APPLICATIONS OF INPUT-OUTPUT MODELS TO THE STRUCTURAL ANALYSIS OF THE YUGOSLAV ECONOMY

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Introduction and Statistical Sources

The elaboration of the input-output tables of the Yugoslav economy has contributed a great deal to our factual knowledge of the interdependent structure of our economic system. The models derived from these tables make possible a systematic and detailed analysis of complex interrelationships in the structure of production, consumption and foreign trade. They represent therefore an important tool for the analytical preparation of economic plans, for the investigation of complex repercussions of various measures of economic policy and for the determination of development conditions and outlooks of individual sectors and productive units.

Input-output models, if adequately constructed and used, may serve as an indispensable source of complex information relevant for the orientation of various economic agents in formulating their own development programmes. In view of the complex interdependences in the economic system elementary market information is not sufficient for this purpose. This role of input-output models is particularly important in the Yugoslav economic system based on the decentralized decision-making and market mechanism.

Our analysis will be based on the input-output table for 1962. The most detailed classification of this table contains 98 productive sectors.[1]) For the purpose of this analysis it has been reaggregated to 29 sectors of which 21 relate to the manufacturing and mining industries accounting for 53 percent of the gross value of production in 1962.

A separate import matrix has been also constructed for this year.[2]) It permits a detailed structural analysis of the import dependence of

*) This paper was prepared for the Fourth International Conference on Input-Output Techniques held in Geneva, January 8—12, 1968. The author is a senior research associate in the Institute of Economics in Zagreb.

1) „Međusobni odnosi privrednih delatnosti Jugoslavije u 1962. godini" (Interindustry Relations of the Yugoslav Economy in 1962), Federal Bureau of Statistics. Beograd 1966.

2) M. Sekulić — „Metode bilansiranja strukturnih proporcija u planu privrednog razvoja" (Methods of balancing structural proportions in the plan of economic development), Federal Planning Bureau, Beograd, and Institute of Economics, Zagreb, Studies No 22, 1965.

the economy. All imports are classified by the same sectors as domestic production and no distinction is made between competitive and noncompetitive imports.

The first experimental input-output table for the Yugoslav economy was compiled for 1955.[3]) and the second table for 1958.[4]) These tables have no identical methodological and classificational basis and in this respect they also differ from the table for 1962. No separate import tables were constructed. The methological principles and the classification system adopted for the 1962 table are being applied to the construction of the input-output table for 1964 which has been published in the meantime[5]) and for 1966 (which is under preparation). In the future work on input-output tables the comparability will be generally secured. In this way a comparable basis will be provided for the exploration of the dynamic factors of structural change of the economy.

Nature of Interdependence in the Production System

The first general impression of the density of interdependent productive links in the production system of the economy can be obtained from the percentage of nonzero coefficients in the technological matrix. In the 29-sector matrix of the Yugoslav economy there are 85 percent and in the 98-sector matrix 63 percent non-empty cells. These percentages give a rough indication of the degree of diversification and sectoral interconnections in the production structure of the economy.

However, the individual technical coefficients represent productive links of different intensity. There is a great number of small coefficients whose variations would not significantly affect the results of an input-output analysis. On the other hand, the variations of the relatively limited number of the most important coefficients would produce significant changes in the output levels required to meet a specified demand on the productive system.

For the analytical applications of input-output models, especially to projection purposes, it is therefore of a great practical importance to estimate the significance of individual technical coefficients for the overall proportions in the structure of production. This permits the identification and location of the significant coefficients whose expected variations in the projection period should be submitted to a separate study. In this way the question of coefficient stability is narrowed down to the most important coefficients.

The formalized methods of updating and extrapolating the technological matrix, based on the simplified assumptions of a uniform spread

3) „Međusobni odnosi privrednih delatnosti Jugoslavije u 1955. godini" (Interindustry Relations of the Yugoslav Economy in 1955), Federal Bureau of Statistics, Beograd 1957.

4) „Međusobni odnosi privrednih delatnosti Jugoslavije u 1958. godini" (Interindustry Relations of the Yugoslav Economy in 1958), Federal Bureau of Statistics, Beograd 1962.

5) Međusobni odnosi privrednih deltanosti Jugoslavije u 1964. godini (Interindustry Relations of the Yugoslav Economy in 1964), Federal Bureau of Statistics, Beograd 1967.

of technological progress in the production system[6]), cannot take care of the specific penetrations of technological progress in individual sectors and elements of the production structure. A separate study of these processes seems to be necessary. This study can be based on the available information concerning the recent technological trends and the experience in the more developed countries and on the existing development programmes of various segments of the economy. The revised coefficients can be readily introduced into the technological matrix used for projection purposes.

The measurements of the significance of technical coefficients may be approached in different ways. In our measurements the following criterion has been adopted. For each coefficient we have calculated the maximum percentage deviation from its existing value that would produce in the most affected sector a 1 percent change in its 1962 output level.[7]) In this way we have taken into account the greatest possible effect of this deviation since a change in each coefficient exerts a varying influence on the output levels of all sectors.

If the absolute value of the so defined permissible deviation from the coefficient a_{sm} is denoted by b_{sm} it can be shown[8]) that the following formula can be used for these calculations:

$$\frac{b_{sm}}{a_{sm}} \cdot 100 = \frac{100\ p}{\left[\left(\max_{i} \frac{r_{is}}{x_i}\right) X_m + p\ r_{ms}\right] \cdot a_{sm}} \qquad (1)$$

where

r_{is}, r_{ms} = the corresponding coefficients of the inverse $(I - A)^{-1}$

X_i, X_m = the output levels of the sectors i and m

p = the predetermined change in the output level of the most affected sector (in our calculations $p = 1$ percent)

The computations carried out on the technological matrix of the Yugoslav economy have shown that $\left(\max_{i} \frac{r_{is}}{X_i}\right)$ for each sector s is attained for $i = s$. It means that a change in the coefficient a_{sm} produces the greatest effect on the output level of the supplying sector s. Consequently, the formula (1) may be simplified as follows:

$$\frac{b_{sm}}{b_{sm}} \cdot 100 = \frac{100\ p}{\left(\frac{r_{ss}}{X_s} \cdot X_m + p\ r_{ms}\right) a_{sm}} \qquad (2)$$

6) For example: Matuszewski, Pitts, Sawyer — „L'ajustement périodique des systèmes de relations inter—industrielles, Canada 1949—1958", Econometrica, Vol. 31, Nr 1—2/1963.

The RAS method of Cambridge, Department of Applied Economics.

7) Similar calculations for the Soviet Union are cited in „Metodi planirovania mežotraslevih proporcij", Naučnoissledovatel'skij ekonomičeskij institut Gosplana SSSR, Ekonomika, Moskva 1965.

8) M. Sekulić — „Tehnički progres i projiciranje strukturnih proporcija" (Technical Progress and Projections of Structural Proportions), Institute of Economics, Zagreb, Ekonomske studije 6/1967.

The results of these calculations for the 29-sector Yugoslav technological matrix are shown in Table 1. According to the allowable deviations from their existing values all coefficients are classified into 11 groups and the percentage of the total intermediate flows pertaining to each group is given in coloumn 4 of the table.

Table 1.

Distribution of Technical Coefficients According to their Significance

Allowable Variations in % $\left(\frac{b_{sm}}{a_{sm}} \cdot 100\right)$	Number of Coefficients in the Group	Percentage of the total number of Coefficients	Percentage of the total intermediate demand
up to 10	43	6.1	62.4
10.1— 20	43	6.1	12.6
20.1— 30	31	4.3	5.2
30.1— 40	28	3.9	5.1
40.1— 50	17	2.4	1.7
50.1— 60	26	3.6	1.6
60.1— 70	28	3.9	2.3
70.1— 80	14	1.9	0.9
80.1— 90	16	2.2	0.7
90.1—100	12	1.6	1.1
Total	258	36.0	93.6
Over 100	459	64.0	6.4
Grand total	717	100.0	100.0

It is seen that the results of input-output analyses are not sensitive to changes in a great many of the coefficients. Out of 717 nonzero coefficients 459 (or 64 percent) belong to the group with allowable deviations of more that 100 percent. If each of these coefficients, taken separately, were completely eliminated from the matrix or increased by more than 100 percent, the output level in the most affected sector would de changed at most up to one percent. Their relative insignificance is also confirmed by the fact that all of these 459 coefficients taken together represent only 6.4 percent of the total intermediate demand in 1962. On the other hand, the remaining 36 percent of the coefficients with allowable deviations under 100 percent represent 93.6 percent of the total intermediate demand. The allowed deviations of these coefficients vary also over a wide range, as shown in Table 1.

In the first two groups with allowed deviations of up to 20 percent there are only 86 coefficients representing as much as 75 percent of the total intermediate demand. The main interdependences in the production system are concentrated in the corresponding cells of the technological matrix.

Therefore, in adjusting the technological matrix for the expected effects of technological progress only a limited number of significant coefficients have to be submitted to a detailed analysis and evaluation of their possible changes. This fact has a double practical meaning. First, the task of adjusting the technological matrix used for structural projections can be reduced to manageable proportions. Second, the possible errors in the coefficients, especially in the numerous »insignificant« coefficients, which might occur as a result of statistical deficiencies in compiling input-output tables, would not have a decisive influence on the analytical results. Owing to the available statistical materials it should be noted that the errors are especially likely in these small coefficients.

This procedure of the estimation of the significance of technical coefficients may be readily formulated for numerical computations and used in the analytical preparation of the plan of economic dvelopment. However, one limitation in this procedure is the ceteris paribus assumption since it calculates the effects of separate variations in the individual coefficients, neglecting simultaneous variations. Nevertheless, it can successfully help to select and locate the important coefficients and to indicate the degree of their significance for the formation of structural proportions in the course of economic developmet. Furthermore, the possible simultaneous variations of the great many of small coefficients will not, as a rule, occur in the same direction. In view of the relatively inconsiderable proportion of the intermediate demand represented by these coefficients their simultaneous variations are not likely to produce a significant impact on the output levels of various sectors.

The concentration of the most intensive productive links in the relatively limited number of coefficients may also suggest some approximative methods in constructing input-output models for practical purposes of planning and structural analysis.

From this viewpoint it is particularly interesting to examine the degree of triangularity of the technological matrix. We have not used a systematic triangularization procedure with the aim of maximizing the sum of intermediate flows in one triangle of the matrix. But a as result of an incomplete triangularization of the 29-sector matrix of the Yugoslav economy 14 percent of the intermediate flows remained under the main diagonal, 43 percent above the main diagonal and the remaining 43 percent were contained in the diagonal items representing the intrasector deliveries. A systematic triangularization procedure would probably further reduce the sum of under-diagonal flows to some extent. In spite of this relatively high degree of triangularity it may be concluded that the circular interrelations, represented by the underdiagonal proportion of the total intermediate demand, cannot be neglected in structural analysis and planning. The big share of intrasector flows stems from the underlying classification system and from the relatively high level of aggregation. In the 98-sector matrix based on the same classification system the interasector flows are reduced to 16 percent of the total intermediate purchases.

Final Demand Markets and the Structure of Production

An important application of input-output models consists in tracing the complex interactions between the demands of final markets and the outputs of producing sectors. The concrete calculations have shown that the indirect effects of a change in finished goods deliveries on the output level of various sectors may exceed by many times the direct effects. Let us illustrate this by the following example. The direct requirements for electric power by 100 dinars of coal production amount to 3.5 dinars while the direct requirements by the same value of production of the electrical machinery and products sector amount only to 0.99 dinars. However, the corresponding total requirements are 4.85 and 4.29 dinars respectively. The essential difference in direct requirements is nearly eliminated in total requirements. This fact has undoubtedly a great importance for the analysis of the electric power balances in the plans of economic development.

The percentage distribution of the output of individual sectors among various uses, shown in Table 2, gives a straightforward information on the dependence of each producing sector on other producing sectors and on various components of final demand. The greater the proportion of intermediate products in the output of a sector the greater its dependence on the production movements of other sectors. As can be seen in Table 2, the position of various sectors is very different in this respect.

If we take into account the intrasector deliveries, depending to a great extent on the classification system adopted, the interdependence pattern is considerably simplified. For example, the bulk of agricultural intermediate products, delivered to other producing sectors, goes to the food processing industry and through this industry ends up in the final demand market. In a similar simple manner the building materials industry is connected through the construction sector with the investment demand.

On the other side, these relationships are much more complex for the sectors producing basic materials and productive services. In the case of iron and steel industry and nonferrous metallurgy, for example, four main consuming industries absorb 88 resp. 80 percent of intermediate deliveries to other sectors. The dispersion is much greater in the case of nonmetallic minerals and chemical products sectors while the electric power, coal and petroleum products are distributed to all producing sectors and final demand components.

However, after a number of production stages all intermediate goods end up ultimately, embodied in final products of different sectors, in various components of final demand. If we denote the column-vector of investment demand by $J^{(d)}$, the column-vector of individual and general consumption by $C^{(d)}$, of exports by E and of stock increases by $\Delta Z^{(d)}$ (the superscript d stands for the supplies from domestic resources) the total allocation of production of each sector to these components of final demand can be calculated in the following way:

$$X = (I - A^{(d)})^{-1}\ (J^{(d)} + C^{(d)} + E + \Delta Z^{(d)}) \qquad (3)$$

where $A_{(p)}$ = the domestic component of the technological matrix.

The total production X is decomposed into ideal parts which are directly and indirectly associated with the corresponding components of final demand.

The results of these calculations for the Yugoslav production system are shown in Table 3. In order to ascertain the indirect effects produced in various sectors by the given level and composition of final demand we have to compare the corresponding data in Table 3 and Table 2.

Table 2.

Output Distribution by Destination in 1962 (%)

Sector	Intermediate demand		Investments	Individual and General Consumption	Exports	Stock Increases
	Total	Intra-sector				
1. Building materials	94	4	—	—	6	0
2. Iron and steel	89	47	—	0	8	2
3. Cellulose and paper	88	28	—	4	7	1
4. Coal and coke	86	4	—	15	0	—1
5. Nonferrous metallurgy	78	43	—	1	21	0
6. Electric power	78	—	—	21	1	—
7. Forestry	75	0	1	18	8	—2
8. Crude petroleum and derivatives	73	22	—	16	10	1
9. Nonmetallic minerals and products	65	11	—	13	16	6
10. Chemicals and chemical products	58	15	—	29	9	4
11. Rubber products	54	—	—	40	2	4
12. Wood products	51	17	1	20	23	5
13. Handicrafts	51	1	2	46	—	1
14. Agriculture	49	37	—	48	5	—2
15. Electrical machinery and products	45	14	12	24	15	4
16. Metal products	40	16	26	14	14	6
17. Transport and communications	39	3	2	36	23	0
18. Textiles	39	32	—	43	8	10
19. Leather and footwear	32	27	—	42	16	10
20. Public utilities	26	0	—	74	—	—
21. Printing and publishing	25	2	—	68	0	7
22. Trade and catering	24	1	7	59	9	1
23. Motion picture production	22	22	—	44	26	8
24. Construction	21	3	76	3	0	—
25. Tobacco manuf.	13	13	—	62	26	—1
26. Miscel. manuf. prod.	13	—	—	62	16	9
27. Food manuf. ind.	13	9	—	71	14	2
28. Shipbuilding	10	3	27	1	62	—
Total production	45	19	12	31	10	2
Scrap and waste	96	—	—	—	4	—

Sectors are ordered according to the decreasing share of intermediate products in their output.

Table 3.

Total Allocation of Production to the Components of Final Demand in 1962 (%)

Sector	Investments	Individual and General Consumption	Exports	Stock Increases	Total
1. Building materials	76	13	11	—	100
2. Iron and steel	39	21.5	31	8.5	100
3. Cellulose and paper	13	58	23	6	100
4. Coal and coke	23.5	51	22	3.5	100
5. Nonferrous metallurgy	23	23	50	4	100
6. Electric power	20	55.5	20	4.5	100
7. Forestry	21	47	29	3	100
8. Crude petroleum and derivatives	17	52.5	27	3.5	100
9. Nonmetallic minerals and products	25	35.5	30	9.5	100
10. Chemicals and chemical products	9	63	21	7	100
11. Rubber products	14.5	55	13.5	7	100
12. Wood products	24.5	35	33	7.5	100
13. Handicrafts	16	71.5	10	2.5	100
14. Agriculture	—	91.5	11.5	—3	100
15. Electrical machinery and products	32	37	24	8	100
16. Metal products	39	29	24	8	100
17. Transport and communications	15	52	31	2	100
18. Textiles	2	69.5	14	14.5	100
19. Leather and footwear	0	62.5	24	13.5	100
20. Public utilities	6	88	5	1	100
21. Printing and publishing	5	82	5	8	100
22. Trade and catering	14	70.5	13.5	2	100
23. Motion picture prod.	—	56.5	34	9.5	100
24. Construction	91	7	2	—	100
25. Tobacco manuf.	—	71	30	—1	100
26. Miscel. manuf. ind.	2.5	70	18.5	9	100
27. Food manuf. industries	—	82	16	2	100
28. Shipbuilding	29	6	65	—	100
29. Scrap and waste	31	34	28	7	100
Total production	24	53	19	4	100

For example, electric power and coal are not directly delivered to investments. But 20 percent of electric power output and 23.5 percent of coal output were indirectly associated with fixed investments by all sectors. Investment goods and services play an important role in the production programmes of only five sectors. The indirect effects of investment activity spread, however, intensively throughout the production system inducing in the final analysis, together with the direct effects, 24 percent of the gross value of production. The implications of the possible fluctuations in the level and composition of investment activity will be therefore felt in many producing sectors, even in those that are only remotely connected with the investment goods production. The input-output model is a suitable analytical tool for ascertaining and locating these implications, thus enabling the policy-makers and the corresponding economic agents to undertake the necessary specific measures to counteract the negative sides of these implications.

Another example may be also cited. The direct export of the products of the nonferrous metallurgy amounted to 20.6 percent of its output. But, as can be seen in Table 3, the contribution of this sector to exports is much bigger (50 percent of its production) if we take into account the part of its output that is incorporated in the exported products of other sectors. It means that 29.4 percent of the production of nonferrous metallurgy was indirectly exported. Similar relationships hold for many other sectors. In view of these indirect export contributions of various sectors the connecting of the foreign currency allocation for imports of raw materials and equipment in proportion to the direct exports of various producers, once applied in the Yugoslav foreign trade policy as an export drive measure, could not be justified.

The analysis of interconnections of the structure of production and final demand components enables us to define more precisely the determinant factors of the development of various sectors as well as their sensitivity to the changes in final markets. All those economic variables that are functionally dependent on production can be also introduced into the analysis. This analysis demonstrates also the extreme complexity of interdependence in the economic structure and the resulting necessity of the use of input-output models in structural analysis and planning.

Structural Analysis of Import Dependence

The availability of the separate import matrix permits a detailed analysis of import dependence of various producing sectors and final demand components. The import dependence of various elements of the economic structure is given by the following expression:

$$U = A^{(u)} (I - A^{(d)})^{-1} \cdot Y^{(d)} + Y^{(u)} \qquad (4)$$

where

U = the column-vector of imports classified by sectors of origin

$A^{(u)}$ = the import component of the technological matrix

$Y^{(d)}$ = final demand requirements met by domestic production

$Y^{(u)}$ = imported goods for final demand.

Of a special interest is the matrix-product $A^{(u)} (I-A^{(d)})^{-1} = G$ on the right-hand side of the expression (4). The element g_{ij} of this matrix

shows the imported intermediate products i which are directly and indirectly contained in one unit of final deliveries of the sector j. This matrix has been used for the investigation of the impact of differenciated import price changes on the domestic prices. The sums of its columns $\left(\sum_i g_{ij}\right)$ represent the total import content of the corresponding sectors.

The total import content of various sectors of the Yugoslav economy ranges from 37.6 percent for the shipbuilding and 32.8 percent for the rubber products industry to only 6 percent for the wood processing industry. Different import contents of various producing sectors determine also the import content of final demand components $Y^{(d)}$. If we add the direct imports $Y^{(u)}$ for final demand we get the following summary results for the Yugoslav economy in 1962 (Table 4)[9]).

Table 4.

Total Import Content of Final Demand Components in 1962
(in %)

Component of final demand	From domestic supplies	From imports	Import content of domestic supplies	Total import content
Investments	81	19	9.5	27
Ind. and general consumption	94	6	10	15
Exports	100	—	14.5	14.5
Stock increases	95	5	22	26
Total	92	8	11	18

The high import content of investments is particularly conspicuous if we take into account only the production and import of equipment. In that case the total import dependence climbs to 58.5 percent. On the whole 37 percent of total imports (including intermediate and finished goods of all sorts) were directly and indirectly attributable to investments. The invesment activity exerts, therefore, a strong pressure on the import capacity of the country.

In addition to its contribution to our factual knowledge of the role of imports in various elements of the economic structure this analysis can serve also as a starting point in exploring the probable repercussions of development programmes on import requirements. The parameters of import dependence change over time, but the analytical scheme given by the expression (4) permits a systematic examination of the expected changes. Various sources of information can be utilized for

[9]) Detailed results of the structural analysis of the import dependence of the Yugoslav economy are contained in M. Sekulić — „Zavisnost jugoslavenske privrede o uvozu" (Import Dependence of the Yugoslav Economy), Ekonomski pregled 9—10, Zagreb 1965.

this purpose. Once the vector of imports U or the possible variants of it have been established the final check of the overall consistency in the structure of production, consumption and foreign trade is achieved in the usual way[10]):

$$U + X = A X + Y$$

where

$$Y = Y^{(d)} + Y^{(u)}$$

Other Uses and Concluding Remarks

Input-output models have been also used for other analytical purposes. We can mention the analyses of price structures and of the interdependences in the price system, an analytical transformation of current market prices to theoretical price systems as a basis for the examination of the relative economic position of various sectors, detailed analyses of final markets of some industrial sectors, etc.

In our empirical research programmes it is foreseen to extend the application of input-output models beyond the sphere of production, consumption and foreign trade to other variables of economic structure. In the first place, capital coefficients and the formulation of suitable dynamic input-output models will be examined.

From our experience we can conclude that input-output models, if flexibly constructed and adapted, can be successfully put to various operative uses. A series of input-output tables for different years, based on the same methodological principles, will greatly enhance these possibilities. The concomitant improving of partial economic statistics, which is enforced by the compilation of input-output tables, is also an important result.

The level of aggregation plays an important role in various operative applications of input-output models. The inherent characteristics of economic processes and the statistical possibilities on the one side, and the operative usefulness of the information provided by the model on the other, dictate the practical aggregation scheme. An experiment with the 29 and 98 sector models, which consisted in calculating the direct and indirect effects of the given volume and composition of investment demand on the output levels of various producing sectors, has shown that the analytical results obtained do not differ significantly. From this we may draw a tentative conclusion that for some aspects of structural analysis and planning more aggregated models can be also successfully used.

(Rad primljen februara 1968.)

[10]) M. Sekulić — „Analiza i planiranje vanjsko trgovinskih efekata pomoću međusektorskog modela", (The Use of Input—Output Models in Analysis and Planning of Foreign Trade Effects), Statistička revija 4, Beograd 1964.

PRIMJENA MODELA MEĐUSEKTORSKIH ODNOSA U STRUKTURNOJ ANALIZI JUGOSLAVENSKE PRIVREDE

Rezime

U ovom radu, koji je priređen za četvrtu međunarodnu konferenciju o tehnici međusektorske analize (Ženeva, 8—12. januara 1968), prikazani su neki rezultati primjene modela međusektorskih odnosa u strukturnoj analizi jugoslavenske privrede.

Nakon kratkog osvrta na statističke izvore analiziran je karakter međuzavisnosti u produkcionom sistemu jugoslavenske privrede i izvršeno je mjerenje signifikantnosti pojedinih tehničkih koeficijenata s aspekta njihova utjecaja na formiranje cjelokupnosti strukturnih proporcija u toku privrednog razvoja. Rezultati ovih mjerenja pokazuju da samo ograničen broj tehničkih koeficijenata ima dominantan utjecaj na formiranje strukturnih proporcija (tabela 1). S tim u vezi razmatran je i stupanj triangularnosti tehnološke matrice jugoslavenske privrede.

Zatim se ispituju kompleksne međuzavisnosti i povezanosti pojedinih komponenti finalne potrošnje i proizvodnih sektora privrede. Proračunata je totalna alokacija proizvodnje pojedinih sektora na investicionu potrošnju, ličnu i opću potrošnju, izvoz i povećanje zaliha (tab. 3). Uporeďivanjem ovih podataka s podacima o osnovnoj namjenskoj raspodjeli proizvodnje (tabela 2) može se ustanoviti indirektni doprinos svakog proizvodnog sektora formiranju pojedinih komponenti finalne potrošnje, pa prema tome i njegova zavisnost o kretanjima na odgovarajućim finalnim tržištima. Na taj način ova analiza omogućuje da se određenije definiraju determinantni faktori razvoja pojedinih proizvodnih sektora.

Na bazi separatne uvozne matrice za 1962. godinu u radu se zatim u sumarnom aspektu prikazuje strukturna analiza uvozne zavisnosti pojedinih proizvodnih sektora i pojedinih komponenti finalne potrošnje. Skiciran je također postupak za utvrđivanje reperkusija različitih razvojnih programa na uvozne potrebe zemlje.

Na kraju se navode i neke druge analitičke primjene modela međusektorskih odnosa kao i rezultati jednog eksperimenta s 29-sektorskim i 98-sektorskim modelom koji pokazuje da se za određene aspekte strukturne analize i planiranja mogu uspješno koristiti i agregiraniji modeli.