

## **Regional Economic Competitiveness. The Case of Romania**

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**Abstract:** The paper approaches the issue of regional competitiveness in Romania, focusing on simple tools for analysis, namely the shift-share analysis (introduced by Dunn in 1960) and specific competitiveness indicators: RCA, RCA1 and RCA2. As documented in the literature, the level of such indicators and the changes that occur in their levels are key factors for an analysis of economic and social performance at regional and sub-regional levels (D’Elia, 2005; Chilian, 2012; Iordan et al., 2014; Pelinescu et.al., 2015). The classical form of shift-share analysis chosen by the authors envisages to “divide” the dynamics of a certain growth factor in a certain region into three components: national, sectoral and regional.

Given such issues, by using the sectoral shift-share analysis of exports completed by the indices-based competitiveness analysis in the paper will be identified the regions of

Romania which reveal dynamics of their economic structures conducting to high levels of external competitiveness (and, thus, to a higher degree of integration into the European Single Market), and to sustainable specializations, adequate to the requirements of building a modern economy, with high flexibility and high technological level.

**Keywords:** regional competitiveness, Romanian regions and counties, comparative advantage/disadvantage indices, shift-share analysis

**JEL Classification:** F14, R12, R15

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## Introduction

Internationally, the theoretical and methodological approaches on regional competitiveness and its determinants are extremely diverse (see, for instance, Kitson, Martin and Tyler, 2004; Boschma, 2004; Dudensing, 2008; Huggins, Izushi and Thompson, 2013; Aiginger and Firgo, 2015; Bekes, 2015). In terms of comparative advantage theory applied only to the regions, in the literature one may identify several theories that address the issues of regions as locations for export specialization (Hampton Roads, 2011): classical economic theory (comparative advantage and absolute advantage), neoclassical economic theory (endowment factors theory) Keynesian economic theory (regional export base multipliers), development economics (regional endogenous growth), new international trade theory (regional specialization), new economic geography (diversification and specialization processes, agglomeration of economic activities).

The factor endowment, attractiveness for investors and workforce, the labor policies applied in the territorial units coupled with the effectiveness of penalty represented by inter-regional migration of capital and labor (which once lost by a region are very difficult to be replaced) may cause that one region is successful and able to provide a higher than decent standard of living for its people, or one in a state of “relative bankruptcy”, when the efficiency of all its sectors is lower than that of the other regions, which is expressed in terms of long-term decline and exclusion (Camagni, 2002).

The processes of globalization and internationalization of economic activities and businesses determine important changes in the content of national, regional and even local advantages and of sectoral specialization at the local level through reconfiguration of collaborative/partnership relationships between companies

and between them and academia and public institutions, and due to changes in innovation processes at regional and local level (see, for instance, Isaksen and Karlsen, 2013). Both at national and regional level, the export sectors are predominantly exposed to international competition and are the main factors in the creation and dissemination of knowledge and innovation and, ultimately, of economic growth and the current sectoral structure of exports predetermine their future state, while the currently existing assets determine the new sectors to be developed in the future (Hausmann and Klinger, 2007; Kadochnikov and Fedyunina, 2013; Landesman, Leitner and Stehrer, 2015).

In literature, one may find many studies showing that in the economic integration process the less developed regions tend to develop unbalanced inter-sectoral trade relations with more developed regions, with a negative impact on the productive base, meaning the specialization of less advanced regions in labor-intensive sectors or that extensively use the natural resources, and not in modern sectors, competitive on international markets, which intensively use capital and/or knowledge and innovation (Camagni, 1992; Kallioras and Petrakos, 2010; Petrakos, Kallioras and Anagnostou, 2011). Knowledge and innovation are increasingly considered as the main factors for boosting regional competitiveness, a fact recognized in the EU policy by developing the concepts of smart specialization and construction of regional advantages and by development and implementation of smart specialization policy, with a sharp territorial/local focus, aimed at promoting the economic diversification of regions based on their assets and unique characteristics (McCann Ortega-Argiles, 2013; Boschma, 2013; Trippel, Asheim and Miörner 2014; Moodysson, Trippel and Zukauskaitė, 2015). Given such problems, by using the *sectoral shift-share analysis of exports* we try to identify in the following the regions of Romania that record developments in their economic structures capable of leading to high levels of external competitiveness (and thus to greater integration into the single market) and to sustainable specializations, appropriate to the requirements of building a modern economy, with high flexibility and high technological level. This analysis will be accompanied by an *indices-based analysis of competitiveness*, a method used in competitiveness studies in Europe (P. Annoni, K. Kozovska, 2010, 2013; Danon M., 2014; Sujová and Hlavackova, 2015; Munteanu *et al.*, 2010).

## 1. Methodological Issues

- The *shift-share method* (introduced by Dunn in 1960) is commonly used in regional analysis, due to its simplicity in capturing changes in the variables taken into account. It requires only relatively modest amounts of data that are generally available, the resulting analysis being quick and reasonably accurate (Nazara and Hewings, 2003). It is a commonly used methodology to obtain insights into the determinants of regional economic growth processes.
- This methodology can address several issues, such as increase in output, in employment and labor productivity growth, exports and imports growth, etc. (Fernández Vázquez *et al.*, 2005). These indicators and their changes may be key drivers of analysis of economic and social performance at regional and sub-regional levels (D’Elia, 2005; Chilian, 2012; Jordan *et al.*, 2014). In its “classical” form, such analysis aims to “divide” the evolution of a particular determinant of growth in a particular region based on three components:
  - i) the *national component*, which expresses how much a variable in each sector and region would have changed if it had experienced the same rate of increase as the overall average national rate (or the EU rate, for a broader analysis),
  - ii) the *sectoral component* (called sectoral mix), which expresses the situation of variables when each of the analyzed sectors would have experienced the same growth rate as the national one, less the previous global component and
  - iii) the *shift component* (called regional shift or competitive effect), as result of the difference between the actually observed trends and the developments calculated as a proportion of national developments, capturing those dynamic elements that are specific/particular for each region. This component can be interpreted as the overall result of a balance between “attractiveness” and “rejection” of a region for various industries (Leo and Philippe, 2005).

The shift-share analysis has as starting point the following equation:

$$\text{Total shift} = \text{NS} + \text{IM} + \text{RS}$$

(1)

where: NS is the national effect (country weights of the main groups of goods under CN), IM is the sectoral effect (sectoral mix effect) and RS is the regional effect. Calculation of the three components for each sector is as follows (D’Elia, 2005; Chilian, 2012):

1. The share of national exports by major commodity groups (national effect):

$$NS = NI_{st-1} * [(RO_t / RO_{t-1} - 1)]$$

(2)

where: s refers to each group of commodities as according to the CN and t and t-1 to the beginning and end of period, respectively, and NI relates to the export of a particular region to the national export.

Thus, the share of the national commodity groups is the export (mil. Lei or Euro) in a given region by groups of goods at the beginning of the analyzed period multiplied by the growth rate of Romania’s total export in the same period.

2. The sectoral mix (sectoral effect)

$$IM = NI_{st-1} * [((RO_{st} / RO_{st-1}) - 1) - ((RO_t / RO_{t-1}) - 1)]$$

(3)

3. The regional shift (regional or competitive effect):

$$RS = NI_{st-1} * [((NI_{st} / NI_{st-1}) - 1) - ((RO_{st} / RO_{st-1}) - 1)]$$

(4)

The regional shift reflects the competitive component in a region, namely the unique dynamic elements that contribute to its export performance. In other words, it reveals which are the leading or laggard regions and product groups as compared to the national levels. The analysis may be further detailed by components, namely: a regional comparative advantage component (ACR) and an allocation component (CA). The decomposition of the regional shift component is important at sub-regional/county level for any existing scale effect when then regions differ much in size (D’Elia, 2005; Esteban-Marquillas, 2000; Baxendine *et al.*, 2005).

$$ACR = NI_{t-1} * (RO_{st} / RO_{t-1}) * [(NI_{st} / NI_{st-1} - 1) - (RO_{st} / RO_{st-1}) - 1]$$

(5)

$$CA = [NI_{st-1} - NI_{t-1} * (RO_{st}/RO_{st-1})] * [(NI_{st}/NI_{st-1} - 1) - (RO_{st}/RO_{st-1}) - 1]$$

(6)

2. The *indices-based analysis* has as reference the approach in the study of Sujová and Hlavackova (2015), where competitiveness is seen in terms of trade relations, which allows highlighting the potential of a region to focus its local development policies towards those sectors or areas of activity that have competitive advantage in the international market.

In such a context, in the current paper result indicators computed at regional level, denoted by RCA, RCA1, and RCA2, were selected in order to reveal the comparative advantage of the large Romanian development regions and their counties in the international markets.

The RCA index highlights the ability of a county to export certain products and is computed as follows:

$$RCA = \ln[(x_{ij}/m_{ij}) / (X_j/M_j)],$$

(7)

where:

$x_{ij}$  = export value of the  $i$  product group in the  $j$  county;

$m_{ij}$  = import value of the  $i$  product group in the  $j$  county;

$X_j$  = total amount of export of the  $j$  county;

$M_j$  = total amount of import of the  $j$  county;

From the point of view of the interpretation of results, the  $RCA < 0$  indicates comparative disadvantages in trade and  $RCA > 0$  indicates the presence of comparative advantages in commodity trade.

The competitiveness growth indicator (RCA1) is computed as follows:

$$RCA1 = (x_{ij}/X_j) / (X_j/X)$$

(8)

where:  $X$  is the total export of Romania.

As economic interpretations of its values, a  $RCA1 > 1$  shows a comparative advantage of a certain industry at national level, and a  $RCA1 < 1$  reveals a comparative disadvantage.

The net trade performance indicator (RCA2) highlights the competitive ability and is calculated as follows:

$$RCA2 = (x_{ij} - m_{ij}) / (x_{ij} + m_{ij}),$$

(9)

The interpretation of this indicator is as follows:

$RCA2 = -1$  means no export of products;

$-1 < RCA2 < 0$  indicates competitive disadvantages;

$RCA2 = 0$  indicates that export is equal to import;

$0 < RCA < 1$  indicates comparative advantages;

$RCA2 = 1$  means no import of products.

In the current paper, with the help of classical shift-share analysis we tried to evaluate the sector development and external competitiveness lags of regions and counties of Romania in terms of foreign trade in the regions or in exports.

Based on data provided by the Romanian National Institute of Statistics (statistical publications, the TEMPO-on line data base), the issue of export sectoral structure dynamics pertaining to regional competitiveness in Romania are analyzed for the 2005-2013 period, and for the 8 development regions and their counties.

By product groups, the following broad groups as according to the Combined Nomenclature (NC) are considered for our analysis: I – Live animals and animal products, II – Vegetable products, III – Animal or vegetable fats and oils, IV – Food products, beverages, tobacco, V – Mineral products, VI – Chemical products and related products, VII – Plastics, rubber and articles thereof, VIII – Raw and tanned hides and skins, furs, and articles thereof, IX – Wood, cork and wickerwork products, X – Pulp, paper and cardboard, and articles thereof, XI – Textiles and articles thereof, XII – Footwear, hats, umbrellas and similar articles, XIII – Stone, cement, pottery, glass products and from similar materials, XV – Basic metals and articles thereof, XVI – Machinery, equipment and appliances, XVII – Transport means, XVIII – Optical, photographic, cinematographically, measurement and control instruments and apparatus, medical instruments, XX – Various commodities and products, XXII – Other products, not elsewhere specified.

## 2. Presentation of results

The exports of Romanian regions during the 2005-2013 period highlights two relatively distinct periods: 2005-2008 (pre-crisis) and 2009-2013 (crisis and post-crisis), with sharp declines in 2009 and partial in 2012, overall and for the main groups of products (according to the CN classification), with certain regional and/or sectoral peculiarities. The change in the sectoral structure of regional exports has partially occurred towards increasing the competitiveness of product groups with mid- and high-technology level in the foreign markets, and towards greater integration into the international value chains of high and medium technology, but also partly towards increasing the quality and competitiveness of products from agriculture, underrepresented in the structure of Romanian exports before joining the EU due to low competitiveness.

Of the two analyzed sub-periods, we focused mainly on the crisis and post-crisis period (2009-2013), in order to identify the potential structural changes induced by it. In this case, to the above-mentioned product groups that registered a negative sectoral mix the XVI group was also added, one of the groups with significant share in the national and regional exports.

In this period, the impact of sectoral negative mix was offset for certain product groups in all regions by the effects of positive regional shifts: Nord-Est (the V, VIII, XI, XV and XVI product groups), Sud-Est (the V, VIII and XI product groups), Sud Muntenia (the XI, XII, XV and XXII product groups), Bucharest-Ilfov (the VIII, XI, XII and XIII product groups), Sud-Vest Oltenia (the XII, XIII and XVI product groups), Vest (the V, XV, XVI and XXI product groups), Nord-Vest (the V, XIII, XV and XXII product groups) and Centru (the VIII, XII, XIII, XV and XVI product groups). Under circumstances of positive sectoral mix, the sub-period is also characterized by positive and/or negative developments in the regional shift component of the export of various groups of products in all regions (Table 1). The most obvious positive sectoral export change (both positive sectoral mix and regional shift component or RS turned positive in the 2009-2013 period) is observed in the Nord-Vest, Central, Nord-Est, Bucharest-Ilfov and Vest regions.

**Table 1**

**The evolution of regional shift (RS) for the export of product groups according to the CN classification, under a positive sectoral mix in the 2009-2013 period over the whole analyzed period, 2005-2013**

	Product groups with negative RS in the 2005-2013 period and also negative in the 2009-2013 period	Product groups with negative RS in the 2005-2013 period and positive in the 2009-2013 period	Product groups with positive RS in the 2005-2013 period and negative in the 2009-2013 period	Product groups with positive RS in the 2005-2013 period and also positive in the 2009-2013 period
Nord-Est	II, III, VI,	IV, X, XVII, XVIII,	XXII	I, VII, IX, X
Sud-Est	IV, VII, IX, XVII, XVIII	VI		I, II, III, X, XXII
Sud Muntenia	III, VI, IX, XXII		I, II, X	IV, VII, XVII, XVIII
București-Ilfov	IX, XVII	I, VII, X, XVIII	II, III, IV	VI, XXII
Sud-Vest Oltenia	VI, VII, IX, X	XVIII	III, IV	I, II, XVII, XXII
Vest	I, II, IX, XXII	IV, VII, XVII	XVIII	III, VI, X
Nord-Vest	X, XXII	I, II, IV, VI, XVIII	IX	III, VII, XVII
Centru	XVIII	II, IV, XVII	I, VI, XXII	III, VII, IX, X

Source: Authors' computations based on data from the Romanian National Institute of Statistics and TEMPO-on line.

The *competitive regional effect decomposition* emphasizes the relatively lower share of regional competitive advantage (ACR) in relation to the allocation effect (CA) in all the regions and for all the analyzed groups of products (with the exception of product group V - Table 2). The greatest influence of comparative advantage is found in the Bucharest-Ilfov and Vest regions and the lowest in the Sud-Vest Oltenia and Nord-Est regions, in line with the share of these regions in the structure of national exports.

Table 2

**Decomposition of regional shift component of exports  
by main commodity groups, 2013 to 2005**

	Nord- Est		Sud- Est		Sud Munte- nia		Sud-Vest Oltenia	
	ACR	CA	ACR	CA	ACR	CA	ACR	CA
I	2.1	23.8	6.8	40.9	1.9	13.9	0.5	7.6
II	-7.2	-80.1	44.5	268.2	3.5	25.3	1.2	17.6
III	-4.7	-52.1	7.5	45.2	-6.6	-47.0	0.0	0.3
IV	-9.5	-105.4	-5.8	-35.0	13.3	95.6	0.6	8.7
V	-216.2	-155.2	58.2	556.0	15.8	71.2	-21.9	13.0
VI	-2.5	-28.2	-5.7	-34.2	-44.5	-319.3	-10.1	-153.2
VII	0.8	8.4	-3.5	-21.2	2.6	18.9	-8.2	-124.0
VIII	-0.6	-6.9	0.2	1.4	-0.7	-5.0	0.9	13.8
IX	7.3	81.3	-3.8	-22.9	-3.7	-26.4	-2.2	-32.9
X	-1.8	-20.5	0.0	0.1	1.1	7.6	-0.3	-4.0
XI	8.7	96.2	8.8	52.9	-3.0	-21.8	4.6	69.7
XII	-3.4	-38.1	1.1	6.9	-0.9	-6.3	0.3	4.6
XIII	-0.7	-7.4	0.7	4.0	4.3	31.1	-0.1	-1.7
XV	-8.2	-90.4	-153.3	-924.6	16.7	119.8	-11.6	-177.0
XVI	10.1	112.3	-0.8	-4.6	-44.4	-318.5	5.1	77.8
XVII	-0.5	-5.5	-125.1	-754.5	177.5	1272.2	25.8	391.4
XVIII	-2.3	-25.6	0.0	-0.2	5.5	39.2	0.0	-0.7
XX	-8.7	-96.0	-4.4	-26.6	27.1	194.4	-1.1	-16.6
XXII	0.4	4.8	2.7	16.2	-12.3	-88.4	2.8	42.3
	Vest		Nord- Vest		Centru		Bucharest- Ilfov	
	ACR	CA	ACR	CA	ACR	CA	ACR	CA
I	-12.7	-68.1	-0.2	-1.5	1.3	10.2	-5.7	-21.0
II	-25.3	-135.9	-24.6	-194.5	-2.2	-18.2	27.2	100.6
III	0.2	1.2	5.8	45.8	0.1	1.2	0.6	2.4
IV	-0.9	-5.1	-8.4	-66.0	-3.0	-24.4	30.9	114.4
V	9.2	-2.0	0.0	-2.7	98.4	-81.1	0.0	-342.6
VI	35.3	189.9	-8.8	-69.2	7.8	64.0	80.5	298.0
VII	-4.6	-24.8	29.7	234.7	4.7	38.1	-32.3	-119.5
VIII	0.0	0.2	-1.9	-15.3	1.9	15.9	-0.9	-3.1
IX	-14.2	-76.4	1.8	14.3	29.2	238.7	-40.4	-149.7

X	2.2	12.0	-1.6	-12.8	2.9	23.3	-1.7	-6.4
XI	-10.1	-54.3	4.4	35.0	16.2	132.5	-72.3	-267.5
XII	7.9	42.4	4.2	33.0	0.2	1.9	-11.5	-42.5
XIII	0.4	2.3	0.1	1.1	-0.9	-7.3	-5.5	-20.5
XV	49.0	263.5	33.5	264.5	25.3	207.4	82.0	303.4
XVI	-153.1	-823.1	5.7	45.2	106.4	870.9	23.6	87.3
XVII	-97.0	-521.8	0.8	6.5	-24.7	-202.0	-30.4	-112.7
XVIII	8.6	46.0	-3.3	-26.0	-3.1	-25.4	-2.7	-9.9
XX	21.5	115.5	18.1	142.9	-12.4	-101.3	-53.7	-198.9
XXII	-0.8	-4.3	-1.7	-13.1	2.9	23.6	5.3	19.5

Source: Authors' computations based on data from the Romanian National Institute of Statistics and TEMPO-on line.

Deepening the analysis of competitiveness in terms of export to county level by using the RCA1 indicator<sup>1</sup>, one may find that few products have maintained comparative advantage for the entire analyzed period. The economic and financial crisis of 2008 prompted certain restructuring, eliminating some product groups and introducing new ones, with comparative advantage in the market. Product groups that maintained their competitiveness during 2005-2013 and their share in total exports in the Romanian counties in 2013 are shown in Table 3.

As regards the Bucharest Municipality, although it reveals as having the highest share in the Romanian foreign trade, namely around 24% a share in 2013 (declining as compared to 2005, when its share reached a little above 30%) and 16.11% a share in Romanian total export, it has registered no comparative advantage for any product group in all the years under analysis. Such a situation is currently difficult to explain and requires a detailed analysis, specific for the structural evolution of export at the territorial level of Bucharest Municipality, based on statistical information adequate to the goal of research.

1 Data available upon request.

Table 3

**Competitive export groups during the 2005-2013 period, by counties**

Region/County	Product groups with export comparative advantage over the 2005-2013 period	Share of selected product groups in total export, %, in years:		
		2005	2010	2013
Nord-Est				
Bacau	V, VI, IX, XI, XII	88.0	65.5	61.7
Botosani	VIII; IX, XI, XII, XV, XX	91.5	90.1 <sup>1</sup>	89.3
Iasi	IV, VI, XI, XV, XVI, XVII, XX	87.7	93.2	94.4
Neamt	IX, XI, XIII, XV, XVI, XX	95.8	85.8	92.5
Suceava	IX, X, XI, XII, XVI, XVII, XX	95.7	87.2 <sup>2</sup>	89.9
Vaslui	III, IV, XI, XII, XVI, XVIII, XX	98.0	97.5	94.4
Sud-Est				
Braila	I, II, XI, XII, XV, XVI, XVII	97.6	98.4	96.7
Buzau	XI, XV, XVI, XX	81.0	52.4 <sup>3</sup>	49.9
Constanta	V, VII, XV, XVII	86.6	86.6	72.9
Galati	XV	90.9	80.1	58.1
Tulcea	VI, XI, XV, XVII	96.5	90.3	84.6
Vrancea	II, IX, XI, XV, XVI, XX	98.8	91.2 <sup>4</sup>	87.7
Sud Muntenia				
Arges	XVI, XVII	73.2	88.0	85.0
Calarasi	VI, IX, X, XI, XV, XVI	92.5	59.3 <sup>5</sup>	55.9
Dambovita	VI, XI, XV, XVI	91.6	87.7	85.0
Giurgiu	I, III, VI, VII, IX, X, XI, XV, XVI, XVII	98.4	9.39	95.0
Ialomita	I, II, III, IV, VI, XI, XV, XVI	98.7	83.1	98.8
Prahova	V, VI, XI, XVI	84.3	81.3 <sup>6</sup>	78.5
Teleorman	I, VI, XI, XV, XVI	96.4	68.9 <sup>7</sup>	73.4
Sud-Vest Oltenia				
Dolj	XI, XV, XVI	30.9	80.1	88.3
Gorj	I, II, VII, IX, XI, XIII, XV, XVI, XX	99.7	92.5	86.4
Mehedinti	IX, XI, XV, XVI, XVII, XX, XXII	92.6	98.1 <sup>8</sup>	93.0
Olt	XI, XV, XVI	95.5	66.7 <sup>9</sup>	66.2
Valcea	VI, VII, IX, XI, XV, XVI, XVII, XX	95.8	95.2 <sup>10</sup>	88.6
Vest				

Arad	XI, XVI, XVII, XX	84.5	83.8	86.2
Caras-Severin	IX, XI, XV, XVI, XVII, XVIII, XX	96.0	98.1	95.7
Hunedoara	IX, XI, XII, XV, XVI, XVII	97.3	93.0 <sup>11</sup>	94.5
Timis	VII, XVI	4.3	11.9 <sup>12</sup>	9.6
Nord-Vest				
Bihor	XI, XII, XVI, XX	67.6	35.2 <sup>13</sup>	33.4
Bistrita-Nasaud	I, VII, IX, XI, XV, XVI, XVII	88.5	95.8 <sup>14</sup>	96.8
Cluj	XVI	22.3	78.4	28.8
Maramures	IX, XI, XV, XVI, XX	81.3	87.8	81.8
Satu Mare	XI, XII, XV, XVI, XX	92.4	70.5	56.6
Salaj	XI, XV, XVI, XX	95.2	90.2 <sup>15</sup>	90.0
Centru				
Alba	IX, XI, XII, XIII, XV, XX	88.3	80.1 <sup>16</sup>	78.6
Brasov	IX, XV, XVI, XVII	65.3	74.0	94.9
Covasna	I, IX, XI, XV, XVI, XX	94.7	90.5 <sup>17</sup>	90.2
Harghita	VII, VIII, IX, X, XI, XV, XVI, XX	94.8	93.0 <sup>18</sup>	87.3
Mures	VI, XI, XII, XIII, XV, XVI, XVII, XX	94.3	92.5	90.5
Sibiu	VIII, XI, XV, XVI, XVII	76.5	83.0 <sup>19</sup>	85.6
Bucharest-Ilfov				
Ilfov	II, IV, V, VII, XI, XV, XVI	63.9	74.6 <sup>20</sup>	72.9

Note: 1. Group XI accounted for 79.1% of the export; 2. Grupa IX accounted for 40% of the export; 3. Groups II, III and IV accounted for 35.6% of the export in 2013 and also showed comparative advantage in 2013; 4. Group XI accounted for 78.1% of the export in 2013; 5. Groups I and II, which accounted for 29.6% of the export in 2013 have also recorded comparative advantage in 2013; 6. Groups V and VI accounted for 33.1% and 34.5%, respectively, of the export; 7. Group IV, which accounted for 14.8% of the export in 2013 showed comparative advantage in 2013; 8. Group XVII accounted for 54.9% of the export; 9. Group XV accounted for 54.4% of the export; 10. Groups VI and VII accounted for 33.1% and 32.9%, respectively, of the export; 11. Group XVI accounted for 46.2% of the export; 12. Group XVI, which accounted for 37.2% of the export in 2013, registered comparative disadvantage; 13. Group XVI, which accounted for 44.1% of the export in 2013 registered comparative disadvantage; 14. Group XVI accounted for 54.0% of the export; 15. Group XV accounted for 63.1% of the export; 16. Group IX accounted for 49% of the export; 17. Group XI accounted for 50.9% of the export; 18. Group XI accounted for 41.7% of the export; 19. Group XVI accounted for 45.4% of the export; 20. Group IV accounted for 37.4% of the export.

Source: Authors' computations based on data from the Romanian National Institute of Statistics and TEMPO-on line.

One may notice that the product groups which have maintained comparative advantage in exports over the 2005-2013 period at county level have also major shares in the export of Romanian counties, except for Cluj County (2005 and 2013); Calarasi County (2010 and 2013), Buzau County (2010 and 2013), Bihor County (2010 and 2013) and Timis County in all the analyzed years.

Also the data in Table 3 show that some counties can be considered as specialized in the export of a single group of products, such as Botoşani (group XI); Galati (Group XV) Vrancea (group XI); Tulcea and Arges (Group XVII), with a share in the export of the county around or above 70% in 2010. In 2013, following the economic crisis, some changes in occurred in values, ranging from 60 to 80%. A special situation was recorded in 2013 in the Cluj County, when a dramatic decrease in the export of group XVI has occurred, against the background of industry reallocation (the best known example is the Nokia Company, which has closed its factory in Romania).

Also surprising is the fact that Timis County maintained comparative advantage during the 2002-2013 period for only two product groups (VII, XVI) whose share in exports was about 12% in 2010, to decrease to about 10% in 2013 although annual data indicates a greater number of product groups.

## Conclusions

Far from being exhaustive, our scientific approach of regional competitiveness based on specific indices, namely RCA, RCA1, and RCA2 has provided more detailed information about the regional competitiveness in Romania and revealed, generally speaking, to what extent the participation of regions to foreign trade is advantageous or not, and in particular, which were the products with competitive or comparative advantage.

The assessment of sectoral development and external competitiveness lags in the Romanian regions and counties pertaining to regional foreign trade, and to regional exports, respectively, by using the classical shift-share analysis, has revealed that the shift in the export sectoral structure by main product groups in a region over a certain period was determined, firstly, by the overall changes occurred in the Romanian economy – reflected by the dynamics of total exports. Secondly, it was generally determined by the changes occurred in the economy

of each region or county, knowing how much important are the local factors in ensuring an economic environment that favors the increase in company competitiveness, which in Romania mainly value the comparative advantages and to a lesser extent the competitive advantages.

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