

INTERNATIONAL COMPETITIVENESS OF THE FURNITURE MANUFACTURING – LESSON FROM THE SELECTED EU COUNTRIES

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ABSTRACT

This study aims to compare and evaluate the international competitiveness of the furniture industry in the selected European Union (EU) countries using chosen result-oriented indicators. The results found that countries with the highest levels of international competitiveness of the furniture industry included Poland, Romania and Italy. In contrast, the comparative advantage of Germany, which is the largest furniture exporter in the EU, was not as significant. No comparative advantage in the furniture trade was observed in France and United Kingdom, which is confirmed by the negative values of the Relative Trade Advantage (RTA) index and by unfavorable values of the export specialization index. The results presented in the article expand the existing knowledge in the area of assessing the international competitiveness of the largest furniture exporters.

KEYWORDS: Furniture manufacturing, international competitiveness, result-oriented indicators, EU countries.

INTRODUCTION

The variety of approaches used to define and measure international competitiveness has so far resulted in the lack of a formalized theory of international competitiveness. In the empirical

literature there are many definitions of competitiveness that cover different levels of aggregation and various areas of activity (Ajitabh and Momaya 2004, Dima et al. 2018). Competitiveness can be looked at different levels: country level (Rabar and Cvek 2019), industry level (Buturac et al. 2018) and firm level (Ajitabh and Momaya 2004, Rugman and Oh 2008). While investigating the phenomenon of national competitiveness, the focus should not be on economy as a whole, but on certain industries and industrial segments (Cho and Moon 2000).

The complexity of the issues relating to competitiveness requires a variety of methods for assessment. Balassa (1979) index is one of the well-known result-oriented indicators in the literature and has been modified by many authors (Vollrath 1991, Laursen 2015). However, as emphasizes Sirgmets et al. (2019), indicators for competitiveness should be used in combination with other indicators to provide a complete assessment. Many studies using the result-oriented indicators to evaluate competitiveness of industries have been elaborated. This also applies to the forest-based sectors, including furniture industry.

The most cited study was elaborated by Han et al. (2009), who evaluated the competitiveness of Chinese wooden furniture against the background of selected countries. Based on this research it can be concluded that China has experienced a transition from comparative disadvantage into a high comparative advantage over the period and has maintained a strong position in this labor-intensive industry. However, it still falls behind traditionally strong competitors such as Italy and Germany in terms of quality and unit price. It is also experiencing a growing challenge from lower-income countries such as Poland and Vietnam. Studies to assess the market success and the competitiveness of wood-based industries were conducted among others by Zhang et al. (2012), Zhelev (2013), Klos and Fabisiak (2013), Bojnec and Fertő (2014), Barta and Kovats (2015), Kersan-Škabić (2014), Hajdúchová et al. (2016), Sedliačiková et al. (2016), Vu et al. (2019) and Grzegorzewska et al. (2020).

China plays an important role in the international furniture trade (Han et al. 2009, Cao et al. 2004, Xiong et al. 2017). However, the furniture industry is also an important element of the EU economy, and the European Community plays a special role in the global furniture market. This is evidenced by the high position of certain EU countries in the world ranking of furniture manufacturers and exporters. According to the data from the International Trade Centre, in 2018, EU28 countries generated 37% of the global furniture exports value. Therefore, the main goal of the article was to conduct an analysis and assess the comparative advantages in the foreign trade in the furniture industry products of selected EU countries, to show changes taking place in this area, as well as to identify countries characterized by the smallest and the highest level of international competitiveness in furniture production. In addition, the article indicates the factors determining the level of international competitiveness of the furniture industry in selected EU countries and refers to the results of earlier empirical studies.

MATERIAL AND METHODS

The competitiveness research included a group of ten EU member states, which in 2018 were characterized by the largest share of the furniture export value in the value of the global export of these products. Germany, Italy, Poland, Czech Republic, Netherlands, France, United Kingdom, Spain, Denmark and Romania. In total, in 2018, these countries generated 29% of the global export value, which confirms their important role in the international trade in the furniture industry products. The years 2009-2018 were analyzed in the research. The primary source of the research material was the International Trade Centre database.

A review of the research concerning international competitiveness in the wood and furniture industry, as well as a theoretical overview of empirical studies on assessing competitiveness with regard to the forest industry conducted by Gordeev (2020) reveals that in the majority of the cases, result-oriented indicators were employed to evaluate the comparative advantages of the foreign trade. Due to the fact that indicators should be used in combination, to minimize the shortcomings of each single indicator. On the basis of the literature review a system of indicators evaluating the trade competitiveness of the sector and its commodities was adopted:

The Import Penetration Rate

The Import Penetration Rate (MP) compares the value of imports and the supply on the internal market. The MP indicator is recorded as follows (OECD 2011, Fronczek 2017):

$$MP = \frac{M}{Q - X + M} \quad (1)$$

where: M is import, X is export, and Q is production.

The Specialization Indicator

The Specialization Indicator (SI) is the relation between the share of a product (or products) in the export of country and the share of this product (or products) in the world export. The values above 1 suggest a specialization in export. This indicator takes the following form (Pawlak 2013):

$$SI_k = \frac{X_{ik}}{X_k} : \frac{X_{iw}}{X_w} \quad (2)$$

where: X_{ik} is export of product i in country k , X_k is total export of goods in country k , X_{iw} is export product i worldwide, and X_w is total export of goods worldwide.

The Coverage Ratio

The Coverage Ratio (CR), also known as Export/Import Coverage Ratio, is the relation between the value of export of a product (group of products) and the value of its import. The values above 100 mean export specialization of a product or group of products. This indicator CR takes the following form (Kubala and Firlej 2019):

$$CR_{ik} = \frac{X_{ik}}{M_{ik}} \cdot 100\% \quad (3)$$

where: X_{ik} is export of product i in country k , and M_{ik} is import of product i in country k .

The Relative Revealed Comparative Export Advantage Index

One of the modifications of the well-known RCA indicator is the Relative Revealed Comparative Export Advantage Index (XRCA) described by Eq. 4 (Pawlak 2013, Frohberg and Hartmann 1997). The XRCA indicator is the relation of two quotients. The first is the ratio of export of a product (or group of products) in the country k to the export of this product (or group of products) in the country m . The second is the ratio of total export of goods in both countries (excluding the analyzed product or group of products). Values above 1 mean a comparative advantage in the product category. In turn, the values below 1 suggest a comparative disadvantage (Pawlak 2013).

$$XRCA_{ik} = \frac{X_{ik}}{X_{im}} : \frac{\sum_{j,j \neq i} X_{jk}}{\sum_{j,j \neq i} X_{jm}} \quad (4)$$

where: X is export, i, j are product categories, and k, m are countries.

The Relative Import Penetration Index

The Relative Import Penetration Index (MRCA) is the relation of two quotients. The first is the ratio of import of a product (or group of products) in the country k to the imports of this product (or group of products) in the country m . The second is the ratio of total import of goods in both countries (excluding the analyzed product or group of products) (Pawlak 2013, Frohberg and Hartmann 1997) (Eq. 5). The values of MRCA indicator below 1 indicate a comparative advantage. In turn, the values above 1 mean a comparative disadvantage.

$$MRCA_{ik} = \frac{M_{ik}}{M_{im}} : \frac{\sum_{j,j \neq i} M_{jk}}{\sum_{j,j \neq i} M_{jm}} \quad (5)$$

where: M is import, i, j are product categories, and k, m are countries.

The Relative Trade Advantage Index

The Relative Trade Advantage Index (RTA) is the difference between the XRCA and the MRCA (Pawlak 2013, Frohberg and Hartmann 1997):

$$RTA_{ik} = XRCA_{ik} - MRCA_{ik} \quad (6)$$

The positive values of RTA suggest a comparative advantage in each product (or group of products). While negative values indicate no competitive advantage (Pawlak 2013, Frohberg and Hartmann 1997).

RESULTS AND DISCUSSION

Data from the International Trade Centre confirmed that in 2009 Germany was the largest furniture exporter in the EU (Tab. 1). The export value of the furniture industry amounted to EUR 10.9 billion (Fig. 1a). This value represented 21.5% of the EU export (Tab. 2). Italy was second in the ranking of furniture exporters in the EU. The export value of the furniture industry products reached EUR 9.3 billion, which accounted for 18.2% of the EU export.

Tab. 1: Export, import and trade balance of the furniture industry in the selected EU countries for 2009 and 2018 (billion EUR).

Country	Export				Import				Trade balance	
	2009	2018	D*	V**	2009	2018	D	V	2009	2018
World	104.7	218.3	208.5	23.6	106.8	210.7	197.3	20.4	-2.1	7.6
EU28	50.9	83.8	164.6	16.5	48.5	80.7	166.4	14.7	2.4	3.1
Germany	10.9	15.8	145.0	11.4	11.2	18.4	164.3	16.3	-0.3	-2.6
Italy	9.3	12.4	133.3	9.8	2.4	3.6	150.0	11.5	6.9	8.8
Poland	5.6	12.6	225.0	26.5	1.3	3.3	253.8	24.6	4.3	9.3
Czech Republic	1.9	4.8	252.6	31.5	1.1	3.1	281.8	31.1	0.8	1.7
Netherlands	1.6	4.2	262.5	28.9	2.8	6.1	217.9	18.9	-1.2	-1.9
France	3.0	3.5	116.7	7.2	6.8	10.2	150.0	13.5	-3.8	-6.7
United Kingdom	1.7	3.4	200.0	25.3	6.3	10.0	158.7	8.7	-4.6	-6.6
Spain	1.9	3.2	168.4	22.7	2.6	4.1	157.7	17.1	-0.7	-0.9
Denmark	1.8	2.6	144.4	14.2	1.2	2.1	175.0	15.1	0.6	0.5
Romania	1.1	2.5	227.3	27.6	0.4	1.0	250.0	24.6	0.7	1.5

*D - dynamics (%), **V - coefficient of variation (%).

Poland was also a significant furniture exporter. In the next place among the furniture industry exporters was France. In 2009, the value of the furniture exports from this country was at the level of EUR 3.0 billion, which constituted 2.9% of the export value of this industry generated by all countries and 5.9% of the EU export. Among the EU countries, the aforementioned four countries played a particularly important role in generating the furniture trade value. In total they generated over 55% of export value. The export value of the furniture industry products of each of the remaining countries was below EUR 2.0 billion, and their share in creating the export value of the EU member states ranged from 2.1% (Romania) to 3.8% (Czech Republic).

In the years from 2009 to 2018, the global furniture industry exports more than doubled and amounted to EUR 218.3 billion at the end of the analyzed period. Of this amount, EUR 83.8 billion was generated in EU countries (64.6% more than in 2009), which constituted 38.4% of the world furniture export (Tab. 2).

Nevertheless, Italy and Germany, together with Poland were still at the forefront of the largest furniture exporters (Fig. 1a). Particularly noteworthy is the evident increase in the importance of the Czech furniture industry in this area, which resulted in its promotion from the 5th to 4th position in this ranking. In the studied period, the highest level of the coefficient of

variation of the furniture industry export value, which indicates the relative variability of this characteristic, was observed in Czech Republic (31.5%), and the smallest (below 10%) variation in the furniture export value took place in France (7.2%) and Italy (9.8%).

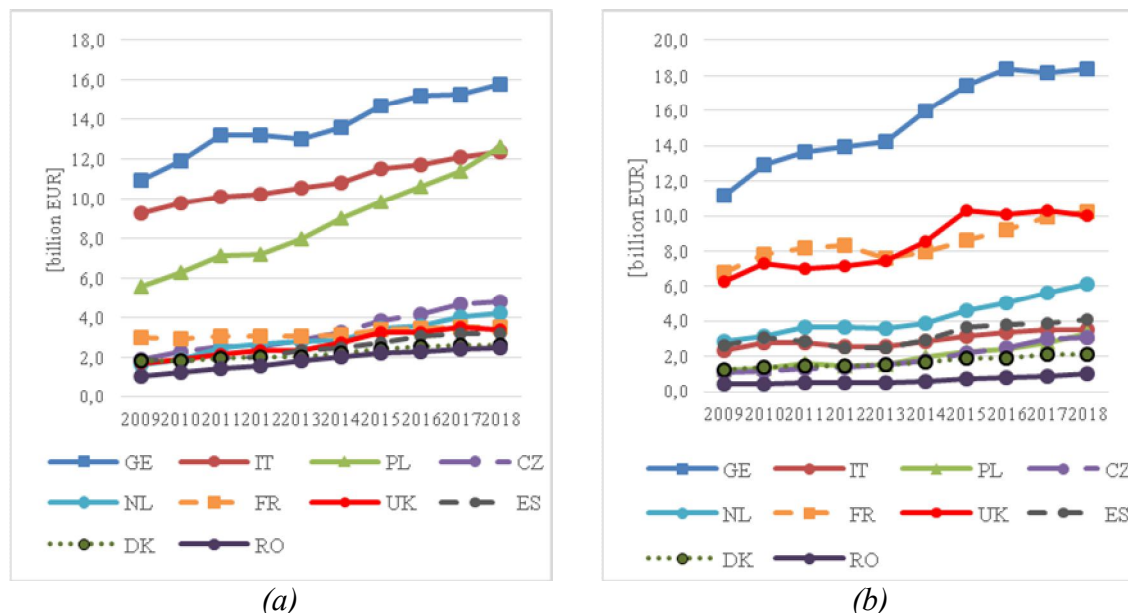


Fig. 1: The changes in foreign trade of furniture industry in the selected EU countries for 2009-2018: (a) The furniture export value (billion EUR); (b) The furniture import value (billion EUR).

In 2009, the global furniture import was at the level of EUR 106.8 billion, marginally higher than the export, which caused a trade deficit in this area of products (Tab. 1). Of this amount, EUR 48.5 billion (45.4%) was generated by the EU member states. Among the analyzed countries, Germany was the largest importer in this period. The furniture value that came to this country from abroad amounted to EUR 11.2 billion (Fig. 1b), which accounted for 23.1% of the EU import. France and United Kingdom were next on the list of importers. The importance of the remaining countries in creating the value of furniture imports in the EU was considerably smaller. This was particularly the case for new EU member states, i.e. Poland, Czech Republic and Romania.

In 2009, among the analyzed countries, the highest positive trade balance was observed in Italy. A clearly export-oriented character was also noted in the case of the Polish furniture industry. The value of products intended for foreign markets was four times higher than the value of foreign furniture on the Polish market. In the years from 2009 to 2018, the global furniture import increased by 97.3% and amounted to EUR 210.7 billion. The export growth rate was significantly higher, which resulted in a positive furniture trade balance. On the other hand, in the EU member states, the dynamics of the furniture industry products import value was similar to the value of their export. Thus, the trade surplus was at a similar level as in 2009.

In 2018, Poland and Italy once again recorded the highest positive furniture trade balance. The gap between these countries has evidently narrowed. This situation was caused by favorable economic trends in Poland as well as by the dynamic development of the furniture industry,

which was manifested by a significant increase in the production, accompanied by a smaller increase in the domestic demand, among others. This led to a significant increase in the value of exported products. Out of the ten largest exporters among the analyzed EU countries, the Czech Republic (EUR 1.7 billion), Romania (EUR 1.5 billion) and Denmark (EUR 0.5 billion) also showed a positive furniture trade balance, although the surplus of exports over imports was significantly lower than in Poland and Italy.

Tab. 2: The share of the export and import values of the furniture industry of the selected countries in the world and EU for 2009 and 2018 (%).

Country	2009	2018	DF*	V**	2009	2018	DF	V
	Share of furniture exports in world exports				Share of furniture exports in EU exports			
EU28	48.6	38.4	-10.2	10.4	100.0	100.0	0.0	0.0
Germany	10.4	6.9	-3.5	15.5	21.5	18.8	-2.7	5.8
Italy	8.8	5.7	-3.1	18.0	18.2	14.8	-3.4	8.7
Poland	5.3	5.8	0.5	8.7	10.9	15.0	4.1	9.2
Czech Republic	1.8	2.2	0.4	17.7	3.8	5.7	1.9	14.7
Netherlands	1.5	1.9	0.4	9.8	3.2	5.0	1.8	16.0
France	2.9	1.6	-1.3	21.7	5.9	4.2	-1.7	12.5
United Kingdom	1.6	1.6	0.0	5.6	3.3	4.1	0.8	9.6
Spain	1.8	1.5	-0.3	10.1	3.7	3.9	0.2	7.3
Denmark	1.7	1.2	-0.5	13.6	3.5	3.1	-0.4	5.7
Romania	1.0	1.1	0.1	6.2	2.1	3.0	0.9	15.0
	Share of furniture imports in world imports				Share of furniture imports in EU imports			
EU28	45.4	38.6	-6.8	11.7	100.0	100.0	0.0	0.0
Germany	10.5	8.7	-1.8	10.2	23.1	23.3	0.2	8.2
Italy	2.2	1.7	-0.5	17.3	4.9	4.4	-0.5	5.7
Poland	1.2	1.5	0.3	17.8	2.6	3.6	1	12.4
Czech Republic	1.1	1.5	0.4	19.1	2.3	3.8	1.5	20.3
Netherlands	2.6	2.9	0.3	11.8	5.8	7.6	1.8	8.9
France	6.4	4.8	-1.6	17.7	14.1	12.6	-1.5	7.1
United Kingdom	5.9	4.7	-1.2	11.2	13.0	12.4	-0.6	5.0
Spain	2.5	1.9	-0.6	18.9	5.4	5.0	-0.4	13.0
Denmark	1.2	1.0	-0.2	11.1	2.6	2.7	0.1	2.3
Romania	0.4	0.5	0.1	18.3	0.9	1.3	0.4	16.1

*DF – difference (p.p.), ** V – coefficient of variation (%).

The conducted analyses demonstrate that in 2009, the highest comparative advantage in the furniture trade was generated by manufacturers and exporters from Poland, Romania and Italy. This is evidenced by the values of the relative revealed comparative export advantage index (XRCA) and relative trade advantage index (RTA), as well as the value of the export/import coverage ratio (CR), which exceeds 100%, indicating a positive turnover in the trade of this group of products (Tabs. 3 and 4). In Poland, the value of revenues from furniture exports exceeded the amount of the incurred import expenses 4 times. Meanwhile, the surplus of exports over imports in Italy and Romania was respectively over 3 and 2 times higher. The export/import coverage ratio in these countries equaled 389.89 and 247.65%, resp. (Tab. 3). Additionally, the highest level of implemented export specialization was noted in Poland, Romania and Italy, measured by the value of the SI index. At the beginning of the analyzed period, the values of

the export specialization indicators in these countries were equal to 4.78, 3.14 and 2.68, resp. The positive and relatively high value of the RTA index achieved by these countries is also noteworthy. Denoting the difference between the XRCA and MRCA indicators, the RTA index also takes into account the export and import situation of the country. Among the ten largest furniture exporters, Poland obtained the highest competitive advantage in this area. In 2009, the mean value of the RTA index was equal to 5.2 (Tab. 4), with the Polish furniture exporters having the highest advantage with respect to Ireland and Malta. These are small countries, which show a relatively low share of the furniture industry production value in the total industry value as well as a relatively low economic labor productivity.

Favorable competitive situation in the furniture trade was also observed in Romania and Italy – on average, the RTA index was equal to 3.1 and 2.7, respectively (Tab. 4). In 2009, a relatively high level of competitiveness in the furniture industry was also noted in the Czech Republic and Denmark, as demonstrated by the values of the relative revealed comparative export advantage index (mean value – 2.4 and 2.8, resp.), as well as the values of the coverage ratio which exceeded 100% (170.3 and 144.1%, resp.). Studies have shown that the Czech and Danish furniture industries were characterized by a favorable competitive situation, which is also confirmed by the RTA values greater than zero (1.4 and 1.3, resp.).

Tab. 3: Selected competitiveness indices of the furniture industry for the selected EU countries.

Country	2009			2018			V*		
	MP	SI	CR	MP	SI	CR	MP	SI	CR
Germany	0.63	1.14	97.71	0.76	0.90	85.80	6.61	12.70	6.34
Italy	0.17	2.68	389.89	0.26	2.00	347.44	12.80	13.21	6.07
Poland	0.55	4.78	443.06	1.45	4.24	386.14	30.90	8.02	7.97
Czech Republic	2.46	2.00	170.26	3.57	2.10	155.72	11.70	5.20	8.04
Netherlands	0.65	0.44	57.14	1.03	0.63	68.19	15.79	12.35	9.24
France	0.64	0.77	44.30	0.75	0.55	34.67	5.32	13.33	7.05
United Kingdom	0.53	0.55	26.44	0.63	0.62	34.33	5.95	9.15	9.31
Spain	0.34	0.98	70.93	0.61	0.83	79.80	23.36	7.57	12.69
Denmark	0.88	2.30	144.13	1.39	2.12	121.19	15.74	5.78	5.04
Romania	0.62	3.14	247.65	1.65	2.79	243.77	33.28	4.49	10.84

*V – coefficient of variation.

It should be emphasized that the comparative advantage of German manufacturers in the furniture trade was not as substantial as in the case of the aforementioned countries. Although in 2009 Germany was the largest furniture manufacturer and exporter among all EU countries, it was also among the leading importers of furniture industry products. In the beginning of this period, the export specialization index (SI) of this country was equal to 1.1; however, the export/import coverage ratio (CR) was lower than 100%, which confirmed the lack of a significant advantage over partners in this area. This view is also confirmed by the values of the comparative advantage of export and import indices, which are above 1. However, the RTA indicator was only marginally above zero.

No comparative advantage in the furniture trade was observed in the cases of France and the Netherlands. Negative values of the RTA index were noted there, along with an unfavorable

situation in the development of the SI and CR indicators, which confirmed the lack of export specialization of these countries in the international exchange of the furniture industry products.

Tab. 4: The values of XRCA, MRCA and RTA indices for the selected EU countries.

Country	Value	2009			2018		
		XRCA	MRCA	RTA	XRCA	MRCA	RTA
Germany	max	8.5	2.1	6.9	32.7	2.0	31.2
	min	0.2	0.5	-1.7	0.2	0.7	-1.6
	mean	1.4	1.2	0.2	2.4	1.2	1.2
	st. deviation	1.7	0.4	1.7	6.1	0.4	6.0
Italy	max	20.4	1.0	19.7	74.5	1.0	73.7
	min	0.5	0.3	-0.2	0.4	0.3	-0.2
	mean	3.3	0.6	2.7	5.5	0.6	4.9
	st. deviation	4.0	0.2	4.0	13.9	0.2	13.9
Poland	max	37.4	1.5	36.3	150.6	1.7	149.4
	min	0.9	0.4	-0.1	0.7	0.6	-0.2
	mean	6.0	0.8	5.2	11.1	1.0	10.1
	st. deviation	7.4	0.3	7.4	28.2	0.3	28.1
Czech Republic	max	15.1	1.9	13.7	79.0	2.4	77.2
	min	0.4	0.5	-1.2	0.4	0.8	-1.3
	mean	2.4	1.1	1.4	5.8	1.4	4.4
	st. deviation	3.0	0.3	3.0	14.8	0.5	14.7
Netherlands	max	3.3	1.3	2.3	22.7	1.7	21.5
	min	0.1	0.3	-1.1	0.1	0.6	-1.4
	mean	0.5	0.7	-0.2	1.7	1.0	0.7
	st. deviation	0.6	0.2	0.7	4.3	0.3	4.2
France	max	5.7	2.2	4.0	6.0	2.2	4.2
	min	0.1	0.6	-1.9	0.1	0.7	-2.0
	mean	0.9	1.3	-0.3	0.9	1.3	-0.4
	st. deviation	1.1	0.4	1.2	1.3	0.4	1.1
United Kingdom	max	4.1	2.0	2.5	7.5	2.1	5.8
	min	0.1	0.5	-1.8	0.1	0.6	-1.7
	mean	0.7	1.1	-0.5	1.1	1.2	-0.1
	st. deviation	0.8	0.4	0.8	1.6	0.4	1.5
Spain	max	7.3	1.6	6.1	31.0	1.5	29.9
	min	0.2	0.4	-1.2	0.2	0.5	-1.1
	mean	1.2	0.9	0.3	2.3	0.9	1.4
	st. deviation	1.4	0.3	1.4	5.8	0.3	5.7
Denmark	max	17.5	2.8	15.4	80.3	3.0	78.1
	min	0.4	0.7	-1.9	0.4	1.0	-2.0
	mean	2.8	1.6	1.3	5.9	1.8	4.1
	st. deviation	3.4	0.5	3.4	15.0	0.6	14.9
Romania	max	24.1	1.4	23.0	102.0	1.5	100.9
	min	0.6	0.4	-0.4	0.5	0.5	-0.4

	mean	3.9	0.8	3.1	7.5	0.9	6.6
	st. deviation	4.8	0.3	4.7	19.1	0.3	19.0

In 2018, comparative advantages in the furniture trade were generated by all countries covered by the analysis, with the exception of France and United Kingdom. Polish furniture manufacturers were once again the most competitive in this respect. In Poland, the value of revenues from the furniture exports exceeded the amount of the incurred import expenses almost four times. The CR index of this country equaled 386.14%, whereas the coefficient of variation in the analyzed period was below 10%, which confirms its slight variability. In addition, the Polish furniture industry was characterized by the highest relative comparative advantage of export (mean value of XRCA = 11.1) and the overall comparative furniture trade advantage (mean value of RTA = 10.1). Polish furniture enterprises have the advantages of low labor costs, favorable geographical position, and a high demand for its products. Poland was competitive both in the area of export as well as the entire international furniture exchange with respect to all EU countries, except for Lithuania and Estonia. These countries were characterized by the largest average share of the furniture production value in relation to the value of the domestic industry production, which confirmed the important role of the furniture industry in the total industry. The importance of furniture export in relation to the total value of the exported goods was also significant. At the same time these countries were characterized by a lower value of furniture production per employee. In the analyzed group of the largest furniture manufacturers, Poland obtained the highest levels of the RTA index with respect to France (6.53), United Kingdom (5.51), the Netherlands (5.60), Germany (3.76) and Spain (3.69). This confirms the significant comparative advantage of Poland in relation to the above-mentioned countries in terms of furniture trade.

In 2018, the surplus of exports over imports in Italy and Romania was respectively over 3 and 2 times higher. The export/import coverage ratio in these countries was 347.44% and 243.77%, respectively. Additionally, the high level of implemented export specialization was noted in Romania and Italy, measured by the value of the SI index. The values of the export specialization indicators in these countries were equal to 2.79 and 2.00, resp. Positive trends were also observed in the mean value the RTA index, the values of which were at the level of 6.6 and 4.9, respectively. These countries demonstrated the highest comparative advantage in the furniture trade in relation to France, United Kingdom, the Netherlands and Germany, with Romania achieving the most favorable results. On the other hand, negative RTA indicators were confirmed for Lithuania, Estonia and Poland. The Czech Republic and Denmark showed also a relatively high level of competitiveness in the furniture industry. This is confirmed by the average values of the XRCA index for export (5.8 and 5.9, respectively) as well as the values of the CR index, i.e. the ratio of export to import, which exceeded 100% (155.72 and 121.19%, resp.). In addition, the mean values of the RTA index were more favorable (4.4 and 4.1, resp.).

Research shows that Poland, Romania and Italy were among the countries with the highest levels of international competitiveness in the furniture industry. During the analyzed period, the RTA and the XRCA showed an upward trend, which implies an improvement in the international competitiveness of the furniture production in these countries and confirms

specialization in net export. Italy and Poland are characterized by a relatively high share of the furniture industry production value in the overall value of industrial production. They are also distinguished by a significant value and volume of furniture production; however, a large number of business entities and a relatively high level of employment, production per company and per employee, place these countries slightly above the average among the EU28 countries. Both Italy and Poland have a long furniture tradition. Moreover, Italian furniture has a good reputation among global customers due to its unique design, among others. On the other hand, Poland took the advantage of the proximity to the Western European market and has become an export-oriented furniture producer (Han et al. 2009). The competitiveness of the Polish furniture industry results from the relatively large sale volumes of such products on the external market, often under the brand names of foreign importers. The Polish furniture industry sells 90% of its products abroad (Grzegorzewska and Stasiak-Betlejewska 2014) and has the highest trade volume of any low-technology manufacturing industry (Grzegorzewska and Więckowska 2016). The high comparative advantages of Poland regarding finished wood products were also found in many empirical studies (Han et al. 2009, Augustyniak and Mińska-Struzik 2018, Grzegorzewska et al. 2020). In addition, Ratajczak (2009) found that the Polish comparative advantages increase with the level of the wood products processing.

An important competitor among the European countries is also Romania. Due to industry large investments in new technologies the furniture production and export have increased (Burja and Mărginean 2013). A relatively high level of competitiveness in the furniture industry was also demonstrated by the Czech Republic and Denmark, which is confirmed by the favorable values of the competitiveness indicators. Similar results were presented by Bojnec and Fertő (2014), according to whom the selected EU13 countries (i.e. Poland, the Czech Republic, Romania) show comparative advantage in the trade of finished wood products, including furniture. The authors reported that wood processing plays a significant role in increasing wood product differentiation as well as the value-added of products processed from wood, which indicates improvement in the international competitiveness of the forestry industry sector. Research confirmed that the other EU13 countries are also competitive on the wood-based market (Zhelev 2013). However, the competitiveness indicators for those countries are lower than for Poland, the Czech Republic or Romania.

In contrast, the comparative advantage of the German manufacturers in the furniture trade was not as evident as in the case of the aforementioned countries. In 2018, Germany was still a leader in the ranking of European furniture manufacturers and exporters; however, it was also among the leading importers of the furniture industry products. Unfavorable values of the export specialization index ($SI = 0.90$) and the export/import coverage ratio ($CR = 85.80\%$) were noted. Nevertheless, the comparative advantage of the German furniture trade increased over the analyzed period, although this increase was not significant – the mean value of the RTA index increased from 0.2 to 1.2. At the end of the analyzed period, the lack of comparative advantage in the furniture trade was observed in France and United Kingdom. These countries were characterized by unfavorable values of the export specialization index (< 1) and the export/import coverage ratio ($< 100\%$).

The average competitiveness position on the global timber and furniture market was also confirmed by Dieter and Englert (2007) and Vu et al. (2019). Moreover, Neykov et al. (2019) demonstrated the lower efficiency of the wood-based industries in Germany using the DEA method. Germany has been characterized by reduced investments and innovations in the furniture industry for a long time. Among the important factors affecting this situation is the reduction in the domestic demand as well as an increased pressure from foreign imports, particularly from Asia. That is why the German furniture manufacturers decided to partially outsource to Poland, which to a certain extent enabled stabilization of the production and increased competitiveness (Vu et al. 2019, Osses et al. 2013, Brenneke 2009). Nonetheless, relatively cheap workforce and low furniture production costs in the Eastern European, Asian or Latin American countries result in lower level of competitiveness of the German furniture manufacturers (Vu et al. 2019). No comparative advantage in the furniture trade was observed in France and United Kingdom. These countries were characterized by unfavorable values of the export specialization index. In addition, the relative import penetration index (MRCA) was higher than the relative revealed comparative export advantage index (XRCA), which resulted in negative values of the RTA index. The negative international competitiveness values for the wood processing industries in United Kingdom were also confirmed by Vu et al. (2019).

In addition, it should be noted that the results presented in this article are consistent with the study reported by Han et al. (2009), which emphasized that Poland and Italy exhibited a remarkably strong comparative advantage, whereas Germany showed a moderate comparative advantage. This means that over a decade, several largest furniture exporters in the EU have maintained, and sometimes even improved, their level of international competitiveness in the field of international furniture trade. However, the weak competitiveness of the wood processing industries in some EU countries can be seen in the fact that the competitive advantage is visible in favorable prices and not in manufacturing complex products with high value added (Bohaček et al. 2020, Ihnat et al. 2018). Business and development, which are purely based on the strategy of low costs and cheap final products, are increasingly less sustainable for enterprises, which aspire towards improvement of competitiveness (Milićević et al. 2017).

The presented research has some limitations. First of all, the data relating to the furniture industry were presented cumulatively for all products. Therefore, in subsequent studies, the analysis of competitiveness should be broadened by expanding the scope to include individual categories of furniture. Furthermore, it would be justified to analyze non-European countries, which are important players on the global furniture market and compare their level of competitiveness in the field of furniture production with the EU countries. Nonetheless, the research results presented in the article expand the existing knowledge and enable certain gaps in the area of assessing the international competitiveness of the largest furniture exporters to be filled. The conducted research may also be a source of information for furniture manufacturers, the entire furniture industry as well as the national governments, since one of their most important tasks is to support highly export-oriented industries. This significant influence of government financial and nonfinancial support on companies and industries performance with mediating role of the competitive position was particularly emphasized by Songling et al. (2018).

CONCLUSIONS

Countries with the highest levels of international competitiveness of the furniture industry included Poland, Romania and Italy. Furthermore, the indicators of competitiveness showed an upward trend, which implies an improvement in the international competitiveness of the furniture production carried out in these countries. The positive and relatively high value of the RTA index achieved by these countries is noteworthy. In 2018, the average values of this indicator for Poland, Romania and Italy were 10.1, 6.6 and 4.9, respectively. Also, the values of the SI index and CR index were very favorable.

In contrast, the comparative advantage of Germany, which is the largest furniture exporter in the EU, was not as significant. Unfavorable values of the export specialization index ($SI = 0.90$) and the export/import coverage ratio ($CR = 85.80\%$) were noted. Nevertheless, the comparative advantage of the German furniture trade increased over the analyzed period, although this increase was not significant – the mean value of the RTA index increased from 0.2 to 1.2. Relatively cheap workforce and low furniture manufacturing costs in Eastern European countries contribute to a decrease in the level of competitiveness of the German furniture industry. In 2018, the lack of comparative advantage in the furniture trade was observed in France and United Kingdom. These countries were characterized by unfavorable values of the SI indicator and the CR indicator.

It was emphasized that in subsequent studies, the analysis of competitiveness should be broadened by expanding the scope to include individual categories of furniture. In addition, it seems appropriate to analyze non-European countries, which are important players on the global furniture market and compare their level of competitiveness in the field of furniture production with the EU countries.

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