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The Effects of Foreign Trade Liberalisation and Financial Flows between Slovenia and the EU after Accession

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Abstract

The new version of the CGE model of the Slovenian economy based on the 1998 SAM was used for simulations of the consequences of further foreign trade liberalisation after 1998 as the outcome of implementation of Free Trade Agreements and the European Agreement, adaptation of the Customs Tariff to the EU Common External Tariff for manufacturing products, adoption of the EU Common External Tariff after the accession of Slovenia to the EU, and estimated transfers between the two budgets. Results obtained show a positive net outcome of Slovenian accession to the EU in the long run. On the other hand, rational behaviour by the government will certainly moderate possible short-run negative effects and improve favourable long-run effects.

Slovenia successfully concluded accession negotiations with the EU in December 2002, along with nine other candidate countries. On financial issues, for the period 2004–06, the following main provisions were agreed. First, Slovenia's aims for the agriculture sector were fulfilled, i.e. the possibility of direct payments from the country's own budget, the same level of direct payments from 2007 on, production quotas not below the level of current production and a financially very attractive solution for rural development. Second, for regional policy and structural funds Slovenia will receive 404 million EUR, with the possibility of further regionalisation on the NUTS-2 level. Third, the EU will partially cover the costs (45% or 107 million EUR) of the construction and maintenance of the Schengen border. Fourth, regarding transfers and the net budget position, Slovenia succeeded in raising budgetary compensations from 45 million EUR in 2003 to 85 million EUR for each year of the 2004–06 period. Fifth, and finally, the Slovenian net budgetary position will remain positive in 2007–13.

These provisions should in fact demonstrate that in the financial part of negotiations Slovenia succeeded in achieving the best combination to fulfil two aims. Namely, the agreement with the EU should enable the continuation of the process of real convergence and should not worsen the budgetary position and thus cause no

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additional difficulties with the fiscal part of the Maastricht criteria. However, it is questionable whether all these very favourable arrangements reflect reality, i.e. whether all the effects of the financial package were taken into account, whether all transfers between the two budgets were estimated correctly and whether there are any other financial flows connected with accession.

In this article we will try to answer the questions above through analysis of the continued foreign trade liberalisation process, the official transfers between the two budgets and some additional financial flows and effects on the domestic budget. For one thing, we should take into account decreased budget revenues due to the complete liberalisation of trade with the EU and candidate countries as well as reduced efficiency of value added tax collection. Second, there will be additional transfers to the EU institutions and increased costs due to the preparation of the Schengen border with Croatia. A partial equilibrium analysis will then be complemented with general equilibrium simulation results in order to estimate more complex mutual effects at the aggregate and sectoral levels.

The outline of the article is as follows. First a short description of the computable general equilibrium (CGE) model is presented. Next the process of further foreign trade liberalisation is analysed, together with calculation of the average rates of import duties collected in 1998–2001 and after accession to the EU. Then the Slovenian net budgetary position is analysed, after which some of the simulation results are presented. In the final section we summarise the central findings of the article.

Description of the CGE Model

The static CGE model used (Majcen & Buehrer, 2001) is broadly based upon the model used in Buehrer (1994), augmented with data from the 1998 social accounting matrix (SAM) and parameters from the global trade analysis project (GTAP) model (Hertel, 1997). The basic structure of this model is similar to that used in many CGE models of developing countries (*cf.* Devarajan, Lewis & Robinson, 1991), previous models of Yugoslavia (Labus, 1990) and models of transition economies (Silver & Tesche, 1992).

Slovenia is treated as a small country in this model for both imports and exports. Given that the focus of this exercise is on the impact on the Slovenian economy of joining the EU, trade with the EU in this model is separated from trade with the rest of the world. Output in the model is produced from a combination of capital, labour and intermediate goods by profit-maximising enterprises. Since this is a short-run model, firms are assumed to have a fixed stock of capital and there are decreasing returns to labour. Labour markets are assumed to be subject either to a fixed wage or a fixed supply of labour, depending on the simulation. Enterprises sell their output either domestically or to the international market. Domestic output is first transformed either into domestically used goods or into aggregate exports, using a constant elasticity of transformation (CET) function and the first order condition of profit maximisation of the transformation function. Aggregate exports are then transformed into different goods for the two foreign markets through another constant elasticity of transformation function and its first order condition. Prices for all exports are fixed in foreign exchange and export demand is assumed to be perfectly elastic.

Domestic consumption is met from a cost-minimising mix of domestic and imported goods from the two regions. Aggregate imports are a cost-minimising combination of imperfectly substitutable imports from the 'Rest of the World' and from the EU. The substitution between imports from the EU and the 'Rest of the World' is modelled using constant elasticity of substitution functions. Domestically

produced and aggregate imported goods are assumed to be imperfect substitutes in consumption. In the model this is represented by equations, which are based on the Almost Ideal Demand System (AIDS; see Deaton & Muelbauer, 1980). Final domestic demand can take the form of intermediate goods, goods for household or government consumption, or goods for investment in physical capital or inventories.

Once the allocation of demand between domestic output and imports in tradable sectors is determined, the price of composite domestic sales can be calculated. Given this price, the demand of the various actors in the economy for final output can be established. Households are assumed to spend fixed value shares of their disposable income to purchase goods from each sector. These shares are derived from a Cobb–Douglas utility function. Disposable income is obtained as the difference between total household income and taxes at an estimated tax rate, interest payments, transfers, and household saving at an assumed fixed saving rate. Government demand is derived from an exogenously fixed level of real demand, allocated in fixed shares among a small number of sectors. Investment demand by sector is based on fixed shares of total investment after inventories. The last two components of final demand are increases in inventories and intermediate demand; both are proportional to the level of output.

The above description of the demand system has ignored the origin of income for each agent. Households are assumed to receive all of the income from labour not sent abroad or paid to the government as taxes. Households also receive income from remittances from the 'Rest of the World' and certain transfers. Transfers are assumed to be fixed in real terms. Since government consumption is fixed, government saving is assumed to be the difference between government revenue and consumption, taking into account interest payments, subsidies, and payments to the transfer account. Government revenue is the sum of various tax sources and transfers to the government. Closure between saving and investment is reached by defining investment as equal to saving. As a result, there is no independent investment function. Total saving is determined as a fixed share of household after-tax income, combined with government and enterprise saving. Enterprise saving is defined as a fixed fraction of after-tax and interest enterprise income. Government saving is defined as the difference between the fixed real level of government expenditure and government revenue from all taxes.

In the foreign exchange market, the exchange rate between the 'Rest of the World' and the EU is assumed fixed. Thus the exchange rates between Slovenia and the EU and the 'Rest of the World' shift proportionally. Foreign exchange market closure is obtained by assuming that the exchange rate with the EU is fixed. All inbound foreign transfers are assumed to be fixed in foreign currency. Outbound transfers are generally functions of income, though this varies from item to item. The two separate foreign exchange markets clear through changes in domestic prices and changing hard currency transfers from the 'Rest of the World' account to the EU account. The *numéraire* of the model is the exchange rate with the EU.

Many of the parameters in the model come directly from the 1998 SAM. The consumption shares are the shares of sectoral consumption in total household consumption. The intermediate uses coefficients are also derived directly from the SAM, as are the parameters for allocating investment expenditure among goods. While these and other parameters come from the SAM, certain behavioural parameters have to be obtained from other sources. These are primarily the various elasticities of substitution and transformation, used in the import and export functions. The parameters for price elasticities on the import side of the model are drawn from the GTAP model (Hertel, 1997). Since the AIDS function also requires income elasticities, we drew these from Buehrer (1994). For the purposes of the simulations in

this model we used a value of 2.0 for the elasticity of transformation between domestic and aggregate export goods. The elasticities of transformation between exports to the EU and to the 'Rest of World' were assumed to be higher.

Foreign Trade Liberalisation in the Process of Accession of Slovenia to the EU

In this section we analyse the levels and changes in the rates of import duties due to continued foreign trade liberalisation after 1998. These in fact cover the following: (1) full implementation of free trade agreements in 2001; (2) the process of gradual adjustment of Slovenian customs tariffs to the EU common external tariff for manufactured products; (3) complete liberalisation of trade with EU and candidate countries after accession, and (4) adoption of the EU common customs tariff and trade regime after accession. The results obtained certainly show a relatively quick on-going process of foreign trade liberalisation with adoption of a new customs system, entry into the GATT/WTO, and signing of several FTAs and particularly of the Europe Agreement. The high degree of orientation of the Slovenian economy towards foreign markets is revealed in the low tariff rates paid on imports from third countries. Full implementation of almost all agreements was completed in 2001.

Analysis of the average rates of import duties collected in 2001 shows very low figures at the aggregate level (1.2%), as well as at the level of imports from the EU15 (0.7%), candidate countries (1.2%) and third countries (2.5%). The results for agricultural products are noteworthy, since in the case of Europe and other FTAs they reveal that these products are subject to concessions only to some extent. And these are products for which we can expect the greatest trade diversion/creation effects after the accession of Slovenia to the EU.[1] Theoretically, the European and almost all other

Table 1. Estimation of changes in rates of import duties after adoption of the EU common external tariff (in 2001 prices, %)

Sector	Situation in 2001			Accession to the EU
	EU15	'Laeken Group'	'Rest of the World'	'Rest of the World'
A	6.52	2.84	2.00	1.76
B	2.16	0.96	2.39	1.36
C	0.03	0.04	0.29	0.40
DA	11.75	10.56	7.65	1.80
DB	0.07	0.50	6.57	6.95
DD	0.14	0.16	0.81	0.62
DE	0.11	0.03	1.06	0.92
DG	0.14	0.04	0.91	2.87
DH	0.16	0.15	4.07	3.90
DI	0.08	0.16	1.40	2.94
DJ	0.08	0.05	0.85	2.51
DK	0.16	0.35	3.29	1.59
DL	0.20	0.27	1.73	1.00
DM	0.13	0.08	5.71	5.49
DN	0.27	0.38	10.08	3.50
E	0.01	0.03	0.03	2.28
Total	0.68	1.15	2.50	2.37
Import Duties (billion SIT)	11.324	2.402	14.724	13.947

Source: 'Import Customs Declarations For 2001'; 'EU Common External Tariff'; COMEXT Data Base; Own calculations.

FTAs should have been fully implemented at the beginning of 2001. Nevertheless, more than 11 billion SIT were collected on imports from EU member states. The main reason can be found in imports of agricultural products, which contributed 8.8 billion SIT of import duties. The group of products from other sectors that were imported without preferential treatment within the Europe Agreement is also quite interesting, since for these products importers paid more than 2 billion SIT of import duties. Obviously it was simpler (or even less expensive) to pay duties according to the official customs tariff than to use preferential treatments.

In 2001 almost half of total import duties were collected on imports of products from EU15 and candidate countries. With accession to the EU Slovenia will lose these import duties. On the other hand, Slovenia collected 14.7 billion SIT on products imported from other countries, at an average rate of 2.5%. Use of the estimated rates of import duties collected on imports of the EU from the 'Rest of the World' on the Slovenian structure of imports from the 'Rest of the World' did not change the average rate of import duties on the aggregate level by a high margin (from 2.50% to 2.37% only). Import duties collected would thus amount to 13.9 billion SIT. Comparison of rates on the sectoral level reveals that the most important changes are in the food, beverages and tobacco industries and for furniture and other manufactured products, for which rates will decrease substantially.

Estimated rates of import duties collected on Slovenian imports from the 'Rest of the World' countries, together with the assumption of a zero rate for imports from the EU15 and 'Laeken group' countries, estimated trade creation/diversion effects and growth rates of imports were then used to estimate values of traditional own resources that Slovenia will pay to the EU budget after accession.[2] Final results are presented in Table 2.

It can be concluded that Slovenian traditional own resources payments in 2004–06 will be between 10.3 and 11.8 billion SIT (in 1999 prices) or between 52.9 and 60.6 million EUR (at 1999 exchange rate).[3] It can be concluded that continued foreign trade liberalisation will cause substantial reduction of budget revenue from import duties. The remaining revenue from import duties will represent 25% of import duties collected on imports from 'Rest of the World' countries. In 1998 budget revenue from import duties amounted to almost 48 billion SIT (1999 prices) and in 2001 only a half of the 1998 amount (23.2 billion SIT). With entry into the EU Slovenia will lose an additional 9.5 billion SIT because of the complete liberalisation of imports from the EU and 'Laeken group' countries and an additional 10.2 billion SIT transferred to the EU budget. Only 3.4 billion SIT will remain for covering the costs of collection of import duties.

The estimates we arrived at using as realistic assumptions and data as possible are significantly higher than the first and also the latest EU estimates, obtained using a revised Slovenian GNP (28–29 million EUR per year). Both EU estimates use some very simplifying assumptions: the same share of import duties in GNP as the average share of the EU member states, the same average rate of import duties collected as the average rate of import duties for imports from the 'Rest of the World' in 2001, a further decrease in this

Table 2. Estimation of traditional own resources to be paid in 2004–06

Scenario	(million 1999 SIT)			(million 1999 EUR)		
	2004	2005	2006	2004	2005	2006
Accession of all 10 candidate countries	10,266	11,011	11,769	52.9	56.7	60.6

Source: Majcen (2002).

average rate because of future new preferential agreements being fully compensated by the future growth of imports, and the existence of no trade creation/diversion effects. On the other hand we based our estimations on the eight digit CN levels taking into account Slovenia's import structure from the 'Rest of the World', using the share of collected/official rates of import duties for two groups of products (agriculture and other products). We further estimated the possible trade creation/diversion effects using the general equilibrium model of the Slovenian economy. We believe that taking all considerations into account, real traditional own resources for 2004–06 will be much closer to our estimates than to the estimates of the EU.

It can be concluded that not all direct effects of continued foreign trade liberalisation were taken into account when the Slovenian net budget position was calculated. On one hand Slovenian budget revenue will decrease by an additional 41.5–65.7 million EUR in 1999 prices, and on the other Slovenia will pay not 29 million EUR of traditional own resources to the EU budget each year, but from 52.9 to 60.9 million EUR (see Table 3).

Transfers between the Slovenian and the EU Budget

Considering the negotiation process, which was concluded on 13 December 2002 in Copenhagen, it has to be stated that the real levels of transfers from both sides are not as obvious as they might seem at first glance. There are many different factors that will influence the final outcome in reality: (1) real growth rates of production and imports after the accession of Slovenia to the EU; (2) inflation rates; (3) exchange rate changes, and (4) absorption capacity of the Slovenian economy. On the other hand we should take into account some additional 'costs' as well; Slovenia will have to pay funds to different EU institutions and will lose a significant amount of VAT because of decreased efficiency of gathering the tax.

According to Bole (2004) both average VAT revenue as a percentage of GDP and VAT revenue as a percentage of GDP per percentage point of standard VAT rate are higher in Slovenia than in the EU, and this can be expected to change with accession to the EU for three reasons: (1) the openness of the Slovenian economy, (2) the large volume of transactions between Slovenia and the EU, and (3) the smallness of the Slovenian economy.[4] One should also take into account additional budget resources for compensating the difference between permitted subsidies and the actual payments from the EU budget in order to reach the complete volume of direct payments to the agriculture sector, as well as additional costs of establishing the external Schengen border.

Table 3. Adjustments of the Slovenian net budgetary position due to complete liberalisation of foreign trade with the EU and candidate countries and adoption of the EU Common external tariff (million EUR, 1999 prices)

	2004	2005	2006
1. Budget revenue	41.5	−63.6	−65.7
2. Transfers to the EU budget	15.9	−18.5	−21.3
3. Total	−57.4	−82.1	−87.0

Note: Figures for 2004 are for eight months only owing to the date of accession, 1 May 2004.
Source: Majcen (2002); own calculations.

It is obvious that when speaking about the Slovenian net budgetary position after accession we should distinguish two situations. The first one strictly considers only the flows between the two budgets while the second takes into account additional changes in the Slovenian budget due to accession. By considering both figures we can estimate the direct impact of transfers on the Slovenian budget. Of course, we should also bear in mind that accession to the EU will have positive effects on the Slovenian economy as well. Finally, we will be able to estimate direct and indirect effects with the use of the CGE model.

Regarding the flows between the two budgets it could be concluded that at the end of negotiations Slovenia succeeded in improving its positive net budgetary position from that in 2003 (45 million EUR) to 81 million EUR for each year of the 2004–06 period (see Table 4). With the added lump-sum cash flow and budgetary compensations the Slovenian net budgetary position would be positive, rising to 0.32–0.34% of GDP. This outcome has been achieved due to the finally accepted corrections of the future GDP growth rates and revised volumes of GDP. Such a result certainly gives Slovenia some additional space in the (quite possible) situation of lower absorption capacity than assumed for the resources from structural funds and for rural development. We should also be aware of the fact that the EU did not accept Slovenia's estimations of traditional own resources to be paid to the EU budget. With the revenue lost as a result of complete liberalisation of foreign trade with the EU and other accession countries (see Table 3), the quite favourable positive net budgetary position disappears. Adding already noted other additional costs and decreased budget revenue, we arrive at the total direct impact of accession on the Slovenian budgetary position (Table 5). The figures were calculated in current prices assuming 2% annual increases from 1999 on. The final outcome will probably be even less favourable if we take into account the fact that exchange rates are not completely following inflation rates in Slovenia.

It can be concluded that the estimated total direct impact of Slovenia's accession on its net budget position will clearly be negative. The Slovenian budget deficit will increase by 155 million EUR in the first year of accession[5] and will amount to 0.6% of GDP. The greatest increase in the deficit is expected in the second year after accession (0.77%). Of course, we should bear in mind that all these estimates are only partial, without taking into account the reactions of economic agents as well as the government. Further trade liberalisation, an increased domestic market and competition, reduced VAT collection and lowered transaction costs will generate changes in domestic production, trade, employment, investment and consumption. What will be the final outcome is hard to conclude without an appropriate tool. In the next section we will thus try to prepare some simulations of possible complex effects of changes in the Slovenian budgetary position after accession to the EU, using a static computable general equilibrium model of the Slovenian economy.

Results of the Simulations

Simulations were prepared using a corrected version of the computable general equilibrium (CGE) model of the Slovenian economy based on the SAM for 1998 (Majcen & Buehrer, 2001). We had to correct the 'Rest of the World' account by splitting it into two separate accounts: the EU15 and 'Laeken Group' on one side and the 'Rest of the World' on the other. We also added a new institution in order to simulate transfers between the two budgets after the accession of Slovenia to the EU. The new version of the model was then used for simulations of the consequences of further foreign trade liberalisation after 1998 as the outcome of the finished process of implementation of FTAs

Table 4. Estimated net budgetary position for Slovenia after enlargement of the EU

	2004				2005				2006			
	EUR	SIT	% GDP	% GNI	EUR	SIT	% GDP	% GNI	EUR	SIT	% GDP	% GNI
Pre-accession aid	51.0	9.9	0.22	0.22	43.0	8.3	0.17	0.17	27.0	5.2	0.10	0.10
1. Agriculture	**43.4**	**8.4**	**0.18**	**0.18**	**124.6**	**24.1**	**0.50**	**0.51**	**158.2**	**30.6**	**0.61**	**0.61**
1a. Common Agricultural Policy	14.9	2.9	0.06	0.06	65.2	12.6	0.26	0.27	71.6	13.9	0.28	0.28
Market measures	14.9	2.9	0.06	0.06	38.3	7.4	0.15	0.16	38.8	7.5	0.15	0.15
Direct payments	0.0	0.0	0.00	0.00	26.8	5.2	0.11	0.11	32.8	6.4	0.13	0.13
1b. Rural development	28.5	5.5	0.12	0.12	59.4	11 5	0.24	0.24	86.6	16.8	0.33	0.34
2. Structural actions after capping	**27.0**	**5.2**	**0.11**	**0.11**	**59.2**	**11.5**	**0.24**	**0.24**	**72.8**	**14.1**	**0.28**	**0.28**
Structural Fund	25.9	5.0	0.11	0.11	45.9	8.9	0.19	0.19	48.9	9.5	0.19	0.19
Cohesion Fund	1.2	0.2	0.01	0.01	13.3	2.6	0.05	0.05	23.9	4.6	0.09	0.09
3. Internal policies	**49.7**	**9.6**	**0.21**	**0.21**	**59**	**11.4**	**0.24**	**0.24**	**66.3**	**12.8**	**0.26**	**0.26**
Existing policies	12.1	2.3	0.05	0.05	20.9	4.0	0.08	0.09	28.2	5.5	0.11	0.11
Institution building	2.0	0.4	0.01	0.01	2.5	0.5	0.01	0.01	2.5	0.5	0.01	0.01
Schengen	35.6	6.9	0.15	0.15	35.6	6.9	0.14	0.14	35.6	6.9	0.14	0.14
Sub-total (1 + 2 + 3)	**120.1**	**23.3**	**0.51**	**0.51**	**242.9**	**47.0**	**0.98**	**0.99**	**297.3**	**57.6**	**1.15**	**1.15**
Cash flow lump sum	65.0	12.6	0.27	0.28	18.0	3.5	0.07	0.07	18.0	3.5	0.07	0.07
Total allocated expenditure	**236.1**	**45.7**	**1.00**	**1.00**	**303.8**	**58.8**	**1.23**	**1.24**	**342.3**	**66.3**	**1.32**	**1.33**
Traditional own resources	18.0	3.5	0.08	0.08	29.0	5.6	0.12	0.12	29.0	5.6	0.11	0.11
VAT resource	22.0	4.3	0.09	0.09	35.0	6.8	0.14	0.14	36.0	7.0	0.14	0.14
GNP resource	129.0	25.0	0.55	0.55	198.0	38.3	0.80	0.81	203.0	39.3	0.78	0.79
UK rebate	17.0	3.3	0.07	0.07	27.0	5.2	0.11	0.11	28.0	5.4	0.11	0.11
Total own resources	**186**	**36.0**	**0.79**	**0.79**	**289.0**	**56.0**	**1.17**	**1.18**	**296.0**	**57.3**	**1.14**	**1.15**
Net balance before budgetary compensation	50.1	9.7	0.21	0.21	14.8	2.9	0.06	0.06	46.3	9.0	0.18	0.18
Budgetary compensation	30.0	5.8	0.13	0.13	66.0	12.8	0.27	0.27	36.0	7.0	0.14	0.14
Net balance after budgetary compensation	80.1	15.5	0.34	0.34	80.8	15.6	0.33	0.33	82.3	15.9	0.32	0.32

Note: The calculations are based on revised GDP; 1999 prices, million EUR, million SIT.
Source: 'The Final Negotiation Results' (2002); calculations by the Ministry of Finance, Budget Department (2002).

Table 5. Estimated budget deficit of Slovenia after accession to the EU (% of GDP)

	2004	2005	2006	2004	2005	2006
		million EUR			billion SIT	
Expected budget revenue	5.634	5.844	6.088	1.500	1.622	1.752
Expected budget expenditure	5.852	6.023	6.199	1.559	1.671	1.784
Expected budget deficit	−219	−178	−112	− 58	− 49	− 32
Expected budget deficit without EU accession effect (% GDP)	**−0.97**	**−0.75**	**−0.45**	**−0.97**	**−0.75**	**−0.45**
1. Expected transfers from the EU budget	294	417	435	68.4	97.0	101.1
2. Expected transfers from the Slovenian budget	205	324	340	47.8	75.8	79.2
3. Expected additional change in the budgetary position after accession (Σ (3a. . .3f)	**243**	**309**	**303**	**57**	**72**	**71**
3a. Expected decreased amount of VAT collected (0.5% of GDP)	83	133	142	19.4	31.1	33. 2
3b. Obligations towards EU institutions	7	12	21	1.5	2.9	4.8
3c. Expected decrease of revenue from import duties	46	72	75	10.7	16.7	17.6
3d. 'Top-up' payments of direct payments	23	19	14	5.2	4.3	3.3
3e. Schengen border	67	52	26	15.6	12.0	6.0
3f. Estimated additional transfers of import duties collected	18	21	24	4.1	4.9	5.7
4. Increase of budget deficit due to EU accession (1-2-3)	−155	−216	−209	−36	−51	−49
Increase of budget deficit due to EU accession (% of GDP)	**−0.60**	**−0.77**	**−0.68**	**−0.60**	**−0.77**	**−0.68**
Total estimated budget deficit	−373	−395	−320	−94	−100	−81
Total estimated budget deficit (% of GDP)	−1.56	−1.52	−1.13	−1.56	−1.52	−1.13

Source: 'The Final Negotiations Results', (2002); calculations by the Ministry of Finance, Budget Department (2002); own calculations.

and the Europe Agreement, adaptation of Slovenia's customs tariff to the EU and the common external tariff for manufactured products, adoption of the EU common external tariff after accession to the EU and estimated transfers between the two budgets.

Foreign Trade Liberalisation

For the CGE model, data on import duties collected for both groups of countries (EU15 + 'Laeken Group' and 'Rest of the World') for the base year 1998 and for 2001 were prepared. Additionally, estimated rates of import duties collected on imports from the 'Rest of the World', valid for 2004–06, were also used. In Table 1 we presented rates of import duties collected used in the CGE model. The main deficiency of the final estimates is certainly the use of only two shares of collected to official import duties. Results on the sectoral level are therefore only rough approximations to be improved in the future.

The following three assumptions were used during the estimation of the levels and changes of rates of import duties used in the CGE model: (1) the final estimation is based on the estimated import duties collected for 2004; (2) the foreign trade regime in effect is reflected in import duties collected compared with official import duties (in the base year 1998 and in 2001); and (3) in 2001 applicable official rates of the EU common external tariff and estimated collected rates also reflect the situation in 2004–06. With these assumptions in mind simulations were performed in two steps. First, we estimated the effects of continued foreign trade liberalisation due to the implementation of the Europe Agreement and other FTAs in 1998–2001, taking into consideration rates of import duties collected. The new equilibrium solution for 2001 was then applied as a basis for comparison with the solution obtained in the second step of accession of Slovenia to the EU.

Simulations were performed using the estimated elasticities of substitution and transformation. Additionally, we tested the sensitivity of the model results to changes of the assumptions regarding the adaptation of wages or employment as well as regarding the possible reaction of the government to changes in import duties collected. Decreased revenue can be compensated with decreased government consumption, saving or introduction of a new tax or increase of an already existing one. We assumed that government compensates lost revenue with increased VAT; the CGE model was therefore adapted to obtain a new equilibrium solution with unchanged government consumption and saving, compensating the revenue loss with an increase in VAT. All simulations (see Table 6) were performed using the assumption of fixed aggregated balance of payments (and variable balances for both foreign accounts), with the exchange rate with the EU being the *numéraire*.

The effects of the foreign trade liberalisation due to accession to the EU on the aggregate level are presented in Table 7. We only used the results assuming the possibility of change in employment. Simulations 1, 3 and 5 represent the outcome of further foreign trade liberalisation and adoption of the EU common customs tariff as well as its trade regime after accession, regarding different possible reactions of the government to decreased revenue. Government was assumed to compensate for decrease revenue either by decreasing consumption (scenario 1), increasing VAT (scenario 2) or decreasing saving (scenario 3). Revenue from import duties was estimated to fall by 59% compared with 2001. Using this figure in order to compare the estimates of import duties collected after accession (Majcen, 2002) we arrive at an estimate some 1.5 billion SIT lower (12 billion SIT in 1999 prices).

However, we should keep in mind that by using the static model this outcome has taken into account only the trade creation/diversion effect due to changes in import

Table 6. Scenarios of CGE model for analysis of trade liberalisation between Slovenia and the EU

Scenario 1	Quantity of labour is variable (fixed wages), decrease of government consumption is equal to decreased revenue from import duties.
Scenario 2	Scenario 1 + assumed decrease in VAT collected equal to 0.5% of GDP.
Scenario 3	Quantity of labour is variable (fixed wages), government consumption unchanged, decreased revenue compensated with increased VAT.
Scenario 4	Scenario 3 + assumed decrease in VAT collected equal to 0.5% of GDP.
Scenario.5	Quantity of labour is variable (fixed wages), government consumption unchanged, decreased revenue compensated with decreased government saving.
Scenario 6	Scenario 5 + assumed decrease in VAT collected equal to 0.5% of GDP.

duties and not real increase of imports in the 2001–04 period. Complete liberalisation of imports from the EU and candidate countries will decrease import prices and thus increase imports from these countries. To preserve an unchanged balance of payments, therefore, exports should also rise through decreased prices (partially as the outcome of reduced import prices of intermediate goods). The final outcome on the level of GDP and employment is slightly negative (-0.10 and -0.34 respectively) as well, mainly because of the assumed compensating decreased government consumption (-2.3%) and thus decreased production of non-market services (scenario 1).

Another possible government reaction to decreased revenue is an appropriate increase in taxes. Here we assumed that VAT should change to the extent that government consumption and saving remain unchanged. The outcome of such a policy on the economy is clearly negative; the final necessary increase in VAT was estimated to be 10%, with employment decreased by 2.5%, GDP by 1.6%, investment by 2.2%, exports by 2% and imports by 1.6%. Compensation by reducing government saving (-30.9%) does not have a negative effect on aggregate employment and GDP. On the contrary, it shows positive effects of liberalisation on trade, though again with decreased investment. In scenarios 2, 4 and 6 we added the estimated decline in VAT collection (0.5% of GDP) in order to obtain the reaction of the economy.[6] It can be concluded that assumed decreased rates indeed have a favourable positive impact on the economy, as expected.

If we sum the results obtained for the (isolated) effects of foreign trade liberalisation, it has to be concluded that the effects are indeed very sensitive to the assumed reaction of the government. Insisting on unchanged government consumption through an adequate rise in the VAT rate will have clearly negative effects on the Slovenian economy. On the other hand, compensation by decreased government saving will have a negative impact on investment and thus a lower growth rate of the economy as an outcome. If we had used a dynamic CGE model for the simulation of changes in particular aggregates compared with the steady growth of the economy, these negative effects on investment would have become obvious. It is therefore evident that a static CGE model cannot provide the final answer regarding the effects of changes in the Slovenian budget: a large part of transfers is connected with changes in structure and in levels of investment and can have indirect effects on investment.

Financial Flows between Slovenia and the EU after Accession

In this section we attempt to obtain some estimates of the complex effects of accession to the EU. Owing to the static nature of the model the results obtained do not show complete short

Table 7. Some macroeconomic effects of foreign trade liberalisation, 2001–04 (changes in %)

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6
Labour	−0.34	0.55	−2.48	−2.07	0.05	1.05
Capital	0.00	0.00	0.00	0.00	0.00	0.00
Import duties	−59.03	−58.41	−60.43	−60.13	−59.11	−58.54
Government consumption	−2.30	−2.95	0.00	0.00	0.00	0.00
Government saving	0.00	0.00	0.00	0.00	−30.89	−39.66
Investment	−0.38	0.33	−2.19	−1.92	−2.05	−1.79
GDP	−0.11	0.50	−1.59	−1.32	0.10	0.76
Exports (total)	1.10	2.56	−1.96	−1.19	0.92	2.33
—EU25	1.28	2.99	−2.22	−1.32	1.08	2.72
—others	0.65	1.53	−1.32	−0.87	0.53	1.37
Imports (total)	1.14	2.47	−1.63	−0.94	0.96	2.23
—EU25	1.17	2.53	−1.60	−0.88	0.96	2.25
—others	1.11	2.35	−1.66	−1.07	1.00	2.21
GDP deflator	−0.73	−0.88	−0.05	−0.03	−0.65	−0.77
VAT	0.00	0.00	10.25	13.35	0.00	0.00

Note: Elasticities of substitution and transformation are taken from Buehrer (1994) and GTAP Data Base. Unchanged government consumption is obtained by the increase of VAT (scenarios 3 and 4).

and long-run effects, but are mainly focused on the short-run outcome (short enough that changes in investment cannot affect the level of capital). Nevertheless, we try to capture some (medium-term, at least) effects through the assumed decrease of transaction costs.

In the preparation of particular scenarios we tried to get as close as possible to reality. We assumed that the quantity of labour was variable, that government would try to preserve unchanged the level of its consumption and saving, compensating the changes with changes in the VAT rate. We did not make any changes in the structure of government consumption or in the structure of investment. Finally, eight scenarios were prepared (see Table 8), starting with foreign trade liberalisation and ending with a complex set of transfers between the two budgets, decreased collection of VAT and changes in government saving, consumption and subsidies.

With the assumptions in scenarios 1–5 we tried to capture changes in protection, transfers between budgets and some additional costs Slovenia will incur after accession. We also added an estimate of decreased transaction costs using the estimates prepared for the EU member states (Emerson, 1988, p. 18). We continued with the assumed lower absorption capacity in order to get some notion of the possible effects of a not so unrealistic outcome; no changes in transaction costs (to capture only the very short-run effects) and the possibility of decreased government consumption. The results on the aggregate level are presented in Table 9. The results of the first two scenarios were already presented in the previous section: possible positive effects of foreign trade liberalisation disappear if the government tries to preserve its consumption and saving unchanged with increased VAT rates. The estimated loss in VAT collected, on the other hand, does have a positive impact on the macro aggregates despite the necessary additional increase in VAT rates.

With accession and abolition of borders in the next few years we can expect a decrease of transaction costs, which we assumed would be equal to 2% of the value of trade with the EU member states.[7] As transaction costs are not explicitly analysed in the model, only import prices were adjusted by 2%. The results obtained in scenario 3 clearly point to a very positive impact; real GDP would rise by 2.2%, employment by 3.2%, exports by 5.5% and imports by 6.7% with trade diversion towards EU member states. Despite unchanged government consumption and saving, abolished import duties and decreased effective VAT rates, the new equilibrium VAT rate remained almost unchanged (0.5% decrease compared with the base solution).

We then proceed to introduce the officially estimated net outcome of assumed transfers between the two budgets (0.33% GDP) and increased subsidies for the agriculture sector amounting to 0.26% GDP. We did not make any adjustments in the

Table 8. Scenarios of CGE model for analysis of financial flows between Slovenia and the EU

Scenario 1	Further foreign trade liberalisation due to accession to the EU
Scenario 2	Scenario 1 + decreased VAT rate (0.5% of GDP).
Scenario 3	Scenario 2 + decreased transaction costs (2% decrease of world import prices).
Scenario 4	Scenario 3 + net transfers from EU budget (0.33% GDP: 0.26% going to agriculture).
Scenario 5	Scenario 4 + adjusted payments of import duties, additional payments to the EU institutions, additional government investment due to the Schengen border, additional direct payments to farmers.
Scenario 6	Scenario 5 + lower absorption capacity (only 50% of the estimated use of sources for rural development and sources from structural and cohesion funds).
Scenario 7	Scenario 6 + no changes in transaction costs.
Scenario 8	Scenario 7 + decrease of government consumption by 5%.

Table 9. Some macroeconomic effects of accession to the EU (changes in %)

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7	Scenario 8
Labour	−2.475	−2.071	3.157	5.091	1.996	−0.449	−5.699	−0.928
Capital	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Import duties	−60.43	−60.13	−58.48	−57.54	−59.08	−60.32	−61.97	−59.15
Government consumption	0.000	0.000	0.000	0.000	0.000	0.000	0.000	−5.000
Government saving	0.000	0.000	0.000	13.88	13.88	13.88	13.88	13.88
Investment	−2.193	−1.915	2.166	4.230	3.025	1.018	−3.099	0.989
GDP	−1.587	−1.322	2.192	3.485	1.443	1.018	−3.781	−0.440
Exports (total)	−1.960	−1.190	5.451	6.951	3.467	1.007	−5.557	1.179
—EU25	−2.225	−1.321	6.357	8.054	4.009	1.181	−6.336	1.347
—others	−1.321	−0.874	3.264	4.285	2.158	0.588	−3.677	0.775
Imports (total)	−1.628	−0.936	6.631	8.838	5.343	2.464	−4.972	1.138
—EU25	−1.603	−0.879	7.871	10.092	6.589	3.693	−4.876	1.231
—others	−1.660	−1.067	2.999	5.165	1.691	−1.140	−5.222	0.898
GDP deflator	−0.050	−0.030	−0.285	−0.589	0.050	0.499	0.866	−0.723
VAT	10.245	13.347	−0.541	−6.489	5.741	15.157	30.618	5.760

Note: Elasticities of substitution and transformation are taken from Buehrer (1994) and GTAP Data Base.

structure of government consumption or investment. Compared with the results obtained in scenario 3 our results are even more favourable, as expected. Additional inflow of money with unchanged government consumption and saving resulted in even lower VAT rates (− 6.5%), resulting in greater competitiveness of the economy.

A more realistic situation is certainly the fifth scenario, with all additional transfers and payments from the Slovenian budget included. The results obtained are still positive with increased GDP, employment, investment and trade, despite the necessary increase in VAT to compensate for all additional transfers and payments. But we can ask ourselves what would happen if the absorption capacity were lower than assumed, e.g. 50% of the level assumed. The fact is that the EU assumed a much higher absorption capacity for the new member states for the use of structural funds than was observed in the existing EU member states. If we assume compensation of lower transfers through VAT, it has to rise by 15% and thus decreases the competitiveness of the economy. The final outcome shows considerable decrease in almost all macro aggregates (though still with positive changes), with the exception of decreased employment.

All the former results could be regarded as the effects in at least the medium or long run. Given the assumptions and the model used, they show a positive net outcome of Slovenia's accession to the EU. But they are indeed quite sensitive to the assumption of decreased transaction costs, which will not be realised in a very short period. This was the reason for trying to calculate the effects without decreased transaction costs (scenario 7). The results obtained indicate that in the very short run a negative outcome of accession should be expected if the government still wants to have its consumption unchanged and investment increased. If the government tries to behave more rationally and finds a possibility to decrease its own consumption (5% decrease is assumed in scenario 8), this would greatly diminish negative short-run effects. The results therefore show the importance of the behaviour of the government in the short run after accession to the EU; rational behaviour will certainly moderate possible short-run negative effects of accession and improve already favourable long-run effects.

Concluding Summary

The main aim of this article has been to estimate the effects of continued foreign trade liberalisation and Slovenia's net budgetary position after accession to the EU, taking into account some additional important changes in the Slovenian budget. For the simulations an adapted CGE model of the Slovenian economy was used.

It can be concluded that continued foreign trade liberalisation will cause a substantial reduction of budget revenue from import duties. The remaining revenue from import duties will represent 25% of import duties collected on imports from 'Rest of the World' countries. In 1998 budget revenue from import duties amounted to almost 48 billion SIT, while in 2001 it was only half of the 1998 amount (23.2 billion SIT). With entry into the EU Slovenia will lose an additional 9.5 billion SIT owing to complete liberalisation of imports from the EU and 'Laeken Group' countries, and also an additional 10.2 billion SIT transferred to the EU budget. Only 3.4 billion SIT will be left for covering the costs of collection of import duties. It is important to note that these estimates are higher than the estimates prepared by the EU.

Regarding the Slovenian net budgetary position after accession two positions should be distinguished. The first is strictly considering only the flows between the two budgets, while the second also takes into account additional changes in the Slovenian budget due to accession. Regarding the flows between the two budgets it could be

concluded that at the end of the negotiations Slovenia succeeded in improving its positive net budgetary position from that in 2003. With the added lump sum cash flow and budgetary compensations the Slovenian net budgetary position would be positive, rising to 0.32–0.34% of GDP. This outcome is due to the finally accepted revisions of future GDP growth rates and revised volumes of GDP. Such a result certainly gives Slovenia some additional space in the (quite possible) situation of lower absorption capacity than assumed for resources from structural and rural development funds.

On the other hand we should take into account decreased budget revenue due to complete liberalisation of trade with the EU and candidate countries as well as decreased efficiency of VAT collection. There will also be additional transfers to EU institutions and increased costs due to the preparation of the Schengen border with Croatia and 'top-up' direct payments to farmers. Taking into account these figures we arrive at a total direct impact of accession on the Slovenian budget position which will be clearly negative. Slovenia's budget deficit will increase by 155 million EUR in the first year of accession and will amount to 0.6% of GDP. The greatest increase in the deficit is expected in the second year after accession (0.77%). Of course we should bear in mind that all these estimates are only partial, without taking into account the reactions of economic agents or of the government. Further trade liberalisation, a larger domestic market and competition reduce VAT collected and transaction costs, generating changes in domestic production, trade, employment, investment and consumption.

All results connected with decreased transaction costs could be regarded as effects in the medium or (preferably) long run. Given the assumptions and the model used, they show a positive net outcome of Slovenia's accession to the EU. But they are quite sensitive to the assumption of decreased transaction costs, which will not be realised in a very short period. Results obtained without the use of decreased transaction costs indicate that in the very short run a negative outcome of accession should be expected, as long as the government still wants to have its consumption unchanged and investment increased. If the government tries to behave more rationally and finds a possibility to decrease its consumption, this would greatly diminish negative short-run effects. The behaviour of the government is therefore crucial even in the short run after accession to the EU, as rational behaviour will certainly moderate possible short-run negative effects of accession and improve already favourable long-run effects.

Notes

1. Lower average rates of duties on imports from third countries are primarily the outcome of different structures of imports of agricultural products.
2. For a complete presentation of the estimation of traditional own resources that Slovenia will have to pay the EU budget see Majcen (2002).
3. The assumption under which Croatia and FYR of Macedonia take full advantage of the Stabilisation and Association Agreement (SAA) with the EU would decrease the estimated traditional own resources payments to 8.2–9.8 billion SIT or 44.3–50.7 million EUR. In reality, Croatian exporters could take advantage of preferential treatment for a minor part of their exports to the EU. It can thus be concluded that the estimated value would be closer to the higher amounts in Table 2, which do not take the SAA into account.
4. The level of control of taxable persons for VAT is likely to be reduced as a result of poorer communication between the tax administrations of Slovenia and the EU member states after the abolition of customs control; the tax administrations of Slovenia's key trade partners are not likely to be prepared to supply the Slovenian tax administration with full information for the relatively small volume and value of trade compared with the EU member states with the highest GDP per capita.

5. If one month of postponement of VAT payments taken into account as well, then the result for 2004 would be even less favourable.
6. We assumed that the decrease in VAT collected was the outcome of decreased collection of the tax on imports of goods. The basic sector rates were then reduced accordingly and applied in the simulations.
7. Direct costs of frontier formalities and associated administrative costs of the private and public sector were estimated to be of the order of 1.8% of the value of goods traded within the Community (Emerson, 1988, p. 18). With the abolition of technical regulations and other non-border barriers this figure was estimated to be, on average, around 2% of enterprises' total costs or 3.5% of industrial value added. Of course, there are substantial differences between industrial and service branches subject to market entry restrictions that could experience considerably higher potential costs and price reductions of the order of 10–20% and even more in some cases, e.g. energy, transport, office and defence equipment, financial services, and road and air transport. It is obvious that some very important effects of abolition of non-tariff barriers have not been taken into account. One possible way to capture them would be to incorporate estimated *ad valorem* equivalents for non-tariff barriers into the existing CGE model.

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