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EXPORT SPECIALIZATION OF SOUTH EAST EUROPEAN COUNTRIES IN THEIR TRADE WITH THE EUROPEAN UNION

Muamer Halilbašić¹, Snježana Brkić²

ABSTRACT

Evolving of trade specialization is usually a long-lasting process resulting from deep structural changes of an economy. In some cases external stimuli such as broader market that resulted from trade liberalization could contribute to a rapid changing of a country's trade pattern. Although trade specialization in its broader sense includes both supply (export) and demand (import) specialization, export patterns of countries and their changes are given most focus in international trade research. The paper investigates export specialization of South East European countries (SEECs) in their trade with the European Union (EU) before and after starting trade liberalization introduced by the Stabilization and Association Agreements (SAA). Comparing 2003 and 2014, the paper aims to verify whether the export pattern of six SEECs (Albania, Bosnia and Herzegovina, Croatia, FYR Macedonia, Montenegro and Serbia) has moved toward the EU demand as in the case of advanced transition countries that joined the EU in 2004. Following empirical trade literature, the research employs several different indicators: indicator of export composition and revealed comparative advantage (Balassa RCA index), indicator of dynamics of trade specialization (Michaely index, the Lorenz curve, Gini coefficient), indicator of export diversification (Herfindahl-Hirschman index of sectoral export concentration), and export quality indicator (export product classification by technology level). As the reference for calculating the indices and plotting the Lorenz curve, EU27 total imports were used. The research results indicate a slight despecialization in most analysed countries. Their export structure, although significantly changed, remains highly concentrated and dominated by primary products, resource based products, and low-technology intensive

products. Despite positive trends in terms of slight movement of export structure toward the EU demand, especially in cases of Croatia and Serbia, large inconsistency with the needs of the EU market still exists, indicating that SEECs have a long way to catch up with the EU.

Keywords: export specialization, revealed comparative advantage (RCA), export specialization dynamics, South East European countries (SEECs), the European Union 27 (EU27)

JEL classification: F14

1. INTRODUCTION

Traditional theories of international trade emphasize free trade and country's specialization based on comparative advantages. By becoming more specialized, a country uses its resources in the most efficient way and benefits from trade with others. Even today economic policy, especially in low-income countries, suggests the focus to be placed on producing a narrow range of products that "country does best."

Contrary to traditional theories that limited trade specialization to specialization in export only, in modern theories the term has got a much more complex meaning. Trade specialization comprises supply (export) specialization and demand (import) specialization, both of which can occur between sectors or inside them (Glejser, Gossens & Eede 1982). Taking into account direction of trade flows and different sources for trade, we can make distinction between several types of trade specialization: export specialization and import specialization, inter-industry specialization, and intra-

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industry specialization. Empirical literature suggests that intra-industry specialization mostly characterized high-income countries whereas low-income countries tended to achieve inter-industry specialization.

In general, trade specialization reflects sectoral structure of an economy. The sectoral structure is the result of long-term trends in overall economic growth, sectoral growth, productivity, structure of demand, and international trade¹. Evolution of country's sectoral structure is something that usually takes a longer period of time except some external or specific internal stimuli such as war, economic integration, transition process, etc. that cause rapid changes in production and trade patterns. For example, economic integration as experienced by the members of the European Union (EU) countries since the 1980s is thought to have the potential to result in important changes in the sectoral composition. The enlargement of the EU caused the pattern of specialisation of new Member States to change very quickly (European Central Bank 2004).

"In Europe, integration in general and EU Eastern enlargement in particular created a wider single market, which stimulates structural adjustment and economic specialization. These impulses are expected to be part of the driving forces for structural changes in the European economies, and for changes in their competitiveness, which are reflected in changes in the production structure, trade specialization, and technological upgrading" (Borbély 2006, pg. 2).

In case of Central and Eastern European countries (CEECs) in the 1990s, impulses coming from dynamic system transformation and anticipated EU membership resulted in strong trade orientation towards the EU and in shifts in specialization and revealed comparative advantages. Something similar is expected to happen in South East European countries (SEECs) as a result of structural transformation associated with transition process and trade liberalization and adjustment in the process of association to the EU.

The paper aims to investigate what happens with inter-industry export specialization at

the regional level in the case of SEECs after their entering the process of association to the European Union. In particular, the paper focuses on the evolution of comparative advantages with respect to the EU 27 demand, in order to verify whether the specialization pattern of the analysed countries has moved towards the most dynamic manufactured goods, as it has happened during association process in the countries that joined the EU in 2004 and 2007 (Zaghini 2003; Yilmaz & Ergun 2003).

The previous research of export specialization of SEECs conducted for the period 2003-2010 (Halilbašić 2012) indicated some changes in export structure and smooth movement in terms of greater alignment with demand in the EU. Despite some positive trends, export structure in all countries stayed concentrated on a relatively small number of products and still largely inconsistent with the EU demand.

For the purpose of the research, SEECs countries include acceding countries or countries that are expected to become candidate countries in the near future (Albania, Bosnia and Herzegovina, FYR Macedonia, Montenegro, and Serbia) and one country that recently joined the EU (Croatia)². The analysis focuses on their export performance and pattern in their trade with EU27 during the period 2003-2014.

The paper is organized as follows: after Introduction, Section 2 briefly describes research methodology – indices and data sets used in the analysis. Section 3 presents research results in details – findings on export specialization pattern of SEECs as well as the dynamic of the distribution of revealed comparative advantages in these countries with respect to EU27 demand. Section 4 consists of concluding remarks.

2. APPLIED METHODOLOGY

In order to obtain a comprehensive insight into the export specialization of the selected countries, the analysis employs a set of different indicators: indicator of export composition and revealed comparative advantage (Balassa RCA index), indicators of dynamics of trade specialization (Michaely index, the Lorenz

curve), indicator of export diversification (Herfindahl-Hirschman index of sectoral export concentration), and export quality indicator (export product classification by technology level). As the reference for calculating the indices and plotting the Lorenz curve, EU27 total imports were used. The indicators were calculated, compared and interpreted for the analysed countries for the period 2003-2014 (except for Serbia and Montenegro where the given period started with 2005 and 2006 respectively³), and/or for the first and the last year of the period.

The analysis was focused mainly on export data of SEECs that were gathered from the relevant database of International Trade Centre and

analyzed at 2-digit or 6-digit aggregation levels of Harmonized Commodity Description and Coding System classification (HS2002).

Although the various measures have been proposed to infer the existence of comparative advantage, the first measure introduced by Bella Balassa (1965) – Balassa revealed comparative advantage index – is still most widely used. The original Balassa RCA index (hereinafter *BI*) is built on export data only and reflects the relative export structure; it is calculated as the ratio between a specific sectors's export share in the country's overall exports and the share of the sector's global exports in the overall world's export:

$$BI_{\{cst|w\}} = \frac{\frac{x_{cs}}{x_c}}{\frac{x_{ws}}{x_w}} \equiv \frac{\frac{x_{cs}}{x_{ws}}}{\sum_{s=1}^S \frac{x_{cs}}{x_{ws}} \cdot \frac{x_{ws}}{x_w}} \equiv \frac{\frac{x_{cs}}{x_{ws}}}{\frac{x_c}{x_w}} \quad (1)$$

Notes: *c* – specific country; *w* – all countries (world) or set of countries; *s* – specific sector; *S* – all the sectors included in the analysis; *t* – considered time period;

Demarcation value is 1 where $BI = x_w/x_c$. Therefore, the *BI* reveals that country *c* has a comparative disadvantage in sector *s* if $0 < BI < 1$, while it has a comparative advantage in sector *s* if $1 < BI$.

Because of some shortcomings of *BI* in analysis of dynamics of country specialization⁴, our research employs synthetic indicator of dissimilarity – the Michaely index (hereinafter

MI) first construed by Michael Michaely (1962). *MI* has a broad range of applications including measuring trade specialization at the sector level. For the purpose of this research *MI* indicates dynamics of a country's export structure, i.e. the dynamics of revealed comparative advantage.

In its adjusted form, the index is calculated as follows (Krugman 1991; Kim 1995):

$$MI_{t \in [1,2]} = \frac{1}{2} \cdot \sum_{s=1}^S \left| \frac{x_{cs2}}{x_{c2}} - \frac{x_{cs1}}{x_{c1}} \right| \quad (2)$$

Notes: *t* – years being compared; – exports of sector *s* of country *c* over time *t*=2; – total exports of country *c* over time *t*=2;

MI ranges the 0-1 interval. The value of 0 represents perfect stability of the specialization pattern, while the value of 1 represents absolute mobility of the specialization pattern.

The shortcoming of the previous analysis is that it yields only quantitative indications about the intensity of changes. No indication of starting position or direction of changes can be extrapolated (Halilbašić 2012). These

limitations can be overcome by calculating the Gini coefficients, or plotting the Lorenz curves with the benchmark EU27 (EU demand) as a term of reference.

The Gini coefficient is a measure of income inequality which has often been adopted for use in different contexts. For the purpose of this research, the Gini coefficient is applied for measuring diversification across sectors and

allows us to determine if some countries are more or less specialized in their trade with the EU. The Gini coefficient is a measure in the range between 0 and 1: zero value means total equality i.e. no specialization or high diversification, whereas the value of 1 indicates a totally unequal distribution, i.e. one sector accounts for the total value of production or exports, whereas all other sectors have zero values (complete inequality or high specialization and little diversification).

The Gini coefficient is usually defined mathematically based on the Lorenz curve⁵. The vertical axis in the figures of the Lorenz curve is the cumulative value of numerator in *BI* (country's share in the EU27 import of the specific industry). The horizontal axis is the cumulative value of denominator in *BI* (country's share in the total EU27 export). The same procedure has been followed – after ranking the series according to the *BI* values – for data from the first and the last year of the analysed period. The 45 percent line represents the equidistributional locus associated with the case in which country has the same pattern of RCA as the benchmark (*BI* = 1 in each sector). Since the series are ranked according to industry's share in national exports, the Lorenz curve will always be below the 45 line, and a country's specialization pattern will be as similar to the benchmark (EU demand) as its specialization curve is close to the 45 percent line.

First used as a measure of asymmetry in the 1940s, the Herfindahl-Hirschman index (hereinafter *HHI*) today is often applied in research of international trade. *HHI* can be used as a measure of the degree of a country's export concentration, when it is calculated using the following formula (Mejía 2011):

$$HHI_c = \sum_s \left(\frac{x_{cs}}{x_c} \right)^2 \quad (3)$$

Notes: – value of exports of sector *s* of country *c*; – value of total exports of country *c*.

The formula refers to *HHI* sectoral concentration, which measures export dispersion from the aspect of export sectors⁶. A lower *HHI* value indicates a higher degree

of export diversification i.e. a lower degree on export concentration and specialization, and vice versa.

We also use Lall's classification of export products by technological categories (Lall 2000)⁷ in order to provide an insight into the export quality in trade of the analysed countries with EU27. We make distinction between five categories of product groups according to their technological content: primary products and resource-based (agro-based) products, resource-based products (other than agro-based), low-technology intensive products, medium-technology intensive products, and high-technology intensive (research intensive) products.

3. RESEARCH RESULTS

3.1. Export Performance and Comparative Advantages

Before institutionalizing its trade relations with SEECS, the EU enabled asymmetric trade preferences in their favour that encouraged SEECS' export to the EU market. Croatia and FYR Macedonia were the first SEECS that signed the Stabilization and Association Agreement (hereinafter SAA) with the EU in 2001. During the period 2006-2008 all other SEECS signed SAA. Several years past between the signing of SAA and its entering into force – three years for most SEECS, five years for Serbia and seven years for Bosnia and Herzegovina (BiH). However, the Interim Agreement on Trade and Trade Related Issues entered into force much before for many of SEECS and enabled faster trade liberalization between them and the EU. (Table 1.1 in Appendix 1)

During the analysed period, SEECS improved their export performances in general and in trade with the EU in particular. Although still strongly dependent on imports, which is reflected by their considerable trade deficits, all SEECS have slightly increased export to GDP ratio. (Table 1.2 in Appendix 1)

A general overview of export performances and revealed comparative advantages for six SEECS in relation to EU27 for 2003 and 2014 is presented in Table 3.1. Export to EU27 has significantly increased for all countries. A

common characteristic of all of them is growing export orientation towards the EU – the share of export to the EU in their total export is more than 60% for all the countries. Due to

geographical export concentration, their export performance is highly dependent on economic conditions in the EU.

Table 3.1 Export Performances and Balassa RCA Index of SEECS in Trade with EU27

Indicator	Albania		BiH		Croatia		FYR Macedonia		Montenegro		Serbia	
	2003	2014	2003	2014	2003	2014	2003	2014	2006	2014	2005	2014
Export to EU 27*	0.37	1.41	0.48	2.70	3.73	6.64	0.71	2.77	0.29	0.08	2.88	6.87
Share of total export %	93.8	77.3	38.9	61.1	68.3	63.7	58.8	74.7	66.5	25.8	56.3	61.5
Max Balassa RCA index	36.8	22.3	18.1	12.3	27.5	7.7	20.6	19.2	66.4	149.5	19.8	11.9
Standard deviation	4.3	2.7	3.2	2.3	3.2	1.4	2.9	2.4	6.7	15.5	2.6	1.5
Number of BI > 1 items	16	21	19	25	32	35	23	18	7	15	30	38
Contribution of top5 (%)	76.3	74.6	59.1	45.6	37.3	25.3	70.0	53.3	92.7	60.5	45.2	44.9
Contribution of top10 (%)	86.8	84.6	77.1	61.2	52.2	35.4	79.0	60.8	-	72.7	61.9	61.4
Contribution of BI > 1 (%)	90.4	89.6	80.5	68.4	63.9	48.8	87.2	89.2	94.2	75.4	82.7	83.8

* EURO billions

Source: Authors' calculations based on International Trade Centre data

In all the countries, the maximum value of Balassa RCA index (*BI*) and standard deviation (with exception of Montenegro) is decreased. In four of them product groups with *BI* > 1 account for the smaller share of total export to the EU; decrease in export share of product groups with comparative advantage is most evident in Croatia (15.1 percent points) and in BiH (12.1 percent points). Contribution to export of product groups with *BI* > 1 only rises in FYR Macedonia and Serbia although very slightly (less than 2 percent points). At the same time, the number of industry groups with *BI* > 1 is increased in most countries (except in

FYR Macedonia). All these findings suggest a reduction in SEECS export specialization in the EU market that is in line with similar studies on industrialized economies (Proudmann and Redding 2000; Laursen 2000; Redding 2002) and on a set of Asian developing countries (Brasili et al. 2000).

In Table 3.2 we have listed the top ten specialization items according to *BI* values in six analyzed countries. *BI* values were calculated on 2-digit HS2002 export data in 2003⁸ and 2014⁹.

Table 3.2 Items of Top Specialization in SEECs (Balassa RCA Index)

Albania				
Product group	BI 2003	Export share 2003	BI 2014	Export share 2014
Footwear, gaiters and the like, parts thereof	36.9	31.5	22.3	21.4
Articles of apparel, accessories, not knit or crochet	13.0	23.0	7.8	12.0
Miscellaneous articles of base metal	9.1	3.9	6.3	2.7
Explosives, pyrotechnics, matches, pyrophorics, etc	0.1	0.0	6.1	0.1
Articles of apparel, accessories, knit or crochet	9.2	13.3	5.8	8.8
Raw hides and skins (other than furskins) and leather	6.1	1.9	5.4	1.2
Lead and articles thereof	2.5	0.1	5.4	0.3
Meat, fish and seafood preparations nes	9.9	3.0	4.4	1.6
Products of animal origin, nes	0.2	0.0	2.8	0.2
Headgear and parts thereof	0.1	0.0	2.7	0.2
BiH				
Product group	BI 2003	Export share 2003	BI 2014	Export share 2014
Footwear, gaiters and the like, parts thereof	11.2	9.6	12.3	11.8
Furniture, lighting, signs, prefabricated buildings	8.9	12.8	10.1	14.5
Wood and articles of wood, wood charcoal	11.1	11.8	8.8	7.5
Umbrellas, walking-sticks, seat-sticks, whips, etc	0.1	0.0	8.5	0.2
Raw hides and skins (other than furskins) and leather	14.3	4.3	7.3	1.6
Manufactures of plaiting material, basketwork, etc.	14.0	0.3	6.8	0.1
Aluminium and articles thereof	4.0	4.6	5.9	7.0
Inorganic chemicals, precious metal compound, isotopes	0.1	0.1	5.4	3.7
Cotton	0.3	0.1	3.9	0.5
Articles of apparel, accessories, not knit or crochet	5.0	8.8	2.7	4.2
Croatia				
Product group	BI 2003	Export share 2003	BI 2014	Export share 2014
Wood and articles of wood, wood charcoal	5.6	6.0	7.7	6.6
Fertilizers	7.4	1.5	7.6	2.2
Sugars and sugar confectionery	11.8	2.9	5.6	1.4
Articles of apparel, accessories, knit or crochet	4.7	6.7	4.2	6.3
Furniture, lighting, signs, prefabricated buildings	2.7	3.8	3.8	5.4
Salt, sulphur, earth, stone, plaster, lime and cement	4.4	1.4	3.8	0.9
Stone, plaster, cement, asbestos, mica, etc. articles	1.4	0.4	3.6	1.0
Raw hides and skins (other than furskins) and leather	4.3	1.3	2.9	0.6
Aluminium and articles thereof	1.8	2.0	2.8	3.4
Glass and glassware	1.8	1.0	2.8	1.3

FYR Macedonia				
Product group	BI 2003	Export share 2003	BI 2014	Export share 2014
Miscellaneous chemical products	0.1	0.1	19.2	23.4
Tobacco and manufactured tobacco substitutes	8.8	3.4	8.8	2.6
Articles of apparel, accessories, not knit or crochet	20.6	36.5	8.6	13.2
Ores, slag and ash	0.4	0.1	7.0	4.6
Iron and steel	8.1	18.8	3.7	9.4
Edible vegetables and certain roots and tubers	2.1	1.1	2.6	1.3
Articles of apparel, accessories, knit or crochet	4.6	6.6	2.5	3.8
Furskins and artificial fur, manufactures thereof	9.0	0.4	2.2	0.1
Footwear, gaiters and the like, parts thereof	5.6	4.8	2.0	1.9
Salt, sulphur, earth, stone, plaster, lime and cement	4.6	1.5	2.0	0.5
Montenegro				
Product group	BI 2006	Export share 2006	Balassa 2014	Export share 2014
Explosives, pyrotechnics, matches, pyrophorics, etc	0.0	0.0	149.5	3.4
Aluminium and articles thereof	66.4	85.7	27.6	32.8
Arms and ammunition, parts and accessories thereof	0.0	0.0	20.2	0.7
Ores, slag and ash	1.8	1.2	13.2	8.6
Copper and articles thereof	1.8	2.0	9.1	7.0
Wood and articles of wood, wood charcoal	1.1	1.0	8.6	7.3
Edible vegetables and certain roots and tubers	0.6	0.3	6.7	3.2
Salt, sulphur, earth, stone, plaster, lime and cement	1.8	0.5	6.1	1.5
Lead and articles thereof	0.7	0.0	4.6	0.2
Meat and edible meat offal	0.0	0.0	3.5	2.9
Serbia				
Product group	BI 2005	Export share 2005	BI 2014	Export share 2014
	BI	Export share	BI	Export share
Cereals	5.7	1.4	12.0	4.8
Edible fruit, nuts, peel of citrus fruit, melons	6.5	4.5	4.6	3.8
Explosives, pyrotechnics, matches, pyrophorics, etc	2.5	0.0	4.2	0.1
Sugars and sugar confectionery	19.8	4.3	3.7	0.9
Copper and articles thereof	8.6	9.4	3.6	2.8
Vegetable plaiting materials, vegetable products nes	6.0	0.0	3.6	0.0
Rubber and articles thereof	5.7	6.1	3.5	4.3
Wadding, felt, nonwovens, yarns, twine, cordage, etc	0.5	0.1	3.2	0.5
Raw hides and skins (other than furskins) and leather	0.7	0.2	3.2	0.7
Glass and glassware	1.8	1.0	2.8	1.3

Source: Authors' calculations based on International Trade Centre data

By country, Albania shows relative strength in apparel and footwear industry, and to some extent in metal, food, and leather industry. BiH is specialized in apparel and footwear industry, wood and furniture, and metal industry. Croatia also has a strong position in wood and furniture, apparel, and metal industry. FYR Macedonia is specialized in chemical products, tobacco, apparel, iron and steel, and some vegetables. Montenegro has the highest revealed comparative advantage in production of aluminium and copper and articles thereof, then ores, lead, explosives, wood and articles of wood. Finally, Serbia has comparative advantage in cereals, edible fruit and sugar, explosives, copper, and rubber.

According to Lall's classification of products by technological categories, the list of products with $BI > 1$ is actually dominated by primary and resource (agro) based products and low-technology products in most analysed countries. In BiH, resource based manufactures and low-technology products prevail in number over primary and agro-based products. In Montenegro, however, at the list of products with BI over 1 are primary and agro-based products as a dominant category and several medium-technology intensive products. Comparing 2014 and 2003 results we can observe that, despite some restructuring in the overall composition of trade, all the countries have moved only slowly away from products requiring unskilled labour, low level of technology and significant resources (including primary products). This makes them increasingly vulnerable to competition from other low-wage regions. However, these countries are more oriented toward manufactures than the vast majority of Latin American countries (Caselli and Zaghini 2005).

3.2. RCA Dynamics of SEE Countries

In order to overcome some shortages of Balassa RCA index¹⁰, especially to avoid a possible confusion in the interpretation of its changes and cross-country comparisons, the analysis includes indicators of export specialization dynamics.

The calculations of the Michaely index (MI) on highly disaggregated trade data (Table 3.3) indicate significant changes in export structure of SEECs in the 2003-2014 time period. MI index ranks from 0.47 in Albania to 0.66 in FYR Macedonia.

Table 3.3 Michaely Index of SEECs (2003-2014)

Country	Michaely index
Albania	0.47
BiH	0.57
Croatia	0.58
FYR Macedonia	0.66
Montenegro ¹	0.62
Serbia ²	0.60

¹Data available from 2006 to 2014

²Data available from 2005 to 2014

Source: Authors' calculations based on International Trade Centre data

The Gini index values, although showing some positive developments in the analyzed period, are still extremely high in most countries. This indicates a huge mismatch between export structure in these countries and the import demand in the EU. The exception to a certain extent are Croatia and Serbia (Table 3.4). The mismatch in the case of Montenegro, Albania and FYR Macedonia, is primarily the result of high concentration of exports on a relatively small number of products (see the value of HHI in Table 3.4). However, in most countries (except in FYR Macedonia and Serbia) export product concentration has decreased during the analyzed period.

Table 3.4 Gini Coefficient and HHI in SEECs

Indicator	Albania		BiH		Croatia		Macedonia FYR		Montenegro		Serbia	
	2003	2014	2003	2014	2003	2014	2003	2014	2006	2014	2005	2014
Gini	0.96	0.85	0.87	0.84	0.75	0.61	0.93	0.92	0.99	0.97	0.83	0.72
HHI x 100	9.27	6.05	3.18	1.59	1.58	0.73	2.69	6.5	72.47	11.77	1.33	1.83

Source: Authors' calculations based on International Trade Centre data

In addition to the Gini coefficient calculations, we also plotted the Lorenz curves for the analysed countries (Figures 3.1 – 3.6). The reason is that the Gini coefficient can yield similar values for very different distributions and does not discriminate the case like Albania. According to the Gini index values, the Lorenz curve is far away from the equidistributional locus for all the analyzed countries, especially in the case of Montenegro, FYR Macedonia, Albania and BiH. Also, between 2003 (2005 for Serbia and 2006 Montenegro) and 2014, the Lorenz curves moved slightly to the left indicating that the pattern of revealed comparative advantages in these countries is coming a little bit closer to the benchmark (EU27). The only exception is FYR Macedonia. However, a deep insight indicates that there are some interesting differences in the Lorenz curve changes between the remaining five countries. In the case of BiH and Montenegro, the movement to the left was primarily the result of high *BI* sectors. Distribution of movement for Serbia is more even but still dominated by high *BI* sectors. The exemption from this pattern is Croatia. Albania is a different and more complex case. The Gini coefficient is significantly reduced in the observed period. This change is also evident from the shape of the Lorenz curve. However, it seems that in its “RCA below 1” sectors, Albania is growing more similar to EU27, but different from EU27 in its “RCA above 1” sectors (sectors with comparative advantage).

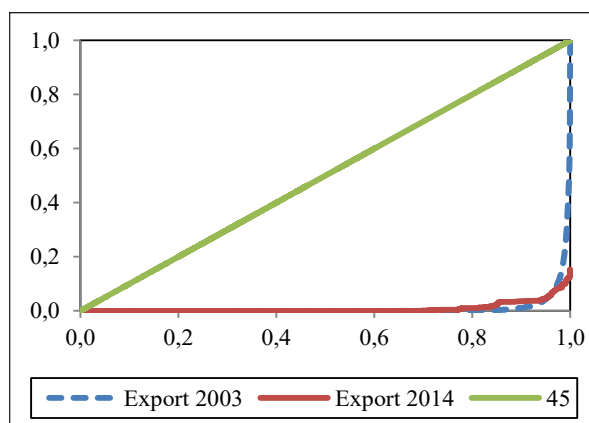


Figure 3.1 Lorenz Curve for Albania

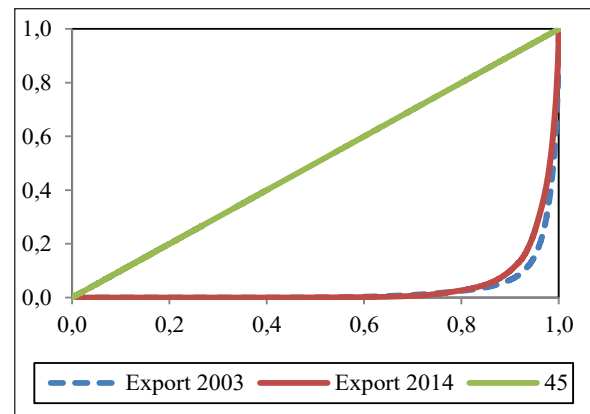


Figure 3.2 Lorenz Curve for BiH

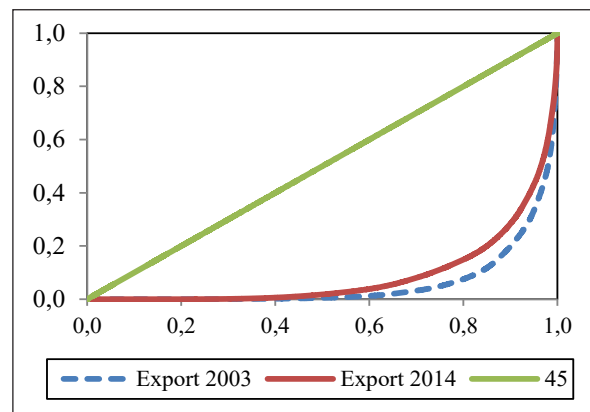


Figure 3.3 Lorenz Curve for Croatia

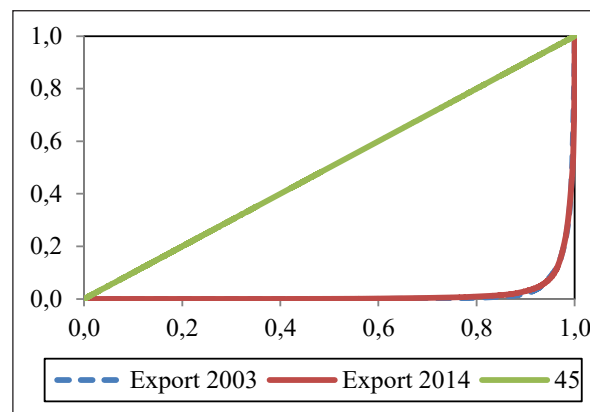


Figure 3.4 Lorenz Curve for FYR Macedonia

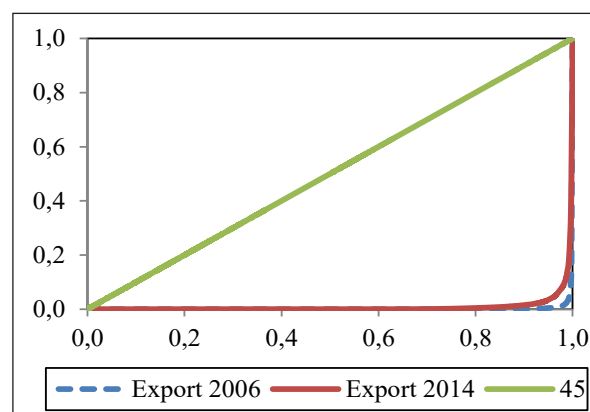


Figure 3.5 Lorenz Curve for Montenegro

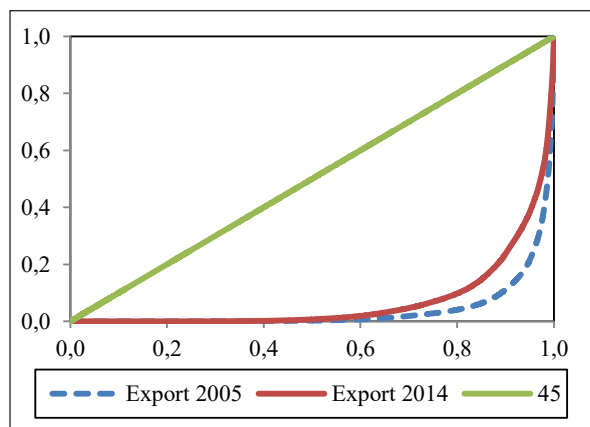


Figure 3.6 Lorenz Curve for Serbia

Source: Authors' own calculation based on International Trade Centre data

4. CONCLUSION

In the last decade export of most SEECS to the EU significantly increased in its absolute value. However, this trend has not been followed by expected improvement in export patterns and export quality. Despite the experiences of CEECS in the 1990s proving that trade liberalization and dynamic adjustment process could accelerate changes in export specialization and specialization dynamics in terms of a greater alignment with the needs of the EU market, research results of SEECS show a different case. A rapid shift in revealed comparative advantages of SEECS and their export structure that would bring the countries closer to the EU demand did not happen for most of them, or at least not to the extent it was expected.

Comparing the results from the beginning and the end of the analyzed period, we found some evidence of a slight despecialization in most SEECS: number of product groups with comparative advantage has increased while the maximum Balassa index and standard deviation as well as cumulative export share of those product groups decreased. The level of export product concentration was also reduced but the export to the EU is still highly concentrated on a small number of product groups.

Based on the Michaelly index, the analysis showed that export structure in these countries was significantly changed in a relatively short time period. However, high specialization of

items remained still largely dominated by primary and resource based products, low-skill products, and low-technology intensive products. The main failure of all these countries is their weak performance in the production of research-intensive goods.

The analysis of distribution of the Balassa index by using the Lorenz curve yielded interesting information about dynamics of country advantages in international trade. Almost all the countries, especially Croatia and Serbia, reported a positive trend in the analyzed period in terms of a greater alignment of their export structure with demand in the EU. However, despite those positive movements, large inconsistency between export specialization of SEECS and the needs of the EU market still exists. There are a large number of products with a significant and growing demand in the EU that the analyzed SEECS do not export or export in negligible quantities. This surely raises the question of a weak convergence of SEECS economies with the EU members' economies and possible problems in the association process.

5. REFERENCES

1. Balassa, B. (1965) Trade liberalization and 'revealed' comparative advantages. *The Manchester School of Economic and Social Studies*. 32(2), pp. 99-123.
2. Borbély, D. (2006) Trade Specialization in the Enlarged European Union. *Physica-Verlag Heidelberg*. Springer Science & Business Media [Online]. Available from: https://books.google.ba/books?id=N_Qzj4Eub9YC&pg=PA1&lpg#v=onepage&q=trade%20specialization%20structure&f=false [Accessed 20 March 2017]
3. Brasili, A., Epifani, P. & Helg, R. (2000) On the Dynamics of Trade Patterns. *De Economist*. 148(2), pp.233-257.
4. Caselli, P. & Zaghini, A. (2005) International Specialization Models in Latin America: The Case of Argentina. *Banca d'Italia*, Discussion Paper No. 558
5. De Benedictis, L. & Tambari, M. (2002) A Note on the Balassa Index of Revealed Comparative Advantage. Working Paper

- No. 158. Università Politecnica delle Marche (I), Dipartimento di Scienze Economiche e Sociali
6. European Commission. *European Neighbourhood Policy and Enlargement Negotiations*. [Online]. Available from: https://ec.europa.eu/neighbourhood-enlargement/countries/check-current-status_en [Accessed 30 March 2017]
 7. European Commission (2005) The Directorate General for Enterprise and Industry. *Competitiveness and Economic Reforms*. [Online]. Available from: <http://ec.europa.eu/DocsRoom/documents/3628/attachments/1/translations/en/renditions/native> [Accessed 20 March 2017]
 8. Ferrarini, B. & Scaramozzino, P. (2011) Indicators and Patterns of Specialization in International Trade. *NCCR Trade Working Paper No. 10*. NCCR Trade Regulation Swiss National Centre of Competence in Research
 9. Halilbašić, M. (2012) Trade Advantages and Specialization Dynamics of SEE Countries. *Conference Proceedings*. The 6th International Conference of the School of Economics and Business "Beyond the Economic Crisis: Lessons Learned and Challenges Ahead". 12-13 October 2012. Sarajevo: School of Economics and Business University of Sarajevo
 10. Glejser, H., Gossens, K. & Eede, M. V. (1982) Inter-Industry versus Intra-Industry Specialization in Exports and Imports. *Journal of International Economics*. 12(3-4), pp. 363-369.
 11. International Trade Center (ITC). *Trade Map*. [Online]. Available from: <http://www.trademap.org/Index.aspx> [Accessed 20 February 2017]
 12. Kaulich, F. (2012) Diversification vs. specialization as alternative strategies for economic development: Can we settle a debate by looking at the empirical evidence? *UNIDO Development Policy, Statistics and Research Branch Working Paper Series*, Working Paper No. 3 [Online]. Available from: http://www.unido.org/fileadmin/user_media/Publications/Research_and_statistics/Branch_publications/Research_and_Policy/Files/Working_Papers/2012/WP032012_Ebook.pdf [Accessed 20 February 2017]
 13. Kim, S. (1995) Expansion of Markets and the Geographic Distribution of Economic Activity: The Trends in the U.S. Manufacture Structure – 1860-1987. *Quarterly Journal of Economics*. 110(4), pp- 881-908
 14. Klotz S., Kniahin, D. & Jansen, M. (2016) ITC Assessment of the Technology Levels of Exports: Methodology and Analytical Issues. *ITC Working Paper Series WP-01-2016.E*. [Online]. Available from: http://www.intracen.org/uploadedFiles/intracenorg/Content/Redesign/Projects/SME_Competitiveness/WP01-2016.E_final.pdf [Accessed 29 March 2017]
 15. Krugman, P. (1991) *Geography and Trade*. MIT Press: Cambridge MA
 16. Lall, S. (2000) The Technological Structure and Performance of Developing Country Manufactured Exports, 1985-1998. *QEX Working Paper Series*, Working Paper No. 44 [Online]. Available from: <https://unstats.un.org/unsd/tradekb/Knowledgebase/Technological-classification-of-exports-by-SITC> [Accessed 23 April 2017]
 17. Laursen, K. (2000) Do Export and Technological Specialisation Patterns Co-evolve in Terms of Convergence or Divergence? *Journal of Evolutionary Economics*, Vol.10, pp.415-436.
 18. Michaely, M. (1962) *Concentration in International Trade*. Amsterdam: North-Holland
 19. Mejia, J. F. (2011) *Export Diversification and Economic Growth: An Analysis of Colombia's Export Competitiveness in the European Union's Market*. Germany: Physica Verlag [Online]. Available from: <http://books.google.ba/books?id=D7ZkIi8-qF0C&pg=PA> [Accessed 10 April 2017]
 20. OECD (2011) *Globalization, Comparative Advantage and the Changing Dynamics of Trade*. [Online]. Available from: https://books.google.ba/books?id=a_4X2KqO6xUC&pg=onepage&q=classification%20

- of%20 products%20by% 20factor%20 intensity%202-digit&f=false [Accessed 29 March 2017]
21. Proudman, J. & Redding, S. (2000) Evolving Patterns of International Trade. *Review of International Economics*, 8(3), pp.373-396.
 22. Redding, S. (2002) Specialization Dynamics. *Journal of International Economics*, 58(2), pp.299-334.
 23. UNCTADSTAT. Product Classification. *Product by technological categories based on Lall (2002)* [Online]. Available from: http://unctadstat.unctad.org/EN/Classifications/DimSicRev3Products_Ldc_Hierarchy.pdf [Accessed 10 April 2017]
 24. United Nations Statistics Division (UNSTATS). Correspondence table. *Correspondence between HS 2002 and SITC rev. 3*. [Online]. Available from: <https://unstats.un.org/unsd/cr/registry/regso.asp?Ci=15&Lg=1&Co=&T=0&p=10> [Accessed 10 April 2017]
 25. Yilmaz, B. & Ergun, S. J. (2003) The Foreign Trade Pattern and Foreign Trade Specialisation of Candidates of European Union. *Ezoneplus Working Paper*, No. 19, Jean Monnet Centre of Excellence
 26. Zaghini, A. (2003) Trade Advantages and Specialisation Dynamics in Acceding Countries. *Working Paper No. 249*. European Central Bank
 27. European Central Bank (2004) Sectoral Specialization in the EU: A Macroeconomic Perspective. *Occasional Paper Series* No. 19 [Online]. Available from: <https://www.ecb.europa.eu/ffa2198d> [Accessed 20 March 2017]

Appendix 1:

Table 1.1: Current Status of SEECS in Relation with the EU

Country	Status	SAA (signed and entered into force)	Application for membership
Albania	Candidate	12/06/2006 signed 01/04/2009 entered	24/04/2009 (accepted 27/06/2014)
BiH	Potential candidate	16/06/2008 signed 01/06/2015 entered (Interim Agreement on Trade entered 01/07/2008)	15/02/2016
Croatia	Member	29/10/2001 signed 01/02/2005 entered	21/02/2003 (accepted 01/06/2004) (membership 01/07/2013)
FYR Macedonia	Candidate	09/04/2001 signed 01/04/2004 entered (Agreement on Trade entered 01/06/2011)	22/03/2004 (accepted 16/12/2005)
Montenegro	Candidate	15/10/2007 signed 01/05/2010 entered (Agreement on Trade entered 01/01/2008)	15/12/2008 (accepted 17/12/2010)
Serbia	Candidate	SAA and Interim Agreement on Trade 29/04/2008 signed 01/09/2013 entered into force	22/12/2009 (accepted 01/03/2012)

Source: Prepared by authors on the basis of the European Commission data
(https://ec.europa.eu/neighbourhood-enlargement/countries/check-current-status_en)

Table 1.2 Evolution of Trade Ratio to GDP in SEECs

Country		2010	2011	2012	2013	2014
Albania	Imports of goods	38.6	41.9	39.5	37.8	39.4
	Exports of goods	13.0	15.1	15.9	18.1	18.3
BiH	Imports of goods	54.7	60.3	59.3	57.7	61.1
	Exports of goods	28.5	31.9	30.5	31.9	32.8
Croatia	Imports of goods	33.7	36.5	36.9	37.9	40.1
	Exports of goods	19.8	21.5	21.9	22.0	24.2
FYR Macedonia	Imports of goods	58.0	65.7	66.9	61.3	64.2
	Exports of goods	35.5	41.8	41.2	39.6	43.5
Montenegro	Imports of goods	53.0	56.5	57.7	53.1	53.0
	Exports of goods	10.6	13.9	11.6	11.2	9.9
Serbia	Imports of goods	42.9	42.7	46.4	45.1	47.0
	Exports of goods	25.1	25.3	27.6	32.1	33.8

Source: International Trade Centre data

(Endnotes)

1. "The industrial structure of the economy and the distribution of the value added across sectors is the result of long-term trends in sectoral growth, associated with the process of economic growth, in which productivity developments, the increase in the standard of living, the structure of demand – closely related to income per capita developments, and international trade play an important role." (The European Commission 2005)
2. Croatia has been included in SEECs although the country became an EU member in the mid 2013. However, the fact that the country belonged to the SEECs for many years during the given time period prevailed as more important for this analysis.
3. ITC database does not include trade data for Serbia before 2005 as well as for Montenegro before 2006.
4. The difficulties of interpreting cardinal BI across countries and across time and the fact that the index is not symmetric and its mean value is not fixed, have led some researchers to propose various ways to "re-normalize" the original index. See, for example, Proudman and Redding (2000), Laursen (2000), etc. Weakness of these new measures is elaborated in details in De Benedictis and Tamberi (2001).
5. Geometrically, the Gini coefficient can be interpreted as the ratio of the area between the line of perfect equality and the Lorenz curve to the area of the triangle between the line of perfect equality and the diagram axes. (Kaulich 2012)
6. HHI geographical concentration measures the export concentration but from the export partners' aspect.
7. Product classification by technological categories according to Lall is based on SITC rev. 3 data. However, the data used for this research are based on HS2002. Therefore the correspondence table between HS2002 and SITC rev. 3 has been applied. (UNSTATS)
8. The data for Serbia are available from 2005, and for Montenegro from 2006.
9. A detailed list of all product groups with $BI > 1$ is given in Appendix 2 – for review purposes only.
10. The first problem is BI upper bond – it is variable and it inversely depends on the share of a country exports in world (or benchmark country group) exports. In particular, this means that BI upper bond varies across countries and across time. A second problem is related to the asymmetry of BI . The mean, $\mu(BI)$, is above the median, $m(BI)$, so that the distribution is skewed to the right; in all our cases $m(BI)$ is below 1; and in all cases $\mu(BI)$, is above 1. This means that the changes in sectors characterized by high values of BI will be over-weighted in terms of the effect on the overall sign of the comparative advantage dynamics (Halilbašić 2012).