

## *An analysis of the construction sectors in Romanian development regions*

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**Abstract:** *In this paper, the authors perform a thorough analysis of the construction sector in the economy of the 8 Romanian development regions of the country. The following indicators are examined: the regional distribution of labour in the construction, the evolution of the value of construction works on the types of works, the distribution of the density of regions' construction companies, the construction companies' distribution by number of employees, the gross value added variation across sectors and regions, and other indicators.*

*In order to formulate a reasonable conclusion on the current situation in Romania in terms of the construction sector (which has been the subject of other previous studies and of the authors), and to compare them over the eight development regions of Romania, in the present work is analysed the dynamics of this sector over the period 2000-2011.*

*Final results highlight the large discrepancies between the eight development regions of Romania in terms of evolution and development of the construction sector and that of Bucharest-Ilfov, which includes the capital, is one in which the number of employees and construction firms (both small and large firms) and gross value added in construction recorded the highest values.*

*The paper concludes with the proposal of a set of measures to increase the construction sector's contribution to the economic development of the regions.*

**Keywords:** *construction, development regions, employment in construction, construction companies.*

**JEL:** *E20, L11, L74*

### **Introduction**

The construction sector has a strategic importance for countries around the world since it provides buildings and infrastructure to the economy and society (European Commission 1, 2014).

Construction activity is the largest economic sector and the largest industrial employer in Europe: it directly employs approximately 20 million people

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and, according to the FIEC (the European Construction Industry Federation), directly and indirectly affects 44 million workers; it represents over 10% of the GDP of the European Union, more than 50% of gross fixed capital formation and 40-45% of Europe's energy consumption is in buildings and 5-10% of this value represents consumption of the processing and transport of construction materials for buildings. Public infrastructure investment is between 0.5 and 2% of GDP in European countries (Enulescu, 2011).

The construction sector plays an important role in the delivery of the European Union's 'Europe 2020' goals for Smart, Sustainable and Inclusive Growth. The strategy for the Sustainable Competitiveness of the construction sector focuses on five Objectives: stimulating favourable conditions for investment; Improving the human-capital basis; Improving Resource Efficiency, Environmental Performance and Business Opportunities; Strengthening the EU internal market and Fostering the Global Competitiveness of enterprises (European Commission in February, 2014).

Economic and financial crises faced by humanity in recent years have affected most sectors of national economies including the construction sector. The construction market has been and will remain an important source of income for the EU – with construction representing a significant percentage of the GDP of each European country.

The construction market in Western European countries has been sensitive to the financial crisis and general economic decline. For example, France, Denmark, Greece, Italy and Portugal in 2008 recorded a decrease in construction activity, while the Netherlands (Sweden, Finland, Austria and Belgium) have experienced a significant slowdown in the rate of growth of the construction sector (Lambrache, 2011). Even in Germany the construction sector has experienced major losses due to reductions in the subsidies granted by the government (Nistorescu, Ploscaru, 2010). Eastern European countries have been less affected by the crisis and not at its beginning in 2008. In fact, Romania, Bulgaria, Poland, Slovenia and Slovakia experienced a large increase in construction activity in 2008. In contrast, Hungary, Czech Republic and Estonia declined due to the economic difficulties that they experienced before the crisis intensified (Lambrache, 2011).

There is a strong correlation between activity in the construction sector and the economic growth of a country, since this sector plays an important role in the country's aggregate economy through its contribution to income generation, capital formation and job creation, thereby increasing GDP and economic and social development of that country (Khan, Liew, Ghazali, 2014).

Rapid globalization trends and major technological changes that humanity has experienced have made difficult the organization of construction for its survival in a competitive world. The current global economic crisis has also had a strong impact on the construction sector, especially in developing countries (Butkovic, Bošković, Katavi, 2014).

The latest data indicate that in July 2014 compared to July 2013, construction works increased by 0.6% in the EU28, but fell in Romania by 19.7%

over the same period of time. The decline in construction works in Romania was much lower in the period 2012-2013, only 0.5%, while in the EU28 there was a drop of 2.2%. (INS, 2014). It should be noted that the construction sector in Romania has not yet stabilized after the economic crisis and continues to be responsive to national and international economic fluctuations.

Although our country has some important advantages such as a highly qualified and low-waged labor force, the impact of economic crisis upon the economic and social environment has been strong (Androniceanu, 2013).

The construction sector, in general, is considered the engine that triggers growth due to its direct links and closeness to many other sectors. In the literature, is emphasized the role of the public sector, especially the government, in minimizing the negative effects of construction activity (Balaban, 2012).

### 1. Construction sector in Romania

Construction sector is the secondary sector of industry, which in 2011 contributed about 43% to the GDP of Romania. In this sector were employed about 28% of the total national workforce, and labour productivity, calculated by GDP per employee was above average, though not particularly high in absolute terms (Table 1).

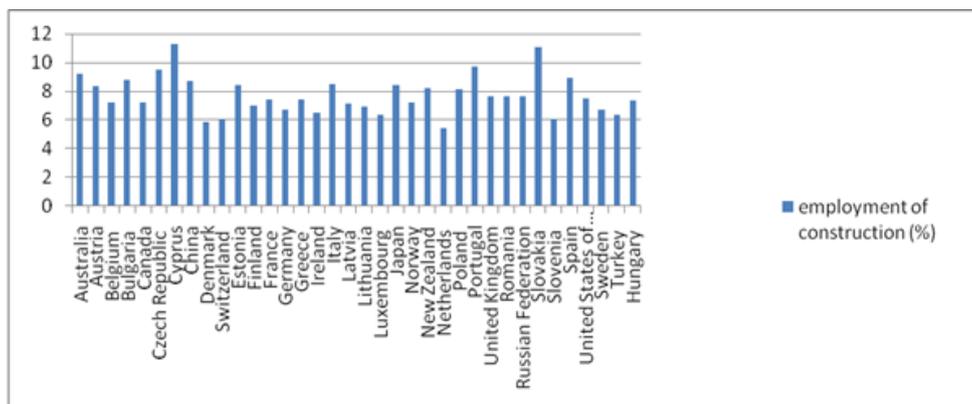
Construction in Romania is more developed than in most EU countries. For example, in 2011, the number of companies active in this field and their contribution to GDP stood at around 9%, while the employment in this sector had a lower rate (7.3%), but as noted above an average labour productivity of 0.078 (Table 1).

**Table 1. - Sectors of activity - number of companies, GDP, employment in 2011**

Sector	Number of companies 2011	Companies (% total)	GDP 2011 (millions lei)	GDP % total	GDP/enterprise 2011 (millions lei)	Employment 2011 (thousands)	Employment rate (% total)	GDP per Employee 2011 (millions lei)
Primary sector	15152	3,4	32814	6,8	2,166	2442	29,2	0,013
Secondary sector	93218	20,6	208491	43,1	2,237	2364,7	28,3	0,088
Industry	49715	11,0	160928	33,3	3,237	1753,8	21,0	0,092
<b>Construction</b>	<b>43503</b>	<b>9,6</b>	<b>47563</b>	<b>9,8</b>	<b>1,093</b>	<b>610,9</b>	<b>7,3</b>	<b>0,078</b>
Tertiary sector	343640	76	242400	50,1	0,705	3558,8	42,5	0,068
All Sectors	<b>452010</b>	<b>100</b>	<b>483705</b>	<b>100</b>	<b>1,070</b>	<b>8365,5</b>	<b>100</b>	<b>0,058</b>

*Source: National Institute of Statistics – NIS*

In 2010 the construction workforce ranged from 5.4% in the Netherlands to 11.3% in Slovakia. In Romania there was an average employment of 7.6% (Figure 1). This shows that, in terms of employment in construction, Romania is in a position comparable to other countries in Europe and in the world.



Source: National Institute of Statistics-NIS

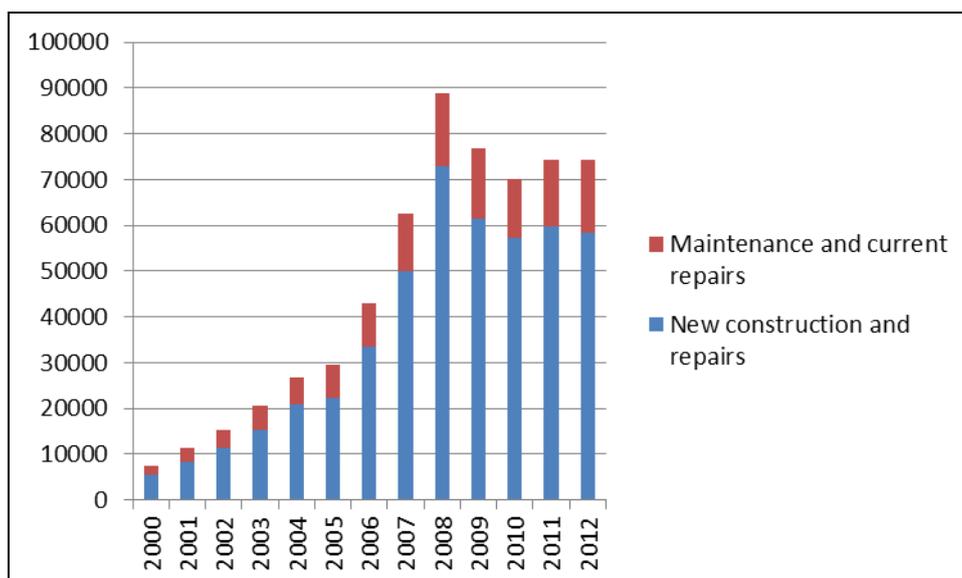
**Figure 1. Percentage of employment in construction (percentage of total employment) in 2010**

Construction was in good times an important engine of the Romanian economy, rising by over 30% (2005-2008). In 2007 the construction market in Romania amounted to EUR 9.2 billion, a situation ahead of countries such as Hungary (7.8 billion euros), Bulgaria (5.3 billion), Slovakia (4.6 billion), Croatia (2.7 billion). However, the economic crisis has affected construction activity after 2008, with substantial declines witnessed.

Construction works are divided into two categories depending upon their type:

- New construction and repairs
- Maintenance and current repairs.

New constructions and repairs constitute the largest percentage of total construction works: around, about 80% (see Figure 2). After 2000 the value of construction increased strongly, recording a peak in 2008. The economic crisis reduced the value of construction, although in recent years it has stabilised somewhat.



Source: National Institute of Statistics – NIS

**Figure 2. The value of construction works categorised by type (millions lei)**

The main factors that can negatively or positively influence the construction sector include:

- instability/stability policy (fiscal policy, budget policy, inflation, etc.)
- instability/stability in legislation
- investment
- labour migration
- reduced demand domestically and internationally
- fragile support of funding from the banking sector
- credit
- the degree of absorption of EU funds
- investment in infrastructure and utilities
- ending unemployment and increasing purchasing power
- attracting and maintaining foreign investment
- compliance with regulations and quality control works

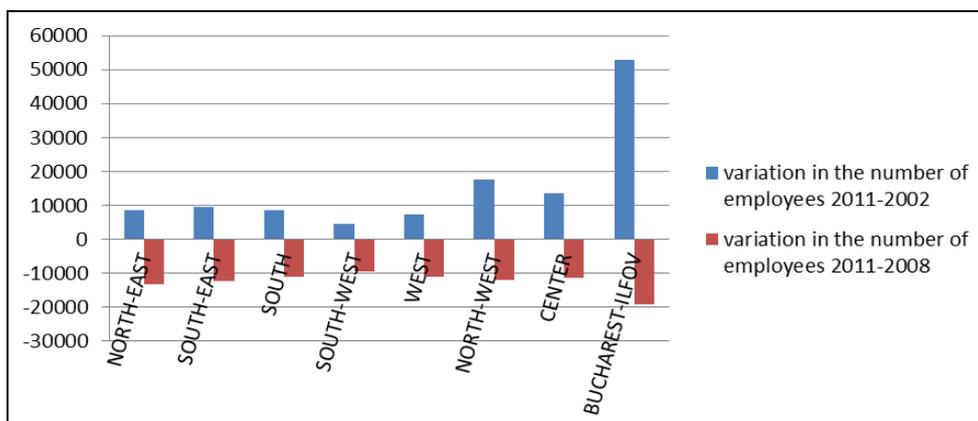
### 3. Changes in the construction sector in the developing regions

The evolution of employment in the construction sector is consistent with the economic changes that Romania experienced. In the period 1990-2000, Romania went through a difficult period of economic decline, the deterioration in the central macroeconomic equilibrium combined with surging inflation. Starting in 2000-2001, the economic climate improved, the economy resumed growth and the years 2006-2008 brought strengthened economic growth. The economic and

financial crisis that began in the second half of 2008 had a negative impact particularly in terms of foreign investment and the level of domestic demand, some foreign companies withdrew or reduced their presence in Romania, this inevitably leading to decrease in the number of employees employed in the sector.

The period 2008-2011 was a tough time for the construction sector, with all regions recording significant reductions in the number of employees (between 9,500 and 19,200 employees). The largest decrease was recorded in the Bucharest-Ilfov area, which had also the largest number of employees employed in the field, other regions recorded decreases approximately equal.

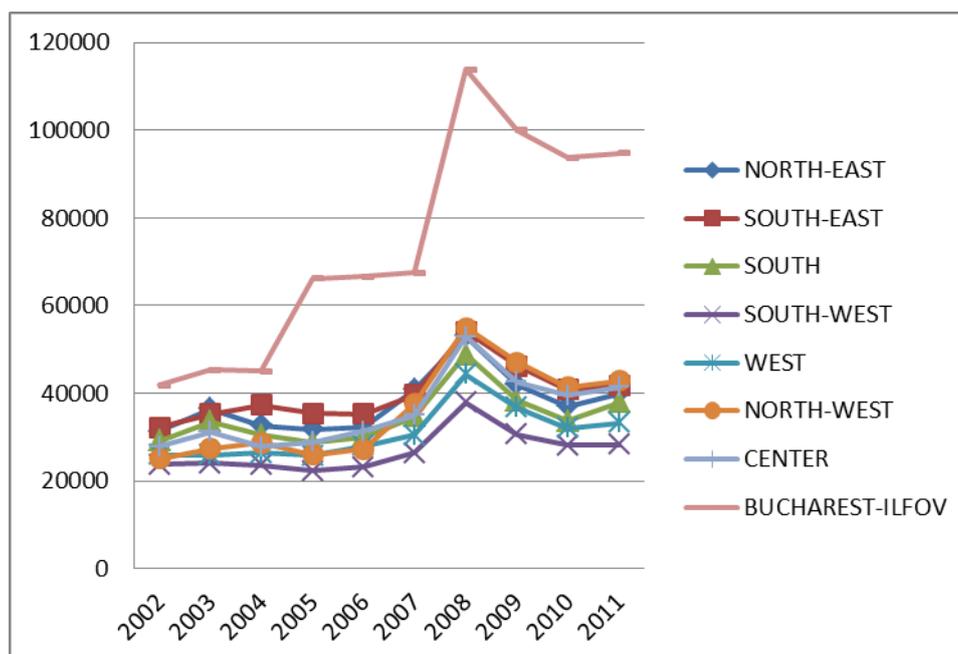
However, the number of employees has grown in recent years because foreign investment started having a bigger importance in Romania's economic upturn, as a way to minimize the effects of the global crisis (Androniceanu, 2013). The largest increase in the number of employees was registered in the Bucharest-Ilfov region (Figure 3), and lowest in the South-West and West.



*Source: Based on the NIS data*

**Figure 3. Changes in the number of employees in construction**

The Bucharest-Ilfov Region has the highest number of employees in construction, more than double employees in other regions. The fewer employees are in the West and South-West (Figure 4).



Source: National Institute of Statistics – NIS

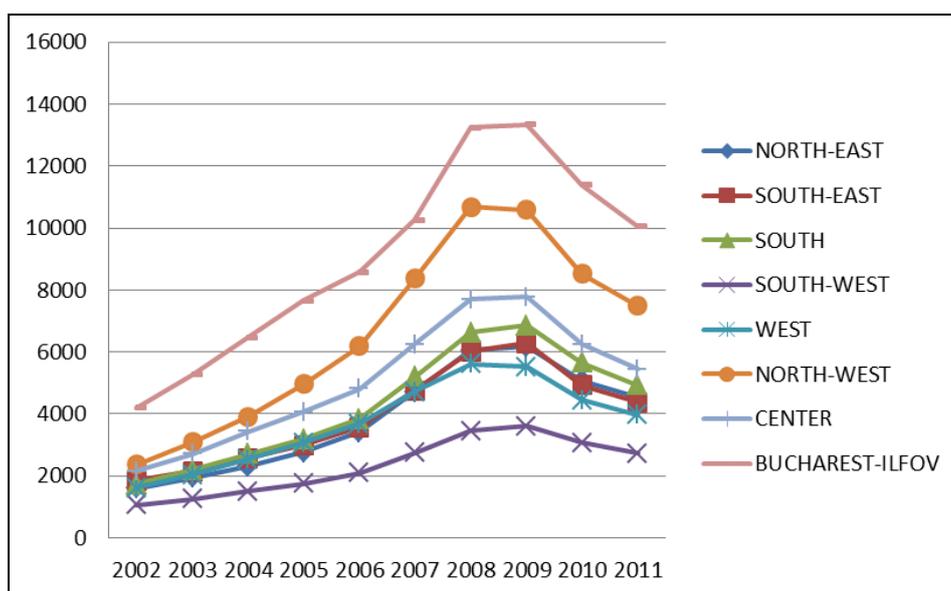
Figure 4. Changes in the number of employees in construction by region 2002-2011

In terms of the number of firms in construction, in 2002-2008, there has been an increase across the regions. The highest increase was recorded in 2008 (Figure 5). The increase in the number of firms in the construction sector is linked to the country's overall growth and development of residential real estate.

After the 2008 economic crisis which had seriously affected the construction sector, the number of firms showed a significant reduction in the years that followed.

The Bucharest-Ilfov region has recorded over time the largest number of firms in the construction sector (Figure 5), while in the South-West it is the opposite. In 2011 construction companies in Bucharest-Ilfov represented 22% of all firms in the construction sector.

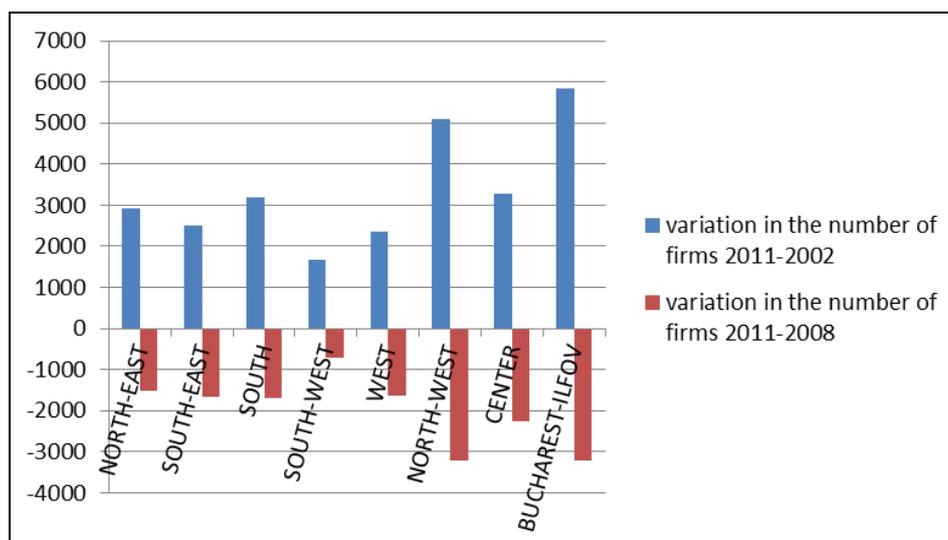
The development of companies in this sector is closely linked to the expansion of urban infrastructure of local and national roads, sewerage and water supply; is associated with developing opportunities for industrial work, such as rehabilitation of railways, air infrastructure; the execution of works in the field of energy efficiency and renewable energy use.



Source: National Institute of Statistics – NIS

**Figure 5. Evolution of the number of construction companies by region 2002-2011**

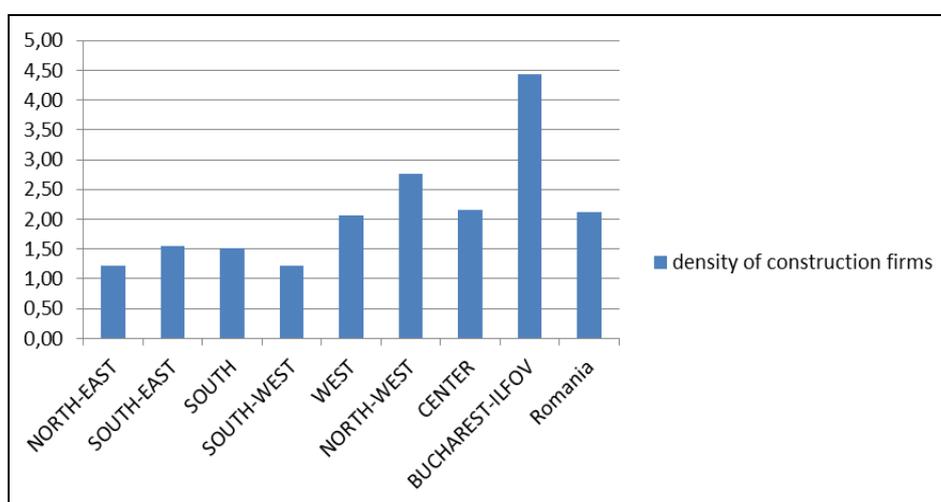
Changes in the number of firms follow the same trend as changes in the number of employees. The period 2002-2011 was a time when there was an increasing number of companies, the largest increase was recorded in the Bucharest-Ilfov region, followed by the North West and the smallest increase was recorded in the South West region (Figure 6). In the period 2008-2011 the number of firms declined in all regions, the largest drop recorded in the region with most companies – Bucharest-Ilfov. A significant decrease was recorded in North West region, and the smallest decrease was recorded in the region with the fewest firms – the South West.



Source: Based on the NIS data

Figure 6. Changes in the number of construction companies

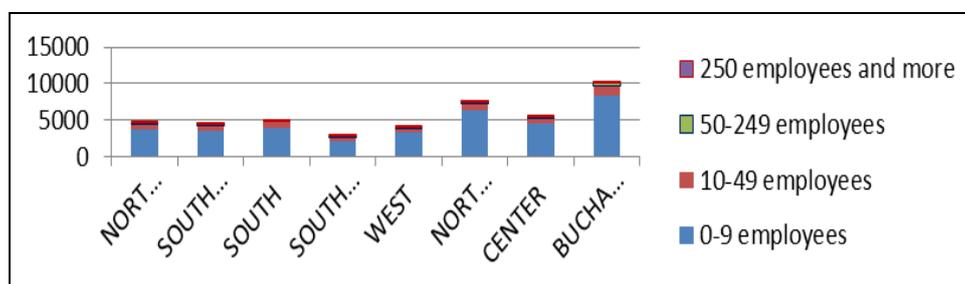
The density of construction companies (number of firms to 1000 habitants) is an indicator which can reflect the development of the sector by region. The highest density of firms in construction is in the Bucharest-Ilfov region – twice the national average. Values above the national average are recorded for the North-West and the Centre. The remaining regions have a density of the number of firms below the national average, the lowest being recorded in the South West region (Figure 7).



Source: Based on the NIS data

Figure 7. Density distribution on regions of construction firms in 2011

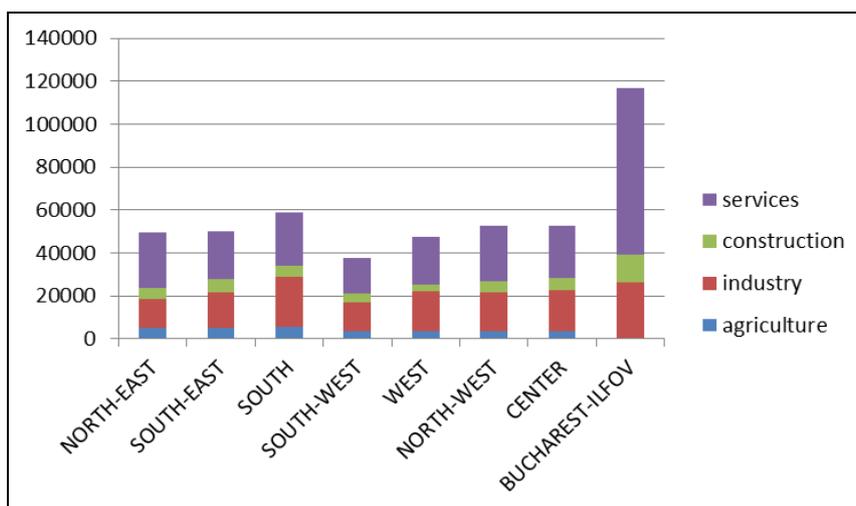
The vast majority of companies active in the construction industry are SMEs, their number increasing almost 4 times compared to 2000; this represents a doubling compared to 2005. SMEs are a key factor in the economic landscape of the European Union and of Romania, providing millions of jobs and triggering innovation. In Figure 8 is shown the structure of active construction firms by the number of employees in 2011. At the regional level, it is observed that the largest share – between 79% and 83.5%, are registered micro enterprises (with less than 9 employees) so construction companies with few employees prevail. The highest percentage of micro-enterprises is in the North West and the Bucharest-Ilfov regions and the lowest in the South-West. Large firms active in construction are insignificant in number; there are areas in which operate very few, if any, of such firms. Thus firms with over 250 employees constitute between 0.16% and 0.43% of all construction firms in the developing regions. The highest percentage of large firms is registered in the Bucharest-Ilfov region and the lowest percentage in the North West region.



Source: National Institute of Statistics - NIS

**Figure 8. The distribution of construction companies by the number of employees in 2011**

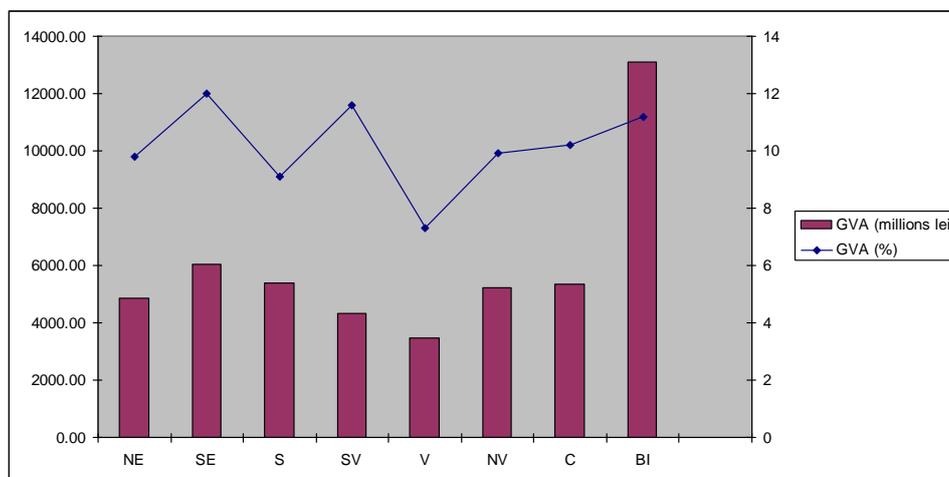
An analysis of gross value added (GVA) helps us identify the correct structure of the economy by industry, being better than GDP, because changes in taxes or subsidies can change the weight of the sector in GDP without changing economic activity itself. In terms of territory, region presents some particularities of economically so agriculture is more developed in the North East, the South, the South East, the South West, industry average values over the South East, the South, the South West, the West, the North West, the Central, and services beyond the country's media in Bucharest-Ilfov and North-East (Figure 9).



Source: MDRAP, 2013

Figure 9. GVA by sector and region in 2010

The highest value of GVA in construction is recorded in the Bucharest-Ilfov region with values exceeding twice the GVA in other regions. It is also remarkable that the South East region has higher values than the other regions, although the number of employees and construction firms is lower than in other regions. The importance of the construction sector in each region can be measured by the percentage of the total construction GVA per region (see Figure 10). Regions that exceed the national average are: the South East, the South West, the Bucharest-Ilfov region and the Center. The lowest percentage is in the West region.



Source: MDRAP, 2013

Figure 10. Variation of GVA by region in 2010 in thousands and as a percentage of the region's GVA

#### **4. Conclusions**

The analysis carried out has shown the existence of large differences between the eight development regions of Romania in terms of the evolution and the development of the construction sector; the Bucharest-Ilfov is the most developed in this regard. Density above the country's average for construction firms is recorded in the Centre and North West regions, and GVA values over the country's average in the Central, the South East, and the South West regions. In the South-East region, although there are a smaller number of employees and firms in the construction sector than other regions, GAV is above the average for the country; this sector can be considered a specialization of the region. The region has a small number of employees and firms in construction and the lowest percentage of GVA.

The economic development of the regions of Romania can be facilitated by setting appropriate strategies for each region based on their current and future potential. Therefore, to increase the contribution of the construction sector in the economic development of the regions there should be taken the following measures (Alpopi, 2014):

- Support investment by:
  - Supporting local authorities in attracting strategic investors in each zone/region and in strengthening the market position of existing ones
  - Developing partnerships between the public and private sectors (PPP) with the objective of attracting foreign investment
- The creation, development, modernization and equipment research and development infrastructure;
- Taxation:
  - Reducing all taxes, including the VAT rate; reducing the number of taxes
  - Providing state guarantees to unlock convertible financial undertakings
  - Deductibility of loss resulting using the application of minimum tax; allowing capital to increase profits and accumulated reserves of construction companies without paying income tax in order to improve the company's financial statements
  - Reduction of tax evasion, undeclared work that has not been registered for tax, encouraging all economic agents to operate legally; tackling undeclared work using such active measures to reduce taxation on labour directly applied
- Investment and economic activity:
  - Measures of development and modernization of all types of national infrastructure: transport, communications, information, communications, environmental monitoring and land etc.
  - Providing state guarantees for new investments in Romania;
  - The establishment of a fund or a guarantee scheme to assist companies in securing financing necessary for participation in EU-funded projects

- Simplification of work in projects with European funding and reducing the percentage of requested financing for SMEs
- Support the production of goods and services funding through state aid schemes applicable to the SME sector
- Improve the business environment radically in terms of availability of financing investment policy transparency and predictability, proportionality administration and regulation, including through better use of ICT by government.

In conclusion, the construction sector, along with other sectors of the Romanian economy, continues to be sensitive to national and international economic fluctuations, as has been seen in recent years.

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