Revealed Competitive Advantage of the European Union and Romanian Manufacturing Industries

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Abstract

This paper deals with the comparison of the Revealed Competitive Advantage (RCA) between the manufacturing industries of the European Union and Romania, in the globalization context, with the aim to highlight the strengths and weaknesses of latter and to offer a general view on industrial sectors competitiveness.

Key words: globalization, competitiveness, revealed competitive advantage

JEL Classification: F14

Introduction

The globalization, one of the most noteworthy process of the actual stage of mankind evolution, is extremely complex, synergistic, in which outstanding technological progress, particularly in transport and communication which compress space and time, combined with the market dereglementation and border openess, bring about unprecedented intensification of human, material, capital, and data worldwide flows. The process integrates in ample networks countries, businesses, governmental and non-governmental organizations, and promotes new values as policies harmonization, efficiency, economic growth, evolutions convergence, homogenizing, reference common standards.

The main driving forces of the globalization are the technological progress, incorporated in communication by satelite, internet, fast flights, etc., and a new vision on economic activity organization and progress, centred on the idea that market competitive existence and free trade are the most effective springs of economic efficiency and a country wealth growth.

The economic globalization comes true in several forms: growth of the international trade volume at a superior rate compared to that of the world economy growth; intensification of capital and direct foreign investment international flows; trans-border information flows multiplying; development of the world wide telecommunication infrastructure; development and consolidation of world wide financial system; increasing weight of the world economy controled by the transnational companies; increasing number of standards with world wide applicability; strong extension of role of international organizations dealing with international tranzactions – The International Monetary Fund and the World Trade Organization.
The globalization is related to *comparative advantage* concept, consisting, essentially, in gains resulting from trade and based on the idea that a country exports goods it produces more efficiently compared to other countries. According to P. Krugman and M. Obstfeld, „a country has comparative advantage in producing a good if the opportunity cost (opportunities values which one gives up while decision making to) to produce this good in term of other goods is smaller in that country than in other countries” \(^1\). In particular cases, the comparative advantage theory justifies countries specialization within the international division of labour.

This theory, centered on the idea of determinative influence of abundance of relatively cheap resources in a national economy on its industrial structure, has been completed with the *competitive advantage* theory, based on reason that efficient specialization of the national industry depends, mainly, on companies competition capacity on domestic market and international markets, their technological progress assimilation pace, as well as their innovation potential.

The Romania’s international specialization on the basis of competitive advantage has a crucial importance, brought about by the imperative necessity to reduce the unfavourable lag compared to industrialised countries development level, and to achieve structural harmonization with industrialised world by attaining its productivity standards.

By its positive and negative effects on economic evolution of all countries, the globalization has, conspicuously, deep interferences with competitiveness of economies, economic sectors, and companies confronting on the global markets.

Logically, the globalization ought to lead, slowly and progressively, to a certain economic, technological, and cultural homogenization. The reality demonstrates, however, that, on the contrary, the economic, scientific, technological, and cultural disparities among world regions and countries are deepening, compelling to embrace a marked proactive behaviour that stimulates – by firms strategies, sectoral strategies and national industrial policies – the competitiveness’ determinative factors. In the new circumstances engendered by globalization, the emphasis in industrial development models radically changes from productive capacities increasing to „capabilities” development, namely factors endowment able to create and consolidate sustainable competitive advantage.

The scanty institutional framework, unrealistic orientation and lack of judiciousness of economic and industrial policies, legislative framework instability, harmful influence of interest groups on general interest are the main shortcomings which hinder these entities – economies, sectors, companies – to turn adequately into account the comparative and competitive advantages they possess, to benefit from opportunities offered by globalization and to successfully face its challenges.

**Methodological Instrument to Measure the RCA**

The factors which influence the competitiveness of different entities mentioned above, as well as the multitude of situations which turns true the effects of these factors, should be correctly and entirely reflected by methodological instruments used to measure the competitiveness level achieved by those different entities. The range of these instruments is large, each kind of measure tackling competitiveness from a certain angle or from several angles simultaneously \(^2\),

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\(^2\) In this respect, see C. Russu, Nicoleta Hornianschi. *ExperienŃa Uniunii Europene privind măsurarea competitivităŃii, in: Cursul de schimb şi competitivitatea în perspectiva aderării la Uniunea Europeană* (Elena Pelinescu – coordinator), Academia Română, Institutul NaŃional de Cercetări Economice, Institutul de Prognoză Economică, Editura Expert, Bucureşti, 2006, pp. 63-126
in an attempt to grasp the differences of competitiveness levels registered by the analysed entities.

One of the most relevant instruments to measure the competitiveness level is the Revealed Comparative Advantage indicator, that represents the measure of product i export of a certain industry (industrial sector) relatively to the amount of all products export towards the rest of the world, determined by relation:

\[
RCA_i = \frac{\sum_i E_{EU,i}}{\sum_i E_{W,j}}
\]

where: \( i \) represents the reference product;
\( E \) – export value;
\( E_{EU,i} \) – product i export from the European Union towards the rest of the world, except intra EU-trade;
\( W \) – reference group for comparison (made up of EU25 plus other selected 30 countries).

An alternative to this indicator is the one proposed by Balassa, according to whom:

\[
RCA_{ci} = 100 \ln \left( \frac{\sum_i E_{ci}}{\sum_i I_{ci}} \right)
\]

where:
\( c \) represents trade partner country;
\( i \) – respective industries group (RCA calculated on the basis of data concerning trade of industries classified according to NACE with three figures. RCA positive/negative value points out a comparative advantage/drawback.)

In other words, RCA represents the export weight of a certain sector in the export amount of ensemble including the respective sector divided by the export weight of the same sector in the world export value. In the case of industrial sectors of the EU, the ratio is between export value weight of a sector in total export value of the EU’s manufacturing industry and export value weight of the same sector in total export value of a reference countries group. The reference countries group includes the EU25 member countries plus other 30 countries (among them countries from Asia no elsewhere specified); the EU export is oriented towards the rest of the world, and therefore excludes the intra-EU trade.

The above unity value of a sector RCA indicator means that it has comparative advantage relatively to reference group, and the under unity value – that the respective sector has weaker performance compared to that of reference group.

**The RCA of the EU Manufacturing Industry Sectors**

The RCA level registered in 2006 by the EU manufacturing industries, listed in decreasing order, is displayed in the next figure.
Fig. 1. RCA indicator of the EU manufacturing industrial sectors by 2006
The first ranked sectors are those in which the EU turned out to be competitive in comparison with the reference countries group, and the last sectors, with under unity RCA, are the less competitive. The assessment should take into account the fact that aggregation by sectors, including a diversity of products with different qualitative levels and export intensity, encompasses certain specific products with considerable different performance, superior or inferior, compared to that of the ensemble; moreover, aggregation by sectors at the UE level means also the summing up the variable contributions of member countries, the RCA of a certain sector being determined, predominantly, by the RCA of the respective sector in countries where it is very developed and has a significant weight in the EU ensemble sector.

The RCA of Romania’s Manufacturing Industry Sectors

In Romania, by the same reference year (2006) taken in order to ensure data temporal compatibility with those concerning the EU from Figure 1, the RCA indicator level of manufacturing industries is shown in the next figure, the chosen graph type being very relevant for the development of the Romanian industry in only a few directions (the graph includes sections from the Combined Nomenclature – NC). The RCA was determined by relation:

\[ \text{ACR}_i = \left[ \frac{E_{R,i}}{\sum_i E_{R,i}} \right] : \left[ \frac{E_{EU,i}}{\sum_i E_{EU,i}} \right] \]  

where:

- \( E_{R,i} \) represents export value of the sector \( i \) from Romania;
- \( \sum_i E_{R,i} \) - export value of the Romanian manufacturing industry;
- \( E_{EU,i} \) - export value of the sector \( i \) at the EU level;
- \( \sum_i E_{EU,i} \) - export value of the EU manufacturing industry.

\[ \text{(3)} \]

**Fig. 2.** RCA indicator at the level of sections of Combined Nomenclature of the Romanian foreign trade in relation with the EU, by 2006

There are six sectors with above unity RCA, ranked by performance, namely XII, XI, IX, XV, VIII and VII, all having a superior competitiveness in comparison with the manufacturing industry average.

In order to compare the RCA level by industries in the EU and Romania, we reproduce Figure 1 this time in radar chart type, therefore in the same plotting way with that of Figure 2, juxtaposition of the two figures revealing the multidirectional development of the European manufacturing industry and narrower oriented development, prevalently corresponding to traditional industries, of the Romanian manufacturing industry.

The second mentioned type of development is typical for developing economies, the RCA indicator configuration of Romania’s industries, with a strong orientation towards the development of a few industries only, being also found again in other countries, especially those belonging to BRIC group (Brazil, Russia, India, China), with natural variations from one country to another.

**The RCA in Service Activities from the EU and Romania**

Although beyond the scope of this study, we consider that it is worth noting the RCA indicator condition in service activities from the EU and Romania, in the same reference year, taking into account the fact that most of these services have close relations with different industries; this indicator is shown in the next figure.
We underline the gladdening finding, resulting from the figures in the above graph, that Romania presents revealed comparative advantages above the EU average in services for travel, communications (very high), construction, computer and information, and personal, cultural, and recreational. The strong development of these mentioned services after 1990 means an enhanced demand of specific machinery and equipment, which make up a considerable stimulus for developing manufacturing industries aimed to by the respective demand.

**Conclusions**

The synthetic conclusion of our research as far as the industrial competitiveness is concerned, seen from the RCA angle, is that a comparison between the EU manufacturing industry and that of Romania highlights both convergences and differences. The lag registered by some sectors of the Romania’s manufacturing industry could be diminished by a well-oriented industrial policy, aiming at enhancing the existent or potential competitive advantages the respective sectors present.

**References**

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Avantajul comparativ relevat al sectoarelor industriei prelucrătoare din Uniunea Europeană și din România

Rezumat

Articolul tratează Avantajul Comparativ Relevat (ACR) realizat de către sectoarele industriei prelucrătoare ale Uniunii Europene și de cele ale industriei României, în contextul actual al globalizării, cu scopul de a evidenția punctele forte și slăbiciunile acestora din urmă și a oferi o vedere generală asupra competitivității sectoarelor industriale.