

ANALYSIS OF THE EVOLUTION OF HUMAN RESOURCE IN ROMANIAN SECONDARY SECTOR

Abstract

The secondary sector, composed of industry and construction, contributes about 43 % to the GDP of Romania. This sector employed less than 28 % of the total workforce employed at national level and labor productivity, calculated by GDP per employee, is above average, but not particularly high in absolute terms. Decrease in the number of employees in the secondary sector was mainly caused by the decline of manufacturing and extractive. Cities that have suffered severe forms of industrialization come predominantly from small towns category. The areas most affected by unemployment are located in counties with a high degree of industrialization before 1990, but have suffered in recent years a strong industrial decline.

The paper presents the analysis of the workforce engaged in the

Keywords: secondary sector, industry, construction, decline, employee

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ANALIZA EVOLUȚIEI RESURSELOR UMANE ÎN SECTORUL SECUNDAR ROMÂNESC

Cristina ALPOPI

Associate Professor, Ph.D., Administration and Public Management Faculty, Bucharest University of Economic Studies

E-mail: calpopi07@yahoo.com

Rezumat

Sectorul secundar, care are în componența sa subsectoarele industrie și construcții, contribuie cu aproximativ 43% la PIB-ul României. În acest sector sunt angajați peste 28% din totalul forței de muncă de la nivel național, iar productivitatea muncii, calculată în funcție de PIB pe locuitor, este peste medie, dar nu foarte mare în termeni absoluți. Scăderea numărului de angajați din sectorul secundar este în principal cauzată de declinul industriei prelucrătoare și al industriei extractive. Orașele care au suferit diferite forme de industrializare, provin în special, din categoria orașelor mici. Zonele cele mai afectate de șomaj sunt situate în județele cu un grad înalt de industrializare înainte de 1990, dar care au suferit în ultimii ani un puternic declin industrial.

Lucrarea prezintă analiza forței de muncă angajate în sectorul secundar, precum și evoluția acesteia în timp. Este evidențiată distribuția șomajului, care este corelat cu declinul industriei și construcțiilor, identificându-se, în același timp, zonelor și orașele afectate de creșterea șomajului.

Cuvinte cheie: sector secundar, industrie, construcții, declin, angajat



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1. INTRODUCTION

Romanian industry contributes about one third to the country's GDP, in this sector being engaged a fifth part of the total nationally workforce employed, thus surpassing the EU27 average. This various subsector comprises both mining and primary processing industry and branches of production and public services. In this sector are generally active above average sized enterprises. Labour productivity, calculated according to GDP per employee is above average, but not very high in absolute terms, reflecting the focus on less advanced forms of production with low added value. Romania, in 2008-2009 was above the average of other countries on this indicator.

Constructions in Romania are more developed than in most EU countries. Thus, the number of active companies in this field and contribution to GDP is around 9%, while the labor force employed in this sector has a lower weight, which indicates an above average level of labor productivity. In the years 2008-2009 in construction subsector were recorded values of index works superior of the European average.

2. ANALYSIS OF THE SECONDARY SECTOR IN ROMANIA

Crisis that was confronted the global economy has negatively affected industrial production in Central and Eastern Europe, by default Romania. Labour productivity in industry, in recent years in Romania has been constantly decreasing, being well below the EU average.

In 2011, industry and constructions, the two subsectors of the secondary sector contribute about 43% to Romania's GDP and employment rate in this sector was 2.364 million people, respectively 28.3%.

The labor market in Romania was concentrated around a few cities that were in economic growth, a trend that will probably continue in the future. The largest number of people employed in constructions (over 1.000 employees), registered in municipalities such as: Alba Iulia, Arad, Pitesti, Bacau, Oradea, Brasov, Braila, Cluj Napoca, Constanta, Craiova, Iasi, Baia Mare, Piatra Neamt, Targu Mures, Suceava, Botosani, Galati, Ploiesti, Satu Mare, Timisoara, Bucharest, and so on, from which more than 10.000 employees in cities like: Brasov, Cluj Napoca, Iasi, Ploiesti, Timisoara, Bucharest. Counties where construction activity was poorly represented, recorded a small number of employees, were those located in the south of the country: Mehedinți, Dolj, Teleorman, Olt, Braila, Tulcea.

Regarding **industrial activity**, counties with a large number of employees (over 20.000) were: Arad, Bihor, Brasov, Cluj, Constanta, Dolj, Galati, Iasi, Prahova, Sibiu, Valcea. The smallest number of employees in industry was recorded in counties like Giurgiu, Ialomita and Calarasi.

In 2011, compared to 2002, industry was characterized by decreasing the number of employees, while in construction has been a positive trend in terms of their number.

Generally, the decrease in the number of employees in the secondary sector is due to the decline of manufacturing and extractive, aspect that prevailed in the small towns, that have suffered in recent years a strong industrially involution.

Manufacturing contributes greatly to economic growth and job creation, being subsector that recorded the highest number of employees both in Romania and European level. The contribution of the sector remains significant even the number of employees has declined significantly after 1990. The most important branches of Romanian manufacturing in terms of the number of employees and turnover (about 25%) are: food and motor vehicles industries .

Mining is very less important in terms of turnover and employment rate, both at European and national level. Mining can confer a competitive advantage in manufacturing, providing direct raw material, without additional costs arising from the transport of other countries and from the long transit time.

In 2011, a significant percentage of industrial employees registered in low-technology industries such as the food industry in the counties Calarasi, Ialomita and Ilfov; textile industry in Botosani, Calarasi, Vrancea, Braila; wood processing industry in the counties of Harghita, Brasov, Maramures, Bistrita Nasaud; manufacturing of motor vehicles in counties: Arges, Arad, Bistrita Nasaud, Caras Severin, Hunedoara, Timis; metallurgical industry in the counties of Galati, Dambovita, Olt etc.

The **construction sector** includes the following subsectors: providing building products and materials, organizing construction activities works and plumbing works, rental construction equipment and machine and professional services.

In constructions predominates very small number of employees firms. In Figure 1 it is noted that in 2010 the largest share was recorded in the category of 0-9 employees, situation not very different in present.

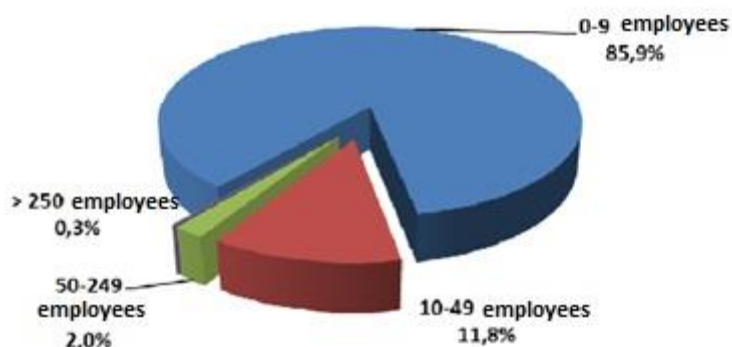


FIGURE 1. STRUCTURE OF ACTIVE CONSTRUCTION FIRMS BY NUMBER OF EMPLOYEES IN 2010

Source: INS, INCD URBAN-INCERC

Number of companies that has worked in the construction industry and consequently the number of employees, increased in 2011. In some counties (Hunedoara, Mehedinti, Covasna, Braila, Constanta), the increase was till 100%, but in a big number of counties, the increase was till 200%, for example in: Satu Mare, Maramures, Timis, Caras Severin, Mures, Sibiu, Valcea, Gorj, Dolj, Braşov, Prahova, Buzau, Ialomita, Calarasi, Tulcea, Botosani, Iasi, Neamt, Bacau and Vaslui. There were counties that have risen over 200%, for example: Bihor, Arad, Salaj, Cluj, Alba, Bistrita Nasaud, Suceava, Harghita, Vrancea, Galati, Arges, Dambovita, Olt, Teleorman, Giurgiu and Ilfov.

Due to the decrease in the number of companies and therefore in the number of employees working in industry during 2002-2011, was affected vast majority of counties (Satu Mare, Maramures, Bistrita Nasaud, Cluj, Mures, Sibiu, Valcea, Arad, Hunedoara, Caras Severin, Dâmboviţa, Teleorman, Calarasi, Ialomita, Braila, Botosani, Iasi, Neamt, Bacau, Covasna). There are counties where the number of firms increased (Bihor, Salaj, Alba, Timis, Gorj, Dolj, Olt, Arges, Brasov, Prahova, Harghita, Suceava, Iasi, Galati, Vrancea, Buzau, Prahova, Giurgiu, Tulcea, Constanta), the largest increase being in Ilfov county.

Employment in industrial sector declined significantly in the Western region, especially in industrialized counties: Hunedoara and Caras-Severin, especially because of massive layoff employees in mining and metallurgical sectors. Coal basin Valea Jiului (Aninoasa, Petrosani, Uricani, Petrila, Lupeni, Vulcan) was strongly affected by the massive restructuring in industry.

During 1999-2011, the number of employees in industry in the Central Region decreased by 42%, the industrial branches most affected by restructuring being machine building industry, metallurgical and

chemical industry, mining (Alba 46,4%, Brasov 57,1%, Harghita 39,4%, Mures 32%, Sibiu 29,2%, Covasna 26.4%).

Bucharest municipality has the highest number of people employed in industry and in the growth poles, Timisoara records the highest number of employees, followed by Cluj, Brasov, Craiova etc., Bucharest doesn't have a leading position. Then comes the sectors of water distribution and waste, energy supply and on the last place is mining. The highest percentage on mining is in Bucharest, Ploiesti, Constanta (Figure 2)

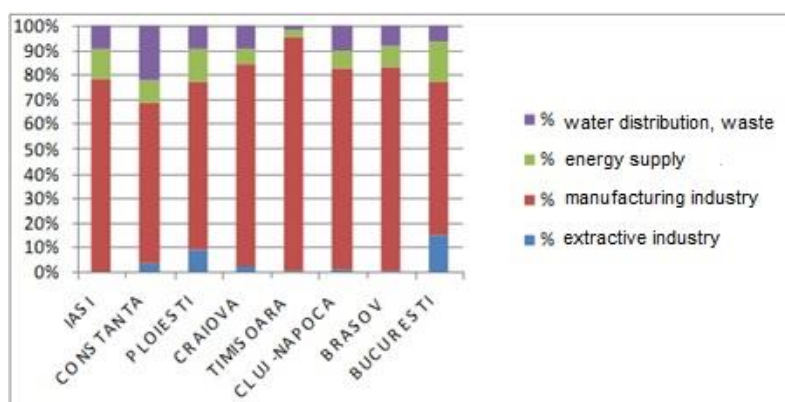


FIGURE 2. DISTRIBUTION OF THE NUMBER OF EMPLOYEES IN INDUSTRY ON SUBSECTORS IN BUCHAREST AND GROWTH POLES CITIES

Source: ONRC data processing

The situation of employment on activity sectors is as follows: in the great number of growth poles cities, most people work in the tertiary sector, excepting Timisoara. The highest values are recorded in Bucharest and Constanta. The secondary sector ranks second position, and primary sector ranks last position (Figure 3).

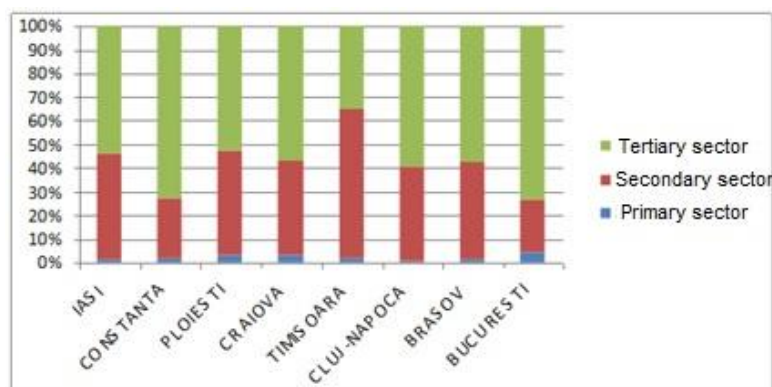


FIGURE 3. DISTRIBUTION OF EMPLOYEES BY ACTIVITY SECTORS FOR BUCHAREST AND GROWTH POLES CITIES

Source: ONRC data processing

We can be said that at the Bucharest and **growth poles**, between the two branches of secondary sector - industry and constructions, most employees are employed in the industrial sector, especially in manufacturing industries, although this sector ranks the second place in order of preferences, most of the employees choosing tertiary sector to work.

At the **poles of development**, between the two branches of the secondary sector - industry and construction, the most employees are employed in industry, especially in manufacturing industries, secondary sector is on par with tertiary sector, in order of preference for job.

At the **poles of regional importance**, it is found that most employees are employed in the secondary sector, followed by the tertiary sector, and on the last place, with a very small proportion, is situated primary sector (Figure 4)

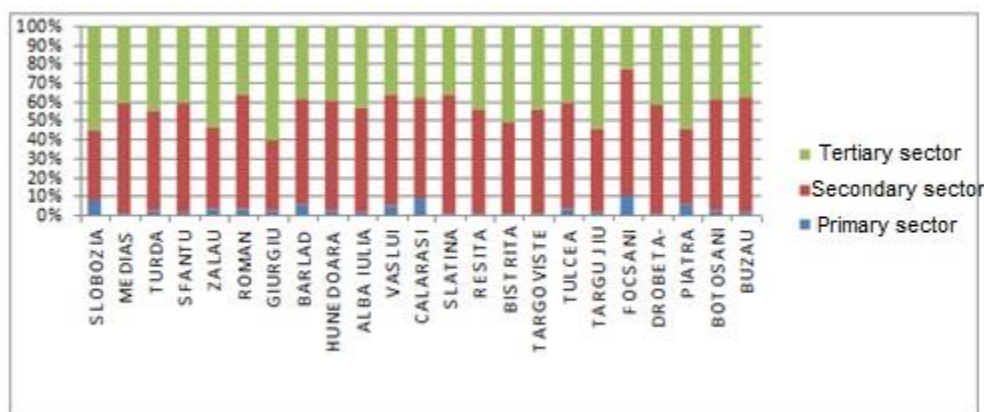


FIGURE 4. DISTRIBUTION OF THE NUMBER OF EMPLOYEES IN INDUSTRY SUBSECTORS FOR CITIES POLES OF REGIONAL IMPORTANCE

Source: ONRC data processing

At the **poles of regional importance**, most of the employees is employed in the industry, standing on top Buzau, Bistrita, Slatina, Medias, Targoviste, Tulcea, Drobeta Turnu Severin etc. In construction the number of employees is reduced. However, on the first places are situated Buzau, Drobeta Turnu Severin, Piatra Neamt, Targoviste, etc. (Figure 5)

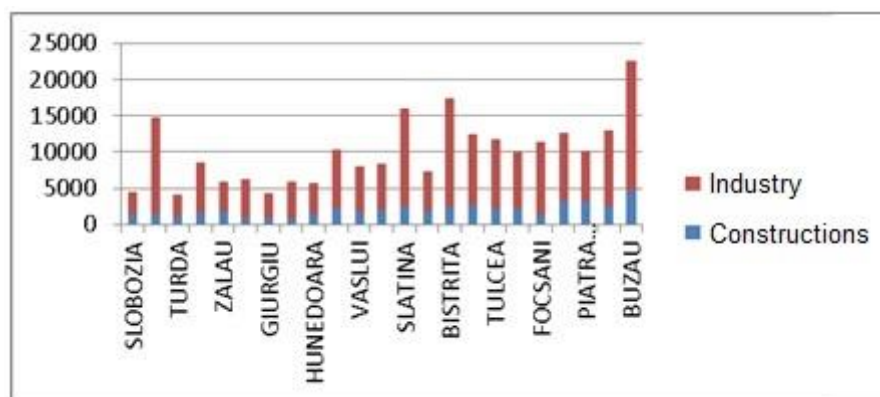


FIGURE 5. DISTRIBUTION OF EMPLOYEES ON ACTIVITY SECTORS FOR POLES OF REGIONAL IMPORTANCE CITIES

Source: ONRC data processing

Regarding the distribution of the number of employees on industrial subsectors, at the poles of regional importance too, we find that most works in manufacturing, followed by the water distribution and waste, and in a very small proportion are those who work in the field of energy supply. A special situation is encountered in Medias, where the percentage of those working in the mining is very high (Figure 6).

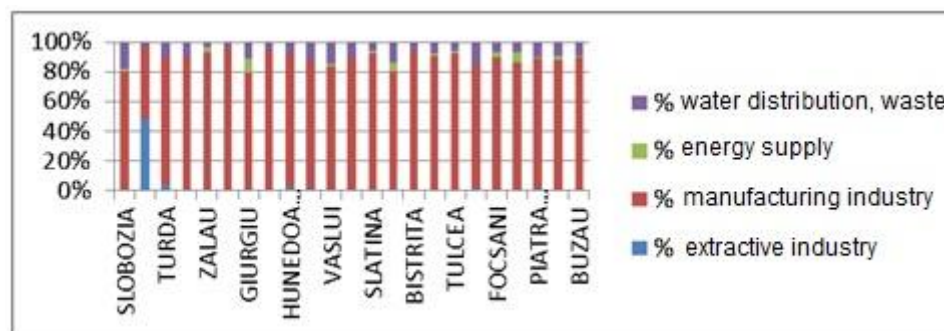


FIGURE 6 - DISTRIBUTION OF THE NUMBER OF EMPLOYEES IN INDUSTRIAL SUBSECTORS FOR CITIES OF REGIONAL IMPORTANCE POLE

Source: ONRC data processing

Thus, on the **regional importance pole**, it appears that most of the employees are working in the industrial sector, especially in manufacturing industries, although this sector is situated approximately on the same position as third sector in order of preference of employment. A small proportion of employees work in the primary sector in several centers of regional importance: Focsani, Calarasi, Slobozia, Barlad, Vaslui etc. In construction, occupancy is low.

At the **poles of local importance**, the largest number of employees are employed in industry, standing out in particular: Mioveni, Petrosani, Mangalia, Sighisoara, Lugoj, Campina, Onesti, Reghin etc. A small

number of employees work in construction, especially in Miercurea Ciuc, Campina, Alexandria, Onesti etc. (Figure 7)

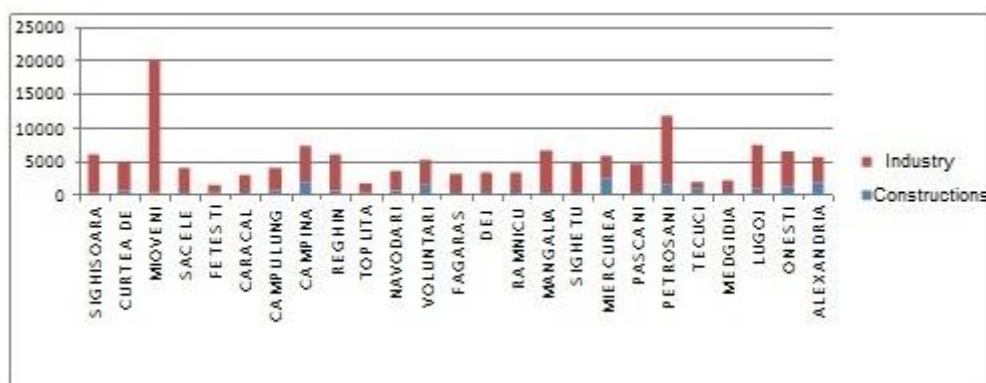


FIGURE 7. NUMBER OF EMPLOYEES IN INDUSTRY AND CONSTRUCTION ON LOCAL IMPORTANCE POLES

Source: ONRC data processing

By sectors, it is found that most employees are employed in the secondary sector, followed by the tertiary sector, and the last is primary sector (Figure 8)

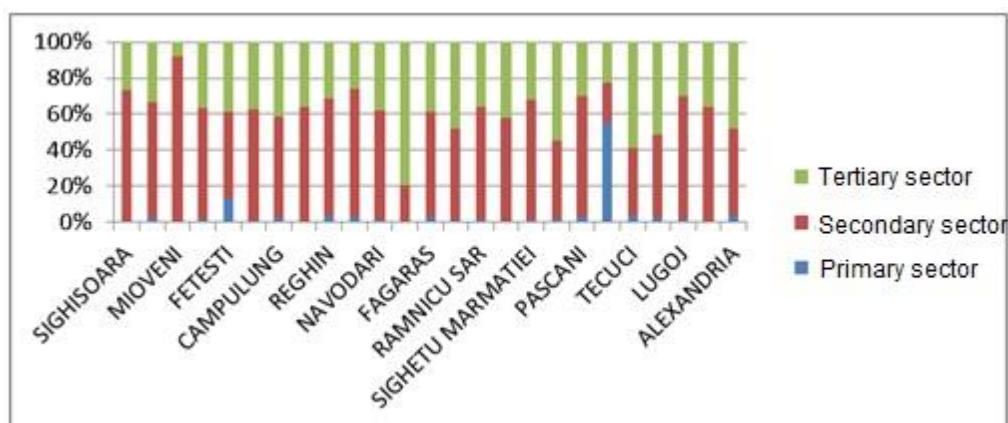


FIGURE 8. DISTRIBUTION OF EMPLOYEES ON ACTIVITY SECTORS FOR POLES OF LOCAL IMPORTANCE CITIES

Source: ONRC data processing

Regarding the distribution of employees number on industrial subsectors, it appears that most work in manufacturing, followed by sectors of water distribution and waste, and energy supply. A special situation is encountered on the pole of local importance Petrosani, where most of the employees work in mining. (Figure 9)

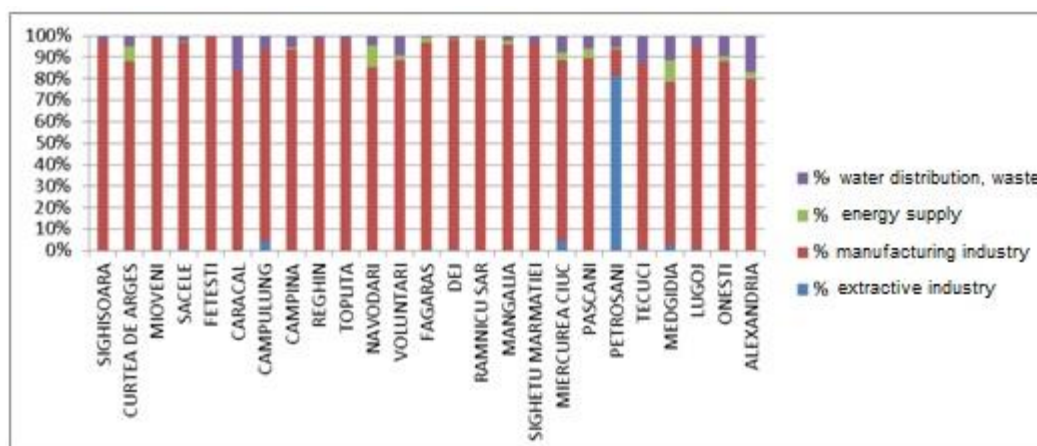


FIGURE 9. DISTRIBUTION OF THE NUMBER OF INDUSTRIAL EMPLOYEES ON SUBSECTORS FOR CITIES-LOCAL IMPORTANCE POLES

Source: ONRC data processing

Concluding, at the local importance poles, it is found that between the two branches of the secondary sector - industry and construction, most employees are in industrial sector, especially in manufacturing industries, although this sector occupies approximately the same position as tertiary sector in order of preferences of employees. A small proportion of employees works in the primary sector in several poles of local importance: Petrosani, Fetești, Reghin, Campulung, Alexandria, Toplița etc.

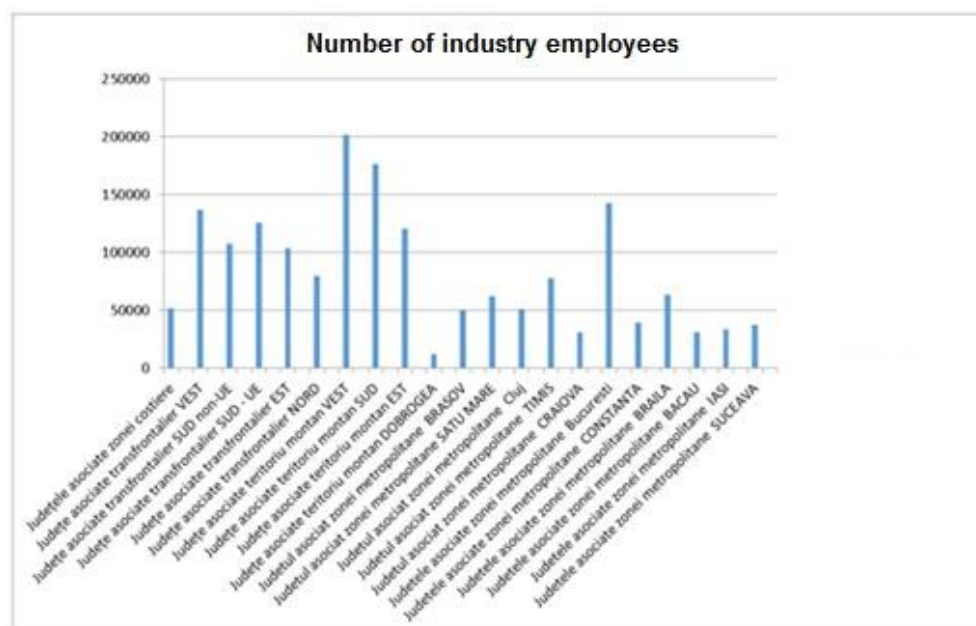


FIGURE 10. DISTRIBUTION OF THE NUMBER OF EMPLOYEES IN INDUSTRY BY TYPE OF AREA

Source: INS data processing

At the counties level, the highest number of employees which work in industry, is recorded in the counties associated of Western mountain territory, followed by counties associated of Southern mountain territory and those associated to Bucharest metropolitan area (Figure 10).

The lowest number of employees in industry is recorded in the counties associated of Dobrogea mountain territory, 60% lower than the counties associated of metropolitan areas of Craiova, Bacau, Iasi, respectively 70% than the counties associated of metropolitan areas of Constanta and Suceava.

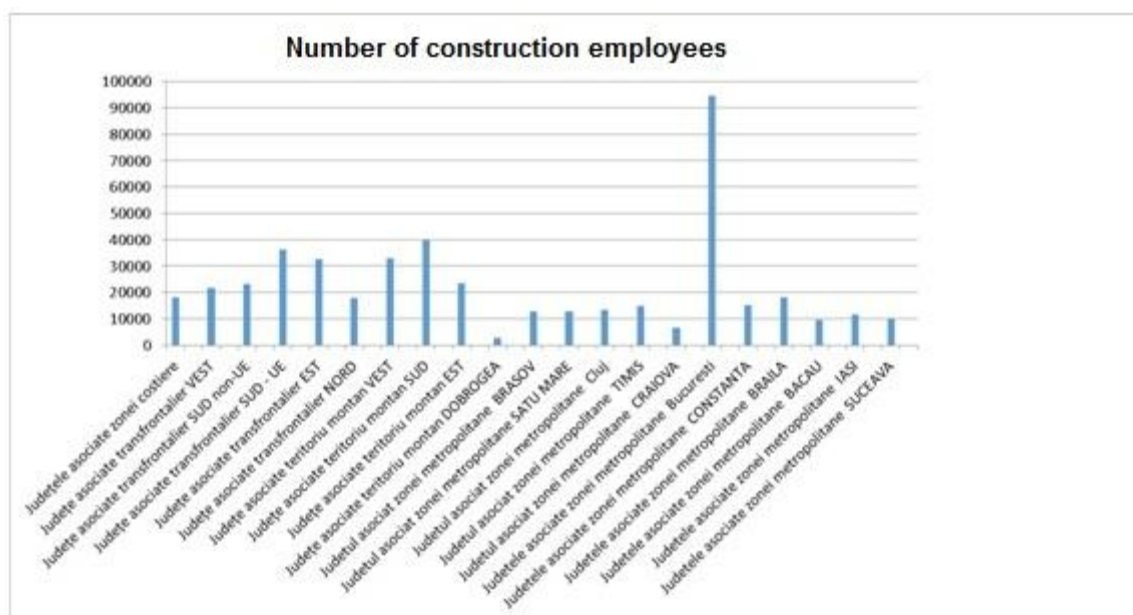


FIGURE 11. DISTRIBUTION OF THE NUMBER OF EMPLOYEES IN CONSTRUCTION BY TYPE OF AREA

Source: INS data processing

Counties associated to Bucharest metropolitan area record the greatest number of employees in construction, significantly higher than other areas (Figure 11). Over 30.000 employees are registered in the counties associated to Western and Southern mountain territory, respectively Eastern and Southern-EU border counties associated, with about 60% less than in Bucharest metropolitan area.

Counties associated to Dobrogea mountain territory, metropolitan areas Craiova, Bacau, Iasi, Suceava retain unfavorable position in terms of number of employees in construction, reaching a level as low as the industry.

Regarding the evolution of the number of employees in construction in 2011 compared to 2002, we can say that there have been positive developments, the largest in the counties associated to metropolitan areas of Bucharest and Satu-Mare, followed by Northern border counties associated, Eastern mountain territory and county associated to the metropolitan area of Brasov. The lowest level of growth was

recorded in the counties associated to metropolitan area of Bacau, followed by counties associated to metropolitan area of Constanta and Craiova, mountain areas of Dobrogea and costal areas.

Compared to the situation in the construction sector, the industry is characterized by a decrease in the number of employees in 2011 compared to 2002. A significant decrease was recorded in the counties associated to metropolitan areas of Bacau, Iasi, Suceava and Eastern border counties associated.

Even in a general context characterized by instability in the industry, some areas have seen an upward trend. The highest level of increase in the number of employees in industry was recorded in the county associated to the metropolitan area of Craiova, followed by the counties associated to metropolitan area of Constanta, Southern non-EU border counties associated, Western and coastal area.

3. THE LABOR FORCE ENGAGED IN THE SECONDARY SECTOR

In 2011, in Romania there were 8.365.500 persons employed in economic terms, of which 2.364.700 persons were employed in the secondary sector, representing 28,3%. Employment rate by subsectors is as follows: 17,9% in manufacturing, 7,3% in construction, 1,5% in water supply, cleaning, waste management and remediation activities, 0,8% in mining and 0,8% in the production and supply of electricity, thermal energy, gas, hot water and air conditioning.

All Romanian regions have a significant industrial component, the highest concentration of employment being in the Northwest and Central regions (Table 1). Mining is concentrated in the South-West, Southern areas, and the fewest employees are in Bucharest-Ilfov, North-West and South-East areas. Manufacturing has the most employees in the North-West and Central areas, and the fewest in the South-West area. The remaining industrial subsectors have a uniform distribution of the workforce in the regions.

Construction sector has a greater labor concentration in Bucharest-Ilfov area, but are distributed in other parts of the country in a relatively uniform manner.

TABEL 1. REGIONAL DISTRIBUTION OF EMPLOYEES IN THE SECONDARY SECTOR (THOUSANDS)

Regions	NV	Center	NE	SE	SM	BI	SV	V	Total
Industry	269,6	272,3	200,3	188,5	254,7	178,6	157,7	232,1	1753,8
Mining	3,8	7,6	4,8	4	11,8	3,7	18,9	10,2	64,8
Manufacturing	244,7	243,2	172,7	156,2	218,9	143,8	114,3	201,2	1495
Production and supply of electricity, thermal energy, gas, hot water and air conditioning	6,4	6,9	7	10,4	7,3	12	13,2	7,8	71
Water supply, cleaning, waste management and remediation activities	14,7	14,6	15,8	17,9	16,7	19,1	11,3	12,9	123
Construction	71,3	66,4	72,3	78,5	68,7	149,8	56,8	47,1	610,9

Source: INS, 2014

A significant problem of labor force in the secondary sector is the low share of highly skilled labor in manufacturing, reflecting the predominance of sectors that require low-skilled and labor-intensive usage (eg. textile or processing of agro-food products). However, increasing the share of highly qualified labor force since 2006 suggests a continuous transition towards a knowledge-based economy and an increase in work requiring middle and high skilled.

4. CONCLUSIONS

Evolution of secondary sector employment is in accordance with the economic changes that Romania crossed. The period 1990-2000 was a difficult period, of economic decline, when the economic restructuring process was accompanied by an appreciable restriction or closure of existing production capacities, the most affected economic sectors being mining, chemical and non-ferrous metallurgy. This fact was reflected in the decline of employment rate. From 2000-2001 the economic climate has improved, economy restarted its growth, and the years 2006-2008 brought economic growth and the increasing of employment rate of the population. Economic and financial crisis that began in the second half of 2008 had a negative impact on the level of investments both foreign and domestic, some foreign companies withdrawing or reducing their presence and lowering the employed population.

Analyzing the territorial distribution of labor, it notes the South West area, with the lowest number of employees in the secondary sector. The year 2008 saw growth in the number of persons employed in industry and construction in all regions, bringing massive restructuring period immediately following the obvious economic consequences.

Rural areas and small towns are facing with a shortage of secondary sector activities. In these areas there are significantly higher proportion of people who are exposed to poverty and social exclusion, particularly in the North-East, South-East, South-West Oltenia and South Muntenia. Over 71% of the poor population of Romania live in rural communities.

Monoindustrial areas affected by industrial restructuring are facing with major economic problems, labor migration, aging and depopulation emphasized. The isolated settlements located in the highlands and along the Danube corridor has the same negative demographic trend, mainly due to the geographical characteristics that limit access to jobs. The former mining towns are at a turning point. Some of them will have to refocus to other economic sectors, while for others mining can be continued starting with massive investments in new technologies.

Romanian industry faces with problems regarding not yet identified resources, the difficult promote on the foreign and internal market, the dependence of certain areas of a single industry.

Economic and social development in certain areas of Romania depends largely on industrial sector restructuring in recent years with significant adverse effects in these territories.

The construction sector, along with other sectors of the Romanian economy, continues to be sensitive to national economic fluctuations, according to the results achieved in recent years.

Legislative and economic instability are the main factors that influence significantly the construction sector.

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