

ROMANIAN FOREIGN TRADE - A REGIONAL PERSPECTIVE

Gabriela Carmen Pascariu

“Alexandru Ioan Cuza” University of Iași

Ramona Frunză

“Alexandru Ioan Cuza” University of Iași

Anca Stângaciu

University of Bacău

Abstract: *The increasing integration of Romania in the global economy is a reality of the last years, proved through a constant growth of the foreign trade with other countries, which exceeded, in terms of dynamics, both GDP and industrial production.*

In the first part of our paper, we intend to analyze the evolution of Romanian foreign trade in the period 1995-2007, focusing on the proportions of the imports and exports, at regional level. We wish to emphasize the correlations between the indicators that describe the degree of openness to foreign trade and indicators of competitiveness and specialization in different industries. The main goal of our approach is to highlight the sectors which generate comparative advantages and potential competitiveness poles, contributing significantly to the increase of the Romanian economy, expressed in GDP/capita.

In the second part of the paper, based on the frame of analysis and interpretation defined and implemented in the first part, we intend to establish if the agglomeration processes in some regions of our country will lead gradually to the strengthening of growth poles and, therefore to boost the foreign trade.

Keywords: foreign trade, regional specialization, openness degree, comparative advantage, competitiveness.

JEL Classification: F14, R11, R12, R58

1. INTRODUCTION

The literature on trade theory provides different perspectives on the evolution of what we call specialization and spatial concentration. These phenomena have generated considerable interest among economists, geographers and historians. Since the work of Adam Smith (*The Wealth of Nations*, 1776), the specialization was related to regional development and economic growth. Also, the work of D. Ricardo, *Principles of political economy and the imposition* (1821) was the source of

inspiration for many economists who have tried to develop theories related to the specialization of national and inter-regional trade. With Heckscher and Ohlin, in the theories of trade has gradually appeared a spatial dimension in trade development.

While specialization is closely related to the evolution of international trade theory, industrial concentration has been "the instruments" of academics, who have studied the localization of the 19th century (Aiginger and Rossi-Hansberg, 2006).

With regard to our country, the starting point on the analysis of specialization and regional concentration is provided by the Eastern European countries because in this area have undergone a reorientation of trade from East to West. Progressive integration of these countries is a result of a change in the productive structures and regional specialization (Traistaru, Nijkamp and Longhi, 2005). Romania, as all other countries in Eastern Europe has undergone major changes in terms of its commercial exchange. Most of these countries have an intra-industry trade with the EU, but the peripheral regions (Romania, Bulgaria) are an exception, with an industry-type inter-industrial. Strong specialization differences persist between these countries, as this so-called center-periphery scheme. Center converges to EU standards, having a development of intra-industry and an increase in specialization while the periphery still depends on the comparative advantages of competitive industries.

2. THE EVOLUTION OF INTERNATIONAL TRADE OF GOODS IN ROMANIA

In what follows we make an analysis in a regional profile of international trade of Romanian, on section of the Combined Nomenclature (CN)¹³.

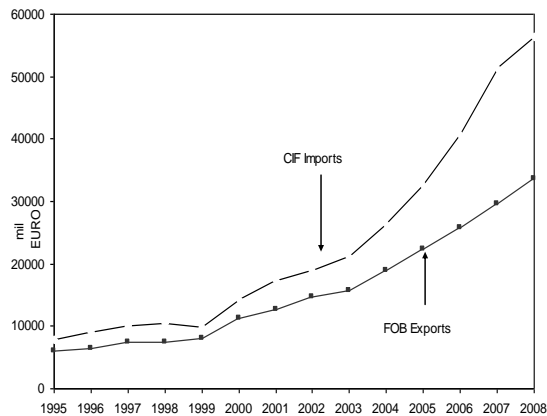
About the evolution of international trade of goods in Romania in the period 1995-2008, we can say that it has recorded an upward trend, thus FOB exports in 2008¹⁴ reached the value of 33,627.9 million euro (up 13.8% from the year 2007 and 5.5 times compared to 1995) and CIF imports were 56,336.8 million EUR (up 9.8% from the year 2007 and 7.1 times compared to 1995). This faster growth of imports compared to exports of goods has determined a negative trade balance, especially towards the end of the period analyzed. In 2008, the deficit FOB / CIF of the international trade of goods was 22,708.9 million EUR, increasing by 4.3% compared to 2007 and 12.4 times compared to 1995.

In *the figure 1*, we present the evolution of export FOB and CIF imports from Romania in the period 1995-2008:

¹³ We mention that the analysis of foreign trade flows is in FOB and CIF.

¹⁴ Data for 2008 are provisional according to the methodology for the realization of foreign trade statistics.

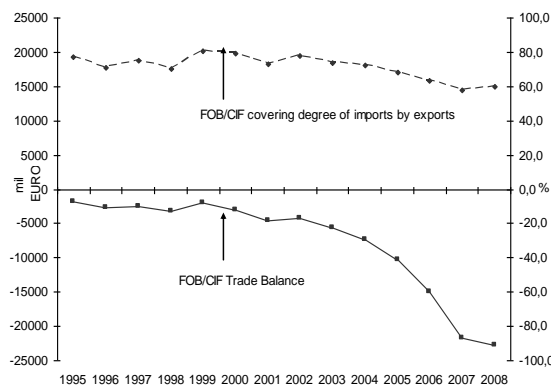
Figure 1 - The evolution of export FOB and CIF imports from Romania in the period 1995-2008



Analyzing the figure 1 we observe that in the period 1995-2008, CIF imports rose to a greater extent than the FOB exports.

Along with the balance of trade balance, in the understanding of international trade competitiveness of Romania, an important indicator it is called *the degree of coverage* of CIF imports with exports FOB. If at the beginning of period, the value of imports was compensated by exports at a rate of 70% - 80%, in recent years, the degree of coverage of imports by exports fluctuate around the value of 60%. *Figure 2* is suggestive in this regard.

Figure 2 - The evolution of trade balance FOB / CIF (million €) and the degree of coverage of imports by exports FOB / CIF (%) in Romania between 1995-2008



So, making a comparative analysis between the two indicators expressed in Figure 2 (trade balance CIF / FOB and the degree of coverage of imports by exports), we see that both have known fluctuation during 1995-2002, and that afterwards, until 2007, having descending values. We are meeting a small recovery in the case of the degree of coverage of imports by exports in the year 2008.

2. INTERNATIONAL TRADE OF GOODS ON DEVELOPMENT REGIONS

We wish to analyze the international trade in goods, on development regions of Romania, considering four important aspects: the flow of exports, flows of imports, the sold of trade balance and the degree of coverage, regional dispersion / the level of regional concentration.

a) The flows of exports

The main exporting regions of Romania in the last 3 years were Bucharest-Ilfov (21.0% of total exports of the country in 2008), West (14.7% of total exports of the country in 2008) and South-Muntenia (14.5% of total exports of the country in 2008). On the opposite side is the North-East (4.6% of total exports of the country in 2008) and South-West Oltenia (7.6% of total exports of the country in 2008) had small share in the exports FOB of Romania. These contributions are raised in *Figure 3*.

Figure 3 - FOB export structure by region of development (%)

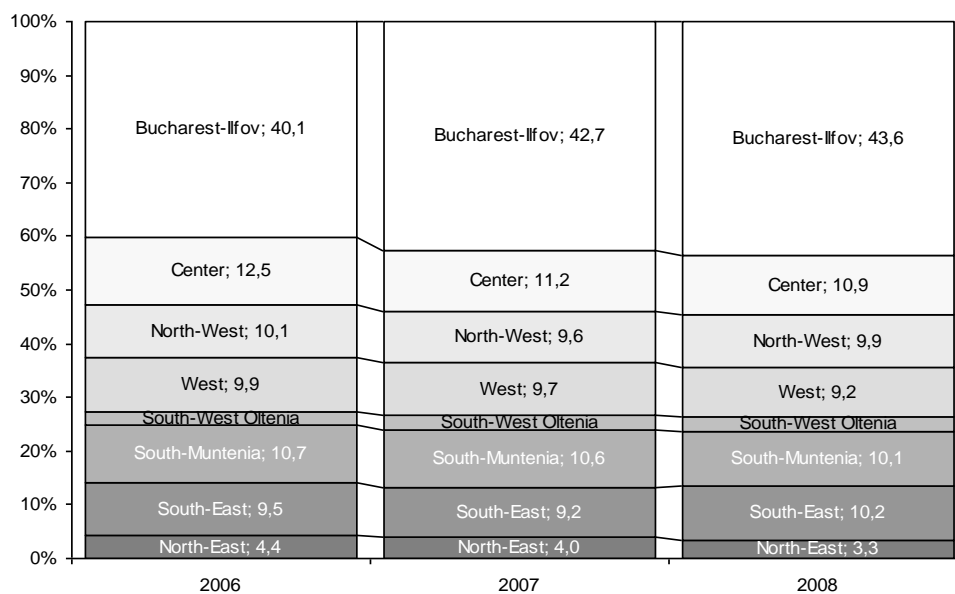


Therefore, it is easy to note that during 2006-2008, the development regions of Romania have remained relatively constant in terms of flows of exports, the the most significant contribution coming from Bucharest-Ilfov.

b) Flows of imports

Regarding the regional structure of Romania's CIF imports, this reflects the same degree of concentration. Thus, the Bucharest-Ilfov region is the largest importer in the last 3 years (43.6% of total imports of the country in 2008) to large distance from the second region as a share, Center (10,9% of total imports of the country in 2008). With low imports, the South-West Oltenia region (2.8% of total imports of the country in 2008) and North-East region (3.3% of total imports of the country in 2008) emerges more from the imports of the other development regions. In *the figure 4*, we can see this situation:

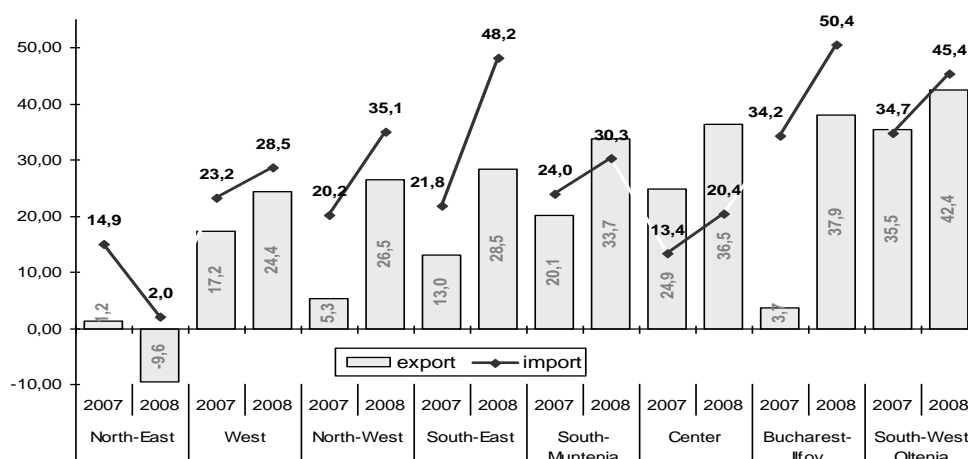
Figure 4 - Structure of imports CIF on development regions (%)



As in the case of exports FOB, we find that the Bucharest-Ilfov is the region that imports more in our country, being followed by the Center and South-Muntenia.

If we study the dynamics of the imports and exports in goods by region, before and after EU accession, can be observed that the upward trend it is find in all development regions (exception is the region North-East which in 2008 exported with less 9.6% than in 2006). The largest increase of the exports and imports in 2008, compared to the year preceding EU accession, we find in the South-West Oltenia and Bucharest-Ilfov and the smallest increase of imports and decreased of exports are register in the North-East. These differences emphasize the discrepancies between Bucharest-Ilfov region and other regions. To highlight better these gaps, we build *the figure 5*:

Figure 5 - Deviation (+/- %) to the year 2006 of the FOB export and import CIF on development regions (year 2006 = 100%)



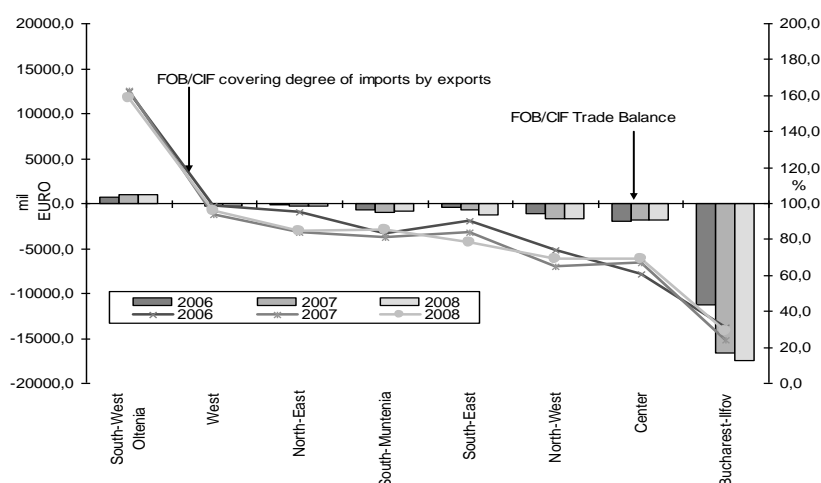
Analyzing *the figure 5*, we observe that in the case of the Bucharest-Ilfov region, the deviation from the 2006 of the FOB export was the following: in 2007, it had a deviation with 3% higher (as a result, exports have increased from the year 2006) and in 2008, the deviation was with 37.9% higher compared to 2007 (thus FOB exports have increased considerably in this region). With regard to imports CIF in Bucharest-Ilfov region, they rose in 2007 to 34.2% from the year 2006 and 50.4 in 2008. Region which recorded their lowest values is North-East (exports, deviation in 2007 was 1.2% compared to 2006 and -9.6 in 2008, and at import, the deviation was 14.9 in 2007 and 2% in 2008).

c) the sold of trade balance and the degree of coverage

Regarding the sold of trade balance, we point out that in the past three years, the largest negative sold of the balance of operations by international trade was registered in the Bucharest-Ilfov, it followed at a big difference to the Center and the North-West. Only in one region, South-West Oltenia, the value of exports was greater than the imports, but there are regions in which the balance trade deficit tends to zero (West and North-East).

The same conclusion follows from using the indicator named *the degree of coverage of imports with exports*, which in recent years has oscillated around the value of 60%. Only in Bucharest-Ilfov region we found a lesser degree of coverage value of imports by exports, in the remaining regions the expenditures made with imports are compensated by revenues from export in a proportion higher than the average calculated at the country level. *Figure 6* is suggestive in this regard

.Figure 6 - The sold of trade balance FOB / CIF (million €) and the degree of coverage of imports by exports FOB / CIF (%) by region of development

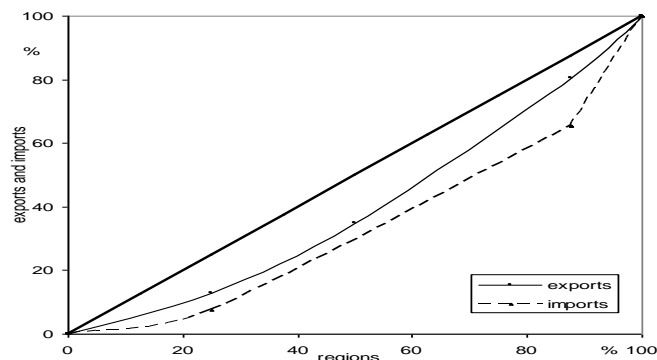


So, we can see easily that in terms of trade balance sold, this recorded negative values, at the highest level, in the Bucharest-Ilfov region(values that were accentuated from 2006 until 2008) and the South-West Oltenia recorded a positive sold in the mentioned years. Concerning the coverage of imports with exports, it was the highest in the South-West Oltenia (arriving in 2008 to approximately 160%) and lowest in the region of Bucharest-Ilfov (about 30% in 2008).

d) regional dispersion / the level of regional concentration

The analysis of the dynamics of international trade of Romania, can help us to express the degree of concentration of exports and imports by region. The graphic representation of this involves the construction of concentration curve of Lorentz-Gini and on her base, the finding of the degree of concentration by determining a coefficient - Gini index. In *figure 7*, we represent Lorentz-Gini curve and the concentration of exports and imports, by Romania's regions in 2008.

Figure 7 - The curve of concentration of exports and imports in 2008



Analyzing *figure 7*, we can see that the curves of concentration of export and import are not near the square diagonal, which certifies that there is a concentration of them, evidenced by the values obtained from the calculation of concentration indices. Gini index of export concentration, calculated by the *method of trapezes* is 19.0%, much smaller than that obtained in an import (31.7%), which means that there is an average concentration of groups in regions with low values, both for export and import.

In the structure of exports, during the past 3 years, the largest share of over 20.0% returned the "Machinery and mechanical appliances; machinery, appliances and electrical equipment; apparatus or reproducing recorded sound and images" and the regions with large contributions at the exports from this section are West, North-West and South-West Oltenia.

Figure 8 - The structure of the exports on the main sections of the Combined Nomenclature (%)

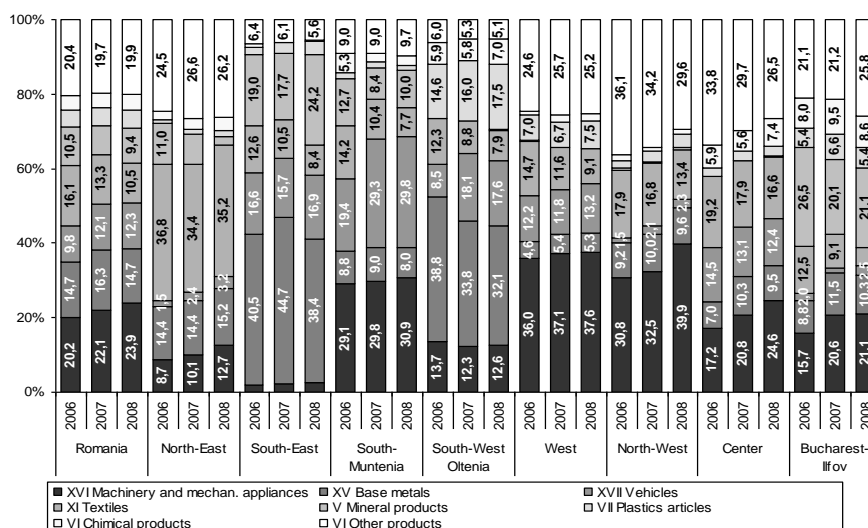
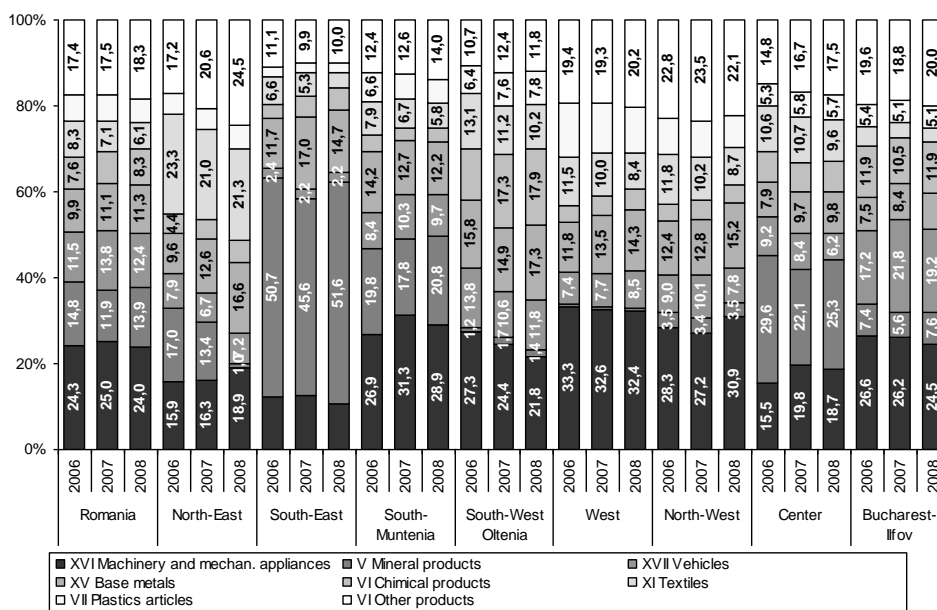


Figure 8 shows us that the largest exporters of machinery and mechanical appliances have been, in the period 2006-2008, the regions: West and North-West, with an average of over 35% of the total exports. The South-East and South-west Oltenia regions own supremacy in exports of base metals.

And at imports, as exports, the "Machinery and mechanical appliances; machinery, appliances and electrical equipment; apparatus or reproducing recorded sound and images" has the largest share in total imports, around of 24, 0%, and most of the imports section is doing in the Bucharest-Ilfov, West and North-West. To relief this, we analyze figure 9:

Figure 9 - The structure of the imports by main sections of the Combined Nomenclature (%)

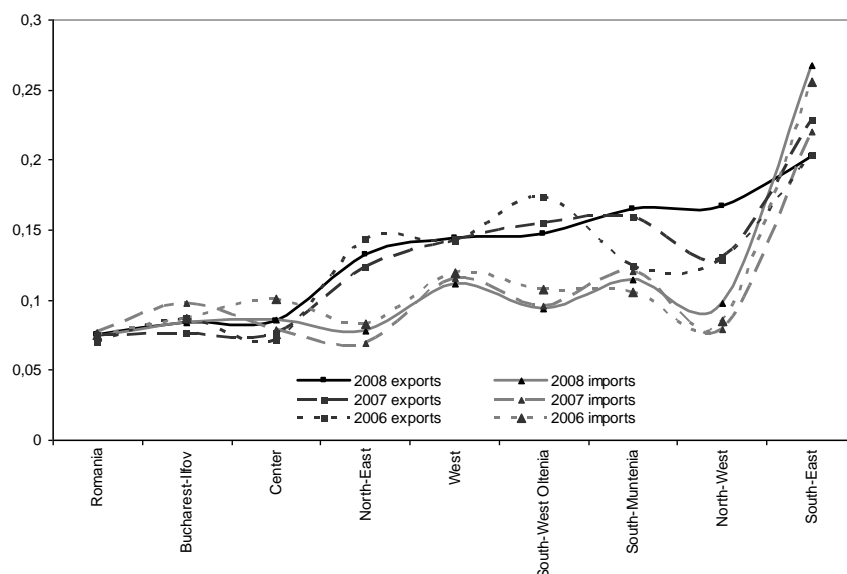


We see that in the 2006-2008 period, the South-East region was a net importer of mineral products (50.7% in 2006, 45.6% in 2007 and 51.6% in 2008).

Analyzing the figure 8 and 9, is observed that there are large discrepancies of the structure of international trade on both sections and regions. In this sense, for the numerical expression of this phenomenon was calculated the informational energy Onicescu, applying the formula corrected. Thus, for each region calculating the energy information Onicescu (corrected formula) of the distribution on sections from the Combined Nomenclature of the export and import, hierarchycing descending the regions, depending on the values calculated for export in 2008, is obtain the figure 9.

A region's export concentration on a few sections from the Combined Nomenclature determine that the value of the informational energy Onicescu to tend to 1, in this situation being the South-East region (38.4% respectively 24.2% of total exports from the region in 2008 were made on the "Base metals and articles thereof" and "Mineral Products") and North-West region(39.9% respectively 13.4% of total exports from the region in 2008 were made on the "Machine and mechanical devices, machinery, appliances and electrical equipment, apparatus or reproducing recorded sound and images "and" textile materials and articles thereof "). On the opposite side, is the Bucharest-Ilfov and Center regions. At import, the highest values of the informational energy Onicescu were obtained in South-East region(51.6% of total imports from the region in 2008 were made on the "Mineral Products") and South-Muntenia region (28 , 9% respectively 20.8% of total imports from the region in 2008 were made on the "Machinery and mechanical appliances, machinery, appliances and electrical equipment, apparatus or reproducing recorded sound and images" and "Mineral Products") and the lowest values are in the Bucharest-Ilfov and Center regions. In *figure 10*, we can observe clearer the concentration of foreign trade.

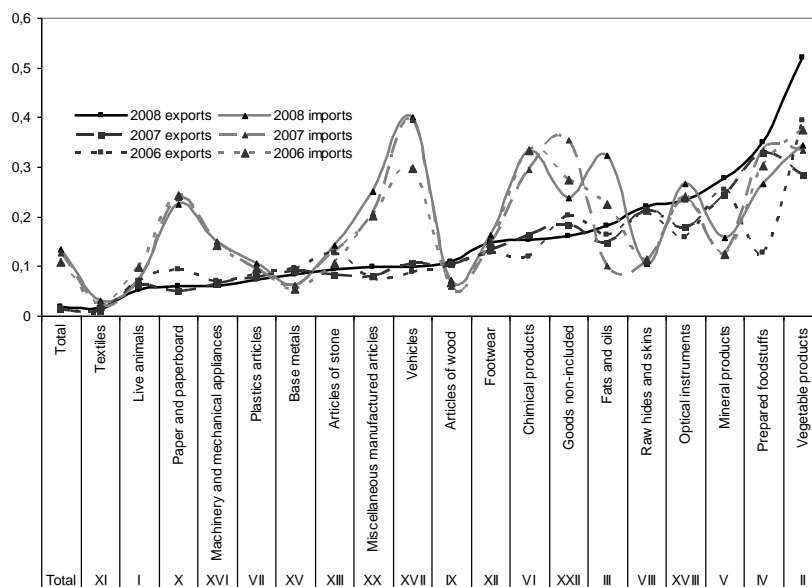
Figure 10 - The concentration of foreign trade by sections and regions of the Combined Nomenclature in the years 2006, 2007 and 2008 (the value of the informational energy Onicescu - corrected formula)



Seeing *figure 10* and comparing the curve of the informational energy Onicescu for export to that for import, is found that the export is more focused on sections of the Combined Nomenclature than import, in most regions, except the South-East region and in some years, Bucharest-Ilfov region.

Calculating for each section of the Combined Nomenclature the value of the informational energy Onicescu (corrected formula) of the distribution by region, both export and import, hierarchizing descending the sections, depending on the values calculated at export in 2008, is obtained the *figure 11*, on the basis of which the concentration of the export of one sections from the Combined Nomenclature, in a small number of regions, makes that the value of the informational energy Onicescu to tend to 1, in this situations being the regions: "Vegetable products" (75.4% of total exports in this section in 2008 were made in the region of Bucharest-Ilfov), "Food, beverages, tobacco" (63.4% of total exports in this section in 2008 were made in the region of Bucharest-Ilfov) and " Mineral Products "(47.2% 34.6% respectively of total exports in this section in 2008 were made in Bucharest-Ilfov region and South-East). Values that tend to zero, we find in the "Textile materials and articles thereof" and "Live animals and animal products". At import, the highest values of the value of the informational energy Onicescu, were obtained for the sections: "Means of transport and materials" (67.7% of total imports in this section in 2008 were made in the region of Bucharest-Ilfov), "Vegetable products" (63.4% of total imports in this section in 2008 were made in the Bucharest-Ilfov) and "Products of chemical industry and related industries "(62.5% of total imports from this section in 2008 were made in the Bucharest-Ilfov). Weak values and therefore a low concentration are meeting in the sections: "Textile materials and articles thereof", "Base metals and articles thereof" and "Wood, exclusive furniture".

Figure 11 - The concentration of foreign trade by sections of the Combined Nomenclature in the years 2006, 2007, 2008 (the value of the informational energy Onicescu - corrected formula)



Comparing this time and the curve of the informational energy value Onicescu for the export with that for the import, we see that the importation is more concentrated on regions than exportation in most sections from the Combined Nomenclature, only in 6 of 19 sections, the export being more concentrated than import.

A complementary analysis those presented above is the construction of a boxplot for each development region, depending on the distribution on sections from the Combined Nomenclature of the export and import (for this type of analysis we used the SPSS statistical analysis). The output is represented by *the figure 12*, respectively *the figure 13*.

Figure 12 - The box-plot of the distribution on sections of the CN of export by region in 2008

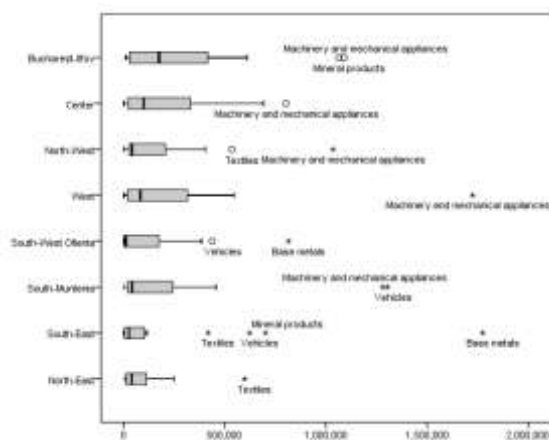
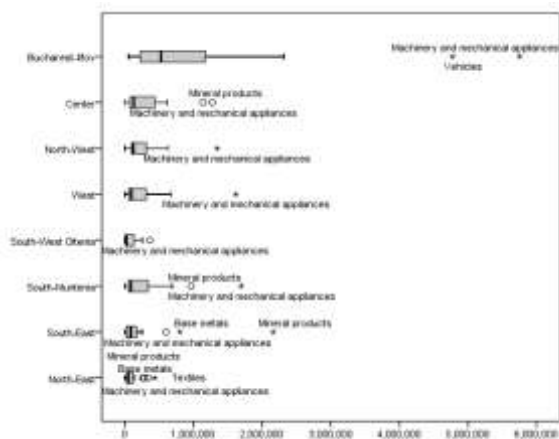


Figure 13 - The box-plot of the distribution on sections of the CN of import by region in 2008



In *figures 12* and *13* it is seen that in all regions the agglomeration of the sections from the Combined Nomenclature is made towards the small values of exports and imports. Also, we can observe that between regions exist differences regarding the export and import afferent to quartile by order 1, 2 and 3. By this graphic representation is put in evidence for each region, the sections

from the Combined Nomenclature that are outliers, and those goods in which the region has specialized its international trade relations. Thus, *figure 12* reveals that the Bucharest-Ilfov region is specialized at export machinery and mechanical appliances and mineral products, the Center region in machinery and mechanical appliances, North-East in textiles machinery and mechanical appliances so on. *Figure 13* shows the region of Bucharest-Ilfov import machinery and mechanical appliances and vehicles, the Center imported mineral products, etc.

3. CONCLUDING REMARKS

The quantitative evaluation of a country's international specialization pattern is deeply and sometimes ambiguously intertwined with the measurement of its trade performance. For example, the normalized trade balance, which is one of the most frequently used specialization indicators, should preferably be seen essentially as a detector of performance. On the other hand, the index of contribution to the trade balance, which was recently proposed as being free from such ambiguity, blends the measurement of specialization with that of the relative size of the trade flow under observation, consequently leading to confusing results. A simple alternative, which keeps the important feature of dealing simultaneously with export and import flows, is a trade specialization index, defined as the difference between the elementary normalized trade balance and the global balance. At the aggregate level, the degree of polarization of the specialization pattern may be measured by the weighted average of the trade specialization indices, taken in their absolute values. All of these indicators refer to trade specialization, while a more thorough understanding of a country's position in the international division of labor would require measuring production specialization, defined in terms of the gap between internal production and demand for each good.

In conclusion, the international trade of Romania in recent years revolves mainly in Bucharest-Ilfov region, then economic specificities of each region to dictate foreign trade flows realized by them.

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