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The economic effects of a Russia-EU FTA

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Abstract: The paper examines the effects of Russia joining the WTO taking into account energy sector reform and the impact of a future Free Trade Agreement (FTA) between the enlarged EU and Russia. The paper uses Computable General Equilibrium Modelling techniques for quantifying the different possible scenarios. The scenarios include a standard assessment of the removal of tariff barriers including agriculture, services and removal of non-tariff barriers. The results suggest that a potential FTA would be beneficial for Russia only if it would incorporate not only reduction in industrial tariffs but also in agriculture and liberalisation in services.

I thank Joe Francois for his suggestions, comments and for providing a rough calibrated baseline model as a starting point for my work here.

1. Introduction

Russia applied for WTO membership and started negotiations for its accession in 1993. Once a WTO member, a possible next step for Russia would be to join a Free Trade Agreement (FTA) with the European Union. Due to Russia's geographic location and the importance of the EU in its external trade, accounting for more than 50% of its total trade, joining a FTA with the EU would be an expected next step. Both joining the WTO and concluding a FTA with the EU would imply reduction in trade barriers with changes in bilateral trade flows that would affect the Russian economy. This paper seeks to provide a quantitative assessment of the impact of the liberalisation of restrictions on trade on bilateral trade flows and its effects on the Russian economy.

The possible impact of a FTA on the Russian economy will depend on the coverage of the agreement. A trade agreement may have broader effects than those resulting from tariff removal. A free trade agreement can affect a whole range of government policies, not just those applied at the border, that could have more important consequences for the domestic economy. If the Russia-EU FTA would only include reductions in industrial tariffs, the benefits for Russia are likely to be limited, since EU tariffs are already low on products exported by Russia (as shown in Brenton, Tourdyeva and Whalley 1997). On the other hand the gains for Russia might be large if the FTA stimulates regulatory reforms, reduction in barriers to trade in services and covers also agricultural products.

In order to quantify the different effects of a FTA and WTO accession on the Russian economy, in this paper I define different scenarios. Due to data limitations and modelling difficulties the benefits from 'locking-in' domestic reform policies can only be proxied very crudely. Nevertheless, the paper seeks to quantify and compare these different scenarios using a computable general equilibrium (CGE) model. CGE models are often used for applied trade policy analysis (see for example Francois and Reinert 1997). These models can be used to assess the economic effects of different trade policies including tariffs and non-tariff barriers. The model used in this paper assumes perfect competition, constant elasticity of substitution preference functions for consumers and constant elasticity of transformation frontier for production possibilities in each region.

A few recent papers have also attempted to quantify the possible effects of Russia's accession to the WTO and a Russia-EU FTA. Jensen, Rutherford and Tarr (2004) use base data from 1995 in a CGE model allowing for increasing return to scale to estimate the effects of the WTO accession. They analyse the medium run effects by assuming a 50% import tariff reduction and liberalization of FDI in the service sector. They find that the overall gains from accession amount to 7.2 percent of the value of Russian consumption (or 3.3% of GDP) in the medium run from WTO accession and up to 24 percent (11% of GDP) in the long run. Most of these gains originate from the FDI liberalization in services (70% of the gains). Yudaeva (2002) also argues that major effects of the WTO accession are expected to come from increasing market access to the service sector, while the effects of liberalization of trade in goods will be rather modest since major trade liberalization has already taken place in Russia. Contrary to these findings de Souza (2004) concludes (again using a CGE model) that WTO accession alone would have limited effects on Former Soviet Union (FSU) countries, while an EU-Russia FTA would yield potentially greater gains based on tariff reductions. Sulamaa and Widgren (2002) also look at the effects of EU enlargement and EU-CIS (Commonwealth of the Independent States) integration using a CGE model with 1997 as a base year. The model used in the paper, similarly to Souza (2004), does not include Russia as a separate region therefore no conclusions can be reached on the precise effects on the Russian economy. The paper finds that the impact of the Eastern enlargement of the EU has negligible impact on other countries while an EU-CIS integration worsens welfare in most of the other regions with the exception of FSU, Finland and Germany. The findings suggest that for an EU-CIS integration to be beneficial it is required that productivity improvements take place in the CIS countries.

In this paper we use an updated database which includes Russia as a separate region and that is based on production and trade in 2001. Moreover, based on recent developments of the negotiations of the WTO accession, we take into account an energy sector reform that largely changes the potential effects of the WTO accession. Furthermore, we combine the negotiated binding tariffs with updated tariff data that provide greater precision for the quantification of the effects. Finally, we investigate the effects of a deeper form of Russia-EU FTA including tariff reductions not only for industrial products but also services and agriculture. Moreover, we investigate the effects of possible regulatory reforms tied to the agreements.

The paper is organised as follows. The following section provides a detailed description of current trade policies both in the EU and in Russia and a brief description of the implications for the FTA. The next section explains the specification of the computable general equilibrium model. Section 4 then describes the different scenarios. The results of the simulations are presented in the fifth section. The final section concludes.

2. Current trade policies and economic links between Russia and the EU[1]

Trade policies in the EU

Table 1 summarises the key features of EU (EU15 Member States and the ten New Member States separately) imports from Russia and the associated MFN tariffs in the common external trade policy of the EU. The table shows that the sectoral structure of EU imports from Russia is dominated by mineral products, and especially oil and gas, which accounted for 38 per cent of the total in EU-15 imports and 64 per cent in EU-10 imports in 2001. The other main sectors in EU-15 imports from Russia are other manufacturing products (18 per cent), other metals (8.7 per cent), steel (5.3 per cent) chemicals (4.8 per cent), agricultural products (3.8 percent), wood (2 per cent) and other machinery products (1.8 per cent). No other manufacturing sector comprises more than one per cent of the total.

Thus, Russian exports to the EU are dominated by resource intensive products. This is a central issue for Russia arising from domestic reform, WTO accession and greater integration with the EU: the extent to which Russia evolves away from an economic structure dominated by basic commodities and resource intensive activities towards a structure based around a modern high value-added manufacturing sector. Economic policy in terms of trade policies, energy policies, policies towards foreign investment, the nature of standards and the standardisation process are all crucial in this context.

[1] This section draws on a joint paper with Paul Brenton entitled "Trade Policies in Russia and the EU with Implications for the Economic Impact of a Free Trade Agreement" prepared for the European Commission in 2001

The next two columns of the table show the trade weighted (using import values for the year 2001) average (MFN) tariff for each sector. This again reflects the dominance of mineral products where tariffs are very low. In addition, all the other key sectors in EU imports from Russia have relatively low tariffs. For coal, oil and gas the average tariff is 0 per cent, for wood the average tariff in 2001 was 0.1 per cent. The average tariff for other manufacturing products is 1.9 per cent, for steel 0.9, for chemicals 1.5 per cent. The trade weighted average tariffs on textiles, clothing, processed food and motor vehicles are the highest (between 1.8 and 9.3 per cent in 2001), but currently these sectors together comprise only 2.4 per cent of total EU imports from Russia. The overall trade-weighted average tariff was 2 per cent in 2001 in the EU-15 and 7.1 percent in the EU-10 in 2001.

Table 1 has shown the situation that would be relevant if Russia paid the MFN tariff of the EU. In practice in 2000 Russia was eligible for preferential treatment under the EU's Generalised System of Preferences (GSP) for certain products. Thus Table 2 extends the analysis by showing for each sector the amount of imports in 2000 which were eligible for GSP treatment and the amount of imports which actually received GSP treatment. The final row of the table shows that only a relatively small proportion (6.4 per cent) of EU imports of non-agricultural products were eligible for GSP treatment in 2000. This reflects that a very large proportion of EU imports from Russia are concentrated upon products that already enter the EU market with zero duties, where the GSP is not relevant. The Table shows that of imports eligible for GSP preferences about 50 per cent were actually granted preferential access to the EU. This is important since if the factors which constrain the full exploitation of the GSP remain under a free trade agreement then the impact of such an agreement on trade flows will be reduced.

One of the main reasons why products may not receive preferential treatment is failure to satisfy the rules of origin which stipulate particular changes or processes that must be undertaken in the beneficiary country to confer origin, (see Brenton and Manchin 2003 for further discussion). This is likely to be an important issue in a free trade agreement between the EU and Russia if the rules of origin constrain the impact of trade liberalisation and domestic reform in Russia in stimulating industrial adjustment in Russia. This may arise since rules of origin tend to be more restrictive for standard and modern manufactures such as processed food products, clothing and engineering and transport

products than for basic commodities where origin is more easily established. In this context a quick integration of Russia into the pan-European area for cumulation would be important in allowing Russian producers to source imports from throughout Europe, including the CEECs and to integrate Russian producers into European-wide networks of production.

Table 2 goes on to show the trade weighted average tariffs computed on the basis of the actual amount of imports which received GSP treatment in 2000 and the average tariffs that would have arisen if GSP preferences had been fully exploited in that year. This leads to a minor reduction in the overall tariff for non-agricultural products from 0.83 per cent with MFN duties (from table 1) to 0.77 per cent with actual GSP preferences and 0.68 per cent if GSP preferences had been fully taken up. The final columns of the table show a slight increase in the proportion of imports from Russia subject to zero duties and a slight decline in the share of trade subject to high duties of more than 10 per cent, once the GSP is taken into account. The overall trade weighted average tariff under the GSP excluding fuels was 1.86 per cent in 2000 and would have been 1.62 per cent if GSP benefits had been fully exploited.

EU imports of steel from Russia, together with imports from Ukraine and Kazakhstan, are subject to quantitative restrictions. These are the only third-party countries to be subject to such restrictions. Many of the quotas applied to these countries appear to be binding, that is, actual trade is very close (more than 90 per cent) of the quota level. These quotas will be removed upon the accession of the respective country to the WTO. If there are different dates of accession to the WTO for these countries, the EU will have to consider the removal of all of the quotas upon the accession of the first countries to avoid potential trade diversion if the non-member countries remained quota-constrained.

Overall, with very low tariff barriers in the EU against imports of industrial products from Russia the scope for trade diversion and trade creation in the EU appears to be very limited.

Trade policies in Russia

Table 3 shows the structure of Russian imports from the EU and the average tariffs for the year 2001 for each sector and in total, weighted by trade values. In 2001 agricultural products (primary agricultural products, forest and fishery, processed food products) accounted for 16 per cent of Russian imports from the EU-15. Russian imports from the EU are dominated by other manufacturing products, which accounted for 37 per cent of the total. Other metals, chemicals, steel and clothing are also important sectors in Russian imports from the EU.

The overall trade weighted average tariff on Russian imports from the EU-15 in 2001 was 8.4 per cent and 8 per cent for the EU-10. High average tariffs, above 15 per cent, are apparent for processed food, wood and clothing. The table also shows that an important proportion of Russian imports from the EU were subject to high duties in excess of 10 per cent.

By presenting an indicator of the similarity of the structure of Russian imports from the EU and imports from other trade partners we examine the potential for the preferential removal of tariffs in Russia against imports from the EU to cause trade diversion in Russia. Figure 1 provides a graphical representation of the values of the similarity index between the EU and different suppliers of imports to the Russian market in 2000. The highest degree of import similarity is between Russian imports from the EU and imports from the US. This reflects in part the importance of machinery in imports from both countries. High degrees of similarity are also apparent between Russian imports from the EU and imports from the Czech Republic and Poland. In the former case this again reflects the importance of engineering products, which accounted for almost 30 per cent of Russia imports from the Czech Republic in 2000. For Poland, however, the high value of the similarity index also captures in part the importance of agricultural products in Russian imports from both the EU and Poland. Due to the EU enlargement a free trade agreement between the EU and Russia will entail no discrimination between existing EU members and countries in Central and Eastern Europe and hence no scope for trade diversion between these groups of countries.

The figure also shows the relatively high degree of similarity between Russian imports from the EU and Russian imports from Ukraine. Thus, a free trade agreement between Russia and the EU could lead to significant trade diversion away from Ukraine in both the EU and the Russian markets. The impact in Russia may well be limited if Ukrainian products are of vastly different quality to products from the EU, thus reducing the degree of substitutability between products from these two countries in the Russian market. Nevertheless, this again raises the issue of whether parallel trade agreements with Ukraine should be investigated.

So, high tariffs and a relatively high degree of similarity between imports from the EU and imports from other OECD countries suggest considerable potential for trade diversion in Russia away from OECD countries such as the US, Canada and Japan following a free trade agreement with the EU. If so this would have the standard negative impact on welfare from the economic theory of preferential trade agreements, which was briefly described in the introduction.

Implications for a Free Trade Agreement

The average tariff on EU imports from Russia is very low. Further, an important share of EU imports from Russia enters the EU at zero duty rates. Hence, it would appear that the removal of tariffs under a free trade agreement would not have a significant impact upon EU imports from Russia. Thus, there appears to be little scope for substantial trade creation or diversion in the EU market under a free trade agreement with Russia.

This of course is based upon an analysis of current trade structures and it may be that a free trade agreement would encourage some diversification of the structure of EU imports from Russia towards products where tariffs are more significant, such as textiles and clothing. This will depend upon supply conditions in Russia and the extent to which EU trade policies are currently constraining imports from Russia in these sectors. Further, producers of products such as clothing may have difficulty in exploiting the benefits of a free trade agreement with the EU if factors which currently constrain the taking up of GSP preferences, such as the restrictiveness of, and costs of proving compliance with, rules of

origin, remain. Nevertheless, even a substantial proportionate increase in trade in these sectors will have at best a small impact on total EU imports from Russia and an insignificant impact upon the EU market as a whole. For example, in 2000 imports from Russia of textiles, clothing and footwear comprised 0.38 per cent of total EU external imports of these products.

Thus, from the point of view of Russian exports to the EU, if a free trade agreement is to have a significant impact it will have to occur via mechanisms other than tariff removal. The key mechanisms which could contribute to a significant increase in economic integration between the EU and Russia are

- The impact of a FTA on the extent and stability of the reform process in Russia.
- The impact of a FTA on foreign direct investment in Russia
- The extent to which a FTA addresses issues relating to technical regulations and conformity assessment although here again EU imports from Russia are currently dominated by sectors where technical regulations are unlikely to be barriers to trade.

Thus, in the context of trade in goods a Russia-EU free trade agreement is unlikely to have a significant impact upon EU imports from Russia in the short-term. The impact of a free trade agreement will emerge in the medium to long-term by way of reinforcing market reforms in Russia, stimulating foreign investment in Russia and creating an environment through the adoption of modern European technical regulations and standards for the growth of technology intensive export orientated industries such as machinery. A suitably designed and implemented agreement could stimulate industrial change and adaptation in a similar way as has occurred in Central and Eastern Europe with flourishing two-way trade in engineering products and the increasing integration of firms from these countries into European-wide production networks. However, a key issue in this context is the need for energy reform in Russia. Subsidised energy prices will act to maintain an industrial structure biased towards energy intensive products.

In contrast to the very low average tariffs in the EU, Russian imports from the EU face considerably higher tariffs. Thus tariff removal under a free trade agreement will have a

much more profound impact upon Russian imports from the EU. The scope for trade creation and trade diversion from the preferential removal of Russian tariffs on imports from the EU will be more substantial, although this impact may be slightly diluted if tariffs are reduced as part of the Russian offer to join the WTO and a free trade agreement occurs after WTO accession. Values of the similarity index (see Figure 1) suggest that if trade diversion does occur in Russia then it will most likely be at the expense of the US, Switzerland, Canada and Japan. There is a high degree of similarity between EU exports to Russia and the exports of many of the CEECs but trade diversion in this case will be avoided by accession. Similar reasoning applies to Turkey, which will also have duty free access to the Russian market if a free trade agreement is implemented.

When levels of protection are not symmetric then the creation of a free trade area has important implications for the terms of trade. If a free trade agreement generates a significant amount of trade diversion, it will tend to improve the terms of trade of the parties to the agreement with an adverse impact upon the terms of trade of the rest of the world. A free trade agreement between countries with greatly differing tariffs can reduce the terms of trade of the high tariff country.[2] For example, if a country with relatively higher tariffs forms a free trade area with the EU and generates significant trade diversion in favour of EU producers, the terms of trade of both partners with respect to the rest of the world will improve. If the agreement leads to trade creation in the high tariff country there will be a decline in sales by local firms in their domestic market. In the EU market, where tariffs are low, trade diversion and trade creation are less likely to be significant. Thus, with no trade being created in the EU market, the decline in domestic sales by firms in the high tariff country may not be offset by a rise in exports to the EU. Overall, the demand for goods produced in the high tariff country may fall and its terms of trade could worsen. Note that in this case the EU benefits from an even larger improvement in its terms of trade. These potential adverse terms of trade effects for Russia would be reduced if a free trade agreement with the EU were accompanied by general external liberalisation.

[2] Spilimbergo and Stein (1996)

3. Model Specifications

The computable general equilibrium (CGE) model used for quantifying the effects of a Russian-EU free trade agreement is characterized by an input-output structure. The model used in this paper is the standard Global Trade Analysis Project (GTAP) model which is a multi-regional model including links between households, firms and governments, incorporating links between different sectors.

Production by firms in each region and sector is represented by a Leontief-type multi-level production function that involves value-added and intermediate inputs obtained from input-output tables. Each industry is assumed to produce a single homogenous product. Demands for primary factors and intermediate inputs are represented by a nested constant elasticity of substitution (CES) function. Intermediate inputs are either produced domestically or imported. Each firm uses a CES composite of domestic and imported intermediates. Domestic and imported goods are imperfect substitutes. The model covers all world trade and production and allows for two-way trade within product categories by treating the products of each region as heterogeneous based on the Armington-assumption. The model assumes perfect competition and constant returns to scale.[3]

Total regional consumption is represented by a composite regional household. Regional household behaviour is governed by a Cobb-Douglas aggregate utility function that is specified over composite government purchases, private consumption and savings. The current government expenditure proxies the welfare derived from the government's provision of public goods and services to private households in the region. Savings in the utility function proxies future consumption. The private consumption is derived from a Constant Difference of Elasticity (CDE) utility function, while government purchases are specified according to Cobb-Douglas preferences.

Labor is assumed to be mobile across industries but not across countries. The global transportation sector intermediates between the supply of, and demand for, international

[3] The algebraic form and theoretical structure of the model is described in Hertel and Tsigas (1997).

transport services. Furthermore, the global bank sector intermediates between global savings and investments. Technological progress is exogenously determined.

The data come from the Global Trade Analysis Project (GTAP) version 6.4 (pre-release) dataset which is benchmarked to the year 2001. The data is aggregated into 22 sectors and 13 regions (details on the aggregation are presented in Appendix 1).

4. Policy scenarios

EU enlargement

In the base scenario we quantify the effects of EU enlargement on trade flows and production. The following scenarios are built on the results of this base scenario assuming that EU enlargement has taken place. This scenario assumes abolition of tariffs within the enlarged EU implying zero tariffs between New Member States and between New and Old Member States. Furthermore, the new Member States apply the common external tariffs of the EU vis-à-vis all third countries[4].

Russian accession to the WTO

The second scenario examines the impact of Russian accession to the WTO assuming that the EU enlargement has already taken place. We assume that Russia reduces its tariff rates to the final binding levels (table 5 shows binding and applied tariff rates for Russia). For several sectors the final binding tariff rate is higher than the actual tariff rate therefore we leave these tariffs unchanged. The sectors where a reduction in tariff rate occurs are wood products, clothing, chemicals, motor vehicles and other transport products. One of the key issues in the negotiations of the WTO accession is the Russian energy price setting. It has been long argued by several countries that Russia has much lower domestic prices of energy that the world prices creating an unfair competition which should be eliminated

[4] In the enlargement scenario the new Member States apply the same average tariffs for each product category as the "old" Member states towards Russia, further they apply zero tariffs towards Turkey with the exception of the agricultural products for which they utilize the "old" Members states average tariffs.

with the WTO accession. As a result, Russia agreed to increase domestic gas prices, therefore we assume according to the agreement reached between the EU and Russia[5] that gas prices for industrial users will be doubled in Russia. Finally, to take into account liberalisation of trade in services, we assume that the ad valorem equivalent of restrictions on services will decline by 20 %.

Russia-EU FTA

The third scenario provides a detailed assessment of a Russia-EU FTA assuming that the eastern enlargement and the WTO accession of Russia have taken place. We consider three different forms of FTAs: (i) FTA with removal of tariffs on industrial goods, (ii) FTA with removal of tariffs on industrial, agricultural goods and liberalisation of trade in services, (iii) FTA with liberalisation of trade in services and goods with reduction in technical barriers to trade. Jensen, J., Rutherford, T. and Tarr, D., (2004) provide estimates for ad valorem equivalence of barriers to FDI in services sectors in Russia which ranges from 33% to 95%. As a crude approximation we assume that the ad valorem equivalent of barriers to trade in services is 55% in Russia and 5% in the EU prior to the FTA. Since these equivalent tariffs are measuring the barriers to trade in services they do not generate any revenues to the governments.

Technical barriers to trade are difficult to measure directly. No precise measure of these barriers is available for us. To proxy the magnitude of technical barriers we define sectors where we expect to have higher technical barriers to trade. The EU has adopted different approaches for the removal of technical barriers to trade between Member States. The most restrictive approach covers products with important health and safety requirements, such as pharmaceuticals, foodstuffs etc, which products are expected to meet relatively more severe technical regulations. Other approaches deal with products for which safety and health concerns are not so important (see a detailed discussion on the importance of technical barriers to trade by product categories in CEC (1998)). We assume that products

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Finally, towards all other trading partners we assume a reduction of tariffs to zero on coal, oil, gas, electricity, natural gas, construction and services and a reduction of tariffs by 4% on all other products.

[5] See European Commission, DG Trade News Release, 21/05/2004, "Russia-WTO: EU-Russia deal brings Russia a step closer to WTO membership".

requiring harmonisation of regulations between EU Member States (most restrictive approach) face the highest technical barriers when traded between Russia and the EU. To proxy the reduction of these barriers due to regulatory reforms undertaken with the FTA we assume an ad valorem equivalent of 5 per cent on imports of primary agricultural products, processed food, chemicals, motor vehicles and other manufactured products into Russia, and 2 per cent into the EU. This is in line with trade cost estimates found by previous studies indicating that trade costs range from 2 to 10 percent of the cost of delivered goods (see further details on these estimates in Francois, van Meijl, and van Tongeren, 2003).

Table 4 Policy scenarios

Enlargement	**WTO accession**	**Russia-EU FTA**		
		restricted FTA	**broad FTA**	**broad FTA with reduction in technical barriers**
• New EU Member states join the custom union of the EU	• tariff reductions according to the binding tariff levels • gas price for domestic users doubles • liberalization of trade in services (ad valorem equivalent of restrictions on services will decline by 20%)	• removal of tariffs on industrial goods	• removal of tariffs on industrial goods • removal of tariffs on agricultural products • liberalization of trade in services	• removal of tariffs on industrial goods • removal of tariffs on agricultural products • liberalization of trade in services • reduction in technical barriers to trade

5. Simulation Results

Enlargement of the EU

The impact of the enlargement on trade flows and production is presented in Table 6. While trade flows between the EU15 countries and Russia are only affected to a small

extent with the exception of the gas sector, Russian exports to the New Member States change importantly in several sectors after the enlargement. This is partly due to the limited similarity in trade patterns between old and new Member States and Russia (see Figure 1). As the New Member States reduce tariffs in several sectors with the adoption of the common external tariffs Russian exports to these countries increases in most of the sectors. The highest rise occurs in clothing products due to the reduction of the very high tariff barriers imposed on Russian products by New Member States prior to enlargement. Several other sectors also experience important increases in exports to the New Member States, such as coal, chemicals, steel, and other manufacturing products. On the other hand Russian exports of primary agriculture products and gas to the New Member States decreases by more than 20% as it is replaced with relatively cheaper EU products. Changes in production are limited under this scenario for Russia and the EU15 countries. For the EU10 countries production of steel rises by 10% due to the elimination of relatively high steel tariffs previously applied by the EU-15. On the other hand production of gas and oil decreases as it is replaced with gas and oil available at cheaper prices in the EU. As prices of these sectors decrease in the EU10 countries export of these products to Russia increases. The increase in the export is very pronounced, which is due to the very limited EU10 export of these products prior to enlargement.

Russian accession to the WTO

Table 7 shows two different scenarios. The first one includes reduction in industrial and agricultural tariffs and diminution of barriers to trade in services. The second table extends the first scenario with an increase in Russian gas price for domestic users. The changes in trade flows are less significant under the first scenario. The highest rise in Russian exports to the EU occurs in other transport vehicles and clothing products for which the increase is around 6%. The increase in the exports of chemicals, motor vehicles and other machinery to the EU is slightly smaller. Trade in services increases between the EU and Russia; while exports of services increase by 6%, imports rises by 10% for other services and 17% for construction services due to the reduction of trade barriers in the service sector. As Russian import tariffs are reduced for wood products the import of these products increases significantly. Furthermore, Russian imports of chemicals and motor vehicles also increase. Due to the reduction of tariffs in several sectors a small restructuring occurs

in the Russian economy. With increased imports of wood, clothing products and services, production in these sectors slightly declines and shifts towards other machinery, other metal and transport goods. On the other hand, production in other regions is only marginally effected as Russia joins the WTO.

As gas price increases in Russia as part of the WTO accession the magnitude of changes both in trade flows and production are more pronounced. Drastic changes occur in the industrial output structure of the Russian economy with an important drop in gas production. The structure of the production shifts from gas, motor vehicles and construction services towards other sectors. The shift away from gas production evolves both towards modern high value-added manufacturing sectors, but also towards resource intensive activities. The most significant rise occurs in production of other transport products, followed by other machinery, oil and clothing. For these sectors the increase in the production is more than 20%. These changes are also reflected by modifications in trade flows. The results show that doubling the gas prices for domestic users with important tariff reductions in certain sectors and liberalization in the services sector would imply strong changes in the Russian trade structure. Exports of all sectors towards the EU10 and EU15 countries rise significantly with the exception of electricity which drops by more than 30%.

EU-Russia FTA

The simulation results of a FTA scenario are presented in Table 8. The deeper is the FTA the higher its impact on trade flows and production. The smallest effects on trade flows occur with the scenario when only industrial tariffs are eliminated, nevertheless the changes are still pronounced. This scenario results in an important increase in trade of textiles and clothing products between the EU and Russia. Russian exports of clothing products more than doubles to the EU while imports of both textiles and clothing also increases significantly. The rise in clothing exports is accompanied with a more than 20% expansion of clothing production. Imports of agricultural products and processed food products from the EU decline while Russian exports increase. Furthermore, Russian exports of gas decrease towards both regions and imports increase. Production of gas

increases in all three regions and the biggest increase occurs in Russia. Prior to the FTA, the EU tariff rate in the electricity sector was zero while Russia had a low tariff toward EU15 countries and somewhat higher tariff towards EU10 countries (around 3%). Therefore once these tariff barriers are eliminated, Russian exports drop by more than 20% and imports increases by 14% from the EU15 and 33% from the EU10 countries which is accompanied with a small decrease in Russian electricity output. In most of the other sectors the impact of the FTA is higher on Russian imports than exports due to the low initial external EU tariffs and higher Russian tariff rates.

When the removal of industrial tariffs is accompanied with the removal of agricultural tariffs and liberalization of trade in services Russian imports of agricultural products and services augment significantly. The changes are similar to the previous simulation results while the magnitude of the changes is bigger for most of the sectors. The Russian production shifts away from some of the resource intensive sectors, such as electricity, natural gas, but also from some sectors with more high value-added, such as motor vehicles and moves towards gas production and to a smaller extent textiles and clothing products.

In the final scenario, when tariff removal is implemented with reduction in non-tariff barriers, the most pronounced increase in Russian exports occurs in clothing and textiles followed by processed food products. Trade rises compared to the previous scenario in primary agriculture products, processed food, chemicals, motor vehicles, other manufacturing due to important non-tariff barriers in these sectors prior to the FTA. Under this scenario the shift in production away from certain resource intensive sectors, such as electricity, natural gas, steel, other mineral products towards gas, clothing, textiles and other manufacturing products is more pronounced than in the previous scenarios.

Welfare consequences

Finally we compare the national income effects of the different scenarios. Income effects in the model are measured by the Hicksian equivalent variation (EV). This represents the income consumers would be willing to forego to achieve post-reform well-being compared

to baseline well-being at baseline prices. Figure 2 shows the income effects of the different scenarios for all regions. The highest income effects in Russia are achieved by joining the WTO and increasing the gas prices for domestic users. When comparing the different Russia-FTA scenarios the most beneficial agreement for Russia would be the deepest form of free trade agreement incorporating not only agriculture and services but also reduction of non-tariff barriers to trade. If the trade agreement would be limited to a reduction in industrial tariffs the FTA would not be beneficial for Russia. This is due to the fact that prior to the potential FTA the EU applies already low external tariffs thus this basic agreement would imply mainly reduction in Russia's tariffs towards the EU. These results suggest that a deep FTA including not only liberalization of trade in services and tariff reduction in other products but also reduction of non-tariff barriers due to regulatory reforms would bring more substantial benefits for the Russian economy. All other regions with the exception of EU-15 countries, Middle-East countries and other European countries would loose from a Russia-EU FTA. The free trade agreement could be beneficial for the EU10 countries only if it is accompanied with higher regulatory reforms.

Our findings are different from those found by de Souza (2004) who concludes that a Russia-EU FTA, which is limited to tariff reduction in the manufacturing sector, would be beneficial for all countries except Turkey. de Souza also finds that Russia's WTO accession would imply a small welfare loss for Russia, Turkey, Finland, Hungary and Poland. His results seem to be partly due to the fact that under the WTO accession scenario he only considered tariff changes according to the agreed WTO tariff bindings and does not separate Russia from other FSU countries. His findings are also in contrast to the results of Jensen and Tarr (2004) who find that all forms of WTO accession would be beneficial for Russia. On the other hand Sulamaa and Widgren (2002) find that a FSU-EU FTA would be welfare worsening for all regions with the exception of the FSU (including Russia). These results are more similar to our findings, although we find that the FSU countries (not including Russia) would always loose from a FTA and Russia with the EU would gain only if the FTA would imply more than only elimination of industrial tariffs. [6]

[6] When comparing our results to those of de Souza (2004) and Sulamaa and Widgren (2002) one should keep it in mind that those scenarios were do not take into account WTO accession when estimating the effects of an FTA.

6. Conclusions

In this paper, the effects of the EU enlargement, Russia's accession to the WTO, and an EU-Russia FTA on bilateral trade flows and production have been examined. A computable general equilibrium model was used to quantify the impact of the different scenarios.

When examining Russia's accession to the WTO two different scenarios were considered. The first scenario assumed reduction in industrial and agricultural tariffs and decline in barriers to trade in services, while the second extended these with an increase in Russian gas prices for domestic users. The first scenario had only limited impact on trade flows and production structure of the Russian economy. However, doubling the gas prices for domestic users would have important consequences for the Russian economy. It would imply changes in trade flows and a drastic drop in gas production shifting the economy towards some higher-value added sectors while in the same time also towards other resource intensive sectors.

The paper also examined three possible scenarios for a Russian-EU FTA. The results show that a key element of a free trade agreement between Russia and the EU will be the coverage of the agreement. If the FTA is not only limited to reduction in industrial tariffs , but also covers liberalisation of trade in services and regulatory harmonisation implying reduction in regulatory barriers to trade, benefits for Russia would be larger. This is particularly true if a FTA would be accompanied by domestic reform, with adjustment involving resources moving into more advanced sectors away from energy and resource intensive sectors. However, it is apparent from the results that an increase in Russian gas prices does not cause a shift away from resource-intensive production towards manufactures. A domestic regulatory reform is needed for a beneficial restructuring of the Russian economy. A free trade agreement can only complement the required domestic reforms.

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Table 1: MFN Tariffs and EU Imports from Russia in 2001

Sector	Imports		Sector of sectors		Weighted Average Tariff		Tariff Revenue	
	EU-15	EU-10	EU-15	EU-10	EU-15	EU-10	EU-15	EU-10
1 primaryagr	389.845	67.187	0.011	0.006	2.8	3.9	11.023	2.641
2 forestsfish	550.097	42.047	0.015	0.004	0.2	0.4	1.099	0.149
3 coal	142.065	78.403	0.004	0.007	0	8	0	6.275
4 oil	7656.060	3868.344	0.209	0.367	0	7.7	0	297.892
5 gas	6121.002	2852.910	0.167	0.271	0	5.1	0	145.084
6 ominerals	160.715	187.817	0.004	0.018	0	6.6	0.026	12.469
7 procfood	449.522	64.744	0.012	0.006	9.3	23.2	41.745	15.029
8 wood	746.184	125.913	0.02	0.012	0.1	5.4	0.951	6.853
9 textiles	144.498	71.722	0.004	0.007	7	11.2	10.171	8.019
10 clothing	163.095	6.183	0.004	0.001	9.1	30.6	14.872	1.889
11 chemicals	1737.790	668.312	0.048	0.063	1.5	7.1	25.41	47.752
12 steel	1935.333	292.428	0.053	0.028	0.9	7.5	18.339	21.974
13 othermetals	3192.751	262.399	0.087	0.025	2.3	2.9	74.731	7.527
14 fabmetals	214.194	297.509	0.006	0.028	2.9	4	6.126	11.762
15 motorvehs	130.169	61.205	0.004	0.006	4.8	5.5	6.297	3.338
16 otransport	93.117	167.926	0.003	0.016	0	7.9	0.01	13.194
17 omachinery	649.536	381.555	0.018	0.036	0.1	4.3	0.939	16.573
18 omanufacts	6648.247	812.499	0.182	0.077	1.9	10.9	124.723	88.318
19 electricity	92.104	21.327	0.003	0.002	0	4.3	0	0.909
20 naturalgas	5.597	0.192	0	0	0	0	0	0
21 construct	80.679	4.560	0.002	0	0	0	0	0
22 oservices	5251.447	205.051	0.144	0.019	0	0	0	0
Total	36554.048	10540.234	1	1	2.0	7.1	336.462	707.649

Table 2: GSP Tariffs and EU Imports from Russia in 2000

Sector	Imports 2000	Imports Eligible for GSP	Imports Receiving GSP Treatment	Ratio of Imports receiving GSP to Eligible Imports	Weighted Average Tariff with current GSP	Weighted Average Tariff with Full GSP	Unweighted GSP Tariff	Share of Sector Imports with t=0		Share of Sector Imports with t>10	
								Actual GSP	Full GSP	Actual GSP	Full GSP
Minerals	22680021	0	0	NA	0.11	0.11	0.00	97.08	97.08	0.00	0.00
Pharmaceuticals	6012	0	0	NA	0.00	0.00	0.00	100.00	100.00	0.00	0.00
Inorganic, Organic Chemicals and Fertilizers	1748452	625975	219516	35	3.16	2.31	4.35	47.70	60.56	0.52	0.00
Other Chemicals	114611	105874	53075	50	4.35	2.51	0.77	37.60	53.71	17.79	0.00
Plastics	129284	88703	45847	52	2.79	2.12	1.72	61.57	66.31	0.00	0.00
Raw Hides and Skins	206911	11926	6984	59	0.22	0.16	1.24	94.21	95.67	0.00	0.00
Wood	1285452	156337	81625	52	0.70	0.57	0.96	88.15	88.43	0.00	0.00
Wood Pulp	466816	246839	193326	78	0.39	0.01	0.11	88.57	99.82	0.00	0.00
Textiles	122003	117220	90320	77	7.41	7.14	6.42	4.11	4.11	5.59	0.15
Clothing	174928	174881	35631	20	12.33	10.81	10.21	0.04	0.04	96.78	96.77
Footwear etc	5946	5962	3270	55	6.69	5.75	5.14	1.05	8.72	24.55	24.55
Stone, Cement etc	25803	23891	10560	44	3.93	2.62	1.59	5.53	8.64	8.18	0.00
Jewels	1973598	3250	0	0	0.00	0.00	0.10	99.84	99.99	0.00	0.00
Iron and Steel	2081212	348027	288956	83	1.38	1.32	1.37	38.95	41.19	0.00	0.00
Base Metals	4767361	0	0	NA	2.24	2.24	1.93	63.00	63.00	0.00	0.00
Non-electrical Machinery	244307	177243	91407	52	1.29	0.67	0.37	40.64	57.97	0.00	0.00
Electrical Machinery	135404	102136	34607	34	1.52	0.70	1.10	47.44	60.15	0.26	0.00
Motor Vehicles	55981	53440	18334	34	8.63	6.30	3.88	2.03	4.75	14.44	11.81
Other Transport Equipment	76620	23269	97	0	0.61	0.08	0.15	69.72	86.76	0.00	0.00
Precision Instruments	36709	29688	3081	10	2.82	1.04	0.67	20.99	50.53	0.00	0.00
Miscellaneous Manufactures	65837	29932	11522	38	0.77	0.07	0.67	72.40	97.43	0.00	0.00
Total	36403268	2324593	1188156	51	0.77	0.68	2.04	84.57	85.84	0.60	0.49

Figure 1: Similarity Between Russian Imports from the EU and Other Suppliers in 2000

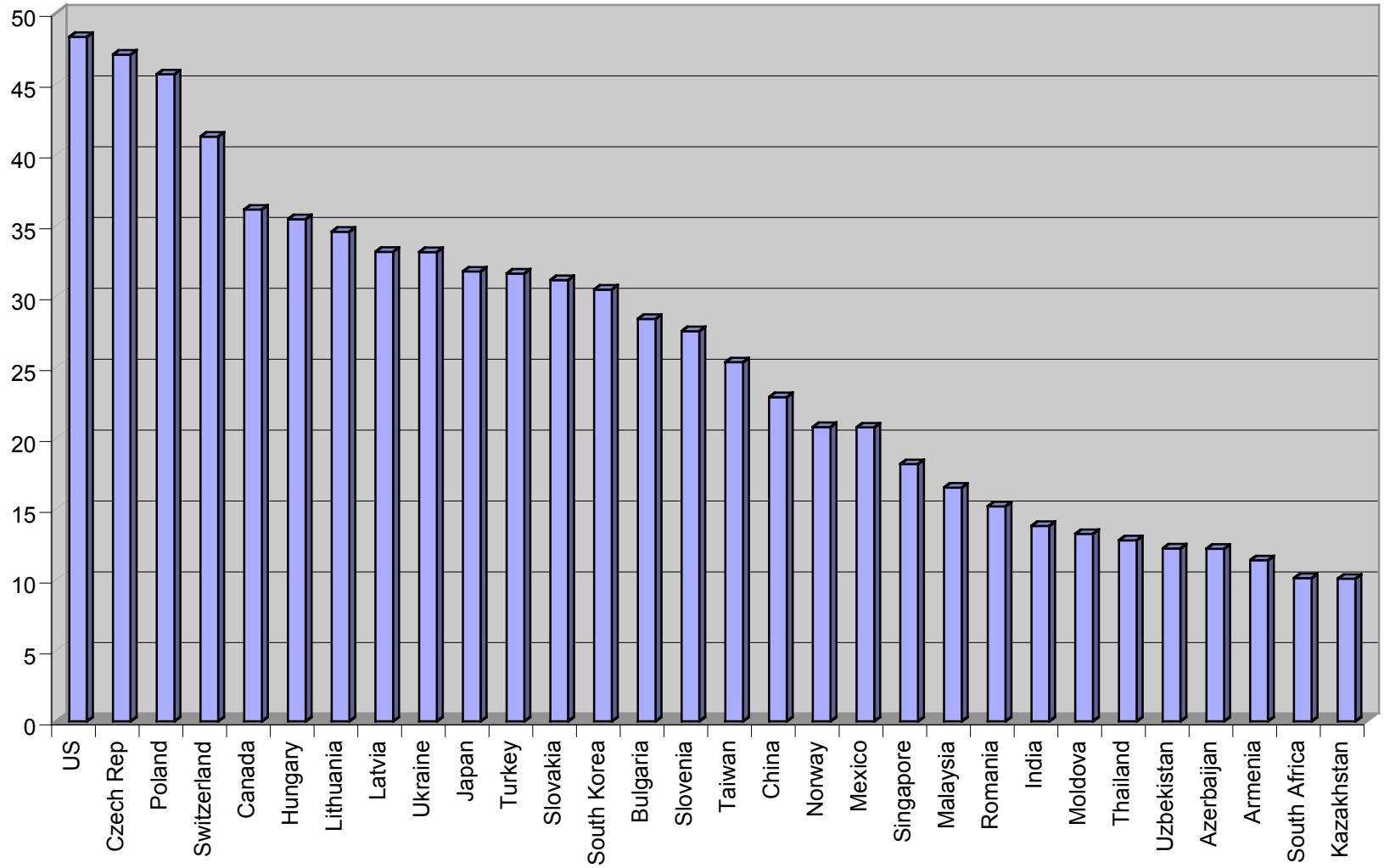


Table 3: MFN Tariffs and Russian Imports from the EU in 2001

Sector	Imports		Sector Share		Weighted Average Tariff		Tariff Revenue	
	EU-15	EU-10	EU-15	EU-10	EU-15	EU-10	EU-15	EU-10
1 primaryagr	681.115	131.111	0.033	0.004	9.6	7.5	65.615	9.79
2 forestsfish	13.056	5.217	0.003	0	9.5	13.2	1.241	0.687
3 coal	1.763	1.722	0	0.009	3.6	0.1	0.063	0.001
4 oil	53.715	22.894	0	0.421	0.1	0	0.042	0
5 gas	1.279	0.000	0	0.205	0	0	0	0
6 ominerals	68.258	5.705	0	0.018	5.3	5.1	3.634	0.293
7 procfood	2397.021	435.404	0.124	0.021	15.6	15.2	374.233	66.291
8 wood	829.306	97.358	0.003	0.01	18.4	18	152.964	17.504
9 textiles	664.082	75.837	0.03	0.011	12.4	11.7	82.43	8.908
10 clothing	715.021	66.579	0.044	0.003	19.6	18.8	139.912	12.517
11 chemicals	3974.189	708.590	0.076	0.067	9	10.8	358.923	76.225
12 steel	461.758	32.212	0.055	0.031	7.6	6.4	35.053	2.073
13 othermetals	277.939	21.255	0.222	0.011	12.7	11.5	35.409	2.448
14 fabmetals	677.004	96.528	0.018	0.017	14.1	14.4	95.461	13.869
15 motorvehs	1881.792	264.527	0.019	0.005	13	13.9	244.015	36.698
16 otransport	172.717	73.272	0	0.019	13.3	7.4	22.886	5.405
17 omachinery	9036.961	660.822	0.003	0.023	7.7	8.4	693.944	55.775
18 omanufacts	3028.759	552.890	0.371	0.125	12.7	11	385.658	60.821
19 electricity	144.707	70.858	0	0.001	0.1	3.3	0.172	2.362
20 naturalgas	147.403	39.944	0	0	0	0	0	0
21 construct	628.971	41.611	0	0	0	0	0	0
22 oservices	7832.248	416.026	0	0	0	0	0	0
Total	33689.063	3820.361	1	1	8.4	8.0	2691.655	371.666

Table 5 Russian import tariffs

	EU15	EU10	REUROPE	TURKEY	MIDEAST	NORTH AMERICA	SOUTH AMERICA	ROECD	EASIA	SASIA	FSU	AFRICA	Simp avera
sim	**9.6**	**7.5**	4.7	7.9	6.1	6.9	7	8.5	8.6	5	0.1	5.7	
primaryagr	**9.5**	**13.2**	9.8	10.2	6.1	10.3	4.2	3.6	7.2	0.3	0	0.7	
forestsfish	**3.6**	**0.1**	0	0	5	0	4.8	0	4.7	0	0	1.6	
coal	**0.1**	**0**	0	0	0	0	0	0	4.2	0	0	2.7	
oil	**0**	**0**	0	0	0	0.2	0	0	0	0	0	4.4	
gas	**5.3**	**5.1**	3.8	5	5	5.2	5	4.9	10.3	5.1	0	5.1	
ominerals	**15.6**	**15.2**	11.5	16.8	13.2	21.4	31.8	16.9	14.7	12.3	0	14.8	
procfood	**18.4**	**18**	16.4	19.2	18.5	18.3	15	18.6	17.4	17.4	0	15.5	
wood	**12.4**	**11.7**	11.4	15	13.8	12.2	11.5	11.3	13.6	11.5	0.3	13.9	
textiles	**19.6**	**18.8**	19.7	19.8	19.7	19.9	12.9	19.6	19.8	19.9	0.2	17.6	
clothing	**9**	**10.8**	9.7	12	8.3	10.5	8.6	9.7	9.9	8.3	0	9.1	
chemicals	**7.6**	**6.4**	6.6	6.7	6	7.3	5.7	6.4	8.1	6.2	0	5.8	
steel	**12.7**	**11.5**	7.3	12.9	14.1	13.7	7.5	9.8	9.2	6.8	0	5.5	
othermetals	**14.1**	**14.4**	12.7	15.3	13.3	14.3	12.6	13	14.7	13.5	0	11.9	
fabmetals	**13**	**13.9**	6.6	12.6	6.6	9.8	7.3	14	8.4	7.4	0	13.4	
motorvehs	**13.3**	**7.4**	7.5	10.7	15.2	14.8	13.3	7.9	13.1	16.8	0	11.6	
otransport	**7.7**	**8.4**	8.8	11	8.8	8.7	9.5	9	9.6	8.6	0	9	
omachinery	**12.7**	**11**	14.8	17	12.2	12.1	7.1	11.6	21.2	13.6	0.3	14.4	
omanufacts	**0.1**	**3.3**	0	0	0	0	0	0	0.8	0	0	0	
electricity	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
naturalgas	**0**	**0**	0	0	0	0	0	0	0	0	0	0	
construct	**0**	**0**	0	0	0	0	0	0	0	0	0	0	

Our data on final binding tariff rates by sectors originates from www.wto.ru.

Table 6 Impact of the Eastern enlargement of the EU (% changes)

	Russian exports to		Russian imports from		industry output		
sim	EU15	EU10	EU15	EU10	RUSSIA	EU15	EU10
primaryagr	-1.46	-21.17	0.49	1.41	-0.07	0.15	-0.02
forestsfish	-0.45	-5.6	0.24	0.32	-0.12	0	-0.35
coal	-1.7	34.21	2.96	3.74	0.42	-0.14	-1.43
oil	-2.78	11.09	2.34	37.06	0.45	-0.16	-10.53
gas	-3.66	-28.32	39.18	440.32	-0.45	-0.65	-18.43
ominerals	-0.37	8.74	0.39	-0.54	0.1	-0.08	1.27
procfood	-2.73	8.6	0.37	3.77	-0.13	0.03	1.65
wood	-0.68	18.15	0.54	-0.37	0.28	0.14	-1.71
textiles	-0.91	7.14	0.55	3.88	0.13	0.03	-1.93
clothing	-0.82	195.45	0.25	0.54	0.49	0.17	-1.96
chemicals	-0.83	26.13	0.45	1.27	0.61	-0.01	-1.33
steel	-3.02	33.65	1.18	1.74	0.03	-0.73	9.95
othermetals	-0.96	-8.12	0.62	-0.5	-0.79	0.12	-1.75
fabmetals	-0.93	-4.29	0.79	-2.07	-0.34	0.15	-2.24
motorvehs	-1.26	-19.7	0.11	7.66	-0.22	-0.01	2.85
otransport	-1.38	45.19	0.71	4.77	0.68	-0.14	-1.01
omachinery	-1.2	21.55	0.33	3.54	0.45	-0.13	1.19
omanufacts	-1.32	42.82	0.48	3.64	0.29	0.01	-0.33
electricity	-0.5	17.85	0.25	2.49	-0.03	-0.04	0.05
naturalgas	-0.61	-0.1	0.42	-0.07	0.01	0.01	-0.09
construct	-0.56	3.44	0.32	-1.89	-0.02	-0.02	2.6
oservices	-0.52	1.53	0.32	-3.72	-0.01	0.01	-0.45

Table 7 Impact of Russia's accession to the WTO (% changes)

without oil price increase							
	Russian exports to		Russian imports from		industry output		
	EU15	EU10	EU15	EU10	RUSSIA	EU15	EU10
primaryagr	-0.37	-0.35	1.16	1.13	0.98	0	0
forestsfish	0.68	0.62	0.44	0.43	0.31	0.01	0.01
coal	-1.08	-1.02	1.69	1.66	0.91	-0.02	-0.02
oil	-0.34	-0.15	0.95	0.95	0.55	-0.01	0.11
gas	-1.84	-1.08	2.07	3.01	0.19	0.35	1.24
ominerals	0.28	0.23	1.27	1.28	1.73	-0.05	-0.1
procfood	2.49	2.47	0.16	0.11	1.39	0	-0.01
wood	3.92	3.81	26.04	22.63	-3.38	0.14	0.07
textiles	4.9	4.88	0.21	0.18	1.37	-0.01	-0.06
clothing	6.3	6.28	5.11	0.16	-1.08	0.02	-0.05
chemicals	4.86	4.75	3.45	14.69	0.83	-0.01	0.2
steel	2.44	2.39	-0.05	-0.09	1.88	-0.08	-0.15
othermetals	3.75	3.75	0.97	0.88	3.26	-0.2	-0.24
fabmetals	3.87	3.69	-0.36	-0.42	1.81	-0.02	-0.09
motorvehs	5.45	5.4	9.85	14.86	0.48	0.03	0.11
otransport	6.38	6.16	22.05	-13.53	2.43	-0.03	-0.27
omachinery	4.79	4.75	0.47	0.43	3.28	-0.03	-0.07
omanufacts	2.59	2.38	-0.26	-0.31	1.18	-0.03	-0.07
electricity	0.16	0.17	1.01	0.95	1.06	-0.01	-0.03
naturalgas	2.45	2.51	-0.01	-0.1	0.95	-0.01	-0.07
construct	3.04	3.08	17.45	17.4	1.04	0	0.03
oservices	5.86	5.9	9.65	9.58	-1.12	0.01	0.01

with gas price increase							
	Russian exports to		Russian imports from		industry output		
	EU15	EU10	EU15	EU10	RUSSIA	EU15	EU10
primaryagr	29.22	27.72	-1.24	-0.63	12.93	-0.15	0.06
forestsfish	23.62	22.47	0.19	-0.26	15.82	-0.16	-0.48
coal	32.44	28.85	-7.6	-7.16	13.91	-0.13	-0.56
oil	47.49	6.75	-6.9	-0.22	22.93	-2.28	-13.61
gas	-0.23	19.53	961.35	9.79	-106.94	-2.04	3.97
ominerals	12.75	10.73	0.58	0.65	11	-0.32	-0.69
procfood	40.46	39.59	-2.86	-2.88	17.93	-0.06	-0.01
wood	45.02	43.57	12.28	9.21	17.87	-0.08	-0.55
textiles	38.4	38.24	6.52	6.51	21.2	-0.08	-0.19
clothing	48.34	48.23	11.12	5.66	21.91	0.01	-0.24
chemicals	30.38	28.99	5.83	17.41	19.09	-0.1	-0.05
steel	20.87	20.19	-9.5	-9.28	13.02	-0.52	-0.72
othermetals	18.81	18.23	1.28	1.37	15.03	-0.92	-0.97
fabmetals	29.21	27.43	-3.54	-3.73	13.36	0.07	-0.32
motorvehs	44.02	43.15	-14.97	-11.07	-7.05	0.09	0.03
otransport	80.61	74.43	-15.13	-39.69	29.19	-0.21	-1.16
omachinery	38.37	37.73	-6.33	-6.46	24.98	0.13	-0.07
omanufacts	45.98	39.69	-10.44	-8.65	16.12	-0.32	0.09
electricity	-31.9	-32.34	29.94	30.9	9.93	-0.05	0.26
naturalgas	55.02	55.6	-10.8	-11.08	8.03	-0.15	-0.56
construct	35.63	35.81	-28.52	-28.53	-24.45	0.32	0.46
oservices	39.71	40.04	6.58	6.26	8.65	0.01	0.06

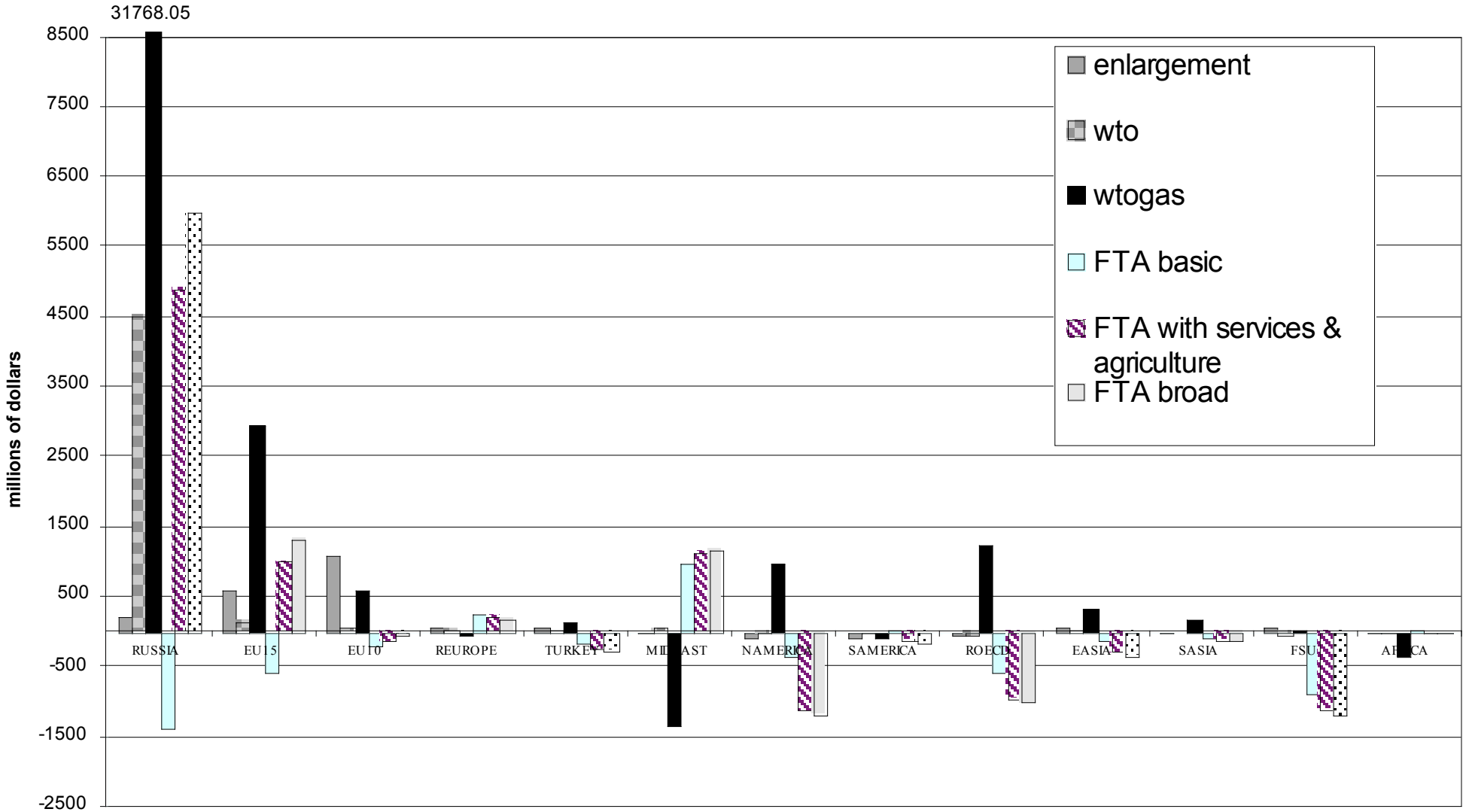
Table 8 Impact of FTA

removal of industrial tariffs							
	Russian exports to		Russian imports from		industry output		
	EU15	EU10	EU15	EU10	RUSSIA	EU15	EU10
primaryagr	5.47	5.09	-1.34	-1.16	0.46	-0.05	-0.03
forestsfish	4.61	4.13	-2.03	-1.66	1.69	-0.07	-0.01
coal	9.31	8.15	15.18	-6.16	0.34	-0.17	-0.03
oil	5.72	0.48	-2.32	-0.53	3.03	-0.18	-0.61
gas	-61.39	-25.32	110.84	82.33	178.88	14.24	48.72
ominerals	3.21	2.6	6.44	6.24	-0.24	-0.05	-0.2
procfood	9.05	8.72	-3.86	-3.76	1.69	-0.05	-0.08
wood	9.56	9.17	16.64	16.86	0.94	0.01	0.04
textiles	94.34	92.99	71.34	64.47	11.4	0.21	0.37
clothing	129.67	128.15	67.93	68.61	23.05	0.3	0.33
chemicals	12.39	12.11	21.18	20.46	-0.11	0.05	-0.03
steel	4.19	4.09	40.63	31.32	-1.24	0.05	-0.28
othermetals	13.92	13.71	120.74	101.11	-0.98	0.05	-0.23
fabmetals	25.59	24.56	60.75	63.45	-3.24	0.12	0.05
motorvehs	49.5	49.16	19.76	19.93	-2.53	0.02	0.19
otransport	26.34	24.43	51.91	36.26	13.25	-0.28	-0.15
omachinery	9.79	9.64	23.2	30.95	-1.97	0.1	0.33
omanufacts	21.4	19.83	48.99	35.9	2.61	-0.06	0
electricity	-23.77	-21.92	13.86	33.53	-1.11	-0.01	0.35
naturalgas	-0.04	1.15	-0.79	-3.44	-1.16	0.02	-1.61
construct	10.2	10.11	-10.49	-10.37	-4.75	0.03	0.01
oservices	9.25	9.21	-3.71	-3.64	0.91	-0.02	-0.04

removal of industrial, agricultural tariffs and trade liberalisation in services							
	Russian exports to		Russian imports from		industry output		
	EU15	EU10	EU15	EU10	RUSSIA	EU15	EU10
primaryagr	22.36	22.26	46	31.72	1.39	0.07	0.14
forestsfish	6.48	5.88	29.8	47.73	3.09	-0.13	-0.06
coal	9.89	8.97	15.51	-6.07	1.23	-0.36	-0.19
oil	6.26	0.34	-1.68	0.59	4.17	-0.45	-0.77
gas	-73.4	-31.34	169.97	105.71	225.55	17.41	60.93
ominerals	4.12	3.43	6.87	6.69	0.79	-0.25	-0.49
procfood	82.66	81.8	62.59	59.89	2.66	0.13	0.26
wood	14.52	13.97	16.36	16.51	4.35	-0.13	-0.22
textiles	109.57	108.07	73.07	66.09	15.96	-0.11	0.04
clothing	148.17	146.49	69.55	70.22	28.86	0.07	0.05
chemicals	14.92	14.65	21.27	20.23	1.6	-0.18	-0.37
steel	5.18	5.12	41.24	31.56	-0.27	-0.22	-0.7
othermetals	14.24	14.28	121.58	101.46	-0.5	-0.4	-0.71
fabmetals	28.25	27.13	61.66	64.13	-1.6	-0.04	-0.2
motorvehs	59.9	59.25	18.05	18.26	-0.41	-0.11	0.09
otransport	37.43	34.4	47.9	32.87	19.55	-0.86	-0.69
omachinery	13.66	13.51	23.86	31.61	0.74	-0.24	0.01
omanufacts	26	23.99	47.96	34.9	4.44	-0.21	-0.19
electricity	-29.21	-26.92	19.17	38.89	-0.43	-0.08	0.32
naturalgas	1.54	3.16	-0.27	-3.68	-0.44	-0.01	-2.1
construct	31.61	31.5	66.24	66.46	-4.82	0.12	0.08
oservices	35.85	35.87	84.72	84.85	0.04	0.04	0.04

removal of industrial, agricultural tariffs, trade liberalisation in services and reduction in NTBs							
	Russian exports to		Russian imports from		industry output		
	EU15	EU10	EU15	EU10	RUSSIA	EU15	EU10
primaryagr	32.29	32.33	68.74	51.86	1.21	0.13	0.21
forestsfish	6.04	5.42	29.91	47.81	2.9	-0.13	-0.07
coal	10.13	9.2	14.73	-6.8	1.01	-0.4	-0.27
oil	4.89	0.03	-0.48	1.57	4.26	-0.48	-0.47
gas	-73.82	-32.36	185.08	105.6	226.93	17.68	62.21
ominerals	3.94	3.27	6.25	6.05	0.07	-0.28	-0.53
procfood	98.91	98.01	82.6	79.32	1.93	0.19	0.36
wood	13.11	12.6	17.44	17.49	3.69	-0.13	-0.28
textiles	112.11	110.48	73.15	66.12	16.6	-0.15	-0.04
clothing	148.32	146.73	70.11	70.66	28.97	0.05	-0.03
chemicals	29.02	28.2	33.57	32.4	1.36	-0.17	-0.28
steel	3.83	3.78	41.46	31.64	-1.24	-0.21	-0.75
othermetals	12.41	12.46	119.96	99.7	-1.87	-0.37	-0.77
fabmetals	26.04	25.13	62.04	64.25	-2.61	-0.04	-0.25
motorvehs	74.21	73.46	31.42	31.59	-1.26	-0.07	0.15
otransport	35.13	32.34	49.89	34.48	18.45	-0.89	-0.75
omachinery	11.82	11.71	24.3	31.93	-0.59	-0.27	-0.09
omanufacts	37.89	35.29	66.36	51.57	5.48	-0.27	-0.31
electricity	-30.06	-27.75	19.67	39.18	-0.7	-0.09	0.29
naturalgas	-0.56	1.15	0.66	-2.97	-0.72	0	-2.2
construct	30.93	30.9	69.67	69.78	-3.46	0.13	0.11
oservices	34.88	34.93	85.71	85.66	0.07	0.04	0.04

Figure 2. National Income Effects (based on equivalent variations)



Appendix I.

Regions of the model:

RUSSIA	RUSSIA
EU15	"Old" EU Member States
EU10	"New" EU Member States
REUROPE	other Western European countries
TURKEY	TURKEY
MIDEAST	Middle East countries
NAMERICA	North America
SAMERICA	South America
ROECD	Rest of OECD countries
EASIA	East Asia
SASIA	South Asia
FSU	Former Soviet Union countries
AFRICA	AFRICA

Sectors of the model:

primaryagr	primary agricultural products
forestsfish	forestry and fishery
coal	coal
oil	oil
gas	gas
ominerals	other mineral products
procfood	processed food
wood	wood
textiles	textiles
clothing	clothing
chemicals	chemicals
steel	steel
othermetals	other metals
fabmetals	fabricated metals
motorvehs	motor vehicles
otransport	other transport
omachinery	other machinery
omanufacts	other manufacturing products
electricity	electricity
naturalgas	natural gas
construct	construction
oservices	other services