THE COMPETITIVE ABILITY OF LATVIAN EXPORT: CURRENT SITUATION AND PROSPECTS

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Abstract
Purpose: Analysis of the competitive ability of Latvia's exports is a most relevant subject in light of Latvia's negative foreign trade balance. The aim of this study is to analyse the competitive ability of Latvia's exports.
Methods: The Herfindahl–Hirschman Index was calculated to establish the diversification level of export markets, and the method developed by G. Lafay was used to determine the most competitive products; the market positions of exported goods were appraised based on the Boston matrix. Tools developed in the interactive Trade Map system were employed for the study.
Results: The most competitive Latvian products as well as the Latvian export products with the greatest potential on the world market have been established in this article.
Application: The results of this study may be useful as reference points in developing Latvia's trade policy and determining priority sectors in Latvia to ensure they are supported and to encourage their development.

Keywords: export, Lafay index, Boston matrix, concentration of export markets, competitive products

1. INTRODUCTION

Presently, the development of foreign economic ties is characterized by increased competition between countries. Countries are striving to increase the competitive ability of companies and goods or services developed by companies, since this contributes to the growth of national exports. Export growth is especially important for Latvia because it has a negative balance of trade.
However, according to a number of studies (Bandevica, Stikane, 2012), policy development should not only be aimed at increasing the export growth rate, but also, to an even greater degree, at increasing national competitive ability in the long run. Export growth based only on trading in low-cost goods cannot improve a country's welfare on a long-term basis. Policies must be aimed at furthering exports' competitive ability through production of more complex products, new technologies and innovation and through improvement of human capital (Bandevica, Stikane, 2012).
From this perspective, evaluation of the current position of Latvia's exports, the competitive ability of goods exported by Latvia and their prospects on world commodity markets is relevant and important from a practical point of view.
The aim of this study is to analyse the competitive ability of goods exported by Latvia and to evaluate their market positions on world commodity markets.
To attain this goal one must complete the following tasks:

1. determining factors that affect the competitive ability of national exports
2. analysis of the existing evaluation methods of a country's trade competitiveness
3. evaluation of the competitive ability indicators of national exports

The method proposed by G. Lafay was used in this study, the Herfindahl–Hirschman Index was calculated and the market position of exported goods was assessed based on the Boston matrix.
Data from the Central Statistical Bureau of the Republic of Latvia, Eurostat, and the interactive database of worldwide trade statistics Trade Map was used as an information base; some data was obtained from experts, news agencies and the Internet.
This study made use of data on research on the subject of foreign trade development and integration of Latvia into the global economy conducted by the Ministry of Economics of the Republic of Latvia, the Bank of Latvia, Riga Technical University, and the Investment and Development Agency of Latvia

(LIAA) as well as data on the subject of competitiveness of exports carried out by the researchers I. Gurova, I. Tochitskaya, Bandevica, Stikane, etc.
The theoretical and methodological basis of this study comprises scientific research on the matters of foreign trade, evaluation of competitiveness of national exports, international integration, and the economics of EU member states.

2. THEORETICAL ASPECTS OF THE COMPETITIVE ABILITY OF EXPORTS

Competitive ability as an economic notion denotes the functional outcome of involvement of numerous competition factors on different levels and segments of the market. The designation "competitive ability" itself indicates that it is an ability to compete or contend in the first place (Poliakova, 2010). As J. Lobanova (2011) notes, the determinant attribute of competitive ability is the fact that it is a multilevel notion. M. Gelvanovsky (2006), in his article "Competitive Ability on Micro, Meso and Macro Level", also points out the multileveled nature of competitive ability. In his opinion "on different levels of the national economy the notion of "competitive ability" is characterised by different criteria, and based on this it must be analysed and evaluated in various ways". In addition, on the micro level goods are the subjects of competition; on the meso level the subjects are individual enterprises, firms, and industry-specific and cross-industry complexes; and on the macro level the subjects are countries' national economies (Gelvanovsky, 2006). As noted by A. Grunichev (2009), each level is a system of interrelated components which in turn are defined by the subsystems on lower levels. One should also take into consideration that at this point no uniform understanding of levels of competitive ability exists. The authors of this study believe that a level is defined by competing subjects with similar characteristics of competitive ability.
G. Poliakova (2010) stresses that competitive ability as a term should not be considered outside its relation to the object, which most often is a product, a firm, an industry, a region or a country, i.e. in the understanding of the authors of this article the subject of competition. The task of analysing the competitive ability of exports is a difficult one, since exports as a subject of research are characterised by multilevel competitive ability. Regardless of the fact that the authors view the micro level (goods) as the primary one, the competitive ability of exports in general cannot exist without meso and macro level competitive ability, and, importantly, the basis for the competitive ability of exports is set on the macro level.
T. Shakleina (2002) treats the competitive ability of a country as a synthetic indicator, which includes the competitive ability of a product, its manufacturer, and the competitive ability of the industry, and characterises the position of a country on the global market.
Michael Porter introduces his very own notion of competitive ability in his theory. He indicates that regardless of the increasing significance of globalisation, national competitive ability is defined by a combination of factors depending on specific local conditions (Porter, 2004). From M. Porter's standpoint national competitive ability in particular determines the success or the failure of specific branches of manufacturing as well as the country's role in the global economy (Porter, 2004). This same idea is further developed by M. Gelvanovsky (2006), who mentions that the foundation for development of competitive ability on all three levels (micro, meso and macro) is laid on the macro level**.**
R. Fathutdinov (2000) on the other hand defines the competitive ability of all levels as external factors of a product's competitive advantages. In the opinion of R. Fathutdinov (2000) increase in competitive ability on the level of a country, industry, region and organisation requires the issue of production with better use of one's potential compared to competitors.
The aforementioned contradictions in opinions of different authors only corroborate the cross impact and correlation among all levels of competitive ability. This correlation is reflected in the evaluation of national competitive ability, which depends directly on the competitive ability of exported goods, the competitive ability of companies manufacturing and exporting such goods, and the competitive ability of the country, which ensures foreign trade regulation.
The authors of this article have summarized the factors influencing the competitive ability of exports based on analysis of literature and have grouped these factors into macro, meso and micro levels (see Table 1).

Table 1

Factors determining the competitive ability of exports (prepared by authors)

Factor level	Factor	Authors who note the importance of the factor
Micro level	High quality of products	Hummels & Klenow (2005); Hallak & Sivadasan (2009); Lederman and Maloney (2009); Negrea (2015)
	Product value	Negrea (2015); Hummels & Klenow (2005)
	Product type and structure • high-technology and innovative nature of product • product with higher added value	Grossman and Helpman (1991); Golikova et al. (2012); Negrea (2015); Gelvanovsky (2006)
Meso level	Production and sales-related costs	Hummels (1999)
	Resource-related advantages (raw materials, specialists, equipment, etc.)	Gelvanovsky (2006)
	Participation of companies in processor chains	Tochitskaya & Scriba (2010)
	Innovativeness of companies	Negrea (2015); Ilzkovitz et al. (2012); Brenton et al. (2009)
Macro level	Economic independence of the country Development of the business environment	Francois and Manshin (2007)
	Trade and tax policies Labour market policy	Tochitskaya & Scriba (2010)
	Correspondence of the volume of exports to global demand	Tochitskaya & Scriba (2010); Ilzkovitz et al. (2012); Brenton et al. (2009)
	Diversification of exports (by country and commodity)	Khusainov (2011)
	Productivity of the manufacturing industry	Tochitskaya & Scriba (2010)

Micro level

Usually the volume of exports is greater for countries that can offer goods of the required quality for a lower price (Negrea, 2015). Lederman and Maloney (2009) note a close connection between the variety of products, markets and economic growth (for the most part in developing countries); however, an opinion persists (Harrison & Rodríguez-Clare, 2009) that no connection exists between the variety of traded products and the competitive ability of exports. A number of researchers (Hummels & Klenow, 2005; Hallak & Sivadasan, 2009) hold the view that only improvement of the quality of the product can increase its competitive ability. A. Negrea (2015) also agrees that while readily available raw materials and prices are traditionally the main factors which determine the manufacturing and foreign trade structure of a country, in the case of a new product quality is very important in determining its competitive ability and gaining a significant share of the international market. In this case the quality may be improved by improving the product itself or the technology employed.

A. Negrea (2015), however, notes that export dynamics are strongly affected by factors like the type and product range of the exported products as well.

Research by Grossman and Helpman (1991) deals with the reflection of innovations and development of new products (horizontal differentiation) and improvement of the quality of the product (vertical differentiation) on international trade. One should also note that empirical testing of mutual effects between exports and innovations produces inconsistent results (Golikova et al. 2012).

In the opinion of A. Negrea (2015), another factor which affects the growth of the competitive ability of exports positively is related to changes in export structure as a result of an increase in the volume of products with greater added value. M. Gelvanovsky (2006), on the other hand, maintains that goods which produce the greatest and the most stable economic effect as a result of their export to the global market must form the basis of exports.

Meso level

As indicated by I. Tochitskaya and A. Scriba (2010) a mandatory condition for ensuring the competitive ability of exports is reduction of costs related to the manufacturing and sales of products. According to Hummels's (1999) estimates the share of an exporter whose transportation costs are 1% lower than those of his competitors increases by 5–8% on the respective market.

An important factor affecting the competitive ability of a country's exports is the involvement level of companies in global production chains. Cooperation with global manufacturers and vendors deserves more and more attention, because without such cooperation companies experience increasing difficulty in gaining any foothold on international markets. Being a part of global production chains is also important from the perspective of acquiring new technologies and implementing new quality standards and requirements (Tochitskaya & Scriba, 2010).

A. Negrea (2015) indicates that structural changes in manufacturing and the transition from traditional labour-intensive manufacturing to high-tech products may lead to a notable improvement of export indicators. Research suggests that many countries in the euro area are not sufficiently active in the field of refocusing their technological and export operation to fast-growing sectors, unlike developing countries such as China and India, which are developing their capacity for innovation and acquiring a significant share of the market in high-technology sectors (Negrea, 2015). This indicates a positive relation between innovation activity and export indicators. According to M. Gelvanovsky (2006), the competitive ability of enterprises, including export-related businesses, is ensured by the availability of resources (raw materials, specialists, equipment, etc.) as well as the ability to exploit these resources in an effective manner.

Macro level

Francois and Manshin (2007) have demonstrated that success in exportation depends on the development level of the business environment as well as the level of economic freedom in general.

B. Khusainov (2011) indicates the importance of diversification of exports and points out that an extensive range of national exports is crucial to ensure larger trade volumes in physical and monetary terms.

I. Tochitskaya and A. Scriba (2010), on the other hand, accentuate the necessity to introduce an economic mechanism that would provide resources to manufacturing sectors and the most efficient enterprises that could be able to meet the competition in the long run to increase the competitive ability of exports. This requires detailed analysis and monitoring of interaction between the trade policy, tax policy, foreign exchange and labour market policy, and the business environment as well as monitoring of the influence of that interaction on decision-making in the investment sector, manufacturing and services sector and trade in general. In order to increase the competitive ability of exports government must provide tax and financial incentives (export loans and loan guarantees, drawback on customs duties, storage of goods in customs warehouses free of charge, etc.) to enterprises (Tochitskaya & A. Scriba, 2010).

In the long term, foreign trade indicators and the competitive ability of exports will, in the opinion of I.Tochitskaya and of A. Scriba (2010), depend in particular on production in the main sectors of the economy and on the productiveness of the manufacturing industry of the particular country compared to other countries. The competitive ability of exports depends on the country's ability to adjust to the dynamics of global demand as well. A beneficial effect may be achieved as a result of increasing the country's presence (share) in growth markets and reducing it in declining markets (Tochitskaya & A. Scriba, 2010). Shifts in demand in particular allow one to determine the role of goods presently considered most significant in the export basket of the country in the future growth of exports. It was established that countries directing their capacity for innovation into the field of high technology also aim to change their production structure in response to increased global demand (Ilzkovitz et al., 2012). However, for most countries, especially those with medium and high incomes, export growth for the most part occurs “by increasing sales of the same products to the same markets” (Brenton et al., 2009).

Thus, the analysis of the literature has displayed the variety of factors affecting the competitive ability of exports and their multileveled nature. The authors of this study agree with the opinion of analysts that all levels of competitive ability are interrelated, and to increase the competitive ability of exports, competitive advantages on all levels must be consolidated, as noted by M.Gelvanovsky (2006), using an efficient national development strategy.

The overall competitive ability of a country's exports, in the opinion of the authors of this article, depends on certain properties of the exported goods (services) which are of particular importance for the export market, on the capacity of the manufacturers of the goods, and on the conditions created in the country for the development of production.
Since there are numerous factors determining the competitive ability of exports and examination of the effects of all factors in one study is virtually impossible, this research will focus on the analysis of a number of factors on the macro and micro levels. An assessment of the development potential of the competitive ability of exports requires evaluation of its current indicators (volume, dynamics, diversification by country and groups of commodities, export market concentration, etc.) as well as establishing the commodities with the greatest competitive ability and a good market position.

3. ASSESSMENT METHODOLOGY FOR THE COMPETITIVE ABILITY OF EXPORTS

The competitive ability of Latvian exports was evaluated based on an analysis of statistical information, calculation of the Herfindahl-Hirschman Index (HHI), the Lafay index, and the Boston matrix.
The aggregated indicators of the competitive ability of exports, which include the effects of factors of all levels, are as follows: export volume and its dynamics, diversification level of export by country and class of goods, etc.
Data from the Central Statistical Bureau (CSB) of the Republic of Latvia, Eurostat, and the interactive data base of worldwide trade statistics Trade Map was used in the estimates of these indicators.
Diversification of exports as one of the parameters of the competitive ability of exports was evaluated based on export concentration by country.
Diversification of export markets allows one to determine the level of dependency of a country on export markets and, respectively, the country's exposure to external turbulence.
For the quantitative assessment of the degree of diversification (concentration level) of exports by group of countries the Herfindahl-Hirschman Index (HHI) was used. The index is calculated as the sum of squares of export/import share indicators of a country from the total volume of its national exports/imports (Formula 1).

$$HHI = D_1^2 + D_2^2 + \ldots + D_n^2, \quad (1)$$

where n – the number of countries.
Based on the values of concentration ratios and the Herfindahl-Hirschman Index, three types of markets are distinguished:

- Type I – highly concentrated markets: 2000 < HHI < 10 000;
- Type II – moderately concentrated markets: 1000 < HHI < 2000;
- Type III – low concentration markets: HHI < 1000 (Khusainov 2011).

In this study, the Herfindahl-Hirschman Index was calculated for Latvia's exports and imports, and this allows one to assess the geographic dispersion of countries from which Latvia imports goods as well.
For the calculation of HHI, countries were selected based on the share of exports – 20 countries – and imports: 18 countries. The selection includes countries whose share of exports/imports in 2015 exceeded 1% of the total volume. Calculations were carried out based on data from the Trade Map database.
Latvia's key exports were selected for analysis of the competitive ability of exported goods and evaluation of their market position and development prospects on world markets. 18 classes of goods were selected whose share in the total volume of exports in 2015 exceeded 1%. The volume of exports was determined based on data obtained from the Trade Map database, according to the Harmonized Commodity Description and Coding System for international trade HS6 at the 4-digit level. For the convenience of information perception, the names of product groups used in the Trade Map database have been shortened. For example, product group 8517 with the title: *Telephone sets, incl. telephones for cellular networks or for other wireless networks; other,* has been shortened to *Telephone sets.*
Evaluation of the commercial competitive ability of a commodity in this study was carried out based on the Lafay index (*LFI*), determined according to formula (2).

$$LFIi = K * \left[\left(X_{d,i} - M_{d,i}\right) - \left(X_d - M_d\right) * \left(\frac{X_{d,i}+M_{d,i}}{X_d+M_d}\right) \right], \quad (2)$$

where LFI i – the indicator of the estimated comparable advantage of country d with respect to

commodity i, X and M – export and import, while K – a constant equal to $\frac{1000}{X_d+M_d}$.

This method allows one to compare the actual industry balance of the country with a hypothetical balance which the country could have without the specialization. The index is negative if the imports of the commodity exceeds its exports, which suggests that the country lacks competitive ability on that market. If the index is positive, the country is able to meet competition on the global market for the commodity (Gurova, 2012).

The Boston matrix was used to assess the market position of exported goods. This further served to assign Latvia's major exports to one of the four classes based on growth rate indicators of global exports and growth rate indicators of market share of the specific goods: “Stars”, “Cash cows”, “Question marks” or “Dogs”. Exports designated as “Stars” and “Question marks” are the ones best able to meet the competition, because they have high export growth rates on world markets. “Stars” make up a significant part of the country's share in world exports, while “Question marks” make up a small part, which means that these goods are in demand, but the country lacks capacity for their export.

In order to determine the exports with the best prospects for increasing export volume, the growth of supply must be adjusted to the growth of global demand for products exported by Latvia. For this purpose, export growth trends (supply) should be compared to the growth trends of world imports (demand) for each type of exported products. The interactive Trade Map system provides the means for the analysis of these ratios and enables one to break the exported products down into four classes:

1. “Champion” products have a high supply and demand growth rate. These products are best able to meet competition and ensure growth of the exporting country's share in the global market for these types of products.
2. On rapidly growing world markets supply growth in the case of “Passive” products is usually on the decrease or insignificant. Trade in these products has export growth potential.
3. “Loser” products are characterised by decreasing demand and supply and reduction of the market share. Export of such products has little room for growth.
4. “Achiever” products on unsuccessful markets are goods with a growing volume of exports in spite of declining demand.

“Champion” and “Passive” products have good prospects due to the rapid growth of global demand for them in contrast to other product classes with stagnating or declining demand (Gurova, 2012).

Data for the period of 2008-2015 was analysed due to the fact that 2008 was the first year of the crisis, while 2015 is the last year for which data is available for analysis in the sources of information used.

4. LATVIA'S FOREIGN TRADE PERFORMANCE

In order to evaluate the overall situation in Latvia's foreign trade, the dynamics of the relative and absolute indicators of commodity turnover, Latvia's exports and imports were analysed in comparison with global indicators.

During the period under consideration (see Fig. 1), foreign trade turnover multiplied by 1.35 times and reached 22 906 million euros in 2015; the growth of exports (1.66 times) exceeded the growth of imports (1.17 times).

Figure 1 shows that the development of Latvia's foreign trade continues, but has slowed down compared to the period after the economic crisis of 2008.

After a sharp decline of foreign trade indicators in 2009, the following three years (2010-2012) were characterised by steady growth of the indicators, but after 2012 the growth rate of goods’ turnover slowed down as a result of deceleration of export and import growth as well as a decrease in the volume of imports in 2015. Latvian export and import volume growth slowdown trends coincide with those of the EU’s performance in foreign trade (Eurostat, 2016).

Foreign trade turnover is dominated by imports, resulting in a trade balance deficit, which decreased gradually after 2013 due to an increase in export growth rates over import growth rates.

All in all, the trends identified in Latvia's foreign trade indicators correspond to changes in the respective global indicators.

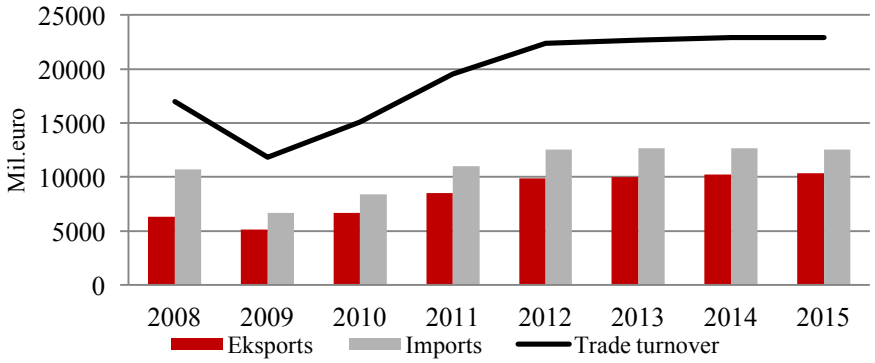

Figure 1. Foreign trade dynamics of Latvia, million EUR (CSB of Latvia)

Geographical diversification of Latvia's exports is adequate. According to Latvian statistics, in 2015 goods from Latvia were exported to more than 200 different countries, though for the most part the share of each of Latvia's export partners does not exceed 5%. The main export partners are the EU countries, the share of which in total exports consistently exceeds 70% (73% in 2015) (CSB of Latvia, 2016).

As indicated by research (Pancenko & Ivanova, 2016), Latvia exports goods to all EU countries; the volume and range of exports, however, vary significantly from country to country. The share of exports to CIS countries amounts on average to 15% and the main export partner in this group is Russia. In 2015 the share of CIS countries in Latvia's exports dropped to 12% as a result of the introduction of mutual sanctions. However, Latvia was able to partially divert the flow of exports to other countries so that the share of other countries increased and constituted 15%. In this group the volume of exports is fractured among a number of countries, among which over 1% of exports go to Turkey, Algeria and the USA.

Figure 2 shows the export structure by country from 2008 to 2015. The ranking of Latvia's leading export partners during the reviewed period undergoes almost no change.

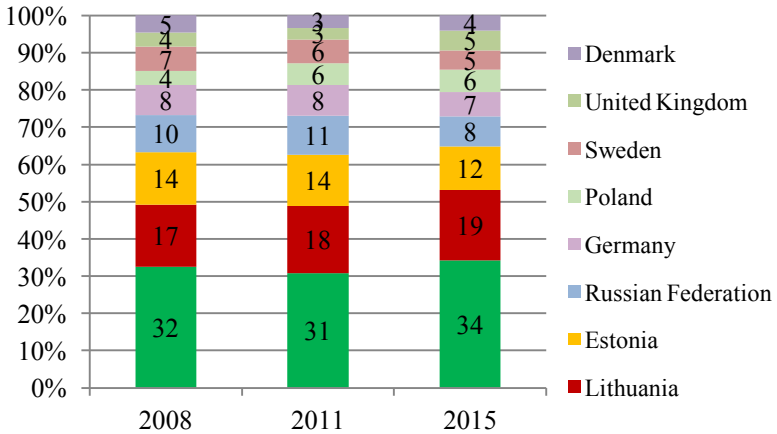

Figure 2. Main trading partners of Latvia (LR CSB, authors' calculations)

In 2015 Latvia's main export partners were the same European countries: Lithuania (19%) and Estonia (12%), with the Russian Federation (8%) in the third position, followed by Germany (7%), Poland (6%), Sweden (5%), the United Kingdom (5%), and Denmark (4%). The share of exports to Lithuania, Poland and the United Kingdom during the reviewed period increased, but the share of exports to other countries decreased.

The growth rate of the volume of goods imported by Latvia's export partners reflects the growth of demand for these goods and thus allows one to speculate about prospects for collaboration with these countries. In this regard the negative growth rate of the volume of imports of most of Latvia's partners in 2015 should be noted. Import growth was evident only in Algeria and the USA, but the share of these countries in Latvia's exports is insignificant. The growth rate of Latvia's exports to Estonia, Germany, Finland and Algeria falls behind the growth rate of world imports of these countries, and that could

show the potential for increasing the volume of exports to these countries.
International trade statistics indicate that the share of Latvia's exports in the total volume of world exports is insignificant, just around 0.1%; however, it has been increasing gradually (from 0.58 % in 2008 to 0.741 % in 2015).
1045 positions of goods (according to the Harmonized Commodity Description and Coding System HS6 at the 4-digit level) were exported by Latvia in 2015 (Trade Map, 2016).
Latvia exports a large variety of goods in small quantities. The maximum volume of one type of exported goods in 2015 amounted to 5.65% in the class of products Telephone sets (8517). Only the shares of 18 classes of products exceeded 1% in the total volume of exports; the share of the other product classes did not exceed 1% (see Figure 3).

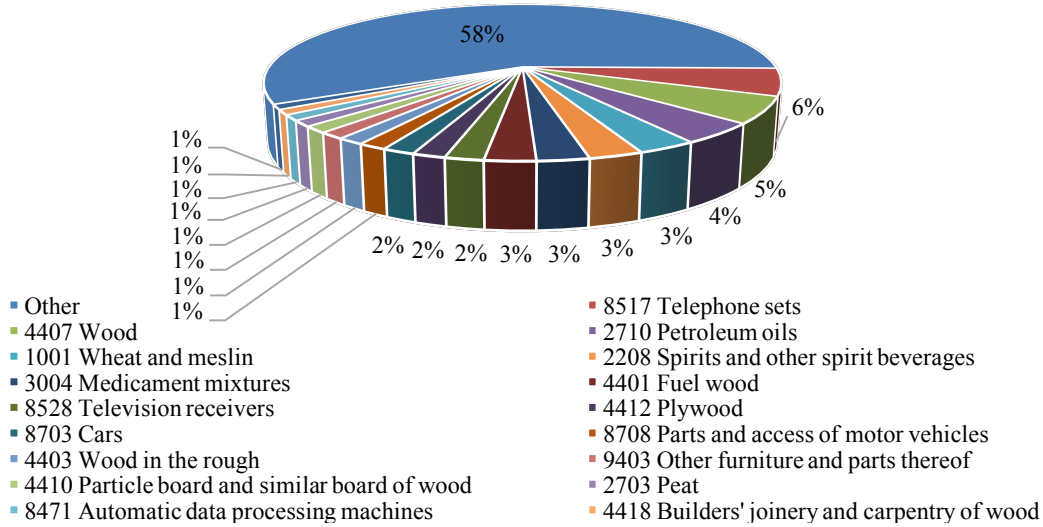

Figure 3. The structure of exports by class of products in 2015 (Trade Map, 2016)

Growth of the sales volume of a product proves its competitive ability, because it indicates growing demand for the product. The dynamics of export volume by class of products are presented in Figure 4.

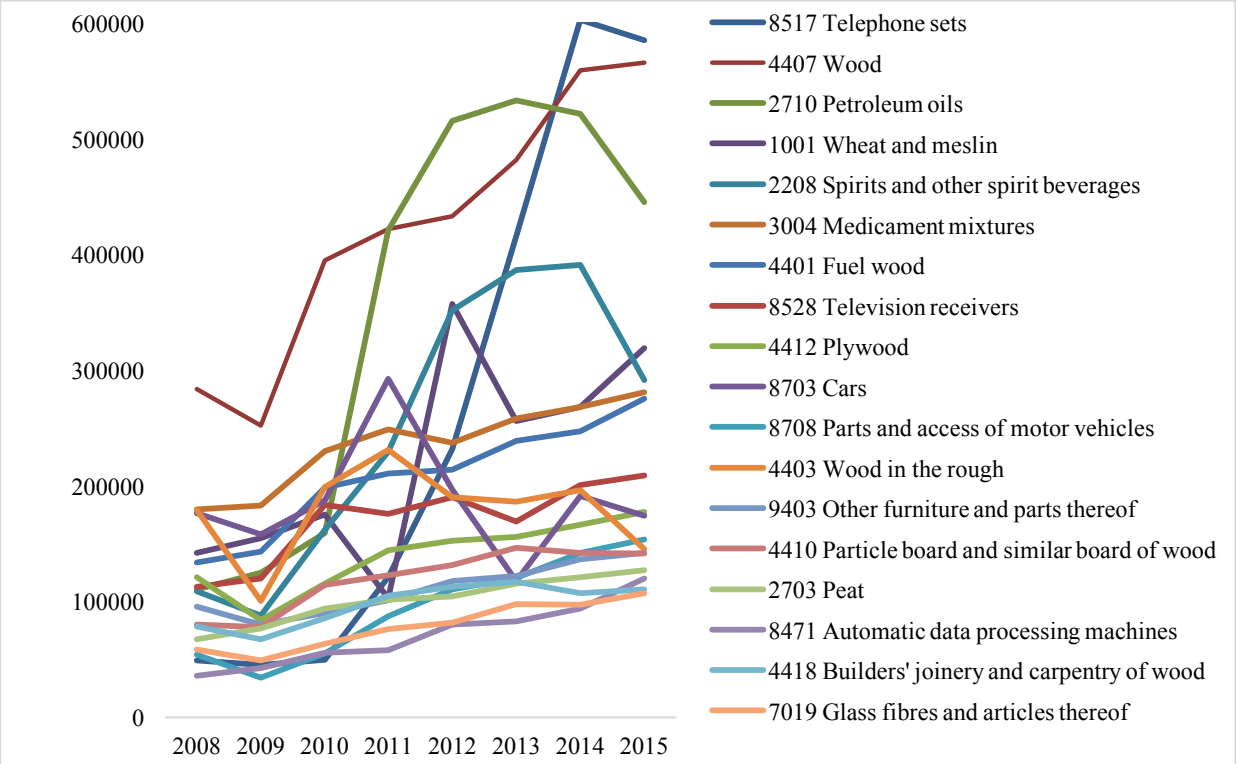

Figure 4. Dynamics of the volume of Latvia's exports from 2008 to 2015, thousand EUR (Trade Map, 2016)

Latvia's exports have a negative trend of unstable product dynamics in most classes of products as illustrated by Figure 4.
During the period of 2011-2015 the following products had the highest average annual growth of export volume: Telephone sets (45%), Wheat and meslin (17%), Automatic data processing machines (13%) and Parts & access. of motor vehicles (10%). However, a number of products had negative average annual dynamics: Cars (incl. station wagons) (-14%), Wood in the rough (-12%), Petroleum oils (-3) and others (Trade Map, 2016).
During the considered period several classes of products replaced one another in the leading position. From 2008 to 2011 the product class Wood sawn/chipped lengthwise (4407) was the leader, in 2012 and 2013 products in the class Petroleum oils (2710) took the leading position, and in 2014 and 2015 products in the class Telephone sets (8517) had the leading position with an export volume of 585480 thousand EUR (see Figure 4).
It is worth noting that in 2015 the sales volume of such important exports as Telephone sets, Petroleum oils, Spirits, other spirit beverages, Cars (incl. station wagon), Wood in the rough, Particle board & similar board of wood and Builders' joinery & carpentry of wood decreased. For the past 3 years there has been a steady growth of the export volume of the following classes of products: Wood sawn/chipped lengthwise, Wheat and meslin, Medicament mixtures, Fuel wood, Television receivers, Plywood, Parts & access. of motor vehicles, Other furniture and parts thereof, Peat, Automatic data processing machines and Glass fibres.
The present and future competitive ability of Latvian goods should not be assessed based only on the growth of sales volume; an analysis of the ability of these goods to meet the competition in the export countries is required as well. The Lafay index will be calculated for that purpose for the most important Latvian exports.

5. ASSESSMENT OF THE COMPETITIVE ABILITY OF LATVIA'S EXPORTS

Diversification of Latvia's exports

Evaluation of the diversification of Latvia's exports and imports by country indicates that during the entire period under consideration the strength of market forces is not concentrated in the hands of a limited number of entities; on the contrary, it is diversified by countries of export as well as import.

Table 2

Export concentration (authors' calculations based on Trade Map data)

HHI	2008	2009	2010	2011	2012	2013	2014	2015
Exports	772,90	748,19	764,61	823,06	740,95	781,24	792,59	743,84
Imports	762,47	765,46	739,70	801,11	845,19	872,99	799,03	781,81

This is evidenced by the value of the index (HHI) for exports and imports for each year (under 1000), which is characteristic for the third market type – low concentration (see Table 2). Thus, the diversification level of external markets is instrumental to the development of Latvia's exports. The dynamics of the index do not have a clear upward or downward trend.

Analysis of the competitive ability of exported goods

The competitive ability of Latvian goods on the world market was evaluated based on the Lafay index. A country is able to meet competition on the global market for a particular commodity if the index has a positive value. A positive index value suggests the presence of competitive advantages. The higher the value of the index, the higher the competitive ability. The index has a negative value if imports of the commodity exceed its exports by the same country, which suggests the inability of the country to meet competition on the respective market.
Table 3 contains the results of Lafay index analysis for 18 product classes with a significant share in the total volume of Latvia's exports. The analysis was based on available data of the past two years (2014 and 2015), which, in the authors' opinion, is sufficient to evaluate the current situation of the competitiveness of Latvian exported goods.
Based on the analysis, in 2014 and 2015 14 out of 18 major Latvian exports had a positive Lafay index. The following product classes were not able to meet competition: Automatic data processing machines (8471); Medicament mixtures (3004); Cars (8703). In 2015 the competitive ability of the product class

Other furniture and parts thereof (9403) increased, while the product class Petroleum oils (2710) lost its competitive ability.

The products with competitive advantages in 2015 based on the Lafay index evaluation are as follows: Wood sawn/chipped lengthwise (4407); Wheat and meslin (1001); Fuel wood (4401); Spirits, other spirit beverages (2208); Plywood (4412); Particle board and similar board of wood (4410); Telephone sets (8517); Peat (incl. peat litter), w/n agglomerated (2703); Builders' joinery & carpentry of wood (4418); Other furniture and parts thereof (9403); Glass fibres (incl. glass wool) and articles thereof (7019); Wood in the rough (4403); Television receivers (8528); Parts & access. of motor vehicles (8708).

Table 3

Analysis of the competitive ability of exported products (authors' calculations based on Trade Map data)

No.	Product	LFI_i 2014	LFI_i 2015	Growth rate
1	4407 Wood sawn/chipped lengthwise	23,88	23,55	-1%
2	4401 Fuel wood	11,44	12,35	8%
3	4412 Plywood	7,14	7,21	1%
4	4410 Particle board and similar board of wood	6,44	6,29	-2%
5	4418 Builders' joinery & carpentry of wood	3,94	4,22	7%
6	4403 Wood in the rough	6,1	3,5	-43%
7	1001 Wheat and meslin	11,08	13,7	24%
8	2208 Spirits, other spirit beverages	13,53	7,85	-42%
9	8517 Telephone sets	5,66	4,98	-12%
10	8528 Television receivers	1,82	2,04	12%
11	2703 Peat (incl. peat litter), w/n agglomerated	5,73	4,75	-17%
12	9403 Other furniture and parts thereof	-27,79	3,93	114%
13	7019 Glass fibres (incl. glass wool) and articles thereof	3,6	3,82	6%
14	8708 Parts & access. of motor vehicles	1,37	1,35	-1%
15	8471 Automatic data processing machines	-1,76	-1,1	-
16	3004 Medicament mixtures	-1,94	-1,99	-
17	8703 Cars (incl. station wagons)	-7,53	-7,7	-
18	2710 Petroleum oils	7,82	-17,99	-

In 2015 the Lafay index for the following classes of products increased compared to 2014, which means that the advantages of products in the following classes had established themselves: Wheat and meslin (1001), Television receivers (8528), Fuel wood (4401), Builders' joinery & carpentry of wood (4418), Glass fibres (incl. glass wool) and articles thereof (7019), Plywood (4412).

For the remaining classes of products the index has gone down. It has dropped by 43% for Wood in the rough (4403), by 42% for Spirits, other spirit beverages (2208), and by 12% for Telephone sets (8517).

The results indicate that Latvia has not lost the ability to compete on the global market. The export product best able to meet the competition is Wood and articles thereof (70,34). Exports of spirits and grain varieties are worth noting as well, but exporters must nonetheless look for new ways to develop these products and distribute them on the global market.

Determining the market positions of the exported goods on the global market

The Boston matrix (BKG) was used to determine the market positions of competitive Latvian products. The distribution of exported products into classes is presented in Table 4.

Table 4

Market positions of products exported by Latvia based on the Boston matrix, 2015
(authors' calculations based on Trade Map data)

"Question marks"	Market growth, %	Share of market, %
8517 Telephone sets	8%	0.1%
4418 Builders' joinery & carpentry of wood	4%	0.8%
4407 Wood sawn/chipped lengthwise	3%	1.9%
4412 Plywood	3%	1.3%
9403 Other furniture and parts thereof	3%	0.2%
8703 Cars (incl. station wagons)	2%	0.03%
4403 Wood in the rough	2%	1.1%
3004 Medicament mixtures	1%	0.1%
8708 Cars (incl. station wagons)	1%	0.0%
4410 Particle board and similar board of wood	1%	2.3%
7019 Glass fibres (incl. glass wool) and articles thereof	1%	1.1%
"Stars"	Market growth, %	Share of market, %
4401 Fuel wood	4%	3.9%
"Dogs"	Market growth, %	Share of market, %
2208 Spirits, other spirit beverages	0%	2.2%
8471 Automatic data processing machines	-1%	0.0%
1001 Wheat and meslin	-4%	0.9%
8528 Television receivers	-4%	0.3%
2710 Petroleum oils	-9%	0.1%
"Cash cows"	Market growth, %	Share of market, %
2703 Peat (incl. peat litter), w/n agglomerated	0%	12.1%

Latvia's leading export products (based on export volume) are in demand on the global market, and in 2015 market growth for these products was 1% to 8%. But because of their small shares in the global export market (up to 2.3%) they can be classified as "Question marks". These products have the potential to increase the export volume and require support. This class includes products with the most rapid growth of export volume: Telephone sets (8517), Wood products (code 44), Cars (incl. station wagons) (8703), Medicament mixtures (3004) and Glass fibres (7019). It should be noted that Medicament mixtures (3004) and Cars (incl. station wagons) (8703) were classified as lacking in competitive ability based on Lafay's method. That is the result of their negative trade balance; the growth of the market for these products indicates growing demand for them. It is possible that in this case the reason is a specific product with competitive advantages on the external market.

The position of "Stars" among the goods exported by Latvia with a relatively large share of the country in global exports (3.9%) and a high export growth rate (4% in 2015) is occupied by Fuel wood.

A number of goods occupy the position of "Dogs", since they are in low demand on world markets (in 2015 their market growth rate was -9% to 0%) and have a small market share. These products are: Spirits, other spirit beverages, Automatic data processing machines, Wheat and meslin, Television receivers and Petroleum oils.

The position of "Cash cow" is taken by Peat (2703), with the largest market share in the global export market (12.1% in 2015) among Latvia's exports, but that is due to the small volume of the commodity in global exports (1047 million EUR in 2015). Market growth for this type of commodity was 0% in 2015.

Determining goods with export volume growth potential

Based on a comparison of demand (average annual growth of global imports) and supply of commodities exported by Latvia (average annual growth of Latvia's share in international exports) and using Trade Map database tools, the authors determined the goods with the best prospects for increasing the export volume (see Table 5).

Table 5

Goods with export volume growth potential (prepared by the authors based on Trade Map data)

"Passive" products	"Champion" products
4403 Wood in the rough	8517 Telephone sets
4410 Particle board and similar board of wood	8708 Parts & access. of motor vehicles
4412 Plywood	8471 Automatic data processing machines
4418 Builders' joinery & carpentry of wood	4401 Fuel wood
3004 Medicament mixtures	4407 Wood sawn/chipped lengthwise
8703 Cars (incl. station wagons)	9403 Other furniture and parts thereof
	2208 Spirits, other spirit beverages
	7019 Glass fibres (incl. glass wool) and articles
	thereof
	2703 Peat (incl. peat litter), w/n agglomerated
"Loser" products	"Achiever" products in declining sectors
None	1001 Wheat and meslin
	8528 Television receivers
	2710 Petroleum oils

Based on Trade Map data for 2015, for the most part goods with considerable export volume are in demand on the global market, regardless of the fact that growth of Latvia's share in global exports is insignificant, which could be the result of the insufficient capacity of Latvian enterprises.

The obvious "Champions" are Telephone sets (8517) and Parts & access. of motor vehicles (8708).

Regardless of the fact that Parts & access. of motor vehicles (8471) were put into the class of "Champion" products by the system, demand for this type of product on the global market has decreased during the last few years. In addition, as a result of the overbalance of imports over exports, this class of products was classified as lacking in competitive ability based on the Lafay index.

For the most part "Passive" products with potential on the global market come from the woodworking industry, but there is also demand for Wood in the rough (4403).

The group of "Passive" products includes Medicament mixtures (3004) and Cars (incl. station wagons) (8703) as well, which indicates that there is a demand for them.

As a result of the analysis classes of products with export volume growth potential have been determined; however, any conclusions about increasing the volume of Latvia's exports require a far more detailed analysis of specific products in these classes as well as an analysis of the industrial capacity of their manufacturers.

CONCLUSIONS

1. The competitive ability of exports is influenced by various interrelated factors, which are divided into macro, micro and meso levels.
2. The methods used for the analysis of competitive ability sometimes produce contradictory results. A more detailed analysis of such contradictions is required.
3. All in all, the trends in Latvia's foreign trade indicators (commodity turnover, export volume and import volume) obtained as a result of the analysis correspond to changes in the respective global indicators.
4. Latvia's main export partners are EU countries (Lithuania, Estonia, Germany, Poland, Sweden, the United Kingdom, and Denmark) and the Russian Federation. The share of other countries is insubstantial and does not exceed 2% of the total volume of Latvia's exports.
5. The dynamics of the volume of exports by country are unstable; exports to a number of countries (Estonia, Germany, Finland, Algeria) lag behind, which could be an indicator of a potential for an increase in Latvia's exports to these countries.

6. The market of export and import of commodities is diversified; the existing structure of external markets encourages the development of Latvia's exports.
7. Latvia exports a large variety of goods in small volumes; the share of each is up to 1% of the total volume of exports. The export dynamics of commodities are unstable; during the last 3 years the volume of exports of the following classes of products increased constantly: Wood sawn/chipped lengthwise (4407), Wheat and meslin (1001), Medicament mixtures (3004), Fuel wood (4401), Television receivers (8528), Plywood (4412), Parts & access. of motor vehicles (8708), Other furniture and parts thereof (9403), Peat (incl. peat litter), w/n agglomerated (2703), Automatic data processing machines (8471) and Glass fibres (incl. glass wool) and articles thereof (7019).
8. Analysis of the competitive ability of Latvia's exports using the Lafay index shows that only 14 (out of 18) positions of important Latvian exports have competitive advantages.
9. According to the BKG matrix analysis, goods with the potential to increase export volume include Telephone sets (8517), Wood products (44 Product code), Cars (incl. station wagons) (8703), Medicament mixtures (3004) and Glass fibres (incl. glass wool) and articles thereof (7019), since these goods have the highest export volume growth rates.
10. Goods in high demand on the global market, but with a low export volume growth rate ("Passive") have been determined. These goods have the potential to increase their export volume and include: Wood in the rough (4403), Particle board and similar board of wood (4410), Plywood (4412), Builders' joinery & carpentry of wood (4418), Medicament mixtures (3004), Cars (incl. station wagons) (8703).
11. Any conclusions about possibilities of increasing the volume of Latvia's exports require a more detailed analysis of specific types of products in the product classes considered as well as an analysis of the industrial capacity of their manufacturers.

RECOMMENDATIONS

1. Foreign trade relations analysts and motivated Latvian exporters should further investigate the possibilities of increasing exports to Estonia, Germany, Finland, and Algeria in order to more fully exploit the trade potential with these countries.
2. Foreign trade relations analysts should perform an additional analysis and look for the reasons for the volatile nature of export volume dynamics (decrease) in the breakdown by commodities and export partners. That would serve as a foundation for the development of efficient measures for support of Latvia's exports by the state and its future development.
3. The possibility should be assessed of increasing exports of "Passive" products: Wood in the rough (4403), Particle board and similar board of wood (4410), Plywood (4412), Builders' joinery & carpentry of wood (4418), Medicament mixtures (3004), Cars (incl. station wagons) (8703); and "Champion" products: Telephone sets (8517), Parts & access. of motor vehicles (8708), Automatic data processing machines (8471), Fuel wood (4401), Wood sawn/chipped lengthwise (4407), Other furniture and parts thereof (9403), Spirits, other spirit beverages (2208), Glass fibres and articles thereof (7019), and Peat (2703). They have good prospects due to the high growth of global demand for them.

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