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## Evaluation of revealed comparative advantage of Lithuanian industry in global markets

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### Abstract

Industry is one of the main fields of manufacturing. The level of its development determines the economic power of the country, employment and social well-being. That is why it is extremely important to reveal the tendencies of industrial changes and identify the strongest and weakest industries. In the scientific literature, the issues of Lithuanian industrial structure are closely related to the aspects of competitiveness which become increasingly topical while evaluating the state of industry. Export of industrial products still remains one of the main factors determining the development and growth of Lithuanian economy. The analysis of the scientific literature revealed the lack of the research on general competitiveness of Lithuanian industry in global markets, evaluating it from the position of the goods exported. Therefore, the aim of this research is evaluation of the competitiveness of Lithuanian industrial products in global markets using Revealed Comparative Advantage index and Revealed symmetric comparative advantage index created on the basis of the first index during the period of 2007–2011.

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*Keywords:* industry; evaluation of industrial competitiveness; revealed comparative advantage.

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### 1. Introduction

*Topicality of the problem.* Export of industrial products remains one of the main factors of Lithuanian economic growth and development after the economic crisis in Russia in 1998 and the global economic crisis of 2008–2009. Industrial development mostly depends on export and the ability of industrial companies to compete in foreign

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markets. According to Rudzkiš & Kvedaras (2003), in small opened countries, export is considered the main source of foreign currencies, extremely important for such transition economy as Lithuania, where the biggest part of raw materials as well as almost all investment goods is imported. Competitive advantage is considered to be the long-term ability of an entity to efficiently create the value which would exceed the value created by competitors and at the same time would generate profitability higher than the average in the industry. The results of previous research (Saboniene, 2009) showed that during the period of 2001–2007, the dominating industries were manufactures of live animals, dairy and dairy products, meat and fish preparations, fertilizers, albuminoids, modified starches, glues and enzymes, produced in Lithuanian food and chemical industries. Strong competitive positions in export in the group of textile materials and products were ensured by such products as articles of apparel, accessories, knit or crochet; in the group of wood and articles of wood – furniture manufacturing. Specialization of Lithuanian export during the researched period increased in the groups of land, air and water transport as well as optics, measuring and medical appliances.

*The level of problem research.* The competitiveness of Lithuanian and other countries' industry was researched by many scientists applying different methods of evaluation. The directions of the research fall into these subgroups:

- General evaluation of the competitiveness of a country (-ies) / regions. The competitiveness of Ukrainian regions was evaluated applying the four-factor (economic development, industrial production, migration, unemployment and labour market) analysis (Odehnal, Sedlacik, & Michalek, 2012); the competitiveness of the Baltic States' export was estimated by BaltEKI index (Bruneckiene & Paltanaviciene, 2012); the competitiveness of the national economics of the Republic of Kazakhstan was evaluated having analysed the World Economic Forum reports (Macerinskiene & Sakhanova, 2011); the competitiveness of Lithuanian export was evaluated using the econometric models (Rudzkiš & Kvedaras, 2003)
- Evaluation of a particular industry in respect of export using revealed comparative advantage (further in the text – RCA) index and its modifications (Kuldilok, Dawson, & Lingard 2013; Vitunskienė & Serva, 2006; Saboniene, 2011; Saboniene, 2009; Dubinas & Stonkuvienė, 2005; Jayawickrama & Thangavelu, 2010; Nikolić et al., 2011; Wu & Lin, 2008; Kathuria, 2013; Wei & Chunming, 2012)
- Evaluation of a particular / general industry by other methods such as Porter's diamond of competitive advantage model (Shafaei, Shahriari, & Moradi, 2009); trade intensity index (Hatab, Shoumann, & Xuexi, 2011); intra-industry trade index (Bernatonyte & Normantiene, 2009); trade balance index (Widodo, 2008); constant market share (Rahmaddi & Ichihashi, 2012); Herfindahl-Hirschman index (Stanikūnas & Burinskas, 2011).

The analysis of the scientific literature proposes the question on what competitive positions Lithuanian industry gained during the period of 2007–2011, comparing the data of Lithuanian industrial export in global export markets. The scientific literature is rich in the studies on particular industries, identifying the groups of products with competitive advantages. However, there is the lack of the research to analyse the general competitive state of Lithuanian industry in global markets, evaluating not only RCA index. Up to now, the scientists have created a few modifications of this index seeking for the accuracy of the interpretation of RCA results. However, it is not entirely clear whether RCA index and its modifications provide similar results. *The purpose of the research* is evaluation of the competitiveness of Lithuanian industrial products in global markets using RCA index and its modification – revealed symmetric comparative advantage (further in the text – RSCA). The following *objectives* enabled to reach the purpose defined: 1) to carry out the analysis of the indexes enabling to evaluate industrial competitiveness in respect of export; 2) to research structural changes of Lithuanian industry in 2000 and 2012; 3) using RCA and RSCA indexes, to evaluate the competitiveness of Lithuanian industry and carry out the comparative analysis of the results.

The structure of the article is organized as follows: section 2 discusses the indexes of the evaluation of industrial competitiveness in respect of export; section 3 describes the methodology of the research; section 4 discusses the data and presents the results; section 5 provides conclusions.

## 2. Literature review

Industry is one of the main branches of manufacturing. It highly determines economic power, employment and social welfare of the country. That is why it is scientifically important to reveal the tendencies of industrial changes as well as the strongest and weakest industries. In the scientific literature, the issues of Lithuanian industrial structure are closely related with the aspects of competitiveness which are becoming increasingly topical evaluating industrial state. Recently, the number of the scientific studies to evaluate the competitiveness of the country, sector or industry is increasing. According to some scientists (Valodkiene & Snieska, 2012; Liučvaitiene & Paleckis, 2011; Meiliene & Snieska, 2010), competitiveness is determined by different factors evaluating them by different aspects, considering country's development, political and geographical position and other factors. Competitiveness is a complex category – that is why it is not easily measured or described in a few parameters (Liučvaitiene & Paleckis, 2011, p. 195). Both the concept of competitiveness and competitiveness evaluation are characterized by multi-dimension. Depending on the purpose of the research, different indexes can be used for evaluation of competitiveness. The scientific literature proposes (Saboniene, 2009; Prasad, 2000; Meiliene & Snieska, 2010) that with a view to increasing competitiveness of a country / sector, it is necessary to increase export. Export is considered to be one of the main indexes of international competitiveness. Methods and indexes commonly used for the analysis of the tendencies and structure of industrial export have been shown in Table 1.

The values of selected indexes for the evaluation of industrial competitiveness enable not only to evaluate the current situation in the sector and carry out the comparative analysis of industrial sectors, but also to plan target measures to strengthen the competitive advantage of a particular sector. The problem arises with the need to choose the indicator most accurately reflecting the current situation in the sector. The authors of the article are of the opinion that RCA index is the most suitable for the research of this kind. According to Wu & Lin (2008), Nicolici et al. (2011), Kuldilok et al. (2013) RCA and its modifications have these advantages: “easy to calculate, widest used method, used to underline economic efficiency of industry, reveal country's weak and strong export sectors, provide arguments necessary for creation of public policies, basic logic is to evaluate country's export specialization related to some reference group”. Other authors (Nicolici et al., 2011; Kuldilok et al., 2013; Kilduff & Chi, 2007) highlight some disadvantages of the indexes such as: “asymmetric, do not provide a detailed explanation of the reasons for changes in levels of competitiveness. Table 1 systematizes the indexes which are not less important researching industrial competitive advantage, but the authors of the article do not analyse them in more detail due to the reasons explicated below. Trade Intensity Index (TII) is used to estimate trade intensity between two or more selected countries. But the empirical part of the article covers only industrial competitiveness of a single country, so export similarity index has not been calculated since it shows whether the compared countries follow similar tendencies in the export of a particular product. Intra-industry index (IIT) shows specialization inside an industry, i.e. it reveals whether the nature and structure of international trade is changing or not. This index is more suitable for the analysis of the structure of international trade. Herfindahl-Hirschman index shows how strong companies' concentration in a particular industry is, and this reflects the competitiveness of internal market. Although XCI is little researched in the scientific literature, it can reveal whether an industry had increasing advantage during the target period. In this research, the index has not been calculated because it reflects similar tendencies to RCA.

Table 1. Indexes of the evaluation of industrial competitiveness. *Source:* prepared by the authors with reference to Amir, 2000; Bezić, Cerović, & Galović, 2011; Hatab et al., 2012; World Bank, 2011; Stanikūnas & Burinskas, 2011; Kilduff & Chi, 2007; Rahmaddi & Ichihashi, 2012

Indexes of industrial competitiveness	Description
<i>Revealed comparative advantage index (RCA):</i> it served as the base for indexes RTA (Relative Trade Advanced), Net Export RCA; RCA*; ESI ( <i>Export specialization index</i> ); RSCA („Symmetric“ <i>Revealed Comparative Advantage Index</i> ); WI ( <i>Weighted revealed comparative advantage</i> ); AI ( <i>Additive Revealed Comparative Advantage Index</i> ); LIIC-A ( <i>International competitiveness index</i> ); NRCA ( <i>The Normalized Revealed Comparative Advantage</i> )	RCA uses the trade pattern to identify the sectors in which an economy has a comparative advantage, by comparing the country of interests' trade profile with the world average. Takes a value between 0 and $+\infty$ . A country is said to have a revealed comparative advantage if the value exceeds unity.

Indexes of industrial competitiveness	Description
<i>Export competitiveness index (XCI)</i>	XCI identifies the success or failure of production when confronted with growing competitive markets. If the XC amounts to more than 1, the export competitiveness is increasing. In contrast, when the value is less than 1, it implies a negative trend of export competitiveness.
<i>Relative growth rates of merchandise exports and imports (GI)</i>	This indicator is used to compare rates of growth of exports and imports of broad classes of goods in one country with those for world trade or the trade of its competitors, including the major products in exports and imports.
<i>Trade Intensity Index (TII)</i> . TII appears in two forms, i.e. export intensity index (XII) and import intensity index (MII).	The trade intensity index (TII) reflects the ratio of the share of country i's trade with country j relative to the share of world trade destined for country j. An index of greater (less) than unity has been interpreted as an indication of larger (smaller) than expected trade flow between two parties concerned.
<i>Intra-industry trade (IIT)</i> , also known as Grubel and Lloyd index	IIT index has a value range between 0 and 1 or 0 and 100 in percentage form. A larger value implies greater trade between firms in the same industry.
<i>Export diversification (concentration) index) (DX) or Herfindahl -Hirschman index</i>	DX links competition to concentration. Index in the range below 1000 shows a very low concentration; in the range of 1000-1800 it means moderate concentration and in the range above 1800 it indicates high level concentration.
<i>Export similarity index (XS)</i>	The export similarity index (XS) provides useful information on distinctive export patterns from country to country. The index varies between zero and 1, with zero indicating complete dissimilarity and 1 representing identical export composition.
<i>Trade complementarity index</i>	Index depicts how specialization in the commodity composition of nation i's exports to the global market meshes with the specialization in the commodity composition of nation j's imports from the international market.
<i>Constant market share analysis (CMSA).</i>	CMS is applied in international trade for analyzing countries market share of manufactured exports.

### 3. Research methodology

The research process was carried out in two stages. Firstly, RCA index which is measured by the product's share in the country's exports in relation to its share in the world trade (Oelgemöller, 2013) was calculated:

$$RCA_i^{LTL} = \left( x_i^{LTL} / X^{LTL} \right) / \left( x_i^w / X^w \right) \quad (1)$$

where:  $x_i^{LTL}$  –Lithuanian export of product i;  $X^{LTL}$  – total export of Lithuania;  $x_i^w$  – world export of product i;  $X^w$  – total world export. The interpretation of RCA index values has been based on the classification of RCA index values presented by Hinloopen & Marrewijk (2001), where class a: RCA values vary from 0 to 1; class b: RCA index varies in the interval from 1 to 2; class c: RCA values vary in the interval from 2 to 4; class d: RCA values are higher than 4. Class a includes all products or industries / sectors by which a country does not have revealed comparative advantage; other three classes (b, c, d) approximately divide the products or industries / sectors related

to revealed comparative advantage into three levels: “weak comparative advantage” – class b, “medium comparative advantage” – class c, and “strong comparative advantage” – class d.

In order to prevent the problem of asymmetry, the modification of RCA index – symmetric revealed comparative advantage (Oelgemöller, 2013) – was calculated in the second stage of the research:

$$RSCA_i = (RCA - 1) / (RCA + 1) \quad (2)$$

RSCA values vary in the interval from  $-1$  to  $+1$ . Values larger or less than zero mean the presence of comparative advantage or disadvantage.

#### 4. Empirical research results

##### 4.1. Structural changes of Lithuanian industry in 2000 and 2012

In order to analyse the structural changes of Lithuanian industry, the data provided by the Lithuanian Department of Statistics (LDS) for the years 2000 and 2012 was used for the comparative analysis. Both in 2012 and 12 years ago, manufacturing (C) dominated in Lithuanian industry. Its relative share in Lithuanian industry structure increased by 2.4 per cent during the analysed period. The grow of manufacturing sector is linked with the increased share of the sold production in export. Second place in Lithuanian industry structure is taken by the industry of electricity, gas, steam and air conditioning (D). Its share in total industry structure decreased by 1.2 per cent. The share of mining and quarrying (B) and water supply, sewage, waste management and remediation (E) in Lithuanian industry structure is insignificant, i.e. it does not even make 1 per cent (see Fig. 1).

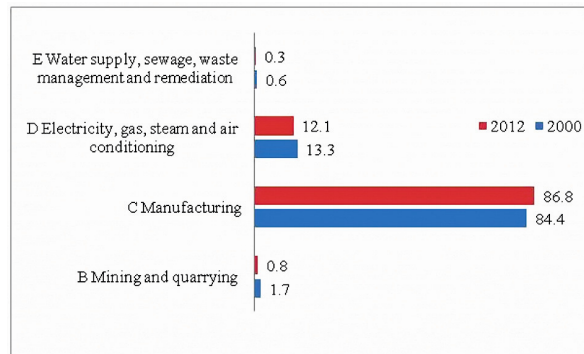


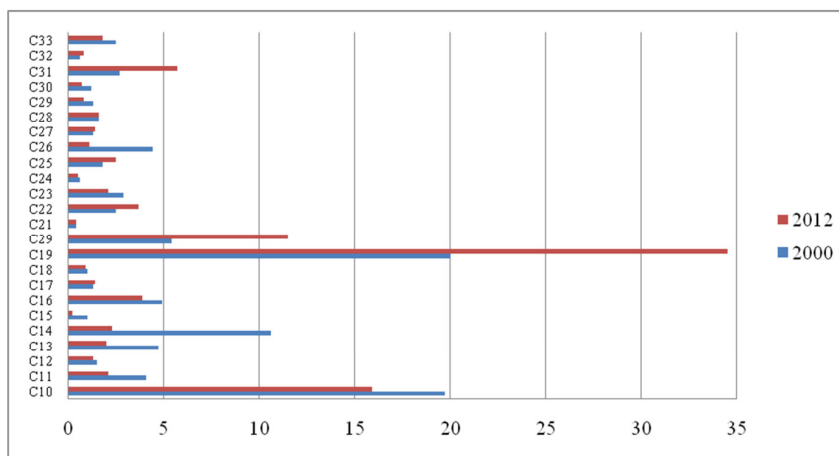
Fig. 1. The structure of Lithuanian industry, per cent. *Source:* prepared by the authors with reference to the data of LDS

For the detailed analysis of the structure of manufacturing sector, see Figure 2. It shows that manufacture of food products took the biggest part in all manufacturing sector (in the year 2000, manufacture of food products made 27 per cent of all manufacture market, in 2012 – 26 per cent). The market share taken by manufacture of textiles significantly decreased: from 21 per cent in 2000 to 9 per cent in 2012. Manufacture of chemicals increased by 9 per cent, and manufacture of furniture – by 5 per cent during the analysed period. Summarizing, it can be concluded that Lithuanian manufacture is dominated by traditional industries such as manufacture of chemicals, food, textile, furniture, but it is becoming more diversified (see Fig. 2).

Comparative analysis of Lithuanian industrial structure during the selected period revealed that the share of most manufactures has remained almost unchanged during 12 years with the exceptions of textile, food, furniture and chemicals. According to the data of the study on the competitiveness of Lithuanian manufacture of textiles and wearing apparel (2009), the decreased share of textiles ( $-8.3$  per cent) in total structure of manufacturing is grounded considering lower competitiveness of textile manufacture in comparison to general evaluation of the

competitiveness of the country in many aspects (efficiency of public institutions, quality of infrastructure and potential of innovations). Although manufacture of furniture, similarly to the manufacture of textiles, is attributed to low-technology manufacture, its market share increased by 3 per cent. The success of furniture manufacture was determined by the cooperation with global distribution channels such as huge global nets of retail (for example IKEA). Successful choice of a promising distribution channel has become a solution to furniture manufacturing companies coping with economic recession and ensuring competitiveness in international markets (Valodkiene, Snieska, & Gaidelys, 2011). The share of food manufacture has also decreased by 3.8 per cent in total structure of manufacturing. The most significant growth has been revealed in the industry of chemicals: manufacture of coke and refined petroleum products increased by 14.5 per cent, manufacture of chemicals and chemical products – by 6.1 per cent.

Summarizing, it can be concluded that Lithuanian industrial structure has slightly changed during the last 12 years. The share of such subsectors as chemicals (coke and refined petroleum products as well as chemicals and chemical products), furniture, rubber and plastic products and metals has increased in the total structure of manufacturing while the share of the subsectors such as manufacture of food, beverages, wearing apparel, computers, electronic and optical products has decreased during the researched period.



C10 – manufacture of food products; C11 – manufacture of beverages; C12 – manufacture of tobacco products; C13 – manufacture of textiles; C14 – manufacture of wearing apparel; C15 – manufacture of leather and related products; C16 – manufacture of wood and products of wood and cork; C17 – manufacture of paper and paper products; C18 – printing and reproduction of recorded media; C19 – manufacture of coke and refined petroleum products; C20 – manufacture of chemicals and chemical products; C21 – manufacture of basic pharmaceutical products and pharmaceutical preparations; C22 – manufacture of rubber and plastic products; C23 – manufacture of other non-metallic mineral products; C24 – manufacture of basic metals; C25 – manufacture of fabricated metal products except machinery and equipment; C26 – manufacture of computers, electronic and optical products; C27 – manufacture of electrical equipment; C28 – manufacture of machinery and equipment n.e.c.; C29 – manufacture of motor vehicles, trailers and semi-trailers; C30 – manufacture of other transport equipment; C31 – manufacture of furniture; C32 – other manufacturing; C33 – repair and installation of machinery and equipment.

Fig. 2. The structure of the manufacturing sector in 2000 and 2012, per cent  
 Source: Prepared by the authors with reference of the data of LDS

#### 4.2. The results of RCA and RSCA indexes for Lithuanian industry in global markets

RCA index was the starting point in the measurement of industry competitiveness (see Table 2).

Table 2. The results of the evaluation of Lithuanian industrial competitiveness in global markets by RCA index during the period of 2007–2011. Source: prepared by the authors with reference to the calculations

Class	Code	Product group	2007	2008	2009	2010	2011
	12	Oil seed, oleagic fruits, grain, seed, fruit, etc. n.e.c.	1.93	1.24	1.78	2.02	1.25
	17	Sugars and sugar confectionery	2.0	1.68	1.46	1.39	1.40
	18	Cocoa and cocoa preparations	1.85	1.90	1.76	1.61	1.55
	19	Cereal, flour, starch, milk preparations and products	1.48	1.25	1.37	1.27	1.24
	22	Beverages, spirits and vinegar	1.15	1.23	1.23	1.78	1.69
	27	Mineral fuels, oils, distillation products, etc.	0.95	1.41	1.52	1.55	1.47
	32	Tanning, dyeing extracts, tannins, derives, pigments etc.	1.20	0.95	1.04	1.13	0.98
b	35	Albuminoids, modified starches, glues, enzymes	1.44	1.62	1.39	1.51	1.58
	39	Plastics and articles thereof	2.34	1.89	2.07	2.02	1.86
	61	Articles of apparel, accessories, knit or crochet	1.32	1.32	1.52	1.38	1.24
	62	Articles of apparel, accessories except knit and crochet, second-hand textile, clothes	2.18	1.56	1.57	1.59	1.40
	68	Stone, plaster, cement, asbestos, mica, etc articles	2.13	1.83	1.64	1.87	1.54
	73	Articles of iron or steel	1.06	0.97	1.17	1.14	1.08
	96	Miscellaneous manufactured articles	1.81	1.51	1.26	1.26	1.39
	21	Miscellaneous edible preparations	2.14	1.99	2.06	2.24	1.99
	63	Other made textile articles, sets, worn clothing, etc.	2.56	2.03	2.17	2.03	1.79
c	16	Meat, fish and seafood food preparations	3.57	3.29	4.61	4.59	2.40
	23	Residues, wastes of food industry, animal fodder	4.69	3.52	3.85	3.56	2.79
	43	Fur skins and artificial fur, manufactures thereof	3.74	3.26	3.76	3.52	3.74
	56	Wadding, felt, nonwovens, yarns, twine, cordage, etc.	3.17	2.42	3.00	3.99	3.69
	11	Milling products, malt, starches, inulin, wheat gluten	3.85	3.70	4.45	4.62	4.95
	24	Tobacco and manufactured tobacco substitutes	5.75	3.22	4.29	5.08	5.93
	31	Fertilizers	19.0	14.34	13.90	10.90	11.85
d	44	Wood and articles of wood, wood charcoal	5.08	4.17	4.33	4.82	4.78
	51	Wool, animal hair, horsehair yarn and fabric thereof	4.94	3.96	4.19	4.11	3.61
	53	Vegetable textile fibres n.e.c., paper yarn, woven fabric	12.5	9.62	8.13	6.92	7.07
	94	Furniture, lighting, signs, prefabricated buildings	5.33	4.33	5.12	4.90	4.80

As it can be seen from the results, class d includes the manufactures taking the strongest competitiveness positions – food, chemicals, textile. Fertilizers; vegetable textile fibres, paper yarn and fabric; tobacco and manufactured tobacco substitutes; furniture, lighting, signs, prefabricated buildings; wood and articles of wood, wood charcoal; milling products, malt, starches, inulin and wheat gluten can be considered to be the most competitive Lithuanian products in global markets during the period of 2007–2011. Reduction of the competitive advantage of particular products, for instance, beverages, spirits and vinegar, mineral fuels, tanning and dyeing extracts and others has been captured since 2008. With reference to the data of International Monetary Fund (2013), in 2009, Lithuania took the second position among 14 countries of the Eastern and Central Europe by the biggest GDP percentage decline (GDP declined by 14.847 per cent). The decline could mostly be determined by the fall of export volumes (in 2009, the volumes of export fell by 14.079 per cent comparing the year 2009 with 2008). In



2011, the groups of the products attributed to class d had the biggest competitive advantage. RCA index for these groups has been presented in Figure 3.

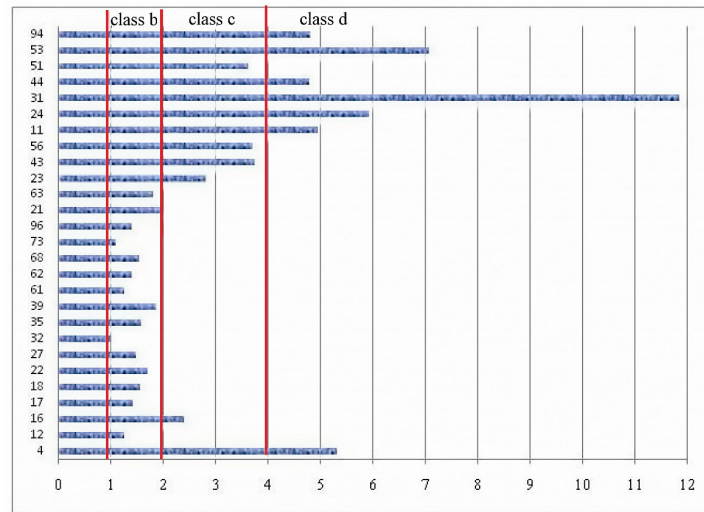


Fig. 3. RCA index for Lithuanian industry in global markets in 2011. *Source:* calculated by the authors with reference to the global trade statistical data announced by International Trade Center, 2013 (<http://www.trademap.org>)

Code numbers correspond with the product groups presented in Table 2. Products attributed to class a are not included in the graph as they do not have any revealed comparative advantage.

In order to eliminate the disadvantages of RCA index explicated in the previous sections of the article, scientists apply an RCA modification – RSCA index. The calculated values of RSCA have been presented in Table 3. The table includes only the groups of industrial products which show positive RSCA values not lower than 0.05.

The results of the calculations propose the following conclusions:

- Manufacturing which fundamentally consists of food, chemicals, furniture and wood manufacture remains the main industry increasing Lithuanian export. In global markets, Lithuania has reached the highest competitive advantage in manufacturing of chemicals: in 2011, manufacture of fertilizers made 11.85 per cent. The share of the exported fertilizers in global export distributed as follows: in 2008 – 2.09 per cent; in 2009 – 1.80 per cent; in 2010 – 1.46 per cent; in 2011 – 1.82 per cent. What is more, fertilizers made the biggest share of export from all 99 groups of products in global exports. According to the data of LDS, the manufacture of chemicals has exported the average of 80 per cent of its production during the researched period. It can be presumed that the manufacture of chemicals will further remain one of the main Lithuanian industries determining the growth of the competitiveness of Lithuanian industrial export in global markets.
- The values of RCA index varying in the interval from 4 to 7.07 revealed that in 2011, Lithuania had strong competitive positions in the industries of textile, wood and food. In the industry of food, the biggest competitive advantage was earned by the manufactures of milling products, malt, starches, inulin, wheat gluten (RCA = 4.95) and the manufactures of tobacco and manufactured tobacco substitutes (RCA = 5.93). In the industry of wood, the strongest positions were taken by the manufactures of furniture (RCA = 4.80) and wood and articles of wood (RCA = 4.78); in the industry of textile – by the manufactures of vegetable textile fibres (RCA = 7.07), wool and other materials (RCA = 3.61), fur skins (RCA = 3.74), wadding (RCA = 3.69). With reference to EOCED (2011) industrial classification, manufactures of wood, food, beverages, tobacco, textile, leather and footwear are attributed to low-technology industries, but particularly these industrial sectors made the biggest share of the value added in economics (in the period of 2006–2010, they made 79 per cent of the value added in all manufacturing sector) and are the biggest employers. With reference to Startiene, Pridotku (2012), the basis of



current Lithuanian manufacture is made of traditional food and beverages, wood, furniture and textile. That is why innovativeness of the industries using traditional technologies and their ability to compete in global markets should determine the state of Lithuanian manufacture in the long-term perspective.

Table 3. The results of RSCA (Revealed „Symmetric“ Comparative Advantage Index). *Source:* prepared by the authors

Code	RSCA value		RSCA clasification		Direction of SI shift
	Start of period 2007	End of period 2011	Start of period 2007	End of period 2011	
11	0.59	0.66	Advantage	Advantage	+
12	0.32	0.11	Advantage	Advantage	-
16	0.56	0.41	Advantage	Advantage	-
17	0.34	0.17	Advantage	Advantage	-
18	0.30	0.21	Advantage	Advantage	-
19	0.19	0.11	Advantage	Advantage	-
21	0.36	0.33	Advantage	Advantage	-
22	0.07	0.26	Advantage	Advantage	+
23	0.65	0.47	Advantage	Advantage	-
24	0.70	0.71	Advantage	Advantage	+
31	0.90	0.84	Advantage	Advantage	-
35	0.18	0.22	Advantage	Advantage	+
39	0.40	0.30	Advantage	Advantage	-
43	0.58	0.58	Advantage	Advantage	0
44	0.67	0.65	Advantage	Advantage	-
51	0.66	0.57	Advantage	Advantage	-
53	0.85	0.75	Advantage	Advantage	-
54	0.15	0.03	Advantage	Advantage	-
56	0.52	0.57	Advantage	Advantage	+
61	0.14	0.11	Advantage	Advantage	-
62	0.37	0.17	Advantage	Advantage	-
63	0.44	0.28	Advantage	Advantage	-
68	0.36	0.21	Advantage	Advantage	-
94	0.68	0.66	Advantage	Advantage	-
96	0.29	0.16	Advantage	Advantage	-

According to Kilduff & Chi (2007), advantage means that the group of products has revealed comparative advantage (positive RSCA value) in the world market, disadvantage – the group of products does not have revealed comparative advantage in the world market (negative RSCA value).

## 5. Conclusions

The evaluation of the competitiveness of Lithuanian industry in global markets by RCA and RSCA indexes revealed similar results. The values of both indexes showed that the strongest competitive positions in global markets during the period of 2007–2011 were taken by Lithuanian food, chemicals, wood and textile manufactures. The research results also revealed that smaller volumes of sales were characteristic to the export of most product groups with competitive advantage in the year 2011 in comparison to the year 2007. Thus, it can be concluded that after the economic crisis, the biggest part of product groups in Lithuanian manufacture have not reached the

competitive advantage that they had during the pre-crisis period. For further research, the authors of the article recommend to include only one of the indexes (RCA or RSCA) that reveal competitive advantage of a particular industry due to the similar results of calculations.

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