

Economic Welfare Effects of EU and CIS Integration



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Introduction

EU enlargement will change European trade relations significantly. Much of the continent will be subject to the EU trade policy regime, which means the question of how an enlarged EU organises its trade relations with the rest of the continent is destined to be a major issue. One key aspect will be the relationship between the EU and Russia. Full EU membership is not an option in Russia's case. To avoid Russia's marginalisation, the EU will need to adopt an open attitude towards the rest of the continent in its external commercial policy.

If we imagine rings of influence, we might describe European integration with EMU forming the inner core. It is surrounded by the Single Market, then the Customs Union with a possibility for unilateral membership for EU outsiders and, finally, the EU free trade area and the rest of Europe.

Trade agreements that create hub-and-spoke patterns of trade tend to marginalise the "spoke" countries, as trade barriers between spokes typically remain higher than for trade between the hub and a spoke. Post-eastern enlargement, it is likely that Russia and other CIS countries become spokes, with trade focused on the enlarged EU.

In Russia's case, a free trade agreement seems a no-brainer. However, there is the potential that such an arrangement diverts trade and investment away from other CIS countries, as well as

a further danger that if the EU adopts a Russia-oriented approach, it may marginalise other CIS countries. Hence, the EU needs to adopt a broad approach. This suggests an EU-CIS free trade area as the apparent candidate for future trade relations.

In a recent simulation study, we sought to assess both the impact of *EU eastern enlargement* on the CIS and the impact of *further integration between the EU and CIS* on both blocs.¹ Our simulations distinguished among three degrees of integration effects. The two baseline integration scenarios (eastern enlargement and EU-CIS free trade area) only considered reductions in trade barriers. For the next simulations, we assumed increased substitution between imported goods and their domestic counterparts. The third pair of simulations assumed productivity gains by new EU entrants (eastern enlargement) or gains by new entrants and CIS countries (EU-CIS free trade area).

EU Enlargement: Economic Structures and Trade Patterns

Currently, it looks like ten EU candidate countries will be able to join the Union in 2004. Bulgaria and Romania have been ruled out of any possible adherence plan to the European Union in the first wave in 2004. These two countries have been, however, left with the door open for entry at a later date – though not necessarily by their target date of 2007.

The ten countries that could enter the Union in 2004 include Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia and Slovenia.

In the latest GTAP database (version 5.0) Poland and Hungary are as separate primary regions while the Czech Republic, Slovenia, Bulgaria, Romania and Slovakia are defined as one region (called Rest of Central European Associates). Baltic States are still part of the Former Soviet Union (FSU) region. Cyprus and Malta are included in a "residual" region, that is, the rest of the world. Therefore we used the CEEC7 region to represent the group of joining countries in the EU enlargement process.

The structure of an average economy in the CEEC7 differs quite significantly from that of the EU15². Agricultural production as a share of GDP is nearly two times higher in the CEEC7 than in the EU15 on average, while per capita GDP is almost three times lower than in the EU15. Also, the level of trade protection in the CEEC7 is within most sectors much higher than in the EU15. The asymmetry of the size of the joining and member country economies is huge; taken together the total CEEC7 economy is roughly 4 per cent of the EU15³. As a result, one would expect that the enlargement process expands consumption opportunities in the CEEC7 region much more than in the EU15. *Ex ante* one would predict a bigger impact of enlargement on the CEEC7 than on the EU15.

We also consider a scenario where the enlarged EU forms a free trade area (FTA) with the FSU. A similar asymmetry between the applicant and the union exists as with the EU enlargement. The FSU economy is slightly larger than that of CEEC7, but still only about 6 per cent of total EU-CEEC7 GDP.

Differences in the supply side (in terms of producer cost structures) between the FSU, CEEC7 and the EU indicate that agricultural products (crops and livestock) are relatively more important in the CEEC7, while natural resources, oil and gas are relatively more significant in the FSU.

The GTAP Model

The Global Trade Analysis Project (GTAP) modelling framework, developed at the Univer-

sity of Purdue, has become a widely applied and well-documented tool in a wide range of topics (there are currently over 400 GTAP applications on the GTAP web page: <http://www.gtap.agecon.purdue.edu>). The GTAP model is a multi-region, computable general equilibrium (CGE) model. The inter-regional linkages originate from bilateral trade flows, while intra-industry linkages are captured by the regional input-output structure. The GTAP database represents the state of the world economy⁴ in a given year. The data cover bilateral trade patterns, the structure of production, consumption and intermediate use of commodities and services. The latest version of the database includes 66 different regions⁵ and 57 different sectors of production.

The GTAP model computes the money metric equivalent of aggregate per capita utility for a region (using the regional household's utility function). The regional household's Equivalent Variation (EV) is the difference between the expenditure required to obtain the new, post-simulation level of utility at initial prices. Huuf and Hertel (2001)⁶ show how the overall welfare measure in GTAP model can be decomposed into several sub-components of which the four major elements are:

- Endowment contribution to welfare (due to the change in the availability of primary factors),
- Technical efficiency contribution to welfare (due to, for example, increased factor productivity),
- Allocative efficiency contributions to welfare (allocation of resources change),
- Terms of trade contributions to welfare (welfare may change as a result of more/less favourable prices of exports/imports).

In a policy shock like trade liberalisation the first two sources of welfare change would typically be zero as the endowment and technical change variables are exogenous. Below, we implement two cases where the technical change component is, however, a significant source of welfare change⁷. In all other simulations the prime sources of welfare change are from terms of trade and allocative efficiency effects.

Policy Scenarios and Simulation Results

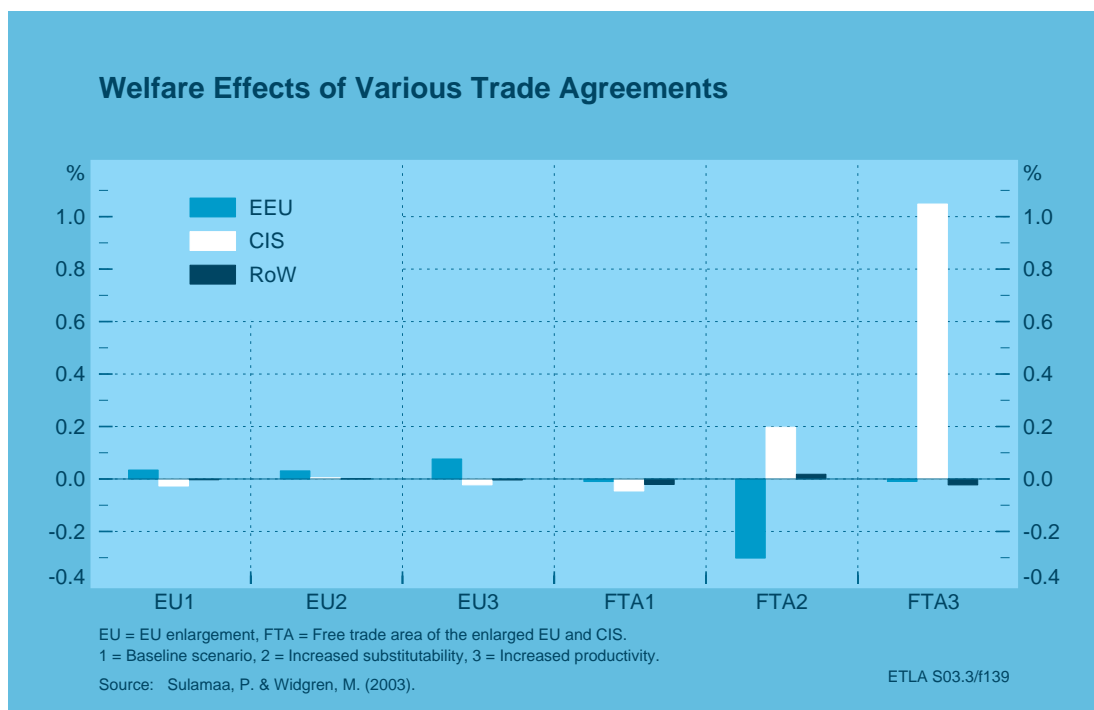
Abolishing formal trade barriers directly affects the relative prices of intermediate inputs and final goods. Changes in demand for goods from different regions leads to trade creation and trade diversion. Free trade means that prices reflect relative scarcities so that countries can better exploit the gains from trade. Trade creation involves reallocation of production between different regions creating efficiency improvements in overall production. Furthermore, elimination of trade barriers affects the terms of trade, that is, the price of exports relative to imports. Abolishing import tariffs will improve the terms of trade for countries that export their goods to that market. While such terms of trade improvements may harm domestic production, they can enhance welfare due to the rise in the value of produced goods relative to imported goods.

All results are reported in terms of percentage changes compared to the relevant reference. In the case of EU-enlargement this reference is the GTAP base year (1997) equilibrium. In case of the FTA simulation the point of comparison is the post EU-CEEC7 enlargement equilibrium

data. It is also worth mentioning that one should read the results more in qualitative terms rather than attach a weight on specific numerical values, which depend on the model's parameter values and the chosen 'business as usual' reference scenario. Welfare effects of different trade agreements on the enlarged EU (EEU), CIS and countries outside the arrangement (RoW) are illustrated in the figure below. The percentage changes are relative to baseline total output.

Our *eastern enlargement* scenarios confirm the familiar view that incumbent EU countries gain very little, while new entrants benefit substantially from accession. The integration effect amounts to a 4-5 per cent boost in GDP for new entrants. It is worth noting that part of this gain has already materialised under their Europe Agreements. For CIS countries, we obtained both positive and negative welfare effects. Summing these effects resulted in an overall positive effect. The same holds for the rest of the world.

Our findings on the impact of *the EU-CIS free trade area* were quite different. The baseline agreement decreases world welfare, and causes



The Effects of Eastern Enlargement and EU-CIS Free Trade Area on GDP Volumes, Percentage Change in the Long-run Equilibrium Compared to the Baseline

	EU1	EU2	EU3	FTA1	FTA2	FTA3
NAFTA	0.000	0.000	0.000	0.000	0.000	-0.001
Germany	0.008	0.012	0.008	-0.016	-0.028	-0.016
FSU	-0.007	0.001	-0.006	0.038	0.087	1.093
Finland	0.008	0.010	0.008	0.034	0.033	0.034
EU-North	0.004	0.005	0.004	-0.067	-0.092	-0.068
EU-South	0.006	0.008	0.006	-0.030	-0.040	-0.031
CEEC7	0.539	0.706	1.645	-0.846	-1.218	-0.846

EU = EU enlargement

FTA = Free trade area of the enlarged EU and CIS

1 = Baseline scenario

2 = Increased substitutability

3 = Increased productivity

Source: Sulamaa, P. & Widgrén, M. (2003).

the EU, CIS and the rest of the world to incur small economic welfare losses. Finland and Germany benefit from the agreement. Other integration effects, i.e. enhanced substitution and improved productivity of the EU-CIS free trade area, are insufficient to make the arrangement beneficial. By increasing substitution between imports and domestic goods, we obtain a welfare gain for CIS countries at a considerable welfare loss to the EU (particularly for the southern EU and new entrants). If we only consider increases in productivity, the EU-CIS free trade area is beneficial for CIS countries, Finland and Germany. It still decreases economic welfare for the rest of the EU and the rest of the world.

Conclusions

In summary, free trade between the EU and CIS countries requires productivity gains, either from better institutions or increased foreign direct investment, in the CIS to be beneficial.

Even with the improvements, however, the agreement is not beneficial for most of the EU, which makes the adoption of such an arrangement unlikely. Notably, Finland and Germany gain in all the EU-CIS free trade area scenarios, while the rest of the EU region loses. For the rest of the world, the EU-CIS free-trade area yields a welfare loss.

Footnotes

¹ Sulamaa, P. & Widgrén, M. (2003), "Eastern enlargement and beyond: A simulation study on EU and CIS integration," CEPR Discussion Papers 3768.

² EU15 stands for the total EU, that is, in our case it is the sum of Finland, Germany, EU-North and EU-South.

³ According to the 1997 GTAP database 5.0.

⁴ The latest version representing the world economy in 1997 as a system of flows of goods and services measured in millions of 1997 USD.

⁵ Of which 56 are primary regions and 10 composite regions.

⁶ Huff, K. and Hertel, T.W. (2001).

⁷ The EU3 and FTA3 scenarios where factor augmenting technical changes were increased in CEEC7 and FSU, respectively.

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