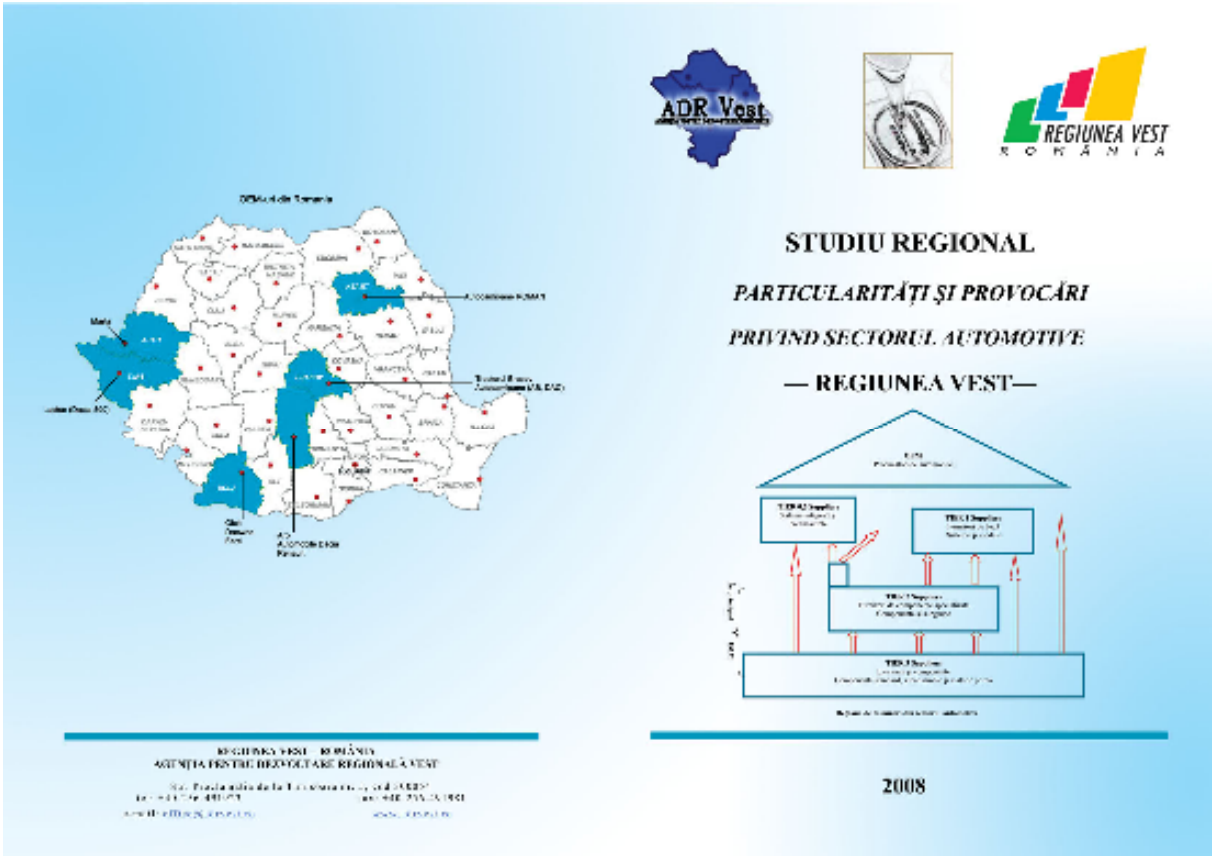


Author:

THE WEST REGIONAL DEVELOPMENT AGENCY
REGIONAL POLICIES AND INTERNATIONALIZATION DEPARTMENT
REGIONAL POLICY OFFICE

Coordinators:
Sorin Maxim, Managing Director of ADR Vest
Raluca Cibu-Buzac, Manager of the Regional Policy and Internationalization Department

Writers:
Andreea Constantin, GIS Consultant
Cristian-Sorin Goția-Crețiu, Regional Policy Consultant
Adrian Mariciuc, Head of the Regional Policy Office
Cristin Cistelecan, Head of the Foreign Investment Office
Cristian Bleotu, sector consultant

SECTOR ANALYSIS

Particular features and challenges regarding the automotive industry at the level of the West Region

TABLE OF CONTENTS:

APPENDICES

1. Introduction

a) The purpose of the research

The present research aims to provide an analysis of the particular features and threats of the automotive industry in the West Region, in order to identify the support and development perspectives based on the needs of this industry and the existing (economic, social, and institutional) resources.

The research focuses on the following main aspects:

- Identifying the economic features of the automotive industry in Romania and in the West Region;
- Analysing the factors **influencing the medium-term development of the automotive industry:** the labour cost, the business environment, the existence of complementary industries, capital safety, quality of education, research and development potential, human resource skills;
- The ways in which companies manufacturing automotive parts can adapt to the global economic and financial evolution;
- Identifying the support structures and services for enterprises / platforms (business platforms, cluster, supplier networks) in operation at this moment, along with analysing the need for the creation of new sector-level structures.

b) Defining the automotive industry

In the current research, we will include in the automotive industry those companies operating in the field of land vehicle production for both person and freight transport. We will also include the vehicle part manufacturers, whether they are Romanian companies or companies with foreign capital operating in Romania.

As far as the automotive industry in its whole is concerned, it displays a series of common features and characteristics [1] regardless of the area where it is situated statistically.

Thus, the automotive industry is characterized by **globalization**. In the discussions regarding the automotive industry, we most often come across terms such as direct foreign investment, global production or international trade. The global character is not only visible at OEM level. Part and subassembly providers have followed the manufacturers and have become "global suppliers".

The automotive industry is also characterized by a **firm, concentrated structure**, in that there are relatively few companies dominating the global market. Generally, when we talk about the automotive industry, we are referring to two types of companies: carmakers and part makers. These two groups of companies have imposed a set of standards that other companies find it difficult to reach. Alliances and/or mergers between companies most often take place within the industry.

[1] Timothy J. Sturgeon, Olga Memedovic,Johannes Van Biesebroeck, *Globalisation of the automotive industry: main features and trends*, *Int. J. Technological Learning, Innovation and Development, Vol. X, No. Y, XXXX, 2004*

At the same time, the automotive industry is a **relational industry**, characterized by a tight relation among different companies, in the form of a chain. The part maker often follows the carmaker to the latter's newly opened location.

The automotive industry is **continually changing**. These days, the car is no longer a simple means of transport. The final product, the car, is meant to contain the best materials. Also, with each new model, a carmaker strives to bring not just a better looking product, but mostly a safer one, with lower fuel consumption, friendlier to the environment, and capable of being recycled at the end of the life span.

To conclude, we can say that the automotive industry is characterized by globalization, a concentrated structure, novelty and change, networked activity, and consolidation on all segments, from production through the supplier chain and transport up to the beneficiary.

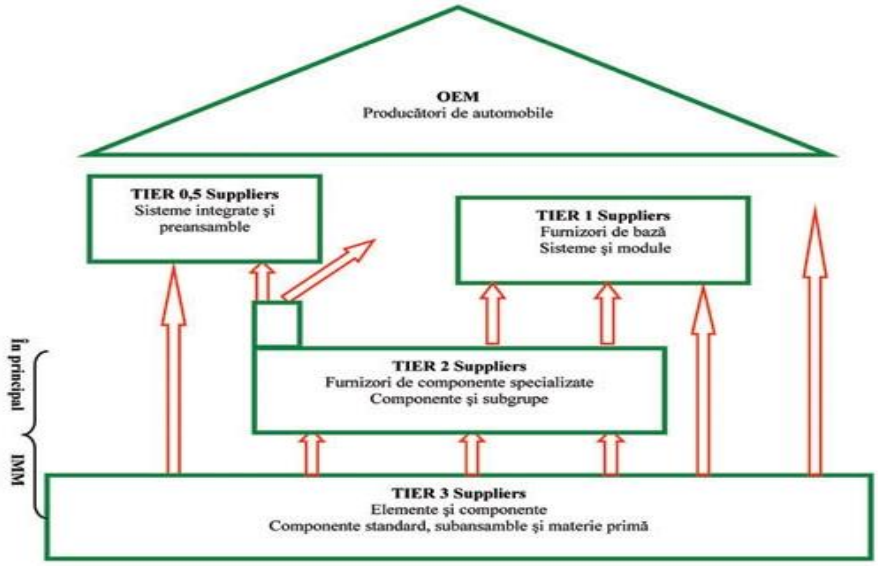
c) The constituents of the automotive sector

We can find several categories of companies in the automotive sector:

- The great players in the automotive industry are the **original equipment manufacturers (OEM's).** The following companies can be included in this category: General Motors Corp., Ford Motor Co., Daimler Chrysler AG, Toyota Motor Corp., Volkswagen AG, Honda Motor Co., Renault-Nissan, PSA, etc. These companies have a significant presence on the European, American, and Japanese markets, accounting for 80% of the world vehicle production;
- The **modular system manufacturers (TIER 1)** are very important for carmakers. The companies in this category sell their product direct to the carmaker based on firm contracts. This category will include those companies building systems such as the full seating system or the dashboard with its electronic system. Of the companies that can be included in this category, let us mention: Continental AG, Robert Bosch GMBH, Delphi Corporation, Johnson Controls, Michelin Group, Lisa Draxlmaier, Valeo, BOS Automotive, Valvetek, Johnson Controls, Sumitomo Electric Industries Ltd, TRW Automotive, Leoni, etc. Moreover, this category includes those companies that are in a position to reject certain terms in the contracts proposed by the OEM's.
- Next to OEM's and TIER 1, an important position in the automotive industry is occupied by the **individual part manufacturers (TIER 2)**. This category includes companies such as Coficab and Contitech.
- Another very important category is that of the **element and small subassembly suppliers (TIER 3).** The companies in this category are small companies, usually with domestic capital, oriented exclusively towards the production of goods for a particular sector, with part of their turnover being accounted for by their activity in the automotive industry. These companies most often make parts that are included in the final product sold by TIER 1 to OEM's. This category includes manufacturers of various textile, metallic, plastic, or electric elements that are part of the final composition of a car. Of the companies that can be included in this category, let us mention: Spumotim, Nefer Prod, Interpart, etc.

Figure 1 below shows the network of suppliers in the automotive sector[2].

[2] i.con.innovation GmbH, *Support to Supply Chain Development in the Automotive Sector West Romania* Working paper – Draft, 2006



Reţeaua de furnizori din sectorul automotive

2. European-level trends of the automotive sector

a) European policies in the automotive industry

The industrial policy, in general, is viewed by the European Commission as a fundamental pillar of the Revised Lisbon Strategy.

The European Commission's initiatives in the field of the automotive industry mainly focus on consolidating competitiveness of this European industry by implementing an efficient regulation framework for the internal market and by the international harmonization of the specific technical requirements. The global technical harmonization is seen as a decisive factor determining the international competitiveness of the European automotive industry.

At the European level, the CARS 21 initiative has been created. It represents the initiative of the European Commission to create a competitive regulation framework regarding automobiles. The result of this initiative is a set of recommendations aiming to improve the global competitiveness of the European automotive industry and the creation of jobs, while protecting the environment and road safety. The coverage area of this initiative spans eight relevant domains: legislative simplification and harmonization, environment protection, road safety, trade, research and development, taxes and fiscal incentives, intellectual property, and competition.

b) The features of the sector in Europe

The European automotive industry, employing over 2 million people, is very important for the competitiveness of the European Union in its effort to meet the major objective of the Lisbon strategy: that of making the European Union the most competitive economy at global level.

The European Union makes one third of the world's cars. If carmaking indicators still show an upward trend at the level of the EU, this is only due to the growth in the 12 new states accepted after 2004. In the other 15 states, the production has stayed at the 2003 level for a few years, while the new EU members have recorded a 23% increase.

Table 1. Motor vehicle production by state and state groups, 2006-2007

State/State group	2006	2007	% Change
All 27 EU member states	18.697.868	19.717.643	5,50%
The 15 old EU member states	16.276.103	16.691.204	2,60%
Austria	274.907	228.066	-17,00%
Belgium	918.056	834.403	-9,10%
Finland	32.746	24.303	-25,80%
France	3.169.219	3.015.854	-4,80%
Germany	5.819.614	6.213.460	6,80%
Italy	1.211.594	1.284.312	6%
The Netherlands	159.454	138.568	-13,10%
Portugal	227.325	176.242	-22,50%
Spain	2.777.435	2.889.703	4,00%
Sweden	333.072	366.020	9,90%
Great Britain	1.649.792	1.750.253	6,15
The new EU member states	2.41.765	3.026.439	25%
The Czech Republic	854.817	938.527	9,80%

Hungary	190.233	292.027	53,50%
Poland	714.600	784.700	9,80%
Romania	213.597	241.712	13,20%
Slovakia	295.391	571.071	93,30%
Slovenia	153.127	198.402	29,60%

Source: OICA, Production Statistics

In spite of the importance given to the automotive industry at EU level, this sector is still facing a series of problems related to the following factors:

- EU productivity is lower than that of the US and Japan;
- the labour cost is a major problem: while labour costs 12.9$/h in South Korea, 29$/h in Japan, and 33.8$/h in the US, the EU has an average of 32.7$/h, with Germany standing out at 36.8$/h;
- the search of new locations and setting up production facilities in Central and Eastern Europe disturbs the balance in the traditional areas.

c) The migration towards Central and Eastern Europe

Lately, especially after joining the EU, Central and Eastern Europe has become one of the favourite destinations for the major carmakers and automotive part manufacturers, whether European, Asian, or American.

Before 1989, Hungary did not have any automotive factory on its territory. Poland had two, in Warsaw and Bielsko-Biala, Czechoslovakia made Skodas in the factory in Mlada-Boleslav, and Yugoslavia had three production units: Novo Mestro, on the territory of present-day Slovenia, Sarajevo, in Bosnia-Herzegovina, and Zastava, close to Belgrade.

If we have a look at these states today, we will see that the Czech Republic, Hungary, Poland, Slovakia, and Slovenia have managed to attract some major carmakers. Factories were built from scratch in countries such as Slovakia and Hungary, while the existing factories in Poland and the Czech Republic were privatized. Hungary now hosts prestigious makes such as Audi, Opel, and Suzuki. Poland has privatized the existing factories with Fiat and Daewoo, but has also benefited from massive investments. Volkswagen has two production facilities in this country, while Isuzu, Opel, and Toyota each have one. New production units of the PSA group were built in Slovakia near Trnava, while Volkswagen settled in Bratislava. The new Renault Clio is now being made in Slovenia. The Sarajevo factory belongs to Volkswagen, and Zastava, the factory in Serbia, was refitted to assemble the Fiat Punto. We should not overlook the production facilities in Turkey, where the following carmakers have their factories: Renault, Toyota, PSA, Hyundai, Honda, Ford, Fiat, Iveco, Mercedes.

The table below provides an overview of the production facilities in the countries in Central and Eastern Europe.

Table 2. Automotive production in Central and Eastern Europe

Country	2003	2004	2005	2006	2007
The Czech Republic	436.279	443.065	599.472	848.922	925.778
Poland	306.847	523.000	540.000	632.300	695.000
Romania	75.706	98.997	174.538	201.663	234.103
Serbia	12.996	13.266	12.574	9.832	8.236
Slovakia	281.150	223.542	218.349	295.391	571.071

Slovenia	110.597	116.609	138.393	115.000	174.209
Hungary	122.338	118.590	148.533	187.633	287.982
Turkey	294.116	447.152	453.663	545.682	634.883

Source: OICA, Production Statistics

We shall now do a comparative analysis of the countries in Central and Eastern Europe from the point of view of their opportunities and threats.

Table 3. *The sector's opportunities and threats in the countries in Central and Eastern Europe – a comparative study* [3]

OPPORTUNITIES	STATE	THREATS
Low salary The presence of some part manufacturers The proximity of Turkey (a country with many carmakers: Kia, Ford, Honda, Hyundai, Peugeot, Renault, Toyota) High number of skilled people Facilities granted to companies coming to the country	**BULGARIA**	☹ No localized carmaker ☹ Weak transport infrastructure ☹ No transparency
The presence of some OEM's such as Fiat, Opel, Volkswagen Large market (Poland is the 6th largest EU state) The presence of many part makers Rising domestic demand for cars Fiscal incentives	**POLAND**	☹ Slow transport infrastructure development ☹ High unemployment rate ☹ Difficulties in recruiting specialized staff
The presence of some OEM's such as Skoda, PSA, Hyundai Tradition in the automotive industry The presence of many part makers The development of a strong network of subcontractors A stable economic and political environment Proximity to Germany	**THE CZECH REPUBLIC**	☹ The low unemployment level leads to staff scarcity and has led to a salary increase ☹ Dependence on the sector at industry level ☹ A rise in the heavy transport on highways as a result of the development of the logistic sector
The presence of some OEM's such as Dacia, Renault, Ford The presence of some part manufacturers Large outlet Favourable geographic position Low salary Increasing confidence for investing in Romania Steady economic growth	**ROMANIA**	☹ Volatile exchange rate ☹ Excessive bureaucracy in terms of processes and certifications ☹ Weak transport infrastructure ☹ Difficulty in recruiting skilled staff in the developed economic areas
The presence of some OEM's such as Kia, Peugeot, Volkswagen The presence of some part manufacturers Special attention given to the sector at national level	**SLOVAKIA**	☹ The sector is concentrated on just two areas: Bratislava and Trnava ☹ Difficulties in recruiting skilled staff for the part manufacturers that have followed the OEM's
The presence of some OEM's such as Renault The presence of some part manufacturers	**SLOVENIA**	☹ Slow privatization of the large state companies ☹ Lack of incentives and facilities

[3] Adapted from Ernst&Young, *The Central and Eastern European Automotive Market. Industy Overview*, November, 2007 and KPMG, *The Automotive Industry in Central and Eastern Europe*, 2008;

Developed transport infrastructure Skilled staff		
The presence of some OEM's such as Audi, Suzuki, Mercedes The presence of some part manufacturers Mature economy Legal system in harmony with the European one Developed transport system (over 1,000 km)	**HUNGARY**	☹ Volatile exchange rate ☹ Poor cooperation between the part manufacturers and the local suppliers

d) European cluster networks: Belcar, TCAS

The countries in Europe differ from the rest of the countries in the world by being very varied. The networks created among various SME's reflect this feature very well and provide a dynamic environment for the automotive sector.

The BELCAR network[4] **(Be**nch **L**earning in **C**luster management for the **A**utomotive sector in European **R**egions)

The Belcar network is concentrated on the analysis and growth of the role played by innovation in the automotive industry clusters that are part of this network. For that purpose, BELCAR aims to build an interregional network of the automotive industry clusters for common activities, and the lessons learned from this experience should be transferred to other European regions. Another aim is to promote the innovation transfer to other sectors, clusters, and regions.

The TCAS network[5] **(T**ransnational **C**lustering in the **A**utomotive **S**ector)

The goal of the TCAS activities is to facilitate the exchange of experience and best practices among the European **automotive industry** clusters, so that these can improve their performance, to create a platform for transnational cooperation, and to open new business perspectives for the companies in the clusters.

e) The response of the world's manufacturers to the global economic and financial development[6]

The economic slowdown generated by the credit crisis has seriously affected carmakers, leading to a drop in sales, which has forced big automotive companies to restructure and resort to government aid in order to avoid bankruptcy.

European carmakers
As a result of the serious global economic problems, the crisis in the automotive sector quickly spread across Europe. As a reaction to the negative effects of the crisis, **Renault,**

[4] More on the network at: www.europe-innova.org/BeLCAR
[5] More on the network at: www.europe-innova.org/TCAS

[6] Adapted after Moneyline.ro, *Piața auto a resimțit din plin efectele crizei financiare mondiale (World Financial Crisis Takes Toll on Car Market)*, 28.12.2008

Daimler, Fiat, Volkswagen, BMW, etc., have temporarily ceased production and/or have announced layoffs.

Central Europe increasingly feels the effects of the economic crisis, with the carmakers in the region (Skoda, Dacia, Audi, etc.) being more and more affected, despite the workforce which is skilled and cheap at the same time. Thus, carmakers in the region are forced to cut down production and adapt it to the decreasing demand.

American carmakers

The ones that have suffered the most as a result of the financial crisis have been the American companies **General Motors, Chrysler, and Ford Motor Co.** Car sales have been seriously affected by the credit crunch and the economic slowdown. Overall, car sales in the US have dropped significantly compared with the same periods in 2007.

Asian carmakers

In Japan, the main automotive companies, **Toyota, Honda, and Nissan**, have reduced production, as the difficult credit terms and rising investor uncertainty have affected car sales.

3. The Romanian automotive industry

a) Romania – Country profile

In the context of an economy in full upward trend, the automotive industry in Romania is thriving, on the one hand due to the infusion of foreign capital attracted by the cheap and skilled workforce, the low costs, the experience in the relations with foreign partners, Romanians' wish and will to cooperate and develop and, on the other hand, by the Romanian manufacturers of automotive parts. The latter are currently restructuring their activity, undergoing certification processes according to the requirements of the current European legislation, continuously prospecting the market for new contacts and new agreements with foreign partners.

At a population of 22 million people, 4.5 million vehicles are registered in Romania, and the percentage of person vehicles among the total number of vehicles registered was 78.7% at the end of 2007[7]. 231,056 person vehicles were made in Romania in 2008, as can be seen in the table below.

Table 4. Vehicle production and assembly in Romania 2006-2008

Production and assembly	2006	2007	2008
Person vehicles	201.663	234.103	231.056
Commercial vehicles	11926	7.599	14.241
Buses	8	10	11
Total	213.597	241.712	245.308

Source: Adaptation from APIA, Statistical Bulletin

At the same time, for a most accurate picture of this field, we have also looked at vehicle imports and exports. Thus, the table below and **Chart 2** show that, no matter which type of vehicle we analyse, Romania imports more than it manages to export.

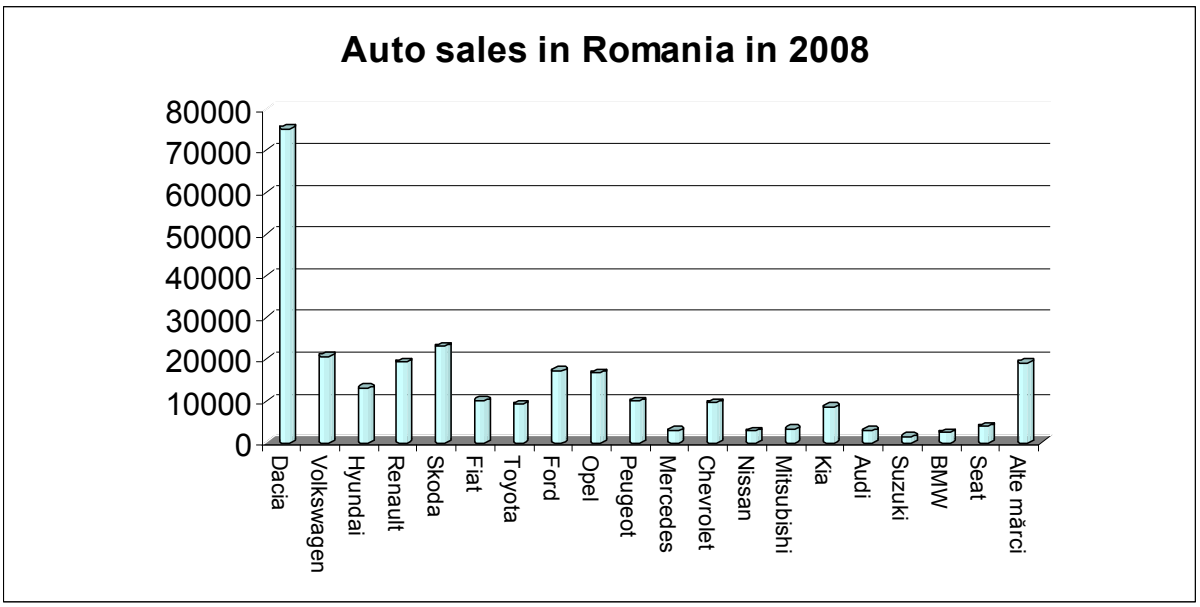
Table 5. Vehicle exports and imports in Romania, 2006-2008

		2006	2007	2008
Person vehicles	Export	80.032	121.866	153.595
	Import	137.252	204.719	189.050
Commercial vehicles	Export	446	685	2.503
	Import	26.369	40.963	39.352
Buses	Export	0	0	0
	Import	2.721	3.227	4.153
Total	Export	80.478	122.551	156.098
	Import	166.342	248.909	232.555

Source: Adaptation from APIA, Statistical Bulletin

Domestic carmaker Dacia is by far the market leader in Romania, with 27.8% of the market thanks to the Logan model. After Dacia, the best selling makes in Romania are Skoda (8.5%), Volkswagen (7.6%), Renault (7.1%), Ford, and Opel, the last two with approximately 6% of the market. See **Chart 1** below as well.

[7] INS, New Road Vehicle Registrations, 2008



Source: APIA, Top Vehicle Sales, 2009

As concerns consumers' preferences in Romania regarding this market, compact, family cars are most people's choice (60%), followed by cars in the small categories. Regardless of make, size, cubic capacity or fuel, the automotive market in Romania is steadily growing.

Based on the statistics provided by ACAROM, it is estimated that the automotive industry had so far attracted investments of 1.5 bn euros, compared to 2.5 bn euros in Slovakia and Hungary or over 6 bn. in the Czech Republic and Poland.

The current state of the automotive industry in Romania shows that there is a growing interest for the potential of the Romanian part manufacturers, foreign companies expressing their interest to develop business in the automotive industry in our country, either by direct investment or by forming joint ventures with Romanian companies.

b) The national policy in the automotive industry

Automobile part manufacturing displays the highest growth in the Romanian automotive industry, this growth being stimulated by the dynamics of the road transport means industry. The main profile of these companies is the production of metal, plastic, and rubber parts, as well as electric and electronic components.

The **new vehicle** market has had an unprecedentedly high rate of development in Romania. The number of new cars made has exceeded 256,000, of which over 215,000 were person vehicles.

As a result, the national automotive market has become the second in the region after Poland, exceeding the size of the Hungarian one. We should also remember that the population of Poland is almost double that of Romania. New car sales have also reached a psychological threshold: **one new car was sold for every 100 inhabitants**, which places us closer to the levels in other countries in the region (in Hungary, it was one new car for every 54 inhabitants, in the Czech Republic it was one for every 78, and in Poland it was one for every 153).

c) The structure of the Romanian sector by CAEN code

From the point of view of the CAEN code (CAEN - the national statistical classification of economic activity), the companies carrying out activities in the automotive industry can be ascribed to the processing industry category.

The processing activity is the mechanical, physical or chemical transformation of materials, substances or components to obtain new products. The materials, substances or components seen as raw materials here are actually products of other economic activities.

The entities in the section regarding the processing industry are often described as companies that use electric machines and equipment for material handling.
As a rule, the processing of components and specialized parts, accessories, and extras for machines and equipment is ascribed to the same class as the manufacturing of the machines and equipment those parts and accessories are meant for. The manufacturing of components and non-specialized parts of machines and equipment, such as engines, pistons, electric motors, electric assemblies, valves, sprocket wheels, bearings, is ascribed to the corresponding processing category, regardless of the machines and equipment where these items may be included.

Traditionally, this study only focuses on the **industry of road transportation means.** As part of the processing industry, this sector has the following related **activities and encodings**:

CAEN 34 - The industry of road transportation means:
CAEN 341 - Vehicle manufacturing:
CAEN 3410 - Vehicle manufacturing;
CAEN 342 - Car body, trailer, and semitrailer manufacturing:
CAEN 3420 - Car body, trailer, and semitrailer manufacturing;
CAEN 343 - Part and accessory manufacturing for vehicles and vehicle engines;
CAEN 3430 - Part and accessory manufacturing for vehicles and vehicle engines.

The field of carmakers cannot be analysed independently and exclusively at the level of CAEN 34. Thus, other CAEN codes that will be included in our discussion belong to activities of the processing industry that are connected to the industry of vehicle part manufacturers. These CAEN codes are presented below, classified into the following types of categories:

Table 6. CAEN codes[8] for auxiliary industries to the automotive sector

CAEN	CAEN code definition	CAEN	CAEN code definition
1740	textile items	2932	industrial ventilation and cooling equipment
2511	tyres and air tubes	2941	portable, electrically driven machine tools
2513	the manufacturing of other rubber products	2942	machine tools for metal processing
2521	plates, foils, tubes, and plastic parts	2943	the manufacturing of other machine tools
2522	plastic wrappings	2951	machines for metallurgy
2524	plastic wrappings	2956	other machines with specific uses

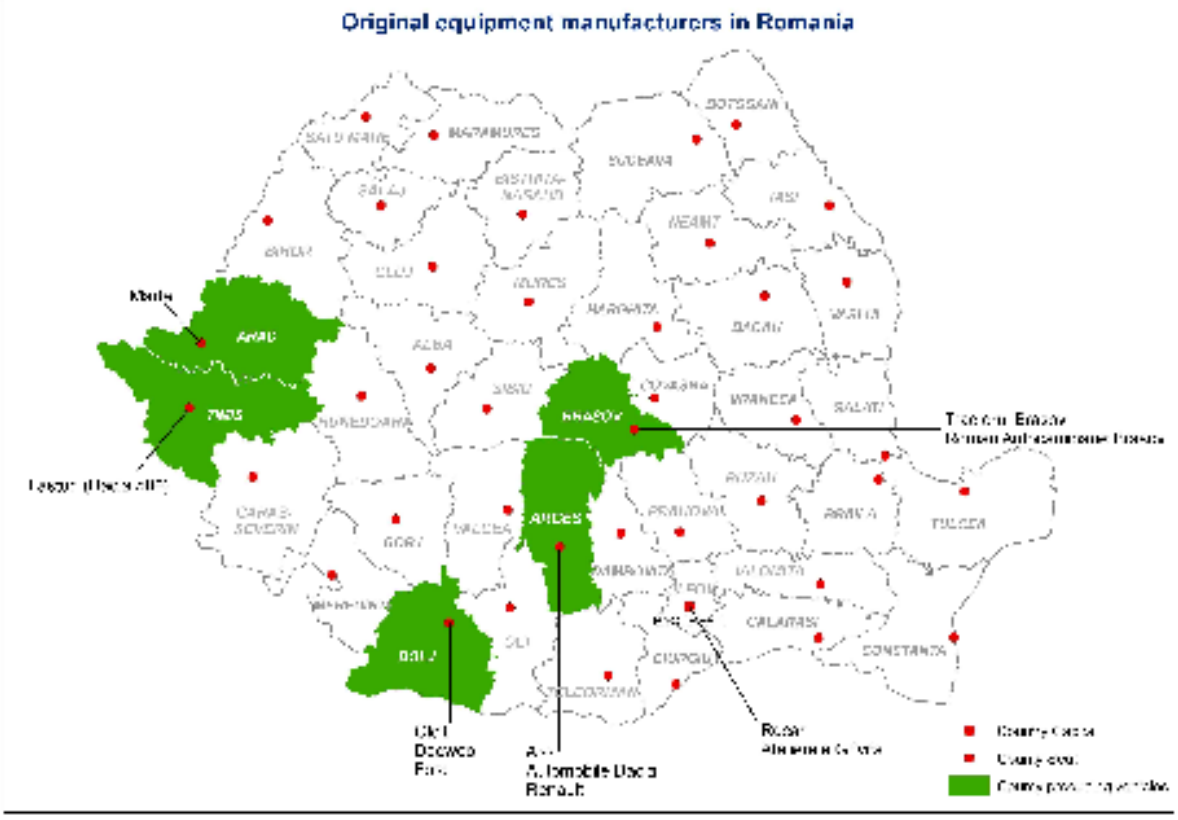
[8] According to INS, CAEN Revised 2 Classification of the activities in the national economy, 2nd edition, Bucharest, 2008

2733	metallurgic steel products	3130	wires and insulated cables
2742	metallurgy - aluminium	3150	electric lamps
2754	cast parts made of other nonferrous metals	3161	electric equipment for engines and vehicles
2811	metallic constructions and related parts	3210	electronic tubes and other electronic parts
2812	metal structures and frames	3663	other manufactured products
2840	metallic products with plastic deformation; powder metallurgy	4521	metallic hall building
2851	metal treatment and plating	4531	electric installation work
2852	general mechanics operations	4534	other installation and auxiliary construction work
2863	ironwork manufacturing	4550	construction machinery rental services
2873	metallic wire items	5154	ironworks equipment
2875	other metallic items	5188	machine, accessory, and agricultural tool sale
2911	internal combustion engines	7221	software product editing services
2912	pumps, compressors, and their parts	7420	industrial automation architecture

d) Romania – domestic companies and products

Romania has a long carmaking tradition. In 1989, our country was manufacturing a range of vehicles, from the Lăstun to the heavy trucks, especially, but not exclusively, for the domestic market. There were vehicle factories in Mioveni, Craiova, Câmpulung-Muscel, Timişoara, and Braşov. Only two of those are still in operation today – Craiova and Mioveni. Both have survived because they have been acquired by big international manufacturers. Other factories were less fortunate: Câmpulung, which is bankrupt, Roman Braşov, where production is only resumed when state subsidies allow it, and Timişoara, which has permanently closed down.

Map 1 below shows each of these production units present in Romania.

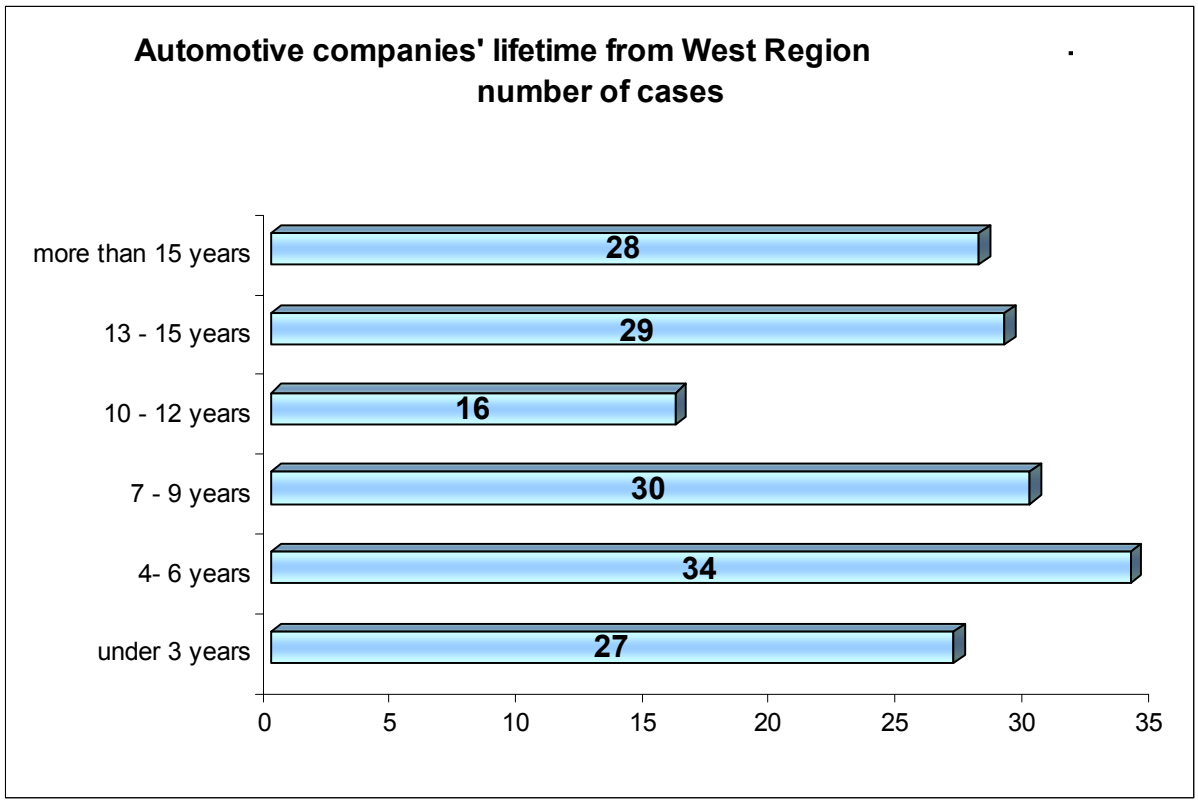


After 1989, a number of carmakers, such as Mercedes, Audi, Hyundai, Volvo, Toyota, and Peugeot, have expressed their desire to manufacture cars in Romania or to purchase one of the domestic companies. In most cases, the talks were abandoned due to the lack of tax incentives from the governments of those times, the weak infrastructure, and other misunderstandings.

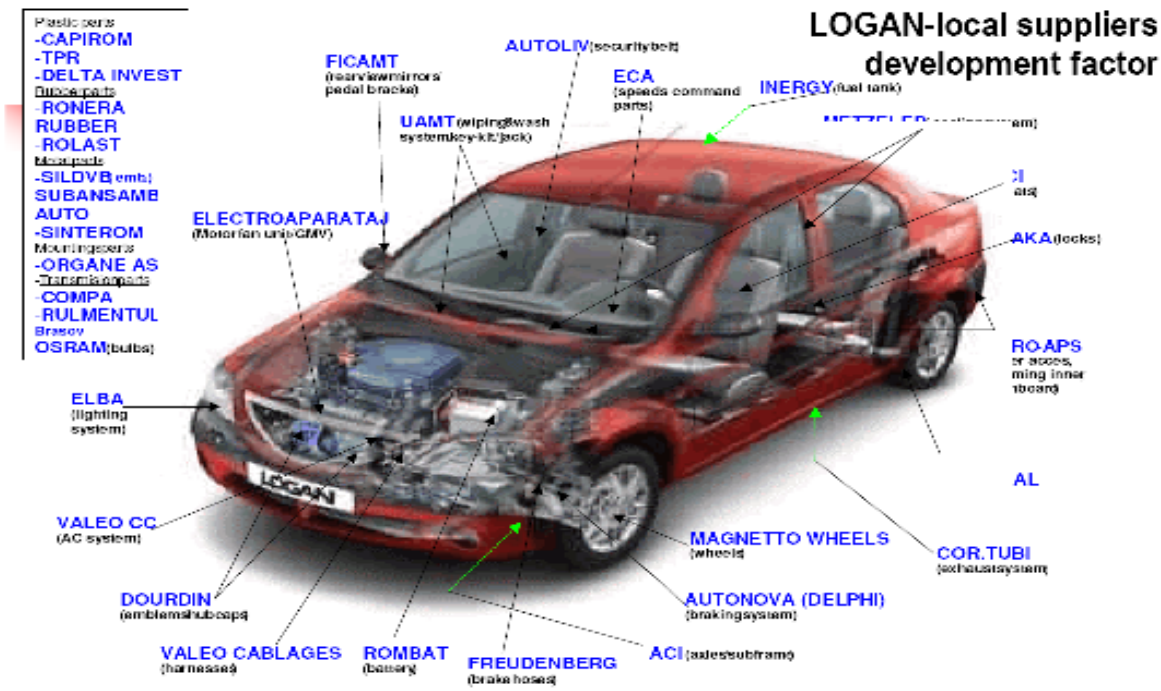
e) Localization of foreign automotive companies

It took a while after the opening of the Romanian economy before major automotive part manufacturers decided to come to our country, as they first preferred surrounding countries. Nevertheless, the automotive industry is nowadays one of the favourite targets for foreign investors in Romania. Whether it has to do with steering wheels, engines, gearboxes, electronic circuits, tyres or rims, airbags, seat upholstery, lamps, and even automotive software, we can find all of them in renowned companies bearing the "Made in Romania" label.

The major surge of the automotive companies towards Romania has been visible since 2000. Over 10 years passed after 1989 before we could talk about Romanian towns or cities "conquered" by the big companies supplying the automotive industry worldwide. In 2007, 38 foreign automotive part manufacturers had factories in Romania and six others were building production facilities. See **Chart 2** below as well.



The presence of Renault in Piteşti has also attracted the company's traditional suppliers, which have settled around the new factory, investing in units that produce not only for Dacia-Renault, but also for clients abroad: Auto Chassis International (automotive chassis), Valeo (circuitry), Johnson Controls (seats), Cortubi (exhaust system), Euro APS (plastic and thermoformed parts), Valeo Climate (air conditioning). **Figure 2** below shows the suppliers of different parts for Dacia Logan.



Nevertheless, we should mention that the automotive part factories in Romania are not exclusive Dacia suppliers. These companies have contracts with, or act as subcontractors for, system and module manufacturers belonging to the major carmakers or for international spare part networks. We would like to mention the investments made in Romania by some foreign companies with branches all over the world: Continental, SNR, Dura Automotive, Delphi, Lisa Draexlmaier, INA Schaeffler, Timken, Koyo, Sumitomo, Yazaki, Leoni, Lear, Takata Petri, Faurecia, and others, clients of major carmakers Ford, BMW, Daimler Chrysler, Peugeot, Citroen, Fiat, Mercedes Benz, Volvo, General Motors, Toyota, Subaru.

Based on the information provided by the Romanian Foreign Investment Agency (ARIS), the table below shows the main automotive part manufacturers in Romania with foreign capital:

Table 7. The main automotive part manufacturers in Romania with foreign capital

Company name	**Country of origin**	**Product**	**Localization**	**Investment type**
Autoliv Inc.	Sweden	seat belts	Braşov Piteşti	greenfield
Auto Chassis International ACI	France	chassis	Piteşti	greenfield
Alcoa Fujikura Inc.	USA	automotive cables	Chişineu-Criş (AR) Caransebeş	greenfield
ACE	Spain	automotive cables	Cluj Napoca	greenfield
Baumeister&Oustler	Germany	plastic and aluminium parts	Arad	greenfield
Coficab	Tunisia	electric cables	Arad	greenfield
Continental	Germany	tyres	Timişoara	brownfield

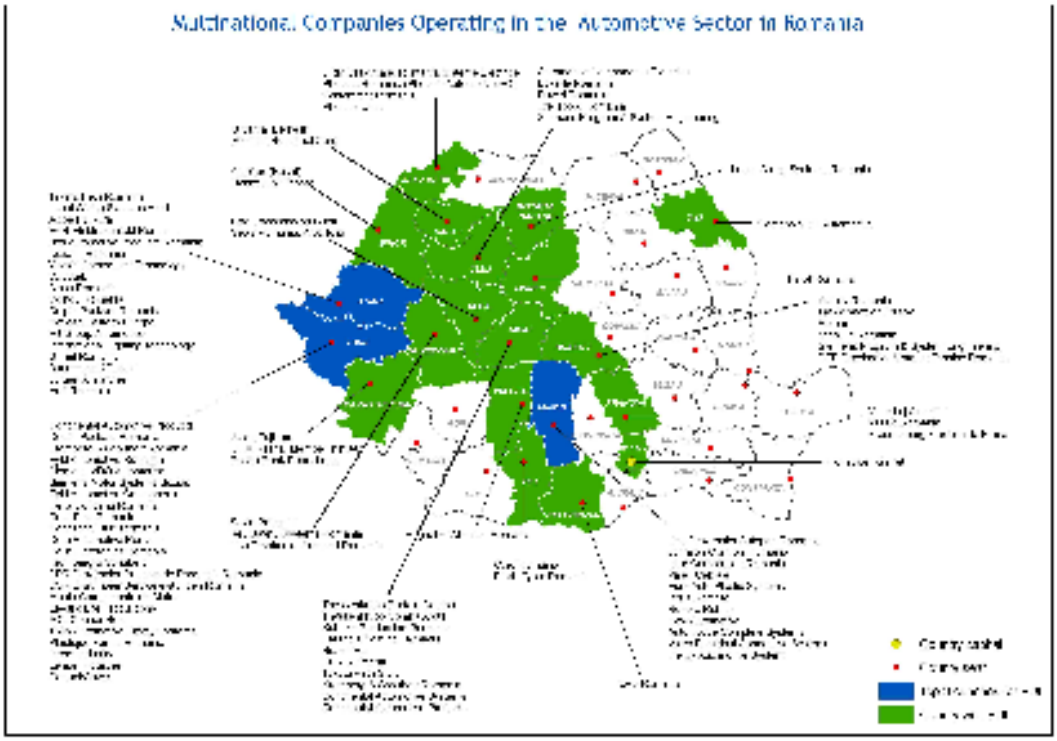
Automotive Products				
Continental Automotive Systems	Germany	electronic systems	Sibiu	greenfield
ContiTech	Germany	transmission belts and rubber hoses	Timişoara	greenfield
DaimlerChrysler	Germany/USA	gearboxes and metal components	Cugir (AB)	joint venture
Coindu	Portugal	seat upholstery	Curtici-Arad	greenfield
Eybl International AG	Austria	steering wheels and seat upholstery	Timişoara Deta (TM)	greenfield
Dura Automotive	USA	control systems	Timişoara	greenfield
Delphi Packard	USA	automotive cables	Sânnicolaul Mare (TM)	greenfield
Faurecia	France	seat upholstery	Tălmaciu (SB)	greenfield
INA Scheaffer	Germany	automotive bearings	Braşov	greenfield
Johnson Controls	USA	seats and seat upholstery	Ploieşti Piteşti	greenfield
Hella	Germany	car lamps	Timişoara	greenfield
Kromberg&Schubert	Germany	automotive cables	Timişoara	greenfield
Honeywell Garett	USA	parts and turbo blowers	Bucharest	brownfield
Lisa Draxlmaier	Germany	cabling and electric system	Piteşti	brownfield
			Satu-Mare Timişoara Hunedoara Braşov	greenfield
Koyo Seiko	Japan	bearings	Alexandria	brownfield
Lear Corporation	USA	automotive cables	Piteşti	greenfield
Michelin	France	tyres	Floreşti (PH) Zalău	brownfield
Leoni Wiring Systems	Germany	automotive cables	Arad Bistriţa	greenfield
Magneto Group	Italy	rims	Dragăşani-Olt	brownfield
Momo - Key Safety Systems Ro	Italy	steering wheels	Ribiţa (HD)	greenfield

Pirelli	Italy	tyres	Slatina	greenfield
Pirelli / Continental AG	Italy/Germany	metallic cord	Slatina	joint venture
Phoenix AG	Germany	Rubber parts	Satu-Mare	greenfield
Renault-Nissan	France	gearboxes	Piteşti	greenfield
SNR Roulemets	France	bearings	Sibiu	greenfield
Solvay-Inergy	Belgium	automotive part	Piteşti	brownfield
Siemens Automotive VDO	Germany	software for the automotive industry	Timişoara	greenfield
Sumitomo Electric Wiring Systems	Japan	automotive cables	Orăştie Deva Alba-Iulia	greenfield
Schlemmer	Germany	automotive cabling protection system	Satu-Mare	greenfield
Takata Corporation	Japan	airbags and steering wheels	Arad Sibiu	greenfield
ThyssenKrupp	Germany	springs and automotive pistons	Sibiu	joint venture
TRW	USA	steering wheels	Timişoara	greenfield
Valeo	France	automotive cables	Piteşti Mioveni Timişoara	greenfield
Valvetek	Italy	automotive valves	Curtici-Arad	greenfield
Yazaki Corporation	Japan	cabling and electric system	Ploieşti Arad	greenfield

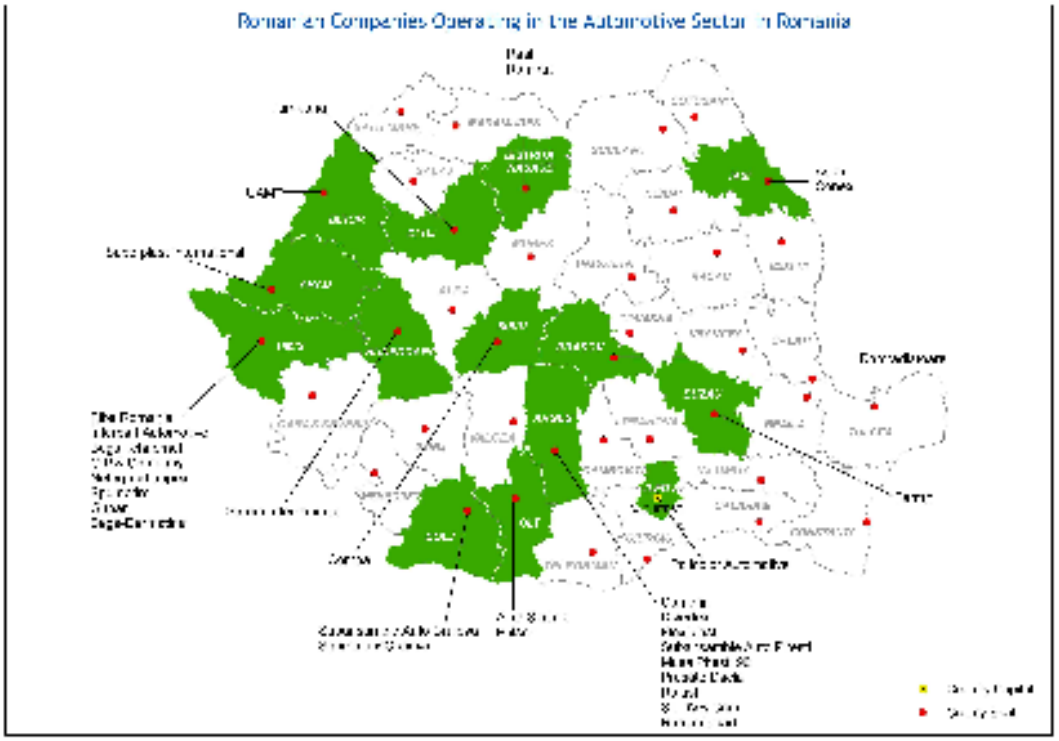
Source: ARIS

Despite the growing number of car part manufacturers setting up shop in Romania, this group remains a concentrated one. The concentration we are talking about is a geographic one. Just 3 counties account for half of the sector's turnover: Timiş, Arad, and Argeş. Their territorial distribution is shown in **map 2** below[9].

[9] The map was made starting from the information in ***Automotive Parts Manufacturing in Romania*****, written by** Central Europe Trust Company, 2007.



Besides these foreign companies, there are a number of Romanian companies operating in this sector as well. See **map 3** below as well[10].



[10] The map was made starting from the information in ***Automotive Parts Manufacturing in Romania*, written by** Central Europe Trust Company, 2007.

f) Institutional structures

The Romanian Carmakers' Association[11] (ACAROM)

ACAROM is a professional and patronal association made up of companies operating in the automotive industry, associated with the purpose of representing the interest of the automotive sector. ACAROM unites 106 companies making automobiles, automotive parts and materials and was founded in 1996, in compliance with law 21/1924.

The Romanian Carmakers and Automotive Importers' Association[12] (APIA)

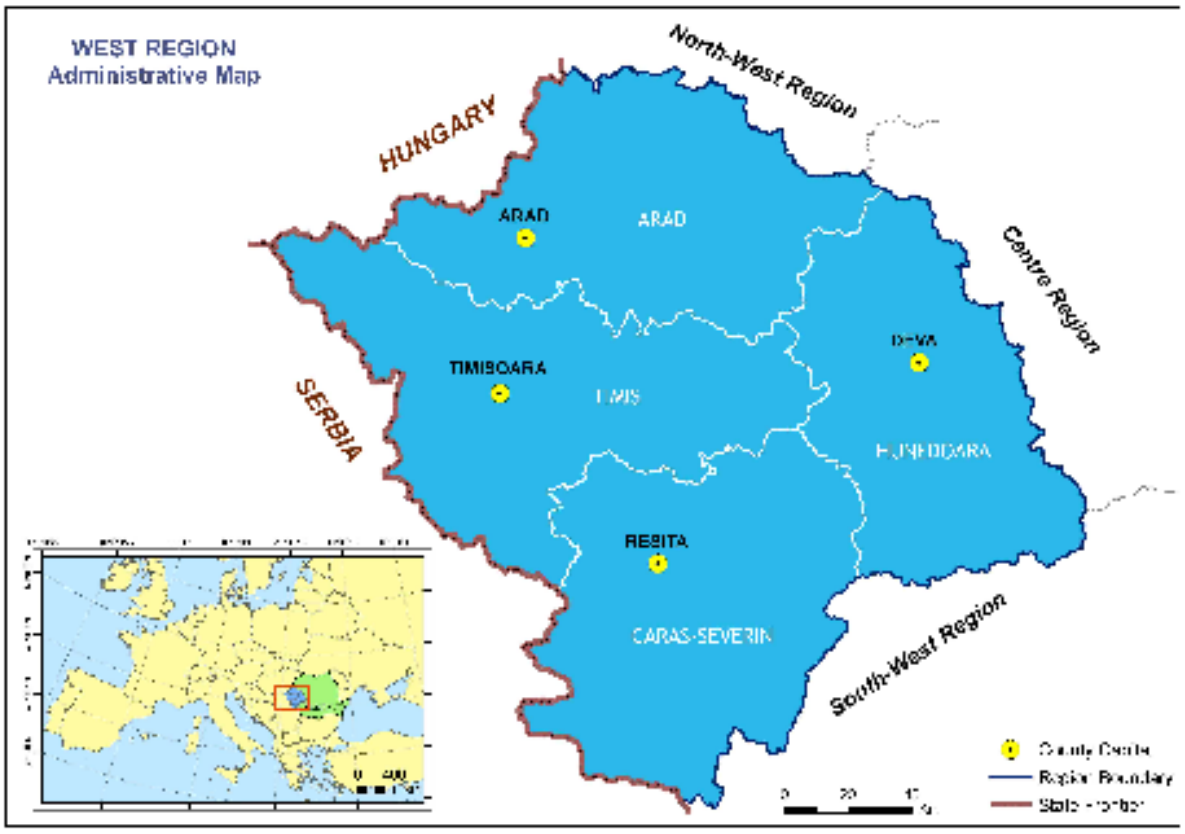
APIA was founded in 1994 and *it now unites the leading companies* in the automotive field: national carmakers, automobile importers, as well as other renowned companies making automotive parts and accessories or lubricants. APIA is a *member of the International Carmakers' Organization* – OICA.

[11] More on www.acrom.ro
[12] More information on www.apia.ro

4. The West Region and the automotive industry

a) The West Region – general features

The West Region lies in the west of Romania, at the border between Hungary and Serbia, consisting of **four counties** from an administrative-territorial point of view: Arad, Caraş-Severin, Hunedoara, and Timiş, as can be seen in **map 4** below. The West Region has an area of 32,034 km^2, accounting for 13.4% of the country's area.



On July 1, 2007, the *West Region had a population of* ***1,924,442 people***, accounting for 8.93% of Romania's population. The West Region has the smallest population of all the country's region, while also being the only region with less than 2 million inhabitants.

On July 1, 2007, the population of the county seats in the region was: 167,238 inhabitants in Arad, 84,678 inhabitants in Reşiţa, 67,508 inhabitants in Deva, and 307,347 inhabitants in Timişoara.

From an administrative-territorial point of view, there are **322 administrative-territorial units** in the West Region, distributed as follows: **42 cities and towns and 280 communes**.

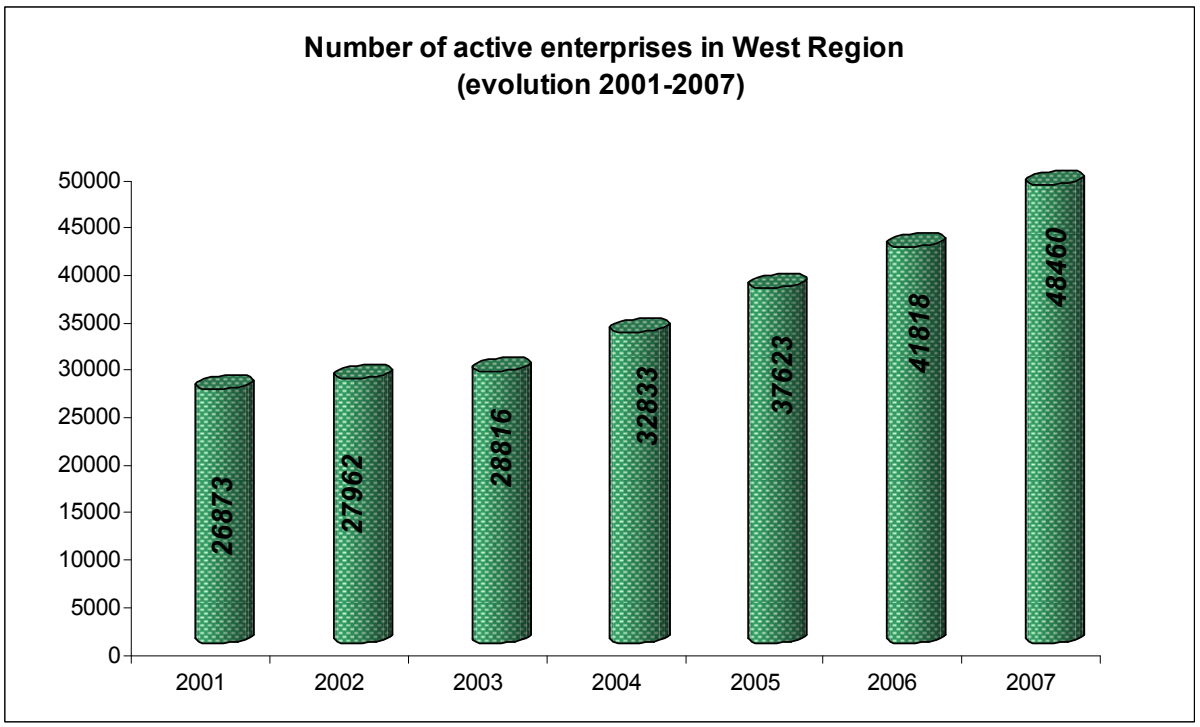
The economic indicators have had a significant evolution in the West Region: both the total GDP and the per capita GDP have risen every year, in agreement with the national tendency, but at a faster rate.

Table 8. The per capita GDP 2001-2006 in lei (RON), current prices

Year/ Region	2001	2002	2003	2004	2005	2006
Romania	5.210,94	6.950,06	9.090,30	11.372,00	13.326,8	**15967,6**
West	5.521,16	7.527,41	10.265,19	13.042,91	14.960,4	**18570,1**

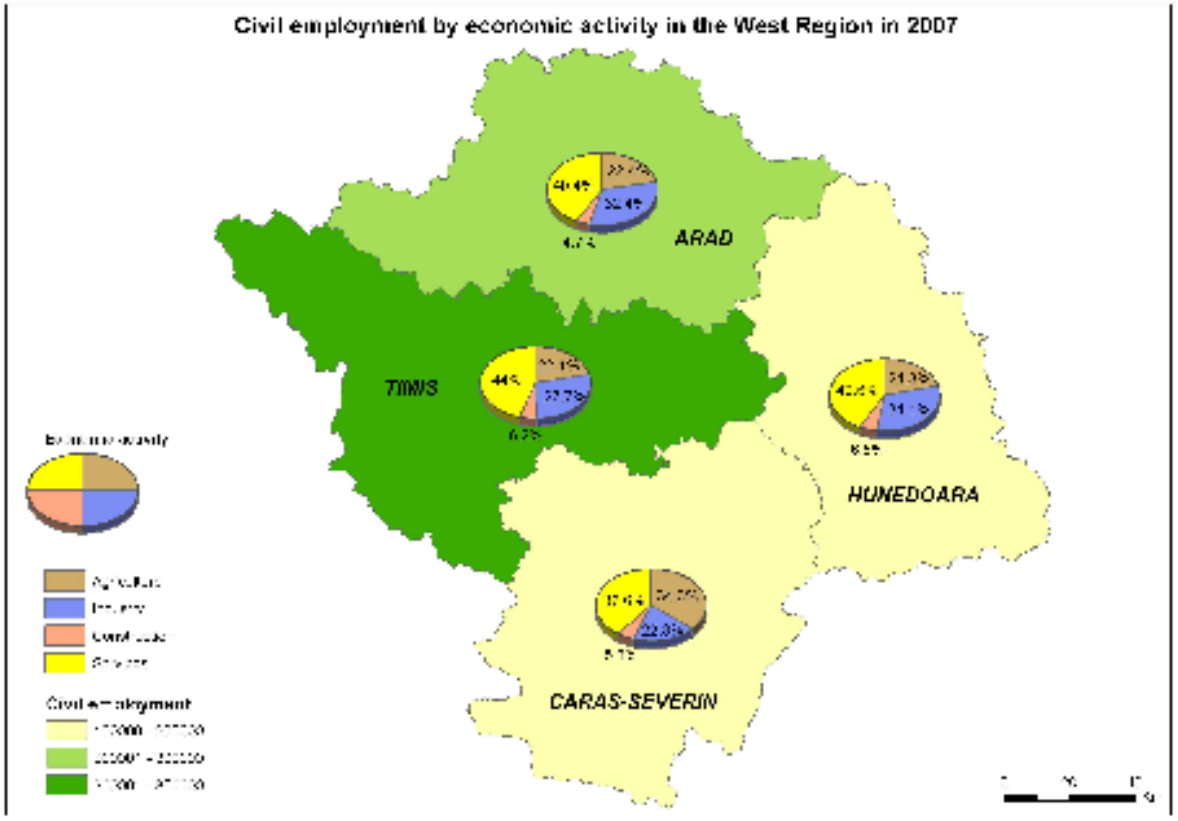
Source: National Regional Accounts 2001-2005, INS, 2008, and the Romanian Yearly Statistics, 2008, INS, 2009

In 2007, there were **48,460** companies operating in the West Region in fields such as industry, constructions, and services, accounting for 9,5% of the total number of enterprises in Romania, continuing the upward trend from the previous period, as can be seen in **chart 3** below.



The transition to the market economy has left its print on the features of the labour market, determining significant changes in the volume and structure of the main workforce indicators (activity rate, employment rate, unemployment rate, etc.). According to the statistics, the **active population** in the West Region in 2007 consisted of 885,000 people. **The employed population** was 835,000 people that year, and the **unemployed population** was 50,000 people, according to the **International Labour Office**. The employed population has maintained a downward trend in the West Region. The average number of employed people in the West Region has risen by 56,000 between 2001-2007, reaching 522,000 people, although there have been fluctuations along this period.

The employment rate of the population at the level of the main sectors of economic activity in the West Region is shown in **map 5** below.



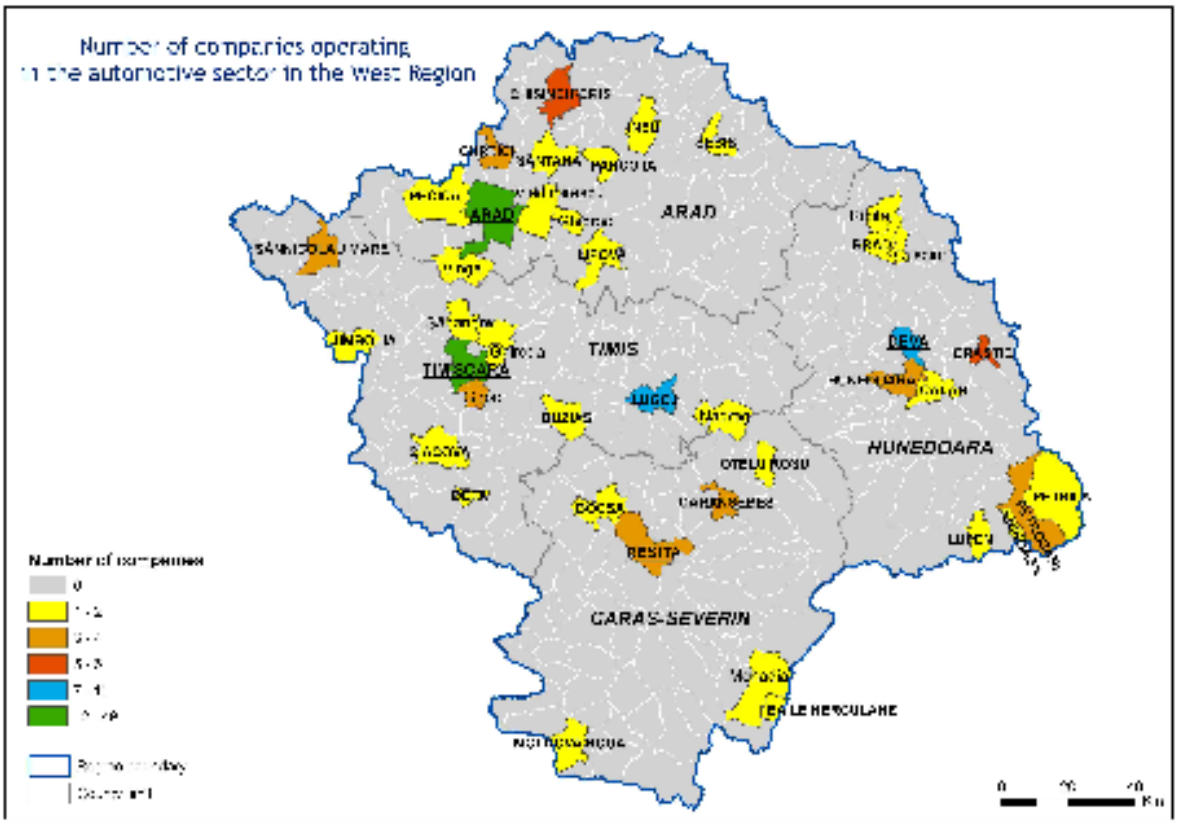
Due to the multi-ethnicity of the population in the region, one of the features of education in the West Region is the existence of many primary and lower secondary schools, and even higher secondary schools where students are taught in a minority language or an international language. The network of education institutions comprises 503 primary and lower secondary schools, 160 higher secondary schools, 5 professional schools, 4 post-secondary schools, and 14 universities.

b) The automotive companies in the West Region

The development of the automotive part sector in the West Region has been achieved both through the specialization of some domestic companies and by attracting foreign investors.

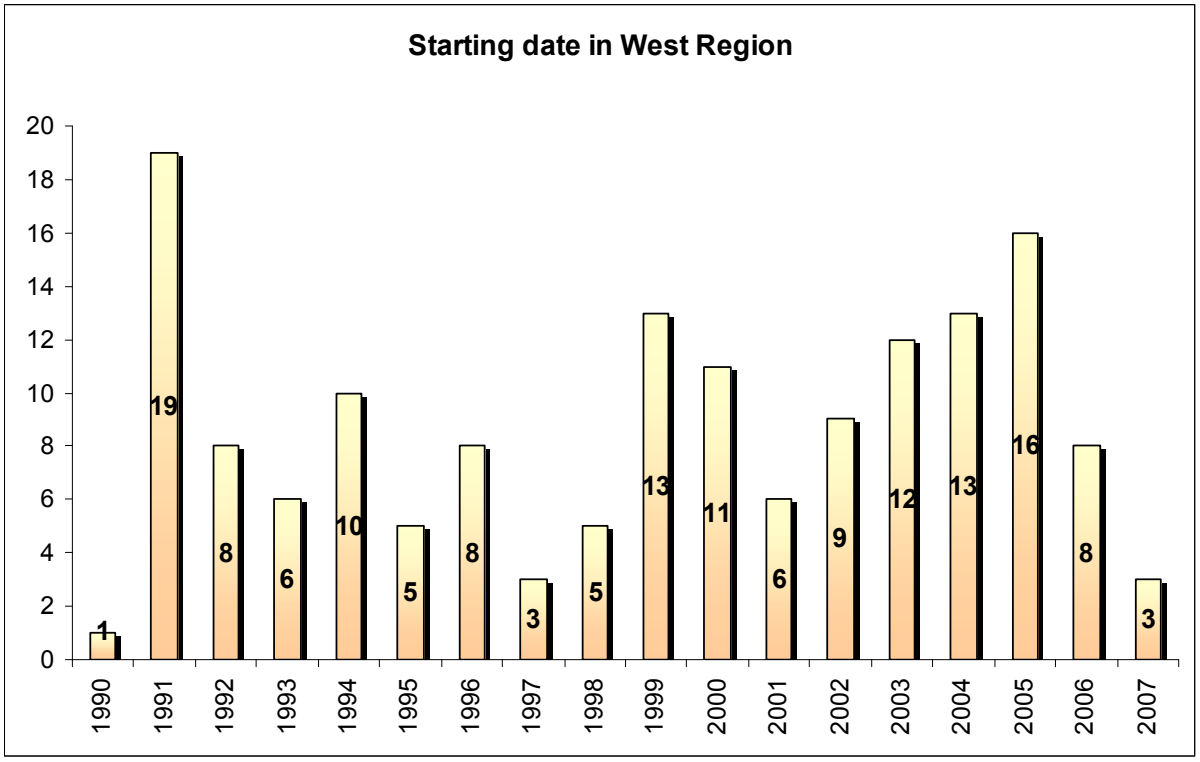
From the point of view of the products made in the West Region, we can speak of 156 companies whose production falls completely or partly in this sector.

Map 6 below gives an overview of the local distribution of these companies in the West Region. As can be seen, Arad and Timişoara are real poles of attraction for the companies in this field, housing most of the companies whose capital is entirely or partly foreign. The industrial tradition, the existence of a solid base for staff recruitment, the existence of a technical university and a suitable infrastructure have been distinguishing features of the two cities in the region's landscape. We should mention that the proximity to the large urban centres of the region has also contributed to the development of other places, preferred by the new companies.

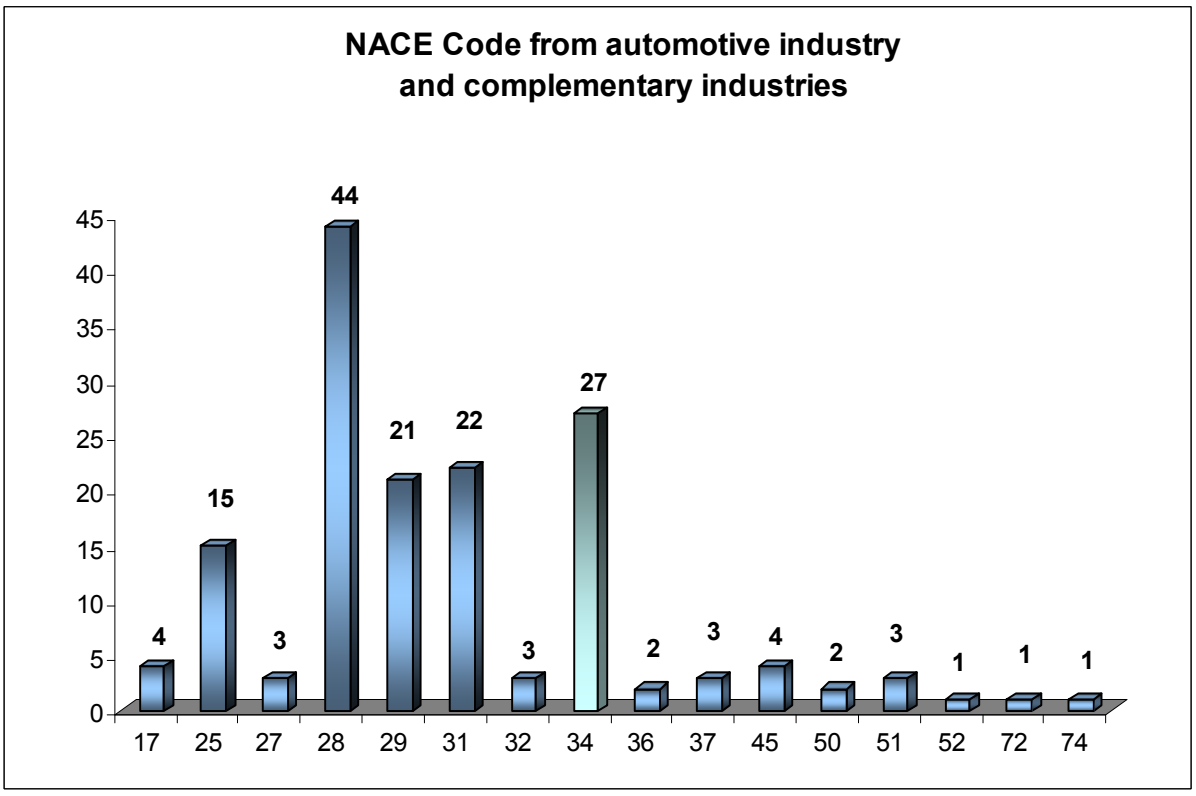


The automotive part suppliers' sector has developed in Romania in the 60's and the 70's, starting with the opening of the Dacia Factory, the avowed purpose being that of manufacturing all the automotive parts needed for the production of the company's models. The 156 companies in this field in the West Region have developed either as a result of the restructuring process or through the privatization of the state-owned Romanian companies and their acquisition by foreign companies, either by a relocation of the production facilities or through greenfield investments.

Chart 4 below represents the moment when these companies started their activity in the West Region. As can be seen, most activities were started in 1991 and 2004. While the 1991 information is based on the restructuring of the former state-owned Romanian companies, 2004 was a year when significant foreign investments in this field were drawn to the West Region.



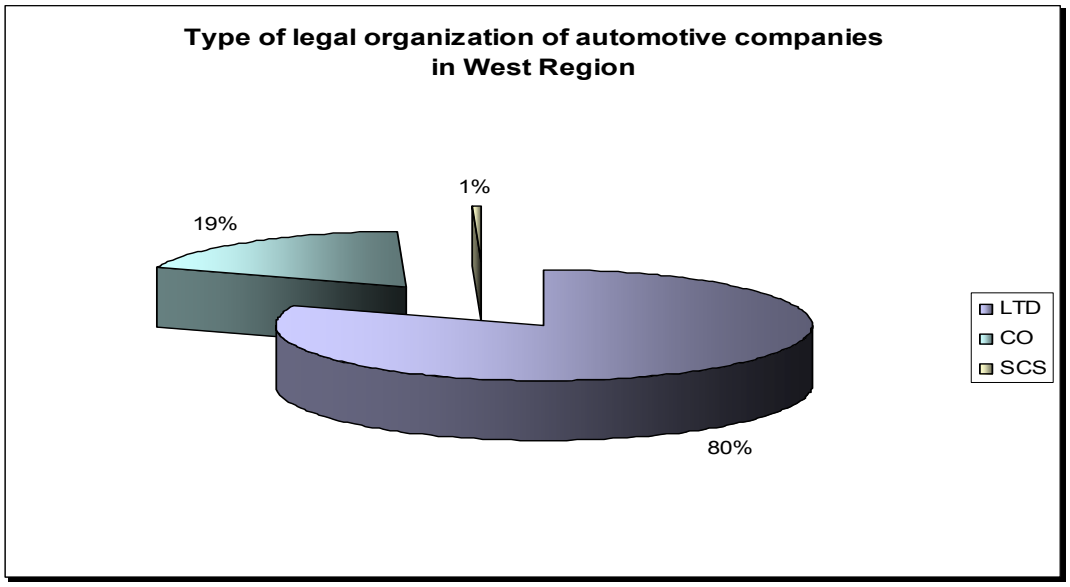
The schematic classification of the activities in the national economy is done using the CAEN encoding. Bedsides code CAEN 34, which corresponds to activities in the industry of road transportation means, other companies have been taken into account, with quite diverse CAEN codes, as can be seen in **chart 5** below.



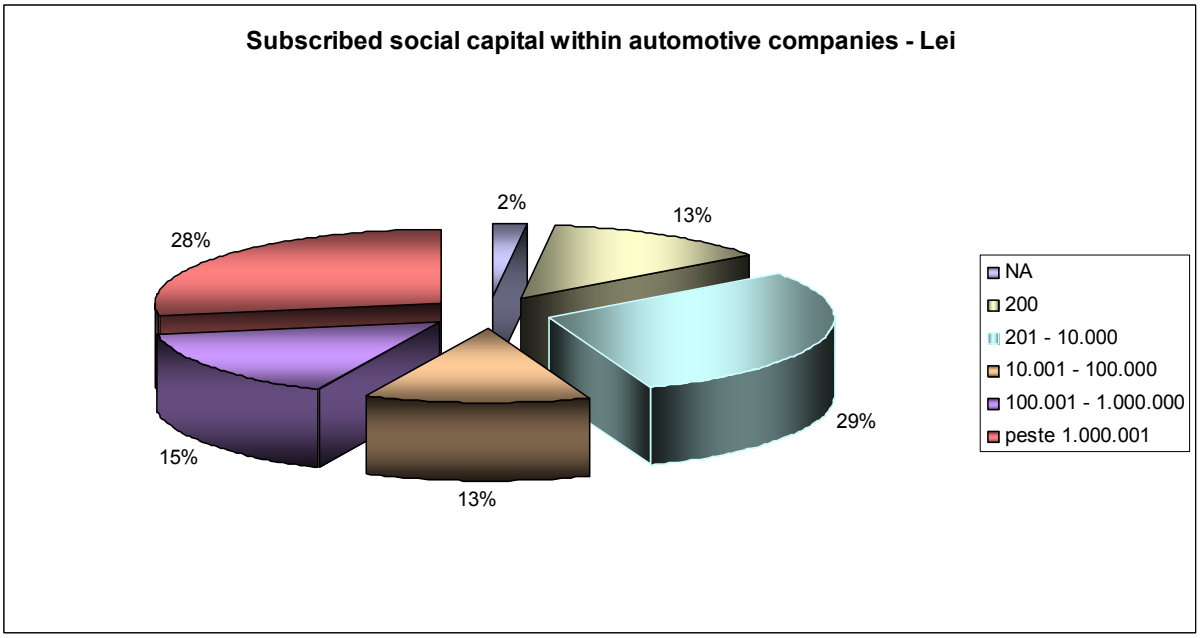
We will now look at the 156 companies based on the information available at the Trade

Register concerning the form of association, the subscribed share capital, turnover, net profit, and number of employees.

As shown in **chart 6** below, most companies in our analysis are limited liability companies. The former state-owned enterprises chose to become joint-stock companies after they were restructured. A few foreign companies have preferred to set up dealerships in Romania.

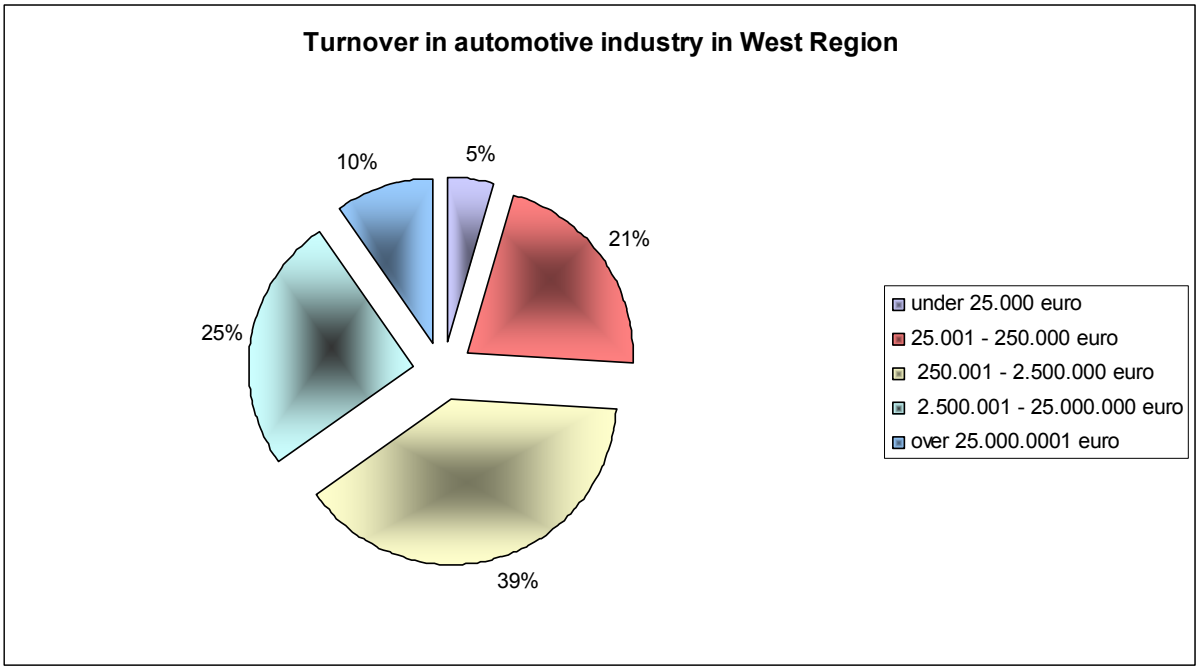


As concerns the **share capital**, this is defined as a sum of all contributions brought by the associates for the setting up and operation of a commercial enterprise. As shown in **chart 7** below, 13% of the companies analysed were set up with the minimum subscribed share capital of RON 200. From the analysis of the subscribed capital, we can see that most companies are in the RON 201-10,000 range (29%) and over RON 1 million (28%).



The **turnover** is the sum total of the revenues generated by the company's trade operations, namely the sale of merchandise and products over a given period of time.

Judging by this indicator, **chart 8** below shows that most companies had a turnover of under 2.5 million euros in the financial year 2007[13], with 65% of the companies belonging to this category.



The table below shows a summary of the sample turnover analysis, with information taken from the financial year 2007.

Table 9. Turnover of the companies in this sector established in the West Region

Turnover – Lei	
Minimum	9.248
Maximum	902.668.550
Total value	6.609.017.807
Average	42.638.825
Total companies	155
NA	1

Source: Own calculations, based on the information received from the Trade Register.

Profit is, in the narrowest sense, the revenue obtained by companies as a product of capital usage. In its broadest sense, profit is the company's earnings above the production cost. For joint-stock companies, after the payment of the legal taxes, the net profit is distributed to the shareholders in the form of annual dividends, in proportion with their contribution to the share capital.

The table below shows a summary of the sample net profit analysis, with information taken from the financial year 2006.

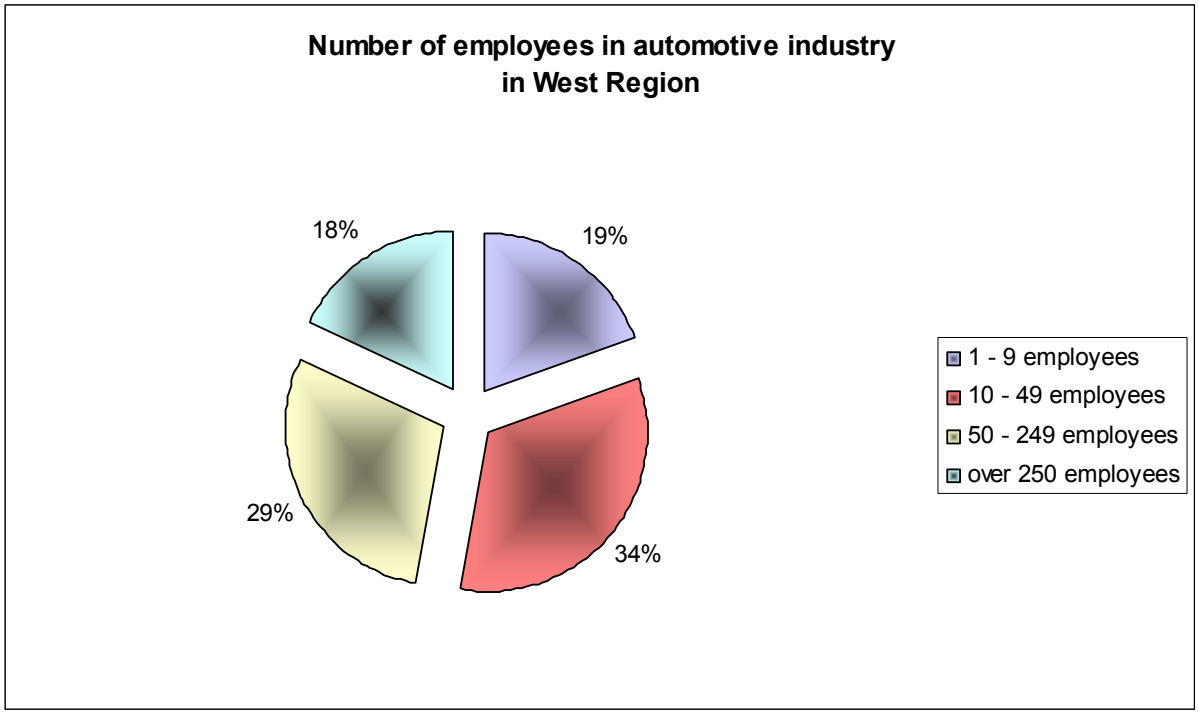
[13] We used an exchange rate of 4.0 lei for 1 euro in this study.

Table 10. The profit of the companies in this sector established in the West Region

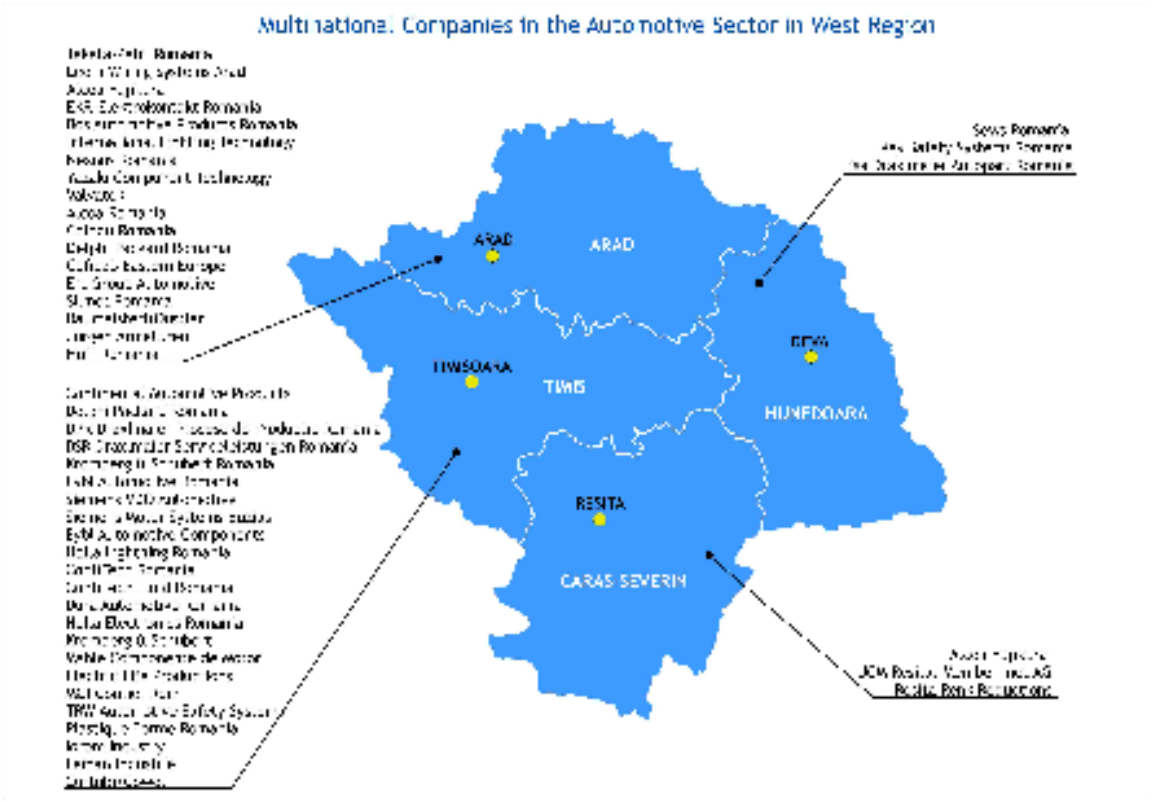
Profit – LEI	
Minimum	2.526
Maximum	42.123.975
Total value	258.998.356
Average	2.642.840,4
Total companies	98
NA	1

Source: Own calculations, based on the information received from the Trade Register.

Based on the information gathered from the 156 companies, grouped in the 4 categories mentioned in law 346 from July 2004 (updated and amended) regarding the incentives for the setup and development of small and medium-sized companies, we can see that most companies employ between 10 and 49 people. **Chart 9** below shows that most companies (35%) belong to the category with 10-49 employees.



Map 7 below gives an overview of the multinational companies established in the West Region.



The automotive industry in the West Region is not "just" the few dozens of companies operating here, but also the hundreds of thousands, maybe even millions, of **automotive parts manufactured**. The main products made by the companies in the West Region are:

- **automotive cables and electric systems** (Alcoa Fujikura Inc., Coficab, Delphi Packard, Kromberg&Schubert, Lisa Draxlmaier, Leoni Wiring Systems, Valeo Lighting Injection, Yazaki Component Tehnology, Ekr Elektrokontakt, Nexans Romania, SEWS (Sumitomo Electric Wiring System), Ersi, Jurgenhake Romania, Kablesysteme Hatzfeld, Vogt Electronic Romania, Dura Automotive, Eltrex, Electric Life Romania, Electric Life Production, Hella Electronics Romania, Elements Romania, Ec Electronics Manufacturing);
- **automotive lamps** (Hella Lighting Romania, Luxten Lighting Company, Elba, Valeo Lighting Assembly);
- **tyres** (Continental Automotive Products, Velsatis, vicus Niccia);
- **transmission belts and rubber hoses** (ContiTech Romania);
- **car seat upholstery** (Coindu, Eybl International AG, Ert Group Automotive);
- **steering wheels** (Eybl International AG, Takata Petri Romania, TRW Automotive Safety Systems, Key Safety Systems Ro);
- **control systems** (Dura Automotive);
- **integrated steering systems** (TRW Automotive Safety Systems),
- **airbags** (Takata Petri Romania, TRW Automotive Safety Systems);
- **seat belts** (Autoliv Romania, TRW Automotive Safety Systems);
- **transmission belts** (Contitech Romania);
- **pneumatic suspension systems** (Contitech Romania, TRW Automotive Safety Systems);
- **vibration control** (Contitech Romania);

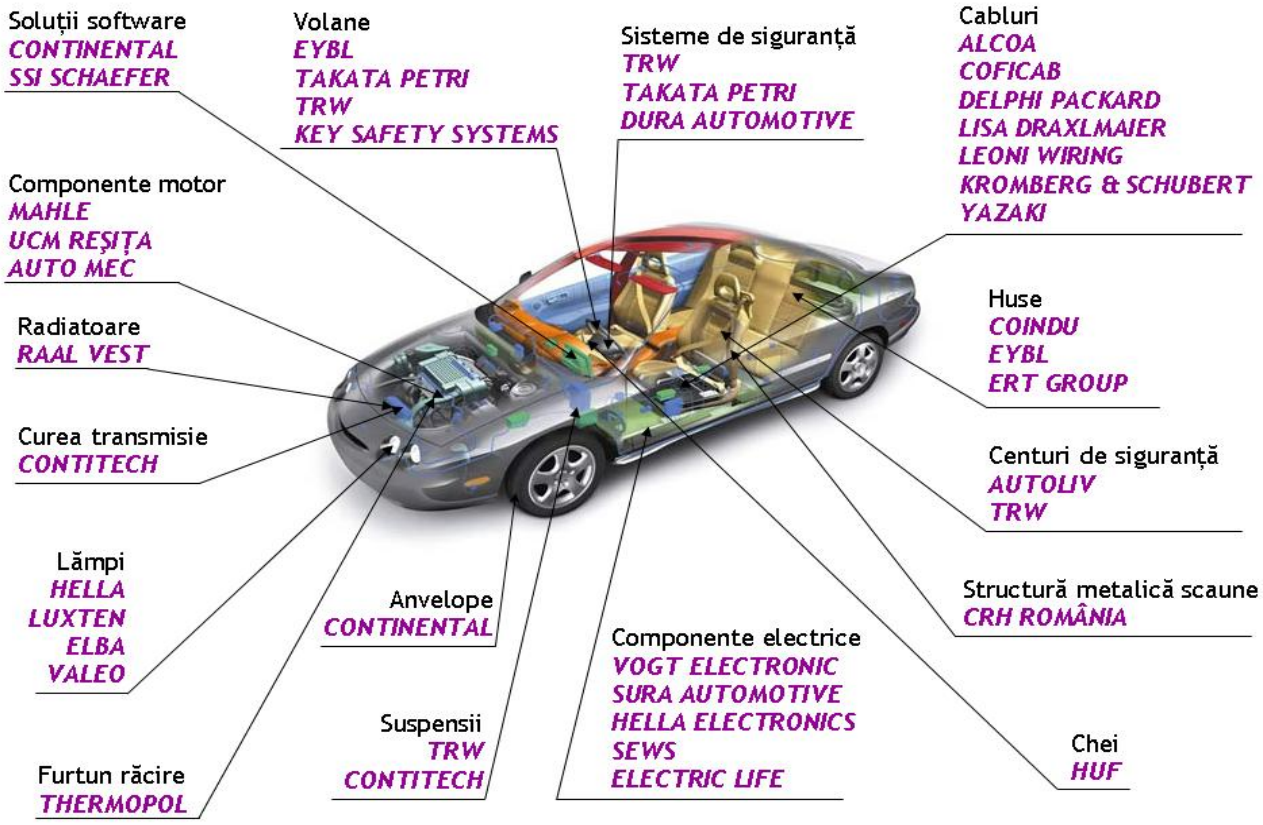
- **automotive valves (Valvetek);**
- **keys and locking systems (Huf Romania);**
- **software solutions** (SSI Schaefer, Continental VDO);
- **sun visors and textile parts for car interiors** (BOS Automotive Products);
- **metallic framework for car seats** (CRH Romania);
- **bus and minibus seats** (BV Productions Ro);
- **lathed parts and devices** (**Vogt Maschinenbau, Prodmec);**
- **engine parts** (Mahle Componente de motor, Sire, Euromont, Auto Mec);
- **silicon cooling hoses** (Thermopol);
- **buses, trolley buses, minibuses** (Astra Bus);
- **engines** (UCM Reşița);
- **automotive radiators** (Raal Vest);
- **electrostatic spray painting lines (Tim-Electrocolor);**
- ***metallic products obtained by plastic deformation*** (PA ID Automation, Newmet, Edorom Metal).

Besides these products themselves, various parts for these products are manufactured by companies operating in the West Region. Their activity in the automotive industry can be discussed based on the products resulting from the production process:

- ***rubber and plastic products*** (Dia Sigi, Delfingen Ro Transilvania, Superplast, International, Chimplast, Filplast, Tehnoprofil, IPCBH, Savrom Mulaj, Schmidt Protex, Huro Supermold, Plastique Forme Romania, Interpart Production, Euroflex, Chimica, MGI Coutier Rom, Leman Industrie, Technic Plastic Roumanie, Gala Niro Com);
- **electric installations** (Idra Star, Imsat Vest, Bielectro)
- **machine tools** (Alco Kraft, Scule Arad, Intertec, Promec, Slatex Maşini F&J, Aris, M.K. Kubitza, Gerom International, Timco, Metronom-B)
- **automation** (Prored end Engineering)
- **metallic wires** (SEWS, Janine Style, Prefal Rom, Nidzon Polistructuri)
- **metallic structures** (Adarco Invest, Caromet, BTC Carpenterie E Trade, Kox Industries, M.M.O. Servicii, Leader Tech, Dancke Ro, J & H Confecții metalice, *Armetal, Feroneria, Dagis S.T., Verofer, Binalia,* Gefo Exim, Arsat-K.N., Isotecno, Gulyas & Co, Trimetal, Modell Krech, Jacquemet Invest, GB-13, Van Emmerik Industries, Recom Sid, The Mechanical Works of Orăştie, Metal Mecanica Mir, Nefer Prod Impex, Metalconforme, Viancons, Royal Industrial, Festimani Comprest, Valmet Production, Gantois Romania, Band Metal, Echitron, Akis Grup, Urmo, Liman, Sircuc, Mas-Cenmais, Promes, Prometal, Midiamet, KPM Technik GMBH&Co KG, Silcom, Lugomet, Montanwerke Walter, Verni & Fida Romania, Gelco Prod, Megaprofil);
- **textile products** (Bega Tehnomet, RA-OL, G.P.&Company).

Based on this product portfolio, we have allowed ourselves to imagine a scenario in **figure 3** below. In this attempt, we started from the idea of building a car by bringing together all the companies in this sector operating in the West Region.

Figure 3. The car built by the automotive part manufacturers in the West Region



c) **Acquisitions at the level of automotive part manufacturers. Impact on the West Region**

Carmakers are going through a restructuring phase marked by cost cuts and most players' relocation to emerging markets, where the costs are still low. Cost-cutting is achieved mainly by increasing the innovation level, but also by outsourcing more and more insistently.

Whether carmakers or automotive part manufacturers, mergers in the automotive industry must be seen as an important tool for industry restructuring and for tapping into new markets. From the mergers among the automotive part manufacturers with production facilities in the West Region, we can mention the following examples: Continental has acquired Siemens VDO[14]; ContiTech AG has acquired the British company Thermopol International Ltd[15]; Schaeffler has taken over Continental[16].

---

[14] Adapted after: Alexandru Anghel, Roxana Pricop, *Continental cumpără divizia auto a Siemens (Continental Buys Siemens Automotive Division)*, Ziarul Financiar, 27.07.2007

[15] Adapted after: *ContiTech AG a achiziționat compania britanică Thermopol International Ltd (ContiTech AG has acquired British Company Thermopol International Ltd)*, www.wall-street.ro, 2.02.2007

[16] Adapted after: Daria Macovei, *Schaeffler a preluat Continental pentru 12 mld. Euro (Continental Taken Over by Schaeffler for 12 bn euros)*, Ziarul Financiar, 22.08.2008

[17] Laurențiu Cotu, *Efectele crizei: angajații Takata-Petri, obligați să-şi ia concediu fără plată o zi pe săptămână (Crisis Effects: One Day a Week Forced Holiday for Takata-Petri Employees)* , Ziarul Financiar, 22.10.2008

[18] Cristian Gubandru, ***Declinul industriei auto afectează SEWS România, care recurge la disponibilizări (Automotive Industry Decline Affects SEWS Romania, which Resorts to Layoffs)*, www.wall-street.ro, 21 ianuarie 2009**

d) The response of the regional manufacturers to the global economic and financial development

Automotive part manufacturers are also affected by the financial crisis, as they are influenced by the interruptions in the production activity of their beneficiaries. A number of subassembly suppliers in Romania have interrupted production or laid off part of their staff as a result of the sudden drop in the demand, caused by the crash of the local and international automotive market. The decision has affected both Tier 1 suppliers and Tiers 2 and 3 (which do not supply carmakers directly, but instead provide products to other automotive part manufacturers) manufacturing gauges both for domestic carmaker Dacia and for export.

Up to now, manufacturers in the field of automotive parts and systems, as well as tyre manufacturers, have announced a series of measures.

Automotive part and safety system manufacturer **Takata-Petri**[17], ranking third among the automotive part manufacturers on the Romanian market, with business worth 245 million euros last year, has shortened the working hours of the employees in its three factories, as a result of the financial crisis that has already left its print on the automotive industry worldwide.

Sumitomo Electric Wiring System (**SEWS**)[18] Romania, employing approximately 4,500 people in its three factories in Deva, Orăştie, and Alba-Iulia, makes electric wiring for various carmakers. The drop in the number of orders from carmakers has led to temporary reductions in the production activity and keeping employees redundant for 75% of the salary.

Automotive part manufacturer **Delphi**[19]**,** which owns two factories in Romania (Sânnicolau Mare and Ineu), has shortened the working hours and laid off some of its 7,400 employees as a result of fewer orders from the main clients.

Automotive cable manufacturer **Leoni Wiring Systems**[20] has closed one of its two factories in the Argeş county and laid off or relocated 228 employees who were working at that facility. Another company shortened the working week to just 4 days.

---

[19] Alexandu Anghel, *Delphi ajustează programul de lucru (Delphi Adjusts Working Hours)*, Ziarul Financiar, 18.11.2008

[20] *Leoni a închis o fabrică cu 228 de angajaţi de pe platforma Dacia (Leoni Closes Down a 228-Employee Dacia Platform Factory)*, Ziarul Financiar, 13.01.2009

[21] Marius Şerban, *Retrospectiva concedierilor şi închiderilor de fabrici de subansamble auto la sfârşitul lui 2008 (A Review of Layoffs and Shutdowns in Automotive Subassembly Factories at the end of 2008)*, standard.ro, 30.12.2008

[22] Idem

[23] Marius Şerban, *Eybl Automotive Romania renunta la aproape 1.000 de salariati (Eybl Automotive Romania Lays Off almost 1,000 Employees)*, standard.ro, 26.01.2009

[24] Marius Şerban, Continental reduce costurile pentru a putea pastra personalul (Continental Cuts Costs to Keep Staff), standard.ro, 04.03.2009

[25] Marius Şerban, *Retrospectiva concedierilor şi închiderilor de fabrici de subansamble auto la sfârşitul lui 2008 (A Review of Layoffs and Shutdowns in Automotive Subassembly Factories at the end of 2008)*, standard.ro, 30.12.2008

French company Valeo[21] , another Dacia supplier, has announced around 5,000 layoffs at its factories worldwide. The measure could also affect the approximately 500 employees in Mioveni. Valeo is the Dacia supplier of wiring and air conditioning.
Lisa Draexmaier[22]**,** electric and interior automotive system manufacturer, estimates 200 layoffs at its Hunedoara factory in 2009. The company will also make redundant, for 3-5 weeks, the 17,500 employees in its 5 factories in Romania.

Regarding the two factories in the town of Deta, Timiş county, belonging to **Eybl Automotive Romania**[23], one specializing in the production of upholstery, and the other one in leather steering wheels and leather-dressed gear levers, AJOFM Timiş has been notified concerning approximately 700 layoffs in the first months of 2009.

In order to avoid layoffs, Continental[24], one of the tyre makers in Romania, has lowered production costs by cutting down overtime or temporarily shutting down a few local factories. The staff in the leasing division has been affected by layoffs.

It is not just multinationals that are affected by the crisis. Confronted with a series of problems, lamp manufacturer **Elba Timişoara**[25] will be laying off over 400 employees.

e) Cooperation between the academic world and the companies in the sector

Partnerships between the academic environment and the automotive industry private sector

The localization in the West Region of numerous companies operating in the automotive production sector has lead to the development of several partnerships with the local actors, namely those from the academic and research environment. In order to have a better view on these collaborations, the technical universities from the region were asked to provide a range of information, which was then compiled.

Politehnica University of Timişoara has signed two collaboration agreements with several companies, two of them from the automotive industry: **Continental** and **Siemens Automotive VDO**, both from Germany. The agreement between Continental and Politehnica University regards financing internships for the students enrolled for master studies in tire technology, training for the companies' staff, and undertaking joint projects with European financing. As to the collaboration with **Siemens Automotive** (Germany) and **Siemens Automotive SRL** (Timişoara), the agreement consists in financing research projects and student internships within Siemens factories. The University has also introduced a two-year master course in **Automotive Embedded Software,** which is held in English.

The **HTEC Training Centre** is operational within the Politehnica University and runs an intensive programme in the field of CNC machines. The courses are designed for the employees of the companies within the West Region and not only that use the CNC technology during their production processes. Upon graduation trainees, they are able to

perform setups of moderate complexity in CNC machining and turning centers such as milling centers. CNC graduates may find beginning to intermediate - level work in the machining trade as a CNC machinist. Also, the HTEC Training Centre offered for students advanced CNC Machining in order to attain greater proficiency in CNC machining.

Politehnica University has implemented a dozen of projects independently or in association with local institutions or the private sector, of which we can mention just a few: *We Steer – Support actions for the emergence of an automotive cluster based on research in the West Region*; *New technologies for electric actuators for automobiles; Programming of CNC machines – Training.*

Aurel Vlaicu University of Arad is centered on five fields of study and nine specializations, four of them being directly connected to the automotive sector. The automotive companies from Arad County recruit their manpower from the graduates of the university. The university collaborates with the private sector in qualifying and continuously training its staff. The Aurel Vlaicu University has run the Phare 2006 project *Training for continuous improvement through Six Sigma systems,* whose direct beneficiary was SC Leoni Wiring Systems SRL Arad.

Noteworthy for the collaboration between the academia and the private sector are also the activities undertaken by the **National Institute for Research-Development in Welding and Materials Testing.** The Institute has had several partnerships with different economic agents in the following areas: equipments/ specialized welding outfits; studies on welding techniques; inspections; welding technologies; technical and technological consultancy; training sessions.

f) Cluster formation and support projects in the automotive industry in the West Region

The "AutomotiVEST" Association – a cluster-type initiative in the automotive industry

Created in June 2007 as an NGO, the AutomotiVEST Association aims to create an economic environment supporting cluster-type initiatives in the automotive industry by developing a central service platform for the companies (suppliers/buyers) operating in this field in the West Region.

Services proposed:
· Information and communication;
· Support for cooperation projects within the network and with external partners;
·Support for technological transfer and research activities;
·Public relations and marketing;
· Benchmarking analyses on groups of companies;
·Market analyses and the development of the supplier chain, both domestically and internationally

WeSteer – Support actions for the development of a knowledge-based automotive cluster in the West Region

The WeSteer Project (Framework Programme VII, FP7-REGIONS-2007-2) is an initiative of the West Regional Development Agency (ADR Vest) together with the Politehnica University in Timişoara (UPT), the company Interpart Production SA and the Tehimpuls Association.

The project is going to be implemented between March 2008 – March 2010 and aims to facilitate the formation of a cluster in the automotive sector through a series of institutional consolidation actions and by encouraging the cooperation between the university environment and the business one. The project budget, amounting to 169,924 euros, is 100% provided by the EU contribution.

5. Regional survey among the companies in the sector

a) Methodology outline

In order to complete the survey with field data, the questionnaire survey was started among the companies in the automotive sector.

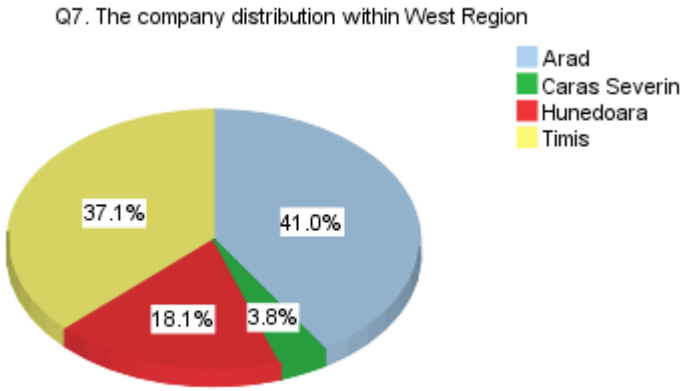
The instrument used in the field survey was the semistructured questionnaire, drawn up based on the indicators identified, totalling 34 items. The questionnaire contains open, closed, half-open, filter-type, and opinion questions, addressing people in management positions in the companies. The estimated time needed to apply the questionnaire was 20 minutes, with the questionnaire being filled in by means of direct interviewing.

The main challenge of the research was to establish the population investigated, considering that the automotive sector represents a new concept encompassing more than the actual carmaking sector.

Thus, any attempt to select companies based on their profile (CAEN code) makes it possible to wrongly ascribe them to the automotive sector. Consequently, the main population was made up of the companies known as belonging to the automotive sector, adding to them the companies whose CAEN code allowed them to be part of this sector in the event of some firm contracts.

Following the direct information check, a final number of 156 companies was obtained for the main population, distributed both geographically as according to their main CAEN code. Corresponding to the main population, a sample of 105 companies was calculated, distributed throughout the West Region, so as to ensure a sampling error of ±5% and a probability p=95%. .

The distribution of the respondent companies by county is shown below.



b) Interpretation of the results

The questionnaires were interpreted on the 4 general dimensions: the economic dimension, the managerial dimension, the strategic dimension, and regional competitiveness.

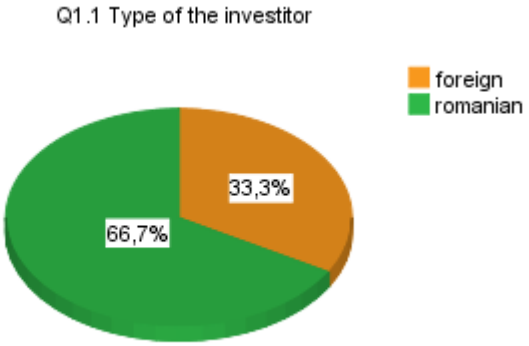
I. THE ECONOMIC DIMENSION

This section looks at the main indicators describing the business activity of the companies and offering an overview of the investment profile, production dynamics, and financial results.

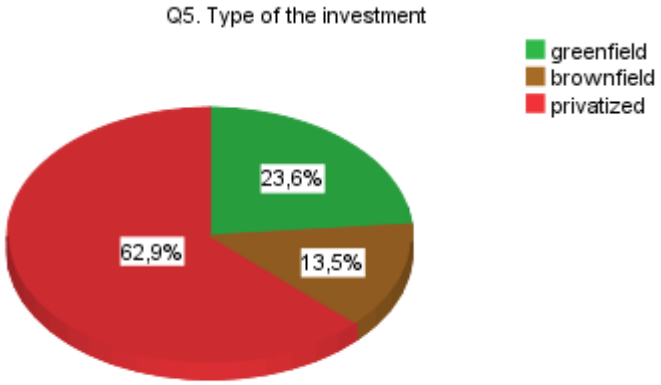
GENERAL INVESTMENT INFORMATION

A first indicator analysed refers to the country of origin of the companies in the sample. The distribution percentage within the sample show that two thirds are Romanian companies, the others being mostly European (Germany, Italy, France, Portugal).

	Frequency	Percent
Germany	14	13.3
Switzerland	1	1.0
France	5	4.8
Italy	8	7.6
Romania	70	66.7
Portugal	3	2.9
Belgium	1	1.0
USA	1	1.0
England	1	1.0
Japan	1	1.0
Total	105	100.0



As concerns the investment type, privatization was performed in most cases (62.9%), which indicates the existence of a previous industrial infrastructure. Nevertheless, there are also a number of greenfield (23.6%) and brownfield (13.5%) investments.

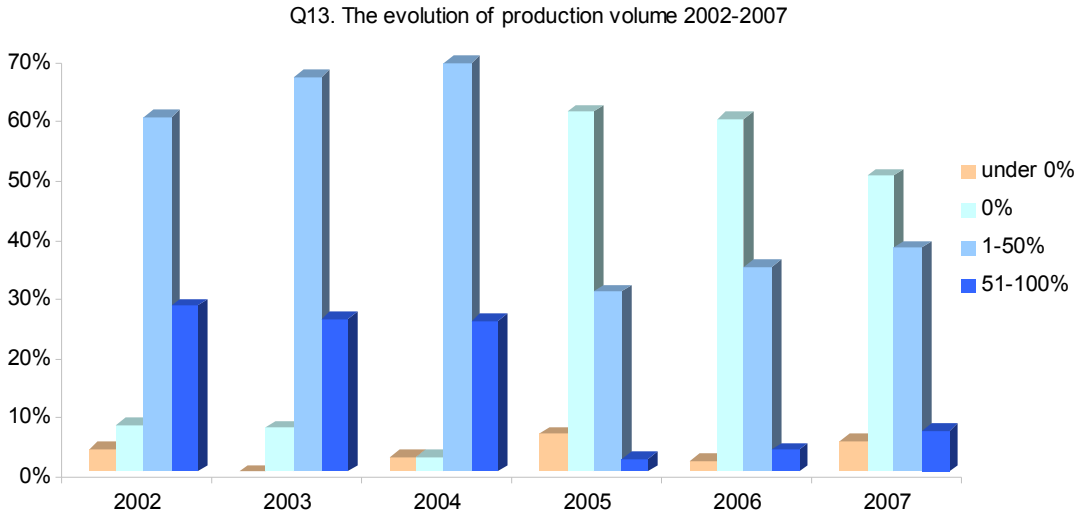


GENERAL PRODUCTION INFORMATION

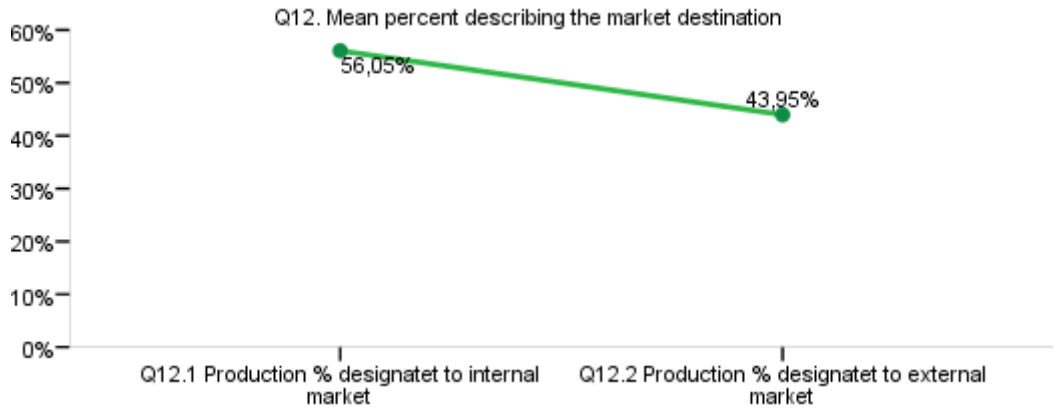
At the level of production dynamics, we looked at the per cent growth/decline. Below, you can find an overview of the fluctuations between 2002-2007, based on the average values.

Production evolution	2002	2003	2004	2005	2006	2007
less than 0%	4,0%	0,0%	2,6%	6,5%	1,9%	5,2%
0%	8,0%	7,4%	2,6%	60,9%	59,6%	50,0%
1-50%	60,0%	66,7%	69,2%	30,4%	34,6%	37,9%
51-100%	28,0%	25,9%	25,6%	2,2%	3,8%	6,9%
Total	**100,0%**	**100,0%**	**100,0%**	**100,0%**	**99,9%**	**100,0%**

Overall, 2002-2007 was characterized by sustained production growth, though only few companies recorded spectacular growth, which was also due to the sector trend at world level.

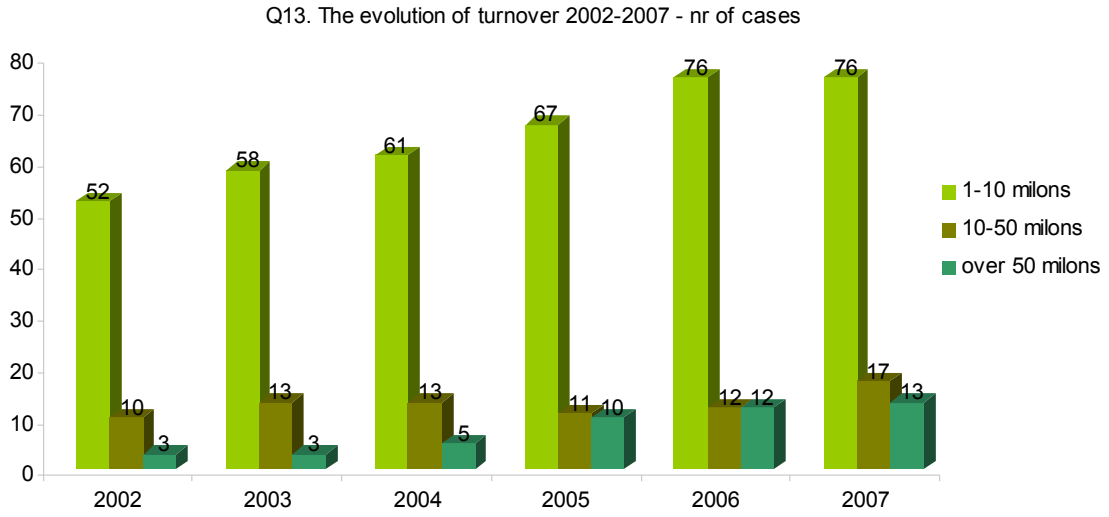


Another indicator of the economic dynamics refers to the outlet for the goods obtained in the production process. The per cent average obtained indicates that, at the level of the surveyed population, 56.06% of the production is intended for the domestic market, while 43.95% goes to the foreign market.

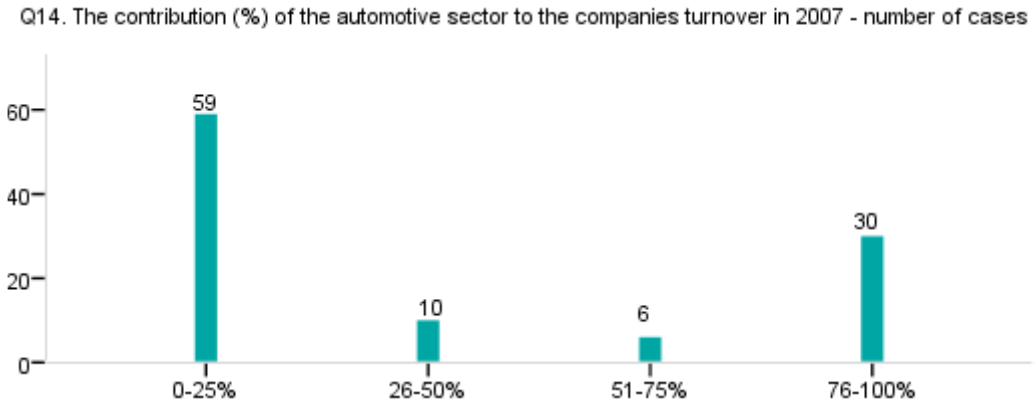


ECONOMIC INDICATORS OF THE SECTOR

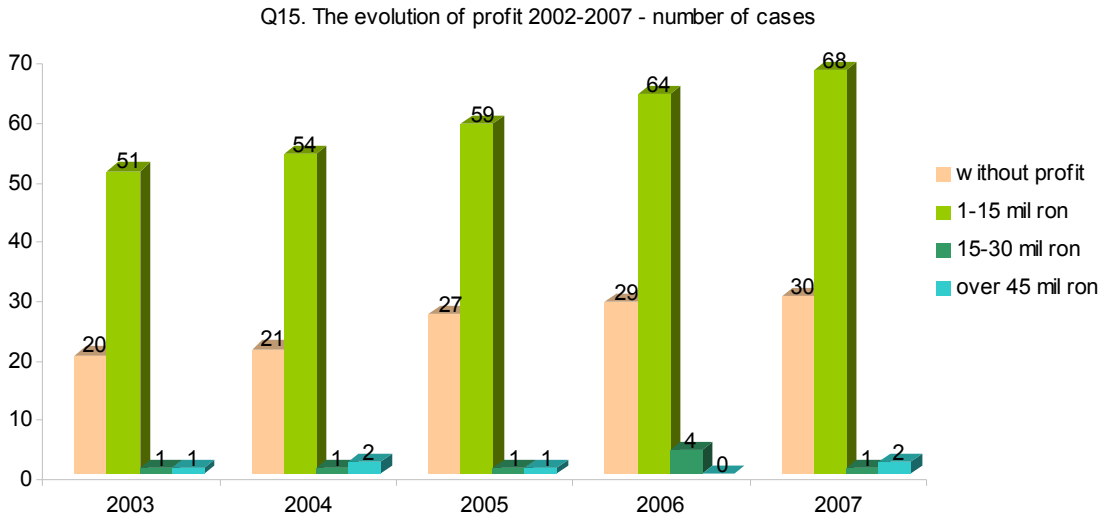
The analysis of the turnover evolution between 2002-2007 revealed an upward trend for both the total and the averages obtained, which denotes sustained growth. However, we must take into account that in the period under analysis (2002-2007), the total number of companies grew due to new companies being founded, which generated a quantitative increase.



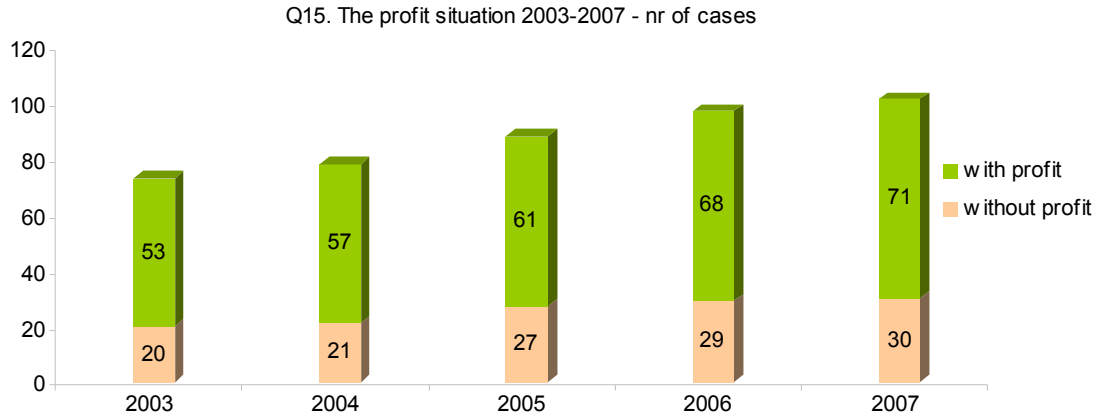
Since not all companies in the sample operate exclusively in the automotive sector, another indicator was worked out, testing the contribution of the sector to the company turnover. Thus, two categories of companies emerge: those operating exclusively in the automotive sector and those operating partly in this sector.



Another indicator used in the analysis of the economic dimension of the sector is profit. The profit evolution analysis for 2002-2007 has revealed that, in all the years analysed, there were companies that did not make any profit. The total number of companies grew during this time due to new companies being set up, whose profit was affected by the investments made.



The following chart was obtained by separating companies that made a profit from companies that did not. Overall, the existence of companies with no profit can be accounted for by the very high expenses incurred during the startup period, especially the investment costs. Investigations were also carried out for the expansion of upgrading of the production units, which also affected these companies' costs.

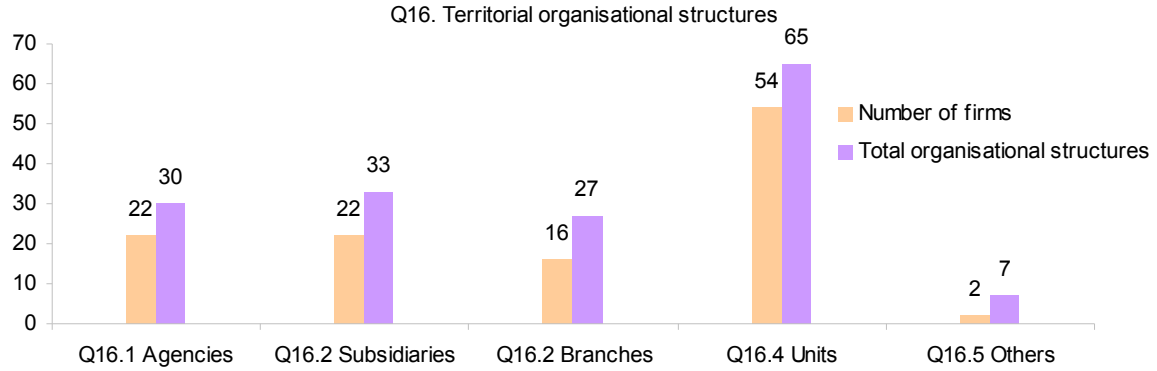


II. THE MANAGERIAL DIMENSION

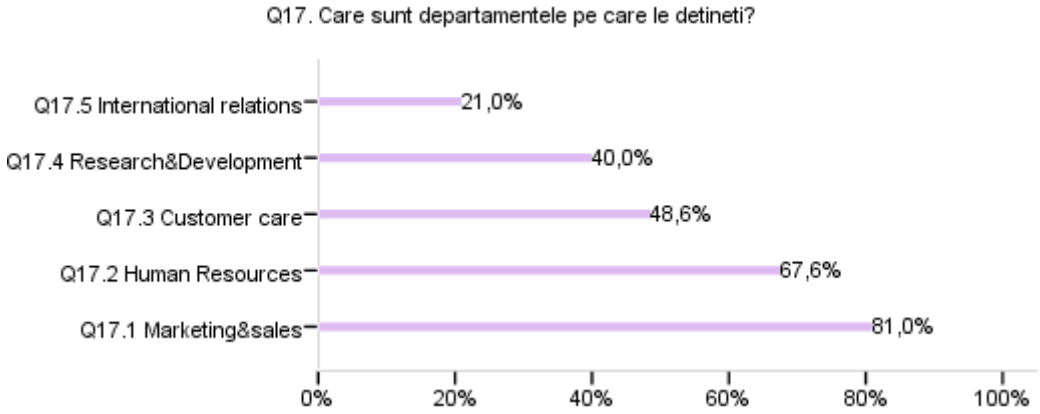
This section looks at the main indicators describing management-related aspects both formally (the structures present) and functionally (existing management practices). A distinct group of indicators targets the human resource issue, as a factor with strategic and economic implications at the level of the West Region.

ORGANIZATIONAL ASPECTS

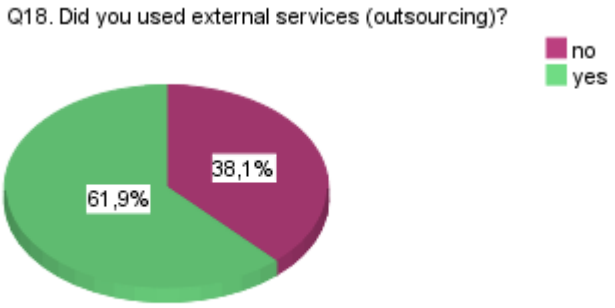
From the perspective of the organizational aspects, the form of territorial organization was analysed. Thus, from the 105 companies included in the sample, 22 companies have a total of 30 agencies, 22 companies have a total of 33 subsidiaries, 16 companies have a total of 27 branches, and 54 companies have a total of 65 units, this being the most frequently encountered structure.



The analysis was extended to the internal organization structure, checking mainly for the existence of strategic departments. Thus, most companies have a marketing and sales department, the least frequent one being the international relations department.



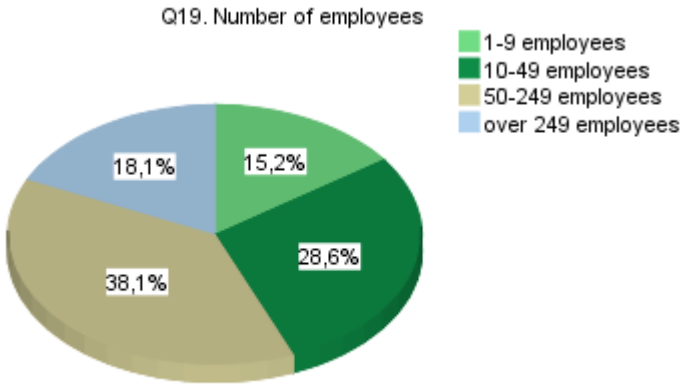
For the analysis of managerial practices, we used another indicator that checks how open the companies are towards outsourcing the company activities, as a solution to optimize internal costs. The following chart shows that 61.9% of the companies have outsourced at least one service, either partly or totally, which indicates a high degree of organizational flexibility.



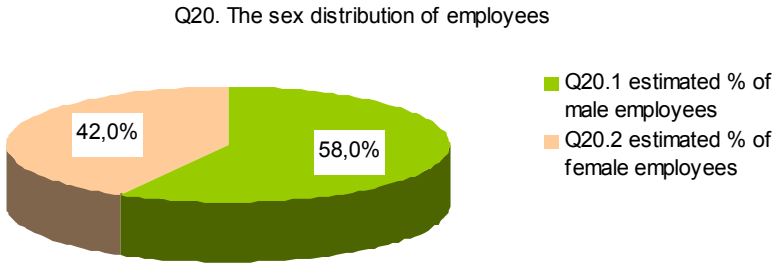
HUMAN RESOURCES

The analysis of the human resource component is a very important aspect in understanding the dynamics and impact of the regional economy. The total number of employees in the automotive sector according to our sample was of 23,401 people, with an average of 223 people per company.

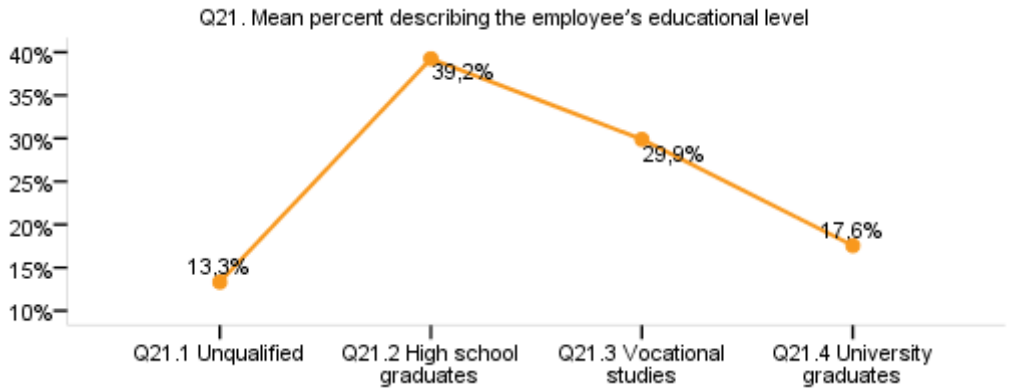
The classification of the companies according to the total number of employees indicates the prevalence of companies with over 49 employees. This is indicative of a strong sector, but also of certain social risks under unfavourable economic conditions.



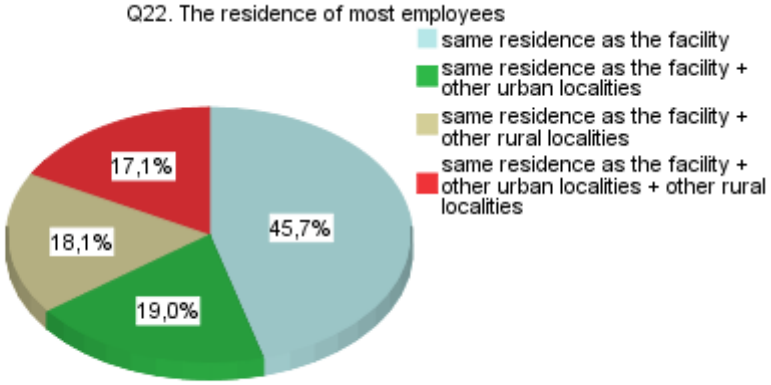
The employee distribution by gender indicates that this sector has a relatively balanced male to female ratio.



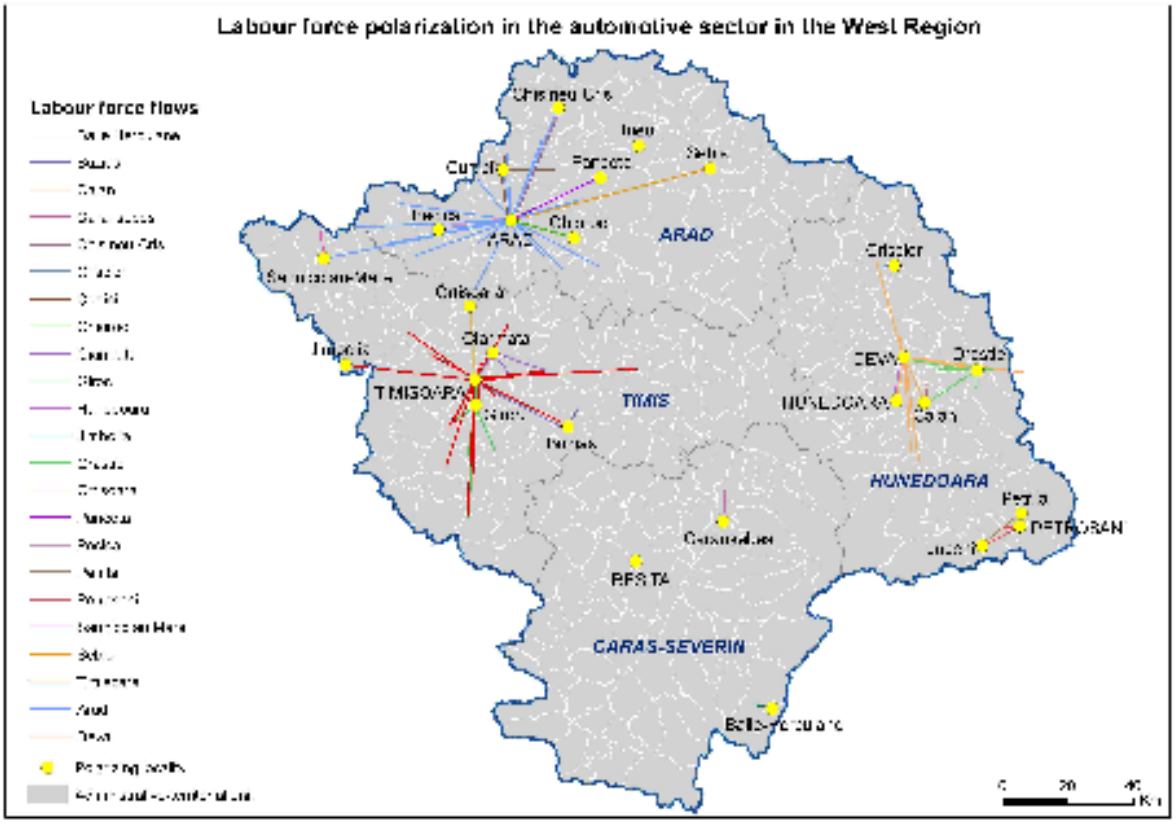
The per cent distribution of employees by education level indicates that most employees have completed secondary studies, while 29.88% have completed professional studies and 17.56% have completed tertiary studies.



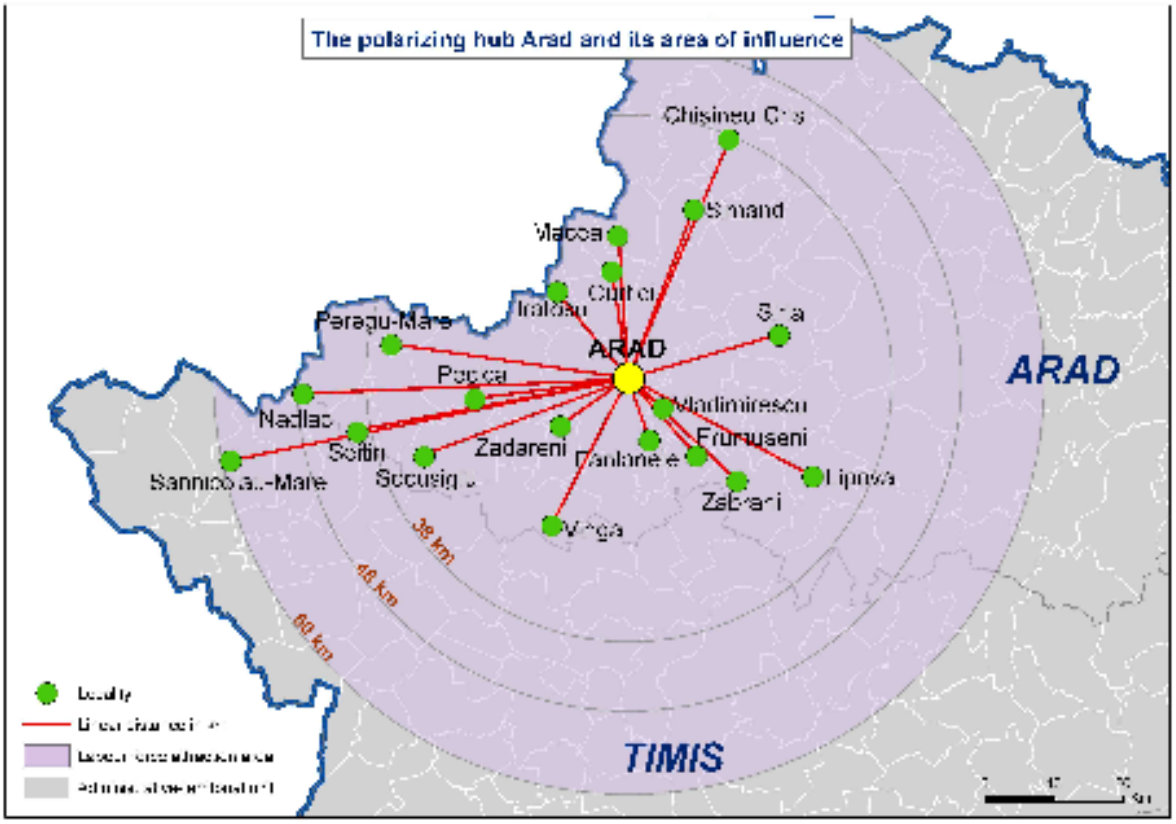
A very important factor analysed refers to the place of origin of the employees in the sector. Thus, only 45% of the companies recruit their workforce solely from the same place as the factory location, while the rest of the companies also target neighbouring rural or urban areas.



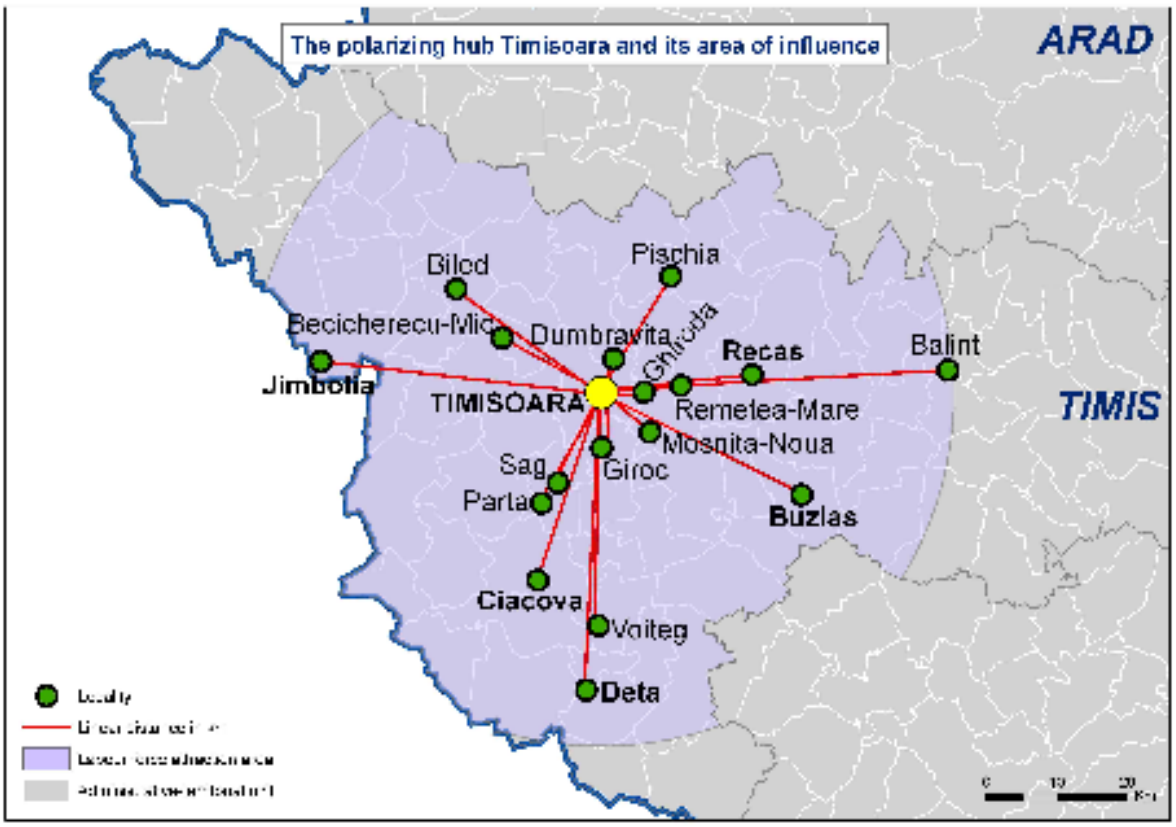
The following maps provide a spatial description of the sector dynamics in relation with the workforce pools at the level of the region.



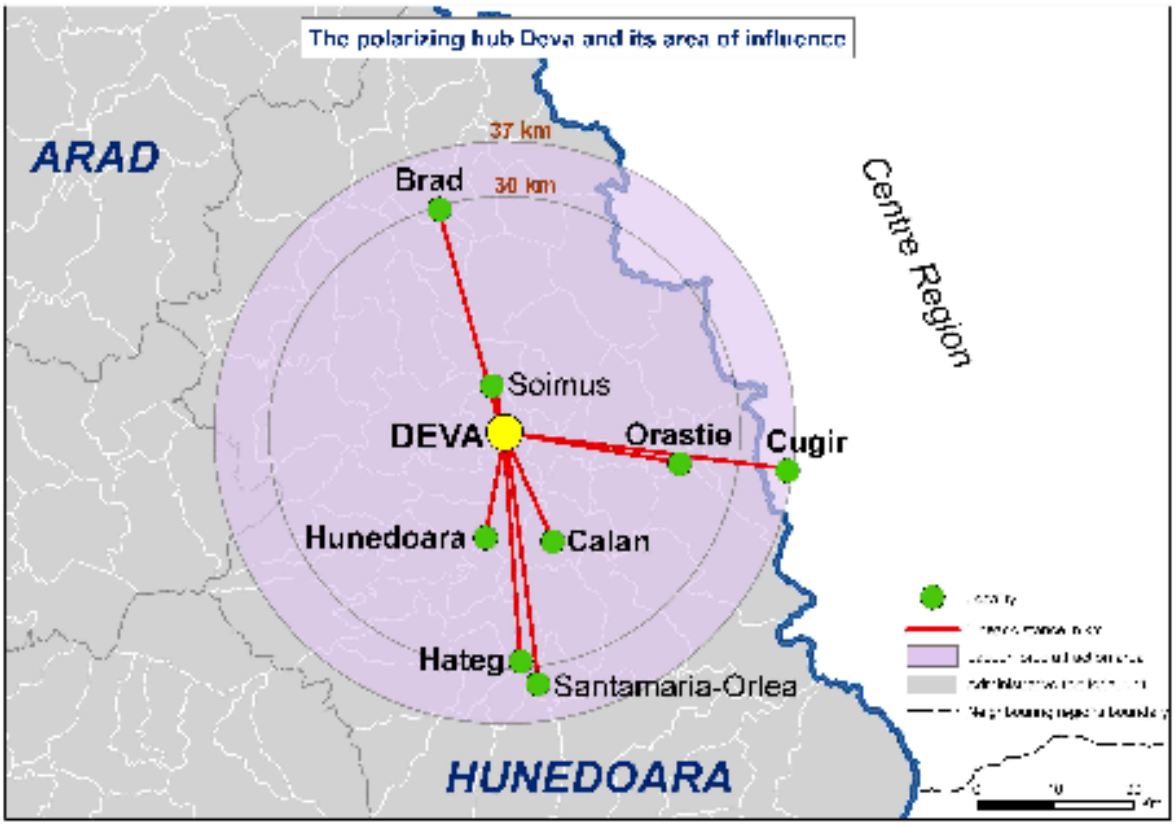
In the county of Arad, we notice a strong attraction of the workforce towards the county seat, whether coming from the satellite localities or from more distant locations, up to, for example, Sânnicolau-Mare (in the Timiş county).



The second pole of attraction for the workforce is the Timiş county, with the county seat attracting a lot of the working population.

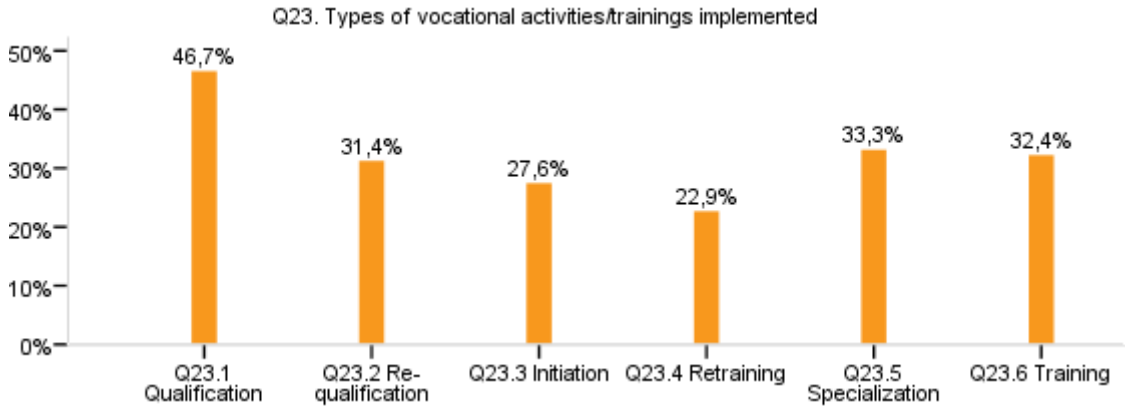


The third (significant) pole of attraction for the workforce is the Hunedoara county, a lot of people seeking work in the county seat, some of them from outside the county (e.g. Cugir, approximately 37 km away).

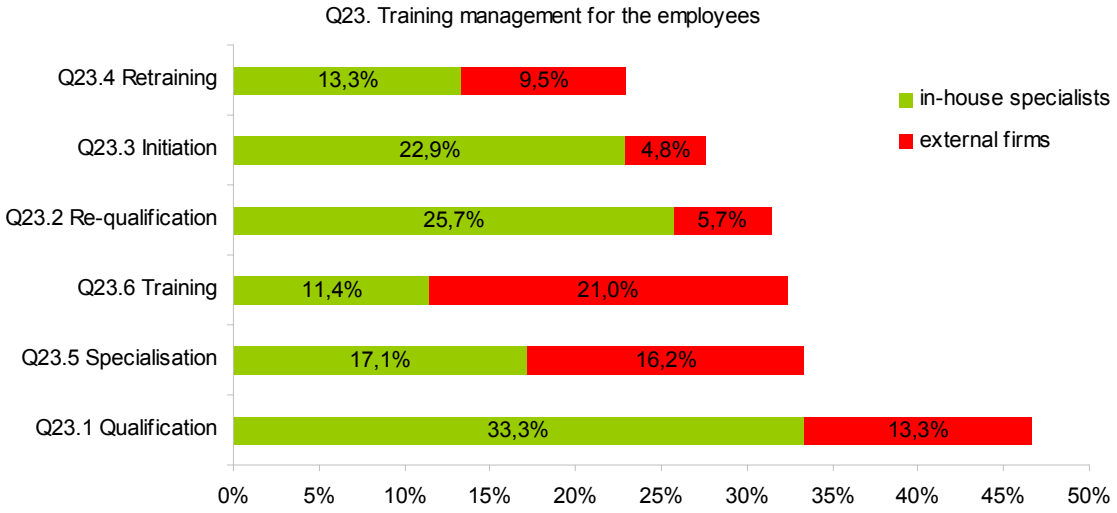


Another very important aspect regarding the human resource component refers to employee training as a resource of competitiveness and productivity. The per cent distribution thus shows that most companies have provided at least one course for their own employees.

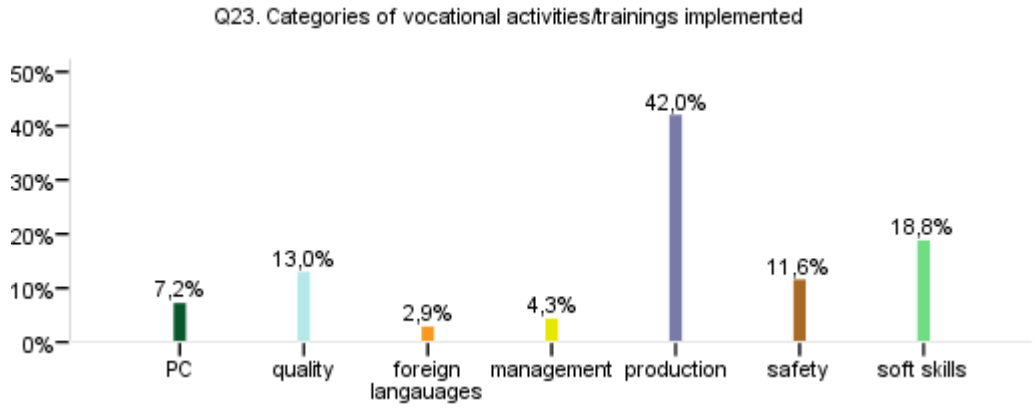
Qualification courses were the most frequent, aiming to supplement the lack of specific competences at the level of the labour market in relation with the new technologies. Next in frequency come the specialization courses (33.3%), trainings (32.4%), and retraining courses (31.4%), the latter being very important for changing employees' professional orientation and absorbing them on the labour market.



The following chart shows the courses taken and the way they were organized, calculated from the total number of companies investigated. We can see that, apart from trainings, all other professional courses were provided using specialists from within the company.



The following chart shows the percentage of each type of course taken, by category. Thus, most courses aimed at production skills (42%), followed by "soft skills" courses (18.8%), which included team-building, teamwork, negotiating, leadership, etc. Also in the production field, courses in labour safety (11.6%) and quality management (13%) were also organized, the latter including the ISO and Six Sigma standards.



III. REGIONAL COMPETITIVENESS

This section looks at the main indicators measuring the aspects that describe regional competitiveness, operationalized in the form of a number of relevant factors for this sector.

OVERALL FACTOR ANALYSIS

This section aimed to identify those aspects that individualize the West Region in relation with the automotive sector in terms of advantages and disadvantages.

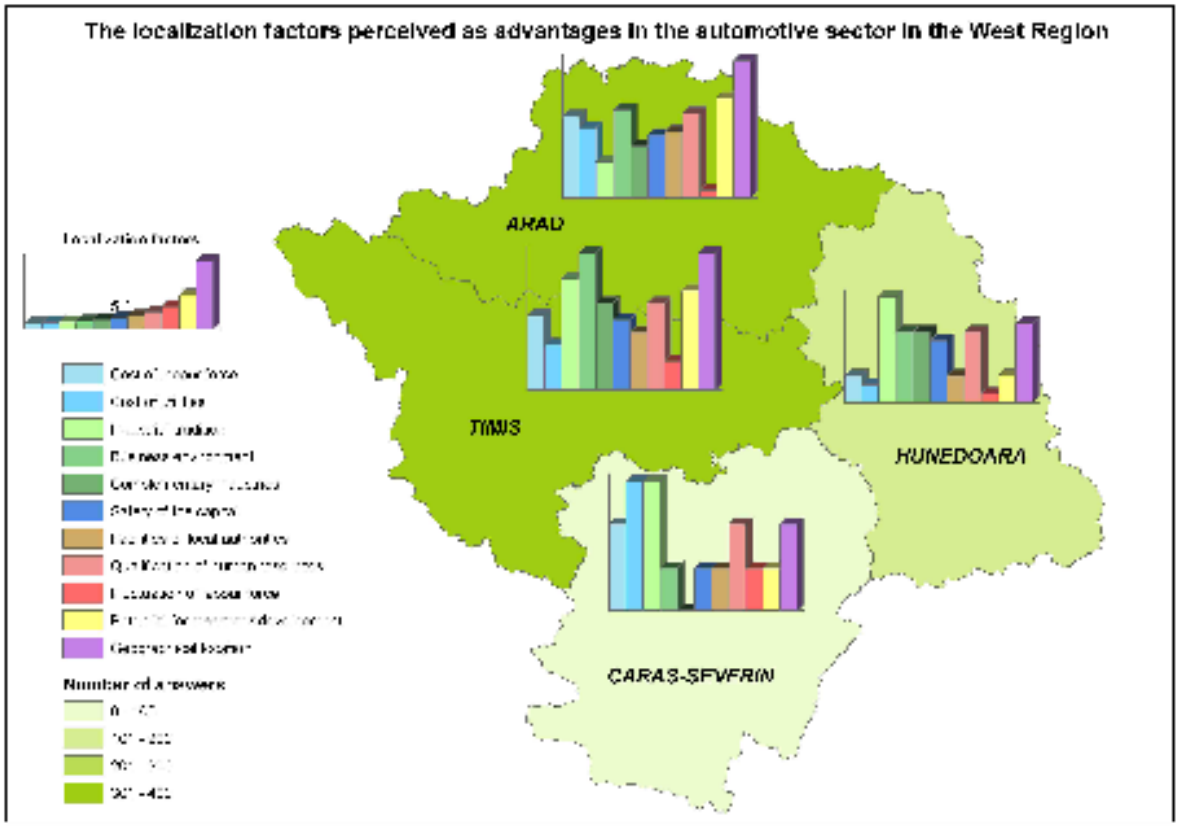
An overall analysis of the advantages will show that geographic location received the highest number of votes (81), followed by the existing business environment (66 votes) and, with almost equally perceived, the research & development potential (55 votes) and human resource skills (54 votes). Among the disadvantages, human resource fluctuation (53 votes) is followed by labour cost (45 votes) and utility costs (43 votes).

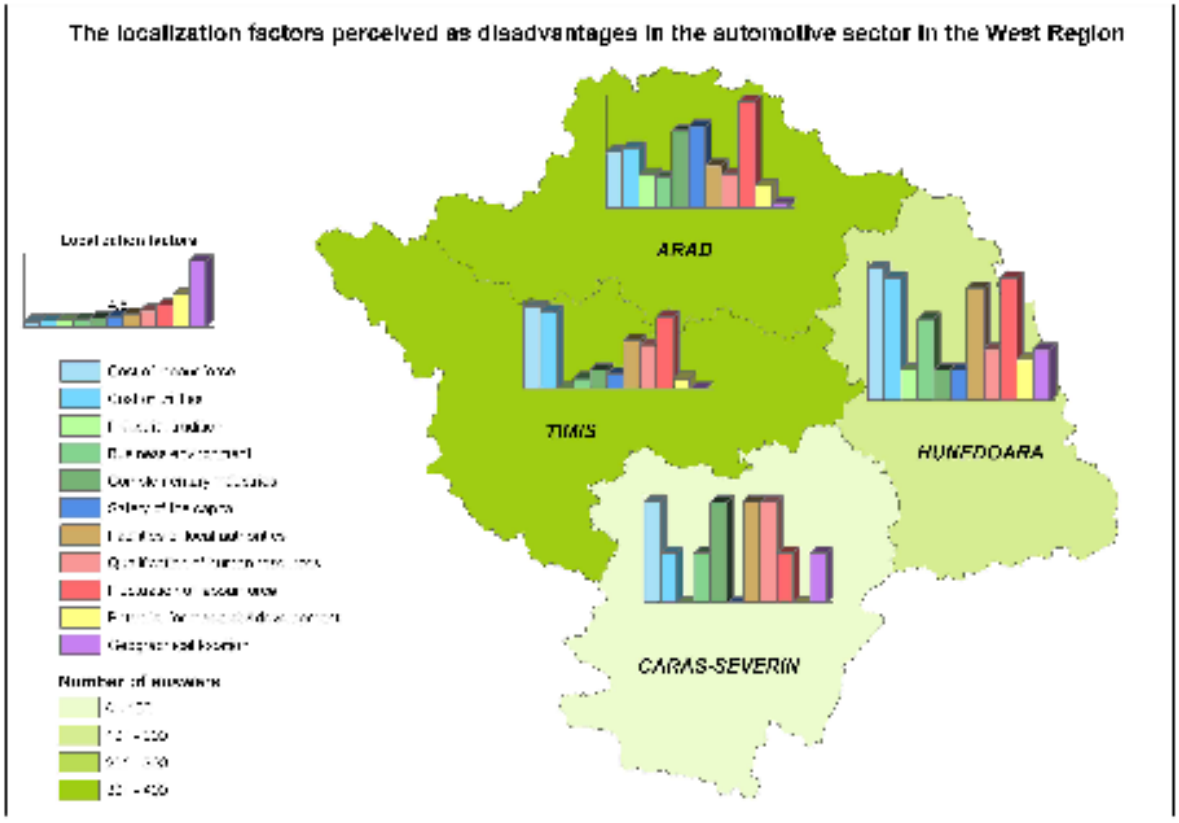
Q24. Advantage and disadvantage perception in the West Region

	Disadvantages	**Advantages**
	N° of cases	N° of cases
Q24.1 Labour cost	45	45
Q24.2 Utility cost	43	35
Q24.3 Industrial tradition	11	52
Q24.4 Business environment	18	66
Q24.5 The existence of complementary industries	27	43
Q24.6 Capital safety	25	42
Q24.7 Local institution facilities	33	36
Q24.8 Human resource skills	24	54
Q24.9 Human resource fluctuation	53	11
Q24.10 Research & development potential	11	55
Q24.11 Geographic location	7	81
Total	**297**	**520**

FACTOR ANALYSIS AT COUNTY LEVEL

This section shows the analysis of the factors investigated, individualized for each county and synthesized cartographically and then statistically.


The localization factors perceived as advantages in the automotive sector in the West Region
ARAD
TIMIS
HUNEDOARA
CARAS-SEVERIN


The localization factors perceived as disadvantages in the automotive sector in the West Region
ARAD
TIMIS
HUNEDOARA
CARAS-SEVERIN

341 responses were gathered in the Arad county, with the following statistical situation:

- the main **advantage** is the geographic location (10.9%), followed by the research & development potential (7.9%) and the existing business environment (7%);
- average importance is given to human resource skills (6.7%) and the cost of labour (6.5%);
- the main **disadvantage** is the fluctuation of human resources (7.3%).

29 responses were gathered in the Caraş-Severin county, with the following statistical situation:

- the main **advantage** is the industrial tradition (10.3%), followed by the cost of utilities (10.3%);
- as concerns the human resource skills, the cost of labour, the existing business environment, and the fluctuation of human resources, these are equally perceived as advantages and disadvantages;
- the main **disadvantage** is the lack of complementary industries (6.9%).

143 responses were gathered in the Hunedoara county, with the following statistical situation:

- the main **advantage** is the industrial tradition (8.4%), followed by the presence of complementary industries (5.6%);
- the existing business environment received equal votes as an advantage and a disadvantage (5.6%);
- the main **disadvantage** is the cost of labour (9.1%), accounted for by the higher salaries in the mining sector, resulting in higher expectations; the cost of utilities came second (8.4%).

304 responses were gathered in the Timiş county, with the following statistical situation:

- the main **advantage** is the geographic location (10.9%), followed by the business environment (10.9%), the industrial tradition (8.9%), the research & development potential (7.9%), and the presence of complementary industries (6.9%);
- the main **disadvantages** are the cost of utilities (5.3%) and the fluctuation of human resources (4.9%).

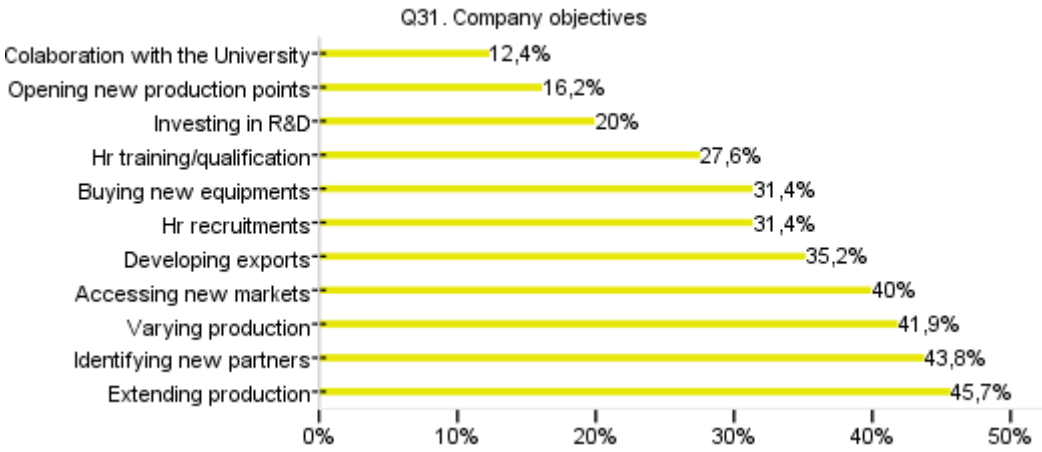
The analysis of the main clients showed a total of 74 company names, both domestic and international. These clients are either companies in the automotive sector – carmakers (OEM) and part manufacturers (Tiers 1 and 2) – or clients from outside the sector.

IV. THE STRATEGIC DIMENSION

This section looks at the main indicators measuring aspects related to the company's development goals, the associative potential, and the supporting activities needed for carrying out the activities.

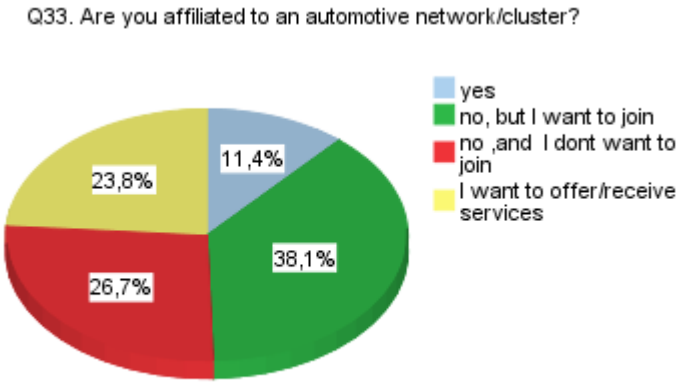
COMPANY GOALS

The synthesis of the development goals undertaken has plainly revealed an orientation firstly towards production (expanding, identifying new partners, diversifying, new markets, etc.) and secondly towards human resources (hiring, professional training), with significant attention being paid to research & development (20%) and cooperation with the university environment (12.4%).

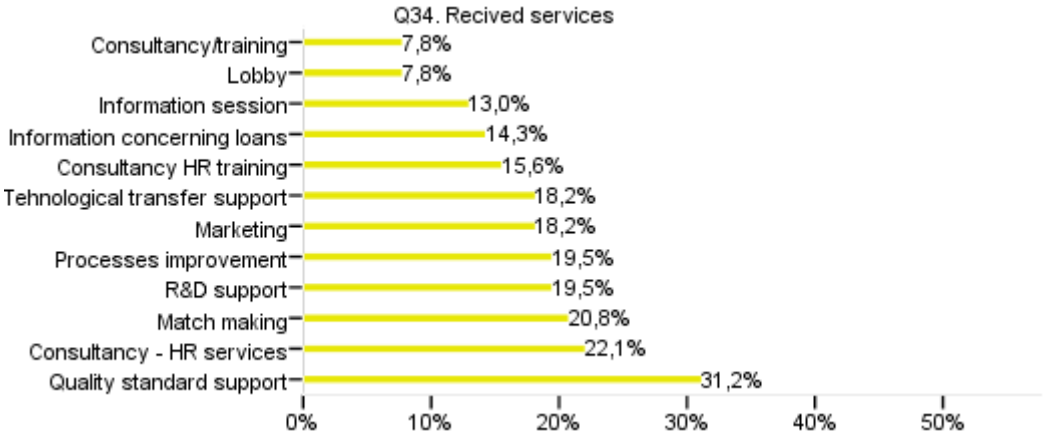


ASSOCIATIVE DYNAMICS ANALYSIS

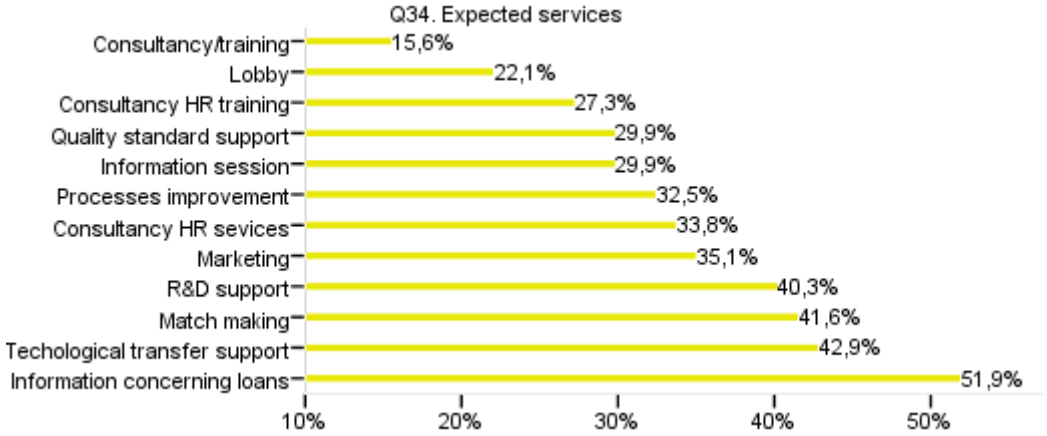
The analysis of associative dynamics indicates that 11.4% of the companies belong to a network/cluster in the automotive sector. Moreover, 38% of the companies are not part of such a structure, but they would like to be, and they are open towards this type of initiatives. The 23.8% percent that do not have a definite position, but would at least like to offer or benefit from services, could also be included among the companies that would be willing to become part of a cluster network.



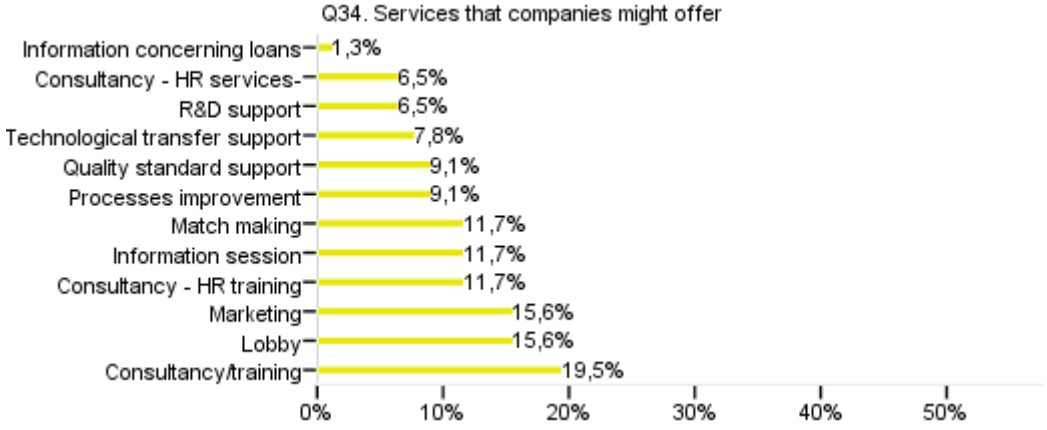
Let us now synthesize the services that the companies in our investigation have benefited from. Of the total of 77 companies that remained after eliminating the 26.7% (which are neither affiliated to any cluster, nor intend to be), we obtained the sub-sample in our analysis.



The analysis regarding the services the companies would like to benefit from has revealed an increase in all percentages, indicating a strong demand in this area.



Belonging to a cluster may require rendering some services. The analysis of the potential service offer has revealed that this is lower compared with the demand or with what the companies have received.



6. Opportunities and threats for the automotive industry in the West Region

The SWOT analysis takes into account the strengths, weaknesses, opportunities, and threats and has been created and used by enterprises as a tool for defining strategies. This tool makes it possible to provide a quick analysis of key strategic issues such as the identification of strategic alternatives.

Before starting a SWOT analysis, a description of the existing background is necessary, so that all participants may start from a "common ground". This preliminary stage is fundamental, since companies most often have different views regarding development topics.

The SWOT technique of discussion/analysis and research is based on the brainstorming method, involving a discussion among the people involved in devising the strategy. Starting from here, we have performed a brief SWOT analysis of the sector at the level of the West Region.

A number of characteristic features have been identified, of which we would like to mention: companies, regional economy, products and raw materials, workforce, research – development, partnerships. Using these elements, we have performed a SWOT analyses of the sector at the level of the West Region.

STRENGTHS	WEAKNESSES
Companies - The presence of tier 1 and 2 part manufacturers - The presence of several multinational companies - The presence of major brands from the category of part manufacturers - The existence of companies of all sizes - Certain companies are certified (quality standard, professional skill certification) ***Regional economy*** - Constant economic growth at the level of the West Region above the Romanian average - High turnover of the companies in the sector as a share of the total turnover made by the active industrial entities in the West Region - The presence of complementary industries (metallic processing, plastics, electronics, etc.) - The increase in the domestic demand for cars in Romania - The industrial infrastructure is operational, but needs some improvement ***Products made and raw materials***	***Companies*** - The lack of a carmaker in the West Region - Domestic companies need an influx of capital and know-how in order to become competitive - Lack of visibility and promotion of local suppliers ***Regional economy*** - High costs for setting up a new production facility (dependence on the evolution on the real estate market and the construction material market) - Weak transport infrastructure (lack of highways and expressways), making the region less attractive - Production costs rising each year ***Products made and raw materials*** - Lack of locally specific products - The prices of raw materials are sometimes high - Several companies depend on the import of raw materials and parts ***Workforce***

- A variety of products obtained by the companies located in the region - The use of modern technologies ***Workforce*** - Workforce with skills in various technical fields - Workforce costs still low compared with the countries in Central and Eastern Europe ***Research and development*** - The existence of specific cooperation between the universities in the region and companies ***Partnerships*** - Industrial agglomeration – competition, competitiveness, multiple possibilities of cooperation	- Difficulties in finding qualified people in areas with a high density of companies - Lack of an in-company human resource strategy (training, career management) ***Research and development*** - There is not enough R&D capacity and the R&D potential is still fuzzy - Lack of specific technological processes ***Partnerships*** - Lack of cooperation and commercial relations among the companies in this sector in the West Region
OPPORTUNITIES	**THREATS**
Companies - The economic performance recorded by the companies located in the West Region can lead to initiating new business in the sector - The emergence of new companies/structures enabling existing companies to outsource their services ***Regional economy*** - New carmakers have set up shop in the West Region (Ford in Craiova and Mercedes in Kecskemet) - Access to European funds for production, human resources, foreign relations - State support for investors - Further initiatives to renew the domestic automotive stock (the scrap bonus, the automotive tax) ***Products made and raw materials*** - New product development and adapting to the current requirements in the sector: lower CO2 emissions, Euro 5 and 6 engines, increased safety (ABS, AFU, and ESC) ***Workforce*** - Strategic promotion of companies'	***Companies*** - Dependence on a single client/manufacturer (for parts or cars) at supplier level - The acquisitions and mergers among part manufacturers decrease the number of competitors on the market ***Regional economy*** - Higher salaries in the sector - Cancellation of fiscal incentives - Non-involvement in the development of the sector - Volatile exchange rate, impacting the import-export activity ***Products made and raw materials*** - The transfer of some production facilities outside the region, along with de-location ***Workforce*** - The demographic decline from the beginning of the 90's is beginning to be felt on the labour market - Workforce dynamics affects companies' results ***Research and development***

activities, especially among students, aiming at staff recruitment ***Research and development*** - Cooperation between companies and the academic world in specific projects - The possibility of relocating research and development activities to Romania ***Partnerships*** - Large number of companies willing to support the regional initiative to develop a cluster - Development of local supplier networks - Willingness for cooperation among companies occupying different positions in the supplier chain	- Research and development activities are not located in the region ***Partnerships*** - Lack of interest regarding the existing cooperating initiatives at regional level

7. Conclusions

Overview

The quality of the workforce in the former communist countries and the low salaries demanded by employees are the main factors that have brought the automotive industry to Central and Eastern Europe.

If we were to assess Central and Eastern Europe as a single market, the states comprising it can be analysed in different ways, depending on their role in this whole. The following categories emerge:

- **centres of major manufacturers**: this category includes the states that have received the largest investments and where production is mostly oriented towards exports (over 75%). The states in this category, such as the Czech Republic and Slovakia, have chances to become that European export hub, covering the supply for the European market, as well as the local one;
- **centres of major local producers**: this category includes states such as Poland or Romania, with massive production for the domestic market and an absorption rate of over 100,000 new cars/year. These countries have the chance to become major exporters if they can make a comparable product to the already existing European offer, but with a certain competitive edge;
- **centres for automotive part manufacturers**: these usually coincide with the locations chosen by the carmakers. Nevertheless, there can also be other aspects persuading automotive part manufacturers to settle in a certain area: low labour cost, highly qualified human resources, the presence of university centres with well developed research departments, etc. This category is populated by countries such as: The Czech Republic, Poland, Ukraine or Romania.

As for the upcoming period, estimations are that Eastern Europe will be making more cars than Western Europe by 2010. A large share of the production is going to be exported. A survey done by Price Waterhouse Coopers mentions an increase of the production capacity in at least four or five countries in Central and Eastern Europe (The Czech Republic, Poland, Romania, Hungary, and Slovakia). They are estimated to produce 3.46 million cars in 2011, which would be 4% of the global car production.

A further expansion is expected towards South-Eastern Europe and Ukraine. Salaries in Central Europe have already surged, and the advantage of cheap labour is gradually fading. On the other hand, local capacity is already significant, so there is not much reason left for additional investments. At the same time, the south-eastern area is still fertile.

The domestic view

The recent ascension to the EU, the moderate taxes imposed in Romania, and the low costs on the labour market have made Romania an attractive destination for automotive part manufacturers that supply factories all over the world and are now considering the Eastern European market.

The Romanian automotive industry is thriving, on the one hand due to the infusion of foreign capital attracted by the cheap and skilled workforce, the low costs, the experience in the relations with foreign partners, the desire to cooperate and, on the other hand, by the Romanian manufacturers of automotive parts. The latter are currently restructuring their

activity, undergoing certification processes according to the requirements of the current European legislation, continuously prospecting the market for new contacts and new agreements with foreign partners.

As concerns the production units, there are four categories of companies specialized in the production of automotive parts in Romania:
• New, greenfield investments;
• Production and/or assembly locations belonging to international groups that have followed Renault to Romania (either greenfield or brownfield);
• The old Romanian factories have started partnerships with representatives of the automotive industry (joint ventures);
• Domestic capital entities that have not yet formed joint ventures, but already have contracts in the automotive industry as a result of the investments made (brownfield).

The regional view

Generally speaking, the automotive companies in the West Region are multinationals which, according to the Romanian law, belong to the category of large enterprises (over 250 employees and a turnover of more than 50 million euros) and have completed large investment projects in the West Region, exceeding 10 million euros (on average).

A distinctive feature of these companies is that, although they initially settled in one location, after starting operation, they sought the development of new production units, both in the West Region and in the neighbouring regions (especially the North-West or Central Region);

The production achieved by the automotive companies is largely intended for export, based on firm contracts with major European, Asian or American carmakers.

At the same time, domestic companies in this industry are either medium-sized or part of a larger group that has some operations focused on this sector. These are mainly suppliers of the Dacia-Renault and the main preoccupation is to attract/sign contracts with foreign carmakers.

The sample view

From a synthetic point of view, we shall outline the main conclusions of the survey for each of the 4 dimensions analysed.

The economic level

- Two thirds of the companies are based on Romanian investments, followed by foreign, mainly European ones (Germany, Italy, France, Portugal);
- 49.5% of the companies are based exclusively on Romanian capital and 25.7% on exclusively foreign capital;
- As concerns the investment type, privatization was performed in most cases (62.9%), which indicates the existence of a previous industrial infrastructure. Next come the greenfield investments (23.6%) and brownfield investments (13.5%);
- Investment age indicate the presence of relatively recent activities, so that the growth point is situated around 2004-2005;
- The owned area/built area ratio indicates that the built area can be extended if production develops;
- The production process largely relies on the acquisition of raw materials/parts from the domestic market;
- The analysis of the turnover evolution between 2002-2007 revealed a clearly upward trend

for both the total and the averages obtained;
- Two categories of companies emerge: those operating exclusively in the automotive field and those with only part of their operations in this field;
- The analysis of the profit evolution between 2002-2007 revealed a clearly upward trend for both the total and the averages obtained;

The management level
- 61.9% of the companies have outsourced at least one service, either partly or totally;
- The total number of employees in the automotive sector according to our sample was of 23,401 people, with an average of 223 people per company;
- The classification of the companies according to the total number of employees indicates the prevalence of companies with over 49 employees;
- Only 45% of the companies recruit their workforce solely from the same place as the factory location, while the rest of the companies also target neighbouring rural or urban areas.
- Most companies have provided at least one course for their own employees as a resource of competitiveness and productivity;
- Most courses focused on production skills (42%), followed by courses on soft skills (18.8%).

The regional competitiveness level
- There are clearly more advantages than disadvantages, the region reaching a high level of performance;
- At the level of the counties, the main **advantage** in *Arad* is the geographic location, while the main **disadvantage** is the fluctuation of the human resources;
- In the *Caraş-Severin* county, the main **advantage** is the industrial tradition (10.3%) and the cost of utilities (10.3%) and the main **disadvantage** is the lack of complementary industries (6.9%);
- The main **advantage** in the county of *Hunedoara* is the industrial tradition (10.3%) and the main **disadvantage** is the cost of labour (9.1%). The explanation has to do with the high salaries in the former mining sector, which have led to high expectations;
- The **advantages** in the *Timiş* county are related to the geographic location (10.9%) and the business environment (10.9%) and the main **disadvantages** are the cost of utilities (5.3%) and the fluctuation of human resources (4.9%).

The strategic level
- The analysis of the associative dynamics indicates appurtenance to the following categories: 11.4% of the companies are members of some network/cluster, 38.1% are not part of such a structure, but would like to be, and 23.8% do not have a clear position, but would at least like to offer or benefit from services.
- The deeper statistical analysis has revealed a higher overall willingness to associate with a cluster among foreign companies (42.9%) than among Romanian companies (35.7%).

APPENDICES:

FIGURES

CHARTS

MAPS

TABLES