

ANALYSIS OF CURRENT STATE AND FUTURE TRENDS OF AUTO PARTS MANUFACTURING SECTOR IN ROMANIA

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ABSTRACT: *In the economy of any country, the auto parts manufacturing sector holds an important percentage in the national automotive industry. The dynamics of sales within it can vary significantly on short term, depending on the automotive market trend. This is also the case of the current situation in Romania, where the effect of the regressive automotive sales evolution will propagate, most probably, with a significant delay for the companies involved in production and trade of auto parts (for both first-assembly manufacture and car maintenance and repair). The statistical data indicate that even though the total volume of vehicles delivered decreased with 7.4% in 2011 as compared to 2010, the total turnover of the companies in the automotive industry increased with 7.8%. The apparent paradox is explained in the present article through the particularities of the demand for spare parts intended for the rolling stock in operation and through the effective organization of the distribution system.*

KEYWORDS: *auto parts manufacturing sector; product finishing units; distribution strategies; first-assembly product; spare parts; vehicle maintenance and repair; motorization degree; age of the automotive park.*

JEL CLASSIFICATION: *M21; L62.*

1. INTRODUCTION

The automobile industry is one of the most important industries in the world, producing over 50 million finite units yearly, generating sizable added value per employee and stimulating the international trade, economic growth, research and sustainable development of economies. The unemployment rates in the automotive field are clearly inferior to the economy average. The significant financial effects resulted from the fees and taxes per motorization are reoriented in the benefit of the community – building highways, culture, health and education.

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The automobile industry influences significantly the global economy, generating annual deliveries of lasting goods (the average use duration of minimum 3 years) of about 17%, part of the secondary sector of economy (Hagiu & Platis, 2012). In this respect, the auto parts manufacturing sector holds a representative position, contributing with approximately 9 – 10% to the turnover in the case of rough cut producers and generating it 100% in the case of the companies specialized in this type of activity (component and spare parts manufacturing).

2. CURRENT STATE OF HORIZONTAL INDUSTRY COMPANIES IN THE CONTEXT OF SALES DECREASE ON THE AUTO MARKET

In recent years, the automotive manufacturing sector has undergone a sustained recovery, knowing the great development in the context of the transfer to it, within the completed units of product execution has meant a growing volume of parts and subassemblies. Carmakers strategy aims location about 33-34% of the level of integration of the completed product manufacturing establishments and, where appropriate, in percentages ranging from 0.5 to 7.0 up to approx. 10.0% to suppliers. The advantages of these strategic options consist of increased specialization, quality and productivity in manufacturing auto components.

When referring to the auto parts manufacturing sector is reasonable to consider both product supplies to complete the rough product - installation (by providers approved by car manufacturers) and those intended to meet the need for spare parts for maintenance and repair required by the specific system (internal and external network service) and the fund market (open market).

In this context, the automotive industry has been resized and reconsidered in order to be able to provide the necessary quantities and assortments, thus giving a new impetus to the entrepreneurs in the horizontal industry profile. Thus, considering the weight of two structural elements in volume export value of automotive (cars and auto parts), which in 2011 accounted for over 18% of the total Romanian exports, confirming the strategic importance of the automotive manufacturing sector national economy. The statistic data shown in Table 1, corresponding fa representative period after the decision to reduce the level of integration of the completed product manufacturing establishments at about 33%, shows the percentage of contribution that cars and components in the automotive sector exports: it is ascertained that over 70% of the export is made by the auto parts manufacturing sector.

The turnover of the companies involved in the automotive industry in Romania surpassed in 2011 11.14 billion euros, registering a 7.8% growth comparing to the previous year (2010). Within it, only the amount of 3.5 billion Euros (28.3%) was achieved from the automobile sales (Dacia Renault and Ford), the difference of 7.64 billion Euros (71.7%) being obtained from the exports of companies that activate in the auto parts manufacturing field.

If the operators within this sector had as sole beneficiaries the product finishing companies the trend of their sales should be similar. But reality does not confirm this evolution. The different trend can be explained with the contribution to the

total turnover for the spare parts destined for the maintenance and repair of indigene manufacturing automobiles which are being used by external beneficiaries.

Table 1. Auto export volume percentage contributions

	2008	2009	2010	2011
Automobiles	18,6	31,2	29,6	28,3
Auto parts (CKD collections inclusively)	81,4	68,8	70,4	71,7

Source: adapted from the National Institute of Statistics – data available online on <http://www.insse.ro>

By correlating the increase in 2011 with 7.8% of the export volume for companies in the auto field ($I_{2011/2010}=1.078$) with the sub unitary index of auto sales increase (the total sales have decreased with 7.4 % - $I_{2011/2010}=0.926$, and the export ones with 3.1% - $I_{2011/2010}=0.969$), it is obvious the ascension of the auto parts manufacturing sector.

Table 2. The evolution of the automobile sales during the period 2000-2011

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Internal saks	50133	52013	52742	57874	80013	113276	107777	102000	84708	41862	36719	30872
Export	2270	2355	4939	11292	18895	50623	79438	128000	172886	269420	312010	312361
Total saks	52403	54368	57681	69166	98908	163899	187215	230000	257594	311282	348729	343233

Source: adapted from <http://www.apia.ro/buletin-statistic/>

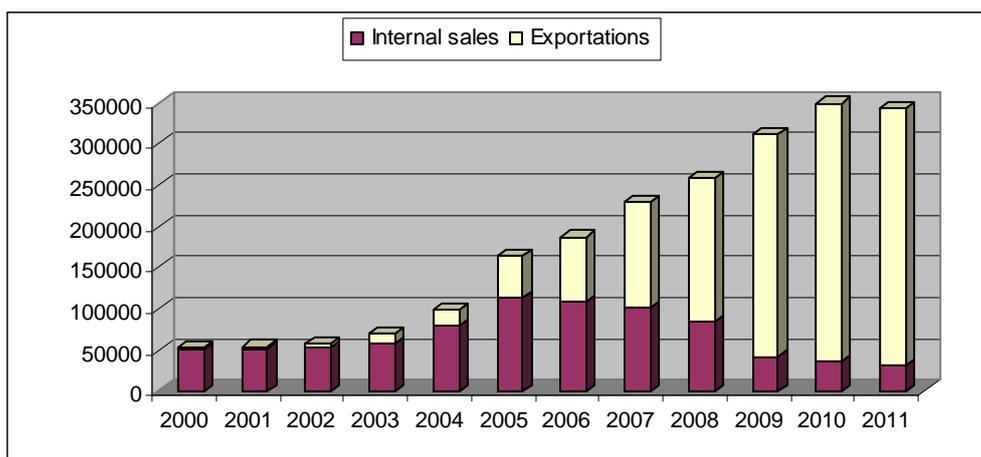


Figure 1. Automobile sales during the period 2000 – 2011

The evolution for these companies' sales is just as favourable internally. Even though the finite product sales are follow a descendent trend, as it can be noticed from the data in table 2, suggestively illustrated by image 1, the increase of the turnovers for the organizations in the auto parts manufacturing sector is explained with the increase of the sales of spare parts destined for vehicle maintenance and repair.

Table 3. The evolution of the number of vehicles in use in Romania and of the monitoring degree

	2007	2008	2009	2010	2011
No. of vehicles in use (million pieces)	3.541.718	4.013.721	4.230.635	4.307.290	4.322.951
Motorization degree (automobiles/1000 inhabitants)	169	196	211	220	227

Source: adapted from <http://www.mediafaxtalks.ro/auto-industry-2012/program-10-547>

The request within this market sector is fuelled by the slight increase of vehicles presently used in Romania, which reported the evolution shown in table 3; even though the motorization degree evolves more and more, it still remains much inferior to the EU average which in 2011 reached a level of 473 automobiles for 1.000 inhabitants.

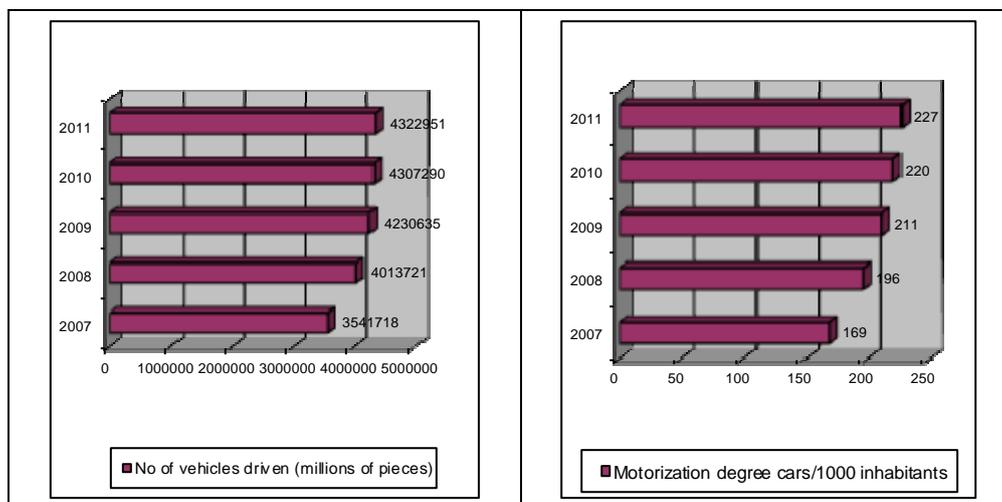


Figure 2. The evolution of the number of vehicles in use and of the monitoring degree

It is noticed that, in the year 2011, there were in use 4.32 million vehicles, to which there are added 0.56 million light commercial vehicles. Their structure of age groups and the weight of each category (age groups) in the total number of vehicles in use are registered according to table 4.

Table 4. Segmentation on age groups of the auto park in Romania

	0-2 YEARS	3-5 YEARS	6-10 YEARS	11-15 YEARS	16-20 DE YEARS	> 20 DE YEARS	TOTAL
No. of vehicles (million pieces)	0,34	1,08	1,37	0,83	0,54	0,74	4,9
Weight vehicle category (%)	7	22	28	17	11	15	100

Source: adapted from Stroe, C. 2012

The data elaboration (with frequency calculations with the help of the SPSS application) leads to the determination of an average age for the auto park in use in Romania for the year 2011, of 11.5 years.

The organization of the auto park in Romania of the year 2011 of “age” categories is illustrated in figure 3.

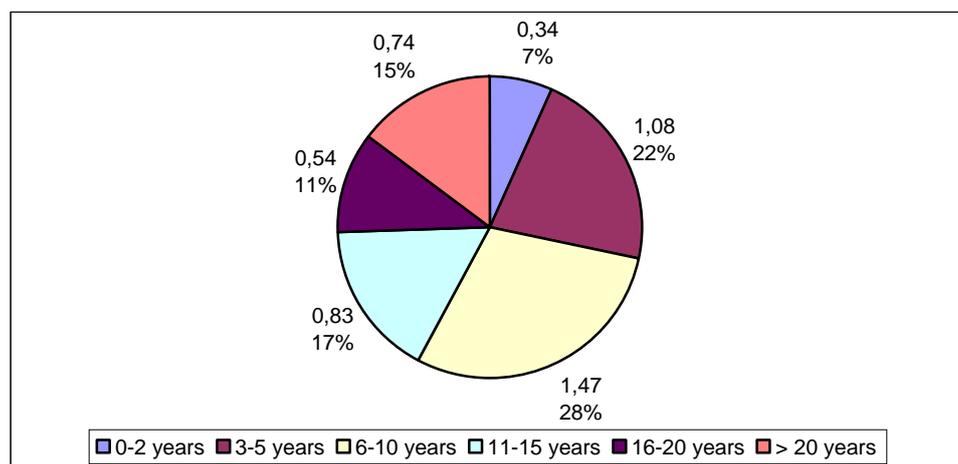


Figure 3. Structure per „age” categories of the auto park in Romania of the year 2011

It is easy to conclude that the most relevant stimulation (unwanted) factor concerning the internal demand for auto spare parts is the seniority of the auto park currently in use in Romania.

Table 5. The evolution of the number of operators in the authorized distribution networks

	2006	2007	2008	2009	2010	2011	2012
Number of companies	528	635	708	712	717	678	655
Variation (compared to the previous year)	n.a.	+20,3%	+11,5%	+0,5%	+0,5%	-5,4%	-3,4%

Source: adapted from <http://www.apia.ro/>

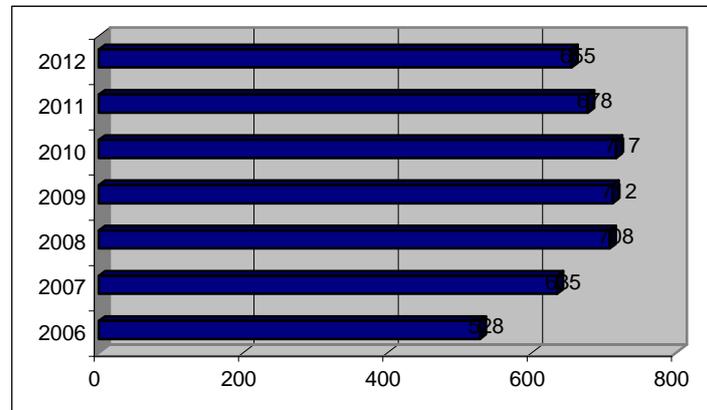


Figure 4. The evolution of the number of operators in the authorized distribution networks

By analyzing the effects of the automobile sales decrease over the companies in the horizontal industry (of auto parts) and from the point of view of the authorized distribution networks, the evolution is totally different. The data in table 5 prove the imminent limitation of their activity as effect of the decreases registered by the auto market in Romania.

3. ORGANIZATIONAL ASPECTS CONCERNING DISTRIBUTION

At macroeconomic level, the organization of the distribution system within the auto parts manufacturing sector differs according to the origin and destination of the parts and components that make the object of the supplier-beneficiary relationships.

Thus, the distribution of the components destined for the manufacturing of rough cuts supposes, most of the cases, a direct relationship supplier-beneficiary (product finisher), received on grounds of firm contracts, rigorously founded. In exchange, in the vehicle maintenance and repair process, in the spare parts insurance system there are mainly shaped the following structures (Mihai & Drăghici, 2005, pp. 245-252):

A. The distribution through representation centres of manufacturers' interests in their relationships with the menders (service systems).

From the organizational point of view, the method takes the shape of distribution with a sole intermediary, but who, from the patrimonial point of view, bears two different aspects:

a – the distribution centre belongs to the vehicle manufacturer, the auto spare parts distribution unfolding according to the chart – figure 5.

It is ascertained that the variant is centred on the problematic of exchange parts (quantities, brand-like structure, quality, conditions-terms regulations, receiving operations, shipment) the solving of which generates the conditions for fulfilling the obligations of the automotive manufacturers, according to the service demands agreed upon for automotive maintenance and repair works. Moreover, the intermediary link

(*Distribution*), represented in the chart from image 5 by *The automotive spare parts national (areal) deposit*, is dimensioned so as to allow the gathering of the spare parts quantities offered by the entire manufacturers network, the destination of which shall be *The automotive maintenance and repair centres* – services for general or specialized operations (sheet metal works – dyeing, mechanic repairs, electric repairs, etc.).

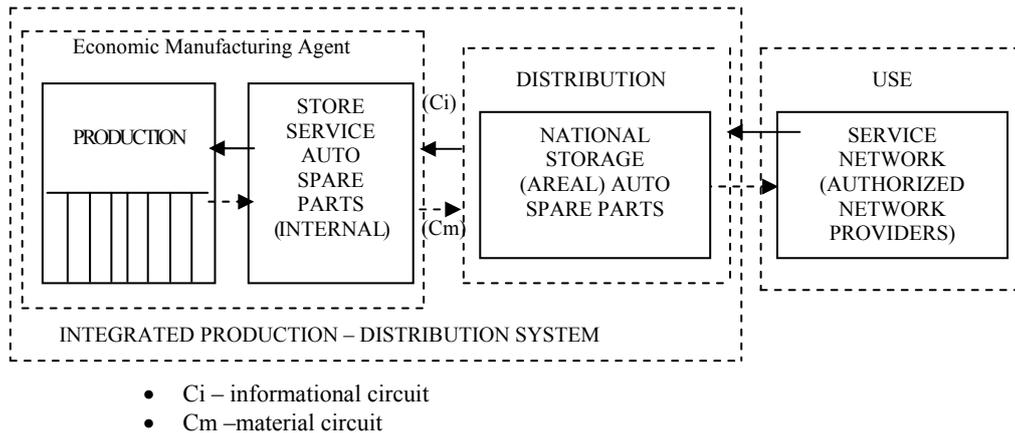


Figure 5. Automotive spare parts distribution system through relationships between the vehicle manufacturers and corresponding spare parts, intermediary representatives and user networks (agreed upon services)

b – the distribution centre belongs to the vehicle manufacturer, according to the previous paragraph (**a**), but by this means the operations of moving the spare parts towards the maintenance and repair centres are performed by all the automotive spare parts manufacturers, the distribution taking place according to the chart shown in figure 6.

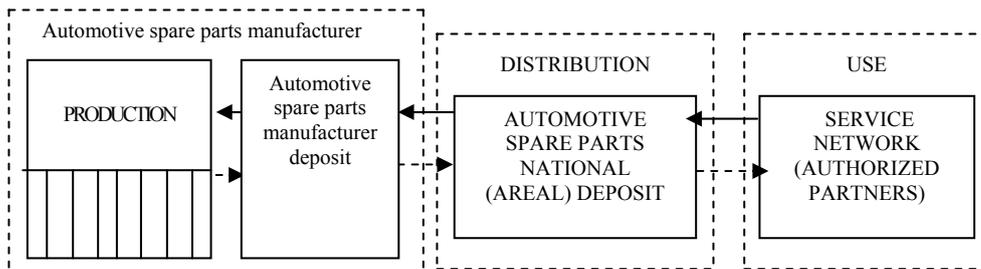


Figure 6. Automotive spare parts distribution system in the relationships between manufacturers-users (agreed upon repairers – service units)

B. Imported spare parts distribution, for the relationships with external manufacturers that produce parts and components destined for the maintenance and repair of vehicles that are made and used in Romania.

Just as in the case of the previous situations, from the organizational and functional point of view, the methods practiced come under the following forms:

a_1 – specific for the auto manufacturers operations and corresponding spare parts, for the relationships with the users – agreed upon service systems – chart – image (7 – a_1).

a_2 – specific for the auto manufacturers operations and corresponding spare parts, for the relationships with their own retail distribution network – chart – image (7 – a_2).

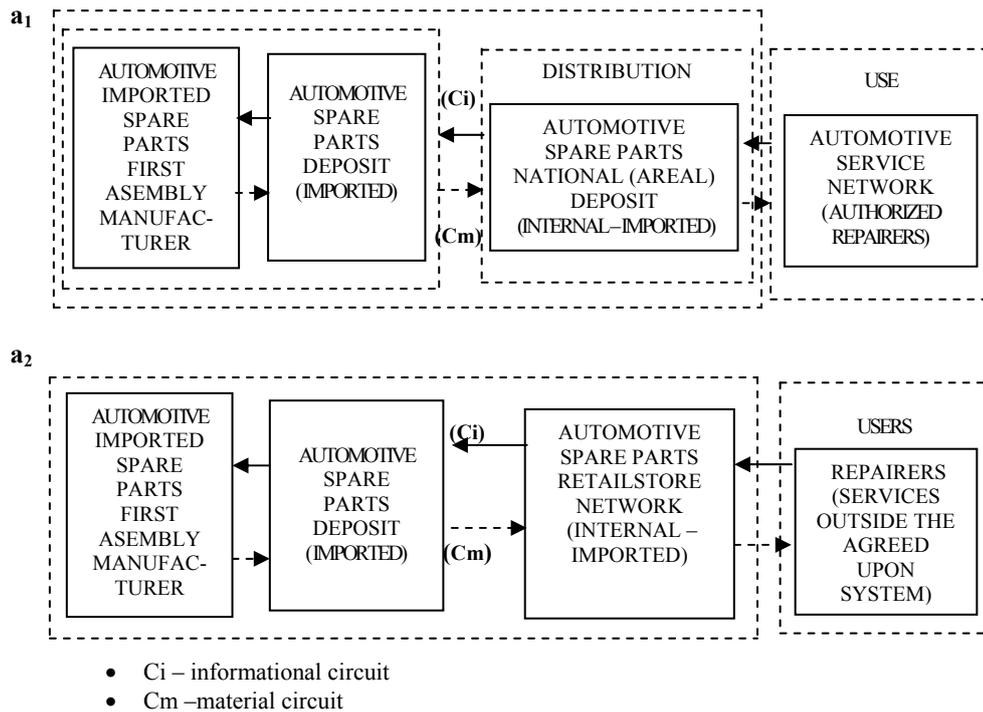


Figure 7 – a_1 and a_2 – Insurance and distribution system for imported automotive spare parts destined for the maintenance and repair of vehicles made in Romania through own systems belonging to the automotive manufacturers – distribution deposits or retail stores

C. Exported spare parts distribution, destined for the maintenance and repair of vehicles made in Romania but which are used by beneficiaries abroad.

The problematic assembly of the activities that form the context of the spare parts made by internal manufacturers and which are destined for the maintenance and repairs of Romanian vehicles currently used by users abroad represents a responsibility for every profile industry manufacturer that comes under a specific mechanism of the type mentioned in figure 8.

It is ascertained that, regardless of the situations of the mechanism for the distribution of spare parts destined for the maintenance and repair of vehicles made in Romania, used by beneficiaries within the country and abroad, the process claims the existence of the maximum opportunity element – *the demand* for automotive spare parts, forwarded by internal or external users – that motivates the construction and

functioning of any of the mechanisms by images 5 – 8, whether the user (maintenance-repair service system) has its operative head office in the country or abroad.

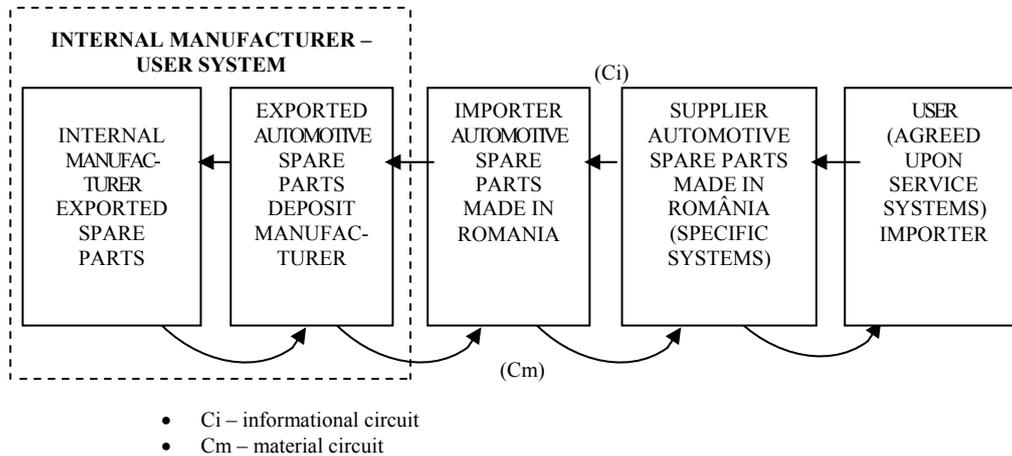


Figure 6. Insurance and distribution system for auto spare parts of internal production destined for the maintenance and repair of vehicles made in Romania, used by external beneficiaries

4. EVOLUTION TRENDS FOR THE AUTO PARTS MANUFACTURING SECTOR IN ROMANIA

The level reached in perfecting the systems for manufacturing and trading vehicles and spare parts by the great manufacturers in Europe and other continents represents the standard all the manufacturers in Romania follow for continuing business in this field. The continuation to implement the concept of *market-like orientation* represents the only viable choice for the operators in the field, thus being able to insure a long-time profitability for the adopted organizations (Pandelică & Diaconu, 2011).

The transformation process regarding the conditions and demands in the automotive field that are currently manifested more dynamically than ever requires from the manufacturers in Romania a new ability to adapt to the worldwide automotive industry state and trends, materialized in the ability to insure from now on a more and more diversified automotive range and – as a direct consequence – parts and components destined for their manufacturing and maintenance – repair in the usage period, at the most compelling quality, performance, comfort, security in usage and efficiency standards. In the future, the vehicle projection shall be influenced by: urban development, standard exigencies regarding environmental protection; customer needs. (Brutu, 2011).

A phenomenon worthy to be taken into consideration in shaping the evolution trends for the auto part sector is the emphasis of the manufacturing migration phenomenon in the vehicle industry, towards attractive regions. The main three strategic axes of the population migration in the automotive industry are: North

America → towards South America, Japan → towards China and Western Europe → towards Eastern Europe. The numbers in table 6 are relevant in this respect.

Table 6. Worldwide phenomenon of the automotive manufacturing migration

	2005	2011	I _{2011/2005}
North America	16.353.042	13.468.490	- 18%
South America	2.970.958	4.327.750	46%
Japan	10.779.659	8.398.654	-22%
China	5.707.421	18.418.876	223%
Western Europe	15.826.847	15.188.636	-4%
Eastern Europe	4.974.153	6.217.364	25%

Source: adapted from Stroe, C., 2012

It is noted that during the period 2005 – 2011, the volume of the production was significantly reduced in the areas characterized by deep reorganizations of the manufacturing capacities (in North America with 18%, in Japan with 22%, and in Western Europe with 4%). The hierarchies have changed and the auto manufacturing barycentre has “migrated” these last years towards the areas with possible increase of requests. Thus, in the context of delocalization, industrial manufacturing in the automotive production increased during the accounting period (2011 comparing to 2005) with 223% in China’s case, 46% in South America and 25% in Eastern Europe.

Worldwide speaking, several governments in preferential migration areas reconsidered the tax system from those respective states, the option for reducing them representing an important factor which determines the decision of foreign investors, substantially increasing these countries’ amenity for foreign investments (Rădulescu, 2011). Among the stimulation factors of production delocalization there can be mentioned: cheap and highly qualified labour force, resource abundance, high level of demand, etc. (Mihai, 2008, pp. 64-70).

In the evolution of automotive spare parts sector in Romania two significant action directions are profiled:

- a – alignment to the technical and technological trends that are being manifested in the profile industry in countries from Europe and other continents;
- b – a new strategic way of thinking regarding the necessity for a radical transformation of the current systems through which there are insured the spare parts destined for the maintenance and repair of the vehicles made in Romania.

In the future, under the impact of new technologies specific for the production, the automotive spare parts distribution and trading system shall bear radical changes compared to the system currently in use (Drăghici & Mihai, 2005, pp. 237-243).

On these grounds, the *Development strategy* of the part and accessory manufacturing systems, including spare parts for the maintenance and repair of automobiles made in Romania, shall aim to:

- Externalize non-profitable technological activities;
- Make self-contained the departments and activities centred on certain technologies;
- Retechnologize and pass them in reprivatisation on the rival market;
- Enter into the supplier chains that are being formed or changed;
- Open, flexible, proactive project management;
- Priority for the marketing client and market-oriented;
- Full commitment for quality;
- Insure the capacity to develop products and processes etc.

5. CONCLUSIONS

The auto parts manufacturing sector in Romania goes through an ascending evolution, despite the decrease of automobile sells both on the internal market and for the export. One cannot say the same about the other operators involved in the system, being obvious the tendency to restrain the authorized distribution network as consequence of the automobile market decrease.

The organization of the automotive spare parts and components manufacturing and distribution system is so designed as to be able to provide the quantities and sorts of parts and subassemblies for both first assembly manufacturing and the automobile maintenance and repair programmes.

Even if long-term it is expected that the effect of declining car sales development to be spread and the companies involved in the manufacture and sale of automotive components, this will happen with a significant delay. Current momentum is maintained sector, in addition to decreasing the degree of integration of the completed product manufacturing establishments, the increased demand for spare parts, caused in turn by an aging fleet was in operation. Calculations leading to the determination of the average age of automotive park in operation in Romania, in 2011, of 11.5 years. In addition, trends are not optimistic looming in the current crisis and reduce incentives for automotive park renewal is expected to increase.

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