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ADJUSTMENT OF INPUT-OUTPUT TABLES UNDER CIRCUMSTANCES OF HIGH AND ACCELERATED INFLATION

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ABSTRACT: The methodology is based on the modification of biproportional methods, where the current data of imports and value added are known, whereas the data of domestic intermediate consumption values are overdue. As up-to-date nominal figures are influenced by inflation, they are realistically expressed with the help of an integrated function of with two definite integrals are known. With this procedure, the Yugoslav input-output table from 1980 can be calculated to a value actual by the end of 1988. It is presented as a table of technical coefficients for 36 sectors of theYugoslav economy.

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The formation of input-output tables, especially tables of intermediate consumption, is still a very ambitious statistical accomplishment. Therefore, it is not possible to expect that there will be complete input-output tables for every country available in each year. That is why, for instance, the last published input-output tables for Yugoslavia (Savezni zavod za statistiku, 1988) and for some of its republics (Bizjak 1989), refer to the year 1980 and so have an eight to nine year retardation. Relations are changing because of the dynamics of the economy and the input-output tables are losing their authenticity. This is particularly obvious in economies affected by inflation, where relative prices vary enormously.

In this article we will show a possible way of calculating tables of intermediate consumption or technical coefficients in cases of Yugoslav hyper- and accelerated inflation. Our starting-point will be the biproportional method, which will be modified in the first phase for the situation in which we are dealing with actual figures for exports

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and the added value. The second phase of modification will include circumstances of accelerated inflation and will, according to such conditions, give an adequate solution, that is, an input-output table on the basis of the last established condition. The following will be presented with a calculation of production values and technical coefficients for 36 sectors of the Yugoslav economy with regard to prices at the end of the year 1988.

1. BIPROPORTIONAL (RAS) METHOD OF ADJUSTMENT OF TECHNICAL COEFFICIENTS

In the 60s, the biproportional (RAS) method was used for the first time. From its first publication (R. Stone, J. Bates, M. Bacharach 1963) onwards, it has been used in various circumstances and in several modifications such as: in cases of known row and column totals (R. C. Geary 1973), of known two or more complete matrices (R. Lecomber 1969), and in situations with secondary products (V. van Rijckeghem 1967). Some of the latest literature also deals with modifications of the RAS method and of the same method upgraded, the two-stage RECRAS-Lagrange method (Y. Kaneko 1988) and problems dealing with the negatives when calculating technical matrices (I. ten Raa and R. van der Ploeg 1989). Long-term projections have been made on basis of the RAS method (L. Johansen 1968). The method is known to be applied in various countries, for instance in the U. S. (C. Almon 1974), Ireland (E. W. Henry 1973), the Netherlands (C. B. Tilanus 1968), and in the Far East, especially in Japan (J. Kaneko 1982). In Yugoslavia, many authors have also dealt with similar problems (M. Dolenc and L. Pfajfar 1976, M. Sekulić 1980, M. Babić 1978, M. Šojić 1986 etc.).

There are critical views on the adjustment of the matrices (J. R. C. Lecomber 1973) and alternative approaches to estimating the input-output coefficients, which are based on linear programming (Y. Matsuzewski, P. R. Pitts and J. A. Sawyer 1964), on an ex-ante alternative (W. H. Fisher 1975), and recently the approach on quadratic programming (F. J. Harrigan 1983).

Basically, the procedure of the biproportional method is double multiplying of the known matrix of technical coefficients:

$$A^* = R\,A\,S \tag{1}$$

A* = actual matrix of technical coefficients
R = diagonal matrix of coefficients concerning row variations (fabrication effect)
A = first matrix of technical coefficients
S = diagonal matrix of column variation coefficients (substitution effect)

In Yugoslav circumstances, where permanent inflation is present, the following alternative was frequently used:

$$A^* = P A P^{-1} \tag{2}$$

P = diagonal matrix of price increasing coefficients

On this method (2) are based most estimations of technical coefficients in Yugoslavia. Considering that price variation is not the only reason for changes of technical coefficients, method (2) allows, a very approximate estimation by not considering any other influence.

2. BIPROPORTIONAL CALCULATION WITH ADJUSTMENT TO KNOWN VALUES OF PRODUCTION AND IMPORTS

Apart from the table with figures of intermediate consumption and its coefficients, other economic figures are mainly from up-to-date, publications. Largely prompt figures are at our disposal concerning the whole value of production of each sector, exports of intermediate products and of the value added. In this case we deal with known vertical sums in a desired actual matrix:

$$s(j) = X(j) - D(j) - M(j) \tag{3}$$

s(j) = total consumption of intermediate products in the "j" sector
X(j) = total value of production in the "j" sector
D(j) = value added of the "j"sector
M(j) = total intermediate exports of the "j" sector

s(j) also represents the sum of values of products of all "n" sectors which are consumed by the "j" sector for its production:

$$s(j) = \sum_{i=1}^{n} x(ij) \tag{4}$$

$$(j = 1, 2, \ldots n)$$

x(ij) = value of products of "i" sector that were consumed in the production of the "j" sector

Because the whole intermediate consumption of each sector is known, we can adjust the other values in the matrix of intermediate domestic consumption to it by (5) for each "n" sector:

$$x(ij)^* = x(ij) \cdot r(i) \cdot (s(j) / \sum_{k=1}^{n} x(kj) \cdot r(k) \tag{5}$$

$$(i = 1, 2, \ldots n; \; j = 1, 2, \ldots n)$$

x(ij)* = actual value of domestic intermediate consumption
x(ij) = primary value of domestic intermediate consumption
s(j) = actual value of all domestic sector intermediate consumption
r(i) = X(j)* / X(j)
(i, j) = 1, 2, ... n; i = j)
X(j)* = actual value of production of the "j" sector
X(j) = primary value of production of the "j" sector

Coefficients r(i) contain the whole nominal modification: modified prices as well as the eventual change of produced quantities, s(j) also derives from the actual structure of production, which is a result of technology and prices. That is why method (5), when actualizing the intermediate consumption table (and with this the matrix of technical coefficients), contains the effect of fabrication and substitution as well as changes in prices.

Such an approach (5), can be used for direct actualizing of the matrix of technical coefficients. In this case, the absolute values of intermediate consumption (classified into givers and as a total) would be replaced by adequate coefficients.

The method of actualizing input-output tables presented here was used in a cost-push inflation model (Kračun 1988), where the starting operation is the decomposition of intermediate consumption on primary costs of production. For examples of such operations where the product of the matrix multiplier and the vector is used, it is possible to estimate how a possibly inexact estimation of certain coefficients would effect the final result, on the basis of the conditionality of the system of linear equations (Vukman 1982).

3. ADJUSTMENT OF THE CALCULATION FOR HIGH AND GROWING RATES OF INFLATION

Method (5) takes into consideration the known quantity of domestic intermediate consumption for each sector which is obtained through (3), that is, from known values of production, imports of intermediate products and the value added. All of the aforementioned values are based on the noted stream in a certain period of time, mostly in the period of one year.

In cases of high inflation rates, a problem appears: which value is actually expressed by the nominal figure? Because the nominal figure is based on the summing up of the amount of money through a certain period of time, and at the same time the relation between a unit of goods and a unit of money has changed, the amount gained is based on the addition of money of different real values. In other words: the higher the inflation the more deviation there is from real values by nominal figures.

Let us consider that in a certain stream of values of incomes two figures are known: the nominal value of the last year Y(2) and the nominal value of the previous year Y(1). On this basis we wish to calculate the input-output table which would express the relations at the end of the last year. For such a calculation a known income figure is needed, expressed in a real unit for the last moment which would represent the annual stream. This quantity is marked as Y(R).

The problem of the relation between available Y(1) and Y(2) and the desired result Y(R) is shown in Fig. 1.

On Fig. 1 we have a cartesian system where the abscissa represents time, the ordinate the growing value of particular transactions (caused by inflation, and eventually also by other reasons). The entire nominal value of transactions in the previous year (=Y(1)), is expressed by the

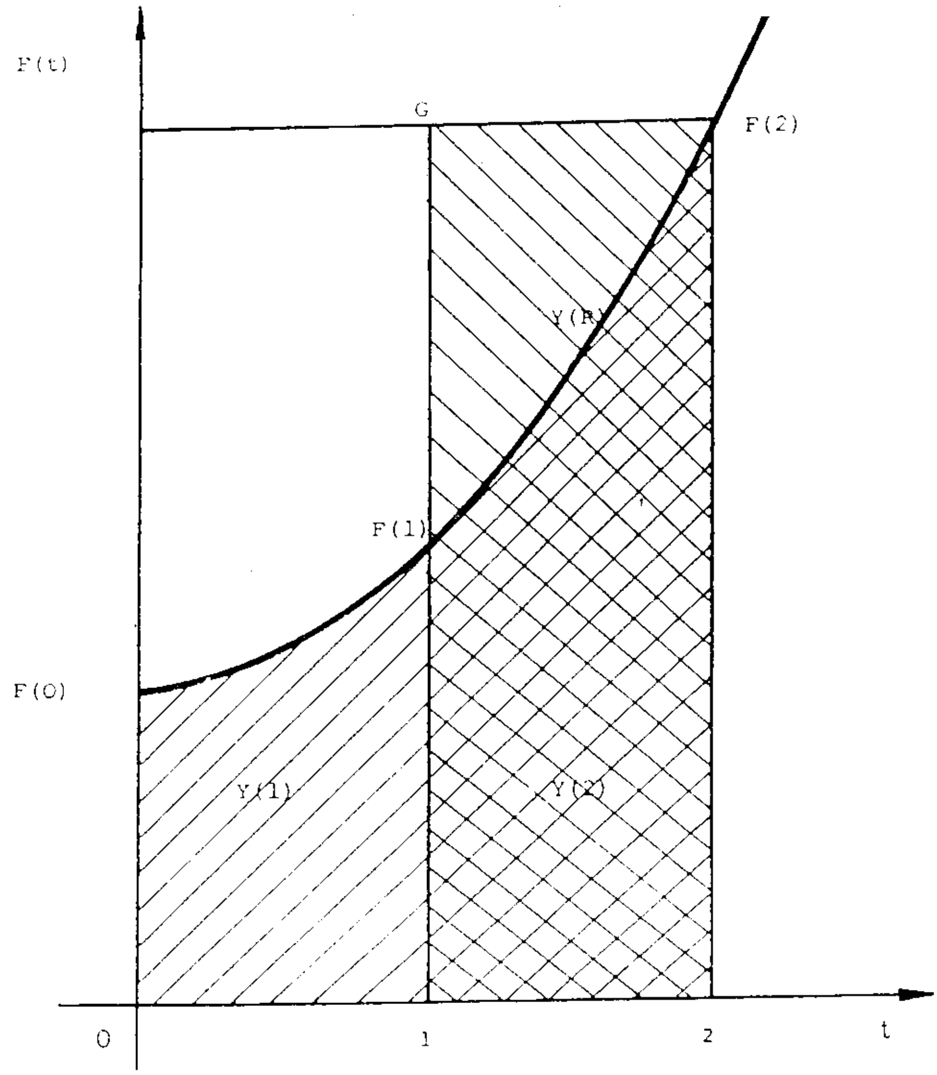

Figure 1: *View of the relation between the desired value — Y(R) and the available figures — Y(1) and Y(2)*

area of a figure with corners 0 — 1 — F(1) — F(0), and in the last year (= Y(2) the area of the figure 1 — 2 — F(2) — (F(1). We are now interested in the real value of the entire income in the last year, expressed by the position of the last moment (=Y(R)). That is the area of a rectangle with corners 1 — 2 — F(2) — G.

Analytically, we can express both nominal values as a definite integral of the function F(t), that is

$$Y(1) = \int_0^1 F(t)\,dt \quad \text{and} \tag{6}$$

$$Y(2) = \int_1^2 F(t)\,dt. \tag{7}$$

Supposing that the desired value Y(R), if the length of the year is marked as 1, corresponds to the value of the function F(t) in point t=2, we would obtain:

$$Y(R) = F(2) \tag{8}$$

The approach to the solution of the problem is in the determination of function F(t), of which the two definite integrals are known. The F(t) to be chosen should enable a solution of the problem in terms of growing rates of inflation.

3.1. *Unique solution on basis of an exponential function*

Supposing that the desired function F(t) is an exponential function, we get the following:

$$F(t) = k \cdot e^{a.t} \tag{9}$$

In this case "k" and "a" are parameters of the exponential function and "e" is the basis of natural logarithms.

On the basis of a general solution of the integral of the exponential function (arbitrary constant left out)

$$\int F(t)\, dt = (k/a) \cdot e^{a.t} \tag{10}$$

we can write our nominal values Y(1) and Y(2) in forms (11) and (12):

$$Y(1) = (k/a) \cdot (e^{a} - 1) \tag{11}$$

and

$$Y(2) + Y(1) = (k/a) \cdot (e^{2.a} - 1) \tag{12}$$

If equation (11) is divided with equation (12) and the result is consolidated we get (13)

$$Y(1) \,/\, [Y(2) + Y(1)] = (e^{a} - 1) \,/\, (e^{2.a} - 1) \tag{13}$$

and because

$$(e^{2.a} - 1) = (e^{a} - 1) \cdot (e^{a} + 1)$$

it will also be

$$[Y(2) + Y(1)] \,/\, Y(1) = e^{a} + 1 \tag{14}$$

From (14) we obtain the solution for parameter "a" of the exponential function (9)

$$a = ln\, [Y(2) \,/\, Y(1)] \tag{15}$$

while parameter "k" can be obtained through substitution in (11):

$$k = Y^{2}(1) \cdot ln\, [Y(2) \,/\, Y(1)] \,/\, [Y(2) - Y(1)] \tag{16}$$

Now we can also calculate the desired Y(R) as F(2), which gives us result (17);

$$Y(R) = Y^2(2) \cdot ln\,[Y(2)\,/\,Y(1)]\,/\,[Y(2) - Y(1)] \tag{17}$$

With (17) we have obtained a unique solution to the given problem. But here we have taken into consideration a simple exponential function; that is why solution (17) is correct only if the inflation rate remains the same throughout both observed periods. In the case of growing rates of inflation, the result based on (17) is underestimated.

3.2. *Solution in cases of accelerated inflation*

If we are dealing with accelerated inflation, we are obliged to find a function F(t) which would correspond to the condition in (18):

$$F(2)\,/\,F(1) > F(1)\,/\,F(0) \tag{18}$$

That is why the desired function F(t) would be considered as a sum of two functions

$$F(t) = f_1(t) + f_2(t) \tag{19}$$

Function $f_1(t)$ would be our already known exponential function

$$f_1(t) = k \cdot e^{a \cdot t} \tag{20}$$

for which we know, that by itself it does not correspond to the condition in (18). Function f_2 has to be obtained, which would in connection with (19) correspond to the condition in (18).

A view of the relation between functions F(t), $f_1(t)$ and $f_2(t)$ is on Fig. 2.

If the known values Y(1) and Y(2) are the same as in solutions with the simple exponential function, the desired function $f_2(t)$ has to take a course which would, on segments 0 — 1 and 1 — 2, not change the area underneath. That is expressed in request (21):

$$\int_0^1 f_2(t)\,dt = \int_1^2 f_2(t)\,dt = 0 \tag{21}$$

On the basis of definitions (19) and (20), and the requests from (18) and (21), this can result in a polynom of odd degree. The simplest possible solution is therefore obtained with the quadratic function, which in its simplest form is

$$f_2(t) = u \cdot t^2 + v \cdot t + z \tag{22}$$

The indefinite integral obtained through (22), with the arbitrary constant left out, is:

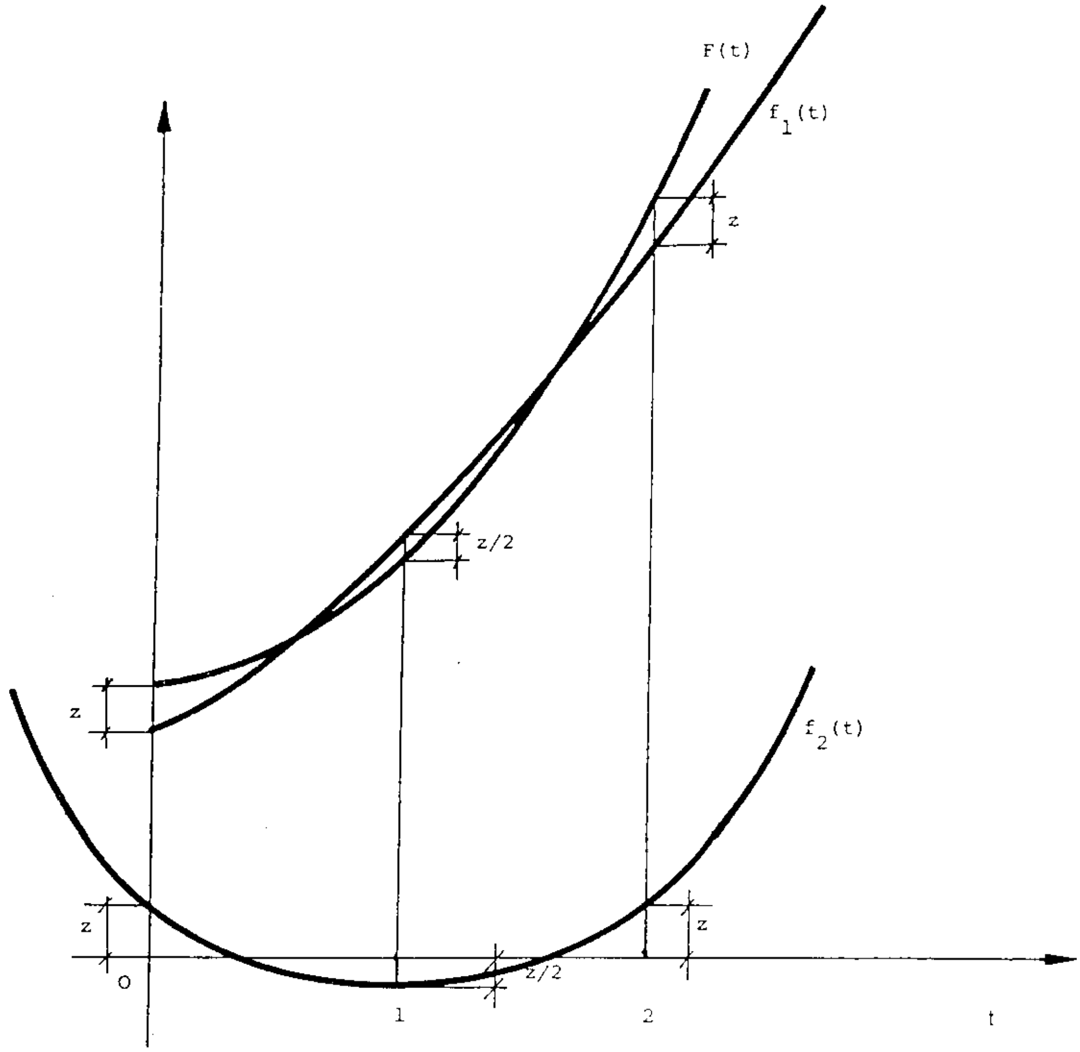

Figure 2: *Functions $F(t)$, $f_1(t)$ and $f_2(t)$*

$$\int f_2(t)\,dt = (u/3) \cdot t^3 + (v/2) \cdot t^2 + z \cdot t \qquad (23)$$

Coefficients "u", "v" and "z" consist, when fulfilling conditions given in (21), the following system of equations:

$$u/3 + v/2 + z = 0$$
$$7 \cdot u/3 + 3 \cdot v/2 + z = 0$$

If coefficients "u" and "v" are obtained with the help of "z" and therefore write $f_2(t)$ in this form, we obtain:

$$f_2(t) = (3/2) \cdot z \cdot (t^2 - 2 \cdot t + 2/3) \qquad (24)$$

For us F(2) is of most interest, because through (8) it was stated that it is the desired result. While solution $f_1(2)$ is identical with the solution for the simple exponential functions (17), the solution for $f_2(2)$ is quoted in (25):

$$f_2(2) = (3/2) \cdot z \cdot (2^2 - 2 \cdot 2 + 2/3) = z \tag{25}$$

Therefore the complete solution, Y(R) in cases of accelerated inflation, is equal to (26).

$$Y(R) = Y^2(2) \cdot \ln [Y(2) / Y(1)] / [Y(2) - Y(1)] + z \tag{26}$$

It is understandable that solution (26) is not unique, for it also requires, in addition to nominal figures for the last and previous year, a parameter of inflationary acceleration. Parameter "z" can be determined only at a certain interval, while it has a reasonable lower and upper limit.

Lower limit "z" is given on the consideration that inflation is accelerated. If we deal with constant rates of nominal growth, then solution (17) is sufficient, and "z" is therefore equalized with zero. For accelerated inflation the following is valid:

$$z > 0$$

Parameter "z" also has its' logical upper limit. We will define it with the request that we were already dealing with inflation at the beginning of the previous period in point t = 0.

If price growth was accelerating the whole time this would mean that the first and second derivations of F(t) are positive:

$$F'(t) = k \cdot a \cdot e^{a.t} + 3 \cdot z \cdot (t - 1) > 0 \tag{27}$$

$$F''(t) = k \cdot a^2 \cdot e^{a.t} + 3 \cdot t > 0 \tag{28}$$

Equation (28) is produced for every "k" and "t", while k > 0 and a > 0. The value of both derivations is smallest at point t = 0. So we obtain maximum "z" from equation (27) with t being equal to 0 which produces the following:

$$k \cdot a \cdot e^0 + 3 \cdot z \cdot (0 - 1) > 0 \Rightarrow z < k \cdot a/3$$

or

$$z\,(max) = k \cdot a/3 \tag{29}$$

As "k" and "a" are parameters of the exponential function, being already expressed in (15) and (16) through our known quantities Y(1) and Y(2), this enables us to do something similar with z (max).

$$z\,(max) = Y^2(1) \cdot \{\ln [Y(2) / Y(1)]\}^2 / \{3 \cdot [Y(2) - Y(1)]\} \tag{30}$$

Concerning the influence of inflationary acceleration on the result, we are interested how big the influence is in comparison to the result to be obtained if it is not taken into consideration. The answer will follow from the comparison between z (max), and Y(R) which is reduced for "z".

$$c = z\,(max) \,/\, [Y(R) - z] = k \cdot a \,/\, (3 \cdot k \cdot e^{2 \cdot a}) =$$
$$= a/(3 \cdot e^{2a})$$

It is obvious that relation "c" converges to 0 when "a" is moving closer to 0 and also with the growth of "a" beyond all limits.

$$a = 0 \Rightarrow c = 0$$

and

$$a = +\infty \Rightarrow c = 0$$

Its' maximum value is obtaineed by equalizing the first derivation dc/da with 0.

$$dc/da = -(2 \cdot a - 1) \,/\, (3 \cdot e^{2 \cdot a})$$

$$dc/da = 0 \Rightarrow a = 1/2$$

$$a = 1/2 \Rightarrow c = 0.0613$$

The described procedure shows that because of inflationary acceleration the result may increase at most up to 6.13% in comparison with the result which would be obtained on basis of a simple exponential function. This increase is lower if "a" is bigger or smaller than 0.5.

Taking into consideration rising inflation, the solution with known Y(1) and Y(2) is not unique anymore. In order to obtain a unique solution, one more figure dealing with growing inflation rates has to be known.

Let us take it that the figure of the nominal growth at the beginning of the previous year is known, when t = 0. We shall mark that as coefficient "b", which is defined as (31):

$$b = F'(0) \,/\, F(0) \tag{31}$$

If we introduce t = 0 into (28) we obtain

$$F'(0) = k \cdot a - 3 \cdot z$$

The value of function F(t) in point t = 0 is

$$F(0) = k + z$$

therefore it is

$$b = (k \cdot a - 3 \cdot z) \,/\, (k + z) \tag{32}$$

From (32) one can explicitly obtain "z" which is the result of the inflationary acceleration:

$$z = (a - b) \cdot k \;/\; (3 + b) \tag{33}$$

The relation between the actual "z" and its logical maximum z (max) is shown on (34):

$$z \;/\; z\,(max) = (1 - b/a) \;/\; (1 + b/3) \tag{34}$$

Result Y(R) is therefore

$$Y(R) = k \cdot [e^{2 \cdot a} + (a - b) \;/\; (b + 3)] \tag{35}$$

(35) can be completed with parameters "k" and "a", obtained directly from input figures Y(1) and Y(2). If (35) is connected to (15) and (16), we obtain Y(R) as a solution to the given problem: to find a real value of the annual income at the end of the year in conditions of accelerated inflation, if nominal values of that income for the last two consecutive years are known.

The biproportional calculation of the actual input-output tables (5) is based on actual figures of imports and added value. These are mainly nominal figures and the described procedure shows how these nominal figures can be recalculated into real values. With this, a real basis is obtained for the adjustment of values in the table of intermediate consumption.

4. THE CALCULATION OF TECHNICAL COEFFICIENTS FOR YUGOSLAVIA AS AT THE END OF 1988

The presented methodology will be demonstrated with a calculation. In phase one, we will calculate the real streams which together combine the value added. With the results obtained, we will in phase two actualize the old table according to method (5). The results will show the circumstances at the end of 1988, acknowledging the trends of the last two years, according to the prices valid at the moment.

In Table 1, the calculation of values of production is shown for each of the 36 sectors represented in the input-output table. The calculation is based on the figures of the final statements concerning the Yugoslav economy for the year 1988 (SDK 1989), which contain nominal figures for the current and previous years.

Because we have a nominal figure for the current year (Y(2)) and for the previous year (Y(1)) for each sector, while the figure for the nominal annual growth at the beginning of the previous period (beginning of 1987) is known only as global, we will start from the point that the relation z/z(max) is the same in all sectors. Let us consider the average growth rate of producers' manufacturing prices between November 1986 and January 1987, calculated according to the annual level (b = 0.675),[1] and the relation between nominal figures of manufacturing production in 1988 and 1987 ($Y(2)/Y(1) = 3.114 \Rightarrow a = 1.136$). With the help of (34) we obtain:

$$z/z(max) = 0.3312$$

The actual calculation of the real value of production for each sector in the 1988 according to prices at the end of that year, taking into account trends in the last two years, is presented through (36):

$$Y(R) = \ln [Y(2) / Y(1)] \cdot \{3 \cdot Y^2(2) + 0{,}3312 \cdot Y^2(1) \cdot \cdot \ln [Y(2) / Y(1)]\} / \{3 \cdot [Y(2) - Y(1)]\} \quad (36)$$

Table 1: *Production value of sectors expressed in nominal and real figures*

Sector	Nominal value 1987	Nominal value 1988	Ratio of nominal values 88/87	Real value for 1988 (prices end 88')	Ratio real/nominal
	Y(1)	Y(2)	Y(2)/Y(1)	Y(R)	Y(R)/Y(2)
1 Eelectricity generation	3.286	9.690	2,948	16.072	1,658
2 Coal mining	735	2.232	3,037	3.747	1,678
3 Coal processing	224	743	3,306	1.290	1,735
4 Prod. of oil and natural gas	211	502	2,372	763	1,518
5 Oil refining	1.736	6.883	3,963	12.800	1,859
6 Extraction of iron ore	48	101	2,081	146	1,437
7 Iron and steel production	2.745	11.896	4,333	22.874	1,922
8 Extr. of non-ferrous metal ore	402	1.685	4,191	3.200	1,899
9 Prod. of non-ferrous metals	1.074	5.031	4,684	9,956	1,978
10 Proc. of non-ferrous metals	461	2.285	4,956	4.616	2,019
11 Production of non-metals	122	413	3,392	725	1,752
12 Processing of non-metals	695	2.684	3,862	4.944	1,841
13 Metal processing activities	3.134	11.735	3,744	21.359	1,820
14 Production of machines	2.139	8.903	4,161	16.863	1,894
15 Vehicle production (all types)	2.875	10.512	3,656	18.960	1,803
16 Shipbuilding	420	2.740	6,516	6.096	2,224
17 Elec. machines and appliances	3.290	13.787	4,190	26.179	1,898
18 Production of chemical products	2.001	9.286	4,640	18.311	1,971
19 Processing of chemical products	2.130	8.548	4,011	15.970	1,868

[1] According to Yugoslav statistical data (Savezni zavod za statistiku, Saopštenje), producers' manufacturing prices were 8.97% higher in January 1987 than in November 1986. Regarding the definition for "b" (31), we deal with this figure when it is recalculated into the annual rate of growth.

20 Produc. of building materials	744	2.675	3,596	4.795	1,792
21 Timber processing	611	2.266	3,709	4.111	1,813
22 Wood final products	1.617	6.380	3,945	11.844	1,856
23 Prod. and procesisng of paper	1.243	4.390	3,532	7.815	1,779
24 Spinning material and textiles	1.562	5.760	3,687	10.423	1,809
25 Final textiles products	2.455	8.212	3,344	14.313	1,742
26 Hide and furs	379	1.410	3,722	2.562	1,816
27 Leatherwear and leather access.	1.176	4.051	3,444	7.142	1,762
28 Rubber processing	682	2.247	3,294	3.893	1,732
29 Produc. of foodstuff products	5.242	19.775	3,772	36.095	1,825
30 Production of beverages	729	2.513	3,447	4.431	1,763
31 Production of fodder	389	1.505	3,861	2.773	1,841
32 Other manufacturing	1.479	5.134	3,469	9.076	1,767
33 Agriculture and fishing	2.980	12.607	4,229	24.022	1,905
34 Building industry	6.475	18.491	2,855	30.283	1,637
35 Transport and communications	4.895	15.935	3,254	27.481	1,724
36 Sundry economic activities	11.541	43.149	3,738	78.490	1,819

In the same way (36), as the calculation for values of 36 sectors of the Yugoslav economy is demonstrated in Table 1, we can obtain elements from the same means of information (SDK 1989) for the calculation of the entire value of intermediate consumption and constituent parts of the value added (depreciation of fixed assets, wages and salaries, taxes and self-imposed taxes, interest). Because the current figures on imports are also available (Dokumenti saveznog zavoda za statistiku 1989), we also use (5) for the calculation of values from the primary input-output table for the year 1980 (Savezni zavod za statistiku 1988) taking into account the conditions actual at the end of 1988.[2]

The results of the calculations are presented in Table 2 in the form of a table of technical coefficients, actual at the end of 1988. The presence of high inflation makes any calculation of an annual average very doubtful. A more adequate way made possible by the methodology presented is the calculation of the present moment, which takes into account the entire dynamic that led to such a situation.

In table 2 the economy is divided into 36 sectors, which corresponds to the official Yugoslav classification of activities. The introduction of simplification and better analysis gives sectors 32 and 36 more detail: sector 32 contains all activities in the fields of manufacturing and mining which are not contained in sectors 1—31. Sector 36 contains all other activities concerning the economy which are not included in the named sectors, including the value of trade services. The table also includes two aggregated illustrations, not numbered as sectors: man-

[2] Considering the variety of data sources, some adjustments are unavoidable. As the final statement for each sector, processed by the Public Auditing Service (SDK 1989), consists of more than 700 elements, an adjustment to other data sources is possible by the corresponding combination of these elements. The details of this operation are not the subject of this paper.

ufacturing and mining, which include sectors 1—32, and the entire economy consisting of 36 sectors.

Imports of intermediate products are included as a whole. They are calculated according to the exchange rate valid at the end of 1988, raised by custom duties paid on imports of intermediate products which are recalculated according to the value at the end of the year 1988.

Some costs have characteristics which unable them to be matched to givers in the table (services of banks and insurance companies, business trips, safeguards against loss etc.). We therefore have a special row called "other costs".

A special row in Table 2 represents net interest rates. This is the difference between paid and received interest. In case of high inflation, interest achieves high nominal values on the side of outflows as well as on the side of inflows, meaning that they should be considered as a part of the business. In the case that received interest exceeds paid interest in the sector, a negative sign appears before the value.

The value of the production in Table 2 is given in billions of dinars, and it matches the one calculated in Table 1.

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Table 2: *Technical coefficients for 36 sectors of the Yugoslav economy based on prices at the end of 1988*

SECTOR	1	2	3	4	5	6	7	8
01 Electricity generation	0,1429	0,0417	0,0105	0,0264	0,0058	0,0810	0,0304	0,0995
02 Coal mining	0,1658		0,0676			0,0009	0,0002	0,0006
03 Coal processing	0,0004					0,0173	0,0343	0,0003
04 Prod. of oil and natural gas	0,0023	0,0001		0,0124	0,0162		0,0016	0,0001
05 Oil refining	0,0443	0,0098	0,0016	0,0094	0,0468	0,0897	0,0088	0,0201
06 Extraction of iron ore							0,0058	
07 Iron and steel production	0,0019	0,0282	0,0003	0,0058	0,0004	0,0071	0,3676	0,0253
08 Extr. of non-ferrous metal ores								0,3445
09 Prod. of non-ferrous metals	0,0006	0,0003				0,0012	0,0021	0,0129
10 Proc. of non-ferous metals	0,0001	0,0005					0,0002	
11 Production of non-metals	0,0003	0,0001		0,0005			0,0003	
12 Processing of non-metals	0,0034	0,0001		0,0025	0,0001	0,0087	0,0045	0,0005
13 Metal processing activities	0,0109	0,0308	0,0004	0,0010	0,0077	0,0410	0,0097	0,0020
14 Production of machines	0,0012	0,0066	0,0010	0,0055	0,0001	0,0420	0,0083	0,0204
15 Vehicle production (all types)	0,0010			0,0036	0,0002		0,0023	0,0003
16 Shipbuilding								
17 Electrical machines and appliances	0,0447	0,0067	0,0002	0,0024	0,0001	0,0359	0,0015	0,0055
18 Production of chemical products	0,0024	0,0010	0,0027	0,0002	0,0102	0,0054	0,0065	0,0061
19 Processing of chemical products		0,0288		0,0084	0,0010	0,1190	0,0007	0,0167
20 Production of building materials	0,0014	0,0013		0,0003	0,0005	0,0091	0,0004	0,0038
21 Timber processing	0,0004	0,0017				0,0012		0,0008
22 Wood final products	0,0008	0,0002			0,0002	0,0011	0,0002	0,0005
23 Production and processing of paper	0,0018	0,0007		0,0003	0,0004	0,0049	0,0001	0,0004
24 Spinning material and textiles				0,0007				0,0002
25 Final texile products	0,0005	0,0009		0,0011	0,0001	0,0019	0,0003	0,0011

SECTOR	1	2	3	4	5	6	7	8
26 Hide and furs		0,0001						0,0002
27 Leatherwear and leather accessories	0,0008	0,0015		0,0012	0,0001	0,0127	0,0001	0,0015
28 Rubber processing	0,0008	0,0039		0,0003		0,0203	0,0005	0,0056
29 Production of foodstuff products								
30 Production of beverages								
31 Production of fodder								
32 Other manufacturing	0,0016	0,0034	0,0001	0,0031	0,0006	0,0345	0,0013	0,0041
TO Total manufacturing and mining	0,4313	0,1695	0,0850	0,0862	0,0916	0,5357	0,4888	0,5743
33 Agriculture and fishing								
34 Building industry	0,0055	0,0039		0,0015	0,0001	0,0064	0,0006	0,0031
35 Transport and communications	0,0175	0,0092	0,0356	0,0131	0,0339	0,0414	0,0179	0,0345
36 Sundry economic activities	0,0443	0,0633	0,0115	0,1000	0,0219	0,2964	0,0568	0,0496
TO Total economy	0,4987	0,2460	0,1322	0,2009	0,1477	0,8801	0,5642	0,6617
Intermediate imports	0,2062	0,1252	0,7958	0,7503	0,7551	0,1068	0,1273	0,0525
Other costs	0,0384	0,0768	0,0175	0,0943	0,0176	0,1488	0,0283	0,0473
Depreciation of fixed assets	0,0906	0,0905	0,0223	0,3289	0,0128	0,2894	0,0259	0,0698
Net wages and salaries	0,0640	0,2102	0,0328	0,1007	0,0193	0,2796	0,0326	0,1044
Taxes and self-imposed taxes	0,0856	0,1988	0,0194	0,2063	0,0217	0,1296	0,0268	0,0751
Net interest	-0,0547	0,0082	0,0557	-0,8742	0,0999	-0,2913	0,2281	0,0213
Surplus	0,0709	0,0438	-0,0759	0,1925	-0,0743	-0,5432	-0,0335	.0,0323
Production value	16.072	3.747	1.290	763	12.800	146	22.874	3.200

SECTOR	9	10	11	12	13	14	15	16
01 Electricity generation	0,0696	0,0138	0,0583	0,0297	0,0159	0,0071	0,0069	0,0040
02 Coal mining	0,0021	0,0003		0,0033	0,0004	0,0003	0,0003	
03 Coal processing	0,0061	0,0003			0,0039	0,0004	0,0003	0,0003
04 Prod. of oil and natural gas		0,0002	0,0191	0,0068	0,0006	0,0002	0,0003	0,0002
05 Oil refining	0,0101	0,0050	0,0172	0,0268	0,0044	0,0030	0,0046	0,0009
06 Extraction of iron ore								
07 Iron and steel production		0,0009	0,0174	0,0057	0,1084	0,0740	0,0563	0,0157
08 Extr. of non-ferrous metal ores	0,1927			0,0057	0,0010			
09 Prod. of non-ferrous metals	0,2640	0,3990	0,0006	0,0061	0,0212	0,0058	0,0099	0,0152
10 Proc. of non-ferrous metals	0,0004	0,0321	0,0003	0,0027	0,0229	0,0101	0,0124	0,0056
11 Production of non-metals		0,0001	0,0310	0,0432	0,0018	0,0001	0,0003	0,0002
12 Processing of non-metals	0,0141	0,0004	0,0102	0,0675	0,0033	0,0025	0,0031	0,0005
13 Metal processing activities	0,0014	0,0050	0,0181	0,0124	0,0986	0,0522	0,0678	0,0205
14 Production of machines	0,0021		0,0095	0,0039	0,0135	0,0679	0,0078	0,0209
15 Vehicle production (all types)	0,0011	0,0005	0,0006	0,0017	0,0105	0,0092	0,1372	0,0026
16 Shipbuilding				0,0002	0,0006	0,0030	0,0005	0,0502
17 Electrical machines and appliances	0,0004	0,0031	0,0095	0,0061	0,0111	0,0344	0,0214	0,0273
18 Production of chemical products	0,0022	0,0019	0,0457	0,0042	0,0066	0,0047	0,0033	0,0088
19 Processing of chemical products	0,0009	0,0013	0,0264	0,0210	0,0105	0,0032	0,0055	0,0054
20 Production of building materials	0,0011	0,0012	0,0030	0,0029	0,0008	0,0004	0,0003	0,0002
21 Timber processing	0,0001	0,0006	0,0015	0,0009	0,0016	0,0009	0,0027	0,0010
22 Wood final products	0,0003	0,0042	0,0009	0,0086	0,0041	0,0012	0,0024	0,0010
23 Production and processing of paper		0,0029	0,0068	0,0122	0,0023	0,0008	0,0015	0,0002
24 Spinning material and textiles		0,0006	0,0002	0,0014	0,0000		0,0017	0,0003
25 Final textile products		0,0002	0,0026	0,0014	0,0003	0,0002	0,0015	0,0002
26 Hide and furs			0,0005				0,0003	

SECTOR								
27 Leatherwear and leather accessories	0,0002	0,0002	0,0014	0,0008	0,0004	0,0009	0,0003	0,0004
28 Rubber processing	0,0001	0,0012	0,0069	0,0013	0,0013	0,0029	0,0208	
29 Production of foodstuff products								
30 Production of beverages								
31 Production of fodder								
32 Other manufacturing	0,0005	0,0007	0,0062	0,0062	0,0026	0,0022	0,0009	0,0010
TO Total manufacturing and mining	0,5708	0,4768	0,2943	0,2840	0,3509	0,2891	0,3716	0,1837
33 Agriculture and fishing								
34 Building industry	0,0002	0,0003	0,0015	0,0018	0,0046	0,0041	0,0016	0,0005
35 Transport and communications	0,0249	0,0169	0,0385	0,0420	0,0177	0,0089	0,0106	0,0054
36 Sundry economic activities	0,0241	0,0365	0,0387	0,0571	0,0435	0,0267	0,0323	0,0189
TO Total economy	0,6201	0,5305	0,3732	0,3850	0,4170	0,3289	0,4161	0,2086
Intermediate imports	0,1403	0,1807	0,0241	0,1448	0,0891	0,0908	0,2173	0,1011
Other costs	0,0177	0,0266	0,1097	0,0533	0,0593	0,0528	0,0321	0,0579
Depreciation of fixed assets	0,0242	0,0194	0,0359	0,0275	0,0211	0,0187	0,0206	0,0050
Net wages and salaries	0,0274	0,0487	0,1675	0,1027	0,1103	0,1006	0,0749	0,0445
Taxes and self-imposed taxes	0,0307	0,0507	0,1320	0,0848	0,0893	0,0900	0,0567	0,0467
Net interest	0,0695	0,0577	0,0759	0,1267	0,1588	0,2288	0,1344	0,4365
Surplus	0,0697	0,0854	0,0814	0,0748	0,0547	0,0890	0,0475	0,0993
Production value	9.956	4.616	725	4.944	21.359	16.863	18.960	6.096

SECTOR	17	18	19	20	21	22	23	24
01 Electricity generation	0,0094	0,0264	0,0112	0,0455	0,0254	0,0172	0,0529	0,0210
02 Coal mining	0,0002	0,0006	0,0002	0,0059	0,0007	0,0006	0,0036	0,0011
03 Coal processing	0,0001	0,0018	0,0001	0,0006	0,0003			
04 Prod. of oil and natural gas		0,0029	0,0008	0,0043	0,0008	0,0005	0,0022	0,0005
05 Oil refining	0,0026	0,0114	0,0115	0,0686	0,0120	0,0065	0,0077	0,0040
06 Extraction of iron ore								
07 Iron and steel production	0,0174	0,0002		0,0344	0,0021	0,0067	0,0003	0,0011
08 Extr. of non-ferrous metal ores	0,0001	0,0033	0,0012	0,0032			0,0005	
09 Prod. of non,ferrous metals	0,0390	0,0061	0,0044	0,0012	0,0007	0,0009	0,0020	0,0002
10 Proc. of non-ferrous metals	0,0195	0,0025	0,0001	0,0008	0,0006	0,0014	0,0010	0,0001
11 Production of non-metals	0,0001	0,0006	0,0008	0,0090	0,0002	0,0002	0,0005	0,0002
12 Processing of non-metals	0,0055	0,0004	0,0087	0,0148	0,0006	0,0078	0,0007	0,0003
13 Metal processing activities	0,0252	0,0043	0,0170	0,0262	0,0112	0,0478	0,0055	0,0049
14 Production of machines	0,0081	0,0025	0,0010	0,0055	0,0042	0,0034	0,0007	0,0025
15 Vehicle production (all types)	0,0003	0,0007	0,0002	0,0017		0,0006		
16 Shipbuilding	0,0006							
17 Electrical machines and appliances	0,1605	0,0021	0,0031	0,0065	0,0017	0,0066	0,0107	0,0035
18 Production of chemical products	0,0131	0,1754	0,1345	0,0091	0,0163	0,0037	0,0466	0,0612
19 Processing of chemical products	0,0133	0,0157	0,1080	0,0088	0,0156	0,0316	0,0243	0,0097
20 Production of building materials	0,0003	0,0008	0,0007	0,0429	0,0017	0,0043	0,0009	0,0003
21 Timber processing	0,0003		0,0005	0,0025	0,0504	0,1206	0,0002	0,0002
22 Wood final products	0,0042	0,0009	0,0013	0,0020	0,0242	0,0656	0,0032	0,0016
23 Production and processing of paper	0,0024	0,0087	0,0267	0,0092	0,0047	0,0108	0,2008	0,0050
24 Spinning material and textiles	0,0005	0,0019	0,0025	0,0006		0,0293	0,0003	0,1644
25 Final textile products	0,0002	0,0006	0,0015	0,0012	0,0001	0,0068	0,0004	0,0012

SECTOR	17	18	19	20	21	22	23	24
26 Hide and furs		0,0001	0,0001			0,0021		
27 Leatherwear and leather accessories	0,0004	0,0006	0,0001	0,0012	0,0003	0,0007	0,0003	0,0002
28 Rubber processing	0,0018	0,0018	0,0003	0,0037	0,0006	0,0009	0,0006	0,0002
29 Production of foodstuff products		0,0001	0,0001				0,0016	0,0003
30 Production of beverages		0,0001						
31 Production of fodder								
32 Other manufacturing	0,0015	0,0017	0,0064	0,0335	0,0012	0,0054	0,0074	0,0018
TO Total manufacturing and mining	0,3283	0,2756	0,3451	0,3443	0,1767	0,3832	0,3764	0,2876
33 Agriculture and fishing	0,0001	0,0007			0,0003	0,0010	0,0004	
34 Building industry	0,0013	0,0009	0,0010	0,0082	0,0019	0,0050	0,0009	0,0007
35 Transport and communications	0,0085	0,0160	0,0208	0,0676	0,0524	0,0278	0,0256	0,0119
36 Sundry economic activities	0,0202	0,0375	0,0419	0,0681	0,2687	0,0377	0,0716	0,0251
TO Total economy	0,3583	0,3304	0,4097	0,4884	0,4999	0,4542	0,4757	0,3259
Intermediate imports	0,1544	0,2981	0,2391	0,0688	0,0580	0,0596	0,1956	0,1981
Oother costs	0,0451	0,0426	0,0452	0,0494	0,0438	0,0440	0,0403	0,0403
Depreciation of fixed assets	0,0153	0,0358	0,0126	0,0293	0,0231	0,0159	0,0320	0,0210
Net wages and salaries	0,0746	0,0415	0,0626	0,1124	0,1015	0,0945	0,0650	0,0931
Taxes and self-imposed taxes	0,0667	0,0402	0,0638	0,0975	0,0888	0,0776	0,0641	0,0668
Net interest	0,2130	0,1565	0,1008	0,0893	0,1052	0,1907	0,077	0,2287
Surplus	0,0722	0,0545	0,0658	0,0645	0,0794	0,0629	0,0482	0,0256
Production value	26.179	18.311	15.970	4.795	4.111	11.844	7.815	10.423

SECTOR	25	26	27	28	29	30	31	32
01 Electricity generation	0,0059	0,0096	0,0039	0,0186	0,0143	0,0154	0,0064	0,0148
02 Coal mining	0,0003	0,0022	0,0006	0,0003	0,0015	0,0007	0,0003	0,0002
03 Coal processing		0,0002			0,0006			
04 Prod. of oil and natural gas	0,0001		0,0001	0,0019	0,0003	0,0016	0,0003	0,0006
05 Oil refining	0,0029	0,0103	0,0019	0,0068	0,0074	0,0106	0,0025	0,0103
06 Extraction of iron ore								
07 Iron and steel production	0,0003	0,0006	0,0040	0,0173	0,0004	0,0016	0,0002	0,0041
08 Extr. of non-ferrous metal ores								
09 Prod. of non-ferrous metals				0,0013	0,0001	0,0012		0,0199
10 Proc. of non-ferrous metals	0,0002	0,0003	0,0002		0,0012	0,0010		0,0030
11 Production of non-metals		0,0018		0,0016	0,0023	0,0007	0,0034	0,0002
12 Processing of non-metals	0,0001	0,0016	0,0002	0,0001	0,0044	0,0446		0,0010
13 Metal processing activities	0,0027	0,0028	0,0048	0,0116	0,0101	0,0156	0,0004	0,0075
14 Production of machines	0,0006	0,0012	0,0017	0,0046	0,0057	0,0048	0,0001	0,0055
15 Vehicle production (all types)		0,0002	0,0003	0,0002	0,0010	0,0008	0,0002	0,0024
16 Shipbuilding								
17 Electrical machines and appliances	0,0014	0,0025	0,0010	0,0028	0,0042	0,0024	0,0002	0,0035
18 Production of chemical products	0,0079	0,0607	0,0031	0,0432	0,0044	0,0070	0,0314	0,0039
19 Processing of chemical products	0,0084	0,0306	0,0282	0,0284	0,0080	0,0231	0,0029	0,0208
20 Production of building materials	0,0001	0,0002	0,0002	0,0004	0,0006	0,0005		0,0050
21 Timber processing	0,0001	0,0002	0,0003	0,0007	0,0003	0,0006		0,0020
22 Wood final products	0,0020	0,0013	0,0069	0,0007	0,0021	0,0084		0,0008
23 Production and processing of paper	0,0031	0,0017	0,0028	0,0015	0,0197	0,0095	0,0120	0,1512
24 Spinning material and textiles	0,1683	0,0074	0,0126	0,0066	0,0004	0,0001	0,0004	0,0012
25 Final texile products	0,0475		0,0016	0,0059	0,0010	0,0006	0,0001	0,0002

SECTOR	25	26	27	28	29	30	31	32
26 Hide and furs	0,0021	0,0289	0,2167	0,0013		0,0003		0,0005
27 Leatherwear and leather accessories	0,0004	0,0040	0,0502	0,0008	0,0003	0,0005		0,0003
28 Rubber processing	0,0002	0,0004	0,0079	0,1103	0,0022	0,0031	0,0010	0,0016
29 Production of foodstuff products		0,1574		0,0007	0,2012	0,1156	0,0500	0,0010
30 Production of beverages					0,0003	0,1079	0,0007	
31 Production of fodder							0,0256	
32 Other manufacturing	0,0037	0,0076	0,0061	0,0017	0,0059	0,0113	0,0016	0,0828
TO Total manufacturing and mining	0,2593	0,3349	0,3565	0,2706	0,3013	0,3908	0,1409	0,3457
33 Agriculture and fishing	0,0007			0,0006	0,1729	0,0752	0,2371	0,0228
34 Building industry	0,0006	0,0012	0,0008	0,0009	0,0010	0,0020	0,0004	0,0024
35 Transport and communications	0,0122	0,0171	0,0116	0,0148	0,0211	0,0163	0,0193	0,0219
36 Sundry economic activities	0,0153	0,0454	0,0198	0,0504	0,0311	0,0392	0,0387	0,0393
TO Total economy	0,2882	0,3988	0,3889	0,3465	0,5277	0,5237	0,4365	0,423
Intermediate imports	0,1538	0,2748	0,1660	0,3749	0,0756	0,0339	0,2749	0,0821
Other costs	0,0460	0,0455	0,0375	0,0423	0,0287	0,0475	0,0701	0,0445
Depreciation of fixed assets	0,0162	0,0136	0,0090	0,0262	0,0173	0,0230	0,0094	0,0202
Net wages and salaries	0,1406	0,0678	0,1010	0,0840	0,0550	0,0821	0,0271	0,1098
Taxes and self-imposed taxes	0,1067	0,0614	0,0684	0,0738	0,0497	0,0602	0,0285	0,0986
Net interest	0,2008	0,0660	0,2181	0,0572	0,1828	0,2150	0,0927	0,1258
Surplus	0,0473	0,0716	0,0107	-0,0051	0,0628	0,0143	0,0604	0,0863
Production value	14.313	2.562	7.142	3.893	36.095	4.431	2.773	9.076

SECTOR	TOT.MAN.	33	34	35	36	TOT.EC.
01 Electricity generation	0,0252	0,0100	0,0081	0,0191	0,0248	0,0229
02 Coal mining	0,0092	0,0002	0,0003	0,0027	0,0030	0,0068
03 Coal processing	0,0031			0,0003	0,0007	0,0022
04 Prod. of oil and natural gas	0,0016	0,0006	0,0010		0,0012	0,0014
05 Oil refining	0,0114	0,0276	0,0154	0,0766	0,0139	0,0165
06 Extraction of iron ore	0,0004					0,0002
07 Iron and steel production	0,0441	0,0002	0,0450	0,0065	0,0060	0,0337
08 Extr of non-ferrous metal ores	0,0098					0,0065
09 Prod. of non-ferrous metals	0,0212		0,0015	0,0002	0,0008	0,0144
10 Proc. of non-ferrous metals	0,0055		0,0049	0,0013	0,0022	0,0044
11 Production of non-metals	0015	0,0004	0,0005	0,0003	0,0002	0,0011
12 Processing of non-metals	0,0051	0,0004	0,0176	0,0043	0,0018	0,0051
13 Metal processing activities	0,0235	0,0065	0,0313	0,0141	0,0145	0,0211
14 Production of machines	0,0086	0,0024	0,0044	0,0054	0,0128	0,0085
15 Vehicle production (all types)	0,0099	0,0027	0,0030	0,0687	0,0099	0,0124
16 Shipbuilding	0,0012		0,0010	0,0269		0,0024
17 Electrical machines and appliances	0,0216	0,0012	0,0342	0,0086	0,0103	0,0188
18 Production of chemical products	0,0259	0,0778	0,0038	0,0081	0,0068	0,0230
19 Processing of chemical products	0,0155	0,0025	0,0086	0,0061	0,0051	0,0122
20 Production of building materials	0,0016	0,0006	0,0635	0,0013	0,0029	0,0056
21 Timber processing	0,0057	0,0001	0,0111	0,0022	0,0018	0,0049
22 Wood final products	0,0047	0,0016	0,0435	0,0007	0,0023	0,0064
23 Production and processing of paper	0,0151	0,0009	0,0011	0,0016	0,0066	0,0114
24 Spinning material and textiles	0,0148	0,0004	0,0003	0,0005	0,0030	0,0104
25 Final textiles products	0,0030	0,0005	0,0011	0,0059	0,0014	0,0027

SECTOR	TOT. MAN.	33	34	35	36	TOT. EC.
26 Hide and furs	0,0052				0,0012	0,0037
27 Leatherwear and leather accessories	0,0016	0,0001	0,0006	0,0012	0,0006	0,0013
28 Rubber processing	0,0039	0,0019	0,0025	0,0241	0,0027	0,0047
29 Production of foodstuff products	0,0257	0,0041		0,0017	0,0427	0,0244
30 Production of beverages	0,0015			0,0004	0,0129	0,0031
31 Production of fodder	0,0002	0,0548				0,0028
32 Other manufacturing	0,0058	0,0010	0,0214	0,0097	0,0094	0,0073
TO Total manufacturing and mining	0,3343	0,1996	0,3267	0,2998	0,2030	0,3039
33 Agriculture and fishing	0,0231	0,1271		0,0001	0,0066	0,0228
34 Building industry	0,0019	0,0008	0,1070	0,0052	0,0061	0,0093
35 Transport and communications	0,0189	0,0095	0,0456	0,0613	0,0210	0,0229
36 Sundry economic activities	0,0392	0,0362	0,0805	0,1136	0,0656	0,0501
TO Total economy	0,4176	0,3734	0,5599	0,4803	0,3024	0,4092
Intermediate imports	0,1771	0,0316	0,0102	0,0303	0,0415	0,1291
Other costs	0,0408	0,0888	0,0881	0,0950	0,1058	0,0597
Depreciation of fixed assets . . .	0,0256	0,0235	0,0157	0,0616	0,0210	0,0262
Net wages and salaries	0,0743	0,0934	0,1420	0,1655	0,1934	0,1040
Taxes and self-imposed taxes . . .	0,0655	0,0823	0,1125	0,1301	0,1944	0,0938
Net interest	0,1515	0,2250	0,0143	-0,0086	0,0153	0,1154
Surplus	0,0472	0,0816	0,0569	0,0455	0,1257	0,0621
Production value	324.158	24.022	30.283	27.481	78.490	484.436

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PRILAGOĐAVANJE INPUT-OUTPUT TABELA U USLOVIMA VISOKE I AKCELERIRAJUĆE INFLACIJE

Davorin KRAČUN

Rezime

Ako su nam poznati tekući podaci o uvozu intermedijarnih produkata, dodatoj vrijednosti i ukupnoj vrijednosti proizvodnje po sektorima, a dok su podaci o domaćim međusobnim isporukama intermedijarnih produkata zastarjeli, njihovo prilagođavanje možemo izvesti sljedećom modifikacijom biproporcionalne (RAS) metode:

$$x(ij)^* = x(ij) \cdot r(i) \cdot s(j) \, / \, \Sigma_{k=l}^{n} x(kj) \cdot r(k) \qquad (5)$$
$$(i = 1, 2, \ldots n; \; j = 1, 2, \ldots n)$$

$x(ij)^*$ = *ažurna vrijednost isporuka domaćih intermedijarnih proizvoda i-tog sektora davaoca i j-tog sektora primaoca*
$x(ij)$ = *provobitna vrijednost isporuka*
$s(j)$ = *ažurna vrijednost ukupne potrošnje domaćih intermedijarnih produkata*
$r(i) = X(j)^* / X(j) \qquad (i, j = 1, 2 \ldots n; \; i = j)$
= *kvocient između tekuće i prvobitne vrijednosti proizvodnje*

U uslovima visoke pa čak i akcelerirajuće inflacije nominalni podaci o vrijednosti proizvodnje i njezinim pojedinim sastavnim dijelovima baziraju na sumiranju novčanih jedinica različite vrijednosti, pa

ih zbog toga ne možemo direktno prihvatiti. Međutim, kako raspolažemo nominalnim podacima za dve uzastopne godine Y(1) i Y(2), možemo ih posmatrati kao dva određena integrala funkcije F(t) pomoću koje ćemo dobiti realnu vrijednost Y(R). U našem kontekstu Y(R) predstavlja vrijednost na kraju posmatranog perioda u istodobnim novčanim jedinicama.

Pošto se radi o akceleriranim nominalnim kretanjima, naša je funkcija F(t) sastavljena od eksponencijalne funkcije $f_1(t)$ *i polinoma drugog stepena* $f_2(t)$*, tako da je možemo izraziti kao*

$$F(t) = k \cdot e^{a.t} + z$$

a traženu realnu vrijednost Y(R) kao vrijednost funkcije F(t) u tački t = 2. Dok parametre eksponencijalne funkcije "k" i "a" možemo jednoobrazno izraziti pomoću ulaznih veličina Y(1) i Y(2), parametru "z" možemo odrediti interval čija je donja granica određena pretpostavkom da je inflacija akcelerirana, dok je njegova gornja granica određena činjenicom da imamo posla s inflacijom, dakle rastućom funkcijom F(t) na cijelom području od t = 0 do t = 2.

$$0 < z < k \cdot a/3$$

Tako smo u mogućnosti da na bazi nominalnih podataka o proizvodnji i dodanoj vrijednosti za 36 sektora jugoslovenske privrede u 1987. i 1988. godini te input-output tabele za 1980. godinu izračunamo vrijednosti za input-output tabelu prema stanju krajem 1988. godine. Rezultati su dati u obliku tabele tehničkih koeficijenata.