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A PRELIMINARY ANALYSIS OF ROMANIAN INPUT-OUTPUT TABLES*

By MASAHIKO YOSHII

Romania under the Ceaușescu era was a country with a less advanced and heavily biased industrial structure. It may be expected that after the "1989 Revolution" the biases should be corrected in the new economic situation. We will compare the input-output tables of 1989, 1993 and 1996, to examine whether the Romanian economic structure has been reformed. We will find out that (1) the manufacturing sectors have dropped in importance in the Romanian economy, and the tertiary industry has added its importance, (2) the proportions of intermediate demands to total demands have fallen, and that of final demand has risen, and (3) the share of agriculture in production and value added has also increased. Summarizing these facts, we may say that the Romanian economic structure has changed to some extent. However, finding out that the change was not big enough, we conclude that the industrial policies of curtailing low competitive industries and bringing up promising ones are necessary in Romania.

1. Introduction

Romania under the socialist regime was known to be a country with a less advanced and heavily biased industrial structure. In 1989, agriculture still accounted for 13.9 per cent of GDP and 27.5 per cent of employees. On the contrary, the tertiary industry accounted only for 26.9 per cent and 25.6 per cent, respectively¹⁾. In the industrial sector, the production goods industry dominated, with extracting, metal and metalworking, and chemical industries as the key industries²⁾.

These distortions were at first formed because of the historical backwardness of the Romanian economic development. Secondly, they were formed because of the general inclination of socialist countries to advance with high economic growth through heavy and chemical industrialization. Thirdly, they came about because of the idiosyncrasies of Nicolae Ceaușescu.

At the end of December 1989, Ceaușescu was executed by a firing squad with his wife, Elena, and the interim government of Frontul Salvării Naționale declared the end of one-party dictatorship and the adoption of democracy. Romania afterwards stepped into the era of transition to a market economy. So it may be expected that at least the second and third biases were to be eliminated, and that the Romanian economic structure should be corrected

* The paper is based on the author's presentation at WIIW (the Vienna Institute for International Economic Studies) on June 6, 2000. He wishes to thank G. Hunya and other participants at the seminar for their valuable comments.

1) ASR(1990), pp.103, 245.

2) The share of producer goods industry (Group A) in the total industrial production was 72.5 per cent in 1989 (ASR(1990), p.453).

TABLE 1-1. IO89

mil. lei, current prices

code	departments of origin	resources			intermediate consumption
		total	of		total
			domestic production	import	
A	B	1	2	3	4
01	coal extracting and processing	22152	15962	6190	21904
02	petroleum and associated gas extracting	58774	17817	40957	59010
03	natural gas extracting	54273	43997	10276	50882
04	iron ore extracting and processing	11606	7363	4243	11655
05	non-ferrous and rare metal extracting and processing	11628	10302	1326	11931
06	non-metal mineral extracting and processing	4335	2617	1718	4146
07	construction material, and construction material extracting and processing	6575	6575	0	6619
08	wood and read exploiting	3916	3807	109	3474
09	electric and thermal energy	58053	54875	3178	46381
10	chemical coes	11345	9195	2150	11401
11	steel	91503	85661	5842	74310
12	non-ferrous	27840	25762	2078	24419
13	machine building and material processing	407255	370552	36703	255209
14	chemical and oil processing	212817	201659	11158	139795
15	grinned material, carbon and graphite producing	3638	3238	400	3342
16	glass and pottery construction material	44926	43687	1239	39415
17	wood processing	41849	41378	471	9961
18	paper	14917	14088	829	12287
19	textile and knitwear	84470	80331	4139	44653
20	ready-made clothes	44560	44558	2	7638
21	leather, fur and shoes	26914	26311	603	3428
22	glass, pottery and porcelain	6987	6843	144	2117
23	food	230297	221806	8491	34054
24	printing	2998	2998	0	2609
25	other manufacturing	17608	17354	254	11042
26	construction	169285	169202	83	28386
27	vegetal production	125716	124238	1478	95323
28	livestock breeding	72955	72865	90	56064
29	agricultural services	21319	21319	0	21456
30	forestry	4665	4665	0	2607
31	transportation	84508	84508	0	65899
32	communication	14127	14127	0	7679
33	material distribution	63353	63353	0	15861
34	scientific education, technical development, project and information	17824	17755	69	12005
35	tourism and hotels	5861	5607	254	100
36	press, publishing and cinema	3601	3522	79	369
I	total	2084449	1939896	144553	1197431
II	depreciation of fixed capital				101331
III	total (I + II)				1298762
IV	national income				632609
V	social production (III + IV)				1931371

final consumption									consumption for other use	total consumption
total	consumption			fixed capital accumulation			change in inventory	export		
	total	household consumption	consumption for social interests	total	material production	non-material production				
41	42	43	44	45	46	47	48	49	50	51
176	682	682	0	0	0	0	-506	0	71	22152
-315	0	0	0	0	0	0	-315	0	78	58774
3198	3103	3103	0	0	0	0	95	0	194	54273
-82	0	0	0	0	0	0	-82	0	33	11606
-349	0	0	0	0	0	0	-349	0	46	11628
178	9	9	0	0	0	0	-36	205	12	4335
-73	0	0	0	0	0	0	-73	0	29	6575
426	607	605	2	0	0	0	-213	31	17	3916
11427	11583	11562	21	0	0	0	-261	105	244	58053
-98	0	0	0	0	0	0	-98	0	41	11345
16812	49	48	1	2744	2744	0	-2308	16326	381	91503
3307	74	72	2	715	715	0	-602	3120	114	27840
150399	27022	26904	118	86013	80779	5234	-11205	48569	1647	407254
72127	19485	19409	76	2056	1861	195	-1876	52462	895	212817
282	32	32	0	179	179	0	-5	76	14	3638
5317	1910	1888	22	940	851	89	-670	3136	194	44926
31704	6049	6011	38	10411	9420	991	-1168	16412	184	41849
2568	1318	1313	5	0	0	0	-176	1426	63	14917
39468	30892	30782	110	2	2	0	-254	8827	349	84470
36728	23126	23053	73	2	2	0	31	13569	193	44560
23369	17752	17703	49	0	0	0	-79	5696	117	26914
4840	3546	3541	5	0	0	0	-25	1319	30	6987
195516	186745	186333	412	0	0	0	-970	9741	727	230297
376	350	342	8	0	0	0	17	8	13	2998
6489	3956	3934	22	2431	2200	231	18	84	77	17608
140899	13976	4718	9258	125526	88775	36751	-458	1855	0	169285
30393	28867	28867	0	888	888	0	-1747	2384	0	125716
16891	20151	20151	0	-1307	-1307	0	-2012	59	0	72955
-137	0	0	0	0	0	0	-137	0	0	21319
2058	780	780	0	776	776	0	335	167	0	4665
18609	16810	16452	358	549	511	38	949	301	0	84508
6448	6377	6303	74	80	75	5	-9	0	0	14127
47492	43852	43774	78	213	199	14	940	2486	0	63353
5819	1164	125	1039	4193	3099	1094	32	430	0	17824
5761	2731	2603	128	0	0	0	0	3030	0	5861
3232	3130	2974	156	0	0	0	-1	103	0	3601
881254	476129	464074	12055	236411	191769	44642	-23213	191927	5764	2084449

TABLE 1-2. IO93
mil. lei, current prices

	industries	distributed output		resources by products					
		actual output	residual sales	distributed output P10	import P60	taxes on products including VAT R21+R221	commercial supplement	custom duties R29	subsidies to products R311
A01	agriculture, forestry and fishing	8033.3	8.6	8041.9	435.3	117.7	195.8	13.2	-262.3
A02	coal and coke	692.3		692.3	242.5	12.2	30.3	0.1	-23.7
A03	petroleum, petroleum prod.	1784.6		1784.6	1143.3	163.1	180.6		
A04	natural gas	127.4		127.4	180.1	6.8			
A05	ferrous and non-ferrous ores	207.0		207.0	89.7	4.5	10.0	2.1	-0.5
A06	building material ores	113.8		113.8	40.8	3.1	7.3	0.4	
A07	other minerals	32.9		32.9	17.6	1.3	5.2	0.9	
A08	food, beverages and tobacco	4351.4		4351.4	502.3	609.3	467.7	63.6	-94.6
A09	textiles, wearing apparel	1424.1	0.4	1424.5	319.1	82.8	248.1	57.2	
A10	leather and footwear	332.0		332.0	46.8	61.9	103.3	7.0	
A11	wood products, furniture, industry n.e.c.	938.7	2.3	941.0	101.1	55.2	168.5	12.2	
A12	cellulose, paper, cardboard	202.8		202.8	30.5	6.7	44.1	2.1	
A13	printing and publishing	133.7	2.6	136.3	8.8	5.8	28.3	0.3	
A14	chemistry and synthetic fiber	1209.8		1209.8	313.4	24.4	56.9	24.2	-65.6
A15	pharmaceutical, detergents, cosmetics	264.7		264.7	92.1	12.8	65.3	4.4	-53.6
A16	rubber and plastic prod.	478.6		478.6	121.0	10.1	49.8	10.0	
A17	glass and glass prod.	106.0		106.0	11.7	11.9	11.5	1.8	
A18	building materials	763.4		763.4	45.9	34.3	47.9	3.0	
A19	basic metals, metal prod.	1560.0		1560.0	162.5	44.1	150.6	4.0	
A20	machinery-building	1905.4		1905.4	460.0	40.8	75.5	34.6	
A21	appliances	60.3		60.3	6.2	14.3	30.1	0.5	
A22	electrical and electronic products	736.0	11.0	747.0	436.1	39.5	107.6	46.9	
A23	transport equipment	1040.9		1040.9	238.3	46.0	49.3	15.0	
A24	electricity, thermic power, gas water	2838.7		2838.7	50.2	176.6			-182.8
A25	construction	2442.4	22.1	2464.5	13.4	13.5			
A26	trade	2208.1		2208.1		8.0	-2134.8		
A27	hotels, restaurants, tourism agencies	983.5	105.0	1088.5	35.1	94.4			
A28	transports	3006.5	10.9	3017.4	108.9	113.3			
A29	communications	325.2		325.2	20.8	19.7	1.1		
A30	financial, banking services	1108.4		1108.4	2.3	0.8			
A31	real estate	488.7	5.4	494.1		3.5			
A32	business services	623.3	11.0	634.3	118.1	12.7			
A33	public administration	1097.3	-140.9	956.4					
A34	personal and social services	1667.6	-38.4	1629.2	115.9	6.4			
ACT	territorial correction				97.7				
TOT	total products	43288.8		43288.8	5607.5	1857.5		303.5	-683.1
N1	gross value added								
P10	actual output								

		uses by products								
import subsidies R311	total	intermediate consumption P20	final consumption				gross fixed capital formation P41	export P50	change in inventory P42	total
			household S80	government S60	private administration S70	total P300				
-2.0	8541.6	4463.3	2859.8	84.1		2943.9	83.5	91.4	959.5	8541.6
	953.7	831.5	2.9			2.9		4.9	114.4	953.7
	3271.6	2281.0	508.2			508.2		371.8	110.6	3271.6
	312.3	312.3								312.3
	312.8	251.0						4.3	57.5	312.8
	165.4	163.1						33.9	-31.6	165.4
	57.9	40.0	1.1			1.1		7.9	8.9	57.9
-17.4	5882.3	1969.3	3267.6			3267.6		169.1	476.3	5882.3
-2.0	2129.7	915.8	706.5			706.5		531.1	-23.7	2129.7
	551.0	132.0	308.5			308.5		136.6	-26.1	551.0
	1278.0	418.0	318.9			318.9	157.8	410.3	-27.0	1278.0
	286.2	201.0	32.1			32.1		10.7	42.4	286.2
	179.5	92.8	50.3			50.3		0.6	35.8	179.5
	1563.1	1110.4	27.7			27.7		315.0	110.0	1563.1
	385.7	119.4	134.3			134.3		15.8	116.2	385.7
	669.5	508.9	39.9			39.9		71.4	49.3	669.5
	142.9	62.2	18.6			18.6		50.9	11.2	142.9
	894.5	623.0	130.1			130.1		70.3	71.1	894.5
	1921.2	1176.8	57.4			57.4		711.5	-24.5	1921.2
	2516.3	1144.0	86.9			86.9	791.6	438.0	55.8	2516.3
	111.4	4.7	156.7			156.7		6.0	-56.0	111.4
	1377.1	609.6	324.7			324.7	330.0	73.7	39.1	1377.1
	1389.5	349.7	218.7			218.7	427.4	250.7	143.0	1389.5
	2882.7	2504.5	373.1			373.1		5.1		2882.7
	2491.4	284.8	265.8	119.1		384.9	1769.5	52.2		2491.4
	81.3	25.9	55.4			55.4				81.3
	1218.0	132.7	1085.3			1085.3				1218.0
	3239.6	2113.6	707.7			707.7		418.3		3239.6
	366.8	172.4	144.9			144.9		49.5		366.8
	1111.5	1042.3	29.4			29.4		39.8		1111.5
	497.6	61.1	436.5			436.5				497.6
	765.1	561.8	55.3	86.6		141.9	23.9	37.5		765.1
	956.4			956.4		956.4				956.4
	1751.5	30.7	329.8	1227.0	92.3	1649.1		71.7		1751.5
	97.7		-63.8			-63.8		161.5		97.7
-21.4	50352.8	24709.6	12670.3	2473.2	92.3	15235.8	3583.7	4611.5	2212.2	50352.8
		18579.2								
		43288.8								

TABLE 1-3. IO96

mil. lei, current prices

	industries	distributed output		resources by products					
		actual output	residual sales	distributed output P10	import P60	taxes on products		trade margins	custom duties R29
						VAT R21	other R221		
A01	agriculture, forestry and fishing	38125.7	36.5	38162.2	451.5	332.3	3.1	1099.4	46.1
A02	coal and coke	3198.4		3198.4	1006.7	37.3		63.2	0.1
A03	petroleum, petroleum prod.	9099.6		9099.6	4442.0	271.4	135.1	1463.7	39.2
A04	natural gas	316.3		316.3	1953.0	26.6			85.8
A05	ferrous and non-ferrous ores	688.2		688.2	696.8	36.5		19.7	1.8
A06	building material ores	276.9		276.9	76.2	10.3		22.3	1.2
A07	other minerals	223.6		223.6	157.0	4.7		22.7	0.7
A08	food, beverages and tobacco	28372.2		28372.2	2528.0	523.0	1565.7	2959.8	545.6
A09	textiles, wearing apparel	8189.5	18.9	8208.4	4185.6	174.9		1808.0	260.4
A10	leather and footwear	1826.3		1826.3	1144.2	34.7	11.3	561.8	37.0
A11	wood products, furniture, industry n.e.c.	6428.2	83.3	6511.5	802.6	180.0	3.0	1110.3	38.4
A12	cellulose, paper, cardboard	1308.2		1308.2	686.9	51.6		189.0	27.3
A13	printing and publishing	1421.3	14.1	1435.4	156.4	28.2		135.6	2.3
A14	chemistry and synthetic fiber	6719.3		6719.3	2767.1	143.3		485.8	116.4
A15	pharmaceutical, detergents, cosmetics	1314.4		1314.4	934.5	100.3		551.6	28.8
A16	rubber and plastic prod.	2152.8		2152.8	900.2	65.3		409.0	51.8
A17	glass and glass prod.	718.8		718.8	121.5	18.5		111.8	4.9
A18	building materials	3282.5		3282.5	366.8	153.3		356.9	11.6
A19	basic metals, metal prod.	10484.6		10484.6	1507.8	158.0		749.0	50.2
A20	machinery-building	9185.9		9185.9	5556.8	265.9		439.8	216.0
A21	appliances	707.0		707.0	177.0	97.4		643.6	7.7
A22	electrical and electronic products	4541.3	9.0	4550.3	3686.0	215.8		813.3	178.6
A23	transport equipment	5886.4		5886.4	1326.4	213.4		632.6	100.0
A24	electricity, thermic power, gas water	11754.5		11754.5	107.5	330.9	377.9		0.4
A25	construction	16571.7	104.4	16676.1	69.0	690.2			
A26	trade	14988.2		14988.2		23.9		-14656.4	
A27	hotels, restaurants, tourism agencies	6784.5	594.3	7378.8	333.8	492.6			
A28	transports	14654.5	56.3	14710.8	575.9	294.3			
A29	communications	3025.5		3025.5	98.1	116.8		7.5	
A30	financial, banking services	4249.6		4249.6	199.5	37.8			
A31	real estate	2423.9		2423.9		19.1			
A32	business services	4148.1	254.1	4402.2	668.1	142.1			
A33	public administration	6134.4	-890.6	5243.8					
A34	personal and social services	11396.5	-280.3	11116.2	747.7	69.0	3.3		
ACT	territorial correction				1400.2				
TOT	total products	240598.8		240598.8	39830.8	5359.4	2099.4		1852.3
N1	gross value added								
P10	actual output								

		uses by products								
subsidies on products R311	total	intermediate consumption P20	final consumption				gross fixed capital formation P41	export P50	change in inventory P42	total
			household S80	government S60	private administration S70	total P300				
-1618.9	38475.7	20289.5	15406.2	345.1		15751.3	331.1	1309.0	794.8	38475.7
	4305.7	4068.3	9.3			9.3		59.4	168.7	4305.7
	15451.0	10181.3	2990.2			2990.2		1774.0	505.5	15451.0
	2381.7	2381.7								2381.7
	1443.0	1367.4						2.4	73.2	1443.0
	386.9	377.8						3.1	6.0	386.9
	408.7	297.9	2.6			2.6		55.5	52.7	408.7
-29.0	36465.3	15471.8	19664.9			19664.9		865.1	463.5	36465.3
	14637.3	6460.9	2969.8			2969.8		5141.3	65.3	14637.3
	3615.3	1187.4	649.6			649.6		1706.6	71.7	3615.3
	8645.8	3099.2	2246.6			2246.6	512.7	2684.6	102.7	8645.8
-207.0	2263.0	1870.7	102.4			102.4		170.9	119.0	2263.0
	1757.9	1426.4	207.7			207.7	2.3	6.1	115.4	1757.9
	10024.9	7035.0	230.7			230.7		2632.0	127.2	10024.9
	2929.6	918.4	1948.6			1948.6		50.7	11.9	2929.6
	3579.1	3015.5	280.3			280.3		237.2	46.1	3579.1
	975.5	577.4	96.0			96.0		295.4	6.7	975.5
	4171.1	2906.2	630.3			630.3		414.9	219.7	4171.1
	12949.6	8927.4	79.5			79.5		3417.8	524.9	12949.6
	15664.4	7805.2	371.6			371.6	5319.3	1869.3	299.0	15664.4
	1632.7	63.2	1682.8			1682.8		36.0	-149.3	1632.7
-390.7	9444.0	4133.6	2602.1			2602.1	2203.3	843.6	-338.6	9444.0
	8158.8	1842.2	1850.5			1850.5	3203.7	1387.0	-124.6	8158.8
	12180.5	10884.4	1260.6			1260.6		35.5		12180.5
	17435.3	2460.4	1466.8	394.1		1860.9	12946.4	167.6		17453.3
	355.7	8.9	346.8			346.8				355.7
	8205.2	2011.8	6193.4			6193.4				8205.2
	15581.0	7710.7	4781.3	569.7		5351.0		2519.3		15581.0
	3247.9	1838.5	1164.2	3.4		1167.6		241.8		3247.9
	4486.9	3379.3	836.2			836.2		271.4		4486.9
	2443.0	411.0	2032.0			2032.0				2443.0
	5212.4	3436.8	282.8	505.0		787.8	479.7	508.1		5212.4
	5243.8			5243.8		5243.8				5243.8
	11936.2	898.4	3150.4	7212.8	376.7	10739.9		297.9		11936.2
	1400.2		-247.4			-247.4		1647.6		1400.2
-2245.6	287495.1	138744.6	75288.8	14273.9	376.7	89939.4	24998.5	30651.1	3161.5	287495.1
		101854.2								
		240598.8								

in accordance with the new economic situation and new comparative advantages.

In this paper we will analyse how the Romanian industrial structure has been changed since the beginning of the transition by using input-output tables. In section 2, we will briefly explain the characteristics of the Romanian input-output tables. In section 3, we will make comparisons of the input-output tables in 1989, 1993 and 1996, focusing on the dynamics of the industrial structure.

2. Characteristics of Romanian Input-Output Tables

After the "December 1989 Revolution", transition of statistics as well as transition of the economic system began in Romania. Efforts to abandon the System of Material Production (MPS) and to introduce the System of National Accounts (SNA) were made³⁾. One of the first efforts was the working out of the input-output table for 1989 (hereafter, IO89) in 1990⁴⁾. The efforts have continued, and today annual national accounts and input-output tables are published.

In this paper, we will compare IO89 with the input-output table for 1993 (hereafter, IO93) and the newest input-output table for 1996 (hereafter, IO96), all shown in Tables 1-1 to 1-3⁵⁾, and then we will explain what economic structural changes have occurred in Romania during the transitional period. When we make comparisons, some things need to be noted. First, as we mentioned, IO89 was drawn up as one of the efforts to adjust the Romanian statistical system to SNA, but we can identify many remnants of MPS in IO89. For example, in IO89 financial and banking services are not included, and all the distribution but the material distribution is not included. Second, as a corollary of the first remark, sectors of IO89 are not compatible with sectors of IO93 and IO96. For example, the number of sectors is different among them. Third, the statistical books do not give us enough information as to the definitions, for example, of sectors. The insufficiency of definitions makes the comparison of the input-output tables difficult. Fourth, 1989 was a year before price liberalization began. IO89 might be constructed with producers' prices, but canceling out the trade service costs in the commercial supplement or trade margin columns in IO93 and IO96 means that they are constructed with purchasers' prices. Owing to these price distortions, direct comparisons between IO89 and the input-output tables of the 1990s (hereafter, IO90s) may produce erroneous conclusions. Knowing these difficulties, we should proceed with the analyses.

As we mentioned, the sectors of IO89 do not correspond to those of IO90s. With the insufficient definitions of sectors, we have to estimate the correspondence of sectors among IO89 and IO90s (Table 2). We will make our analyses according to the correspondence, eliminating in some analyses branches that do not have any correspondent ones among IO89 and IO90s (the series are indicated by a lowercase a).

3) Experiences in introducing SNA in Romania were mentioned in Dumitrescu *et al.* (1994).

4) ASR(1990), pp.253-261.

5) CN(1997), pp.69-75, CN(1999), 121-127. In each original input-output table, the intermediate consumption matrix is included. We omit the matrices for want of space.

TABLE 2. Correspondence of sectors among IO89 and IO90s

IO89	IO90s
27) vegetal production	1) agriculture, forestry and fishing
28) livestock breeding	
29) agricultural services	
30) forestry	
1) coal extracting and processing	2) coal and coke
10) chemical cocas	
2) petroleum and associated gas	3) petroleum, petroleum prod.
3) natural gas extracting	4) natural gas
4) iron ore extracting and processing	5) ferrous and non-ferrous ores
5) non-ferrous and rare metal extracting	
7) construction material and material	6) building material ores
6) non-metal material extracting and	7) other materials
23) food industry	8) food, beverages and tobacco
19) textile and knitwear	9) textiles, wearing apparel
20) ready-made clothes	
21) leather, fur and shoes	10) leather and footwear
8) wood and read exploiting	11) wood products, furniture,
17) wood processing	
18) paper industry	12) cellulose, paper, cardboard
24) printing industry	13) printing and publishing
36) press, publishing and cinema	
14) chemical and oil processing	14) chemistry and synthetic fiber
	15) pharmaceutical, detergents,
	16) rubber and plastic prod.
22) glass, pottery and porcelain	17) glass and glass prod.
16) glass and pottery construction material	18) building materials
11) steel	19) basic materials
12) non-ferrous	
13) machine building and material processing	20) machinery-building
	21) appliances
	22) electrical and electronic products
	23) transport equipment
9) electric and thermal energy	24) electricity, thermic power, gas water
26) construction	25) construction
33) material distribution	26) trade
35) tourism and hotels	27) hotels, restaurants, tourism agencies
31) transportation	28) transports
32) communication	29) communications
15) grinned material, carbon	30) financial, banking services
25) other manufacturing industry	31) real estate
34) scientific, education, technical	32) business services
	33) public administration
	34) personal and social services

3. Comparisons

The new Romanian government has endeavored to reform its socialist and distorted economic structure⁶⁾. The analyses of the input-output tables will show how the Romanian economic structure has changed, or has not changed so much. In the analyses that follow, IO90s will be recalculated in producer prices because of the differences of price structures between IO89 and IO90s.

(1) dynamics of industrial structure

Table 3 shows the shares of each sector in intermediate goods, final goods and total demand. Examining the total demand in series a, we can say that heavy and chemical industry decreased its share between 1989 and 1993 (37.96%→18.19%), which is in accordance with our expectations. On the contrary, agriculture (10.78%→20.57%), extracting and energy industry (11.45%→18.35%), and tertiary industries (8.05%→16.51%) increased, roughly doubling their shares during the period. And between 1993 and 1996, some reactions can be observed.

If we look into individual industries, it is most striking that in heavy industry the machine building industry dropped its share by almost 15 percentage points (19.54%→5.74%) and the drop accounts for almost all of the share decrease of the heavy and chemical industry. In extracting industries, petroleum and electricity industries increased their shares (2.82%→7.10% and 2.79%→7.01%, respectively), which shows evidence of an "oil shock" in Romania⁷⁾. It is of interest that the natural gas industry, on the contrary, decreased its share (2.60%→0.75%). It might be because the price of natural gas did not rise so much as the price of oil did, or because of the change of definitions of the sector which will be discussed in the import and export analysis. In light industries some sectors like food and wood industries increased their shares, but, in contrast, textiles and paper industries decreased their shares, so that we cannot say that light industries as a whole increased in significance (21.76%→20.37%→24.47%).

It is also interesting that agriculture increased its share between 1989 and 1993, but after that decreased a little. The first reason for the share's increase was the correction of relative prices. The second reason was the fact that many people returned to farming after the adoption of the Land Law⁸⁾. The share of the tertiary industry might have increased during the transitional period, but because of the quasi-MPS characteristics of IO89, the table does not give us enough evidence for a comparison with the pre-transitional period.

When we look into the intermediate and final goods demand, in many sectors the directions of the share changes are the same between intermediate and final goods demand, so that we can confirm the phenomena that was found in the total demand analyses. But in some branches the share changes are in opposite directions. The extreme case is the food,

6) The processes of market economic reform in Romania are explained in Yoshii(2000).

7) Kuboniwa shows that oil shock occurred in transitional Russia. Kuboniwa *et al.* (1999), p.83.

8) We have discussed the phenomenon of returning to farming in Romania from the labor market angle. Ohtsu and Yoshii(1999), pp.305-6.

beverages and tobacco industry, where the share in intermediate goods production increased from 2.84 per cent to 12.42 per cent, but, on the other hand, the share in final goods production decreased from 22.19 per cent to 18.59 per cent. The data shows that the main items of these sectors may have changed.

In agricultural and petroleum sectors, the shares increased remarkably as well as in the case of the total demand, suggesting that Romanian citizens began to consume these products that they could not obtain under the Ceaușescu's regime.

(2) intermediate and final demands

Table 4 shows the proportions between intermediate and final demands for each sector. The proportions for each sector are different very much. In some sectors like ferrous and non-ferrous ores and building material ores sectors in 1989, the intermediate goods proportions exceed 100 per cent, and, on the contrary, in some sectors like appliances the proportions after the transition recorded negative values. However, as a whole, we can say that in 1989 the shares for intermediate demands were higher, and between 1993 and 1996 they gradually decreased. In particular, the share of the intermediate demand in the petroleum sector decreased by more than 30 percentage points between 1989 and 1996 (100.40%→66.17%), showing that petroleum and petroleum products were hunger exported under the Ceaușescu era. On the contrary, in some sectors like electricity the share of intermediate demand increased (78.89%→86.91%). Remembering that in this period industrial production in Romania decreased by 53 percentage points and the industrial demand for electricity may have decreased, this phenomenon is very unusual.

(3) dynamics of value added

Table 5 shows the origins of value added (national income). At first, the share of agriculture in value added increased during the transitional period (15.79%→27.12%), and the rate of increase was almost the same as the increase of the share in the total demand of that sector. In the extracting and energy sector, the shares of value added of petroleum and natural gas sectors have decreased (1.45%→0.33% and 4.48%→0.12%, respectively), but that of electricity dramatically increased (-0.85%→9.09%→11.62%), which boosted the share increase of the extracting and energy industry (5.72%→15.42%).

As for the manufacturing sectors as a whole, the share of value added decreased and the rate of decrease is higher than the rate of their decrease in total demand shares (53.36%→24.49%). The decrease of the share of heavy industry was mostly accounted for by the decrease of share of the machinery building sector. But the decrease of the share of light industry was accounted for by the decrease of almost all light industrial sectors.

The share of transport equipment in value added in 1996 in the original data series surged up. If we calculate the coefficients in 1994 and 1995, the levels are nearly the same as that of 1993. So the increase in 1996 was exceptional, probably because Dae Woo plant in Craiova began to operate in March 1996.

Regarding the tertiary sector, its share in value added increased, and its rate is higher than

TABLE 3. Sectoral proportion of inputs and outputs

	intermediate demand				
	IO89	IO93a	IO96a	IO93	IO96
agriculture, forestry and fishing	14.65	20.98	16.93	18.92	15.51
coal and coke	2.78	3.88	3.29	3.49	3.01
ferrous and non-ferrous ores	1.97	1.12	1.08	1.01	0.99
building material ores	0.55	0.73	0.29	0.65	0.26
other minerals	0.35	0.16	0.22	0.14	0.20
petroleum, petroleum prod.	4.93	9.24	6.85	8.33	6.28
natural gas	4.25	1.47	1.88	1.32	1.72
electricity, thermic power, gas water	3.87	11.98	8.75	10.80	8.02
chemistry and synthetic fiber	11.67	7.63	7.64	4.60	4.93
pharmaceutical, detergents, cosmetics				0.39	0.18
rubber and plastic prod.				1.89	1.89
glass and glass prod.	0.18	0.18	0.37	0.16	0.34
building materials	3.29	2.57	1.98	2.31	1.81
basic metals, metal products	8.25	4.67	6.60	4.21	6.05
machinery-building	21.31	4.74	5.70	4.27	5.23
appliances				-0.17	-0.52
electrical and electronic products				1.79	2.22
transport equipment				1.03	0.68
food, beverages and tobacco	2.84	4.49	8.21	4.05	7.52
textiles, wearing apparel	4.37	2.53	3.49	2.28	3.20
leather and footwear	0.29	-0.19	0.45	-0.17	0.41
wood products, furniture, industry n.e.c.	1.12	0.87	1.46	0.78	1.34
cellulose, paper, cardboard	1.03	0.71	1.33	0.64	1.22
printing and publishing	0.25	0.28	1.04	0.25	0.96
construction	2.37	1.29	1.47	1.17	1.34
trade	1.32	10.27	12.13	9.26	11.12
hotels, restaurants, tourism agencies	0.01	0.18	1.26	0.16	1.15
transports	5.50	9.54	6.15	8.60	5.63
communications	0.64	0.72	1.42	0.65	1.30
financial, banking services				4.48	2.54
real estate				0.25	0.30
business services				2.36	2.50
public administration				0.00	0.00
personal and social services				0.10	0.63
total	100.00	100.00	100.00	100.00	100.00

agriculture	14.65	20.98	16.93	18.92	15.51
extracting and energy industry	18.70	28.56	22.37	25.75	20.50
heavy and chemical industry	44.70	19.78	22.29	20.47	22.81
light industry	9.89	8.68	15.99	7.82	14.65
construction	2.37	1.29	1.47	1.17	1.34
tertiary	7.48	20.71	20.96	25.87	25.17

final demand					total demand				
IO89	IO93a	IO96a	IO93	IO96	IO89	IO93a	IO96a	IO93	IO96
5.55	20.14	16.10	15.90	12.23	10.78	20.57	16.53	17.34	13.77
0.02	0.60	0.21	0.48	0.16	1.61	2.27	1.80	1.91	1.50
-0.04	0.31	0.07	0.24	0.05	1.11	0.72	0.59	0.61	0.49
0.00	0.01	0.01	0.01	0.01	0.32	0.38	0.15	0.32	0.13
0.02	0.09	0.10	0.07	0.07	0.21	0.12	0.16	0.10	0.14
-0.03	4.89	4.67	3.86	3.54	2.82	7.10	5.80	5.99	4.83
0.38	0.00	0.00	0.00	0.00	2.60	0.75	0.97	0.63	0.81
1.32	1.87	1.15	1.47	0.87	2.79	7.01	5.08	5.91	4.23
8.23	4.34	4.93	1.77	2.01	10.21	6.02	6.33	3.12	3.38
			1.04	1.35				0.73	0.80
			0.63	0.38				1.23	1.09
0.55	0.40	0.35	0.31	0.27	0.34	0.29	0.36	0.24	0.30
0.62	1.34	1.12	1.06	0.85	2.16	1.96	1.56	1.66	1.30
2.32	3.68	3.56	2.90	2.70	5.73	4.18	5.13	3.52	4.28
17.14	6.78	6.96	5.35	5.28	19.54	5.74	6.31	4.84	5.26
			0.42	1.06				0.14	0.32
			2.99	3.57				2.42	2.94
			4.05	4.25				2.62	2.57
22.12	19.33	18.59	15.26	14.11	11.05	11.78	13.23	9.93	11.02
8.65	6.00	7.24	4.73	5.50	6.19	4.23	5.30	3.57	4.42
2.65	2.07	2.15	1.63	1.63	1.29	0.92	1.27	0.77	1.06
3.64	4.25	4.91	3.35	3.73	2.20	2.53	3.13	2.13	2.61
0.30	0.42	0.35	0.33	0.26	0.72	0.57	0.85	0.48	0.71
0.41	0.43	0.29	0.34	0.22	0.32	0.35	0.68	0.30	0.57
15.88	10.90	13.26	8.61	10.07	8.12	6.01	7.17	5.07	5.97
5.35	0.27	0.31	0.22	0.23	3.04	5.36	6.41	4.52	5.34
0.65	5.36	5.48	4.23	4.16	0.28	2.73	3.30	2.30	2.75
2.10	5.56	6.97	4.39	5.29	4.05	7.59	6.54	6.39	5.45
0.73	0.96	1.25	0.76	0.95	0.68	0.84	1.34	0.71	1.11
			0.27	0.74				2.27	1.59
			1.70	1.37				1.01	0.86
			0.79	1.19				1.54	1.81
			3.73	3.53				1.96	1.87
			6.71	7.42				3.57	4.23
100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

5.55	20.14	16.10	15.90	12.23	10.78	20.57	16.53	17.34	13.77
1.67	7.77	6.20	6.13	4.70	11.45	18.35	14.55	15.46	12.12
28.87	16.54	16.92	20.52	21.72	37.96	18.19	19.69	20.50	22.23
37.77	32.49	33.52	25.65	25.46	21.76	20.37	24.47	17.17	20.39
15.88	10.90	13.26	8.61	10.07	8.12	6.01	7.17	5.07	5.97
8.83	12.16	14.01	22.80	24.89	8.05	16.51	17.60	24.26	25.02

TABLE 4. Proportion between intermediate demands and final demands

	1989		1993		1996	
	int	fin	int	fin	int	fin
agriculture, forestry and fishing	78.10	21.90	51.89	48.11	52.90	47.10
coal and coke	99.43	0.57	86.93	13.07	94.35	5.65
ferrous and non-ferrous ores	101.52	-1.52	79.17	20.83	94.54	5.46
building material ores	100.67	-0.67	98.51	1.49	97.42	2.58
other minerals	95.64	4.38	64.55	35.45	70.89	29.11
petroleum, petroleum prod.	100.40	-0.40	66.17	33.83	61.09	38.91
natural gas	93.75	6.25	100.00	0.00	100.00	0.00
electricity, thermic power, gas water	79.89	20.10	86.91	13.09	89.07	10.93
chemistry and synthetic fiber	65.69	34.31	70.28	29.72	68.48	31.52
pharmaceutical, detergents, cosmetics			25.36	74.64	10.57	89.43
rubber and plastic prod.			73.22	26.78	81.54	18.46
glass and glass prod.	30.30	69.70	31.44	68.56	52.62	47.38
building materials	87.73	12.27	66.45	33.55	65.34	34.66
basic metals, metal prod.	82.73	17.27	56.78	43.22	66.46	33.54
machinery-building	62.67	37.33	41.98	58.02	46.69	53.31
appliances			-60.45	160.45	-77.55	177.55
electrical and electronic products			35.13	64.87	35.52	64.48
transport equipment			18.71	81.29	12.43	87.57
food, beverages and tobacco	14.79	85.21	19.38	80.62	32.06	67.94
textiles, wearing apparel	40.53	59.47	30.38	69.62	34.03	65.97
leather and footwear	12.74	87.26	-10.61	110.61	18.27	81.73
wood products, furniture, industry n.e.c.	29.36	70.65	17.47	82.53	24.17	75.83
cellulose, paper, cardboard	82.37	17.64	63.48	36.52	80.34	19.66
printing and publishing	45.13	54.87	40.25	59.75	79.17	20.83
construction	16.77	83.23	10.95	89.05	10.57	89.43
trade	25.04	74.96	97.49	2.51	97.69	2.31
hotels, restaurants, tourism agencies	1.71	98.29	3.41	96.59	19.70	80.30
transports	77.98	22.02	63.98	36.02	48.52	51.48
communications	54.36	45.64	43.82	56.18	54.88	45.12
financial, banking services			93.77	6.23	75.11	24.89
real estate			11.66	88.34	16.17	83.83
business services			72.98	27.02	64.98	35.02
public administration			0.00	100.00	0.00	100.00
personal and social services			1.39	98.61	6.96	93.04
total products	57.45	42.55	47.56	52.44	46.96	53.04

TABLE 5. Sectoral proportion of value added (national income)

	shares of value added				
	IO89	IO93a	IO96a	IO93	IO96
agriculture, forestry and fishing	15.79	27.12	25.33	22.64	20.57
coal and coke	-0.27	1.42	0.84	1.19	0.69
ferrous and non-ferrous ores	0.54	3.65	2.74	0.31	-0.46
building material ores	0.22	0.44	0.20	0.28	0.09
other minerals	0.16	0.38	-0.57	0.10	0.11
petroleum, petroleum prod.	1.45	0.33	0.11	3.04	2.22
natural gas	4.48	0.12	0.13	0.37	0.16
electricity, thermic power, gas water	-0.85	9.09	11.62	4.23	2.59
chemistry and synthetic fiber	3.87	3.36	3.90	1.22	1.27
pharmaceutical, detergents, cosmetics				0.71	0.64
rubber and plastic prod.				0.97	0.67
glass and glass prod.	0.62	0.33	0.40	0.28	0.33
building materials	1.68	1.94	1.53	1.62	1.24
basic metals, metal prod.	1.99	1.97	2.47	1.64	2.00
machinery-building	18.67	4.36	4.18	3.64	3.39
appliances				0.14	0.32
electrical and electronic products				1.45	1.85
transport equipment				1.59	10.61
food, beverages and tobacco	11.75	9.09	11.62	7.59	9.43
textiles, wearing apparel	8.80	3.36	3.90	2.81	3.16
leather and footwear	1.94	0.88	0.79	0.74	0.65
wood products, furniture, industry n.e.c.	3.10	2.48	2.98	2.07	2.42
cellulose, paper, cardboard	0.39	0.38	0.51	0.32	0.41
printing and publishing	0.53	0.25	0.71	0.21	0.58
construction	7.12	6.71	8.55	5.60	6.94
trade	7.05	10.93	12.06	9.12	9.79
hotels, restaurants, tourism agencies	0.48	2.34	3.32	1.95	2.70
transports	5.65	11.34	9.26	9.47	7.52
communications	1.87	1.65	2.59	1.37	2.11
financial, banking services				5.46	3.18
real estate				1.50	1.55
business services				1.99	2.39
public administration				3.34	3.29
personal and social services				5.63	6.62

agriculture	15.79	27.12	25.33	22.64	20.57
extracting and energy	5.72	15.42	15.07	9.52	5.39
heavy industry	26.84	11.96	12.47	13.26	22.32
light industry	26.52	16.44	20.50	13.72	16.65
construction	7.12	6.71	8.55	5.60	6.94
tertiary	15.04	26.26	27.24	39.83	39.15

TABLE 6. Proportion of distributed value added

	1993	1994	1995	1996
compensation of employees	38.79	35.43	36.79	35.96
gross wages and salaries	29.32	27.17	28.74	27.37
employers' actual social contribution	9.14	7.94	7.57	8.05
employers' imputed social contribution	0.33	0.32	0.47	0.54
other taxes on production	7.39	7.17	7.44	7.30
other subsidies on production	2.52	2.36	2.13	1.69
gross operating surplus	56.33	59.76	57.90	58.44
gross value added	100.00	100.00	100.00	100.00

TABLE 7. Proportion of import and export to output

	import/distributed output			export/total production		
	1989	1993	1996	1989	1993	1996
agriculture, forestry and fishing	0.70	5.13	1.17	1.16	1.08	3.39
coal and coke	24.90	25.94	23.94	0.00	0.52	1.41
ferrous and non-ferrous ores	23.97	30.23	50.31	0.00	1.45	0.17
building material ores	0.00	26.39	21.58	0.00	21.93	0.88
other minerals	39.63	34.85	41.25	4.73	15.64	14.58
petroleum, petroleum prod.	69.69	39.05	32.80	0.00	12.70	13.10
natural gas	18.93	58.57	86.06	0.00	0.00	0.00
electricity, thermic power, gas water	5.47	1.74	0.91	0.18	0.18	0.30
chemistry and synthetic fiber	5.24	20.58	29.17	24.65	20.68	27.74
pharmaceutical, detergents, cosmetics		25.81	41.55		4.43	2.25
rubber and plastic prod.		20.18	29.49		11.91	7.77
glass and glass prod.	2.06	9.94	14.46	18.88	43.25	35.15
building materials	2.76	5.67	10.05	6.98	8.69	11.37
basic metals, metal prod.	6.64	9.43	12.57	16.29	41.31	28.50
machinery-building	9.01	19.45	37.69	11.93	18.52	12.68
appliances		9.32	20.02		9.02	4.07
electrical and electronic products		36.86	44.75		6.23	10.24
transport equipment		18.63	18.39		19.60	19.23
food, beverages and tobacco	3.69	10.35	8.18	4.23	3.48	2.80
textiles, wearing apparel	3.21	18.30	33.77	17.36	30.46	41.48
leather and footwear	2.24	12.35	38.52	21.16	36.06	57.45
wood products, furniture, industry n.e.c.	1.27	9.70	10.97	35.93	39.37	36.70
cellulose, paper, cardboard	5.56	13.07	34.43	9.56	4.59	8.57
printing and publishing	1.20	6.06	9.83	1.68	0.41	0.38
construction	0.05	0.54	0.41	1.10	2.11	1.00
trade	0.00	0.00	0.00	3.92	0.00	0.00
hotels, restaurants, tourism agencies	4.33	3.12	4.33	51.70	0.00	0.00
transports	0.00	3.48	3.77	0.36	13.38	16.48
communications	0.00	6.01	3.14	0.00	14.31	7.74
financial, banking services		0.21	4.48		3.58	6.10
real estate		0.00	0.00		0.00	0.00
business services		15.70	13.18		4.98	10.02
public administration		0.00	0.00		0.00	0.00
personal and social services		6.64	6.30		4.11	2.51
total products	6.93	11.47	14.20	9.21	9.43	10.93

the rate of increase in total demand shares. These figures indicate that in Romania an adjustment of the socialist and distorted industrial structures, or "post-industrialization" process, has been advancing.

Table 6 shows how the value added produced was distributed. Unfortunately IO89 did not provide the data, so we cannot compare the proportions with the pre-transitional period. The proportions were stable as a whole, but a small portion moved from the wages of employers and compensation of employees to profits of enterprises (gross operating surplus). If we think the Romanian economy recovered a little between 1993 and 1996, the benefit was handed more to enterprises than to labor.

(4) dynamics of import and export

Table 7 shows the proportions of imports to distributed outputs, *i.e.* inputs, and exports to the total production of each sector. While the proportion of exports to the total production remained stable at around 10 per cent during the transitional period (9.21%→9.43%→10.93%), the proportion of imports to the total production steadily increased (6.93%→11.47%→14.20%). The data show the weakening competitiveness of Romanian manufacturing products and the increasing independence of intermediate and final products on the external markets.

While exports from whole manufacturing sectors decreased, exports from light industries like food, textiles and leather increased. This shows that the heavy industrialization under the socialist regime was a total failure, and that Romania today could export goods of labor-intensive industries by using its relatively cheaper labor.

In contrast, the proportions of production product imports like machines, and consumer products like appliances, electrical and electronic products steadily increased. This shows that Romania has lost its competitiveness in technologically intensive industries.

This fact can be confirmed also within imports of light industries. Imports of the light industrial sectors have also increased. This may indicate that Romania imports consumer goods of high quality, but exports those of low quality produced with cheap labor.

Strange may be the fact that exports from the petroleum sector in 1989 were zero. Romania is a country that has a huge capacity for processing crude oil and that imported large quantities of crude oil in order to utilize this capacity. This may be because of the difference in definition of sectors between IO89 and IO90s. In IO89 the sector was defined as a petroleum and associated gas extracting industry, excluding the petroleum products. In fact, 4.68 mil. tons of diesel oil and 3.71 mil. tons of fuel oil were exported in 1989⁹⁾.

(5) Subsidies

Table 8 shows the subsidy structure, although IO89 does not give us any information about subsidies. Subsidies have steadily decreased since 1993, and most production subsidies were abolished¹⁰⁾. Also we can find that import subsidies have also been abolished in accordance

9) ASR(1999), p.619.

10) On May 1, 1993, the government expressed its intention to abolish all subsidies to consumption goods. Yoshii(2000), p.75.

TABLE 8. Subsidies

	1993		1996
	subprod	subimp	subprod
agriculture, forestry and fishing	3.09	0.00	4.19
coal and coke	2.54		
ferrous and non-ferrous ores	0.17		
building material ores			
other minerals			
petroleum, petroleum prod.			
natural gas		0.65	
electricity, thermic power, gas water	6.33		3.29
chemistry and synthetic fiber	4.31		2.18
pharmaceutical, detergents, cosmetics	15.02		
rubber and plastic prod.			
glass and glass prod.			
building materials			
basic metals, metal prod.			
machinery-building			
appliances			
electrical and electronic products			
transport equipment			
food, beverages and tobacco	1.95	0.36	0.09
textiles, wearing apparel		0.11	
leather and footwear			
wood products, furniture, industry n.e.c.			
cellulose, paper, cardboard			
printing and publishing			
construction			
trade			
hotels, restaurants, tourism agencies			
transports			
communications			
financial, banking services			
real estate			
business services			
public administration			
personal and social services			
total products	1.40	0.04	0.80

TABLE 9. Investment

	1989	1993	1994	1995	1996
inv/gdp	29.6	17.9	20.3	21.4	23.0
chininv/gdp	-2.9	11.0	4.5	2.9	2.9

with the WTO standard. These facts indicate good signs of price liberalization solidly progressing in Romania. But we will have to examine the total abolishment of subsidies under the right-wing Constantinescu government after 1997.

(6) investment

Table 9 shows the dynamics of investment. Unfortunately input-output tables provide data about from which sectors some sector demands investment goods, not about the amount of investment in some sector, so that we can show only the proportion of investment to GDP and that of the change in inventories to GDP. But even in these cases we can easily understand the decrease of investment rates during the initial period of the transition, although later the rates recovered a little. Also in 1993, the rate of change in inventories to GDP was tremendously big, which indicates the fact that goods produced for investment during the initial period of the transition were not used for investment itself, but remained unsold and accumulated as inventories.

However, the investment ratios have recovered since 1994, indicating some recovery in the Romanian economy.

4. Conclusion

From the above analyses we find that the Romanian economic structure has changed to some extent because of the changes in economic system, price liberalization, the opening of the Romanian economy and so on. First, the manufacturing sectors, especially the heavy and chemical industry, have become less important to the Romanian economy, and many enterprises of these sectors might have run with negative value added. On the other hand, the tertiary industry has increased in importance, although the quasi-MPS characteristics of IO89 could not allow us to make enough comparisons in the tertiary sectors with IO90s.

Secondly, we could confirm that the proportions of intermediate demand to total demand have fallen, and that of final demand have risen. This suggests that the policy of heavy and chemical industrialization or of hunger exports under the socialist economic system was totally thrown away.

Thirdly, the share of agriculture in production and value added has also increased contrary to our expectations. The "return to farming" phenomenon has occurred.

Although some economic structural change has occurred in Romania, the level has not been as high as expected at the beginning of the transition. For example, as we suggested, many Romanian industries have operated with negative or very low value added. Also, the tertiary industry accounts for only a quarter of the economy, which is still low compared with other Central-Eastern European countries¹¹⁾. These facts suggest that these industries with very low levels of competitiveness should be curtailed or abolished, and that policies for promoting

11) In terms of gross value added, the shares of the tertiary industry are 51.6 % for Czech Republic (1998), 60.2% for Hungary (1997) and 60.0% for Poland (1997). Calculations by the author from WIIW, *Countries in Transition 1999*, Table III/1.3.

industries that are more promising are necessary.

There remain some things that have not been resolved in this paper. First, we have not made an analysis of input-output coefficients. This is my future goal.

Second, we have used the input-output tables up to 1996. But at the end of 1996, the government had shifted to the right, and further economic structural changes such as privatization have proceeded since then. For example, subsidies to production were abolished by the hands of the new government. In addition, Romania has experienced the "second transitional shock" since the beginning of 1997. We have to wait for publication of the input-output table of 1997 where these phenomena may be explicitly manifested.

(August 31, 2000)

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