COMPETITIVENESS OF DAIRY PRODUCTS EXPORT TO RUSSIA AND ALTERNATIVE MARKETS

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In order to protect certain sectors, Russia has introduced some new protectionist measures for EU agricultural products such as meat and dairy products. Russia is a member of WTO for four years, but is still not respecting its WTO commitments concerning the liberalisation of trade regime. The research was conducted in order to measure the level of competitiveness of Lithuanian dairy products in trade with Russia and in alternative markets. Measuring the competitiveness, International competitiveness index in the specific (local) region (LIIC) was used. The research has found an increase in the competitiveness of export of dairy products in EU-28 countries and countries outside the EU markets. The results differed by level of competitiveness among two groups of countries. In the period of analysis, LIIC index was higher in the first group than in the second group of EU countries.

Keywords: agri-food trade, export competitiveness, dairy products, European Union, import ban (embargo), LIIC index, Russia.
JEL Codes: F13, F14, Q17, Q18.

1. Introduction

In the free trade doctrine there arise conflicts when the countries take protectionist measures without reason. Russia, which imposed an embargo on certain agricultural products, such as meat and dairy products, fruits and vegetables against some countries of the world (on 7 August 2014) is an example of such a country. The problem of the research arises from the conflict between theory and practice (Imagawa, 2004; Bojnec, 2014; Carraresi, 2015). Concerning the problem, since 1997 the relations between EU and Russia is regulated by the Partnership and Cooperation Agreement. The EU strongly supported Russia's WTO membership since the actual accession has been started on 22 August 2012. Russia's WTO membership should give a high impact to further development of the economic relationship between the EU and Russia and it should also prevent Russia from adopting unexpected protectionist measures. Although Russia is a member of WTO for four years, it is still not respecting its WTO commitments.
Russia still remains among the most important markets for EU agricultural products. It took the second place (after the USA) in 2015. Since the embargo has been introduced, the exporters of EU agri-food products have made an effort to compensate the losses in export sales to Russia by increasing exports to alternative markets.

The dairy products is chosen to analyse in the research because of these main reasons: 1) dairy products sector is potentially one of the worst affected and Lithuania is one of the countries potentially worst affected by Russian ban in terms of absolute value; 2) over the period of embargo, in the structure of export value to Russia, dairy products took the 4th place among 24 groups of agricultural and food products.

The main purpose of the research is to measure the level of competitiveness of Lithuanian dairy products export in trade with Russia and in alternative EU and outside EU countries, using LIIC index.

The object of the research is the export of Lithuanian dairy products over the period of Russian embargo.

The research relies on the data from Statistics Department of Lithuania and UN Comtrade database for 2010–2015.

Novelty of the research. In the scientific literature, a number of various researches analysing the competitiveness of the food industry could be found. Competitiveness is a crucial issue in the EU food industry. In the last five years the competitive performance of agriculture and food industry in Lithuania and other EU countries has been affected by an significant event, namely Russian embargo for certain agricultural products. The research is assessing the effects of the import ban on country’s export competitiveness of dairy products. The approach used in the research is almost the same in terms of methodology, but differ in fields, industries and countries that have been involved in the research.

Dealing with the competitiveness issues, Revealed comparative advantage (RCA) index is commonly used, for example (Bojnec, 2014; Belová, 2012; Svatoš, 2012; Qineti, 2009; Serin, 2008; Fertő, 2002; Esmaeili, 2014; Rusali, 2013; Török, 2013).

Š. Bojnec and I. Fertő (2014) have dealt with the export competitiveness of dairy products of the EU-27 countries. The authors have been analysed the countries inside and outside the EU, using the RCA index in the period of 2000–2011. According to the results, about half of the EU-27 countries have had competitive exports in a certain segment of dairy products and the results differed by level of milk processing and for markets inside and outside the EU. The importance of product differentiation of dairy chain for export competitiveness and specialization was also indicated.

A. Belová et al. (2012) have measured competitiveness of export of Czech poultry meat on the EU and on the other world markets by using comparative analysis of Lafay (LFI) and RCA indices, also M. Svatoš and L. Smutka (2012) have discovered a positive comparative advantage of the export of certain groups of agricultural products, such as cereals, livestock, dairy products, beverages and tobacco, but negative comparative advantage of the export of the whole food sector.

A. Qineti et al. (2009) have used RCA index in measuring the competitiveness of agricultural and food products of the Slovakia and the whole EU in trade with Russia and Ukraine, V. Serin and A. Civan (2008) have analysed competitiveness of food industry in trade between Turkey and the EU, by using RCA index. Furthermore
I. Fertö and L. J. Hubbard (2002) have measured RCA and competitiveness of certain agricultural and food sectors of Hungary and found out that the government support is extremely important for the livestock sector. A. Török and A. Jambor (2013) have analysed the situation of foreign trade of food products in Hungary after joining the EU. The authors suggested to develop the food sector of Hungary in long term by producing and exporting the processed products with higher value added.

A. Esmaeili (2014) has also dealt with competitiveness issues. The author used an RCA approach and Spearman correlation coefficient in order to measure the comparative advantage among eight main exporting countries of dates. The analysis showed that the comparative advantage of Iran, Iraq, and Saudi Arabia had been decreasing in the period of 1989–2005.

A. M. Rusali (2013) has been made a comparative analysis of the comparative advantage of the export of certain Romanian agri-food products, and found out that international specialization of these products had been decreasing in the period before the accession to EU and after, with the exception of cereals and tobacco.

In order to measure the level of competitiveness of the export of agricultural and food products of Russia and dynamic changes in the period between 1998 and 2010, N. Ishchukova and L. Smutka (2013) have applied the RCA and LFI indices. The results showed that primary products and byproducts had positive comparative advantage in the EU market in relation to the entire world.

N. Ishchukova and L. Smutka (2013) have been analysing Russian foreign trade in agricultural products and foodstuffs. The authors have combined Revealed Symmetric Comparative Advantage (RSCA) and Trade Balance Index, that were used to set a new analytical tool “products mapping”. According to these two selected indicators, the exported products have been divided into four groups. Specific groups of products have been distinguished from the total export of agricultural products and certain changes over the period of 1998–2010 have been traced.

L. Carraresi and A. Banterle (2015) have evaluated the competitive performance of EU-28 countries at a sector level inside the EU by comparing the food industry and agriculture and assessing the effects of the EU expansion and economic crisis on competitiveness. In order to measure the competitive performance, the authors used External market share (EMS) and RCA indices. The results have revealed trends in competitive performance from 1995 to 2011 had been divergent.

V. Raičević et. al. (2012) have analysed the food industry of Serbia, using the RCA, LFI and Modified index of comparative advantage (Sm) and specialization in international trade using Grubel Lloyd’s index (GL). The results demonstrated that 21 of 37 analysed sectors of the Serbian food processing industry had a high value of index of RCA in 2005 and 2009.

W. Akhtar et al. (2013) have examined Pakistan's competitiveness in export of selected horticulture commodities by employing set of RCA and RCA indices with respect to global trade over the period 1990–2009. H. N. Manjunatha Reddy et al. (2013) have evaluated the growth in Indian fruits exports and the competition and performance of Indian fresh fruits in the global market based on secondary data for the period during pre-WTO (1985–86 to 1996–97) and post-WTO (1997–98 to 2005–06). The data was analysed by using different econometric analysis tools like
exponential growth function, Markova chain analysis and instability index, CMS approach (model), nominal protection coefficient (NPC). The results indicated a positive compound growth rate in both export quantity and value during both the periods.

In scientific literature there are also a number of researches analysing export competitiveness on national or even regional level, for example, J. Bruneckienė and D. Paltanavičienė (2012) have analysed theoretical and practical aspects of the measurement of export competitiveness of Baltic States in the period of recovering from the outcomes of economic crisis of 2008–2009. The authors proposed model of measurement of the national export competitiveness and quantitative (index) and qualitative (questionnaire for experts) measurement of the Baltic states export competitiveness. The newly created index (BaltEKI) was established, which consists of 17 indicators, divided into 7 groups. I. Travkina and M. Tvaronavičienė (2011) have estimated the relationships between export competitiveness and certain productivity factors. The authors have used Krugman hypothesis in order to measure the competitiveness by productivity (gross value added divided by consumption of fixed capital or worked hours) and characterised export competitiveness as export specialisation, expressed by Herfindahl-Hirschman index (HHI) of export of Lithuanian industrial sectors, over the period of 1995–2008. The authors have suggested a practical approach for predicting the competitiveness of Lithuanian export changes in the future and have provided possible consequences of impact of certain factors of productivity on further competitiveness of export.

2. Methods

In the scientific literature, B. Balassa (1965) has introduced the concept of comparative advantage. RCA index reveals advantages and disadvantages of countries and shows the specialization of the country, but it should be stated that by using this index there is no possibility to know the reasons why any country decide to export or import their production to particular country.

T. Imagawa (2004) in their study by measuring the international competitiveness of the Japanese and US markets in particular, used International competitiveness of selected market (LIIC) index, claiming that it is the best, when there is a need to set a certain product a comparative advantage in another market.

According to K. Laursen (1998), using the LIIC index is reasonably assessment of a particular country specific industries competitiveness by comparing them with those of other countries in their respective industries international trade efficiency, as well as the country's weaknesses and strengths to establish branches or sectors.

In order to determine the degree of competitiveness and advantages, compared to certain products with other countries, the LIIC index value, originated from Balassa’s RCA index, is analysed:
\[ LIIC = \left( \frac{\sum_{k} X_{ij}^k}{\sum_{k} \sum_{i} X_{ij}^k} \right) \left( \frac{\sum_{i} \sum_{k} X_{ij}^k}{\sum_{k} \sum_{i} X_{ij}^k} \right) \]

\( X_{ij}^k \) - product from the exporting country \( i \) to the importing country \( j \)
\( \sum_{k} X_{ij}^k \) - the sum of all products from the exporting country \( i \) to importing country \( j \)
\( \sum_{i} \sum_{k} X_{ij}^k \) - the sum of all the products and all of the exporting countries \( i \) to importing country \( j \).

LIIC index is the ratio of sector k’s export from exporting country to importing country relative to exporting country’s total exports to the importing country divided by the ratio of sector’s k’s importing country import from the world relative to the importing country total imports.

If LIIC exceeds 1, the sector (products) of the considered country is competitive on the partners market; If LIIC is lower than 1, it is non-competitive on the partners market.

LIIC index compares the dairy products of Lithuanian origin exported to the selected country, part of the total exports of all products of Lithuanian origin in this country with import of dairy products of the selected country, from the part of the country’s total imports of all products. It reveals if Lithuanian dairy products are relatively excel in the EU and outside the EU markets, and if do not, and also shows the level of export specialisation of these products. In calculating LIIC index, dairy products of Lithuanian origin are distinguished and re-exports is not included.

Dairy products of Lithuanian origin export competitiveness analysis was made by using four-digit product codes (CN 0401–0406) of dairy products of the combined nomenclature.

In the research, LIIC index values for the period of 2010–2015 are calculated and analysed. Research analysis was made according to the selected countries, to which export value of dairy products of Lithuanian origin was the highest and the countries, to which exports of these products, over the reference period, increased significantly. In order to measure export competitiveness of Lithuanian dairy products, partners of country’s dairy products export are analysed by splitting them into two groups – the EU-28 and countries outside EU. Over the period of analysis, dairy products were exported to 26 EU countries and to 80 countries outside the EU.

The main export markets of dairy products of Lithuanian origin in the period of Russian embargo and the changes of export values with separate countries are analysed in the research. The highest export value of dairy products of Lithuanian origin with the first group, during the reference period, were in trade with Italy, Poland, Germany and Latvia, Netherlands. Greece is chosen to analyse in the research, because export of Lithuanian dairy products value to this country, within the period of analysis, increased sharply. Comparing to 2013, in 2014 export value to Greece increased from EUR 48 million to EUR 1293 million (27 times). These countries accounted from 59.4 percent in 2013 to 65.3 percent in 2014 of all dairy products of Lithuanian origin export value to EU-28 countries.
3. Results

Russia's share against the total export to the countries outside the EU dropped to 29 percent in 2015, whereas in 2011 it made 71 percent and in 2013 accounted for 60 percent. Despite of that fall it still retains the first position among the partners of export to countries outside the EU and Russia was in the second place among total 133 export partners in 2015.

Trade of dairy products plays an important role in the foreign trade structure of Lithuania. The dairy industry produces for about 20 percent of agricultural production of Lithuania. About 85 percent of total dairy exports of the Baltic states in 2015 was occupied by the Russian market. 25–30 percent of Lithuanian dairy products is exported to Russia.

Over the period of 2010–2015, the balance of Lithuania’s trade in dairy products with Russia and other countries was positive each year.

If compared to 2014, in 2015 total agricultural and food export value dropped by 54.5 percent to EUR 486.7 million (of Lithuanian origin by 28.3 percent). The share of export of dairy products from the total agricultural and food exports accounted for 10.9 percent. Export of dairy products of Lithuanian origin reached EUR 62.7 million and accounted for 13 percent in 2015 (in 2014, 20.7 percent).

95 percent of dairy products export to Russia in 2015 was of Lithuanian origin. The highest value in export structure of dairy products was cheese and curd (more than 96 percent).

The main export countries of dairy products of Lithuanian origin in 2015 were Italy (19.5 percent of the total export of dairy products), Poland (18.7 percent), Germany (13.1 percent), Latvia (8.8 percent), the USA (6.2 percent), and the Netherlands (4.3 percent). The process of reorientation of export of dairy products gained momentum in 2015. As compared to 2013, when there were no Russia’s sanctions, exports to Saudi Arabia increased most considerably.

Dairy products exports since 2013 to other countries increased by 53 percent, excluding Italy, Poland, Germany, Latvia, markets. Compared to 2013, dairy exports to Saudi Arabia in 2015 increased by 83 times, Singapore – 6, Vietnam, Malaysia – 5, and the USA – 3.5 times.

Fig. 1 presents LIIC indices of export of Lithuanian dairy products to EU-28 countries over the period of 2010–2015. Over this period, Lithuania mainly exported to Italy, Germany, Latvia, the Netherlands and Poland. Certain changes in the competitiveness due to the food embargo introduced by Russia were made. A significant decrease in the export value of dairy products to Poland and Netherlands since 2013 resulted in the decrease of the LIIC index.
In 2015 the first position among export partners of dairy products took Germany and Italy. Over the period of 2010–2015, the average share from the dairy products export to Germany accounted for 24.5 percent, in Italy for 23.3 percent. Dairy products of Lithuanian origin were competitive in the EU-28 markets, with the exception of Greece (in 2011–2013 and in 2015, LIIC index values were less than 1). The greatest, but as far as decreasing, competitiveness, during the reference period, was in trade with Italy (LIIC index were unequally ranging from 26.4 to 21.0). It shows that Lithuania has great potential for the distribution of dairy products with this country. Poland was in the second place in terms of LIIC index values, however, the competitiveness during the reference period, had a significant decline (LIIC index value decreased from 14.1 in 2010 to 5.4 in 2015). LIIC index values in Germany, the Netherlands and Latvia fluctuated within the range between 1.5 and 6.1. Because these values were greater than 1, this indicates that Lithuanian dairy products are competitive in the aforementioned markets. As self-sufficiency level of dairy products in Latvia is not sufficient (about 85 percent) and Lithuanian milk purchase price is one of the lowest in the EU.

Fig. 2 presents LIIC indices of export of Lithuanian dairy products to countries outside the EU in the period of analysis. A considerable increase in the export of dairy products to Belarus, Saudi Arabia, Vietnam, USA, Japan, Malaysia since 2013 resulted in the increase of the LIIC index in 2014. Export value of dairy products to USA in 2015 increased further and resulted in the increase of the LIIC index in 2015.
The values of LIIC index during the reference period showed that dairy products of Lithuanian origin were also competitive in the countries outside the EU, but with the exception of Saudi Arabia over the period of 2010–2013. Taking into consideration that strong consumption of dairy products growth is expected in Saudi Arabia during the next 10 years and that LIIC index since 2014 was increasing each year, Saudi Arabia is becoming a potential market for Lithuanian dairy products.

LIIC index confirmed the decreasing competitiveness of export of dairy products in Russia. The values of LIIC index decreased each year from 24.0 in 2010 to 12.0 in 2014. The highest level of competitiveness has been measured in trade with alternative markets such as Singapore, Malaysia and Vietnam. This shows that Lithuania has great potential for the distribution of dairy products to these countries. Over the period of 2010–2015, average share from the exports of dairy products to Singapore was 24.5 percent, to Malaysia 23.3 percent, Vietnam 23.3 percent. During the reference period, the value of LIIC index in Belarus was steadily growing and each year has grown from 0 in 2010 to 26.5 in 2014. This shows the growing potential of dairy products of Lithuanian origin export to Belarus.

USA, Russia and Japan are expected to have the largest growth of dairy production in the world. Dairy production in the USA is expected to increase by 1.1 percent during the next decade. Japan retains one of the highest position among the largest importers of agri-food products in the world. Over the period of 2010–2015, the values of LIIC index in Japan were the highest among the countries outside the EU. LIIC index in the USA has been steadily growing.

Over the period of analysis, values of LIIC index were higher in the first group than in the second group of selected countries.
4. Conclusions

1. Russian embargo for certain agricultural products was a challenge for EU and both Lithuanian exporters, however, it opened up new opportunities. After sanctions imposed by Russia in 2014, exporters of dairy products ought to begin their export reorientation to alternative markets. There is a need to search for alternative markets for exporters of dairy products.

2. In practice, trade data is being commonly analysed by using Balassa’s RCA index. This index identifies revealed comparative advantage or disadvantage of a country, but by using this index there is no possibility to know the reasons why any country decide to export or import their production to particular country. In order to measure the level of competitiveness of export of dairy products in the agricultural and food sector in trade with Russia and in alternative markets, LIIC index was used in the research, claiming that it is the best, when there is a need to set a certain product a comparative advantage in another market. Calculated LIIC indices, over the period of 2010–2015, confirmed that level of competitiveness of Lithuanian dairy products in selected EU-28 countries and countries outside the EU was increasing.

3. The results of the research showed that Lithuanian dairy products were competitive in selected EU-28 countries. The highest competitiveness was in trade with Italy as LIIC index values in various years were ranging from 26.4 in 2010 to 21.0 in 2015. The second place took Poland, however, the competitiveness had a significant decline from 14.1 in 2010 to 5.4 in 2015. During the entire reference period, LIIC index of Germany, the Netherlands and Latvia fluctuated within the range between 1.5 and 6.1.

4. Russia’s share against the total export to the countries outside the EU dropped to 29 percent in 2015, whereas in 2011 it made 71 percent and in 2013 accounted for 60 percent. Despite of that fall it still retains the first position among the partners of export to countries outside the EU and Russia was in the second place among total 133 export partners in 2015. The share from the dairy products export to countries outside the EU went up from 0.8 percent in 2014 to 2.8 in 2015. All these changes in the export structure were consequences of the process of export reorientation that have started after sanctions imposed by Russia in 2014.

5. LIIC index showed, that dairy products of Lithuanian origin are also competitive in the countries outside the EU. The value of LIIC index confirmed the decreasing competitiveness in Russia, it decreased from 24.4 in 2010 to 11.9 in 2014. The highest competitiveness were in trade with Singapore, Malaysia and Vietnam. The value of LIIC index in Belarus was steadily growing from 0 in 2010 to 26.5 in 2015. It shows that Lithuania has potential to trade of dairy products with these economies. The results differed by level of competitiveness. LIIC index was higher in the first group than in the second group of EU-28 countries.

6. The results of the research could be valuable for finding alternative markets of export of dairy products in order to maintain the competitiveness and certain level of income of exporters of dairy products. The results of the research could also be valuable in the process of export reorientation in promoting faster development of export.
References


PIENO PRODUKTŲ EKSPORTO Į RUSIJĄ IR ALTERNATYVIAS RINKAS KONKURENCINGUMAS

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Santrauka


Raktiniai žodžiai: eksporto konkurencingumas, Europos Sąjunga, importo draudimas (embargas), LIIC indeksas, pieno produktai, prekyba žemės ūkio ir maisto produktais, Rusija.

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