**Potential Effects of the CU—EU Free Trade Agreement**

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***Abstract.*** This paper investigates the possible economic effects of free trade agreement, implying a mutual zero imports tariffs in the trade between the Customs Union (Russia, Belarus, Kazakhstan) and the European Union. Analysis of the effects is made using a computational general equilibrium model. We estimate the impact of an FTA on the economies, both at the level of the entire economy and at the industry level. The sensitivity analysis is made. It is shown that, in both relative and absolute terms, Russia potentially benefits from the agreement more than the EU. The cumulative gain of the CU is strictly positive, but the benefits and costs are unevenly distributed among its members.

*Keywords:* Customs Union, European Union, free trade agreement, CGE.

*JEL:* C68, F15, F17.

**Introduction**

In May 2005, at the Russia–EU summit, the Common Economic Space "road map" was accepted which main objective declared "creation of the opened and integrated market between Russia and EU". When Mr. Putin was Russian Prime Minister, in 2010 it declared need to create harmonious economic community from Lisbon to Vladivostok, in prospect promoting creation Eurasian "free trade area and even more advanced forms of economic integration". Quite recently, in January, 2015, at the Russia–EU summit the Russian representatives "suggested EU leaders to study possibility of formation of a free trade area between EU and the Eurasian economic union created by Russia, Belarus and Kazakhstan".

From the theoretical point of view, the main FTA reasons are the mutual benefit of contracting parties arising due to more effective resource allocation at decrease in trade restrictions (Egger, Larch, 2008; Pahre, 2008; Gruber, 2000; Manger, 2009; Manger, 2009; Baldwin, Jaimovich, 2010; Fugazza, Robert-Nicoud, 2010). In modern conditions, trade agreements mention a wide range of questions, beginning from full cancellation of customs tariffs on trade in goods between contracting parties and finishing any aspects of labor freedom, capital and services. So, for example, in (Horn, Mavroidis, Sapir, 2010) it is analyzed, over what questions now, generally conduct negotiations, and is shown that obligations in a services sector, investments, protection of intellectual property rights, technical barriers in trade and a competition policy are of very great importance in modern trade agreements.

As the majority of the world countries are members of the WTO, almost all preferential trade agreements have to correspond with WTO rules. In this regard, we raise two question groups in trade agreements. The first group is WTO+, that is the provisions which are falling under the current mandate of the WTO and already being obligations in WTO agreements: trade in industrial and agricultural goods, trade in services, customs administration, exports duties, sanitary and phytosanitary measures, government enterprises, technical barriers in trade, compensated and anti-dumping measures, trade investment measures (TRIMS), intellectual property rights (TRIPS) connected with trade. The second group, WTO–X, is out of the sphere of the WTO: from corruption and a cultural exchange to human rights and fight against terrorism.

To consider possible possibility of free trade agreement with EU, we have to note that EU interacts with neighboring countries in various formats meaning various depth of integration. In this regard, Russia can rely on a certain EU flexibility concerning conditions of such trade agreement. The main questions that can be mentioned in this trade agreement are WTO+ ones, questions of assistance to the mutual investments, separate sectorial arrangements (by an example of EU–Switzerland interaction experience).

We have to mention the major aspect which needs to be considered at integration with EU discussion. From 2010, when Customs Union (CU) started, the trade policy of Russia, Belarus and Kazakhstan was transferred to supranational level to the Eurasian Economic Commission just as and in the EU, the European Commission carries out functions of supranational institute which sign all external trade and economic agreements. In this regard, it is correct to discuss conditions and consequences of trade agreement between CU and EU. Apparently, now the agreement between the CU and EU is hard-hitting for political reasons that we will not discuss. The real research is attempt to answer a question, to what economic consequences can lead the trade agreement between considered blocks.

The possible agreement has to include a set of questions, since tariffs in trade in goods and decrease in barriers on group of the questions relating to a range of WTO+ and finishing separate sectorial arrangements. In this paper we try to discuss economic consequences of free trade agreement meaning mutual duty-free trade in goods between the CU and EU. First, it is the first stage of serious economic integration therefore it is represented natural first of all to investigate its consequence. Secondly, zeroing of the specific, ad valorem and combined customs duties in mutual trade in goods is the mental experiment which directly is giving in to quantitative measurement.

One of the most popular and demanded tools of free trade agreements consequences estimation is Computable General Equilibrium model (CGE) which structural equations reflect the general balance in all markets that allows to analyze influence of various external economic changes on national economy (see Clausing, 2001; Trefler, 2004; Romalis, 2007; Chang, Winters, 2002; Egger, 2004; Magee, 2008; Carrere, 2006; Baier, Bergstrand, 2004; Harris, 2006). At a choice of the equations assumptions of technology and production factors, preferences of agents, economic policy of the government, competition level, etc. become. Now the models assuming the perfect competition and capital accumulation are most widespread (Hertel, 1997; Cheong, Wang, 1999; Brown, Deardorff, Stern, 2001; McDaniel, Fox, 2001; Choi, Schott, 2001, 2004; Ghosh, Rao, 2005; Francois, McQueen, 2005; Siriwardana, Yang, 2007; Georges, 2008).

Advantage of CGE models versus econometric models is possibility of estimation the effects from government economic policy and ability to analyze changes of such macro variables as GDP, exports, imports. Besides, by means of CGE models it is possible to estimate potential changes of various economic indicators at sectorial level. It allows to analyze effects of government policy, including FTA formation, in the terms "winning and losing" industries that gives deeper understanding of in what sectors separate arrangements with the trade partner are necessary. (Teixeira, Raszap-Skorbiansky, 2010; Németh, Szabó, Ciscar, 2011; Perali, Pieroni, Standardi, 2012; Lakatos, Walmsley, 2012).

In this paper we use CGE Globe v1 model offered by McDonald, Thierfelder, Robinson in 2007[[1]](#footnote-1). The detailed description of this model and necessary data is provided in (McDonald, 2003; McDonald, Sonmez, 2004; McDonald, Thierfelder, 2004; McDonald, Thierfelder, Robinson, 2007). The model is based on assumptions about the perfect competition and constant returns to scale. In the model it is supposed that imports goods are differentiated, are divided on a national origin and countries has elements of market power which is realized through their tariff rates. As a result, decrease in tariffs can lead to considerable effects from terms of trade change because of market power destruction. Differentiation of goods of the same industry depending on the country of goods' origin (including domestic goods), is modelled by means of function with constant elasticity of substitution (CES). At such form of composite consumer goods aggregation domestic and imports goods aren't completely neither substitutes, nor compliments: in any balance that will be consumed at the same time all goods strictly in positive quantity. Such CES function property allows to model the unequal prices of domestic and imports goods and is correspond to real situation at which practically all countries consume both domestic and imports goods.

One of the main CGE models drawback is the results dependence of on a choice of a calibration way and values of parameters (Pak, Yongduk, 2006). In such way, stability analysis of model results is necessary.

**Modelling of the CU—EU Free Trade Agreement**

This section analyzes the effects of an FTA between the Russian Federation and the EU, using a general equilibrium model Globe v1, a detailed description of which is given in (McDonald, Thierfelder, Robinson, 2007). We assume that all imports duties between the CU and the EU are mutually canceled.

Table 3 presets the results of modeling the impact of the FTA on GDP for each participant, which show the percentage change in GDP in relation to the initial level. The results reflect only the effect of the FTA and do not reflect the change in GDP, which would have happen without a trade agreement, that is, these results can be interpreted as the net effect of changes in GDP from the FTA. All the variables listed in the tables below, provides similar percentage contribution of the trade agreement to GDP, production, imports, exports.

*Table* 3

**Impact of the FTA on GDP (in %)**

|  |  |  |
| --- | --- | --- |
| **Region** | **Short run** | **Long run** |
| Russia | 0.8 | 2.0 |
| Belarus | –0.6 | 0.0 |
| Kazakhstan | 0.6 | 1.2 |
| EU | 0.1 | 0.2 |

*Source:* Authors' calculations.

The model used allows evaluate the results in two time perspectives: short and long run. Short run in the model means that the aggregate supply of factors of production (capital and labor) in each country is fixed at the initial level. At the same time, the demand for factors of production in a given country can vary from industry to industry. It is assumed that factors of production are homogeneous for all sectors of the economy and in every country the aggregate demand for each factor of production is equal to total supply of this factor. Long run in the model differs from the short only in that the supply of labor in each country remains fixed, while the supply of capital is not fixed and may change, adjusting to a new equilibrium.

From the table 3 it’s can be seen that as a result of the abolition of imports duties Russian GDP in the short term will increase by 0.8%, GDP of Kazakhstan by 0.6%, and the EU's GDP by 0.1%. In absolute terms, the Russian welfare will increase by about $15 billion, the welfare of Kazakhstan by about $1 billion, the EU’s welfare by about $15 billion. In the short term, the Belarusian GDP will fall by 0.6%, which in absolute terms is about $400 million.

In the long run, which allows for the accumulation of capital, the GDP of Russia, Kazakhstan and the EU will grow more than in the short run (by 2.0%, 1.2% and 0.2% respectively). The welfare of the RF is $40 billion, for Kazakhstan is $2 billion, for the EU is $30 billion. Belarusian GDP in the long term will reach a level that took place prior to an FTA.

*Table* 4

**Impact of the FTA on Exports (in %)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **CU’s Exports** | **CU’s Exports to the EU** | **CU’s Exports to the rest of the world** |
| **Region** | SR | LR | SR | SR | LR | SR |
| Russia | 1.8 | 3.1 | 2.2 | 3.6 | 2.0 | 3.1 |
| Belarus | 2.4 | 3.1 | 3.6 | 4.3 | 3.0 | 3.4 |
| Kazakhstan | 0.7 | 1.4 | 1.2 | 1.8 | 1.0 | 1.7 |
| EU | 0.1 | 0.2 |   |   |   |   |

*Source:* Authors' calculations. SR, LR – short run, long run respectively.

Table 4 presents results of model of exports changes for FTA participants. Russian exports in the short term will increase by 1.8% and exports of Belarus - by 2.4%, exports of Kazakhstan – by 0.7%, the EU’s exports – by 0.1%. In the long term Russians exports will grow a little more than in the short term – by 3.1%. Belarus exports in the long term will increase by 3.1%, Kazakhstan’s exports – by 1.4%, the EU’s exports – by 0.2%. The increase of exports of the CU is due to the growth of exports of these countries in the EU and in countries outside the EU. The table also shows the results of change in exports from the CU to the EU and the rest of the world respectively. It can be seen that both indicators will increase as a result of the abolition of imports duties. Russian exports to the EU will increase by 2.2% in the short run and by 3.6% in the long term.

*Table* 5

**Impact of the FTA on Imports (in %)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **CU’s Imports** | **CU’s Imports from the EU** | **CU’s Imports from the rest of the world** |
| **Region** | SR | LR | SR | LR | SR | LR |
| Russia | 1.5 | 2.3 | 5.5 | 6.3 | –3.0 | –2.3 |
| Belarus | 0.7 | 1.5 | 4.3 | 4.7 | –3.7 | –3.4 |
| Kazakhstan | 0.6 | 1.2 | 4.4 | 4.6 | –1.5 | –1.3 |
| EU | 0.2 | 0.3 |   |   |   |   |

*Source:* Authors' calculations. SR, LR – short run, long run respectively.

Table 5 presents the results of imports changes for FTA participants. Russian imports in the short term will increase by 1.5%, imports of Belarus – by 0.7%, imports of Kazakhstan – 0.6%, the EU’s imports – by 0.2%. Unlike exports, imports growth in all three countries of the CU occurs only due to the growth of imports from the EU. As it can be seen from Table 5 imports from the EU in the CU grows and imports from the other countries – falls: a result of the abolition of imports duties is replacement of the goods from the other countries by the goods from the EU. In the long term, Russian imports will increase by 2.8%, Belarusian imports – by 1.2%, Kazakhstan’s imports – by 1.3%, the EU’s imports – by 0.3%.

As a result of the abolition of imports duties between the CU and the EU (effective Russian imports tariff from the EU is 7.5%, Table 2) Russian imports from the EU will increase by 5.5% (Table 5). It is interesting to consider an analogy between the abolition of imports duties and exchange rate appreciation. Whether there will be an increase of Russian imports from the EU by 5.5%, if the rubles consolidation occurs by 7.5% against the euro? There are a number of differences between the abolition of imports duties and the appreciation of the ruble, so results of influence of these two scenarios on the economy, in particular on the imports, can vary significantly. Firstly, from the abolition of imports duties on goods from the EU price of imports from the EU falls relative to other prices in the economy, unlike the case of the ruble appreciation, when the price of imports from the EU falls relative to domestic goods, but it cannot fall relative the prices of imports from other countries. Secondly, the exchange rate is more volatile variable, so economic agents don’t immediately change their behavior in response to the appreciation of the ruble (importers don’t immediately increase the demand for foreign goods), waiting for a response weakening in time. Since, on the contrary, imports duties will be abolished on the long period the economic agents immediately change their behavior adjusting to the new conditions. Thirdly, the appreciation of the ruble and the mutual abolition of imports duties affect for exports differently. The ruble appreciation leads to the fact that exports of goods become unprofitable, which has a negative impact on production and income of households as owners of production factors. It adversely affects aggregate demand including demand for imports. Asymmetrical impact of the exchange rate and imports duties conforms to the results obtained in the works (Idrisov, 2010a, 2010b; Knobel, 2010, 2011). Elasticity of imports demand for imports to the real effective exchange rate of modulus is greater than the elasticity of demand for own (foreign) price: if the elasticity estimates to the real effective exchange rate for various industries range from 2.5 to 3.5, the estimates of elasticity of demand to its own (foreign) price - from -1.2 to -0.5.

In the works (Idrisov, 2010a, 2010b), the author evaluates the elasticity of demand for imports to the exchange rate and to its own price of imported products for various industries. The average value of elasticity by industries according to the author’s assessment is about 2.6, which means that the annual appreciation of the ruble by 7.5% should lead to increase of demand for imports by 2.6 \* 7.5 ≈ 19% (it should be noted that it is the net effect of appreciation: appreciation may be accompanied, for example, by a drop of production in the EU, which will lead to a less significant increase of trade). The average value of the elasticity of demand to imports prices in the works (Idrisov, 2010a, 2010b) is about –0.9, which means that the reduction of duties by 7.5% should lead to increase of demand for imports by 0.9 \* 7.5 ≈ 7%, which is consistent with results shown in Table 5. The paper (Knobel, 2011) proposes the assessment of elasticity of imports demand for the product group "live animals; products of animal origin", which relates products of the meat industry at -0.96: at this value of elasticity nullification of 20% imports duties for meat products may lead to an increase of imports by 0.96 \* 20 ≈ 20%. It is broadly consistent with the results obtained in this work about the growth of imports from the EU by industries after the abolition of imports duties.

The results of this work of imports change in response to the abolition of duties can also be compared with the results of the foreign authors’ works of estimates of the elasticity of demand for imports. For example, in the paper (Marquez, 2000) the average elasticity of U.S. imports to a price estimated by the author is -1.18. This means that after the abolition of imports duty equal 7.5% the demand for imports will grow by 1.18 \* 7.5% ≈ 9%. In the paper (Masih, 2000) elasticity of imports demand in Japan is estimated at –1.89, which corresponds to an increase of imports by 1.89 \* 7.5% ≈ 14% in case of cancellation of imports duties. These results are consistent with the results of this work.

Table 6 presents the change of imports by industries as a result of FTA. Russian imports will grow in almost all industries in the short term. In all industries this growth is due only to the growth of imports from the EU, as imports of the Russian Federation from countries outside the EU falls.

Russian imports will grow most of all in the following areas (in the short and long term): meat (2.3% and 2.9%), products of wood and paper (5.5% and 6.4%), refined minerals (4.0% and 4.5%), vehicles and parts (3.3% and 4.2%). Significant growth in these sectors is associated with high imports duties. For example, in the sector of meat where imports from the EU is growing by 22%, the weighted average imports tariff is 21%.

*Table* 6

**Impact of the FTA on Russian sectorial Imports (in %)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | The weighted average tariff on imports from the EU | Imports | Imports from the EU | Imports from the rest of the world |
| SR | LR | SR | LR | SR | LR |
| Agriculture, foresty, fishing | 8.1% | 0.9 | 1.6 | 7.7 | 8.4 | –2.1 | –1.4 |
| Minerals | 3.3% | –0.3 | 0.3 | 1.8 | 1.8 | –1.4 | –1.4 |
| Meat | 21% | 2.3 | 2.9 | 21.5 | 22.4 | –2.4 | –1.9 |
| Dairy products | 8.5% | 2.5 | 3.1 | 10.3 | 11.0 | –2.8 | –2.2 |
| Other foods | 11.8% | 2.9 | 3.5 | 6.7 | 7.2 | –2.5 | –2.1 |
| Textiles | 13% | 1.0 | 1.9 | 11.3 | 12.4 | –3.3 | –2.4 |
| Wearing | 18.9% | 2.4 | 3.2 | 14.5 | 15.4 | –3.5 | –2.8 |
| Wood, Paper | 12.3% | 5.5 | 6.4 | 9.5 | 10.3 | –5.0 | –4.3 |
| Mineral products | 12.5% | 4.0 | 4.5 | 11.5 | 11.9 | –3.1 | –2.8 |
| Chemical | 9.5% | 2.8 | 3.6 | 6.0 | 6.8 | –4.3 | –3.6 |
| Metals | 13.7% | 2.5 | 3.2 | 10.6 | 11.3 | –3.2 | –2.6 |
| Motor | 7.4% | 3.3 | 4.2 | 16.2 | 17.2 | –5.5 | –4.6 |
| Electronic machinery | 7% | 0.2 | 1.1 | 1.4 | 2.3 | –1.9 | –1.0 |
| Other manufact | 12.4% | 3.4 | 4.3 | 10.6 | 11.5 | –2.9 | –2.1 |

*Source:* Authors' calculations. SR, LR – short run, long run respectively.

Table 7 shows the change of exports by sectors. According to the model after trade liberalization in the short term exports of the Russian Federation will increase in all sectors except industries of vehicles and parts and textiles. A negligible drop in exports in these sectors (-0.6% and -0.4%, respectively) explained by fall of output of domestic goods in them. Most of all Russian exports will grow in the meat industry (3.8%), which is a consequence of the abolition of the high imports duty of the EU on Russian meat.

*Table* 7

**Impact of the FTA on Russian sectorial exports, production and consumption (in %)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Exports | Production | Consumption |
|  | SR | LR | SR | LR | SR | LR |
| Agriculture, foresty, fishing | 1.6 | 2.5 | –0.2 | 1.1 | –0.3 | 1.0 |
| Minerals | 1.9 | 3.3 | 1.2 | 2.6 | 0.6 | 2.0 |
| Meat | 3.8 | 5.1 | –0.5 | 0.9 | –0.3 | 1.0 |
| Dairy products | 1.5 | 2.6 | –0.3 | 1.0 | 0.2 | 1.4 |
| Other foods | 1.2 | 2.3 | –0.5 | 0.9 | –0.1 | 1.2 |
| Textiles | –0.6 | 0.0 | –0.8 | 0.3 | 0.3 | 1.3 |
| Wearing | 2.1 | 2.8 | –1.0 | 0.2 | 1.2 | 2.1 |
| Wood, Paper | 0.5 | 1.5 | –1.3 | 0.0 | 0.5 | 1.8 |
| Mineral products | 1.9 | 3.3 | 0.6 | 2.1 | 0.4 | 1.8 |
| Chemical | 2.6 | 3.8 | 0.5 | 2.0 | 0.8 | 2.0 |
| Metals | 2.6 | 3.7 | 0.9 | 2.3 | 0.4 | 1.8 |
| Motor | –0.4 | 0.5 | –2.2 | –0.9 | 0.9 | 2.0 |
| Electronic machinery | 0.9 | 1.9 | 0.0 | 1.5 | 0.1 | 1.3 |
| Other manufact | 1.6 | 2.2 | –0.1 | 1.1 | 0.3 | 1.6 |

*Source:* Authors' calculations. SR, LR – short run, long run respectively.

Regarding output drop in two industries of the Russian economy will occur in the short term: in the industry of motor vehicles and parts (2.2%) and in the industry of wood products and paper (1.3%) (Table 7). These drops of production are explained by substantial increase of imports, which leads to the substitution for domestic goods by goods from the EU. The abolition of high imports duties of the Russian Federation makes the EU’s imports more profitable and consumption is cheaper compared to domestic ones. Since the choice of consumption between imported and domestic goods in the model is based on a function with a non-zero constant elasticity of substitution, any reduction in prices of imported goods implies an increase in its consumption by reducing the consumption of domestic goods: in the economy consumer switch over to imports goods from domestic ones. Decrease of demand for domestic goods implies decrease of production.

In general, the change of output in a particular industry can be explained by two countervailing effects. On the one hand, the elimination of imports duties of the EU makes Russian exports to the EU more competitive, which implies an increase of supply of goods due to increased production. On the other hand, the removal of imports duties of the CU implies switching from consumption of domestic goods over to imported goods, and as a result, the fall of output.

That what kind of effect among the two mentioned above ones will prevail in a particular industry depends on the structure of mutual trade between the CU and the EU: sector share in imports from the EU, the share of industry in exports to the EU, imports duties of the CU and the EU in relation to each other (before the FTA). For the mentioned above two industries (motor vehicles and parts, products of wood and paper), it can be noted that the second effect will dominate the first one. Firstly, the share of these sectors in imports from the EU (16% and 2%, respectively), as well as imports duties of the CU in these industries (7.4% and 12.3%, respectively) are significant. Secondly, on the contrary, the share of these sectors in the exports of the CU to the EU (0.04% and 0.2%, respectively) and imports duties of the EU (6.1% and 0.0%, respectively) are small. Consequently, the impact on production of the Russian Federation from the abolition of imports duties of the CU (negative effect) much more than the effect of the abolition of imports duties of the EU (positive effect). Therefore production decreases not only in the short term but in the long term in these industries. In the industry of motor vehicles and parts production falls by 0.9% in the long term, and in the industry of wood products and paper production to reach the level before the creation of the FTA in the long term.

Regarding other industries, there is a decline of production in the short term in many of them: it can be argued that from the two effects in the short term the first effect will dominate the second one. In other words, the output in the industry will fall due to the switching from consumption of domestic goods for imported goods because of decrease of imports prices. This fall in demand of domestic consumers will not be offset by an increase in demand of consumers in the EU, i.e. an increase of exports. For example, in the clothing industry (in which output falls by 1%) it due to the fact that the share of clothing in Russian imports from the EU (1.08%) is significantly greater than the proportion of Russian clothing exports to the EU (<0.01%), and Russian duty for imports of clothing is nearly 19%. Nevertheless, after capital accumulation in the industry (as in all other sectors except two ones) output grows in the long term.

The long term differs from the short term in the model that supply of capital in the country is not fixed and the price of capital is fixed, and in the short term - on the contrary. Regarding such specification of the model, the decline of production in some industries in the short term and increase of production in the long term can be explained as follows. After the abolition of imports duties in some sectors of the Russian Federation an increase of output occurs because of increased demand for domestic products from foreign consumers along of falling prices of these products for them. Moreover increase of demand for domestic products can occur from domestic consumers, as far as after cancellation of duty domestic consumers begin to consume not only products for which prices fell (price effect), but also other goods (income effect). In response to increase of demand producers are starting to increase output, thereby presenting a greater demand for production factors. Since short-term supply of factors (including capital) is fixed, an increase in demand for them is offset by price increases. In industries where an increase in demand for domestic goods does not occur or there is a slight increase, enterprises are forced to reduce demand for production factors due to raised prices of them. As a result, output in these sectors falls in the short term. In contrast, long-term price of capital is fixed, and supply of capital can be adjusted according to demand. Unlike the short term, in the long term there is no increase of capital price (although salary increases as well as in the short-term). Therefore, manufacturers in the industries where consumer demand is growing slightly, expand production, increasing demand for capital with the possibility to rent capital at a fixed price.

For some sectors of the Russian economy, production increase even in the short term. For example, minerals according to the model will grow by 1.2% in the short term and by 2.6% in the long term, production of minerals – by 0.6% and 2.1%, metals – 0.9% and 2.3%. Output growth in these sectors can be explained by the fact that the abolition of imports duties on the EU’s products from the Russian Federation makes the exports of Russian goods to the EU more profitable. Producers are beginning to increase exports at the expense of reorientation products from the domestic market to exports and an increase of production. This effect on the production on the one hand is small, as the EU’s imports duties in these industries were originally small, and their cancellation will not result a significant increase of demand for Russian exports to the EU. As shown in Table 1 the EU’s imports duty for minerals from Russia is only 0.4%, the duty for products of minerals – 4.7%, while the duty for metals – an average about 4%. On the other hand, the noted impact is significant; so much as these industries absorb a large share in the exports of the Russian Federation to the EU (Table 1). In addition, decline of demand in some sectors of the Russian economy because of the switching from consumption from domestic goods for imported goods result in the release of production factors in these sectors. Being that the factors of production in the model are homogeneous, they flow in those industries in which there was not a drop of demand from consumers.

# Conclusion

This paper investigates the possible economic impact of a free trade agreement between the European Union and Russian Federation, meaning mutual zero imports tariffs in trade of the Customs Union and the EU. One of the most common and popular tools for assessing the effects of trade agreements is a computational general equilibrium modeling (CGE), the structural equations of which represents the general equilibrium in all markets. Such models allow us to analyze the effect of various changes in national economy (see Clausing, 2001; Trefler, 2004; Romalis, 2007; Chang, Winters, 2002; Egger, 2004; Magee, 2008; Carrere, 2006; Baier, Bergstrand, 2004; Harris, 2006).

This paper uses the CGE model Globe v1, proposed by McDonald, Thierfelder, Robinson in 2007. Detailed description of this model and the necessary data for are discussed in the papers (McDonald, 2003; McDonald, Sonmez, 2004; McDonald, Thierfelder, 2004; McDonald, Thierfelder, Robinson, 2007 ) .

We estimate the effects of the free trade agreement on the economy of the countries participating in the agreement, both at the level of the whole economy, and on the sectoral level. We also made an analysis of the results sensitivity to changes in the model parameters. These results suggest that the cumulative effect of the FTA on Russia's GDP is 0.8% in the short run (in absolute terms is about $15 billion), and is 2.0 % in the long run (about $40 billion). Short-term and long-term impact on the GDP of Kazakhstan are, respectively, 0.6% (~ $1 billion) and 1.2 % (~ $2 billion) . In contrast to the economies of Russia and Kazakhstan, the impact on the economy of Belarus, as it was expected, will not be positive. Belarus GDP will decline by 0.6% (about 400 million dollars) in the short run and will reach the pre-FTA-level in the long run. EU GDP will grow by 0.1% (~ $15 billion) in the short run and by 0.2% in the long run (~ $30 billion). Thus, both in relative and in absolute terms, Russia is potentially benefit more than the EU from this free trade agreement.

We also estimate the effects of the free trade agreement on the economic industries in the countries participating in the agreement. We divide all economic industries to 15 subaggregated groups, for which we estimate the effects of the FTA in terms of production, household consumption, imports, exports and employment.

In Russia the production decreases only in two areas in the long run: in the industry of motor vehicles and parts and in the industry of wood products and paper. A similar pattern is observed for Kazakhstan. In Belarus, except of these two industries, the production will decrease in agriculture, food industries, as well as in manufacturing. The production in the EU decreased only in the sector of minerals, both in the short and in the long run.

Household consumption in Russia and Kazakhstan as a result of the abolition of imports duties will increase in all sectors in the short run. In the long run, this growth in consumption will be even more. This growth can be explained by two effects: the price effect and the income effect. In those sectors where there is a substitution of domestic goods with imported goods, the domestic price of goods will decrease. For these industries, the growth of consumption are causing by both effects. In other industries, where domestic goods are not substituted by imported goods, consumption growth is due only to the income effect. In these industries, commodity price increase, as a result of growing demand. Therefore, the price effect is the opposite to the income effect. However, the predominant of these two effects is the income effect.

Thus, the formation of an FTA have positive impact on households consumption in Russia and Kazakhstan. Household consumption in the EU will also increase in all sectors, but the percentage change is significantly less than in Russia. Household consumption in Belarus drops in all sectors, in which the production decrease.

# References

1. Baeva, Knobel. (2013). World trade and economic cooperation experience between large integration areas and territorially remote economics. Eurasian economic integration. N 2 (19), P. 7–20, May 2013 (in Russian)
2. G.I. Sinelnikov–Murylev S.G. (2012). Modernization or Conservation: the Role of Exports Duties on Oil and Oil Products // Economicheskaya Politika. N3. P. 5–19 (in Russian)
3. Idrisov G. (2010). Sensitivity of Russian imports of equipment to fluctuations of the exchange rate // Russian foreign economic journal. № 2. P. 48–58. (in Russian)
4. Idrisov G. (2010). Factors of Demand for Imported Goods for Investment Purpose to Russia // Series «Nauchnie Trudi» № 138. Gaidar Institute for Economic Policy (in Russian)
5. Knobel A.Y. (2010). Factors of Imports Tariff Formation // Series «Nauchnie Trudi» № 143. Gaidar Institute for Economic Policy. (in Russian)
6. Knobel A. (2011). Estimation of imports demand function in Russia // Journal of Applied Econometrics. N4 (24). P. 3–26. (in Russian)
7. Mau V., Novikov V. Relations between Russia and the EU: the space of choice or the choice of space. Voprosy ekonomiki. N6. P.133–143. (in Russian)
8. Mau V.A., Kovalev G.S., Novikov V.V., Yanovsky K.E. (2004). Problems of Russian’s integration into the common European economic space. Series. «Nauchnie Trudi» № 71. Institute for the Economy in Transition. (in Russian)
9. Farkhutdinov I.Z. (2009). Investment cooperation between Russia and the EU: political and legal issues and perspectives // EvrAzYuzh. N11 (18). http://www.eurasialaw.ru
10. Baier, S. L., & Bergstrand, J. H. (2004). Economic determinants of free trade agreements. *Journal of International Economics*, *64*(1), 29-63.
11. Baldwin, R., & Jaimovich, D. (2012). Are free trade agreements contagious?. *Journal of international Economics*, *88*(1), 1-16.
12. Brown, D. K., Deardorff, A. V., & Stern, R. (2001). Impact on NAFTA members of multilateral and regional trading arrangements and tariff harmonization. *North American Linkages: Opportunities and Challenges for Canada*.
13. Carrere, C. (2006). Revisiting the effects of regional trade agreements on trade flows with proper specification of the gravity model. *European Economic Review*, *50*(2), 223-247.
14. Chang, W. and Winters, L. A. (2002). How regional blocs affect excluded countries: the price effects of MERCOSUR. *American Economic Review,* 92(4), 889-904.
15. Cheong I., Wang Y. (1999). Korea-U.S. FTA Policy: Prospects and Analysis // Working Paper 99-03. Seoul: Korea Institute for International Economic Policy.
16. Chʻoe, I. B., & Schott, J. J. (2001). *Free trade between Korea and the United States?* (Vol. 62). Peterson Institute.
17. Choi, I., & Schott, J. J. (2004). Korea-US Free Trade Revisited. *Free Trade Agreements–US Strategies and Priorities*., ed. Jeffrey J. Schott. Washington, D.C.: Institute for International Economics.
18. Clausing, K. A. (2001). Trade creation and trade diversion in the Canada–United States free trade agreement. *Canadian Journal of Economics/Revue canadienne d'économique*, *34*(3), 677-696.
19. Egger, P. (2004). Estimating regional trading bloc effects with panel data. *Review of World Economics*, *140*(1), 151-166.
20. Egger, P., & Larch, M. (2008). Interdependent preferential trade agreement memberships: An empirical analysis. *Journal of International Economics*, *76*(2), 384-399.
21. Francois, J. F., McQueen, M., & Wignaraja, G. (2005). European Union–developing country FTAs: overview and analysis. *World Development*, *33*(10), 1545-1565.
22. Fugazza, M., & Robert-Nicoud, F. (2010). The'emulator effect'of the Uruguay round on US regionalism. London, Centre for Economic Policy Research Discussion Paper No.7703
23. Németh, G., Szabó, L., & Ciscar, J. C. (2011). Estimation of Armington elasticities in a CGE economy–energy–environment model for Europe. *Economic Modelling*, *28*(4), 1993-1999.
24. Georges, P. (2008). Liberalizing NAFTA Rules of Origin: A Dynamic CGE Analysis. *Review of International Economics*, *16*(4), 672-691.
25. Ghosh, M., & Rao, S. (2005). A Canada–US customs union: Potential economic impacts in NAFTA countries. *Journal of Policy Modeling*, *27*(7), 805-827.
26. Gruber, L. (2000). *Ruling the world: Power politics and the rise of supranational institutions*. Princeton University Press.
27. Harris, R. (2006), The Economic Impact of the Canada-U.S. FTA and NAFTA Agreements for Canada: A Review of the Evidence // *J. Curtis and Sydor A. (eds.), Foreign Affairs and International Trade*. Canada, Ottawa.
28. Hertel, T. T. W. (1999). *Global trade analysis: modeling and applications*. T. W. Hertel (Ed.). Cambridge university press.
29. Horn, H., Mavroidis, P. C., & Sapir, A. (2010). Beyond the WTO? An anatomy of EU and US preferential trade agreements. *The World Economy*, *33*(11), 1565-1588.
30. Lakatos, C., & Walmsley, T. (2012). Investment creation and diversion effects of the ASEAN–China free trade agreement. *Economic Modelling*, *29*(3), 766-779.
31. Lipsey, R. G. (1970). The Theory of Customs Union: A General Equilibrium Analysis. *London School of Economics, Research Monograph*, *7*.
32. Magee, C. S. (2008). New measures of trade creation and trade diversion. *Journal of International Economics*, *75*(2), 349-362.
33. Manger, M. S., & Manger, M. S. (2009). *Investing in protection: The politics of preferential trade agreements between north and south*. Cambridge University Press.
34. Marquez, J. (2000). The puzzling income elasticity of US imports. *Washington: Federal Reserve Board*.
35. Masih, R., & Masih, A. M. (2000). A reassessment of long-run elasticities of Japanese imports demand. *Journal of Policy Modeling*, *22*(5), 625-639.
36. McDonald, S. (2003). A Standard Computable General Equilibrium Model: Technical Documentation. *PROVIDE Project Technical Paper 2003*, *3*.
37. McDonald, S., & Sonmez, Y. (2004). Augmenting the GTAP Database with Data on Inter-Regional Transactions. Sheffield Economics Research Paper 2004:009. The University of Sheffield
38. McDonald, S., & Thierfelder, K. (2004). Deriving a global social accounting matrix from GTAP versions 5 and 6 data, GTAP Technical Paper 23. Global Trade Analysis Project: Purdue University.
39. McDonald, S., & Thierfelder, K. (2006). The Doha Development Agenda and Africa: Taking Armington Seriously. In *9th Annual Conference on Global Economic Analysis*.
40. McDonald, Thierfelder and Robinson. (2007). Globe v1: A SAM Based Global CGE Model using GTAP Data.
41. Meade, J. E. (1980). *The theory of customs unions*. Greenwood Press.
42. Nijkamp, P., Wang, S., & Kremers, H. (2005). Modeling the impacts of international climate change policies in a CGE context: The use of the GTAP-E model. *Economic Modelling*, *22*(6), 955-974.
43. Pahre, R. (2008). *Politics and trade cooperation in the Nineteenth century*. Cambridge University Press.
44. Perali, F., Pieroni, L., & Standardi, G. (2012). World tariff liberalization in agriculture: An assessment using a global CGE trade model for EU15 regions. *Journal of Policy Modeling*, *34*(2), 155-180.
45. Gomes Pereira, M. W., Teixeira, E. C., & Raszap-Skorbiansky, S. (2010). Impacts of the doha round on Brazilian, Chinese and Indian agribusiness. *China Economic Review*, *21*(2), 256-271.
46. Romalis, J. (2007). NAFTA's and CUSFTA's Impact on International Trade. *The Review of Economics and Statistics*, *89*(3), 416-435.
47. Siriwardana, M. (2007). The Australia-United States free trade agreement: An economic evaluation. *The North American Journal of Economics and Finance*, *18*(1), 117-133.
48. Siriwardana, M., & Yang, J. (2008). GTAP Model Analysis of the Economic Effects of an Australia–China FTA: Welfare and Sectoral Aspects. *Global Economic Review*, *37*(3), 341-362.
49. Trefler, D. (2004). The long and short of the Canada-U.S. free trade agreement. *American Economic Review,* 94(4): 870-895.
50. Viner, J. (1950). The Customs Union Issue, Carnegie Endowment for International Peace. *New York*.
51. Wonnacott P., Wonnacott R. (1981). Is Unilateral Tariff Reduction Preferable to a Custom Union? The Curious Case of the Missing Foreign Tariffs. *American Economic Review*, 71:704-14.
1. We do not consider influence of cancellation of export duties on mineral products as the CGE model assuming imperfect replacement between all goods and possibility of essential increase in production not really is suitable for modeling of this scenario. [↑](#footnote-ref-1)