29	35	27	24
Exports														
Crude Articles	55	44	45	50	48	43	34	50	33	38	38	37	32	35
Simply Transformed Articles	39	33	39	35	46	50	58	43	50	46	46	43	42	36
More Elaborately Transformed Articles	6	23	16	15	7	7	8	7	17	17	16	21	27	30
Imports														
Crude Articles	20	36	31	22	26	31	31	28	38	39	42	45	36	26
Simply Transformed Articles	26	29	24	33	29	25	35	25	18	21	18	19	23	25
More Elaborately Transformed Articles	54	35	45	45	45	44	34	46	44	41	40	36	41	49

Continued ....

Table 4: Structure of Exports and Imports by use of Products and Stage of Production, 1939, 1946-1972 (Percentages)

(Continued)

	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Exports															
Intermediate Goods	47	46	44	44	42	42	42	43	48	50	53	52	50	51	53
Capital Goods	12	10	11	18	14	12	17	18	14	16	14	14	15	14	14
Consumer Goods	41	45	46	39	44	46	41	39	38	35	34	33	35	35	33
Imports															
Intermediate Goods	56	57	52	54	58	63	62	58	57	57	60	63	64	63	62
Capital Goods	20	29	28	25	20	22	20	22	22	25	22	21	21	21	22
Consumer Goods	24	15	20	21	22	16	18	21	21	18	18	15	15	16	16
Exports															
Crude Articles	26	26	25	20	21	17	13	13	16	14	13	12	11	12	9
Simply Transformed Articles	37	39	38	38	37	39	34	33	32	32	34	34	32	31	35
More Elaborately Transformed Articles	37	36	37	43	43	44	54	53	53	54	53	54	57	57	57
Imports															
Crude Articles	31	20	24	27	30	24	28	25	18	16	17	15	17	16	18
Simply Transformed Articles	23	23	22	22	22	25	23	23	25	23	23	27	27	25	25
More Elaborately Transformed Articles	47	57	54	51	48	52	49	53	57	62	60	59	57	59	57

Source: Jugoslavija, 1945-1964; Statistika Spoljne Trgovine, various years.

industrialization strategy of increasing the level of domestic processing as well as the strategy of emphasizing the production of an extremely wide range of products, which has been looked upon favorably in Yugoslavia. There have also been efforts to achieve a diversified foreign trade structure, from both the country and commodity standpoint. The rationale behind this policy, undertaken at both the government and enterprise level, is that diversification minimizes risk.[9]

Import structure by end use, since it settled into a degree of stability in 1954, has shown a tendency for intermediate goods to increase in importance, while the opposite trend is observed for consumer goods, as the domestic consumer goods industry developed. Food imports declined from 24 percent of total imports in 1954 to 8 percent in 1973; meanwhile the share of imports of consumer durables, with their relatively high income elasticity of demand, was rising. Imports of capital goods have tended to remain, with some exceptions, at around one-fifth of total imports. In so far as end-use categories of imports are concerned, there has been a downward trend in recent years in the share of crude articles. Interestingly however, the structure of imports by stage of production in 1973 was quite similar to the pre-war structure of 1939.

In summary, the foreign trade structure of Yugoslavia, in terms of highly aggregative commodity bundles, has undergone vast changes in the course of the industrialization that has taken place since the introduction of the system of workers' self-management. The shift in exports towards more highly-processed goods has been especially pronounced. Associated with the increase in the share of industry in the social product from 22.0 to 38.1 percent between 1952 and 1972

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[9] A theory of "capillary trade", as this type of trade strategy has been called by the Yugoslav economist, Vladimir Pertot, appeared in Yugoslavia; for a further discussion see Branko Horvat,"Yugoslav Economic Policy in the Post-War Period: Problems, Ideas, Institutional Developments", American Economic Review, Vol. 61, Part 2, June 1971, p. 122.

(cf. footnote 5), has been a rise in the industrial export proportion of total exports from 58.7 to 85.0 percent. A relative increase in imports of manufactured goods has also taken place, albeit on a smaller scale. The share of industrial imports in total imports rose from 83.0 to 91.7 percent between 1952 and 1972. An examination of structural foreign trade changes on a more disaggregated level will now be undertaken.

IV. STRUCTURAL CHANGE IN MANUFACTURED EXPORTS

The definition of manufactured exports used in this section corresponds to the Yugoslav definition of industrial production. Exports are disaggregated according to twenty industrial branches, included among which are energy production and food processing. Changes in the composition of industrial exports will be examined in the light of certain industrial branch production characteristics, for example, growth of output and capital and labor characteristics of production. The import requirements of the various exporting branches will also be examined in a following section.

Basic data on the growth of Yugoslav industrial exports are found in Table 5. These exports increased about thirteenfold from 1952 to 1972, while total exports rose by a factor of nine. An obvious question that arises when industrial export expansion is observed, is whether this growth implies that the economy is becoming more "open". One indicator of the "openness" of an economy is the export/output ratio; although this is admittedly a rough measure, we will assume that greater "openness" is implied by a rise in this ratio. In 1952, 4.6 percent of industrial output was exported (Table 6), while in 1972 the share had reached 13.9 percent.[10] When the three energy

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[10] In 1962 and 1965 the share of industrial output exported was 10.6 and 15.3 percent respectively (conversion rate used for export valuation was 750 old dinars per U.S. dollar in 1962 and 12.50 new dinars per dollar in 1965).

Table 5

VALUE AND STRUCTURE OF YUGOSLAV EXPORTS, 1952, 1962, 1972

Value in m. U.S. $; Structure in percent

	1952			1962			1972		
	Value	Total Structure	Industry Structure	Value	Total Structure	Industry Structure	Value	Total Structure	Industry Structure
Total Exports	246.5	100		690.5	100.0		2237.2	100.0	
Industry-Total	144.6	58.7	100	545.3	79.0	100.0	1902.1	85.0	100.0
Electrical Energy				1.2	0.2	0.2	3.2	0.1	0.2
Coal & Coal Derivatives	1.9	0.8	1.3	1.3	0.2	0.2	5.5	0.2	0.3
Crude Petroleum & Derivs.	2.0	0.8	1.4	15.4	2.2	2.8	9.5	0.4	0.5
Iron & Steel Metals	2.9	1.2	2.0	27.2	4.0	5.0	54.9	2.5	2.9
Non-Ferrous Metals	58.0	23.5	40.1	63.2	9.1	11.6	272.0	12.2	14.3
Non-Metals	6.4	2.6	4.4	19.1	2.8	3.5	40.8	1.8	2.1
Metal Industry	0.8	0.3	0.6	90.7	13.2	16.6	321.4	14.4	16.9
Shipbuilding				66.1	9.5	12.1	161.9	7.2	8.5
Electrical Industry	0.1	0.0	0.1	29.3	4.2	5.4	168.2	7.5	8.8
Chemical Industry	6.9	2.8	4.8	17.0	2.4	3.1	162.4	7.3	8.5
Building Material Industry	0.1	0.0	0.1	1.2	0.4	0.2	2.5	0.1	0.1
Timber Industry	36.1	14.7	25.0	96.7	11.1	14.1	174.3	7.8	9.2
Paper Industry	2.6	1.0	1.8	8.8	1.3	1.6	44.1	2.0	2.3
Textile Industry	3.7	1.5	2.6	40.8	6.0	7.5	224.1	10.0	11.8
Leather & Footwear Industry	1.6	0.7	1.1	17.4	2.5	3.2	138.4	6.2	7.3
Rubber Industry	0[1]	0.0	0.0	0.9	0.1	0.2	13.6	0.6	0.7
Foodstuffs Industry	12.8	5.2	8.8	47.9	7.0	8.8	65.1	2.9	3.4
Printing Industry	0.1	0.0	0.1	0.3	0.0	0.0	6.8	0.3	0.4
Tobacco Industry	8.6	3.5	5.9	20.4	3.0	3.7	33.3	1.5	1.8
Film Industry	0[2]	0.0	0.0	0.5	0.0	0.1	0.2	0.0	0.0
Agriculture - Total	89.0	36.2		129.5	19.0		301.7	13.5	
Agriculture	61.3	24.9		17.1	2.5		24.8	1.1	
Fruits	2.3	1.0		8.2	1.2		8.4	0.4	
Livestock	24.1	9.8		84.0	12.2		226.6	10.2	
Fisheries	1.4	0.5		1.8	0.3		3.1	0.1	
Home-Processed Agricultural Products				18.5	2.8		38.9	1.7	
Forestry	12.9	5.2		15.7	2.0		33.5	1.5	

Notes: [1] 0.011 [2] 0.005

Source: Calculated from Data in: Statistički Godišnjak SFRY, 1954, 1973; Statistika Spoljne Trgovine, 1961, 1972.

Table 6

Export/Output Ratios, 1952, 1972

	Exports/Output (percentages)		Index of Export/Output	
	1952	1972	1952 = 100	1972 Total Industry = 100
Electrical energy	0	0.5	56[3]	3
Coal & coal derivatives	1.2	1.7	142	12
Crude petroleum & derivatives	2.7	2.0	74	14
Ferrous metals	1.7	8.6	506	62
Non-ferrous metals	31.4	27.9	89	201
Non-metals	6.3	18.8	298	135
Metal industry	0.2	14.2	7100	102
Shipbuilding[2]	0	54.5	160[4]	392
Electrical industry	0.1	19.4	19400	140
Chemicals	5.0	15.3	306	110
Building materials	0.1	0.7	700	5
Wood	13.0	20.7	159	149
Paper	3.8	15.1	397	109
Textiles	0.5	15.5	3100	112
Leather & footwear	1.6	34.1	2131	245
Rubber	0.03	6.5	21667	47
Foodstuffs	6.8	4.0	59	29
Printing	0.2	1.8	900	13
Tobacco	5.4	12.8	237	92
Film	0.3	1.5	500	11
Total industry	4.6	13.9	302	100

Notes: Exchange rates used: 1952: 300 old dinars = 1 U.S. $
1972: 17 new dinars = 1 U.S. $

[1] Export share of production in 1954 was 0.9 percent

[2] Export share of production in 1956, was 33.9 percent (exports valued at exchange rate of 632 old dinars per U.S.$

[3] 1954 = 100

[4] 1956 = 100.

Source: Statistički Godišnjak, 1954, 1973.

branches (electrical energy, coal and petroleum) are removed from the totals, the export-output ratios become 5.2 percent in 1952 and 19.8 percent in 1972.

From the rise in the proportion of industrial production exported, it appears that the economy has become more outward-oriented. Indeed, 16 of the 20 industry branches exported a larger share of their output in 1972 than in 1952. Nevertheless, changes in the export-output ratio must be interpreted with extreme caution. The exchange conversion rate used in the valuation of exports in domestic currency is extremely important here. This is especially so in the case of Yugoslavia since 1952; in the intervening years, the dinar-U.S. dollar official exchange rate has gone from 300 old dinars (= 3 new dinars) to 17 new dinars per dollar.[11] That the Yugoslav official and/or settlement rate during most, if not all, of this period was not an equilibrium rate is a widely-held view.[12] Thus the magnitude of the export-output ratios, as well as their movement over time, should be looked upon as no more than an approximation.

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[11] For Yugoslav exchange rates, 1952-1972, see C. Chittle, op.cit..

[12] The equilibrium exchange rate is a rather elusive concept. One might think of it as that rate of exchange which is consistent with long-run balance of payments equilibrium under acceptable domestic conditions. The difficulty of taking proper account of price movements is also a hazard encountered in comparing export-output ratios over time. This problem is accentuated when a large share of prices are government controlled, as they are in Yugoslavia. Adjusting the official exchange rate for price changes may mitigate the price problem somewhat. Adjusting the Yugoslav exchange rate by multiplying it by the ratio of the U.S. wholesale price index to the index of producers' prices of manufactured goods (1966=100) yields a "real" exchange rate of 3.87 new dinars per dollar in 1952 and 13.60 in 1972. Using this "real" exchange rate as the conversion factor, the export-output ratio becomes 5.9, 13.5, 16.4 and 11.1 percent in 1952, 1962, 1965 and 1972, respectively. Another problem involved in a comparison of the foreign trade ratio over time is that Yugoslavia has employed multiple exchange rates to a considerable extent, as well as export subsidies. If not taken into account, these constitute additional distortion factors.

Another method of providing information on the trend towards openness of the economy is to relate the growth of exports to that of production. The exchange rate problem drops out in this approach. A price problem remains, however, in that both the trade and production data should be in real terms, that is, in constant prices. Yugoslavia publishes data on industrial value-added in constant prices, as well as export and import price indexes; current dollar value exports and imports were adjusted by the appropriate price index to obtain constant price data.

The growth rates of real industrial exports, imports and value-added have been calculated for the twenty year period (1952-1972) as well as for two sub-periods (Table 7). The compound annual growth

Table 7

GROWTH RATES OF INDUSTRIAL PRODUCTION, EXPORTS AND IMPORTS[1]
(percentages)

	1952-1961	1961-1972	1952-1972
Industrial Exports	13.1 (1.03)	11.1 (1.21)	12.0 (1.12)
Industrial Imports	9.5 (0.75)	8.8 (0.96)	9.1 (0.85
Industrial value-added	12.7	9.2	10.7

[1] Rate of growth of industrial value-added in 1966 prices. Export and import growth rates computed from constant (1966) price data (current dollar values adjusted by the export or import price index). Numbers in parentheses are growth rates of exports or imports relative to the growth of production.

Source: Calculated from data in Statistički Godišnjak.

rate of industrial exports of 12 percent exceeded the growth of industrial value-added by about 12 percent during the entire period. Industrial exports during the earlier period grew at a more rapid rate than in the reform years but in relation to the growth of output exports were more buoyant from 1961-1972.[13] This finding is consistent with a previous study which showed that export expansion was a stronger source of industrial growth during 1961-1970 than from 1952-1961.[14] While the trend of the economy in the entire two decades ending with 1972 was in the direction of becoming more open, the pace of change was considerably more rapid in the period following the economic reform of 1961.[15] The policies aimed at increasing the country's internationally competitiveness and participation in the world economy seem to have not been without some effect. However, we shall examine the growth of exports during the 1961-1972 period more closely.

1. A Constant-Market-Shares-Analysis of Export Growth

The economic reforms of 1961 and 1965, but especially the latter, contained the major efforts towards improving Yugoslavia's participation

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[13] See Chittle, op.cit., for the rationale of dividing the economic development of Yugoslavia since 1952 into an inaugural and a reform stage. Industrial exports in current prices grew faster in the period of 1961-1972 than in 1952-1961 (14.6 vs. 12.7 percent), as did industrial value-added (18.7 and 13.8 percent in the respective periods).

[14] Op.cit.. The data in Table 7 are also consistent with the author's earlier conclusions regarding the relative role occupied by import substitution as a source of growth. The growth of industrial imports at a rate about 4 percent less than the growth of industrial value-added in 1961-1972, when contrasted with an import growth rate of approximately 3/4 that of value-added in 1952-1961, supports the proposition that import substitution contributed more to the growth of industry prior to the reform of 1961 than after. Confining the comparison of import with output growth to 1961-1970 does not alter the analysis.

[15] For details of the economic reforms of 1961 and 1965 see op.cit.. The terms "openness" and "outward-looking" as used here carry no connotation regarding the structure of exports in the light of the nation's comparative advantages.

in the international division of labor. Among the foreign trade objectives of the 1965 reform were: to achieve a broader integration into the international division of labor, to do away with budget subsidies for exports, to subject the domestic market to greater competitive pressures from abroad, and to "assure a much faster growth of exports over production".[16] Included in the reform was a devaluation of the dinar from 750 to 1250 dinars per U.S. dollar.

The constant-market-shares analysis is a useful, albeit simplified method for examining the growth of exports.[17] Export growth is attributed to four factors: the growth of world trade, commodity structure, market structure, and a residual which has been termed the competitiveness effect. Various influences may be subsumed within the competitive effect, for example, movements in relative prices, quality, and marketing factors, and government policies.

The constant-market-shares analysis adopts the norm that a country's share in world export markets should remain constant over time. The difference between the hypothetical growth of exports implied by this norm and the actual growth is then broken down into commodity, market and competitive effects. The application of the constant-market-shares analysis to the growth of Yugoslav exports proceeds from the following identity:

$$E^2 - E^1 \equiv r E^1 + \sum_i (r_i - r) E^1_i + \sum_i \sum_j (r_{ij} - r_i) E^1_{ij} + \sum_i \sum_j (E^2_{ij} - E^1_{ij} - r_{ij} E^1_{ij})$$

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[16] Dušan Anakioski, "Foreign Trade in the Years of the Reform", Yugoslav Survey, Vol. X, No. 3, August 1969, p. 71.

[17] For a fuller discussion of the theory of the constant-market-shares analysis see Edward E. Leamer and Robert M. Stern, Quantitative International Economics, Boston, Allyn and Bacon, Inc., 1970, Chapter 7 and J. David Richardson, "Constant-Market-Shares Analysis of Export Growth", Journal of International Economics, Vol. 1, No. 2, May 1971.

where

E^1 = value of total merchandise exports of Yugoslavia in the initial year

E^2 = value of Yugoslav exports in the end year

E_{ij} = value of Yugoslav exports of commodity i to market j

$E = \sum_i \sum_j E_{ij}$

r = percentage increase in total world exports between years 1 and 2

r_i = percentage increase in world exports of commodity i between years 1 and 2

r_{ij} = percentage increase in world exports of commodity i to market j between years 1 and 2

The actual increase in Yugoslavia's exports appears on the left of the identity sign as $E^2 - E^1$. The four terms on the right side represent the world trade effect (hypothetical increase in Yugoslav exports required to maintain its share of world exports), commodity composition effect (increase in exports resulting from a favorable commodity structure), market distribution effect (export growth resulting from a favorable market structure), and the residual competitive effect respectively. Seven commodity categories, twelve markets and two time periods were used in applying the constant-market-shares analysis to Yugoslavian export growth.[18] The 1965 dividing point was used since, as noted above, it was the economic reform of 1965 which emphasized most strongly the goal of increasing the international competitiveness of the economy and more actively participating in the international economy.

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[18] The commodity groups used were the SITC one-digit sections. The market regions were the EEC, EFTA, Eastern Europe, other Europe, United States, Canada, Developing America, Developing Africa, Japan, Socialist Asia, other Asia and all other.

An examination of the results (Table 8) reveals the competitive effect, accounting for 58.8 percent of the increase in exports, to have been the major force in the export expansion that took place in 1961-1965, followed by the world trade effect of 42.8 percent. The structure of exports according to commodities as well as markets was not an important explanatory factor in the growth of exports. However, the picture differed considerably in the second period. The major change in 1965-1972 was in the magnitude of the competitive effect as it became a negative influence. The world trade effect soared to three digits while the commodity and market effects both acted as mild hindrances to export growth.

Table 8

CONSTANT-MARKET-SHARES ANALYSIS OF YUGOSLAV EXPORT GROWTH, 1961-65, 1965-72

Yugoslav Exports in 1965 (m. U.S. $)	1091.3		in 1972	2237.3	
Yugoslav Exports in 1961	568.8		in 1965	1091.3	
Increase in Exports	522.5	100.0 %		1146.0	100.0 %
Increase due to:					
World Trade Effect	233.5	42.8		1322.7	115.4
Commodity Composition Effect	-10.4	-2.0		-44.2	-3.9
Market Distribution Effect	2.3	0.4		-100.8	-8.8
Competitive Effect	307.1	58.8		-31.7	-2.8

Calculated from data in OECD, Trade by Commodities, Series B, 1961, 1965, 1972; U.N., Monthly Bulletin of Statistics, September 1974; U.N., Handbook of International Trade and Development Statistics, 1972.

The greater world trade effect in the more recent period is explained by a reduction in the growth of Yugoslav exports in relation to world

export growth. Whereas in 1961-1965, the growth of Yugoslav and world exports was 91.9 and 39.3 percent respectively (17.7 and 8.6 percent on a compound annual growth basis), the comparative export growth figures in 1965-1972 were 105.0 and 121.2 percent (10.8 and 12.0 percent compound annual rates). It is the reason for this failure to keep up with the growth of world trade that will explain much of the change in the pattern of export growth influences that took place in 1965-1972. Although the commodity and market structure of Yugoslavia's exports worsened somewhat in the second period, the crucial change was the decline in the broadly-defined competitiveness factor.

A thorough search into this decrease in competitiveness is beyond the scope of this paper. However, some general observations are in order. The rate of growth of Yugoslav exports failed to exceed world export growth in four of the seven years beginning with 1966 and ending with 1972 (the Yugoslav growth rate was greater than the world rate in each of the years 1962-1965). The particularly troublesome years for Yugoslav exports were 1967 and 1968, when total exports grew by 2.6 and 1.0 percent and industrial exports by -0.3 and 6.2 percent. An important factor in this relative stagnation of exports was the government policy directed towards reducing the size of Yugoslav clearing account balances. Exports to eastern Europe were virtually stagnate between 1965 and 1969. Moreover a tight credit policy was introduced with the reform of 1965; real investment and employment declined during 1965-1967. Export financing was affected by the restrictive credit policy. The elimination of export subsidies doubtlessly contributed to the sluggish export growth that occurred during the first few years following the launching of the reform. The credit screws were tightened further in 1967 in an unsuccessful attempt to reverse the export slowdown that had set in. The recovery of exports followed the relaxation of the restrictive monetary and credit policy; meanwhile export premiums were brought back as an export policy tool.

In summary, the constant-market-shares analysis applied to the 1961-1965 and 1965-1972 periods provides evidence that increased

competitiveness was an important factor in the growth of Yugoslav exports during 1961-1965. However in the latter period competitiveness became a negative influence on export expansion. The process of adapting to the new economic conditions which resulted from the economic reform of 1965 is likely to have contributed to the deterioration in competitiveness. The difficulty of financing exports and attempts to reduce clearing balances should not be lost sight of. In addition, the trade discrimination effects associated with European regional trade blocs were increasingly being felt.[19] Finally, the disappearance of inefficient enterprises, foreseen to take place following the economic reform, does not appear to have taken place. The law passed in 1967 to allow Yugoslav enterprises to enter into joint ventures with foreign firms can be seen as recognition that stronger efforts to increase productive efficiency were called for.

2. Export Specialization, 1952, 1962, 1972

Structural changes in industrial exports defined in terms of the Yugoslav twenty-branch industrial classification can be seen in Table 5.[20] Industrial exports have increased from about 145 million U.S. dollars in 1952 to over 1.9 billion dollars in 1972.[21] In this section structural changes in industrial exports during the two decades beginning with 1952 are examined from the standpoint of sectoral specialization.

Given that exports classified by industrial branch consist of 20 export sectors, the average branch share of exports is 5 percent. The two-digit industrial branch exports which account for more than one-twentieth of total industrial exports can be looked upon as export

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[19] A trade agreement was negotiated with the EEC in 1970.

[20] This classification is similar to, but not identical with, the two-digit ISIC classification.

[21] $ 2.5 billion in 1973.

specialization branches. The pattern of export specialization has been calculated for the years 1952, 1962 and 1972 (Table 9).[22]

An important question concerning the export specialization of Yugoslavia is to what extent the comparative advantages of the country are reflected in its major exports.[23] In order to shed light on this question, the capital and labor intensities of the various industries have been computed (Table A-1). In this calculation, the cumulative, i.e., direct plus indirect, capital-labor ratios serve as a basis for ranking the various industries according to their capital (or labor) intensities. Additionally, the industries have been classified as being relatively skilled- or unskilled-labor intensive. In making this classification, both the wage value-added per employee and the ratio of personnel with secondary education and above, highly skilled and skilled workers to total employees were used (Table A-2).[24] Finally, each of the twenty industrial branches were put into one of the following categories: capital and skilled-labor intensive, capital and unskilled-labor intensive, labor and skilled-labor intensive, and labor and unskilled-labor intensive (Table A-3). It is assumed that Yugoslavia's comparative advantages lie in those goods that are relatively labor, as opposed to capital, intensive in production, and which use relatively more unskilled-, as opposed to skilled-labor.

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[22] These years divide the period into two segments of equal length. This division also corresponds roughly with the inaugural stage of development in which export and import exchange rate coefficients, i.e. multiple exchange rates, were a major commercial policy tool, and the reform stage, during which the exchange rate coefficients gave way to customs tariffs and export subsidies, and a rise in the importance of the foreign exchange retention quota system (cf. footnote 13).

[23] For a "Leontief" type calculation of the capital-labor ratios of Yugoslav aggregate exports and total industrial exports, see Chittle, op.cit..

[24] An industry is classified as skilled-labor intensive if the value of the indicator for that industry exceeds the average for all of industry, with adjustments being made for discrepancies between the two indicators.

Table 9

Industrial Export Specialization

	Percent of Industrial Exports
1952	
Non-ferrous metals	40.1
Wood products	25.0
Food products	8.8
Tobacco	5.9
1962	
Metal products	16.6
Wood products	14.1
Shipbuilding	12.1
Non-ferrous metals	11.6
Food products	8.8
Textiles	7.5
Electrical machinery, etc.	5.4
1972	
Metal products	16.9
Non-ferrous metals	14.3
Textiles	11.8
Wood products	9.2
Electrical machinery, etc.	8.8
Chemicals	8.5
Shipbuilding	8.5
Leather and footwear	7.3

Source: Table 5.

This assumption is supported by the outflow of emigrant labor from Yugoslavia. The number of Yugoslavs employed abroad was about one million at the end of 1973. This means that of the total Yugoslav paid employment, exclusive of the self-employed (mainly independent farmers and artisans) but inclusive of emigrant workers, about 20 percent, or one of every five workers, were employed abroad. About 50 percent of these emigrant workers are found in the Federal Republic of Germany. The Yugoslav emigration rate (external migrants as a percentage of total population) of 4.2 % in 1971 was the second highest in Europe.[25] About three-quarters of the emigrant workers are unskilled. Moreover the number of workers with near zero marginal productivity has been estimated to be about 300,000 out of a total labor force of about 9 million.[26]

Exports of four industry branches fit the above definition of export specialization in 1952. Except for non-ferrous metals, these exports consist of traditional consumer goods which are unskilled-labor intensive in production. Non-ferrous metals are capital and skilled-labor intensive; these however are supply-oriented goods in which comparative advantage is determined largely by natural resource endowment.

By 1962, roughly ten years after the étatist system was replaced by workers' self-management (albeit with considerable participation by the government, especially with respect to investment and income distribution decisions), Yugoslavia's "export industries" had expanded to seven. Reflecting the progress that had been made in building up heavy industry, a process which began when étatism was the order of the day and extended into the workers' self-management stage of development, especially through the first half of the

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25 Ivo Baučić, The Effects of Emigration from Yugoslavia and the Problems of Returning Emigrant Workers, European Demographic Monographs II, Martinus Nyhoff, The Hague, 1972, p. 3.

26 Bernard Kayser, Cyclically-determined Homeward Flows of Migrant Workers, OECD, Paris, 1972, p. 30 (cited in Economic Survey of Yugoslavia, OECD, Paris, 1973, p. 32).

1950s, the metal products industry had become the major export sector, with shipbuilding in third position.[27]

Exports had obviously become more diversified in 1962. No sector accounted for more than 17 percent of industrial exports, a pronounced change from the situation in 1952. Metal products (including non-electrical machinery and equipment, and transport equipment, except ships) and electrical machinery and supplies were new, and important, export industries, along with shipbuilding. Thus as part of the export diversification that took place was a broadening of Yugoslavia's export industries to include goods having a relatively high world income elasticity of demand. While these new export industries are relatively labor-intensive, they also tend to be relatively skilled-labor-intensive. The question as to what extent this export structure reflects the nation's comparative advantages is exceedingly complex in nature. The structure of a nation's exports reflects a combination of factors, among the most important being the nation's own, as well as the rest-of-the-world's, commercial policy and the interplay of the forces of comparative advantage. In addition, there is no clearly best method of relating the nation's comparative advantages, properly defined, to its foreign trade structure.[28] Further comments on this topic appear later.

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[27] The metal products industry has been cited as an example of an industry whose growth was of an import-substituting character and whose export expansion eminated "by unrestricted export incentives and reckless depreciation of the dinar and by taking capital from other industries to finance buyers abroad". (the quotation is from the review by Dr. Ivo Fabinc of Dr. Vladimir Pertot, Ekonomika međunarodne razmjene Jugoslavije (The Economics of Yugoslavia's International Trade: An Analysis of the Period between 1919 and 1968), International Problems, 1972, p. 161. Pertot goes on to note that the import-substituting function of this industry has been negated by its imported inputs.

[28] Not to mention the short-run versus long-run comparative advantage controversy.

The list of "greater than 5 %" export branches in 1972 totalled eight, providing an indication of further export diversification.[29] The effects of the economic reforms of the early and middle 1960s should have been substantially felt by 1972. As previously noted, a major aim of these reforms was to increase the efficiency of the Yugoslav economy and to bring about greater participation in the world economy consistent with the nation's comparative advantages.[30] The increasing importance of both chemical and leather and footwear exports reflects in part a greater utilization of domestic raw materials, e.g.,

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[29] A word of caution must be interjected here. The high degree of aggregation in which the analysis is framed masks a considerable amount of economic variation within the various industry branches. The interpretations drawn here should be viewed with this thought in mind. However the conclusions drawn here with respect to export diversification are supported in general by a recent study on foreign trade diversification (Zoran Trputec, "Economic Development and Foreign Trade Diversification - the Experience of Underdeveloped Countries and the Case of Yugoslavia", International Problems, 1973, pp. 117-127). The coefficient of export commodity concentration, as computed by Trputec, has varied as follows: 1939: 35.25, 1945: 34.05, 1954: 21.40, 1956: 17.22, 1960: 17.07, 1964: 17.90, 1965: 19.13, 1968: 17.49 (p. 122). The U.N. has used a normalized Hirschmann index to measure export commodity concentration of a large number of developed and developing countries in 1962 and 1968 (U.N., Handbook of International Trade and Development Statistics, 1972). It was found that Yugoslav exports were somewhat less concentrated in 1968. Moreover, Yugoslav exports were less concentrated in 1968 than any of the developing countries for which the index was calculated and all but three of the developed countries (over 100 countries in all). See also the reference to the theory of capillary trade in Section III above.

[30] cf. footnote 15. Also, the Social Development Plan of 1966-1970 called for "Efforts to step up the integration of the Yugoslav economy into the international division of labour . . . in its efforts to expand its role in the world market the Yugoslav economy will increasingly rely on its comparative advantages. This means that production will less and less be geared to what is needed by, and can be placed on, the domestic market, as has been the case so far, but will be more and more oriented to what is profitable to produce in world proportions". Yugoslav Survey, Vol. VII, No. 27, October-December 1966, pp. 3865-3866 (R. Stajner, "The Fundamentals of Yugoslavia's 1966-1970 Social Development Plan", pp. 3863-3868). The Plan goes on to name non-ferrous metallurgy, tourism, international transport, some sectors of mechanical engineering, electrical engineering and shipbuilding as industries in which the nation has a comparative advantage. "The Plan also favours the development of some labour-intensive manufacturing activities which temporarily have a comparative advantage because of available labour and the increasing shortages of manpower in developed countries" (p. 3866).

hides, non-ferrous and non-metallic minerals. The chemical industry has also been a major beneficiary of foreign investment in the form of joint ventures. Since foreign participation in Yugoslav enterprises in this form was legalized in 1967, this industry has received about one-fifth of the total private foreign direct investment in Yugoslavia.

In summary, an examination of Yugoslav industrial exports by industrial branches reveals that export specialization has become more diversified since 1952. The major export industries, defined in terms of their shares of industrial exports, tend to be a mixed bag, reflecting the country's relative abundance of unskilled-labor, as well as its natural resource endowment. To what extent the structure of industrial exports stems from the interplay of the forces of comparative advantage, domestic economic policies affecting exports (investment, exchange rate, taxation and subsidy policies) or from commercial policies in the rest-of-the-world is an important question the complete analysis of which is beyond the scope of this paper.

3. Net Export and Import Industries and Factor Proportions

In so far as industrial goods are concerned, it is not uncommon for a country to be a substantial importer as well as exporter of the same product. Much of international specialization is based on such intra-industry trade. The likelihood for this phenomenon to occur is greater the more broadly products are defined. At the two-digit level of industrial classification most countries both export and import goods that are in the same product category. In this section an attempt will be made to explain the foreign trade pattern of Yugoslavia by relating the factor-intensiveness of the industrial branches to their net exports (imports).

The hypothesis is formulated that Yugoslavia imports manufactured goods that are capital- and skill-intensive and exports goods which are intensive in unskilled-labor. As previously stated, it is assumed that capital and skilled-labor are relatively scarce

factors of production in Yugoslavia. The industrial branches have been grouped in Table 10 as net exporters and net importers according to data in the Yugoslav input-output table of 1968. Direct capital and labor data are from Statistički Godišnjak SFRY (Yugoslav Statistical Yearbook); these data, with the help of the input-output table, were used in calculating the cumulative capital and labor data (see Tables A-2 and A-3 for further information regarding the ranking of the industries according to factor intensities).

Of the net export group in 1968, only non-ferrous metallurgy and the paper industry have cumulative capital-labor ratios that exceed the industrial average. The appearance of these two industries in the net export group can be explained, however, on the basis of their usage of natural resources with which Yugoslavia is relatively well-endowed. Yugoslavia is the leading European producer of antimony, chrome, copper, lead and molybdenum; as Europe's second largest producer of mercury, she produces about 10 percent of the world's mercury and is a major producer of bauxite and zinc. Vast amounts of timber are also found in Yugoslavia.

With the exception of non-ferrous metals, shipbuilding and film, the net exporters also tend to use relatively much unskilled labor in their production. Of these three film is a special case, while the position of the other two as net-exporters can be explained by looking at nature's benevolence to the country.

The position of rubber products, coal, non-metals, building materials and food manufactures is contrary to the hypothesis. Government price and investment policies have tended to hinder the development of the primary and semi-processed goods industries.[31] This

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[31] See for example Zoran Nikolin, "Some Basic Features of Yugoslavia's Industrial Development in 1952-1972", Yugoslav Survey, Vol. XIV, No. 3, August 1973, pp. 155-162. Nikolin states that the production of industrial materials began to lag behind the requirements of domestic enterprises on a major scale at about 1960. He cites power, steel, non-ferrous metals, cement and building materials as being in continual short supply; shortages of chemical semi-manufactures, primary wood products, and raw material inputs of the footwear, rubber, paper and textile industries tend to be more irregular (p. 161).

Table 10

Net Exports and Imports and Factor Intensiveness, 1968

R A N K I N G

	Value 1000 New Dinars	K^x/L^x	L/X	L^x/X	K/X	K^x/X	Personnel with secondary and above education, Skilled & Highly Skilled - Total Employed	Wage Value Added per Employee
NET EXPORTERS								
Wood products[1]	1,291,203	6	2	15	4	2	18	19
Shipbuilding	1,130,879	10	14	14	13	10	4	5
Leather and footwear	705,207	19	8	3	20	19	11	17
Non-ferrous metals	638,070	5	13	13	6	5	9	6
Tobacco manufactures	306,515	20	17	1	18	15	16	12
Textiles	88,633	18	5	4	12	16	19	20
Paper	52,558	2	11	7	2	1	15	15
Film	5,539	11	19	20	19	20	1	1
NET IMPORTERS								
Metal products	7,067,215	13	7	9	11	9	5	11
Chemicals	1,996,059	7	15	16	10	7	10	7
Ferrous metals	1,212,340	4	12	6	5	3	6	9
Petroleum	977,981	3	20	18	7	8	3	2
Electrical machinery, etc.	601,322	12	16	12	17	11	8	8
Rubber products	333,348	16	6	11	16	18	12	14
Coal, etc.	326,585	8	1	10	3	6	13	16
Non-metals	243,919	15	3	8	8	12	17	18
Printing, etc.	72,407	9	9	17	15	13	7	3
Electricity	34,988	1	18	19	1	4	2	4
Building materials	19,323	14	4	15	9	14	20	13
Food manufacturing	4,876	17	16	2	14	17	14	10

[1] See footnote, Table A-3. K is direct capital, K^x cumulative capital, L is labor, L^x cumulative labor (in physical units)

Source: Calculated from data in Inter-industry Relations of the Yugoslav Economy, 1968; Industrijska Preduzeća, 1968, p. 24; Tables A-1, A-2.

strategy of giving preference to industries producing finished and highly-processed goods has contributed to a somewhat "top-heavy" structure of the economy and thus a trade pattern that is somewhat out of line with expectations based on the nation's comparative advantages.

4. Contribution of Industrial Branches to Incremental Industrial Exports

As previously stated, the early and middle 1960s were years in which major foreign trade reforms occurred. In this section the effects of these reforms on the distribution of the incremental value of industrial exports is examined. The contribution of the various industrial branches to the growth of industrial exports in the pre-reform period of 1952-1961 is compared to that in the reform years of 1961-1972 (Table 11). Such a comparison may provide information on the efficiency of Yugoslavia's industrial sector in earning foreign exchange.[32]

The performance of the unskilled-labor intensive industries in the latter period as contrasted to the former is somewhat mixed. While the contribution of the entire group declined from 47.1 to 33.6 percent of incremental exports, this decrease was entirely accounted for by the fall in the importance of exports of food products. Exports of food products encountered severe growth problems in the 1960s. Although there was a growth spurt in the late 1960s, declines in the first two years of the 1970s resulted in 1972 exports being less than in 1965. Part of the export lag of this industry can be traced to production problems. Whereas agricultural production in 1972 was only 4.5 percent greater than in 1961, 1961 output was 92.6 percent greater than that of 1952.[33]

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[32] The contribution of a given industry branch to the growth of industrial exports is computed by dividing the change in exports of the branch by the change in total industrial exports.

[33] The price reform of 1965 in which producers' prices of agricultural goods rose by 43 percent, while producers' prices of industrial goods rose by only 15 percent, was probably a strong contributing factor to the 16 percent increase in agricultural output that took place in 1966. Neither continuous high growth in output nor significant increases in the terms of trade of agriculture relative to industry followed this burst of output.

Table 11

Industrial Branch Contribution to the Growth in Value of Industrial Exports, 1952-1961, 1961-1972
(Percentages)

	1952-1961	1962-1972
Electrical energy	0.2	0.2
Coal, etc.	0.1	0.2
Petroleum	1.2	0.3
Ferrous metals	6.4	2.3
Non-ferrous metals	-2.2	14.9
Non-metals	2.9	1.8
Metal products	23.8	17.2
Shipbuilding	9.9	9.1
Electrical machinery, etc.	9.0	9.6
Chemicals	2.9	10.0
Building materials	0.4	0.1
Wood	10.5	7.4
Paper	1.3	2.6
Textiles	11.7	12.7
Leather and footwear	4.4	8.5
Rubber products	0.1	0.9
Food	14.5	0.8
Printing, etc.	0.2	0.4
Tobacco	2.5	1.2
Film	0.2	-

Total Industrial Exports (m. U.S.$): 1952 : 144.72
1961 : 424.80
1972 : 1902.05

Contribution of branch i = $\frac{\Delta E_i}{\Delta \sum_i E_i}$ where E = export value

Source: Statistički Godišnjak SFRY; Statisticki Spoljne Trogovine.

Largely influenced by the non-ferrous metals and chemical industries, the contribution of capital-skill-intensive exports to incremental exports rose by a factor of about 3.25 in 1961-1972 as compared to the earlier period. Exports of non-ferrous metals were on a downward trend during the 1950s and did not reach their 1952 level again until 1962. In the meantime their share of total industrial exports fell from over 40 to less than 12 percent. Since 1962, non-ferrous metals exports have grown faster than the industrial average (imports have grown even faster, cf. fn. 31). The chemical industry, as its share of industrial investment rose from 6.4 percent in 1952-1960 to 8.2 percent in 1961-1971, moved from a lagging export growth sector to a leading one. The chemical industry, as previously observed, has been a major beneficiary of joint venture capital.

In this section the contribution of various export goods to the growth in the value of industrial exports both before and after the major foreign trade reforms of the 1960s was examined. From this analysis no clear picture emerges regarding the "rationale" of the foreign exchange earnings. There has been some tendency for the capital intensive branches to provide a greater share of export earnings since the reforms.

V. IMPORT REQUIREMENTS AND "NET TOTAL EXPORTS"

In the preceding sections exports and imports have been defined in standard commodity composition terms. Exports of steel, for example, were defined to include exports of those articles coming under the general definition of steel; imports were treated in the same way. While this definitional concept has obvious advantages and uses, it also has certain limitations. In particular, this definition of exports and imports is inappropriate for analyzing the net balance of trade effects of the exports of the various industries. In this section the import content of production as well as the "net exports" of the various industry branches will be calculated. The concept of exports used is the "net total exports" concept, that is, direct and

indirect exports of each industry branch out of its value-added. In this way a more realistic picture of the export supply position is obtained.

As a first step in the analysis of the "net exports" of the various sectors of the Yugoslav economy, the import intensity of production was calculated (Table 12). With the use of the Yugoslav input-output table, the total imports, m_j^x, required for the production of one unit of good j were calculated as follows:

$$m_j^x = \sum_i m_i \; s_{ij}$$

where m_i is the direct import component of one unit of output of good i and s_{ij} is an element of the $[I-A^{(D)}]^{-1}$ matrix.

As can be seen in Tables 12 and 13, the trend of the import content of production has been upward. Imported inputs as a share of output increased for 16 of 20 branches between 1962 and 1968. Between 1968 and 1970, 17 of 19 industry branches experienced a rise in their import requirements. All of the major economic groups in Table 13 have also become more import-dependent. This is especially so in the case of industrial investment and exports. Part of this trend towards a greater reliance on imported inputs can be explained by business cycle conditions. The break in the trend in 1966 reflects the economic slump that had set in. The economy in 1968 began to move out of the recession that saw no growth of industrial production in 1967. By 1970 the economy was moving along with a good head of steam, as industrial production rose by 11 percent in 1969 and 9 percent in 1970. Other factors contributing to the increase in the use of imported inputs include import liberalization, the use of the foreign exchange retention quota as an export promotion instrument, the development strategy of promoting manufacturing industries at the expense of supplier industries, and speculation concerning the 1971 devaluations.[34]

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[34] See footnote 15.

Table 12

Import Component of Production by Economic Sectors

(percentages)

	1962		1968		1970	
	Direct	Total	Direct	Total	Direct	Total
1. Electrical energy	0.8	5.9	2.1	5.7	2.2	5.8
2. Coal, etc.	11.4	14.9	12.2	15.1	10.5	13.5
3. Crude Petroleum, etc.	12.2	17.2	26.8	34.2	31.0	39.8
4. Ferrous metals	6.8	18.7	8.9	23.2	10.7	26.9
5. Non-ferrous metals	6.3	14.8	12.3	26.5	19.0	34.4
6. Non-metals	4.6	9.2	5.9	12.3	5.9	12.5
7. Metal products	9.2	16.9	8.9	18.0	13.2	23.5
8. Shipbuilding	30.6	37.4	24.0	30.9	27.2	35.5
9. Electrical machinery, etc.	11.7	19.6	11.4	22.3	15.2	27.9
10. Chemicals	16.4	22.7	20.7	29.8	22.3	33.2
11. Building materials	3.2	8.0	3.1	7.8	3.1	8.4
12. Wood	1.6	5.9	6.5	12.1	10.6	15.9
13. Paper	3.2	7.6	7.6	16.0	12.4	21.6
14. Textiles	16.5	27.0	17.2	29.1	17.8	29.5
15. Leather & footwear	12.8	22.9	14.1	24.0	16.1	26.3
16. Rubber	28.7	32.8	24.9	31.0	29.0	36.1
17. Food	5.6	9.8	8.5	13.2	9.0	14.1
18. Printing	3.5	7.2	5.1	10.5	7.9	14.3
19. Tobacco	3.8	5.8	2.6	7.8	4.8	11.9
20. Film	3.4	8.1	5.5	9.3		
21. Miscellaneous manufactures	4.2	10.0	8.9	17.2		
22. Agriculture	1.7	4.1	1.8	4.9		
23. Forestry	0.4	1.5	0.6	1.9		
24. Construction	0.9	6.1	1.4	7.1		
25. Transport & Communication	8.0	12.8	10.1	14.1		
26. Trade & catering	0.3	1.6	0.3	1.4		
27. Arts & crafts	4.0	9.6	4.0	9.7		
28. Public utilities	0.9	4.2	2.0	5.0		
29. Scrap & waste	-	-	-	-		

Source: 1962, 1968: Calculated from Inter-industry Relations of the Yugoslav Economy, 1968.

1970: Mijo Sekulić, "Osjetljivost Jugoslavenske privrede na promjene Uvoznih Cijena - Strukturna Alaliza", Ekonomski Pregled, Zagreb, No. 3-4, 1972, pp. 138, 140.

Table 13

Total Import Content of Major Sectoral Groups

(percentages)

SECTOR	1962	1966	1968	1970
Gross Output	11.0	10.8	11.4	13.4
Intermediate Goods	12.0	13.1	13.6	16.4
Final Demand	18.3	18.3	18.8	21.3
Investment	26.5	24.7	26.0	28.1
Industrial Investment	57.8	59.1	63.0	68.9
Consumption - Personal and Public	15.1	15.2	15.4	16.1
Total Exports	14.5	15.1	16.8	21.7
Industrial Exports	17.5		22.3	

Source: See Table 12.

Among the most import-intensive industries are those whose growth has been of an import substituting type, for example, ferrous metals, metal products, electrical machinery, chemicals, rubber products and leather and footwear. Thus the effect of import substitution policies on the trade balance can be seen to be somewhat different than would be implied by the ratio of the imports of a particular commodity to the total domestic supplies of the same good. A final comment on the import-intensity of production relates to the products which account for an above average share of industrial exports (Table 9). These major export products, with the exception of wood, food and tobacco products, have a relatively high import content of production. The export retention quota, which permits firms to retain a certain share of their foreign exchange earnings, may play a major role in this association between import intensity of production and export shares.

To obtain the net balance of payments effects of the exports of the various industry branches one could multiply the import share of production (Table 12) of each branch by its direct exports and thus obtain the total import component of exports (assuming that the import content of production is constant regardless of where the product is sold). Subtracting this figure from direct exports yields a number which might be termed the net (of direct and indirect imports) exports, or net foreign exchange earnings of the particular industry branch. Yet an inconsistency remains in that imports are valued on a total (direct plus indirect) basis, while exports are valued on a direct basis only. Thus the exports of industry i are overvalued to the extent that direct exports of i contain inputs from other economic sectors, while the contribution of industry i to the nation's total exports is undervalued to the extent that production of industry i is contained in the exports of other industries.

To put exports on the same basis as imports, and to more accurately calculate the balance of payments effects of exporting, the Yugoslav input-output table has been used to calculate the total, that is, direct plus indirect, exports of the various sectors. Total

exports (E_i^x) of industry i can be calculated as follows:

$$E_i^x = \sum_j v_i \; s_{ij} \; E_j$$

where

E_i^x = total exports of industry i

E_j = a vector of direct exports

$v_i = \frac{V_i}{X_i}$ = share of value-added (V_i) in the gross output (X_i) of i

The proportional factor v_i serves to avoid overvaluation or double counting. Each element (s_{ij}) of the i^{th} row of the domestic coefficients matrix $[I-A^{(D)}]^{-1}$ is multiplied by v_i to yield the value-added of i required to produce one unit of each of the j commodities. The sum of the product of each element of the redefined row of s_{ij}s and the respective element of the vector of direct exports (E_j) is then the total exports of industry i.[35]

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[35] It is assumed that the value-added proportion of gross output is uniform regardless of where the product is sold, e.g. in foreign or domestic markets. For additional information on the methodology and rationale of the calculations see the author's, "Symmetry between Total Imports and Exports", mimeo., September 1974. The method used here to calculate total exports has been used by Juvia Blumenthal in his article, "Exports and Economic Growth: The Case of Postwar Japan", Quarterly Journal of Economics, Vol. LXXXVI, No. 4, November 1972, pp. 617-631. Blumenthal used the concept of total exports to calculate the structure of exports and the export-output ratio; he did not apply it to balance of payments analysis.

In matrix notation, this computation takes the following form:

$$E^{\pi} = V \left[I - A^{(D)} \right]^{-1} E$$

where E^{π} is a vector of total exports, V is a diagonal matrix whose diagonal elements are the value-added/gross output ratios of the various sectors, and E is a vector of direct exports. Thus the E_i^{π}s represent the direct plus indirect exports of each industry i out of its value-added. As such, E_i^{π} is a measure of the value-added of industry i which is exported directly by industry i in the form of exports of the product(s) produced by i and exported without further processing, plus the value-added of industry i which is contained in the exports of each industry j which uses industry i output in some way in its production process. As E^{π} is a value-added measure it is obviously net of imports. Thus total E^{π} of the economy differs from the sum of total direct exports by the total import requirements of production.

A comparison of redefined total exports (E^{π}) with standard direct exports by commodity (E) supports a priori assumptions concerning associations between the two sets of data. E^{π} is greater than E in those sectors which act mainly as suppliers of primary or intermediate inputs. This is to be expected, since these sectors make a major contribution to export earnings by being embodied in the direct exports of other sectors. The opposite relation between E^{π} and E exists for those sectors producing mainly for final consumption; here E^{π} is less than E.

Examples of the above relationships are not difficult to find in Table 14. Only a few will be cited here as illustrations. For example, the contribution of total exports of the forestry sector to total export earnings of the economy on a value-added basis is about four times greater than the share of direct forestry exports in total direct exports, while the export share of the wood products industry

Table 14

Yugoslav Direct and Total Exports, 1962, 1968

(value in thousands of new dinars, structure in percent)

Sector	Direct Exports (E)		Cumulative Exports = $[I-A^{(D)}]^{-1} E$		Value Added/ Gross Output		Total Exports = E^{x} = $V [I-A^{(D)}]^{-1} E$ = Col.3 x Col.5, Col.4 x Col.6		Structure of Exports (Sectors 1-29)				Structure of Industrial Exports (Sectors 1-20)			
									Total Exports=E^{x}	Direct Exports=E	Total Exports	Direct Exports	Total Exports	Direct Exports	Total Exports	Direct Exports
	1962	1968	1962	1968	1962	1968	1962	1968	1962	1962	1968	1968	1962	1962	1968	1968
1. Electrical energy	12,690	4,206	212,379	536,718	.6367	.7286	135,222	391,053	2.0	0.2	2.1	-	3.5	0.2	4.3	-
2. Coal, etc.	7,240	10,369	274,353	440,926	.5858	.6441	160,716	284,000	2.4	0.1	1.5	0.1	4.2	0.2	3.1	0.1
3. Crude petroleum, etc.	131,630	145,732	339,818	537,452	.5579	.4281	189,584	230,083	2.8	1.7	1.3	0.6	4.9	2.8	2.5	1.1
4. Ferrous metals	276,870	361,801	1,072,141	1,814,527	.1842	.1909	197,488	346,393	2.9	3.5	1.8	1.6	5.1	5.0	3.8	2.7
5. Non-ferrous metals	477,880	1,672,205	1,164,526	3,925,635	.3208	.2589	373,580	1,016,347	5.5	6.0	5.4	7.3	9.7	11.6	11.1	14.0
6. Non-metals	133,590	364,556	244,741	597,775	.5661	.5318	138,548	317,897	2.0	1.7	1.7	1.6	3.6	3.5	3.5	3.1
7. Metal products	973,170	2,004,184	1,675,799	3,868,706	.4156	.4054	696,462	1,568,393	10.2	12.2	8.3	8.8	18.0	16.6	17.1	14.7
8. Shipbuilding	657,030	1,558,260	697,818	1,630,180	.2783	.3529	194,203	575,291	2.9	8.2	3.0	6.8	5.0	12.1	6.3	7.8
9. Electrical machinery,etc.	328,620	1,165,162	524,266	1,636,425	.3744	.3408	196,285	557,694	2.9	4.1	2.9	5.1	5.1	5.4	6.1	8.1
10. Chemicals	222,830	1,094,656	504,020	2,124,623	.4164	.3648	209,874	775,062	3.1	2.8	4.1	4.8	5.4	3.1	8.5	6.8
11. Building materials	62,970	104,911	110,265	229,437	.5620	.6051	61,969	138,832	0.9	0.8	0.7	0.5	1.6	0.2	1.5	0.2
12. Wood	633,020	1,435,772	899,500	1,979,772	.3917	.3832	352,334	758,649	5.2	7.9	4.0	6.3	9.1	14.1	8.3	10.4
13. Paper	79,380	415,748	253,147	961,093	.4046	.2618	102,423	251,614	1.5	1.0	1.3	1.8	2.7	1.6	2.8	3.2
14. Textiles	430,710	1,719,224	737,179	2,851,638	.3605	.3331	265,753	949,881	3.9	5.4	5.0	7.5	6.9	7.5	10.4	12.5
15. Leather and footwear	190,940	902,545	275,817	1,238,389	.2952	.3087	81,421	382,291	1.2	2.4	2.0	4.0	2.1	3.2	4.2	6.8
16. Rubber products	8,460	55,793	68,242	209,080	.4792	.4573	32,702	95,612	0.5	0.1	0.5	0.2	0.8	0.2	1.0	0.4
17. Foodstuffs	529,650	879,085	597,913	1,068,618	.3468	.3054	207,356	326,357	3.0	6.6	1.7	3.9	5.4	8.8	3.6	5.4
18. Printing, etc.	2,790	33,006	37,227	99,054	.5873	.5616	21,863	56,619	0.3	0.1	0.3	0.1	0.6	-	0.6	0.3
19. Tobacco	313,690	316,837	360,907	416,609	.6339	.2734	228,779	113,901	3.4	3.9	0.6	1.4	5.9	3.7	1.2	2.4
20. Film	22,490	15,169	28,849	21,124	.5426	.5778	15,653	12,205	0.2	0.3	0.1	0.1	0.4	0.1	0.1	-
21. Miscellaneous manufacturing	29,880	78,529	33,515	81,825	.5136	.4198	17,213	34,350	0.3	0.4	0.2	0.3				
22. Agriculture	726,370	2,450,137	1,631,444	4,648,418	.5462	.5625	891,095	2,614,735	13.1	9.1	13.8	10.7				
23. Forestry	88,350	201,220	335,881	756,634	.8780	.8559	294,904	647,603	4.3	1.1	3.4	0.9				
24. Construction	3,800	281,524	163,681	525,629	.4586	.4618	75,064	242,735	1.1	0.1	1.3	1.2				
25. Transport and communication	1,097,580	3,318,256	1,459,239	4,172,485	.5937	.6444	866,350	2,688,749	12.7	13.8	14.2	14.5				
26. Trade and catering	515,710	2,158,255	744,764	3,447,740	.8657	.9059	644,742	3,123,308	9.5	6.4	16.5	9.5				
27. Service rendering arts and crafts	-	28,465	135,371	435,651	.5634	.5446	76,268	237,256	1.1	-	1.3	0.1				
28. Public utilities	-	-	20,462	82,527	.6951	.7497	14,223	61,870	0.2	-	-	-				
29. Scrap and waste	10,080	50,762	66,212	190,995	1.0000	1.0000	66,212	190,995	1.0	0.1	-	0.2				
T O T A L	7,967,420	22,826,369					6,808,286	18,989,755	100	100	100	100	100	100	100	100

on a value-added basis is considerably less than on a direct basis. The same type of relationship exists between the agriculture and food processing sectors. The contribution of the energy sectors, electricity, coal and petroleum, to total industrial exports on a value-added basis, exceeds the shares of the same sectors in aggregate direct industrial exports, while in the case of textiles, shipbuilding and leather and footwear the relationship is turned around.

The value-added measure of exports, in addition to providing information on the source of foreign exchange earnings by economic sector (the difference between E^x and $E - m^xE$ as a measure of exports net of imported components is vast for some sectors) is especially useful in overall economic planning and coordination. By examining the production process more deeply it goes beyond the facade of direct exports by commodity. Whereas with the concept of direct exports, the entire value of the exports of commodity i is attributed to the industry in which the commodity undergoes its last stage of processing prior to export, the value-added measure takes into account the entire production process and allocates export value to the various sectors according to their value-added contribution to the exported commodity. As a consequence, it provides economic planners and policy-makers with additional information and more clearly indicates the sources of the nation's foreign exchange earnings.

VI. GEOGRAPHICAL EXPORT PATTERNS

Yugoslavia's trade structure is diversified by country as well as commodity. In 1973 she exported goods to at least 116 different countries. Italy, the Soviet Union and the Federal Republic of Germany are the most important markets for Yugoslav goods. In 1973 these three countries received 16.3, 14.3 and 11.2 percent respectively of Yugoslav merchandise exports. The same three countries are the leading sources of Yugoslav imports with Germany providing

19.1, Italy 11.9 and the Soviet Union 9.0 percent of total imports in 1973.

Information on the geographical structure of Yugoslav exports contained in Table 15 reveals that about one-half of total merchandise exports goes to western industrialized countries, one-third to eastern Europe and one-sixth to the developing countries. An economic blockade was imposed by the Soviet bloc nations in 1948. By 1950 Yugoslav trade with these nations had virtually disappeared. Economic relations thawed slightly in 1954 but it was not until 1956 that normal trade relations were resumed. Yugoslavia has had an observer status with COMECON since 1956; since 1964 she has had a special status which allows her to participate only in those COMECON projects which she finds desirable.[36] Among the developing countries, the People's Republic of China, Libya, India, Iran and Egypt provided the major export markets in 1973. None of these countries accounted for more than 1.6 percent of Yugoslavia's total exports. Although oscillations have occurred, the long-term structure of exports according to western industrialized, eastern European and developing countries has been rather stable.

Yugoslav enterprises find the eastern European market for manufactured goods easier to enter than the western European market. Competition is not as strong in the eastern market and there are fewer marketing difficulties, e.g.,quality, design and technical standards are less rigorous. Moreover, prices in eastern markets tend to be higher than in western trade. For the same reasons, Yugoslav importers have a preference for buying from the West. Since the Yugoslav balance on service account with the East tends towards surplus, she is not very keen on having a positive merchandise trade balance with these countries, as this involves the

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[36] Yugoslavia is also a member of GATT, ECE, IMF, IBRD, is associated with the OECD, and has a trade agreement with the EEC.

Table 15

GEOGRAPHICAL STRUCTURE OF YUGOSLAV EXPORTS, 1948 - 1973

(Percentage)

	1948	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
Western Europe	40.2	77.4	66.6	68.6	59.6	57.9	51.7	50.6	45.7	45.1	45.9	44.1	48.3	43.0	36.1	41.8	44.6	45.4	50.3	51.5	45.8	48.9	45.9
EEC	19.4	45.3	37.3	41.0	35.3	34.8	32.0	28.6	26.2	25.6	26.0	27.2	33.9	27.5	25.1	27.7	29.7	28.0	32.0	33.0	29.1	30.6	32.2
EFTA	20.0	28.9	23.4	23.2	19.1	17.4	16.0	18.7	16.0	8.1	15.7	15.0	12.9	13.3	8.8	11.1	11.9	12.7	14.0	14.4	14.1	14.9	11.1
Eastern Europe	51.6	-	-	1.4	11.0	20.3	26.6	27.8	30.9	32.2	30.8	24.3	26.6	34.5	42.4	36.5	36.0	33.3	29.1	30.8	36.5	35.3	32.4
United States	2.7	14.7	14.0	9.5	10.8	8.5	8.5	7.4	6.5	6.9	6.4	7.6	5.9	5.8	5.7	6.2	6.3	7.1	6.3	5.3	6.0	6.7	8.2
Latin America	0.5	1.8	1.6	4.4	7.0	3.5	0.5	1.0	1.9	1.7	2.1	4.6	2.0	2.4	1.5	1.3	1.4	1.5	2.6	1.3	2.3	2.3	2.2
Asia	1.2	3.1	14.7	13.8	9.1	7.4	6.7	6.4	9.8	8.4	9.9	11.7	8.4	9.4	9.3	9.3	7.9	8.3	7.3	7.0	5.2	4.0	6.9
Africa	3.8	3.0	3.1	2.2	2.3	2.1	5.9	6.6	5.1	5.6	4.7	7.4	8.4	4.7	4.8	4.7	3.6	4.2	3.9	3.6	3.8	2.4	3.9
Other	-	-	-	0.1	0.2	0.3	0.1	0.2	0.1	0.1	0.2	0.3	0.4	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.4	0.4	0.5
	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Source: Statistika Spoljne Trgovine, various years.

building up of bilateral credit balances (Appendix Table A-4 contains information on Yugoslavia's merchandise trade balance with the convertible currency and bilateral clearing areas). Consequently, since 1967 prior approval has been a prerequisite for exporting to the clearing area and certain conditions may be attached to the approval of such exports, e.g.,the exporter may be required to import certain goods from the clearing area or to export a certain quantity outside the clearing area.[37]

One would perhaps expect that Yugoslav exports to eastern Europe, with the greater emphasis on long-term agreements and planning, would be subject to less instability than exports to western market economies.[38] To test this hypothesis an "instability index" of Yugoslav exports to eastern Europe and the EEC has been calculated. The index was computed for the period from 1956, the first year of normal economic relations with eastern Europe following the economic blockade, to 1973. Instability was measured by calculating the annual average percentage deviation from trend.[39]

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[37] Slobodan Madžić, "Certain Issues Related to Yugoslavia's Trade with the COMECON Countries", International Problems, 1969, p. 110.

[38] Yugoslav foreign trade is conducted directly by producing enterprises as well as by some specialized export-import firms. In this respect the similarity with western countries is considerably greater than with the state trading system of eastern Europe.

[39] This index was used by the U.N. to calculate an index of export fluctuation for a large number of developed and developing countries (U.N., Handbook of International Trade and Development Statistics, 1972). It is calculated as follows:

$$F = \frac{100}{n} \sum_{i=1}^{n} \frac{\left| X_i - \hat{X}_i \right|}{\hat{X}_i}$$

where F = fluctuation index
X_i = value of exports at time i
$\hat{X}_i$ = corresponding trend value (exponential trend)
n = number of years covered.

The value of the index is 13.329 for exports to eastern Europe and 8.849 for exports to the EEC. Contrary to expectations, exports to eastern Europe were less stable during 1956-1973. These results are consistent with a previous study which found Yugoslav exports and imports with the COMECON countries to be less stable than with the convertible currency area.[40] A possible explanation could be that political relations with eastern Europe are less stable and that this instability effects trade flows. However, other considerations such as the composition of exports according to income elasticities of demand and the growth instability of the two regions may also be explanatory factors.

The structure of Yugoslav exports (by SITC one-digit sections) to the EEC, COMECON (= eastern Europe) and the developing countries (Tables 16-18) provides information concerning the broad categories of goods exported to groups of countries at various levels of industrialization. The EEC nations are among the most highly industrialized in the world, the developing countries are at the low end of the industrialization totem pole, while the countries of COMECON occupy a somewhat intermediate position. One would expect the structure of Yugoslav manufactured exports to the EEC to lean more towards labor-intensive goods and articles for which style, quality and technical sophistication are relatively unimportant, than would be the case with exports to the other two groups. The proximity and the industrial orientation of eastern Europe seemingly provide opportunities for heavy manufactured goods, and consumer goods, which would not be competitive in western markets. The political position of Yugoslavia as a leader of the non-aligned nations and her advanced stage of industrialization vis-à-vis these nations imply relatively favorable market conditions for Yugoslavia's more capital and skill-intensive goods.

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[40] Lj. Madžar, "Jedna empirijska analiza stabilnosti spoljnotrgovinskih tokova", Ekonomist, vol. XXI, No. 3, 1968, pp. 580-587 (cited in Horvat, op.cit., p. 126).

Table 16

STRUCTURE OF YUGOSLAV EXPORTS TO EEC, 1960 - 1972[1]

(Percentage)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Sitc Section													
0	45.2	43.2	37.4	44.5	41.4	40.8	39.0	45.7	32.0	31.4	26.1	26.8	31.0
1	5.1	4.9	2.2	1.9	2.6	2.2	1.7	1.7	1.9	1.7	1.4	1.9	1.0
2	26.7	29.3	28.6	23.9	22.9	20.2	15.9	14.3	18.3	16.6	15.8	14.7	12.9
3	0.7	0.7	2.7	0.8	0.6	0.5	1.6	1.7	0.6	0.4	1.3	1.9	0.4
4	-	-	0.1	-	-	0.1	0.1	0.5	0.4	0.5	0.2	0.2	0.1
5	1.8	1.4	1.3	1.3	2.1	2.3	3.2	2.6	3.3	2.7	3.3	4.0	4.3
6	14.4	13.1	18.8	18.6	17.8	19.2	22.9	19.7	26.0	28.4	30.1	23.3	23.2
7	0.4	0.8	1.5	1.8	2.7	4.0	3.7	3.5	4.3	6.3	10.1	13.8	15.1
8	5.3	6.4	7.4	7.2	9.9	10.7	11.8	10.1	13.0	12.1	11.8	13.2	11.8
9	0.1	0.1	0.1	-	-	-	-	0.2	0.1	-	-	-	0.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1]EEC here refers to the original six members.

Source: OECD, Statistics of Foreign Trade, Series B, various years.

Table 17

STRUCTURE OF YUGOSLAV EXPORTS TO EASTERN EUROPE, 1960 - 1972[1]

(Percentage)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Sitc Section													
0	15.9	12.1	10.6	12.1	14.2	11.6	6.5	4.5	4.0	5.0	6.4	5.8	4.2
1	5.8	5.1	7.8	10.8	10.5	6.6	5.5	5.9	6.4	5.2	7.2	6.1	4.8
2	12.4	11.4	12.0	10.9	10.5	6.2	5.6	6.2	6.8	6.0	5.7	5.6	5.9
3	0.5	0.5	0.9	0.9	0.4	0.3	0.2	0.2	0.2	1.1	0.6	0.5	0.5
4	0.2	-	0.1	-	-	-	-	0.1	-	-	-	0.2	-
5	6.0	5.4	5.4	6.0	7.1	6.8	7.7	8.6	9.6	10.9	9.5	11.1	11.1
6	27.2	25.2	25.0	22.7	21.7	20.3	20.2	21.4	20.7	25.9	26.8	28.0	28.7
7	24.2	33.6	32.6	23.6	19.2	34.3	40.0	32.8	33.8	28.4	29.2	25.8	23.0
8	7.6	6.7	5.7	12.9	16.5	13.8	14.3	20.4	18.5	17.5	14.9	17.1	21.8
9	-	-	0.1	0.1	-	-	-	0.1	-	-	-	-	-
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

[1]Countries included are U.S.S.R., German Democratic Republic, Poland, Czechoslovakia, Hungary, Romania, Bulgaria and Albania.

Source: OECD, Statistics of Foreign Trade, Series B, various years.

Table 18

STRUCTURE OF YUGOSLAV EXPORTS TO DEVELOPING COUNTRIES, 1960 - 1972

(Percentage)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
Sitc Section													
0	9.2	9.5	3.6	6.2	4.7	2.5	3.6	8.7	3.0	3.7	2.6	3.4	5.1
1	2.2	2.2	0.9	1.5	0.4	2.0	1.2	0.9	0.6	0.6	0.5	-	0.1
2	11.9	10.4	5.3	4.5	5.9	4.6	5.3	5.5	6.6	5.7	5.7	5.6	10.6
3	0.7	1.8	3.4	2.8	2.4	2.2	1.8	2.8	0.8	0.1	-	0.6	0.4
4	-	-	-	-	-	-	-	-	-	-	-	-	0.1
5	4.3	4.7	4.1	3.9	3.5	6.4	6.3	7.5	4.9	5.1	5.7	8.4	4.5
6	35.2	34.3	26.1	22.4	33.1	31.3	30.5	30.4	30.7	31.0	29.2	27.4	25.6
7	34.2	33.9	53.4	56.1	47.2	47.0	49.2	41.5	51.0	52.2	53.1	52.0	50.2
8	0.9	3.0	3.1	2.3	2.5	3.8	2.1	2.8	2.4	1.7	2.6	2.8	3.4
9	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	-	-	0.2
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: OECD, Statistics of Foreign Trade, Series B, various years.

Looking first at the share of manufactures (SITC 5-8) in total Yugoslav exports to the three country groups, it is not surprising to find, given the increase in the share of manufactures in total exports that has taken place, that the proportion of manufactures in total exports to each group has exhibited a rising trend. The rise has been especially marked for the EEC, although the share remains considerably lower than is the case with exports to COMECON and the developing countries. The share of manufactures in total exports in 1972 (with the 1960 share in parentheses)were: EEC: 54.4 (21.9), COMECON: 84.6 (65.0), and Developing Countries: 83.7 (74.6).[41] Yugoslavia's success in exporting manufactures to eastern Europe may help to explain a characteristic of her industrialization in which export expansion appears to have gone hand-in-hand with import substitution.

The relatively low share of machinery and transport equipment in exports to the EEC is consistent with expectations based on Yugoslav comparative advantages vis-à-vis the various country groups. Within SITC section 6 we find that textile yarn and cotton fabrics are the most important products exported to the EEC, whereas ferrous and non-ferrous metals occupy the leading roles in exports to eastern Europe and the developing countries. The structure of Yugoslav exports by region in general appears to be consistent with a priori expectations that the greatest scope for non-traditional exports is provided by the markets of eastern Europe and the developing countries. The developing countries market may be the most dynamic for Yugoslav exports in the near term. Yugoslavia has

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[41] Roughly one-third of exports to the EEC in 1972 consisted of food and live animals. Fresh or frozen meat, of which beef is a major component, accounted for over 10 percent of Yugoslavia's exports to the EEC in 1972. Thus the importance to Yugoslavia of the EEC's ban on beef imports in 1974 can be seen.

been making efforts to increase the share of her exports to developing countries for some years without much success. However in 1973 exports to these nations grew by 88 percent compared with an overall export growth rate of 26 percent. Her friendly relations with the Arab countries may also be a plus factor concerning future growth of her exports to the Third World.

Table A - 1:

Gross Turnover, Fixed Assets, Employment, Capital-Output, Labor-Output and Capital-Labor (Direct and Cumulative) Ratios, 1968 - Continued

	Labor-Output Ratio						K/L	K^*/L^{*1}	Rank K/L		Rank K^*/L^*		Index[2] of K^*/L^*
	(Tens of man-years per m. N.D. of Output)		Rank (sec. 1-29)		Rank (sec. 1-20)				(sec. 1-29)	(sec. 1-20)	(sec. 1-29)	(sec. 1-20)	
	Direct	Cumulative	Direct	Cumulative	Direct	Cumulative							
1. Electricity	0.5696	1.5575	27	28	18	19	36.7848	16.3373	1	1	1	1	331
2. Coal-Production and Processing	2.6187	3.8479	4	15	1	10	4.1480	4.6158	10	7	11	8	93
3. Crude Petroleum and Processing	0.4587	1.7126	29	27	20	18	12.8005	8.4513	3	2	5	3	171
4. Ferrous Metallurgy	1.1258	4.3121	21	9	12	6	7.3775	6.3840	7	4	7	4	129
5. Non-ferrous Metallurgy	1.0430	3.6354	22	18	13	13	6.2960	6.1147	8	5	8	5	124
6. Non-metals, production & processing	2.3709	3.9122	6	12	3	8	2.4532	3.4449	18	14	18	15	70
7. Manufacture of Metal Products	1.6561	3.8926	15	14	7	9	2.1305	3.6739	20	16	16	13	74
8. Shipbuilding	1.0082	3.5394	23	19	14	14	3.2190	4.0396	14	11	13	10	82
9. Manufacture of Electrical Machinery, Apparatus, Appliances & Supplies	1.3048	3.7590	19	17	16	12	2.1350	3.7870	19	15	15	12	77
10. Manufacture of Chemicals	1.0042	3.3239	24	21	15	16	5.1952	4.9512	9	6	10	7	100
11. Manufacture of Building Materials	2.1004	3.4256	7	20	4	15	2.6642	3.6672	16	13	17	14	44
12. Manufacture of Wood	2.3793	4.9628	5	7	2	5	3.6184	5.6420	12	9	9	6	114
13. Production & Processing of Paper	1.2156	3.9257	20	11	11	7	9.9520	9.4063	5	3	3	2	190
14. Manufacture of Textiles	2.0095	7.4585	8	5	5	4	1.7438	1.5618	23	18	25	18	32
15. Manufacture of Leather & Footwear	1.5374	7.9534	16	4	8	3	1.1780	1.2154	26	20	27	19	25
16. Manufacture of Rubber Products	1.6679	3.8094	14	16	6	11	1.7005	2.9438	24	19	20	16	60
17. Food Manufacturing	0.8832	9.4501	25	3	16	2	3.5574	1.9995	13	10	23	17	40
18. Printing, Publishing & Allied Industries	1.5010	2.9923	17	23	9	17	1.8929	4.3096	22	17	12	9	87
19. Tobacco Manufactures	0.8085	9.6740	26	2	17	1	2.6685	1.2114	15	12	28	20	25
20. Motion Picture Production	0.4707	1.4391	28	29	19	20	3.8628	3.7962	11	8	14	11	77
21. Miscellaneous Manufacturing Industries	1.7605	4.8700	12	8			1.4531	2.6394	25		22		
22. Agriculture	11.7945	17.7038	1	1			0.4089	0.5238	29		29		
23. Forestry	3.0041	3.9077	3	13			16.2340	13.5302	2		2		
24. Construction	1.8106	4.0246	11	10			0.8603	2.6478	27		21		
25. Transport and Communications	2.0073	3.1463	9	22			9.3752	7.6407	6		6		
26. Trade and Catering	1.4163	1.8037	18	25			2.6403	2.9538	17		19		
27. Service Rendering Arts & Crafts	5.2422	6.9781	2	6			0.7290	1.4592	28		26		
28. Public Utilities	1.8834	2.6406	10	24			10.4747	9.0496	4		4		
29. Scrap and Waste	1.7224	1.7224	13	26			1.9419	1.9419	21		24		

Note: [1] K^*/L^* = cumulative capital-labor ratio [2] weighted average = 4.9388 = 100

Sources: Statistički Godišnjak, 1970, pp. 104, 120-121; Yugoslav Survey, Vol. 11, No. 2, May 1970, p. 53; sector 29 inputs estimated.

Sector	Gross Turnover m. N.D.	Fixed Assets m. N.D. (Actual Value)	Employment (Annual Average)	Capital-Output Ratio					
				(00000 N.D. per m. N.D. of Output)		Rank (sec. 1-29)		Rank (sec. 1-20)	
				Direct	Cumulative	Direct	Cumulative	Direct	Cumulative
1. Electricity	6645	13923	37849	20.9526	25.4453	2	5	1	4
2. Coal-Production and Processing	2621	2847	68635	10.8623	17.7612	6	9	3	6
3. Crude Petroleum and Processing	4087	2318	18746	5.8716	14.4746	10	11	7	8
4. Ferrous Metallurgy	4327	3594	48712	8.306	27.5290	8	4	5	3
5. Non-ferrous Metallurgy	4966	3261	51796	6.5667	22.2294	9	8	6	5
6. Non-metals, production & processing	1795	1044	42558	5.8162	13.4773	11	15	8	12
7. Manufacture of Metal Products	15160	5349	251072	3.5284	14.3009	17	12	11	9
8. Shipbuilding	2123	689	21404	3.2454	14.2997	20	13	13	10
9. Manufacture of Electrical Machinery, Apparatus, Appliances & Supplies	6476	1804	84502	2.7857	14.2354	24	14	17	11
10. Manufacture of Chemicals	7052	3679	70818	5.2170	16.0378	13	10	10	7
11. Manufacture of Building Materials	2484	1390	52174	5.5958	12.5622	12	18	9	14
12. Manufacture of Wood	5436	4680	129338	8.6093	28.0001	7	3	4	2
13. Production & Processing of Paper	2231	2699	27120	12.0977	36.9264	5	2	2	1
14. Manufacture of Textiles	10810	3788	217231	3.5042	11.6488	18	20	12	16
15. Manufacture of Leather & Footwear	2678	485	41172	1.8111	9.6663	28	25	20	19
16. Manufacture of Rubber Products	1435	407	23935	2.8362	11.2142	23	22	16	18
17. Food Manufacturing	10045	3156	88720	3.1419	11.3350	21	21	14	17
18. Printing, Publishing & Allied Industries	3187	906	47838	2.8428	12.8955	22	16	15	13
19. Tobacco Manufactures	2197	474	17763	2.1575	11.7187	26	19	18	15
20. Motion Picture Production	242	44	1139	1.8182	5.4631	27	27	19	20
21. Miscellaneous Manufacturing Industries	301	77	5299	2.5581	12.8540	25	17		
22. Agriculture	38238	18053	4540000	4.7212	9.2726	14	26		
23. Forestry	2064	10270	63242	49.7578	52.8718	1	1		
24. Construction	17103	2664	309674	1.5576	10.6565	29	23		
25. Transport and Communications	14908	28055	299248	18.8188	23.6399	4	6		
26. Trade and Catering	26461	9895	374779	3.7395	5.3277	16	28		
27. Service Rendering Arts & Crafts	7039	2690	369000	3.8216	10.1823	15	24		
28. Public Utilities	1471	2902	27705	19.7281	23.8947	3	7		
29. Scrap and Waste	586	196	10093	3.3447	3.3447	19	29		

Continued ....

Table A - 2

Ranking of Industrial Branches According to Skill Intensity, 1968

Industry Branch	Wage Value Added per Employee		Personnel with Secondary Education and above, Highly Skilled and Skilled per Employee	
	Value in New Dinars	Rank	Number	Rank
Electrical energy	16,090	4	63.7	2
Coal, etc.	9,674	16	41.0	13
Petroleum	17,897	2	62.6	3
Ferrous metals	10,800	9	48.6	6
Non-ferrous metals	12,754	6	45.2	9
Non-metals	9,028	18	33.8	17
Metal products	10,722	11	51.6	5
Shipbuilding	15,203	5	58.8	4
Electrical machinery, etc.	11,273	8	46.0	8
Chemicals	12,229	7	44.3	10
Building materials	10,032	13	30.3	20
Wood products	8,354	19	33.4	18
Paper	9,904	15	38.0	15
Textiles	7,933	20	32.9	19
Leather and footwear	9,254	17	42.8	11
Rubber products	9,935	14	41.7	12
Food products	10,745	10	39.5	14
Printing, etc.	16,476	3	47.2	7
Tobacco	10,060	12	35.4	16
Film	58,999	1	65.0	1
Total Industry	10,612		46.8	

Source: Calculated from data in Statišticki Godišnjak SFRY, 1970, Table 106.6 and Industrijska Produzeća, 1968, Table 4, 1970, Table 6.

Table A - 3

Classification of Industries According to Capital-Labor Skilled-Unskilled Labor-Intensity, 1968

1. Capital and Skilled Labor-Intensive

   Electrical energy
   Petroleum
   Ferrous Metals
   Non-Ferrous Metals
   Chemicals

2. Capital and Unskilled Labor-Intensive

   Paper and paper products

3. Labor and Skilled Labor-Intensive

   Printing
   Shipbuilding
   Film
   Electrical machinery, etc.
   Metal products

4. Labor and Unskilled Labor-Intensive

   Wood Products[1]
   Coal
   Building materials
   Non-metals
   Rubber, etc.
   Food products
   Textiles
   Leather, etc.
   Tobacco

[1] Wood products are classified as being labor-intensive, contrary to the data in Table A-1. Although the fixed capital in this industry was checked in various sources for accuracy, the fixed capital figure in Table A-1 appears vastly overstated when compared with its value in other years. Using 1969 data, the wood products industry ranks 12th in terms of the direct capital-output ratio and 19th in terms of the direct capital-labor ratio.

Source: Tables A-1 and A-2.

Table A-4

YUGOSLAV EXPORTS AND IMPORTS BY CONVERTIBLE AND BILATERAL AREAS, 1966 - 1973

(m. U.S. dollars)

	Convertible Currency Area			East-European Bilateral Account Countries			Other Bilateral Account Countries		
	Exports	Imports	Balance	Exports	Imports	Balance	Exports	Imports	Balance
1973	1895	3350	-1455	868	1020	-152	90	141	-51
1972	1381	2348	- 967	792	797	- 5	64	88	-24
1971	1058	2330	-1272	670	778	-108	86	144	-58
1970	1013	2149	-1136	551	593	- 42	115	132	-17
1969	882	1456	- 574	455	508	- 53	138	170	-32
1968	693	1177	- 484	436	489	- 53	134	131	3
1967	677	1113	- 436	455	459	- 4	120	136	-16
1966	622	768	- 146	449	415	34	149	130	19

Source: Quarterly Bulletin, National Bank of Yugoslavia, Vol. II, No. 3, July 1974, Tables 20, 21.

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