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A MODEL OF SHORT-RUN RESPONSES TO MONETARY, FISCAL, INCOME AND PRICE POLICIES

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<u>Abstract:</u>
The model formalises economic policy measures and their influence on economic dynamics including the changes in input-output relations. It offers analytical tools with which it is possible to calculate short-run response of prices, production, import, export and employment to the measures of economic policy and to eventual external price shocks in a small open economy (pressed by problems characteristic for more developed countries in transition).

In order to formalise the dynamics of intersectoral relations the elements of input-output analysis are combined with the functions of dynamics based on econometric estimations. The iterative method of solving the model includes decomposition through the matrix multiplier and the biproportional technique in updating the I-O relations. The result is beside the calculation of changes in prices, production, export, import and employment, a table of new input-output relations as well.

The model is applied to the current economic situation in Slovenia. The measures of economic policy are transformed into the exogenous variables of the model. Beside the basic combination of exogenous variables, which corresponds to the actual measures, some alternative scenarios are calculated. Comparison of the results demonstrates the influence of alternative measures in monetary, fiscal, income and price policies to the movement of prices, production, export, import and employment in the actual situation for 27 sectors.

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What economic policy should be used to achieve growth in conditions of moderate inflation? How should instruments of monetary, fiscal, income and price policy be combined for the best prospects for maximum economic growth and minimum inflation? What might be the direct, indirect and dynamic economic response to individual economic policy measures, accounting of their interdependence with structure and movement trends? These are questions for which decision makers of economic policy continuously search for the most real answers possible. Especially in countries in transition where there is a simultaneous unfolding of the economic reform process, there might be an assortment of stabilisation policy measures of decisive importance for successful transition.

Previous experience with economies in transition, especially those which have come the furthest with reforms, shows that after the resolution of the most obvious problems (privatisation, basic macroeconomic stabilisation), there emerges the need for more subtle economic policy with mutually co-ordinated measures. The danger of inflation and depression comes from a lower level of development, incomplete institutions and the presence of remains of non-market-economic traditions disproportionately larger than in developed, stabilised and traditionally market-oriented countries. Sensitivity to external shocks is therefore also larger. On the other hand, when the bulk of the reform has been performed, the government can not incessantly intervene in the economy with measures whose character would contradict the principles of market-economy. Economic policy measures therefore rely, to a larger extent, on fiscal, monetary, income and price policy. However, because the actual condition in transition economies deviates from assumptions of main-stream theories more than in developed economies, reliance on anticipated effects of the measures is even more risky.

The presented model will offer analytical tools with which it will be possible to predict short-run response of dynamics in prices, production, import, export and employment to the measures of economic policy and to eventual external price shocks in a small open economy pressed by problems characteristic of more advanced countries in transition. The model ties economic trends with measures of monetary, fiscal, income and price policy in the framework of the given inter-sector and cost structure. The iterative method of solving the model leads to reciprocal adjustment in the effects of economic policy measures, change in economic structure and economic movement. Fundamentals of the model's relationships are shown in Figure 1.

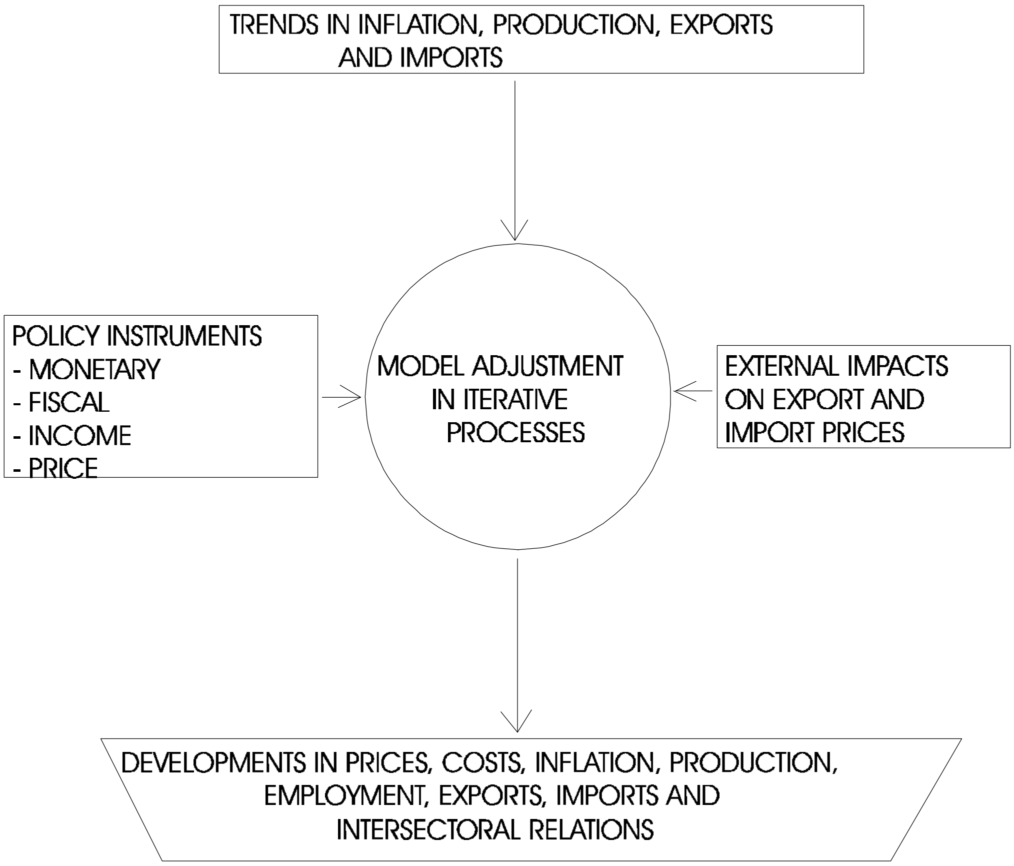

Figure 1: Fundamentals of the Model`s Relationships

It is characteristic of countries in transition that the implementation of reforms coincides with a decrease in economic activity, transformation depression (Kornai 1993). At the same time, there also emerged high inflation (Commander 1992, Commander and Coricelli 1992), the reduction of which became a primary goal of economic policy, even by means of shock and with political risk (Sachs 1992), as well as by taking into account post-war experience of developed countries in a wider context of reconstruction (Dornbusch, Nolling and Layard 1993). In more advanced transition economies, there was soon a decrease in inflation and renewed economic growth. Moderate inflation, however, might be more permanent in nature (Dornbusch and Fischer 1993), particularly because there exist price distortions (Weitzman 1991, Žižmond 1992, Xu 1993), pressure of monopolised and non-tradable sectors in open economies (Aukrust 1970 and 1977) and high sensitivity to external price shocks (Gomulka 1993, Strašek 1994). Under such conditions, the selection of appropriate combinations of economic policy instruments is especially important and delicate.

The assigned task is solvable only if the analytical tools do not remain merely on the level of instruction of the association between macroeconomic aggregates. An important role in economic movement of countries in transition under circumstances of moderate inflation is played by price relations, which change, among other things, also because of the effects of

economic policy. This fact demands suitable treatment of inter-sector dynamics of price and quantity. The use of input-output analysis in the modelling of prices and price relationships has yielded many results (e.g. Haig and Wood 1976, Domberger 1980 and 1987), also for reform or transition economies (Skolka 1984, Mencinger 1985, Karasz 1992, Kuboniwa 1993). Especially interesting are analyses with dynamic input-output models (Ten-Raa 1986, Aulin-Ahmavaara 1990). Their use in the analysis of price relationships can also be found (Morciano 1984, De Clementi 1988, Zaghini 1991, Mattey 1993).

In the presented model, there arise dynamics by the iterative method. It allows, namely, the following of not only direct and indirect price-cost effects in the framework of the static multiplier model, but also resulted changes in income and primary costs with all the consequences (Kracun 1988). In this, the divergence of price and quantity dynamics are also considered (Kracun 1991), so that it approaches the general equilibrium model in some respects (Walker 1988, Davar 1989, Kracun 1996). Each iteration includes a modified biproportional method (Kracun, 1990) when the matrix of domestic intermediate consumption is adjusted.

The case study of this model is developed on the base of Slovenian economy. Slovenia is in many respects the forerunner among the countries in transition (GDP p.c. exceeds 10,000 USD, trade ratio 1.2). Since 1993 there is a steady growth (3.5-5.5 % annually), but still biased with moderate inflation (8.5-9.5 % annually). The process of transition and recovery is considered as irreversible (Kracun and Zizmond, 1997). The question of proper stabilisation measures is therefore a vital question of economic policy.

1. Scheme of the Model

In each iteration, the trends in economic movement up to then are remodelled on the basis of new external influences and applications of economic policy instruments. These processes of adjustment proceed within certain inter-sector relationships which also adapt to the changes. The result is an adapted dynamic and structure.

The measures of economic policy in the model are formalised so that they allow for the simulation of the widest possible spectrum of selection of realistic means and goals. With regard to the fact that transition economies, as a rule, have behind them inflationary experience in which there developed spontaneous mechanisms of adjustment, the modelled measures account for this by including eventual indexation variables which correspond to various possible indexation systems. It is possible to combine nominal and real targets, continued (with a uniform principle throughout all iterations) or individual (separate for each iteration) and to anticipate a system of responses to external influences.

Economic policy measures possess their own primary effect on the prices of production factors and on costs as well as on product prices. Thus, for example, monetary policy influences import and export price through the exchange rate, the price of money through interest rates, and eventually also inflation expectations through money supply. Fiscal policy with change in taxation and subsidisation rates influences changes in the relationship between prices and costs. Income policy influences the formation of wages and with this, production costs and purchasing power. In certain sectors, the setting of prices is also the subject of price policy. By taking the necessary measures, mutual relationships between prices change, which might also cause corresponding changes of the economic decisions.

Because of economic policy (as well as other, external influences), the relationship alters between prices and costs controls in the adaptation of management decisions. It leads to increases or decreases in production quantity, export and import, and with this also changes

in the employment of production factors. Prices and quantities of consumption by production factors change, which leads to an altered structure of costs and inter-sector relations.

In this context, there arises also a changed product price. As probable reasons for price changes, the model considers adjustment according to inflation, changes in exchange rates and foreign prices, changes in costs and changes in purchase power (for consumption and investment).

The result of all these changes, are changes on dynamics and structure, because of which successive iterations unfold under different conditions. Economic-policy goals and instruments may or may not adapt to this, depending on the way in which they are formulated. Noting the changes from iteration to iteration reveals trends lead by measures of economic policy under the given conditions. A schematic representation of the iteration is given in figure 2.

The number of iterations is an exogenous variable of the model. It should correspond to experience with the frequency of adjustments in the actual economy. The following presentation is intended to formalise the changes brought about by one iteration.

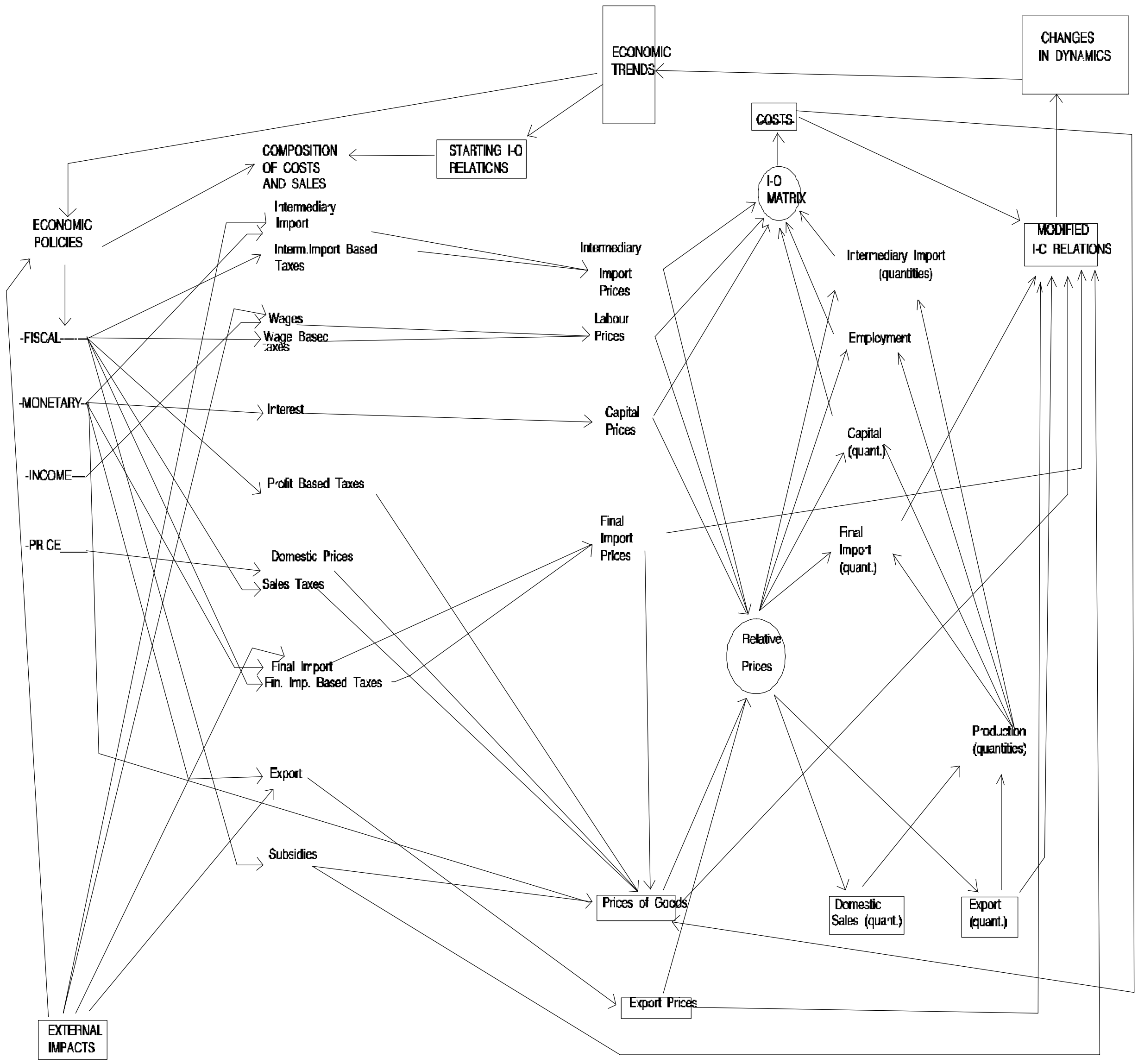

Figure 2: Schematic Representation of the Model's Iterative Course

2. Basic Definitions

The total production value *V* in the model is treated as divided into *m* sectors, while *n* steps are anticipated in the iterative procedure. It is comprised of the value of domestic intermediary consumption *D*, intermediary import *M*, wages *W*, and gross surplus *S*. For sector *j*, it is defined in step *k* as:

$$V_{j,k} = D_{j,k} + M_{j,k} + W_{j,k} + S_{j,k} \tag{1.01}$$

j=1,2,...,m
k=1,2,...,n

In the market, *V* together with the final import *F* forms supply, while domestic consumption *C* together with export *X* and expected subsidisation *GG* forms the demand side of the market. The equation for market realisation is thus expressed as:

$$V_{j,k} + F_{j,k} = C_{j,k} + X_{j,k} + GG_{j,k} \tag{1.02}$$

The value of production *V* is the product of quantity *Vq* and price *Vp*.

$$V_{j,k} = Vq_{j,k} \cdot Vp_{j,k} \tag{1.03}$$

Each of the component parts of the value is comprised of the basic elements. Domestic intermediary consumption *D* is comprised of the obtained values from the various sectors *Ad*. Thus it is defined as:

$$D_{j,k} = \sum_{i=1}^{m} Ad_{i,j,k} \tag{1.04}$$

i=1,2,...,m
j=1,2,...,m
k=1,2,...,n

in which *i* denotes the supply sector.

The gross value of intermediary import *M* is comprised of its net value *MN* and the corresponding taxes *MT*. The level of tax, however, depends on *MN* and the regulated rate *MTr*.

$$M_{j,k} = MN_{j,k} + MT_{j,k} \tag{1.05}$$

$$MT_{j,k} = MN_{j,k} \cdot MTr_{j,k}$$
(1.06)

Intermediary import *M* has its own quantitative designation *Mq* and price *Mp*. With respect to price, it is also possible to distinguish its gross *Mp* and net *MNp* value, whose relation is given by (1.08).

$$M_{j,k} = Mq_{j,k} \cdot Mp_{j,k}$$
(1.07)

$$Mp_{j,k} = MNp_{j,k} \cdot (1 + MTr_{j,k})$$
(1.08)

Gross value of wages *W* is comprised of their net value *WN* and taxes *WT* which are dependent on the taxation rate of net wages *WTr*.

$$W_{j,k} = WN_{j,k} + WT_{j,k}$$
(1.09)

$$WT_{j,k} = WN_{j,k} \cdot WTr_{j,k}$$
(1.10)

If the level of employment is denoted by *Wq*, average gross wages by *Wp*, and average net wages by *WNp*, then:

$$W_{j,k} = Wq_{j,k} \cdot Wp_{j,k}$$
(1.11)

$$Wp_{j,k} = WNp_{j,k} \cdot (1 + WTr_{j,k})$$
(1.12)

Gross surplus *S* is comprised of depreciation *SD* and gross profit *SP*, where upon the deduction of tax on the profit *ST*, the net profit *SN* remains.

$$S_{j,k} = SD_{j,k} + SP_{j,k}$$
(1.16)

$$SP_{j,k} = ST_{j,k} + SN_{j,k}$$
(1.17)

The net profit is therefore definitely influenced by the allowed rate of depreciation *SDr*, on the depreciation base *SB* and the rate of tax on profits *STr*, except in the case of negative $Sp_{j,k}$.

$$SN_{j,k} = (S_{j,k} - SB_{j,k} \cdot SDr_{j,k}) \cdot (1 - STr_k)$$
(1.18)

The gross value of the final import *F* is comprised of the net value *FN* and import taxes *FT*. The level of taxes depends on the tariff rate *FTr*. In the import quantity *Fq*, the average import price together with taxes is *Fp*, while the average net unit price of the final import is *FNp*. Therefore:

$$F_{j,k} = FN_{j,k} + FT_{j,k}$$
(1.19)

$$FT_{j,k} = FN_{j,k} \cdot FTr_{j,k} \quad \textbf{(1.20)}$$

$$F_{j,k} = Fq_{j,k} \cdot Fp_{j,k} \quad \textbf{(1.21)}$$

$$Fp_{j,k} = FNp_{j,k} \cdot (1 + FTr_{j,k}) \quad \textbf{(1.22)}$$

Similarly, the gross value of exports *X* is comprised of its net value *XN* and probable export subsidies *XG*. The value is the product of the quantity *Xq* and price, gross *Xp* or net *XNp*. The relationship between net and gross export price is stipulated by the rate of probable subsidisation *XGr*. Then:

$$X_{j,k} = XN_{j,k} + XG_{j,k} \quad \textbf{(1.23)}$$

$$XG_{j,k} = XN_{j,k} \cdot XGr_{j,k} \quad \textbf{(1.24)}$$

$$X_{j,k} = Xq_{j,k} \cdot Xp_{j,k} \quad \textbf{(1.25)}$$

$$Xp_{j,k} = XNp_{j,k} \cdot (1 + XGr_{j,k}) \quad \textbf{(1.26)}$$

The value of domestic sales *C* is obtained by adding the net value *CN* to the sales tax, the amount of which is determined by the taxation rate *CTr*. The product of quantity of sales *Cq* and average gross *Cp* or net *CNp* prices is the gross or net value of domestic sales respectively.

$$C_{j,k} = CN_{j,k} + CT_{j,k} \quad \textbf{(1.27)}$$

$$CT_{j,k} = CN_{j,k} \cdot CTr_{j,k} \quad \textbf{(1.28)}$$

$$C_{j,k} = Cq_{j,k} \cdot Cp_{j,k} \quad \textbf{(1.29)}$$

$$Cp_{j,k} = CNp_{j,k} \cdot (1 + CTr_{j,k}) \quad \textbf{(1.30)}$$

The main source for the model base are the input-output tables, but with some modifications. The model base used for Slovenia is in Appendix 3. The table is calculated out of the Slovenian input-output tables (Zakotnik, 1996).

3. Measures of economic policy and their direct effect on prices

Measures of economic policy influence changes of value in its entirety or in individual elements, and changes in relationships between the individual elements. Individual measures of monetary, fiscal, income or price policy aim at various elements of the model and follow them in the interaction with exogenous influences. Changes in circumstances, such as changes in relative prices, rates of inflation or changes in economic trends, when they are perceived, influence changes in the economic behaviour. This process is simulated by the model with the iterative method.

The way in which certain instruments of economic policy affect changes in the value of individual elements in a single iteration, will be defined. In the largest measure, these changes are carried to the price of production factors. The coefficient of price change between

iteration *k-1* and *k* will therefore be expressed as a function of those exogenous variables that are the result of economic policy and other exogenous variables.

3.1 Monetary Policy

The simulation of monetary policy measures accounts for the influence on the prices of imported components due to changes in foreign currency exchange rate and on the cost of capital due to changes in interest rates.

3.1.1 Foreign Exchange Rate

Changes in foreign exchange rate *EX* are the result of two types of exogenous variables, in each iteration. Variables *FEX* and *GEX* are derived from eventual indexation systems, i.e. the formation of exchange in the given relationship at the last recorded rate of inflation. The variable Δ*EXr* illustrates from recorded inflation independent changes in exchange rate in the designated *k*-th step. Therefore,

$$\frac{EX_k}{EX_{k-1}} = (1 + PP_{k-1} \cdot FEX + GEX)^{1/n} \cdot (1 + \Delta EXr_k)$$

(2.1.01)

The change in foreign exchange rate possesses, as a consequence, changes in net import and export prices in intermediary import *MNp*, final import *FNp* and export *XNp*.

$$\frac{MNp_{j,k}}{MNp_{j,k-1}} = \frac{EX_k}{EX_{k-1}} \cdot (1 + \Delta MNpr_{j,k})$$

(2.1.02)

$$\frac{FNp_{j,k}}{FNp_{j,k-1}} = \frac{EX_k}{EX_{k-1}} \cdot (1 + \Delta FNpr_{j,k})$$

(2.1.03)

$$\frac{XNp_{j,k}}{XNp_{j,k-1}} = \frac{EX_k}{EX_{k-1}} \cdot (1 + \Delta XNpr_{j,k})$$

(2.1.04)

Here, variables Δ*MNpr*, Δ*FNpr*, Δ*XNpr* express rates of exogenous changes in import and export prices in the *k*-th step, which are reflected in the *j*-th sector. They include probable inter-currency changes and price changes in foreign markets.

3.1.3 Quantity of Base Money

Similarly, changes in base money *PM* may also be followed, which can change in each iteration as a result of monetary policy. These changes may be conditioned with inflation and are defined by exogenous variables *FPM* and *GPM*, or are independent and represented in each *k*-th step by Δ*PMr*.

$$\frac{PM_k}{PM_{k-1}} = (1 + PP_{k-1} \cdot FPM + GPM) \cdot (1 + \Delta PMr_k)$$

(2.1.07)

3.2 Fiscal Policy

Because the progressive steps of the model's iteration are being pursued, the exogenous variables which illustrate measures of fiscal policy will correspond to changes in the individual *k*-th step. Where imports or wages are concerned, these are changes in the charge which lead to changes in the relation between net and gross value.

If there arises a change in the rate of import tax on intermediary import *MTr* or final import *FTr* in the *k*-th step, the for the *j*-th sector it will mean that:

$$MTr_{j,k} = MTr_{j,k-1} + \Delta MTr_{j,k} \tag{2.2.01}$$

$$FTr_{j,k} = FTr_{j,k-1} + \Delta FTr_{j,k} \tag{2.2.02}$$

Here, $\Delta MTr_{j,k}$ and $\Delta FTr_{j,k}$ are exogenous variables of fiscal policy as changes in import tax. The use of equations (1.08) and (2.1.02) leads to the corresponding gross values of intermediate import, and with (1.22) and (2.1.03) the final import.

Analogous treatment may be applied to the meaning of changes in taxation and contributing rates for wages (exogenous variable ΔWTr_k), which changes the relation between gross and net wages in the *k*-th step.

$$WTr_{j,k} = WTr_{j,k-1} + \Delta WTr_k \tag{2.2.03}$$

Gross wages, which are formed in the *k*-th step, are arrived at with the use of equations (1.12) and (2.3.01).

Net profit is formed under the influence of allowable depreciation rates and taxation rates on company income - equation (1.18). With exogenous variables of fiscal change $DSDr_{j,k}$ and ΔSTr_k, the new allowable depreciation level is obtained in the *k*-th step

$$SDr_{j,k} = SDr_{j,k-1} + \Delta SDr_{j,k} \tag{2.2.04}$$

and the new level of tax on company income

$$STr_k = STr_{k-1} + \Delta STr_k \tag{2.2.05}$$

If the change in sales tax for the *j*-th sector in the *k*-th iteration is represented by $\Delta CTr_{j,k}$, then

$$CTr_{j,k} = CTr_{j,k-1} + \Delta CTr_{j,k} \tag{2.2.06}$$

which, in relation to equation (1.30) allows for the calculation of final prices.

On the side of subsidies, the change in probable export subsidies in the *k*-th step for the *j*-th sector may be illustrated by the exogenous variable $\Delta XGr_{j,k}$, to obtain

$$XGr_{j,k} = XGr_{j,k-1} + \Delta XGr_{j,k} \tag{2.2.07}$$

which, with equations (1.26) and (2.1.04), shows the change in the average gross export prices.

In the remaining subsidies, the changes are illustrated by the known method

$$\frac{GG_k}{GG_{k-1}} = (1 + PP_{k-1} \cdot FGG_j + GGG_j)^{1/n} \cdot (1 + \Delta GGr_{j,k})$$

(2.2.08)

with exogenous variables *FGG*, *GGG* **and** Δ*GGr*.

3.3 Income Policy

Variables with which wage variations are exogenously defined, may take into account the last recorded rate of inflation (*FW* **and** *GW***), or are dependent on it and merely express the rate of change in the determined sector and step -** $\Delta WNpr_{j,k}$**. The index of the average net wage is thus:**

$$\frac{WNp_{j,k}}{WNp_{j,k-1}} = (1 + PP_{k-1} \cdot FW + GW)^{1/n} \cdot (1 + \Delta WNpr_{j,k})$$

(2.3.01)

3.4 Price Policy

If, in any sector, prices are exogenously formed by economic policy, then price changes in this sector may also be expressed directly by the exogenous variables *FCN*, *GCN* **and** Δ*CNr***:**

$$\frac{CNp_{j,k}}{CNp_{j,k-1}} = (1 + PP_{k-1} \cdot FCN_j + GCN_j)^{1/n} \cdot (1 + \Delta CNpr_{j,k})$$

(2.4.01)

j = selected sector of price control

Formation of prices in equation (2.4.01) is valid for sectors with price control, while the spontaneous (exogenous) formation of prices is a matter of further discussion.

4.0 Adjustment of Quantity

In the economy, price and quantity changes unfold in parallel. Between them is a certain interdependence since production and especially supply decisions are founded on the search for the most rational combinations. This is indicated on the basis of variation in relative prices. The model's solutions to sectoral functions of the volume of production, export, import, employment and capital will follow.

The quantity adjustment functions in the model are derived as functions of change in relative prices. In addition to this, as in the individual iteration of the independent variable, previous trends and interdependence of quantities are taken into account. With regard to the iterative nature of the model, all quantity change functions are expressed so that they consider corresponding successions of calculations and results. Their input variables are founded on results of calculations from previous iterations and on only those results from the current iteration which were calculated before the function in question.

Time lags, which are possessed by quantity functions, are the shortest possible which enable consistent execution of the model. If empirical analysis confirms the need for longer time periods, then this is compatible with the model's logic. Therefore, it is possible to introduce distributed lags in individual variables.

Quantity functions are in this case given in linear form. There is no difficulty in their transformation into potential or other forms by logarithms, which also correspond to the logic of the production function. Also with regard to form, it will be possible to accept the decision on the basis of econometric analysis of empirical data. The model is therefore not limited to this form. Empirical research of short-run adjustment of quantities in forms which are required by the logic of this model, has thus far given quite suitable results (Kracun 1991; Ovin 1990a and 1990b).

4.1 Production

Adjustment of the production volume for the j-th sector and the *k*-th iteration is expressed in the following form:

$$\frac{Vq_{j,k}}{Vq_{j,k-1}} = KEVq_j \cdot \frac{\sum_{j=1}^{m} \frac{Vq_{j,k-1}}{Vq_{j,k-2}} \cdot V_{j,k-2}}{\sum_{j=1}^{m} V_{j,k-2}} + KEXqVq_j \cdot \frac{\sum_{j=1}^{m} \frac{Xq_{j,k-1}}{Xq_{j,k-2}} \cdot X_{j,k-2}}{\sum_{j=1}^{m} X_{j,k-2}} +$$
$$+KCNpVq_j \cdot \frac{CNp_{j,k-1}}{CNp_{j,k-2} \cdot (1+PP_{k-1})^{1/n}} + KXpVq_j \cdot \frac{Xp_{j,k}}{Xp_{j,k-1} \cdot (1+PP_{k-1})^{1/n}} +$$
$$+KWpVq_j \cdot \frac{Wp_{j,k}}{Wp_{j,k-1} \cdot (1+PP_{k-1})^{1/n}} + KMpVq_j \cdot \frac{Mp_{j,k}}{Mp_{j,k-1} \cdot (1+PP_{k-1})} +$$
$$+ KFqVq \cdot \frac{Fq_{j,k-1}}{Fq_{j,k-2}} + K0Vq_j$$

(3.01)

The equation of changes in production quantity (3.01) considers trends, up until then, of production and export of the entire economy (coefficients *KEWq* and *KEXqVq*), relative movements in domestic prices in the sector (coefficient *KCNpVq*) relative movements in export prices in the sector (coefficient *KXpVq*) relative prices of production factors used by the sector (labour *KWpVq*, intermediary import *KMpVq*) and trends in final import of goods in the sector, *KFqVq*. In this form, equation (3.01) represents merely a frame which defines short-run movements of production in the model. Variables are compatible with the model's other variables and temporal consequence of their adjustment. Actual coefficient values must be given by econometric analysis, which leads to an assortment of coefficients and variables which remain in the model.

The econometric estimations based on monthly indexes 1993-1996 did not give the best results for (3.01). As the most reasonable solution for the model, the equation (3.01'') was found.

$$\frac{Vq_{j,k}}{Vq_{j,k-1}} = \left(KXqVq_j \cdot \frac{Xq_{j,k}}{Xq_{j,k-1}} + KWqVq_j \cdot \frac{\sum_{j=1}^{m} \frac{Wq_{j,k-1}}{Wq_{j,k-2}} \cdot W_{j,k-2}}{\sum_{j=1}^{m} W_{j,k-2}} + K0Vq_j \right)^{R^2}$$

(3.01'')

It seemed that the variations in export (coefficient *$KXqVq_j$*) and total employment (coefficient *$KWqVq_j$*) were decisive for the variations in the quantity of production. Anyhow, the result is corrected with the determination coefficient R^2 in order to prevent degeneration of the model in the iterative process.

4.2 Export

Adjustment in the volume of export of the j-th sector n the *k*-th iteration is expressed in the following form:

$$\frac{Xq_{j,k}}{Xq_{j,k-1}} = KVXq_j \cdot \frac{Vq_{j,k}}{Vq_{j,k-1}} + KEXWpXq_j \cdot \frac{EX_{j,k}}{EX_{j,k-1}} \cdot \frac{\sum_{j=1}^{m} W_{j,k-1}}{\sum_{j=1}^{m} \frac{Wp_{j,k}}{Wp_{j,k-1}} \cdot W_{j,k-1}} +$$
$$+ KEXq_j \cdot \frac{\sum_{j=1}^{m} \frac{Xq_{j,k-1}}{Xq_{j,k-2}} \cdot X_{j,k-2}}{\sum_{j=1}^{m} X_{j,k-2}} + KCNpXq_j \cdot \frac{Xp_{j,k} \cdot CNp_{j,k-2}}{Xp_{j,k-1} \cdot CNp_{j,k-1}} +$$
$$+ KPXq_j \cdot \frac{Xp_{j,k}}{Xp_{j,k-1} \cdot \left(1 + PP_{k-1}\right)^{1/n}} + K0Xq_j$$

(3.02)

Changes in export quantities which are expressed by equation (3.02), result from changes in the volume of the production sector (coefficient *KVXq*), changes in the relationships between foreign exchange and labour costs in the entire economy (coefficient *KEXWpXq*), general export trends (coefficient *KEXq*), changes in relationships between export and domestic prices of the sector (coefficient *KCNpXq*) and changes in relative export prices of the sector (coefficient *KPXq*).

Similar as with the production functions, the econometric estimations of export based on monthly indexes 1993-1996 did not give the best results for (3.02). As the most reasonable solution for the model, the log-log equation (3.02'') was found.

$$\frac{Xq_{j,k}}{Xq_{j,k-1}} = \left(K0Xq_j \cdot \left(\frac{Xp_{j,k} \cdot CNp_{j,k-2}}{Xp_{j,k-1} \cdot CNp_{j,k-1}} \right)^{KCNpXq_j} \cdot \left(\frac{OECD_k}{OECD_{k-1}} \right)^{KOECDXq_j} \right)^{R^2}$$

(3.02'')

The variable *OECD* represents the expected import demand of 7 the most important destination countries for Slovenian export.

For the same reason as with the production functions, the result is corrected with the determination coefficient R^2.

4.3 Import

The quantity of final import in every sector should adjust itself on the basis of general import trends and relative import prices, as shown by equation (3.03).

$$
\begin{aligned}
\frac{Fq_{j,k}}{Fq_{j,k-1}} = {} & KEFq_j \cdot \frac{\sum_{j=1}^{m} \frac{Fq_{j,k-1}}{Fq_{j,k-2}} \cdot F_{j,k-2}}{\sum_{j=1}^{m} F_{j,k-2}} + KEXPFq_j \cdot \frac{EX_{j,k}}{EX_{j,k-1} \cdot (1+PP_{k-1})^{1/n}} + \\
& + KFpWpFq_j \cdot \frac{Fp_{j,k-1}}{Fp_{j,k}} \cdot \frac{\sum_{j=1}^{m} \frac{WNp_{j,k}}{WNp_{j,k-1}} \cdot W_{j,k-1}}{\sum_{j=1}^{m} \cdot W_{j,k-1}} + \\
& + KCpFq_j \cdot \frac{Fp_{j,k-1} \cdot Cp_{j,k-2}}{Fp_{j,k-2} \cdot Cp_{j,k-1}} + K0Fq_j
\end{aligned}
\qquad \textbf{(3.03)}
$$

Changes in import quantities are supposed to be dependent, in the final import, on general import trends (coefficient *KEFq*) and real exchange rate (coefficient *KEXPFq*) as well as changes in import prices compared with net wages (coefficient *KFpWpXq*) and domestic sector prices (coefficient *KCpFq*).

Intermediary import of each sector is treated as a function of production quantity (coefficient *KPMq*). Thus:

$$
\frac{Mq_{j,k}}{Mq_{j,k-1}} = KVMq_j \cdot \frac{Vq_{j,k}}{Vq_{j,k-1}} + KPMq_j \cdot \frac{Mp_{j,k}}{Mp_{j,k-1} \cdot \left(1+PP_{k-1}\right)^{1/n}} + K0Mq_j \qquad \textbf{(3.05)}
$$

Due to the difficulties with the econometric estimations it is reasonable to merge both aspects of import into one log-log function. The result is then:

$$
\frac{(M+F)q_{j,k}}{(M+F)q_{j,k-1}} = \left(K0MFq_j \cdot \left(\frac{(M+F)p_{j,k} \cdot CNp_{j,k-2}}{(M+F)p_{j,k-1} \cdot CNp_{j,k-1}} \right)^{KCpMFq_j} \cdot \left(\frac{Vq_{j,k-1}}{Vq_{j,k-2}} \right)^{KVqMFq_j} \right)^{R^2} \qquad \textbf{(3.05'')}
$$

which considers the variations in imports as the result of variations in relative prices (the variable under $KCpMFq_j$) and in quantity of production (the variable under $KVqMFq_j$). The correction with the determination coefficient R^2 has the same role as in the other functions of quantitative changes.

4.4 Market Supply Quantity

When the changes in produced (*Vq*), exported (*Xq*) and imported (*Fq*) quantities are known, application of weight factors determines the corresponding market supply quantity:

$$\frac{Cq_{j,k}}{Cq_{j,k-1}}=\frac{\dfrac{Vq_{j,k}\cdot V_{j,k-1}}{Vq_{j,k-1}}+\dfrac{Fq_{j,k}\cdot F_{j,k-1}}{Fq_{j,k-1}}-\dfrac{Xq_{j,k}\cdot X_{j,k-1}}{Xq_{j,k-1}}}{V_{j,k-1}+F_{j,k-1}-X_{j,k-1}}$$

(3.04)

4.5 Employment

Change in employment level of each sector is shown by equation (3.06). It is expressed as a function of quantity produced (coefficient *KVWq*) and real wages (coefficient *KPWq*).

$$\frac{Wq_{j,k}}{Wq_{j,k-1}}=KVWq_j\cdot\frac{Vq_{j,k}}{Vq_{j,k-1}}+KPWq_j\cdot\frac{Wp_{j,k}}{Wp_{j,k-1}\cdot\left(1+PP_{k-1}\right)^{1/n}}+K0Wq_j$$

(3.06)

Considering the attempts for an econometric estimation, which suits the model purposes, the employment function is:

$$\frac{Wq_{j,k}}{Wq_{j,k-1}}=\left(\begin{array}{l}KVWq_j\cdot\dfrac{Vq_{j,k}}{Vq_{j,k-1}}+KPWq_j\cdot\dfrac{Wp_{j,k}}{Wp_{j,k-1}\cdot(1+PP_{k-1})^{1/n}}+\\ +KEWq_j\cdot\dfrac{\sum_{j=1}^{m}\dfrac{Wq_{j,k-1}}{Wq_{j,k-2}}\cdot W_{j,k-2}}{\sum_{j=1}^{m}W_{j,k-2}}+K0Wq_j\end{array}\right)^{R^2}$$

(3.06'')

where with the coefficient *KEWq*$_j$ lagged total employment is included as a variable. The correction with the determination coefficient R^2 has the same role as in the other functions of quantitative changes.

5. Adjustment of costs

The presentation of the model, up to now, has given prices changes of production factors and their utilised quantities in the *k*-th iteration. Therefore, with the known value of cost elements in the elapsed (*k-1)* iteration, its value in the *k*-th is arrived at.

For direct costs of intermediary import, labour and interest, the value in the *k*-th iteration is obtained such that their previous value is multiplied by the price and quantity index. So for intermediary import

$$M_{j,k}=M_{j,k-1}\cdot\frac{Mp_{j,k}}{Mp_{j,k-1}}\cdot\frac{Mq_{j,k}}{Mq_{j,k-1}}$$

(4.01)

where the price index is known from equation (2.1.02) in relation with equations (2.2.01) and (1.08), and the quantity index from equation (3.05).

The following holds for labour costs

$$W_{j,k} = W_{j,k-1} \cdot \frac{Wp_{j,k}}{Wp_{j,k-1}} \cdot \frac{Wq_{j,k}}{Wq_{j,k-1}}$$

(4.02)

where the price index is known from equation (2.3.01) in relation with equations (2.2.03) and (1.12), and the quantity index from equation (3.06).

Price indices are known from equation (2.1.05) and (2.1.06), and quantity indices from (3.07) and (3.08).

When calculating the adjustment of those costs which are based on the use of intermediary production of domestic origin, the decomposition method is used, based on the Leontief matrix. With its use, the corresponding influence of inter-sector relations on cost adjustment with price change may be considered.

For this calculation costs are defined as *PC***:**

$$PC_{j,k} = D_{j,k} + M_{j,k} + W_{j,k}$$

(4.05)

and two auxiliary variables: *PC1c* **and** *PC2c***.**

$$PC1c_{j,k} = \frac{M_{j,k-1} + W_{j,k-1}}{V_{j,k-1}}$$

(4.06)

$$PC2c_{j,k} = \frac{M_{j,k} + W_{j,k}}{V_{j,k-1}}$$

(4.07)

Considering that in the *k***-th iteration,** *j* **of each of the auxiliary variables are defined, they may be arranged in a horizontal vector and post-multiplied with the matrix multiplier. New horizontal vectors are obtained, the elements of which are** *PC1t* **and** *PC2t***:**

$$\{PC1t_k\} = \{PC1c_k\} \cdot \{[I] - [Adc_{k-1}]\}^{-1}$$

(4.08)

$$\{PC2t_k\} = \{PC2c_k\} \cdot \{[I] - [Adc_{k-1}]\}^{-1}$$

(4.09)

Matrix multiplier {[I**] -** Adc_{k-1}**]}**$^{-1}$ **is comprised of elements of** $Adc_{i,j,k-1}$**, known from** *k-1***-th iteration, of which the definition**

$$Adc_{i,j,k} = \frac{Ad_{i,j,k}}{V_{j,k}}$$

(4.10)

corresponds to the basic input-output analysis (see also equation (1.04)).

The procedure defined in equations (4.06) to (4.09) defines the decomposition of costs which arise from intermediary domestic use, on primary costs arising from the use of production factors, the adjustment method which is explained in equations (4.01) to (4.04). Costs of each sector are therefore multiplied by the obtained indices, as shown in equation (4.11).

$$PC_{j,k} = PC_{j,k-1} \cdot \frac{PC2t_{j,k}}{PC1t_{j,k}} \tag{4.11}$$

With the help of the definition of costs (4.05), this part of the model is completed with the value of intermediary domestic consumption of each sector:

$$D_{j,k} = PC_{j,k} - M_{j,k} - W_{j,k} \tag{4.12}$$

6. Price adjustment

The first equation that shows price adjustment in this presentation has already been encountered in section 3.4 on price policy. Still, equation (2.4.01) corresponds exclusively to sectors whose prices are under direct control and enables the simulation of various forms of price control. The formation of prices under conditions of direct control is, as a rule, limited only to a small segment of the economy. Key to following price adjustment in the model is therefore the price function which corresponds to spontaneous price formation in each sector, taking into account relevant circumstances (Zeelenberg 1986, Shea 1993). Here, it must be compatible with the logic of the model and the rules of the iterative solution method. Some experiences, thus far, with the formation of corresponding price functions on the basis of empirical research (Kracun and Zizmond 1988, Zizmond 1989) and its inclusion in the iterative model (Kracun 1991) has given encouraging results.

The price adjustment function considers general circumstances of price formation and factors on the supply and demand side. As general circumstances, the function includes past trends in inflation, movement in exchange rate (i.e. prices of imported competition) and monetary movements. The main factor of the supply side is the movement of costs per unit of production. From the demand side, consideration is given to movement in wages and corporate surplus as sources of purchase power per unit of disposable supply. The simplest form of price adjustment for the *j*-th sector and *k*-th iteration, where independent variables are a result of hitherto described procedures in the model, is shown by equation (5.01).

$$\begin{aligned}\frac{CNp_{j,k}}{CNp_{j,k-1}} &= KPPCp_j \cdot (1+PP_{k-1})^{1/n} + KFCp_j \cdot \frac{Fp_{j,k}}{Fp_{j,k-1}} + KPMCp_j \cdot \frac{PM_k}{PM_{k-1}} + \\ &+ KPCCp_j \cdot \frac{PC_{j,k}}{PC_{j,k-1}} \cdot \frac{Vq_{j,k-1}}{Vq_{j,k}} + KEWCp_j \cdot \frac{\sum_{j=1}^{m} W_{j,k}}{\sum_{j=1}^{m} W_{j,k-1}} \cdot \frac{Cq_{j,k-1}}{Cq_{j,k}} + \\ &+ KESCp_j \cdot \frac{\sum_{j=1}^{m} S_{j,k}}{\sum_{j=1}^{m} S_{j,k-1}} \cdot \frac{Cq_{j,k-1}}{Cq_{j,k}} + K0Cp_j\end{aligned} \tag{5.01}$$

Coefficient *KPPCp* expresses the connection of sector prices with inflation up to then, coefficient *KFCp* with movement in import prices, coefficient *KPMCp* with movement of base money, coefficient *KPCCp* with the movement in average costs, coefficient *KEWCp* with

movement of surplus in the total value of wages above real movement of sectoral supply, and coefficient *KESCp* with the movement in the total value of surplus of firms above the real movement in sectoral supply.

Of course, equation (5.01) represents merely a framework in which it is possible to search for a suitable price function of each sector. A concrete selection of coefficients and relevant variables as well as appropriate time delays must be completed on the basis of econometric analysis. Except in the special case which will be described further, the linear form is also not compulsory.

Sectoral characteristics can give coefficients various meanings. Thus for example, it can be concluded that the significant coefficient *KFCp* is characteristic for the tradable sectors, coefficient *KEWCp* for sectors with the consumer market, and coefficient *KESCp* for sectors with investment and intermediates sales markets.

In the case of significance of coefficient *KESCp* there emerge difficulties in the iterative succession of solution of the model. If the value of gross surplus *S* (see defining equation (1.01)) of all sectors in the *k*-th iteration were known it would be necessary to know the total value of production *V*, which can be calculated only after solving equation (5.01). Therefore, in the process of solving the model in such a case, it is not possible to use equation (5.01) directly. Such a case does however have at least two possible solutions.

The first possible solution is based on time delay. If, for variable *S*, the values or indices of previous iterations are used, this problem is avoided. At higher frequencies of adjustment, the delay of one iteration becomes insignificant. The deficiency of this solution is in trying to make the model approach real relation and overall premises of economic theory. Because the relationship between prices and demand is that which reflects prompt changes, while there is a time lag in relation to the supply side, it would also be undesirable in the model to extend time lags related to the demand side.

The second solution demands a linear relationship between the dependent variable - price index and the total commercial surplus index variable. In this case, their inter-relationship can be expressed with a multiplier as is evident in the following presentation.

The primary definitions of relationships between price and quantity, and the structure of product value, lead to equations (5.02) and (5.03) with which it is possible to carry out a substitution in the price adjustment function equation (5.01).

$$\frac{CNp_{j,k}}{CNp_{j,k-1}} \cdot \frac{Cq_{j,k}}{Cq_{j,k-1}} = \frac{CN_{j,k}}{CN_{j,k-1}} \qquad \textbf{(5.02)}$$

$$CN_{j,k} = S_{j,k} + PC_{j,k} + F_{j,k} - CT_{j,k} - X_{j,k} - GG_{j,k} \qquad \textbf{(5.03)}$$

If the definition from equation (1.28) is considered, then equation (5.03) may also be written as:

$$CN_{j,k} \cdot (1 + CTr_{j,k}) = S_{j,k} + PC_{j,k} + F_{j,k} - X_{j,k} - GG_{j,k} \qquad \textbf{(5.04)}$$

Substitutions transform equation (5.01) into (5.05):

$$\frac{S_{j,k}+PC_{j,k}+F_{j,k}-X_{j,k}-GG_{j,k}}{CN_{j,k-1}\cdot(1+CTr_{j,k})}=KESCp_j\cdot\frac{\sum_{j=1}^{m}S_{j,k}}{\sum_{j=1}^{m}S_{j,k-1}}+$$
$$+\Big(\ KPPCp_j\cdot(1+PP_{k-1})^{1/n}+KFCp_j\cdot\frac{Fp_{j,k}}{Fp_{j,k-1}}+KPMCp_j\cdot\frac{PM_k}{PM_{k-1}}+$$
$$+KPCCp_j\cdot\frac{PC_{j,k}}{PC_{j,k-1}}\cdot\frac{Vq_{j,k-1}}{Vq_{j,k}}+KEWCp_j\cdot\frac{\sum_{j=1}^{m}W_{j,k}}{\sum_{j=1}^{m}W_{j,k-1}}\cdot\frac{Cq_{j,k-1}}{Cq_{j,k}}+$$
$$+K0Cp_j\ \Big)\cdot\frac{Cq_{j,k}}{Cq_{j,k-1}}$$

(5.05)

To make the expressions more clear, two auxiliary variables *A1* and *A2* are defined. Each of these auxiliary variables is defined in sector *j* and iteration *k*.

$$A1_{j,k}=PC_{j,k}+F_{j,k}-X_{j,k}-GG_{j,k}$$

(5.06)

$$A2_{j,k}=\Big(\ KPPCp_j\cdot(1+PP_{k-1})^{1/n}+KFCp_j\cdot\frac{Fp_{j,k}}{Fp_{j,k-1}}+KPMCp_j\cdot\frac{PM_k}{PM_{k-1}}+$$
$$+KPCCp_j\cdot\frac{PC_{j,k}}{PC_{j,k-1}}\cdot\frac{Vq_{j,k-1}}{Vq_{j,k}}+KEWCp_j\cdot\frac{\sum_{j=1}^{m}W_{j,k}}{\sum_{j=1}^{m}W_{j,k-1}}\cdot\frac{Cq_{j,k-1}}{Cq_{j,k}}+$$
$$+K0Cp_j\ \Big)\cdot\frac{Cq_{j,k}}{Cq_{j,k-1}}$$

(5.07)

With the help of the auxiliary variables, a clearer version of equation (5.05) is obtained by equation (5.08):

$$\frac{S_{j,k}}{CN_{j,k-1}\cdot(1+CTr_{j,k})}+\frac{A1_{j,k}}{CN_{j,k-1}\cdot(1+CTr_{j,k})}=KESCp_j\cdot\frac{\sum_{j=1}^{m}S_{j,k}}{\sum_{j=1}^{m}S_{j,k-1}}+A2_{j,k}$$

(5.08)

This is rearranged to give:

$$S_{j,k}\cdot\sum_{j=1}^{m}S_{j,k-1}-CN_{j,k-1}\cdot(1+CTr_{j,k})\cdot KESCp_j\cdot\sum_{j=1}^{m}S_{j,k}=$$
$$=A2_{j,k}\cdot CN_{j,k-1}\cdot(1+CTr_{j,k})\cdot\sum_{j=1}^{m}S_{j,k-1}-A1_{j,k}\cdot\sum_{j=1}^{m}S_{j,k-1}$$

(5.09)

The left and right sides are summed up for all values of *j*:

$$\sum_{j=1}^{m}\ S_{j,k}\cdot\sum_{j=1}^{m}S_{j,k-1}-\sum_{j=1}^{m}\ CN_{j,k-1}\cdot(1+CTr_{j,k})\cdot KESCp_j\cdot\sum_{j=1}^{m}S_{j,k}=$$
$$=\sum_{j=1}^{m}\ A2_{j,k}\cdot CN_{j,k-1}\cdot(1+CTr_{j,k})\cdot\sum_{j=1}^{m}S_{j,k-1}-\sum_{j=1}^{m}\ A1_{j,k}\cdot\sum_{j=1}^{m}S_{j,k-1}$$

(5.10)

which leads to an explicit expression for the index of change in total gross surplus of the entire economy:

$$\frac{\sum_{j=1}^{m} S_{j,k}}{\sum_{j=1}^{m} S_{j,k-1}} = \frac{\left(\sum_{j=1}^{m} A2_{j,k} \cdot CN_{j,k-1} \cdot (1+CTr_{j,k}) - \sum_{j=1}^{m} A1_{j,k} \right)}{\sum_{j=1}^{m} S_{j,k-1} - \sum_{j=1}^{m} CN_{j,k-1} \cdot (1+CTr_{j,k}) \cdot KESCp_{j}} \qquad \textbf{(5.11)}$$

The drawback to this solution, besides the required linear relationship, is that it deals with a fraction in which the denominator could approach zero. In the iterative process, there is the risk of degeneration of the model in the numerical solution.

Although each of the stated solutions has certain weaknesses, they collectively provide sufficient opportunity for suitable execution of the model - even numerically. Coefficient *KESCp* **in particular empirically proves to be significant in only a small number of sectors, for which the market reacts to increased purchasing power of firms. In the majority of sectors, the price adjustment function does not contain the mentioned component.**

As the price function eq.(5.01') with the time delay for *S* **is applied. The econometric estimations based on Slovenian monthly data series 1993-1996 were satisfactory.**

$$\frac{CNp_{j,k}}{CNp_{j,k-1}} = KPPCp_{j} \cdot (1+PP_{k-1})^{1/n} + KFCp_{j} \cdot \frac{Fp_{j,k}}{Fp_{j,k-1}} + KPMVqCp_{j} \cdot \frac{PM_{k} \cdot Vq_{j,k-1}}{PM_{k-1} \cdot Vq_{j,k}} +$$
$$+ KPCCp_{j} \cdot \frac{PC_{j,k}}{PC_{j,k-1}} \cdot \frac{Vq_{j,k-1}}{Vq_{j,k}} + KEWCp_{j} \cdot \frac{\sum_{j=1}^{m} W_{j,k}}{\sum_{j=1}^{m} W_{j,k-1}} \cdot \frac{Cq_{j,k-1}}{Cq_{j,k}} +$$
$$+ KESCp_{j} \cdot \frac{\sum_{j=1}^{m} S_{j,k-1}}{\sum_{j=1}^{m} S_{j,k-2}} \cdot \frac{Cq_{j,k-2}}{Cq_{j,k-1}} + K0Cp_{j} \qquad \textbf{(5.01')}$$

In sector E (electricity, gas and water supply) instead of a market price function we use exogenous determination of prices, based on the eq. (2.4.01).

7. Concluding Iterations

The iteration is concluded with the calculation of the inflation rate, according to which prices and other parameters in the next iteration adjust themselves. This is:

$$PP_{k} = \left(\frac{\sum \frac{Cp_{j,k}}{Cp_{j,k-1}} \cdot C_{j,k-1}}{\sum C_{j,k-1}} \right)^{n} - 1 \qquad \textbf{(6.01)}$$

This is the weighted price index in the domestic market where probable effects of changes in sales tax are included - equation (1.30). Considering that the solution of the model proceeds

in *n* iterations, the price index which refers to the entire period requires an exponent corresponding to the number of iterations.

In the concluding operations of the model's solution in the individual iteration, the calculation of matrix elements of domestic intermediary consumption should be mentioned. This is based on a modified biproportional method (Kracun 1990):

$$Ad_{i,j,k} = Ad_{i,j,k-1} \cdot \frac{Cp_{i,k} \cdot D_{j,k}}{Cp_{i,k-1} \cdot \sum_{i=1}^{m} \frac{Ad_{i,j,k-1} \cdot Cp_{i,k}}{Cp_{i,k-1}}}$$

(6.02)

Equation (6.02) differs from the standard biproportional method in that besides price indices, it also takes into account intermediate calculated values of total domestic intermediary consumption in each sector *D*, which is elucidated by equations (1.04) and (4.12).

Thus are presented all main elements of the model's solution. The remaining ones which are not specifically presented, may be completed on the basis of the definitions presented in equations (1.01) to (1.30). It is possible to calculate any desired number of iterations and to compare values which are obtained by performing the iterations. Following the values from iteration to iteration represents a model-based solution of processes which occur in certain scenarios (with exogenous variable determination) in economic policy.

8. Model application: The choice for Slovene economic policy in moderate inflation

Slovenia is among those reforming countries, which managed to get out of transformation depression rather soon, and at the same time succeeded in cutting inflation to a moderate level. With the GDP of more than US$ 10,000 per head its economic situation can be compared to those of developed countries. Main macroeconomic indicators for Slovenia in the last years are shown in Table 1:

Table 1: Some Macroeconomic indicators of Slovenia

Year	Retail prices (in %, end of year)	Gross domestic product (real growth rates in %)	General government balance; surplus (-); deficit (+), as % of GDP	Current account; surplus (+); deficit (-), as % of GDP
1992	92.9	-5.5	0.2	6.3
1993	22.9	2.8	0.3	1.2
1994	18.3	5.3	-0.2	3.3
1995	8.6	4.1	0.0	-0.2
1996	8.8	3.1	0.3	0.3
1997 (estimate)	9.4	3.3	-1.1	-0.5
1998 (estimate)	8.0	3.8	-1.0	-0.2

Source: Slovenian Economic Mirror, 1998; Bank of Slovenia, Monthly Bulletin, 1998

In 1995, Slovenia managed to cut inflation to a moderate level. Afterwards, there was no further cutting, which somehow agrees with the postulation of Dornbusch and Fischer (1993), that a moderate inflation can be persistent and long lasting. Official forecast of inflation for Slovenia in 1998 was 8%. By using a model we will try to find out which preconditions have to be fulfilled for the official forecast to come true.

Model assessments stem from three scenarios: »realistic«, »pessimistic« and »restrictive«. »Realistic« scenario is grounded on the most probable course of events, as it takes into account the accepted or forecasted measures of the economic policy at the beginning of 1998. »Pessimistic« scenario is also quite likely, as it differs from the »realistic« scenario only in some peculiarities and represents a warning of what can happen after minor deviations of the economic policy. Conditions which should be fulfilled in the context of economic policy for 1998, for the official forecast of inflation to come true, are included in »restrictive« scenario.

»Realistic« scenario is based on the following preconditions:

- **Foreign currency rates change in monthly intervals reaching 90% of price rates,**
- **The amount of base money rises so that it is 15 percentage points behind the year inflation rate,**
- **Tariffs for final imports fall by 2 percentage points in the first iteration, which nears the Association agreement with the European union and Free trade agreements,**
- **Sales taxes in DF sector (petrol derivatives) rise by 30 percentage points in the third iteration,**
- **Wages rise to follow prices and their growth is 10% above the rate of price growth,**
- **Prices in controlled sector E (electricity) after rising by 8% in the first iteration, follow the general price index.**

The described »realistic« scenario is based on the most likely expectations. The result is 11.6% inflation rate in 1998.

The assessment according to »pessimistic« scenario takes into account less favourable circumstances:

- **Foreign currency rates follow the inflation with 10% higher rate than the recorded rate of price growth,**
- **Taxes and deductions from salaries rise by 3 percentage points in the middle of the year (in the sixth iteration),**
- **Sales tax v in DF sector (petrol derivatives) rises by 50 percentage points in the third iteration,**
- **Wages overtake inflation and their rate of nominal growth is 30% higher than the rate of price growth,**
- **Prices in sector E (production of electricity) after rising by 8% in the first iteration are higher than inflation and further increase by 7% in 1998.**

Preconditions, on which »pessimistic« scenario is based, only slightly differ from the preconditions of the »realistic« assessment. They represent a simulation of actions in case of possible complications within the balance of payments on current account (exchange rate), budget (sales tax and wage tax), and social agreements (wage rise) and price control over monopolists. This estimation results in 14.9% inflation.

Consequently, is it possible that the forecasted inflation remains 8% in reality in 1998? Model assessment also gives positive answers, as this one in the form of »restrictive« scenario:

- **Foreign currency rates change according to inflation, but lags behind, so that the rate of depreciation amounts 50% only of the price growth rate,**
- **The quantity of base money rises according to the price rise index,**
- **Sales tax does not rise in any of the sectors,**
- **Wages conform to inflation,**
- **Prices in sector E do not change after the initial 8% rise in the first iteration (they are frozen until the end of the year).**

The result of model assessment is in this case a yearly inflation of 8.03 %.

The translation of scenarios into exogenous variables of the model is shown in Table 2.

Table 2: Exogenous variables of three scenarios

Exogenous variables	"Realistic" scenario	"Pessimistic" scenario	"Restrictive" scenario
FEX	0.9	1.1	0.5
GEX	0.0	0.0	0.0
ΔEXr_k	0.0	0.0	0.0
FPM	1.0	1.0	1.0
GPM	0.15	0.15	0.0
ΔPMr_k	0.0	0.0	0.0
$\Delta MT_{j,k}$	0.0	0.0	0.0
$\Delta FTr_{j,k}$	-0.02; k=1,	-0.02; k=1,	-0.02; k=1,
	0.0; $1<k<n$	0.0; $1<k<n$	0.0; $1<k<n$
$\Delta WTr_{j,k}$	0.0	0.03; k=6	0.0
$\Delta SDr_{j,k}$	0.0	0.0	0.0
$\Delta STr_{j,k}$	0.0	0.0	0.0
$\Delta CTr_{j,k}$	0.3; j=DF, k=3	0.5; j=DF, k=3	0.0
$\Delta XGr_{j,k}$	0.0	0.0	0.0
FGG_j	1.0	1.0	1.0
GGG_j	0.0	0.0	0.0
$\Delta GGr_{j,k}$	0.0	0.0	0.0
FW	1.1	1.3	1.0
GW	0.0	0.0	0.0
$\Delta WNpr_{j,k}$	0.0	0.0	0.0
FCN_j	1.0; j=E	1.0; j=E	0.0
GCN_j	0.0	0.07; j=E	0.0
$\Delta CNpr_{j,k}$	0.08; j=E, k=1	0.08; j=E, k=1	0.08; j=E, k=1
$OECD$	0.029	0.029	0.029
Results (the annual rates of inflation)	0.1163	0.1490	0.0803

The results of calculations for all three scenarios in the form of quotients of yearly growth for all sectors, as well as for the total is shown in Table 3.

Table 3: Quotients of price changes on the yearly basis

Sector	"Realistic" scenario	"Pessimistic" scenario	"Restrictive" scenario
A AGRICULTURE, HUNTING AND FORESTRY	1.1511	1.1709	1.1342
B FISHING	1.1599	1.1775	1.0879
CA EXTRACTION OF ENERGY PRODUCTS	1.1538	1.1925	1.1171
CB EXTRACTION OF MINERALS AND STONES	1.0506	1.0609	1.0033
DA MANUFACTURE OF FOOD PRODUCTS AND BEVERAGES	1.1218	1.1419	1.0998
DB MANUFACTURE OF TEXTILE PRODUCTS	1.0254	1.0416	0.9997
DC MANUFACTURE OF LEATHER AND FUR	1.0720	1.0836	1.0561
DD MAN. OF FURNITURE AND OTHER WOODEN PRODUCTS	1.1311	1.1493	1.1134
DE MANUFACTURE OF PAPER AND PAPER PRODUCTS	1.0994	1.1175	1.0766
DF MANUFACTURE OF REFINED PETROLEUM PRODUCTS	1.4606	1.6779	1.1658
DG MAN. OF BASIC CHEMICALS AND CHEMICALS PRODUCTS	0.9957	1.0147	0.9668
DH MANUFACTURE OF RUBBER PRODUCTS	1.0322	1.0542	1.0032
DI MANUFACTURE OF NON-FERROUS MINERALS	1.0564	1.0642	1.0409
DJ MANUFACTURE OF METAL PRODUCTS	1.0619	1.0821	1.0373
DK MANUFACTURE OF MACHINERY AND EQUIPMENT	1.0795	1.0907	1.0659
DL MAN. OF ELECTRICAL AND OPTICAL EQUIPMENT	1.0775	1.0885	1.0641
DM MANUFACTURE OF TRANSPORT EQUIPMENT	1.1319	1.1637	1.1031
DN OTHER PRODUCTS OF MANUFACTURING	1.0965	1.1089	1.0851
E ELECTRICITY, GAS AND WATER SUPPLY	1.1929	1.2922	1.0800
F CONSTRUCTION	1.1030	1.1086	1.0957
G WHOLESALE; RETAIL; CERTAIN REPAIR	1.0755	1.1004	1.0464
H HOTELS AND RESTAURANTS	1.0979	1.1156	1.0732
I TRANSPORT, STORAGE, COMMUNICATIONS	1.1199	1.1343	1.1005
J FINANCIAL INTERMEDIATION	1.1304	1.1865	1.0830
K+MS REAL ESTATE, RENTING AND BUSINESS SERVICES	1.1181	1.1592	1.0757
NMS NON-MARKET SERVICES	1.1238	1.1651	1.0816
TOTAL PRODUCTS AND SERVICES	1.1163	1.1490	1.0803

9. Conclusions

Presented model offers a possibility for the formalisation of measures of economic policy and the study of their short-term effects. Special care goes to pricing and conditions in the economy with a moderate inflation.

The state of economy is shown with the input-output table. This state is temporary, the result of the current development, and subject to future changes. In addition to current development and relationships between sectors, future development is influenced by measures of economic policy and possible exogenous influences. This is why relationships found in input-output table change. This process follows the model in iteration procedure, in which measures of economic policy, exogenous influences and inter-sectoral relationships adapt to each other. In each iteration, input-output table is adjusted using a biproportional method.

A theoretical solution of the model is shown in our paper. In addition to a theoretical solution, the paper gives a possible usage of the model for the assessment of effects of economic policy in case of Slovenia.

Databases present a certain problem in the application of the model. Input-output tables and data for their adaptation are reliable enough, which cannot be said for indexes, which represent the basis for the calculation of individual functions. In case of Slovenia series of monthly indexes have been used (1993-1996), which are not reliable enough due to »statistical transition«. Such are also econometric estimations: adequate results were found only in functions of prices. Econometric estimations of functions of production, export, imports and employment do not allow more than moderate enthusiasm. Within these elements model application differs from theoretical ideas, whereas the solutions used remain consistent of the model despite not too reliable econometric estimations.

The case of the use of model indicates possibilities, which emerge for the estimation of measures of economic policy in various situations. It enables us to investigate the preparation of economic measures in a rather profound manner, in the context of economic trends and relationships.

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Appendix 1: The Table of Symbols

ITEM	nominal value	rate	price	quantity	exogenous indexation variables	variables of exogenous changes
domestic intermediary consumption of the i-sector products	$Ad_{i,j,k}$					
domestic intermediary consumption	$D_{j,k}$					
net intermediary import	$MN_{j,k}$		$MNp_{j,k}$			$\Delta MNpr_{j,k}$
taxes based on intermediary import	$MT_{j,k}$	$MTr_{j,k}$				$\Delta MTr_{j,k}$
gross intermediary import	$M_{j,k}$		$Mp_{j,k}$	$Mq_{j,k}$		
net wages	$WN_{j,k}$		$WNp_{j,k}$		FW GW	$\Delta WNr_{j,k}$
taxes based on wages	$WT_{j,k}$	$WTr_{j,k}$				$\Delta WTr_{j,k}$
gross wages	$W_{j,k}$		$Wp_{j,k}$	$Wq_{j,k}$		
costs (without depreciation)	$PC_{j,k}$					
depreciation	$SD_{j,k}$	$SDr_{j,k}$				$\Delta SDr_{j,k}$
profit	$SP_{j,k}$					
taxes based on profit	$ST_{j,k}$	$STr_{j,k}$				$\Delta STr_{j,k}$
net profit	$SN_{j,k}$					
total surplus (including depreciation)	$S_{j,k}$					
total production value	$V_{j,k}$		$Vp_{j,k}$	$Vq_{j,k}$		
net final import	$FN_{j,k}$		$FNp_{j,k}$			
taxes based on net final import	$FT_{j,k}$	$FTr_{j,k}$				$\Delta FTr_{j,k}$
gross final import	$F_{j,k}$		$Fp_{j,k}$	$Fq_{j,k}$		
net export	$XN_{j,k}$		$XNp_{j,k}$			
net export based subsidies	$XG_{j,k}$	$XGr_{j,k}$				$\Delta XGr_{j,k}$
gros export	$X_{j,k}$		$Xp_{j,k}$	$Xq_{j,k}$		
net domestic sales	$CN_{j,k}$		$CNp_{j,k}$		FCN_j GCN_j	
domestic sales based taxes	$CT_{j,k}$	$CTr_{j,k}$				$\Delta CTr_{j,k}$
gross domestic sales	$C_{j,k}$		$Cp_{j,k}$	$Cq_{j,k}$		
subsidies (other than export based)	$GG_{j,k}$	$GGr_{j,k}$			FGG_j GGG_j	$\Delta GGr_{j,k}$
rate of exchange	EX_k				FEX GEX	ΔEXr_k
base money	PM_k				FPM GPM	ΔPMr_k
rate of inflation		PP_k				

Function coefficients:

production	$KEVq_j$	$KEXqVq_j$	$KCNpVq_j$	$KXpVq_j$	$KWpVq_j$	$KMpVq_j$	$KNAVq_j$	
	$KNPVq_j$	$KFqVq_j$	$KWqVq_j$	$K0Vq_j$				
export	$KVXq_j$	$KEXWpXq_j$	$KEXq_j$	$KCNpXq_j$	$KPXq_j$	$KOECDXq_j$	$K0Xq_j$	
final import	$KEFq_j$	$KEXPFq_j$	$KFpWpFq_j$	$KCpFq_j$	$K0Fq_j$			
intermediary import	$KVMq_j$	$KPMq_j$	$K0Mq_j$					
import (all)	$KCpMFq_j$	$KVqMFq_j$	$K0MFq_j$					
employment	$KVWq_j$	$KPWq_j$	$K0Wq_j$					
domestic market prices	$KPPCp_j$	$KFCp_j$	$KPMCp_j$	$KPCCp_j$	$KEWCp_j$	$KESCp_i$	$KPMVqCp_j$	$K0Cp_j$
determination coefficient	R^2							

Sectors and iterations:

receiving sectors	$j=1,2,\ldots,m$
giving sectors	$i=1,2,\ldots,m$
iterations	$k=1,2,\ldots,n$

Appendix 2: Equations of the *k*-th Iteration

Domestic intermediary consumption

$$Ad_{i,j,k} = Ad_{i,j,k-1} \cdot \frac{Cp_{i,k} \cdot D_{j,k}}{Cp_{i,k-1} \cdot \sum_{i=1}^{m} \frac{Ad_{i,j,k-1} \cdot Cp_{i,k}}{Cp_{i,k-1}}} \qquad (6.02)$$

$$D_{j,k} = PC_{j,k} - M_{j,k} - W_{j,k} \qquad (4.12)$$

Intermediary import

$$MN_{j,k} = MN_{j,k-1} \cdot \frac{MNp_{j,k}}{MNp_{j,k-1}} \cdot \frac{Mq_{j,k}}{Mq_{j,k-1}}$$

$$\frac{MNp_{j,k}}{MNp_{j,k-1}} = \frac{EX_k}{EX_{k-1}} \cdot (1 + \Delta MNpr_{j,k}) \qquad (2.1.02)$$

$$MT_{j,k} = MN_{j,k} \cdot MTr_{j,k} \qquad (1.06)$$

$$MTr_{j,k} = MTr_{j,k-1} + \Delta MTr_{j,k}$$

$$M_{j,k} = MN_{j,k} + MT_{j,k} \qquad (1.05)$$

$$\frac{Mq_{j,k}}{Mq_{j,k-1}} =$$

- sectors K+MS, NMS:

  $$\frac{Mq_{j,k}}{Mq_{j,k-1}} = 1$$

  sectors DB, DC, DE, DH, DK, DL, DN, E:

  $$\frac{Mq_{j,k}}{Mq_{j,k-1}} = \frac{(M+F)q_{j,k}}{(M+F)q_{j,k-1}} = \left(K0MFq_j \cdot \left(\frac{(M+F)p_{j,k} \cdot CNp_{j,k-2}}{(M+F)p_{j,k-1} \cdot CNp_{j,k-1}} \right)^{KCpMFq} \cdot \left(\frac{Vq_{j,k-1}}{Vq_{j,k-2}} \right)^{KVqMFq} \right)^{R^2} \qquad (3.05'')$$

- other sectors:

  $$\frac{Mq_{j,k}}{Mq_{j,k-1}} = \frac{(M+F)q_{j,k}}{(M+F)q_{j,k-1}} = \left(\left(K0MFq_j \cdot \left(\frac{(M+F)p_{j,k} \cdot CNp_{j,k-2}}{(M+F)p_{j,k-1} \cdot CNp_{j,k-1}} \right)^{KCpMFq} \cdot \left(\frac{Vq_{j,k-1}}{Vq_{j,k-2}} \right)^{KVqMFq} \right)^{R^2} \right)^{R^2} \qquad (3.05''')$$

Wages

$$WN_{j,k} = WN_{j,k-1} \cdot \frac{WNp_{j,k}}{WNp_{j,k-1}} \cdot \frac{Wq_{j,k}}{Wq_{j,k-1}}$$

$$\frac{WNp_{j,k}}{WNp_{j,k-1}} = (1 + PP_{k-1} \cdot FW + GW)^{1/n} \cdot (1 + \Delta WNpr_{j,k}) \qquad (2.3.01)$$

$$WT_{j,k} = WN_{j,k} \cdot WTr_{j,k} \qquad (1.10)$$

$$WTr_{j,k} = WTr_{j,k-1} + \Delta WTr_k \qquad (2.2.03)$$

$$W_{j,k} = WN_{j,k} + WT_{j,k} \qquad (1.09)$$

$$\frac{Wq_{j,k}}{Wq_{j,k-1}} = \quad .$$

- sectors J, K+MS, NMS:

$$\frac{Wq_{j,k}}{Wq_{j,k-1}} = 1.$$

- other sectors:

$$\frac{Wq_{j,k}}{Wq_{j,k-1}} = \left(\begin{array}{l} KVWq_j \cdot \dfrac{Vq_{j,k}}{Vq_{j,k-1}} + KPWq_j \cdot \dfrac{Wp_{j,k}}{Wp_{j,k-1} \cdot (1 + PP_{k-1})^{1/n}} + \\ + KEWq_j \cdot \dfrac{\sum_{j=1}^{m} \dfrac{Wq_{j,k-1}}{Wq_{j,k-2}} \cdot W_{j,k-2}}{\sum_{j=1}^{m} W_{j,k-2}} + K0Wq_j \end{array} \right)^{R^2} \qquad (3.06'')$$

Production costs

$$PC_{j,k} = PC_{j,k-1} \cdot \frac{PC2t_{j,k}}{PC1t_{j,k}} \qquad (4.11)$$

$$PC1c_{j,k} = \frac{M_{j,k-1} + W_{j,k-1}}{V_{j,k-1}} \qquad (4.06)$$

$$PC2c_{j,k} = \frac{M_{j,k} + W_{j,k}}{V_{j,k-1}} \qquad (4.07)$$

$$\{PC1t_k\} = \{PC1c_k\} \cdot \{[I] - [Adc_{k-1}]\}^{-1} \qquad (4.08)$$

$$\{PC2t_k\} = \{PC2c_k\} \cdot \{[I] - [Adc_{k-1}]\}^{-1} \qquad (4.09)$$

$$Adc_{i,j,k} = \frac{Ad_{i,j,k}}{V_{j,k}} \qquad (4.10)$$

Surplus

$$SD_{j,k} = SD_{j,k-1} \cdot (1 + PP_{k-1})^{1/n} \cdot (1 + \Delta SDr_{j,k})$$

$$SDr_{j,k} = SDr_{j,k-1} + \Delta SDr_{j,k} \qquad (2.2.04)$$

$$SP_{j,k} = S_{j,k} - SD_{j,k}$$

$ST_{j,k} = SP_{j,k} \cdot STr_k$ èe $Sp_{j,k} > 0$; $SP_{j,k} \le 0 \Rightarrow ST_{j,k} = 0$

$$STr_k = STr_{k-1} + \Delta STr_k \qquad (2.2.05)$$

$$SN_{j,k} = S_{j,k} - SD_{j,k} - ST_{j,k}$$

$$S_{j,k} = V_{j,k} - PC_{j,k}$$

Production value

$$V_{j,k} = C_{j,k} + X_{j,k} + GG_{j,k} - F_{j,k}$$

$$\frac{Vq_{j,k}}{Vq_{j,k-1}} =$$

- sectors J, K+MS, NME:

$$\frac{Vq_{j,k}}{Vq_{j,k-1}} = 1\,.$$

sectors B, DC, E, H:

$$\frac{Vq_{j,k}}{Vq_{j,k-1}} = \left(\left(KXqVq_j \cdot \frac{Xq_{j,k}}{Xq_{j,k-1}} + KWqVq_j \cdot \frac{\sum_{j=1}^{m} \frac{Wq_{j,k-1}}{Wq_{j,k-2}} \cdot W_{j,k-2}}{\sum_{j=1}^{m} W_{j,k-2}} + K0Vq_j\right)^{R^2}\right)^{R^2} \qquad (3.01''')$$

other sectors:

$$\frac{Vq_{j,k}}{Vq_{j,k-1}} = \left(KXqVq_j \cdot \frac{Xq_{j,k}}{Xq_{j,k-1}} + KWqVq_j \cdot \frac{\sum_{j=1}^{m} \frac{Wq_{j,k-1}}{Wq_{j,k-2}} \cdot W_{j,k-2}}{\sum_{j=1}^{m} W_{j,k-2}} + K0Vq_j\right)^{R^2} \qquad (3.01'')$$

Final import

$$FN_{j,k} = FN_{j,k-1} \cdot \frac{FNp_{j,k}}{FNp_{j,k-1}} \cdot \frac{Fq_{j,k}}{Fq_{j,k-1}}$$

$$\frac{FNp_{j,k}}{FNp_{j,k-1}} = \frac{EX_k}{EX_{k-1}} \cdot (1 + \Delta FNpr_{j,k}) \qquad (2.1.03)$$

$$FT_{j,k} = FN_{j,k} \cdot FTr_{j,k} \tag{1.20}$$

$$FTr_{j,k} = FTr_{j,k-1} + \Delta FTr_{j,k} \tag{2.2.02}$$

$$F_{j,k} = FN_{j,k} + FT_{j,k} \tag{1.19}$$

$$\frac{Fq_{j,k}}{Fq_{j,k-1}} =$$

- sectors K+MS, NMS:

$$\frac{Fq_{j,k}}{Fq_{j,k-1}} = 1$$

sectors DB, DC, DE, DH, DK, DL, DN, E:

$$\frac{Fq_{j,k}}{Fq_{j,k-1}} = \frac{(M+F)q_{j,k}}{(M+F)q_{j,k-1}} = \left(K0MFq_j \cdot \left(\frac{(M+F)p_{j,k} \cdot CNp_{j,k-2}}{(M+F)p_{j,k-1} \cdot CNp_{j,k-1}} \right)^{KCpMFq_j} \cdot \left(\frac{Vq_{j,k-1}}{Vq_{j,k-2}} \right)^{KVqMFq_j} \right)^{R^2}$$

- other sectors:

$$\frac{Fq_{j,k}}{Fq_{j,k-1}} = \frac{(M+F)q_{j,k}}{(M+F)q_{j,k-1}} = \left(\left(K0MFq_j \cdot \left(\frac{(M+F)p_{j,k} \cdot CNp_{j,k-2}}{(M+F)p_{j,k-1} \cdot CNp_{j,k-1}} \right)^{KCpMFq_j} \cdot \left(\frac{Vq_{j,k-1}}{Vq_{j,k-2}} \right)^{KVqMFq_j} \right)^{R^2} \right)^{R^2} \tag{3.05'''}$$

Export

$$XN_{j,k} = XN_{j,k-1} \cdot \frac{XNp_{j,k}}{XNp_{j,k-1}} \cdot \frac{Xq_{j,k}}{Xq_{j,k-1}}$$

$$\frac{XNp_{j,k}}{XNp_{j,k-1}} = \frac{EX_k}{EX_{k-1}} \cdot (1 + \Delta XNpr_{j,k}) \tag{2.1.04}$$

$$XG_{j,k} = XN_{j,k} \cdot XGr_{j,k} \tag{1.24}$$

$$XGr_{j,k} = XGr_{j,k-1} + \Delta XGr_{j,k} \tag{2.2.07}$$

$$X_{j,k} = XN_{j,k} + XG_{j,k} \tag{1.23}$$

$$\frac{Xq_{j,k}}{Xq_{j,k-1}} = \ .$$

- sectors K+MS, NMS:

$$\frac{Xq_{j,k}}{Xq_{j,k-1}} = 1.$$

sectors B,CA,DB, DD, DI, DL, DN, F, G, H, J:

$$\frac{Xq_{j,k}}{Xq_{j,k-1}} = \left(\left(K0Xq_j \cdot \left(\frac{Xp_{j,k} \cdot CNp_{j,k-2}}{Xp_{j,k-1} \cdot CNp_{j,k-1}} \right)^{KCNpXq_j} \cdot \left(\frac{OECD_k}{OECD_{k-1}} \right)^{KOECDXq_j} \right)^{R^2} \right)^{R^2} \tag{3.02'''}$$

other sectors:

$$\frac{Xq_{j,k}}{Xq_{j,k-1}} = \left(K0Xq_j \cdot \left(\frac{Xp_{j,k} \cdot CNp_{j,k-2}}{Xp_{j,k-1} \cdot CNp_{j,k-1}} \right)^{KCNpXq_j} \cdot \left(\frac{OECD_k}{OECD_{k-1}} \right)^{KOECDXq_j} \right)^{R^2} \qquad (3.02'')$$

Domestic sales

$$CN_{j,k} = CN_{j,k-1} \cdot \frac{CNp_{j,k}}{CNp_{j,k-1}} \cdot \frac{Cq_{j,k}}{Cq_{j,k-1}}$$

$$\frac{CN_{j,k}}{CN_{j,k'1}} =$$

- Prices in the controlled sectors (sector E):

$$\frac{CNp_{j,k}}{CNp_{j,k-1}} = (1 + PP_{k-1} \cdot FCN_j + GCN_j)^{1/n} \cdot (1 + \Delta CNpr_{j,k}) \qquad (2.4.01)$$

- Market prices (other sectors):

$$\frac{CNp_{j,k}}{CNp_{j,k-1}} = KPPCp_j \cdot (1 + PP_{k-1})^{1/n} + KFCp_j \cdot \frac{Fp_{j,k}}{Fp_{j,k-1}} + KPMVqCp_j \cdot \frac{PM_k \cdot Vq_{j,k-1}}{PM_{k-1} \cdot Vq_{j,k}} +$$
$$+ KPCCp_j \cdot \frac{PC_{j,k}}{PC_{j,k-1}} \cdot \frac{Vq_{j,k-1}}{Vq_{j,k}} + KEWCp_j \cdot \frac{\sum_{j=1}^{m} W_{j,k}}{\sum_{j=1}^{m} W_{j,k-1}} \cdot \frac{Cq_{j,k-1}}{Cq_{j,k}} +$$
$$+ KESCp_j \cdot \frac{\sum_{j=1}^{m} S_{j,k-1}}{\sum_{j=1}^{m} S_{j,k-2}} \cdot \frac{Cq_{j,k-2}}{Cq_{j,k-1}} + K0Cp_j \qquad (5.01)$$

$$CT_{j,k} = CN_{j,k} \cdot CTr_{j,k} \qquad (1.28)$$

$$CTr_{j,k} = CTr_{j,k-1} + \Delta CTr_{j,k} \qquad (2.2.06)$$

$$C_{j,k} = CN_{j,k} + CT_{j,k} \qquad (1.27)$$

$$\frac{Cq_{j,k}}{Cq_{j,k-1}} = \frac{\frac{Vq_{j,k} \cdot V_{j,k-1}}{Vq_{j,k-1}} + \frac{Fq_{j,k} \cdot F_{j,k-1}}{Fq_{j,k-1}} - \frac{Xq_{j,k} \cdot X_{j,k-1}}{Xq_{j,k-1}}}{V_{j,k-1} + F_{j,k-1} - X_{j,k-1}} \qquad (3.04)$$

Subsidies

$$\frac{GG_{j,k}}{GG_{j,k-1}} = (1 + PP_{k-1} \cdot FGG_j + GGG_j)^{1/n} \cdot (1 + \Delta GGr_{j,k}) \qquad (2.2.08)$$

The rate of exchange

$$\frac{EX_k}{EX_{k-1}} = (1 + PP_{k-1} \cdot FEX + GEX)^{1/n} \cdot (1 + \Delta EXr_k) \qquad (2.1.01)$$

Base money

$$\frac{PM_k}{PM_{k-1}} = (1 + PP_{k-1} \cdot FPM + GPM)^{1/n} \cdot (1 + \Delta PMr_k) \qquad (2.1.07)$$

The rate of inflation

$$PP_k = \left(\frac{\sum \frac{Cp_{j,k}}{Cp_{j,k-1}} \cdot C_{j,k-1}}{\sum C_{j,k-1}} \right)^n - 1 \qquad (6.01)$$

Appendix 3: The model base

Input output tables of Slovenia adjusted for use as the model base

	INPUT-OUTPUT TABLE IN MARKET VALUE 95	A	B	CA	CB	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	E	F	G	H	I	J	K+MS	NMS	TOTAL
A	AGRICULTURE, HUNTING AND FORESTRY	72820	0	0	0	55313	2	0	12326	279	0	259	2	3	0	0	0	0	0	0	0	0	1507	0	0	0	28	142538
B	FISHING	0	0	0	0	233	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	1	243
CA	EXTRACTION OF ENERGY PRODUCTS	0	0	27	1	13	30	2	2	3	3	199	15	421	408	13	83	5	13	23747	141	0	0	0	0	0	0	25126
CB	EXTRACTION OF MINERALS AND STONES	2	0	0	48	27	0	0	0	37	0	274	1	1480	134	0	14	0	703	0	5384	0	47	0	0	0	121	8270
DA	MANUFACTURE OF FOOD PRODUCTS AND BEVERAGES	6921	0	0	0	21875	2691	0	0	0	0	118	0	0	0	0	0	0	0	0	0	0	30935	0	0	0	6787	69328
DB	MANUFACTURE OF TEXTILE PRODUCTS	21	229	15	3	45	19821	2099	40	6	4	12	120	5	6	22	13	2	1942	21	72	1	194	240	34	1	2651	27620
DC	MANUFACTURE OF LEATHER AND FUR	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	134	918	83	1170
DD	MANUFACTURE OF FURNITURE AND OTHER WOODEN PI	276	0	0	0	389	0	0	5264	12	0	0	0	30	0	1	0	1	8622	0	4126	0	0	0	0	0	1972	20694
DE	MANUFACTURE OF PAPER AND PAPER PRODUCTS	2802	6	240	42	26	1667	5	352	9953	48	2	294	686	964	739	1335	347	334	415	4598	1593	789	1579	707	854	6708	37084
DF	MANUFACTURE OF REFINED PETROLEUM PRODUCTS	3681	0	2	57	585	233	1	104	24	60	554	52	1716	178	153	199	88	187	1314	516	190	0	4569	0	1299	1316	17077
DG	MANUFACTURE OF BASIC CHEMICALS AND CHEMICALS	2011	0	0	98	935	447	2	2837	338	1	10931	5722	121	1776	752	552	16	1382	0	2848	0	0	1	0	2332	11645	44746
DH	MANUFACTURE OF RUBBER PRODUCTS	2309	13	62	0	688	68	4	20	0	0	85	7438	0	1	766	226	2763	732	0	14	1588	3697	6669	115	2495	477	30230
DI	MANUFACTURE OF NON-FERROUS MINERALS	55	0	0	0	3	0	0	2	0	0	2	6	2913	435	142	130	1	199	0	29085	0	400	0	0	3384	121	36880
DJ	MANUFACTURE OF METAL PRODUCTS	35	0	28	7	2245	97	4	6	40	9	6163	399	2806	27074	10383	4680	731	120	1	10973	0	50	92	3	38131	5512	109590
DK	MANUFACTURE OF MACHINERY AND EQUIPMENT	908	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3379	0	1	520	0	4812
DL	MANUFACTURE OF ELECTRICAL AND OPTICAL EQUIPME	0	0	0	0	0	0	0	0	0	0	0	293	0	1	265	10579	1427	0	0	0	0	0	0	0	727	1	13295
DM	MANUFACTURE OF TRANSPORT EQUIPMENT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	735	0	0	1	736
DN	OTHER PRODUCTS OF MANUFACTURING	59	0	22	5	59	231	23	40	2084	3	232	33	39	2303	5261	133	52	1038	40	121	236	51	133	43	14897	7455	34593
E	ELECTRICITY, GAS AND WATER SUPPLY	525	0	1356	530	5153	5242	204	2749	12901	1073	4930	2517	3713	23866	2601	2040	1371	2236	0	1182	815	1079	1959	575	2344	4904	85866
F	CONSTRUCTION	57	22	21	11	93	72	21	42	100	3	82	67	35	261	105	138	54	52	677	69879	246	183	9692	2034	5642	2589	92180
G	WHOLESALE; RETAIL; CERTAIN REPAIR	4946	11	280	41	3307	1757	575	1002	1438	274	3364	673	2064	3784	3005	1473	19406	1776	686	13841	2531	2149	2	126	7346	14180	90036
H	HOTELS AND RESTAURANTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I	TRANSPORT, STORAGE, COMMUNICATIONS	7041	29	1594	648	7057	12979	2944	5204	6438	1033	5329	2391	9767	18025	6486	5870	4461	6702	10315	11976	3924	2466	31	702	5155	13570	152135
J	FINANCIAL INTERMEDIATION	1270	18	207	78	1296	1431	209	638	965	133	1289	565	481	2336	1106	2202	888	643	2370	1471	6957	0	3371	22818	2412	810	55965
K+MS	REAL ESTATE, RENTING AND BUSINESS SERVICES	1433	0	1926	1709	12088	4117	736	2923	5728	333	14459	4566	3390	10184	8275	16032	5167	5288	27376	35785	16248	0	22583	1948	300798	38243	541337
NMS	NON-MARKET SERVICES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	PRODUCTS AND SERVICES - TOTAL	107172	327	5780	3276	111429	50887	6835	33551	40347	2978	48286	25154	29670	91736	40078	45699	36781	31970	66963	192013	34360	46935	51656	29240	389255	119175	1641551
	PRODUCTION IN TERMS OF MANUFACTURE	223941	686	24565	9839	225553	141894	24723	63199	100013	11997	163725	72294	67417	227405	118810	128596	120864	91444	126664	309518	247985	117593	244728	69959	818197	479533	4231140
	INDIRECT TAXES ON DOMESTIC PRODUCTION	2879	12	22	2	37716	4475	1630	362	3282	13928	3334	2080	2992	2470	880	1694	555	2132	9927	7655	11235	4269	5315	5653	29247	0	153746
	MARKET VALUE OF DOMESTIC PRODUCTION	226821	698	24587	9841	263269	146370	26353	63561	103295	25925	167059	74374	70409	229874	119689	130289	121418	93576	136591	317173	259220	121862	250043	75611	847444	479533	4384886

	A	B	CA	CB	DA	DB	DC	DD	DE	DF	DG	DH	DI	DJ	DK	DL	DM	DN	E	F	G	H	I	J	K+MS	NMS	skupaj
D - domestic intermediary consumption	107172	327	5780	3276	111429	50887	6835	33551	40347	2978	48286	25154	29670	91736	40078	45699	36781	31970	66963	192013	34360	46935	51656	29240	389255	119175	1641551
MN - net value of intermediary import	26729	12	368	1261	35156	38600	8876	12480	34378	8559	55901	21179	17847	66780	46107	34616	56945	24597	10477	30293	22563	2157	43320	2619	90429	59840	752089
MT - taxes based on intermediary import	825	3	581	218	1987	1347	48	321	1637	919	5719	1910	1430	5068	2227	3504	2898	296	0	0	0	0	0	0	0	0	30937
M - gross value of intermediary import	27554	15	949	1479	37143	39947	8924	12801	36015	9478	61620	23089	19277	71848	48334	38120	59843	24893	10477	30293	22563	2157	43320	2619	90429	59840	783026
WN - net wages	37859	140	8760	2211	27322	24833	4445	7864	10435	212	19270	10195	8051	28040	14053	20793	10172	15771	14991	39479	70205	27827	52709	3543	102913	84252	646347
WT - taxes based on wages	30602	114	7081	1787	22085	20073	3593	6356	8434	172	15576	8241	6508	22665	11359	16808	8222	12748	12118	31912	56748	22493	42606	2864	83186	68103	522454
W - gross wages	68462	254	15840	3998	49407	44905	8038	14220	18869	384	34846	18437	14559	50705	25413	37601	18394	28520	27109	71391	126953	50321	95315	6407	186099	152355	1168801
PC - total costs	203187	595	22569	8753	197979	135738	23796	60572	95231	12840	144752	66679	63505	214289	113824	121421	115019	85383	104549	293697	183876	99413	190291	38267	665783	331369	3593378
SD - depreciation	18147	91	1996	658	39218	8730	2330	2247	5072	9011	11290	6101	4646	13301	4809	6122	5221	5476	29369	15604	32054	15123	43569	4469	97638	79634	533351
SP - gross profit	5486	12	21	430	26072	1902	228	742	2993	4074	11017	1594	2258	2285	1056	2747	1178	2717	2673	7872	43291	7326	16183	32875	84023	68530	358913
ST - tax on profit	388	1	0	21	2812	115	10	48	334	0	1561	157	158	229	85	347	31	257	27	700	5706	1019	1798	650	8401	8401	34903
SN - net profit	5098	11	21	409	23260	1787	218	694	2659	4074	9456	1437	2101	2056	971	2400	1147	2460	2646	7172	37585	6307	14385	32225	75623	60129	324010
S - gross surples	23633	103	2017	1088	65290	10632	2557	2989	8064	13085	22307	7695	6904	15585	5865	8869	6399	8193	32042	23476	75345	22449	59752	37345	181661	148163	892264
V -value of production	226821	698	24587	9841	263269	146370	26353	63561	103295	25925	167059	74374	70409	229874	119689	130289	121418	93576	136591	317173	259220	121862	250043	75611	847444	479533	4384886
FN -net final import	14264	1345	6185	265	57475	22563	5382	412	7466	37698	18062	1642	1919	22768	76443	66905	128662	20430	2305	0	0	0	18765	0	0	130	511085
FT -taxes based on net final import	2697	18	600	11	7208	3121	1223	69	580	779	896	419	473	1484	4831	3777	26274	2737	53	0	0	0	0	0	0	0	57250
F - gross final import	16961	1363	6785	276	64683	25685	6605	481	8046	38477	18958	2061	2392	24251	81275	70683	154936	23167	2358	0	0	0	18765	0	0	130	568335
XN -net export	8792	95	69	899	34421	91789	13694	41786	55286	1064	105259	34493	26631	108161	104675	98113	117090	41614	12881	15988	19733	0	61476	1292	12433	901	1008633
XG - export subsidies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
X - gross export	8792	95	69	899	34421	91789	13694	41786	55286	1064	105259	34493	26631	108161	104675	98113	117090	41614	12881	15988	19733	0	61476	1292	12433	901	1008633
CN - net domestic sales	232110	1954	31281	9216	255815	75790	17634	21895	52773	49410	77424	39862	43178	143495	95409	101165	158710	72997	116141	293530	228252	117593	202017	68666	805764	478762	3790842
CT - domestic sales based taxes	2879	12	22	2	37716	4475	1630	362	3282	13928	3334	2080	2992	2470	880	1694	555	2132	9927	7655	11235	4269	5315	5653	29247	0	153746
C - gross domestic sales	234989	1966	31303	9218	293531	80265	19264	22257	56055	63338	80758	41942	46170	145965	96289	102859	159265	75129	126068	301185	239487	121862	207332	74319	835011	478762	3944588
GG - subsidies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MTr - rate of import tax on intermediary import	0,0309	0,2200	1,5799	0,1728	0,0565	0,0349	0,0054	0,0258	0,0476	0,1074	0,1023	0,0902	0,0801	0,0759	0,0483	0,1012	0,0509	0,0120	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0411
WTr - rate of tax on wages	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083	0,8083
SDr - rate of depreciation																											
STr - rate of tax on profits	0,0707	0,0782	0,0003	0,0494	0,1079	0,0604	0,0444	0,0643	0,1116	0,0000	0,1417	0,0983	0,0698	0,1002	0,0807	0,1264	0,0266	0,0946	0,0102	0,0889	0,1318	0,1391	0,1111	0,0198	0,1000	0,1226	0,0972
FTr - rate of import tax on finale import	0,1891	0,0131	0,0970	0,0419	0,1254	0,1383	0,2272	0,1672	0,0777	0,0207	0,0496	0,2553	0,2467	0,0652	0,0632	0,0565	0,2042	0,1340	0,0230	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,1120
XGr - export subsidies	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000	0,0000
CTr - rate of tax on sales	0,0124	0,0061	0,0007	0,0002	0,1474	0,0590	0,0924	0,0165	0,0622	0,2819	0,0431	0,0522	0,0693	0,0172	0,0092	0,0167	0,0035	0,0292	0,0855	0,0261	0,0492	0,0363	0,0263	0,0823	0,0363	0,0000	0,0406

Appendix 4: Function coefficients

Table A4.1: Function coefficients of production

Sector:	A	B	CA	CB	DA	DB	DC	DD	DE
K0Vq	7.39 (1.50)	14.77 (0.30)	-21.22 (-2.05)	17.84 (1.09)	9.15 (1.24)	-10.98 (-1.65)	-6.68 (-0.97)	-5.10 (-0.63)	-8.76 (-1.17)
KXqVq	0.03 (0.96)	0.03 (1.63)	0.003 (0.44)	0.11 (1.25)	-0.01 (-0.46)	-0,0001 (-0.07)	0.29 (4.31)	0.06 (1.39)	0.15 (1.19)
KWqVq(-1)	-6.43 (-1.30)	-13.60 (-0.28)	22.22 (2.15)	-16.91 (-1.03)	-8.10 (-1.10)	11.98 (1.80)	7.34 (1.07)	6.06 (0.75)	9.65 (1.28)
R^2	0.05	0.06	0.10	0.06	0.03	0.07	0.33	0.07	0.06
F	1.11	1.51	2.37	1.31	0.63	1.61	10.93	1.56	1.52
DW	2.53	2.03	1.55	0.91	1.19	1.85	1.37	1.37	0.67

Sector:	DF	DG	DH	DI	DJ	DK	DL	DM	DN
K0Vq	2.50 (0.06)	-4.83 (-0.58)	-18.62 (-1.61)	9.54 (0.76)	-4.73 (-0.94)	-16.17 (-1.72)	-17.53 (-1.61)	-9.76 (-0.67)	-5.43 (-0.72)
KXqVq	-0.05 (-0.74)	0.13 (1.43)	0.20 (2.90)	0.02 (0.47)	0.23 (3.28)	0.32 (2.72)	-0.02 (-1.82)	0.06 (1.17)	0.03 (2.78)
KWqVq(-1)	-1.42 (-0.04)	5.76 (0.69)	19.46 (1.68)	-8.52 (-0.68)	5.51 (1.09)	16.89 (1.79)	18.68 (1.71)	10.70 (0.74)	6.47 (0.85)
R^2	0.01	0.05	0.23	0.01	0.23	0.21	0.12	0.05	0.15
F	0.28	1.27	6.57	0.30	6.67	5.88	3.01	1.14	3.94
DW	0.26	0.81	2.46	0.48	1.57	1.10	1.51	1.88	1.47

Sector:	E	F	G	H	I
K0Vq	3.36 (0.38)	-4.23 (-0.93)	9.98 (2.17)	31.00 (2.11)	-5.10 (-0.65)
KXqVq	0.004 (3.39)	0.05 (3.26)	-0.0001 (-0.01)	-0.002 (-0.23)	-0.01 (-0.40)
KWqVq(-1)	-2.35 (-0.27)	5.18 (1.13)	-9.08 (-1.98)	-29.99 (-2.04)	6.11 (0.78)
R^2	0.21	0.21	0.08	0.09	0.02
F	5.76	5.79	1.95	2.09	0.41
DW	1.14	1.90	1.06	1.25	2.31

Table A4.2: Function coefficients of export

Sector:	A	B	CA	CB	DA	DB	DC	DD	DE
K0Xq	-0.01	0.56	0.19	0.05	0.07	0.16	0.01	0.04	-0.01
	(-0.53)	(2.99)	(1.68)	(1.91)	(2.05)	(1.02)	(0.97)	(2.22)	(-0.88)
KCNpXq	-0.46	0.73	0.27	-0.40	0.06	0.61	-0.80	-0.83	-0.59
	(-2.78)	(2.10)	(1.88)	(-1.55)	(0.48)	(4.33)	(-4.01)	(-5.26)	(-3.14)
KOECDXq	3.13	-17.12	2.03	0.90	-0.92	8.59	1.29	3.62	1.05
	(4.00)	(-2.78)	(0.58)	(1.06)	(-0.73)	(2.01)	(3.16)	(5.39)	(4.52)
R^2	0.47	0.27	0.08	0.07	0.01	0.33	0.34	0.52	0.37
F	18.70	4.52	1.93	1.65	0.31	10.31	10.75	22.31	12.21
DW	0.86	1.67	1.00	1.29	1.28	1.83	2.04	0.96	1.92

Sector:	DF	DG	DH	DI	DJ	DK	DL	DM	DN
K0Xq	0.13	0.01	0.02	0.06	0.01	-0.002	0.20	0.06	0.13
	(1.79)	(1.60)	(2,03)	(1.58)	(1.24)	(-0.30)	(2.38)	(1.53)	(1.71)
KCNpXq	-0.11	-0.30	-0.19	-0.23	-0.43	-0.71	0.28	0.28	0.27
	(-0.26)	(-3.48)	(-1.92)	(-1.48)	(-3.38)	(-2.16)	(2.34)	(1.98)	(2.15)
KOECDXq	1.10	1.59	2.95	4.44	0.67	1.96	-5.19	3.75	4.10
	(0.48)	(5.57)	(3.52)	(3.46)	(2.40)	(8.18)	(-1.86)	(3.17)	(1.64)
R^2	0.01	0.51	0.33	0.35	0.26	0.61	0.15	0.25	0.16
F	0.14	22.00	10.56	11.48	7.46	33.53	3.65	6.97	4.10
DW	0.95	0.99	1.18	1.20	1.11	1.63	1.34	1.33	1.38

Sector:	E	F	G	H	I	J
K0Xq	0.63	0.14	0.14	0.41	0.21	0.59
	(1.47)	(3.47)	(1.70)	(3.00)	(3.43)	(1.80)
KCNpXq	0.02	-0.58	0.28	0.23	-0.08	0.16
	(0.13)	(-3.72)	(1.93)	(1.00)	(-1.49)	(0.88)
KOECDXq	1.34	1.51	5.06	4.53	-0.37	2.13
	(0.18)	(1.15)	(1.92)	(1.23)	(-0.21)	(0.27)
R^2	0.001	0.25	0.14	0.06	0.05	0.04
F	0.03	7.04	3.32	1.26	1.14	0.38
DW	0.82	0.63	1.31	0.88	1.22	0.50

Table A4.3: Function coefficients of import

Sector:	A	B	CA	CB	DA	DB	DC	DD	DE
K0IMq	0.08 (3.35)	0.13 (4.09)	0.92 (6.46)	0.12 (4.24)	0.12 (2.26)	0.47 (3.04)	0.03 (2.91)	0.06 (4.48)	0.01 (0.95)
KCpIMq	-1.25 (-6.23)	-0.60 (-3.65)	0.26 (0.31)	-0.80 (-6.52)	-0.71 (-5.45)	1.36 (0.89)	-0.34 (-2.42)	-1.20 (-9.37)	-0.12 (-1.21)
KVqIMq(-1)	-0.61 (-0.97)	0.05 (0.63)	1.42 (1.27)	0.08 (0.63)	0.07 (1.79)	0.06 (0.03)	0.40 (3.57)	0.43 (3.05)	0.13 (1.52)
R^2	0.48	0.26	0.04	0.53	0.58	0.02	0.26	0.68	0.07
F	19.67	7.33	0.83	23.33	14.60	0.41	7.36	44.95	1.63
DW	0.59	0.91	1.29	1.38	1.56	0.71	1.81	1.37	1.32

Sector:	DF	DG	DH	DI	DJ	DK	DL	DM	DN
K0IMq	0.08 (1.59)	0.11 (6.22)	0.01 (0.23)	0.04 (2.70)	0.04 (3.32)	0.02 (1.91)	0.02 (1.91)	0.15 (3.13)	0.02 (1.42)
KCpIMq	-1.81 (-3.02)	-0.97 (-6.48)	-0.74 (-1.95)	-1.09 (-6.73)	-1.41 (-5.88)	-0.57 (-2.63)	-0.57 (-2.63)	-0.64 (-1.22)	-1.13 (-7.17)
KVqIMq(-1)	-0.20 (-2.69)	-0.10 (-0.73)	0.68 (5.12)	-0.03 (-0.37)	0.49 (2.45)	0.13 (1.41)	0.13 (1.41)	-0.59 (-1.77)	0.39 (2.68)
R^2	0.24	0.50	0.39	0.53	0.51	0.18	0.18	0.11	0.57
F	6.58	21.02	13.68	23.24	21.91	4.68	4.68	2.71	28.06
DW	0.95	1.25	1.61	0.85	1.11	1.64	1.64	1.49	1.92

Sector:	E	F	G	H	I
K0IMq	0.50 (3.09)	0.11 (4.97)	0.04 (1.39)	1.67 (4.06)	0.30 (5.48)
KCpIMq	-0.19 (-1.07)	-0.59 (-4.02)	-0.68 (-3.96)	0.25 (1.74)	-0.55 (-3.72)
KVqIMq(-1)	-0.02 (-0.02)	1.79 (2.18)	-0.24 (-1.01)	-1.46 (-0.99)	-1.30 (-1.38)
R^2	0.03	0.65	0.27	0.09	0.26
F	0.58	38.36	7.89	2.18	7.36
DW	0.80	1.11	1.33	1.76	0.82

Table A4.4: Function coefficients of employment

Sector:	A	B	CA	CB	DA	DB	DC	DD	DE
K0Wq	2.71 (1.58)	-6.34 (-1.79)	0.55 (1.60)	0.09 (0.35)	0.58 (1.75)	-0.77 (-1.09)	-0.91 (-1.28)	3.22 (3.93)	-0.57 (-0.93)
KVWq	-0.02 (-0.68)	0.01 (0.06)	0.01 (0.56)	-0.01 (-1.28)	-0.01 (-0.48)	0.02 (0.25)	0.01 (0.24)	0.03 (2.00)	0.01 (0.52)
KPWq	0.09 (2.09)	0.05 (0.83)	-0.01 (-0.59)	0.02 (1.26)	0.02 (1.53)	-0.01 (-0.79)	0.02 (0.62)	0.01 (0.63)	0.02 (0.79)
KEWq(-1)	-1.79 (-1.04)	7.29 (2.04)	0.46 (1.36)	0.89 (3.14)	0.41 (1.23)	1.77 (2.53)	1.89 (2.68)	-2.26 (-2.76)	1.55 (2.54)
R^2	0.16	0.16	0.07	0.22	0.09	0.17	0.16	0.28	0.15
F	2.28	2.37	0.98	3.57	1.21	2.54	2.44	4.74	2.17
DW	0.46	0.31	0.96	0.60	0.75	0.58	0.62	0.75	1.14

Sector:	DF	DG	DH	DI	DJ	DK	DL	DM	DN
K0Wq	1.44 (1.47)	-0.33 (-0.33)	1.69 (3.06)	-1.68 (-3.18)	0.60 (0.57)	-3.10 (-2.65)	-1.94 (-2.79)	-0.51 (-0.33)	-1.58 (-1.94)
KVWq	-0.01 (-5.27)	0.03 (3.26)	0.01 (0.27)	-0.02 (-2.07)	-0.02 (-1.42)	-0.01 (-1.01)	0.01 (2.59)	0.01 (1.10)	-0.01 (-1.94)
KPWq	0.02 (0.67)	0.01 (0.01)	0.01 (0.27)	0.02 (1.10)	0.11 (2.28)	0.06 (1.89)	0.01 (0.20)	0.10 (2.07)	-0.05 (-1.43)
KEWq(-1)	-0.45 (-0.46)	1.31 (1.30)	-0.70 (-1.26)	2.67 (5.06)	0.29 (0.28)	4.05 (3.47)	2.92 (4.22)	1.40 (0.92)	2.53 (3.12)
R^2	0.45	0.28	0.05	0.42	0.14	0.29	0.39	0.13	0.27
F	10.02	4.72	0.61	9.06	2.09	5.07	7.74	1.90	4.59
DW	0.80	0.57	0.42	1.45	0.60	0.63	0.56	0.63	0.71

Sector:	E	F	G	H	I
K0Wq	0.71 (1.63)	1.22 (1.46)	-1.07 (-1.16)	-0.77 (-0.59)	-0.39 (-0.55)
KVWq	-0.01 (-1.25)	0.01 (0.72)	-0.01 (-0.29)	0.01 (1.54)	0.01 (0.06)
KPWq	0.01 (0.21)	0.05 (1.97)	0.02 (0.46)	0.01 (0.16)	0.05 (2.04)
KEWq(-1)	0.30 (0.71)	-0.29 (-0.34)	2.06 (2.23)	1.75 (1.36)	1.34 (1.91)
R^2	0.06	0.16	0.13	0.20	0.19
F	0.85	2.39	1.80	3.06	2.86
DW	1.07	0.64	0.28	0.62	2.86

Table A4.5: Function coefficients of domestic market prices

Sector:	A	B	CA	CB	DA	DB	DC	DD	DE
K0Cp	0.36	0.48	-0.18	0.64	0.36	0.41	0.62	0.46	0.31
	(1.27)	(0.50)	(-0.41)	(1.97)	(1.37)	(1.63)	(3.71)	(2.61)	(0.68)
KPPCp	0.65	0.10	1.22	0.05	0.64	0.54	0.36	0.55	0.66
	(2.14)	(0.11)	(2.59)	(0.15)	(2.35)	(2.13)	(2.11)	(3.01)	(1.35)
KFCp	0.01	-0.0001	-0.001	0.002	0.01	-0.0002	0.01	-0.01	0.00001
	(0.87)	(-1.22)	(-0.32)	(1.07)	(1.41)	(-0.03)	(1.19)	(-0.97)	(0.12)
KPMVqCp	-0.04	0.42	-0.04	0.31	-0.003	0.07	0.02	-0.02	0.01
	(-0.48)	(1.00)	-(0.32)	(2.56)	(-0.04)	(0.99)	(0.52)	(-0.30)	(0.08)
KPCCp	0.03	-0.001	0.002	0.001	-0.005	-0.01	-0.003	0.01	-0.001
	(1.67)	(-0.14)	(0.40)	(0.09)	(-0.43)	(-1.21)	(-0.58)	(1.38)	(-0.40)
KEWCp	-0.01	0.02	0.01	0.005	0.0002	-0.001	-0.003	0.02	-0.003
	(-1.02)	(0.92)	(0.72)	(0.45)	(0.02)	(-0.32)	(-0.50)	(1.83)	(-0.12)
KESCp	0.01	-0.02	-0.004	-0.01	0.001	0.001	-0.002	-0.01	0.02
	(0.78)	(-0.94)	(-0.58)	(-0.45)	(0.08)	(0.24)	(-0.35)	(-0.75)	(0.92)
R^2	0.19	0.65	0.17	0.22	0.17	0.18	0.29	0.32	0.12
F	1.53	0.91	1.38	1.58	1.35	1.49	2.75	3.14	0.94
DW	1.66	2.38	1.93	2.25	1.60	1.79	1.88	1.85	1.71

Sector:	DF	DG	DH	DI	DJ	DK	DL	DM	DN
K0Cp	0.30	0.36	0.24	0.76	0.35	0.65	0.62	-0.01	0.63
	(0.76)	(2.11)	(1.44)	(4.44)	(1.36)	(4.73)	(6.41)	(-0.03)	(3.66)
KPPCp	0.76	0.56	0.72	0.18	0.62	0.35	0.38	1.05	0.37
	(1.88)	(3.13)	(4.18)	(0.99)	(2.33)	(2.48)	(3.72)	(4.47)	(2.08)
KFCp	0.002	0.01	0.001	0.003	0.02	0.003	-0.01	-0.0001	0.02
	(0.61)	(0.79)	(0.36)	(1.15)	(1.52)	(0.30)	(-1.64)	(-0.22)	(2.95)
KPMVqCp	-0.06	0.08	0.04	0.06	0.02	0.01	0.01	-0.05	-0.02
	(-0.52)	(1.50)	(0.85)	(1.16)	(0.28)	(0.28)	(0.28)	(-0.76)	(-0.37)
KPCCp	0.0003	-0.001	-0.01	0.003	-0.01	-0.01	-0.0001	0.004	0.01
	(0.24)	(-0.13)	(-1.42)	(0.45)	(-0.81)	(-1.27)	(-0.26)	(1.27)	(1.21)
KEWCp	0.002	0.01	0.004	0.002	0.004	0.01	-0.0003	-0.0004	0.001
	(0.68)	(1.35)	(0.46)	(0.35)	(0.26)	(0.86)	(-0.12)	(-0.06)	(0.49)
KESCp	-0.002	-0.01	-0.007	-0.01	-0.01	-0.01	0.001	0.001	-0.002
	(-0.64)	-1.40	(-0.93)	(-1.04)	(-0.70)	(-1.02)	(0.22)	(0.11)	(-0.76)
R^2	0.11	0.32	0.39	0.15	0.22	0.27	0.33	0.36	0.31
F	0.82	3.12	4.21	1.15	1.84	2.47	3.26	3.73	2.93
DW	1.80	2.34	2.42	2.32	1.90	1.92	2.33	1.65	1.64

Sector:	E	F	G	H	I
K0Cp	-0.20	0.82	0.16	0.41	0.54
	(-0.18)	(9.05)	(0.95)	(2.83)	(2.71)
KPPCp	1.26	0.19	0.82	0.55	0.45
	(1.12)	(2.04)	(4.43)	(3.75)	(2.21)
KFCp	-0.01	0.001	0.003	-0.0003	0.001
	(-1.22)	(0.84)	(0.67)	(-0.27)	(0.53)
KPMVqCp	0.05	0.01	0.01	0.04	0.03
	(0.15)	(0.26)	(0.32)	(1.03)	(0.47)
KPCCp	-0.10	-0.01	0.01	0.01	-0.01
	(-2.19)	(-2.01)	(0.80)	(1.69)	(-0.74)
KEWCp	0.0004	0.002	-0.003	-0.003	0.001
	(0.19)	(1.05)	(-0.82)	(-1.29)	(0.26)
KESCp	-0.001	-0.002	0.003	0.002	-0.001
	(-0.26)	(-1.26)	(0.91)	(1.22)	(-0.34)
R^2	0.17	0.27	0.57	0.41	0.15
F	1.37	2.50	8.72	4.70	1.18
DW	1.70	1.89	2.74	1.66	2.43

Appendix 5: Quotients of annual changes according to the three scenarios

Table A5.1: The "Realistic" scenario

		Prices	Production	Export	Intermediary	Final Import	Employment	Costs
A	AGRICULTURE, HUNTING AND FORESTRY	**1,1511**	**1,0022**	**0,9351**	**1,2987**	**1,2987**	**0,9651**	**1,0203**
B	FISHING	**1,1599**	**1,0095**	**1,5174**	**1,1175**	**1,1175**	**0,9867**	**0,8879**
CA	EXTRACTION OF ENERGY PRODUCTS	**1,1538**	**0,9681**	**1,0165**	**1,0149**	**1,0149**	**0,9961**	**0,9948**
CB	EXTRACTION OF MINERALS AND STONES	**1,0506**	**1,0479**	**1,0430**	**1,5399**	**1,5399**	**0,9837**	**1,1089**
DA	MANUFACTURE OF FOOD PRODUCTS AND BEVERAGES	**1,1218**	**1,0138**	**1,0132**	**1,5355**	**1,5355**	**0,9977**	**1,1130**
DB	MANUFACTURE OF TEXTILE PRODUCTS	**1,0254**	**0,9900**	**1,2357**	**1,0999**	**1,0999**	**0,9833**	**1,1023**
DC	MANUFACTURE OF LEATHER AND FUR	**1,0720**	**0,9174**	**1,0481**	**1,1068**	**1,1068**	**0,9793**	**1,1638**
DD	MANUFACTURE OF FURNITURE AND OTHER WOODEN PRODUCT	**1,1311**	**1,0102**	**1,1485**	**1,4384**	**1,4384**	**0,9852**	**1,1254**
DE	MANUFACTURE OF PAPER AND PAPER PRODUCTS	**1,0994**	**1,0172**	**0,9729**	**1,0079**	**1,0079**	**0,9928**	**1,0078**
DF	MANUFACTURE OF REFINED PETROLEUM PRODUCTS	**1,4606**	**1,0036**	**1,0103**	**1,0683**	**1,0683**	**0,9559**	**0,8824**
DG	MANUFACTURE OF BASIC CHEMICALS AND CHEMICALS PRODUC	**0,9957**	**1,0338**	**1,0881**	**1,4390**	**1,4390**	**0,9984**	**1,2364**
DH	MANUFACTURE OF RUBBER PRODUCTS	**1,0322**	**1,0495**	**1,0710**	**1,0139**	**1,0139**	**0,9986**	**1,0302**
DI	MANUFACTURE OF NON-FERROUS MINERALS	**1,0564**	**1,0081**	**1,0949**	**1,1446**	**1,1446**	**0,9889**	**1,0966**
DJ	MANUFACTURE OF METAL PRODUCTS	**1,0619**	**0,9910**	**1,0308**	**1,1606**	**1,1606**	**0,9680**	**1,1104**
DK	MANUFACTURE OF MACHINERY AND EQUIPMENT	**1,0795**	**1,0387**	**0,9844**	**1,0538**	**1,0538**	**0,9618**	**1,0161**
DL	MANUFACTURE OF ELECTRICAL AND OPTICAL EQUIPMENT	**1,0775**	**1,0178**	**1,0526**	**1,0568**	**1,0568**	**0,9692**	**1,0273**
DM	MANUFACTURE OF TRANSPORT EQUIPMENT	**1,1319**	**0,9926**	**1,1810**	**1,0253**	**1,0253**	**0,9699**	**0,9852**
DN	OTHER PRODUCTS OF MANUFACTURING	**1,0965**	**1,0444**	**1,0443**	**1,1461**	**1,1461**	**0,9685**	**1,0281**
E	ELECTRICITY, GAS AND WATER SUPPLY	**1,1929**	**1,0260**	**1,0103**	**1,1754**	**1,1754**	**1,0001**	**0,9504**
F	CONSTRUCTION	**1,1030**	**0,9841**	**1,1117**	**1,7837**	**1,7837**	**0,9895**	**1,1585**
G	WHOLESALE; RETAIL; CERTAIN REPAIR	**1,0755**	**0,9930**	**1,0331**	**1,1323**	**1,1323**	**0,9958**	**1,0646**
H	HOTELS AND RESTAURANTS	**1,0979**	**1,0530**	**1,0161**	**1,1891**	**1,1891**	**0,9922**	**1,0133**
I	TRANSPORT, STORAGE, COMMUNICATIONS	**1,1199**	**1,0000**	**1,1381**	**1,2832**	**1,2832**	**0,9740**	**1,0623**
J	FINANCIAL INTERMEDIATION	**1,1304**	**1,0000**	**1,0089**	**1,0000**	**1,0000**	**1,0000**	**1,0133**
K+MS	REAL ESTATE, RENTING AND BUSINESS SERVICES	**1,1181**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0110**
NMS	NON-MARKET SERVICES	**1,1238**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0118**
TOTAL	PRODUCTS AND SERVICES - TOTAL	**1,1163**	**1,0054**	**1,0818**	**1,1721**	**1,1425**	**0,9885**	**1,0535**

Table A5.2: The "Pessimistic" scenario

		Prices	Production	Export	Intermediary	Final Import	Employment	Costs
A	AGRICULTURE, HUNTING AND FORESTRY	**1,1709**	**1,0025**	**0,9352**	**1,3092**	**1,3092**	**0,9622**	**1,0568**
B	FISHING	**1,1775**	**1,0096**	**1,5189**	**1,1194**	**1,1194**	**0,9834**	**0,9678**
CA	EXTRACTION OF ENERGY PRODUCTS	**1,1925**	**0,9657**	**1,0165**	**1,0148**	**1,0148**	**0,9962**	**1,0212**
CB	EXTRACTION OF MINERALS AND STONES	**1,0609**	**1,0489**	**1,0430**	**1,5526**	**1,5526**	**0,9828**	**1,1486**
DA	MANUFACTURE OF FOOD PRODUCTS AND BEVERAGES	**1,1419**	**1,0141**	**1,0132**	**1,5482**	**1,5482**	**0,9973**	**1,1565**
DB	MANUFACTURE OF TEXTILE PRODUCTS	**1,0416**	**0,9891**	**1,2362**	**1,0968**	**1,0968**	**0,9834**	**1,1214**
DC	MANUFACTURE OF LEATHER AND FUR	**1,0836**	**0,9165**	**1,0480**	**1,1077**	**1,1077**	**0,9784**	**1,1976**
DD	MANUFACTURE OF FURNITURE AND OTHER WOODEN PRODUCT	**1,1493**	**1,0098**	**1,1481**	**1,4541**	**1,4541**	**0,9850**	**1,1436**
DE	MANUFACTURE OF PAPER AND PAPER PRODUCTS	**1,1175**	**1,0165**	**0,9729**	**1,0079**	**1,0079**	**0,9920**	**1,0272**
DF	MANUFACTURE OF REFINED PETROLEUM PRODUCTS	**1,6779**	**1,0037**	**1,0103**	**1,0716**	**1,0716**	**0,9549**	**0,9401**
DG	MANUFACTURE OF BASIC CHEMICALS AND CHEMICALS PRODUC	**1,0147**	**1,0335**	**1,0881**	**1,4516**	**1,4516**	**0,9980**	**1,2601**
DH	MANUFACTURE OF RUBBER PRODUCTS	**1,0542**	**1,0444**	**1,0710**	**1,0142**	**1,0142**	**0,9986**	**1,0520**
DI	MANUFACTURE OF NON-FERROUS MINERALS	**1,0642**	**1,0082**	**1,0948**	**1,1488**	**1,1488**	**0,9862**	**1,1266**
DJ	MANUFACTURE OF METAL PRODUCTS	**1,0821**	**0,9896**	**1,0308**	**1,1667**	**1,1667**	**0,9643**	**1,1351**
DK	MANUFACTURE OF MACHINERY AND EQUIPMENT	**1,0907**	**1,0346**	**0,9844**	**1,0545**	**1,0545**	**0,9563**	**1,0511**
DL	MANUFACTURE OF ELECTRICAL AND OPTICAL EQUIPMENT	**1,0885**	**1,0175**	**1,0526**	**1,0576**	**1,0576**	**0,9676**	**1,0585**
DM	MANUFACTURE OF TRANSPORT EQUIPMENT	**1,1637**	**0,9920**	**1,1811**	**1,0257**	**1,0257**	**0,9668**	**1,0108**
DN	OTHER PRODUCTS OF MANUFACTURING	**1,1089**	**1,0432**	**1,0444**	**1,1505**	**1,1505**	**0,9645**	**1,0617**
E	ELECTRICITY, GAS AND WATER SUPPLY	**1,2922**	**1,0265**	**1,0103**	**1,1763**	**1,1763**	**1,0000**	**0,9276**
F	CONSTRUCTION	**1,1086**	**0,9829**	**1,1115**	**1,7989**	**1,7989**	**0,9876**	**1,2086**
G	WHOLESALE; RETAIL; CERTAIN REPAIR	**1,1004**	**0,9931**	**1,0331**	**1,1346**	**1,1346**	**0,9951**	**1,0934**
H	HOTELS AND RESTAURANTS	**1,1156**	**1,0559**	**1,0161**	**1,1879**	**1,1879**	**0,9916**	**1,0479**
I	TRANSPORT, STORAGE, COMMUNICATIONS	**1,1343**	**0,9998**	**1,1381**	**1,2876**	**1,2876**	**0,9717**	**1,0952**
J	FINANCIAL INTERMEDIATION	**1,1865**	**1,0000**	**1,0089**	**1,0000**	**1,0000**	**1,0000**	**1,0177**
K+MS	REAL ESTATE, RENTING AND BUSINESS SERVICES	**1,1592**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0139**
NMS	NON-MARKET SERVICES	**1,1651**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0150**
TOTAL	PRODUCTS AND SERVICES - TOTAL	**1,1490**	**1,0051**	**1,0818**	**1,1762**	**1,1458**	**0,9873**	**1,0746**

Table A5.3: The "Restrictive" scenario

		Prices	Production	Export	Intermediary	Final Import	Employment	Costs
A	AGRICULTURE, HUNTING AND FORESTRY	**1,1342**	**1,0018**	**0,9350**	**1,2875**	**1,2875**	**0,9690**	**0,9886**
B	FISHING	**1,0879**	**1,0095**	**1,5175**	**1,1155**	**1,1155**	**0,9910**	**0,9159**
CA	EXTRACTION OF ENERGY PRODUCTS	**1,1171**	**0,9711**	**1,0165**	**1,0150**	**1,0150**	**0,9959**	**0,9754**
CB	EXTRACTION OF MINERALS AND STONES	**1,0033**	**1,0465**	**1,0430**	**1,5260**	**1,5260**	**0,9848**	**1,1100**
DA	MANUFACTURE OF FOOD PRODUCTS AND BEVERAGES	**1,0998**	**1,0135**	**1,0132**	**1,5217**	**1,5217**	**0,9983**	**1,0762**
DB	MANUFACTURE OF TEXTILE PRODUCTS	**0,9997**	**0,9912**	**1,2353**	**1,1037**	**1,1037**	**0,9831**	**1,0948**
DC	MANUFACTURE OF LEATHER AND FUR	**1,0561**	**0,9185**	**1,0483**	**1,1058**	**1,1058**	**0,9804**	**1,1384**
DD	MANUFACTURE OF FURNITURE AND OTHER WOODEN PRODUCT	**1,1134**	**1,0108**	**1,1490**	**1,4218**	**1,4218**	**0,9855**	**1,1147**
DE	MANUFACTURE OF PAPER AND PAPER PRODUCTS	**1,0766**	**1,0181**	**0,9728**	**1,0078**	**1,0078**	**0,9938**	**0,9947**
DF	MANUFACTURE OF REFINED PETROLEUM PRODUCTS	**1,1658**	**1,0036**	**1,0103**	**1,0649**	**1,0649**	**0,9571**	**0,8137**
DG	MANUFACTURE OF BASIC CHEMICALS AND CHEMICALS PRODUC	**0,9668**	**1,0342**	**1,0882**	**1,4253**	**1,4253**	**0,9990**	**1,2215**
DH	MANUFACTURE OF RUBBER PRODUCTS	**1,0032**	**1,0560**	**1,0711**	**1,0136**	**1,0136**	**0,9986**	**1,0157**
DI	MANUFACTURE OF NON-FERROUS MINERALS	**1,0409**	**1,0079**	**1,0950**	**1,1401**	**1,1401**	**0,9925**	**1,0766**
DJ	MANUFACTURE OF METAL PRODUCTS	**1,0373**	**0,9928**	**1,0309**	**1,1541**	**1,1541**	**0,9729**	**1,0930**
DK	MANUFACTURE OF MACHINERY AND EQUIPMENT	**1,0659**	**1,0438**	**0,9844**	**1,0529**	**1,0529**	**0,9691**	**0,9852**
DL	MANUFACTURE OF ELECTRICAL AND OPTICAL EQUIPMENT	**1,0641**	**1,0181**	**1,0525**	**1,0559**	**1,0559**	**0,9713**	**1,0023**
DM	MANUFACTURE OF TRANSPORT EQUIPMENT	**1,1031**	**0,9934**	**1,1809**	**1,0249**	**1,0249**	**0,9740**	**0,9570**
DN	OTHER PRODUCTS OF MANUFACTURING	**1,0851**	**1,0458**	**1,0443**	**1,1414**	**1,1414**	**0,9739**	**0,9991**
E	ELECTRICITY, GAS AND WATER SUPPLY	**1,0800**	**1,0253**	**1,0103**	**1,1745**	**1,1745**	**1,0002**	**0,9944**
F	CONSTRUCTION	**1,0957**	**0,9856**	**1,1120**	**1,7672**	**1,7672**	**0,9920**	**1,1158**
G	WHOLESALE; RETAIL; CERTAIN REPAIR	**1,0464**	**0,9929**	**1,0330**	**1,1297**	**1,1297**	**0,9966**	**1,0494**
H	HOTELS AND RESTAURANTS	**1,0732**	**1,0493**	**1,0161**	**1,1906**	**1,1906**	**0,9930**	**0,9946**
I	TRANSPORT, STORAGE, COMMUNICATIONS	**1,1005**	**1,0001**	**1,1382**	**1,2783**	**1,2783**	**0,9771**	**1,0400**
J	FINANCIAL INTERMEDIATION	**1,0830**	**1,0000**	**1,0089**	**1,0000**	**1,0000**	**1,0000**	**1,0090**
K+MS	REAL ESTATE, RENTING AND BUSINESS SERVICES	**1,0757**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0075**
NMS	NON-MARKET SERVICES	**1,0816**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0078**
TOTAL	PRODUCTS AND SERVICES - TOTAL	**1,0803**	**1,0058**	**1,0818**	**1,1678**	**1,1390**	**0,9900**	**1,0375**