ECONOMIC IMPACTS OF EU–BELARUSIAN TRADE

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Abstract. *The main goal of the research is to assess the efficiency of Belarus–EU trade and to develop an econometric model to find out which goods Belorus should export in order to ensure its GDP growth. Authors have made an analysis of the main trade theories, reviewed the common EU trade policy, determined a relationship between Belarusian trade in goods with the EU and its economic growth, studied the consequences of the potential free trade agreement with the EU. The research used secondary data that have been analysed by means of a system of indicators, the matrix method, and regression correlation analysis. The analysis revealed that the trade balance between Belarus and the EU in most years has been negative, that the degree of trade concentration between Belarus and the EU is low, and that trade between the two parties has both intra-industry and inter-industry features. The econometric model has revealed a negative impact of the Belarusian export of agricultural products and iron and steel on its GDP growth rate. The study has also shown that so far it is difficult to forecast the timelines and consequences of Belarus–EU free trade agreement.*

Key words: *trade, common trade policy, export, import, economic growth*

Introduction

The importance of foreign trade for the economic growth and welfare of a nation has been strongly advocated in the economic literature since Adam Smith's (1776) inquiry into the nature and causes of the wealth of nations. Export–import plays an important role in the EU–Belarus relations, especially for the latter; therefore, evaluation of the efficiency of foreign trade relations between Belarus and the EU is of great importance.

The share of the EU in Belarus's turnover in goods is only about 20% (as of 2010), whereas the share of its major trade partner – Russia – is 47%. As Belarus is considered a small open economy its trade is expected to be geographically as much as possible diversified. The EU is the closest neighbor therefore Belarus should gain maximum benefits from this fact, e.g., higher GDP, new technologies, investment, new knowledge, etc.

The object of the research is the EU trade policy and Belarus's export of major goods to the EU. The aim of the study was to assess the efficiency of trade relations of Belarus with the EU and to develop an econometric model, based on regression analysis, to

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forecast what kind of merchandise export to the EU should be developed in order to ensure GDP growth.

The tasks of the research include the examination of the EU common trade policy, determination of factors having an impact on Belarusian trade in goods with the EU and economic growth, identification of products which Belarus should export to the EU to provide for a sustainable growth of GDP, and to study the possible consequences of a free trade agreement with the EU.

Literature review

The impact of foreign trade on GDP has been studied by many economists and resulted in the export-led growth thesis. As export sales increase, GDP will rise and improve economic well-being and societal prosperity. Export performance has a stimulating effect through technological spillovers and other related externalities. Exposure to international markets improves efficiency, supports product and process innovations, while specialisation encourages the economy scale. The export-led growth will cause economy-wide productivity gains in the form of enhanced levels of GDP (Morgan, Katsikeas, 1997).

The free trading system is crucial for prosperity and contributes to economic growth at both the global and national levels. As noted in the report for the G-20 Summit, being connected to the world economy does not guarantee economic growth, but there are few, if any, examples of the countries that managed to sustain high rates of growth while staying disconnected from international production and financial networks (Seizing, 2010).

The historical development of trade policy was studied by Kerr (2007), Neal (2007), Shcherbanin (2009). The development of the EU common trade policy was examined by Isachenko (2010). The theory of international trade was formulated late in the 18th – early 19th centuries by A. Smith and D. Ricardo. A. Smith (1776) invented *the theory of absolute advantage,* showing that countries are interested in free trade as they can benefit from it irrespective of whether they are exporters and importers (Shcherbanin, 2009). D. Ricardo (1817) proved that the principle of absolute advantage is only a special case of the general rule, and developed *the theory of comparative advantage* (Gladkov, 2009). J. Mill (1848) explained that the exchange price is established under the supply and demand law at such a level that the total export of each country allows paying its total import. According to E. Heckscher and B. Ohlin (19991), (Gladkov, 2009) country's export and import composition are determined by different endowments of production factors such as work, land, capital, and also by different internal needs for those or other goods. All trade concepts consider trade not simply as a mutually beneficial exchange of goods, but also as the means to reduce the gap of economic development among the countries (Pashkovskaya, Gospodarchik, 2010).

Among the basic issues of international trade theories there is matching of public interests and interests of firms participating in international trade. M. Porter's concept of international competitive advantage of nations holds that the competitiveness of a country in international trade is determined by four basic components: factor conditions, demand conditions, related and supporting industries, and firm strategy in a certain competitive situation (Pashkovskaya, Gospodarchik, 2010).

The opposing arguments against free trade are provided by the infant-industry concept (Panic, 2005). Developing countries sometimes claim that well established foreign firms destroy their new (or "infant") industries; this forces governments to assist infant firms either with subsidies or with tariffs and other forms of import control. The infant industry argument is also sometimes generalized to the "infant economy" argument claiming that the entire industrial sector must go through the stage of infancy. This argument is, in fact, consistent with the views of Hamilton and List, the two most influential advocates of protection as a policy instrument in the early stages of industrialization; however, contrary to the view attributed to them in economic literature, neither Hamilton nor List argued for protection as a permanent instrument of economic policy (Panic, 2005).

The EU common trade policy

The first steps in the development of common trade policy had been undertaken long before signing the basic documents of the EEC. The signing of the Treaty of Commerce between Great Britain and France in 1860 marked the beginning of a new era in the history of liberalization of not only European but also the world trade; it came to the end only with the beginning of the First World War (Christopher, Warburton, 2010). This agreement introduced the most favored nation (MFN) regime and two-level customs tariffs. The signing of this treaty promoted the conclusions of other bilateral treaties, including unconditional MFN (Babin, Isachenko, 2007).

By signing in 1957 the Treaty of Rome on establishing the EEC, its member states set the task to create a customs union. By the end of the 1980s, the trend towards common trade policies began to dominate in all regions of the world. The NAFTA was established to gradually eliminate trade restrictions to enhance the economic performance and competitiveness of American companies. Cooperation and coordination of interests in the countries of the Asia-Pacific region have also increased. In these circumstances, the further coordination of efforts of European countries in foreign economic activities became extremely necessary to ensure a successful operation of the EU companies in foreign and domestic markets (Isachenko, 2010). The principles and rules of common external policy laid down in the Treaty of Rome were revised and amended, and reflected in the Treaties of Maastricht and Amsterdam. The notion of "external trade policy" was expanded, and coordinated actions began to be applied to all spheres of foreign economic activity.

The expansion of international trade and increased competition transformed the EU common trade policy into one of the most important directions of integration. Combined efforts in international trade have contributed to the higher authority of the EU in the world as the EU trade policies significantly influence world trade and the development of international trade rules. By gradually negotiating, the EU managed to form a system of external trade relations and regulations with individual countries, based on their peculiarities and importance for the European market.

Almost 40 years ago the customs union within the EEC was created, based on the elimination of duties in internal trade and adoption of the common customs tariff (CCT). The common customs policy has played an increasingly important role in the simplification of import procedures for trade in goods. The customs union became a multifunctional tool for European policy, which now remains one of the cornerstones of European integration. The customs union became the key element in creating the Single Internal Market, which is based on the free movement of goods, capital, services, and labour.

The EU's CCT came into force on 1 January 1968 and fixed the customs rate common for the EU, replacing all national customs duties on goods from third countries. The CCT applies to all goods imported into the territory of the EU and is based on the principle of MFN to all member states of the WTO. It took 10 years to harmonize national import tariff rates with the rates of the CCT. The adoption of the CCT created new opportunities and led to economic growth in the EU member states.

The EU customs tariff is characterized by tariff escalation setting lower duties on import of raw materials and components, and higher duties on processed goods. The low level of customs duties on raw materials or labour-intensive products indicates that the Community is interested in importing these goods. This is an essential difference from tariffs on agricultural goods, which are considerably higher than customs duties on industrial goods. The EU applies specific and compound duties for agricultural goods many of which are subject also to tariff quotas. To some agricultural goods, seasonal duties are applied. In order to boost competitiveness, the EU can temporarily reduce or even abolish duties on certain components for sophisticated products in such industries as chemical, microelectronics, aircraft, shipbuilding, high-tech and science-intensive production.

The EU customs legislation provides for the so-called *preferential tariffs* for certain goods from certain countries. This applies mainly to bilateral trade agreements and cooperation of the EU with individual countries, association agreements or agreements on free trade zone. Reduction of customs tariffs is part of the policy of providing assistance in the form of the general system of preferences for developing countries. In these cases, there may be a total removal or cut of duties, or introduction of tariff rate or tariff quota limits.

The average weighted level of tariff applied by the EU amounts to 3.2%, which is one of the lowest in the world. It is higher for agricultural goods of interest for Belarus (the rate is 10.1%), while for industrial goods it is only 2.7%. The average bound level of the CCT is 5.0% (12.3% on agricultural and 3.9% on industrial goods), and the applied level is 5.1% (12.8 and 4.0%, respectively) (World, 2010).

Methods

The aim of the research was to analyse the efficiency of trade between Belarus and the EU. The study starts with an overview of Belarus's trade statistics, including Belarus–EU trade, and completes with the analysis of implications of a Belarus–EU prospective free trade zone.

The research encompasses a quantitative analysis of the indicators of economic efficiency of trade between Belarus and the EU as well as the development of an econometric model based on a regression correlation analysis. In the research, a matrix method of initial data presentation was used to work with a number of indicators and/or product groups by a time series covering the period from 1992 to 2010[1]. The following system of indicators as the method to assess the export–import potential of Belarus was used:

- the coefficient of balanced trade;
- the index of unit share contribution to total trade;
- the Herfindahl–Hirschman index;
- the trade overlap index.

To obtain the estimated parameters (coefficients) of the model, calculations were made using SPSS Release 20.0.0 computer package.

Overview of Belarus's external trade

The Belarusian economy has a high degree of trade openness, with the ratio of total merchandise trade to GDP standing at 110% in 2010 (versus only 10.6% in 1992). Trade openness has been historically underpinned by an import bias manifested in the high ratio of merchandise imports to total merchandise trade, fluctuating between 51% and 58% over the last decade. A persistent and expanding trade deficit reached $9.6 billion in 2010, while in 1992 there was a trade surplus of $310 million (see Fig. 1). According to the World Bank data, the ratio of trade deficit to GDP increased to 17.5% over the same period[2].

[1] In the literature, the matrix method is used for the visual demonstration of a time series of several indicators. iIn particular, the method is used by the Belarusian economist H. Milashevich (2009) to analyse the trade of Belarus with russia (Humanitarian and Economic Herald – Minsk).

[2] See World Bank, World Development Indicators for Belarus at http://databank.worldbank.org/, and Central Intelligence Agency data of the World Factbook at https://www.cia.gov/library/publications/the-world-factbook/geos/bo.html

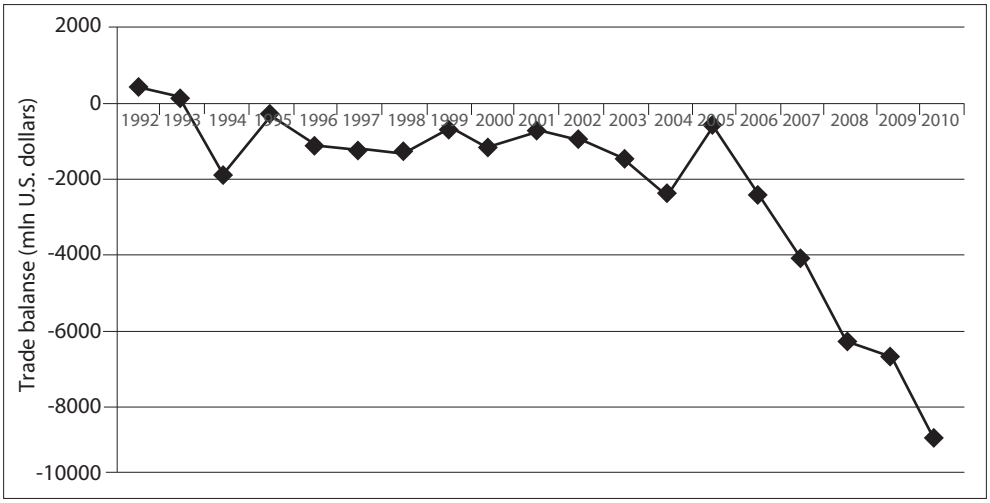

FIG. 1. **Belarusian merchandise trade balance**

Source: compiled by the authors.

The structure of the Belarusian merchandise trade demonstrates a high concentration. As shown in Fig. 2, mineral products have constituted the largest segment of merchandise exports and imports in 2010; chemical products ranked second on the export side, followed closely by machinery, equipment, and transport vehicles. On the import side, machinery, equipment, and transport vehicles ranked second, followed by chemical products, albeit with a wide gap.

In the period since late nineties, a gradual shift in exports towards fuels has been observed at the expense of manufactures, demonstrating a continuous deterioration in export competitiveness (see Fig. 2).

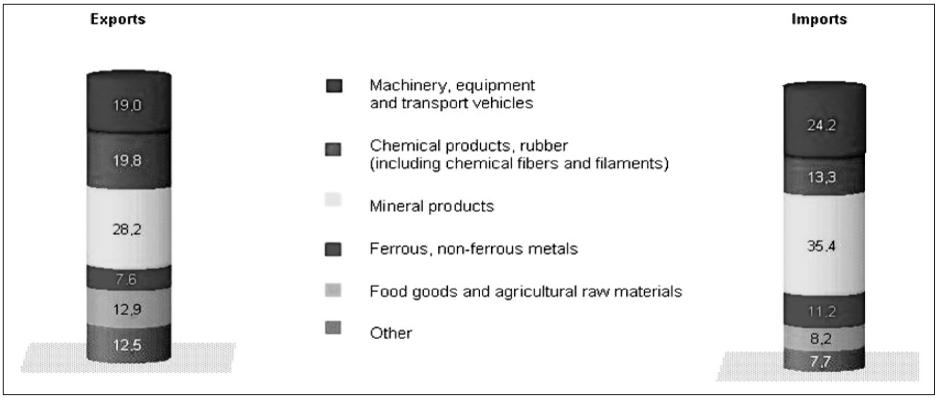

Fig. 2. **Commodity structure of Belarusian exports and imports in 2010 (%)**

Source: National Statistical Committee of the Republic of Belarus.

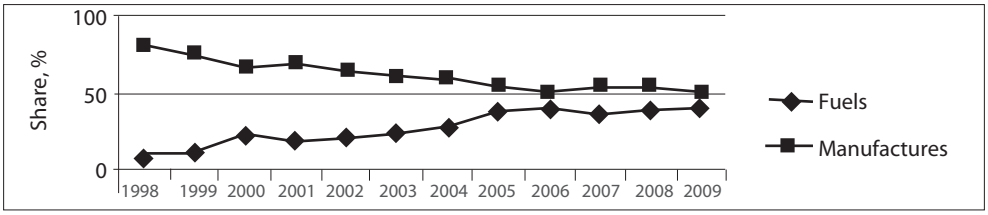

Fig. 3. **Share of fuels and manufactures in merchandise exports (1998–2009, percentage of total merchandise exports)**

Source: World Bank, World Development Indicators for Belarus.

Fuels and fuel products accounted for around 8% of Belarusian total merchandise exports in 1998 as compared to the around 78% share of manufactures, while in 2009 the share of fuel in exports increased to 37% and of manufactures decreased to 48% (see Fig. 3).

Another feature of the Belarusian trade is a heavy concentration with a limited number of partners, particularly with Russia. While the share of Russia in the Belarusian merchandise trade has been continuously declining since 1998, it is still considerable. Belarusian exports to Russia, consisting mainly of trucks, tractors, milk and dairy products, meat, iron and steel and ethylene, accounted for 41% of Belarusian exports

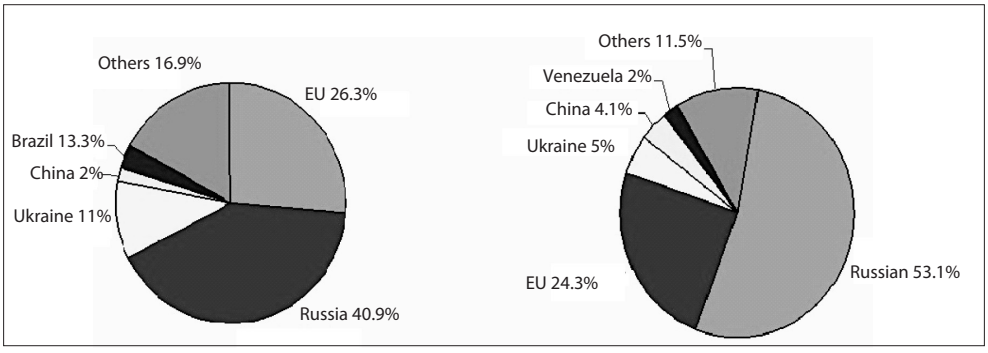

FIG. 4. **Belarus's main export (left) and import (right) partners in 2010**

Source: International Monetary Fund, Direction of Trade Statistics.

in 2010 versus 65% in 1998. On the import side, the share of Russia in total Belarus' imports remained even higher (53%) and was dominated by oil and raw commodities. The other main trade partners of Belarus are the EU and Ukraine, exports to which are led mainly by mineral and agricultural products, with a small share of chemicals, machinery and transport equipment to the EU.

Analysis of Belarus–EU trade

Figure 5 shows that until 2007 trade between the EU and Belarus was balanced, but since then imports from the EU started to grew dramatically while exports were severely cut.

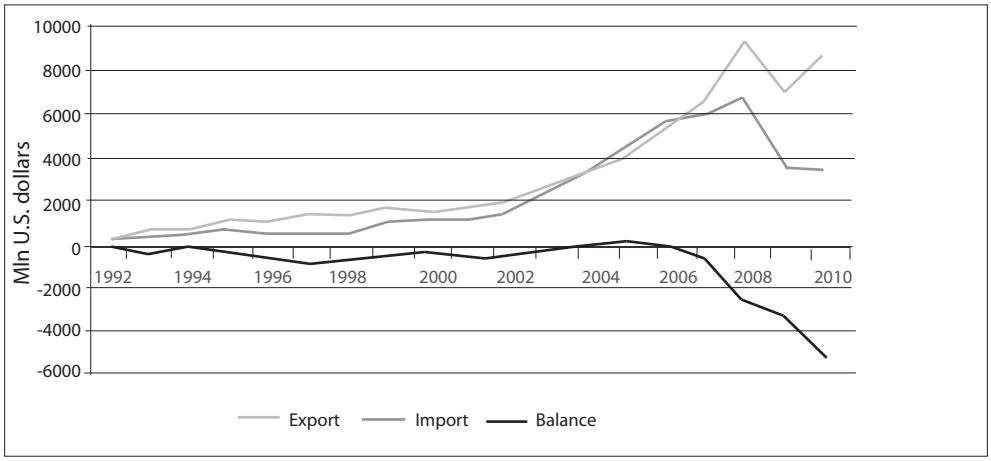

Fig. 5. **Main indicators of foreign trade of Belarus with the EU**

Source: compiled by the authors.

It is remarkable that while the Belarusian export to the EU in 2003 increased by 53.3%, in 2009 it decreased by 47.5% in comparison to the previous year. At the same time the annual growth rate of Belarusian import from the EU countries was higher than those of export: in 2007 imports increased by 13%, in 2008 by 27.2%, and in 2010 by 26.3%. In 2009, during the world crisis, there was a decline of Belarusian import from the EU by 21.6%.

The coefficient of balanced trade

The calculation of this coefficient was made using the following equations:

$$BT = B / T \text{ or} \quad (1)$$

$$BT = (E - M) / (E+M), \quad (2)$$

where B i trade balance, T is trade turnover, E is exports, and M is imports.

BT enables to assess whether the trade of Belarus with the EU for the period 1992–2010 is balanced or not. When the bilateral trade is fully balanced, BT is equal to 0, i.e. export is equal to import. The coefficient between – 1 and – 0.5 indicates a significant imbalance of trade, combined with considerably outweighed imports; any values between +0.5 and +1 indicate unbalanced trade but with significantly outweighed exports, and values from – 0.5 to +0.5 show that trade is fairly balanced.

Calculations have revealed that trade between Belarus and the EU is fairly balanced as the coefficient in most years varied from –0.4777 to +0.0281, and only in 2004–2006 the coefficient had a positive value, demonstrating a trade surplus as a result of accession of Belarus' closest trade partners in Eastern Europe to the EU in 2004.

Index of unit share contribution to total trade

To assess the impact of the trade of Belarus with the EU on the whole Belarusian foreign trade, the index of unit share contribution to total trade[3] was used:

$$UC = BT \times USh, \quad (3)$$

where UC is the index of unit share contribution to total trade, and BT is the coefficient of balanced foreign trade, and USh is a unit share.

The unit share (USh) is a vector of the trade turnover of Belarus with the EU, where each element is divided by the total foreign trade of Belarus. The indicator of unit share contribution to total trade can take any value between – 100 and +100, with the negative value indicating trade deficit, and the positive value trade surplus. When the indicator of unit share contribution to total trade is divided by 100%, the value of the impact of trade with a particular country on the total trade of Belarus is obtained.

The share of the EU in total foreign trade turnover of Belarus is not very high; usually, it varies between 20% and less than 27% of total Belarusian trade turnover. There were some years (1994, 1996–1998, 2000 and 2001) when the share of the EU dropped below 20% or even to 11.8%, but this was rather caused by the severe economic downturn during the first years after the collapse of the Soviet Union. The very low level of trade between Belarus and the EU can be explained by the fact that bilateral relations stalled in the late nineties for some political reasons. The only exception can be observed in 1993 when the share of the EU in the total trade turnover of Belarus increased up to more than 62%. The indicator of the EU contribution to the total trade of Belarus varies from – 21.9357% to 0.7130%. The negative values indicate trade deficit, but the index itself reveals the low share of trade with the EU in the total trade of Belarus.

The Herfindahl–Hirschman or trade concentration index (HHI)

To assess the economic efficiency of trade between Belarus and the EU, the Herfindahl–Hirschman, or trade concentration index (HHI), was used. It is calculated as a squared value of a partner's export share in the total export:

[3] The index of unit share contribution to trade is used in the literature to show the share of a trade partner in a country's coefficient of balanced foreign trade; in particular, this index is used by the Belarusian economist H. Milashevich (2009) to analyse the trade of Belarus with Russia (Humanitarian and Economic Herald – Minsk).

$$HHI = (E / E_t), \quad (4)$$

where (E / E_t) is the share of the EU export in the total export of Belarus.

HHI reflects the degree of trade concentration between Belarus and the EU. Generally, the index can take any value between 0 and +1; the higher the value of the index, the greater the degree of trade concentration.

The concentration of trade between Belarus and the EU, according to our calculations, has an uneven character: in 1993–1997 it decreased from 0.1673 to 0.0046, in 1998–2006 it slightly raised, when reas since 2007 it began to decline and in 2010 reached 0.0190. It should be noted that the overall degree of trade concentration between Belarus and the EU is very low, with the highest value (0.1673) reached in 1993. This indicates that Belarus has more trade relations with countries outside the EU, especially with Russia and other CIS countries.

Trade overlap index (TOI)

To determine the relative importance of intra-industry or inter-industry trade in goods between Belarus and the EU, *the trade overlap index* was used. The index can take any value between 0 and +1. The higher value of the index, the greater the degree of intra-industry trade between the countries:

$$TOI = 2 \times min (E, M) / (E + M), \quad (5)$$

where E is the merchandise export to the EU by aggregate product groups,

M is merchandise import from the EU by aggregate product groups.

The trade overlap indexes for different industries are presented in Table 1.

Table 1 demonstrates that between Belarus and the EU either intra-industry or inter-industry trade prevails – in 8 out of 15 (i.e. virtually in 50% of cases) aggregate product groups (primary products, agricultural products, manufactures, chemicals, other semi-manufactures, textiles, clothing, and other manufactures) the TOI during the study period (1992–2010) exceeds 0.5 (indicating intra-industry specialization in trade), while in other product groups (fuels and mining products, iron and steel, machinery and transport equipment, office and telecommunication equipment, transport equipment, other machinery, and other products) inter-industry trade prevails. In case of inter-industry trade, products of one of Belarus' industry are used in the production of another industry within the EU (and vice versa), while under intra-industry specialization there prevails the exchange of similar products with the same industry either in Belarus or in the EU, which demonstrates a higher level of cooperation and stimulates specialization in components or technologies.

TABLE 1. **Trade overlap indexes by aggregate product groups**[4]

	1000	*1100*	*1200*	*2000*	*2100*	*2200*	*2300*	*2400*	*2410*	*2420*	*2430*	*2500*	*2600*	*2700*	*3000*
1992	0.58	0.72	0.03	0.43	0.22	0.83	0.74	0.17	0.37	0.16	0.17	0.98	0.90	0.38	0.45
1995	0.93	0.77	0.26	0.69	0.71	0.97	0.83	0.20	0.11	0.12	0.32	0.70	0.58	0.60	0.30
2000	0.77	0.78	0.21	0.77	0.39	0.95	0.98	0.36	0.18	0.30	0.42	0.68	0.52	0.71	0.53
2005	0.34	0.80	0.07	0.62	0.27	0.63	0.91	0.24	0.04	0.28	0.26	0.78	0.48	0.61	0.22
2006	0.31	0.71	0.07	0.57	0.27	0.61	0.86	0.18	0.03	0.19	0.19	0.75	0.59	0.56	0.26
2007	0.32	0.81	0.11	0.54	0.27	0.58	0.82	0.18	0.03	0.14	0.22	0.75	0.78	0.52	0.22
2008	0.39	0.58	0.09	0.49	0.32	0.71	0.65	0.12	0.03	0.10	0.14	0.64	0.91	0.46	0.23
2009	0.50	0.71	0.14	0.39	0.52	0.47	0.62	0.09	0.04	0.06	0.10	0.65	0.92	0.49	0.25
2010	0.75	0.69	0.25	0.39	0.56	0.52	0.61	0.09	0.03	0.05	0.12	0.73	0.94	0.44	0.30

Source: calculated by the authors.

Assessment of relation between the economic growth of Belarus and trade indicators

To assess the relation between trade and economic growth, an econometric model based on regression correlation analysis was used. It allows forecasting the development of Belarusian merchandise export to the EU by aggregate product groups in order to stimulate the GDP growth. The study period covers years 1993–2010.

The regression correlation analysis between Belarusian export to the EU and GDP growth was carried out using the following econometric model:

$$Y = \beta_0 + \beta_1 \times X_1 + \beta_2 \times X_2 + \beta_3 \times X_3 + \varepsilon, \quad (6)$$

where Y is the logarithm of Belarusian GDP growth rate;

X_1 is the logarithm of growth rate of agricultural products export to the EU;

X_2 is the logarithm of growth rate of fuels and mining products export to the EU;

X_3 is the logarithm of growth rate of iron and steel export to the EU;

ε is the residual.

[4] 1000 – Primary products: 0, 1, 2, 3, 4, 68; 1100 – Agricultural products: 0, 1, 2, 4, excl. 27, excl. 28; 1200 – Fuels and mining products: 3, 27, 28, 68; 2000 – Manufactures: 5, 6, 7, 8, excl. 68, excl. 891; 2100 – Iron and steel: 67; 2200 – Chemicals: 5; 2300 – Other semi-manufactures: 61, 62, 63, 64, 66, 69; 2400 – Machinery and transport equipment: 7; 2410 – Office and telecommunication equipment: 77, 76, 776; 2420 – Transport equipment: 78, 79, 713, 7783; 2430 – Other machinery: 71, 72, 73, 74, 77, excl. 713, excl. 776, excl. 7783; 2500 – Textiles: 65; 2600 – Clothing: 84; 2700 – Other manufactures: 81, 82, 83, 85, 87, 88, 89, excl. 891; 3000 – Other products: 9, 891.

TABLE 2. **Results of regression correlation analysis**

Regression statistics				*Collinearity statistics*	
R-square	0.505	Adjusted R-square	0.400	Tolerance	Variance inflation factor (VIF)
F-statistics	4.756	Significance	0.017		
Dispersion analysis					
	Coefficients	T-statistics	Significance		
(Constant)	0.080	4.543	0.000		
X_1	-0.109	-1.987	0.047	0.648	1.544
X_2	0.031	1.674	0.104	0.759	1.317
X_3	-0.069	-2.137	0.039	0.741	1.350

Source: **SPSS Release 20.0.0.**

R-square (provides a measure of how well future outcomes are likely to be predicted by the model) is slightly above 0.5, and the adjusted R-square (a modification of the R-square, which adjusts for the number of explanatory terms in a model) is less than 0.5 (the closer R-square to 1.0 the better regression line fits the data), but, according to Borodich (2000), the value of R-square usually doesn't exceed 0.6–0.7 for the time-series regression if they have no strongly defined trend (dependence of production growth rate on the growth rate of the cost of resources, inflation rate on unemployment, etc., when the increase in independent variables doesn't necessarily lead to the increase in dependent variables).

Also, we can test the overall quality of the regression equation (Borodich, 2000):

$$\text{if } F > F_{crit} = F_{\alpha;\, m;\, n\text{-}m\text{-}1}, \tag{7}$$

where α is the significance level,

m and $(n\text{-}m\text{-}1)$ are degrees of freedom, n being the sample size on which the regression equation is based, m is the number of independent variables in the model, and $F_{\alpha;\, m;\, n\text{-}m\text{-}1}$ is the critical value of the Fisher distribution (its value can be obtained from special statistical tables), then the hypothesis of the significance of the relation between the variables is acceptable.

In our case, $F = 4.756 > F_{0.05;\, 3;\, 18\text{-}3\text{-}1} = 3.34$; this indicates the regression equation to be of a rather high quality and properly reflect the dynamics of the dependent variable Y.

The significance (P-value) of the regression equation is $0.017 < 0.05$, implying that the whole regression equation is meaningful.

The presence of multicollinearity (a linear combination of the independent variables included in the equation) is not determined because the VIF for each coefficient in the

equation is far less than 10 (or less than 4 in other sources, because there is no formal VIF value for possible collinearity problems).

The absolute value of T-statistics for variables X_1 and X_3 is very close to 2; this is why coefficients β_1 and β_3 are statistically significant, and β_2 is relatively significant as it takes the absolute value between 1 and 2 (Borodich, 2000). The author found a relation between the variables and economic growth, as well as the general characteristics of the model (i.e. the relation between the variables in the model is estimated as quite strong).

As a result of our calculations we obtained the following equation, showing a relation between the economic growth of Belarus and its merchandise export by some aggregate product groups (agricultural products, fuels and mining products, iron and steel):

$$\boldsymbol{Y = 0.08 - 0.109 \times X_1 + 0.031 \times X_2 - 0.069 \times X_3} + \varepsilon. \quad (8)$$

The coefficients indicate that an increase in exports of agricultural products from Belarus to the EU by 1% leads to GDP decrease by 0.109%. An increase in exports of fuel and mining products by 1% leads to GDP growth by 0.031%, and of iron and steel – to GDP decrease by 0.069%. This means that the best way for Belarus to increase the growth rate of GDP is to expand the export of fuel and mining products and reduce the export of agricultural products as well as of iron and steel.

Also, our research made it possible to forecast how merchandise export to the EU by aggregate product groups should develop in order to ensure GDP growth. For this purpose, three alternatives of forecasts of merchandise export to the EU were chosen: annual GDP growth by 1% (pessimistic), by 3% (neutral), and by 5% (optimistic).

Using equation (8) value of X_1: ($X_1 = -Y / 0.109$), it was revealed that concerning agricultural products, in order to attain a 1% GDP growth, the Belarusian agricultural export to the EU should be reduced by 9%, to attain a 3% growth – by 28%, and to attain the GDP growth by 5% the export should be reduced by 46%. Using equation (8) value of X_2 ($X_2 = Y / 0.031$) concerning fuel and mining products, in order to attain a 1% GDP growth, their export to the EU should be increased by 32%, to attain a 3% growth – the export should be increased by 97%, and to attain GDP growth by 5% the export should be increased by 161%. The value of $X_3 = -Y / 0.069$ means that in iron and steel products, to achieve a 1%, 3% and 5% GDP growth, Belarusian export to the EU should be reduced respectively by 14%, 43%, 72%.

It should be noted that the coefficient of correlation between Belarus's economic growth and its total merchandise export to the EU is 0.6, which means quite a strong positive linear relation between two given variables, and this fact again indicates a good quality of the developed model as a particular case of a more common relation between the economic growth of Belarus and its merchandise export to the EU.

Prospects for free trade area between Belarus and the EU

The EU Eastern Partnership initiative in 2009 presupposes, inter alia, the future establishment of a free trade area (FTA) embracing the EU and its six partners – Armenia, Azerbaijan, Belarus, Georgia, Moldova, and Ukraine. With regard to Belarus, no practical actions so far have been taken in this direction because of the WTO membership precondition.

It is assumed that the FTA would be beneficial for both parties. In the presence of FTA, the EU exports would be exempted from various tariff and non-tariff barriers. For Belarus, the expected consequences of FTA would be controversial, since the average level of tariff protection in Belarus for the moment is higher than in the EU: for Belarus, a simple average MFN applied duty rate in 2010 was 9.5%, while in the EU only 5.1% (World, 2010).

The export of the EU to Belarus consists mainly of equipment and other high value-added goods, and lower tariffs would increase the competition for the manufacturing industry of Belarus. As a result, Belarus' trade deficit with the EU ($5.3 billion in 2010) can increase even more especially during the current financial disturbances Belarus is facing and result in a deterioration of foreign exchange reserves of Belarus and depreciation of its national currency. Negative consequences on the budget may come from the removal of export duties on Belarusian oil and fuels and other raw materials (especially on potash fertilizers and on timber) exported to the EU, because customs revenues account for about 55% of Belarus' 2011 budget revenues.

One of the positive results of FTA with the EU might be the diversification of Belarusian exports by increasing the volume of finished goods, and first of all high-tech and other machine-building goods. It should be mentioned that the EU has recently made positive steps in trade with Belarus. Since the beginning of 2010, the EU didn't renew textile quotas on Belarus' textile exports to the EU, although Belarus usually didn't use more than 10% of quotas set on the most textile product lines.

Another positive effect on Belarusian trade with the EU would be the abolition of the anti-dumping measure. The duty rate of 27.5% was applied by the EU for each ton above the duty-free volume of 700 thousand tons of potassium chloride per year against the Belarusian potassium chloride, since July 2011. Table 3 demonstrates data on Belarusian export to the EU of potassium chloride by years.

TABLE 3. **Export of Belarusian potassium chloride to the EU by years (in thousand tons)**

1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
790	822	744	728	959	1 159	924	964	1 020	870	276	765

Source: Eurostat.

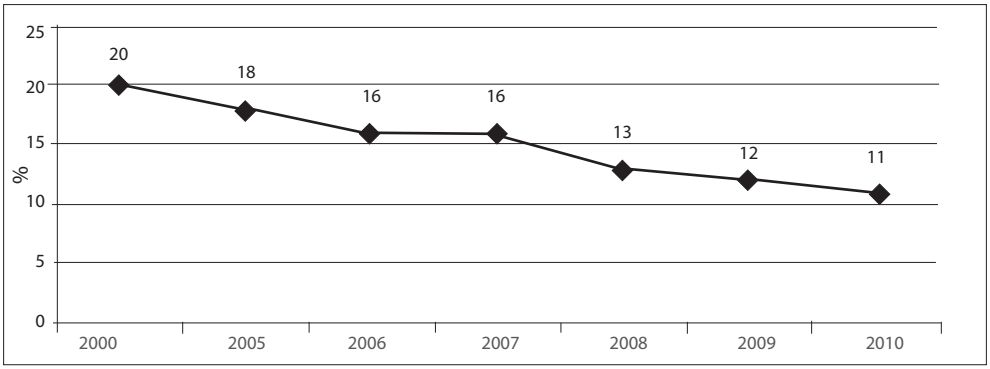

FIG. 6. **Share of the EU in Belarusian export of agricultural products (%)**

Source: calculated by the authors.

If to multiply the volume exceeding quota in each year by the duty rate of 27.5% and by averaged expected annual price of $200 per ton, and then to sum up these results, we will obtain an impressive amount of lost Belarusian export revenues of about $11 billion. In comparison, the losses of $80 million per year in trade with Belarus, estimated by the European Commission and caused by the participation of Belarus in the Customs Union with Russia and Kazakhstan are relatively low. According to the Ministry of Foreign Affairs of the Republic of Belarus, half of the above-mentioned amounts accounted for used motor vehicles, and second-hand clothes took a large part of the remaining amount.

A positive effect of the FTA with the EU for Belarus would be obtained from the free export of agricultural products to the EU. The small and constantly declining share of the EU in the Belarusian export of agricultural products (see Fig. 6) can be explained by the EU customs duties and other non-tariff measures. We made a forecast of the possible gains for Belarus from free trade with the EU in agricultural products. If to multiply the volumes of agricultural export of Belarus to the EU by the EU's simple average applied ad valorem MFN tariff on agricultural products (see Table 4) and then to sum up these results, a gain of almost $250 million would have been obtained in 2006–2010.

The Customs Union with Russia has increased import tariffs by 7% and decreased by 18% all Belarusian tariff lines; this demonstrates the overall lowering of Belarusian customs duties for imports from the EU. According to the WTO statistics, the Belarusian simple average MFN applied duties in 2010 in comparison to 2009 decreased from 10.6% to 9.5%.

TABLE 4. **The EU simple average applied lo ad valorem MFN tariff for agricultural products**

2006	2007	2008	2009	2010
15.1	15	16	13.5	12.8

Source: World Tariff Profiles 2006–2010.

We consider that the establishment of a free trade area with the EU may be completed no earlier than by the end of the 2020s. Before establishing the free trade area, the EU has to ratify the Partnership and Cooperation Agreement of 1995, which is hardly to happen in the nearest future. In addition, Belarus has to join the WTO. It should be taken into consideration that the free trade area with the EU is hard, if not impossible, to establish because of Belarus's commitments under the Customs Union with Russia and Kazakhstan as customs duties are no longer controlled by Belarusian authorities.

Conclusions

According to classical trade theory, competitive advantages or disadvantages in certain products may arise from differences in costs and the productivity of the factors of production. The factor proportion theory says that countries will tend to export the goods that use large amounts of abundant production factors while they will import goods that require large amounts of scarce production factors. Most theories see the advantages of free trade, with the exception of maybe the only theory of infant-industry, employed by economists from developing countries.

Free trade policy was one of the pillars of European integration as its implementation was aimed at strengthening its competitive position in the world. The basis for the common trade policy of the EU is the common customs tariff.

The share of the EU in the total merchandise trade turnover of Belarus usually varies between 20% and 30% in the last years, but even such a rather small share can considerably influence Belarus's GDP growth.

Analysis of Belarusian–EU trade indicators made it possible to draw the following conclusions:

1. The coefficient of balanced trade showed a normal balance with outweighed imports as indicators within a reasonable range from -0.5 to +0.5.
2. The index of unit share contribution into the total trade indicates a negative trade balance of Belarus with the EU.
3. The Herfindahl–Hirschman index shows a low degree of trade concentration between Belarus and the EU.
4. The trade overlap index didn't give a clear notion of whether the trade of Belarus with the EU is intra-industry or inter-industry.

The econometric model developed to assess the relation between trade indicators of Belarusian export to the EU of certain products and the economic growth has revealed a negative correlation between the export of agricultural products, iron and steel and the GDP growth but a positive correlation for fuels and mining products. The model can be used to define the export volumes of particular products necessary to achieve the desirable GDP growth rates.

The EU, as a stronger economic player, seems to gain from creating a free trade area with Belarus. Belarus can expect positive results only in the medium term as the conclusion of the agreement is restricted by its uncertain political environment and absence of the WTO membership.

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