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THE ROLE, SIGNIFICANCE AND TREND OF CONSTRUCTION SECTOR IN MACEDONIA

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Abstract

The theory has concluded, and the practice has confirmed numerous times, that the dynamic trends in construction influence the general economic activity of a country with a multiplier effect. More specifically, growth in the construction sector activity stimulates a revival of the total economic activity. Hence, the growth in this sector stimulates a faster economic growth of a country. The governments of many countries, including Macedonia, through macroeconomics policies, encourage and stimulate construction activities with an ultimate goal to sooth recession trends in the economy. In order to reduce unemployment and strengthen aggregate demand, especially in crisis times,[30] governments often engage in financing and building public objects.
First in this paper we give a short review of why and how the developments in construction are usually analyzed, with an emphasis on the methodology implemented by the State Statistical Office of the Republic of Macedonia; further we make an analysis of the role and significance of the construction sector in Macedonia and finally we review the EU experiences. Having this in mind and considering the fact that thus far a more serious and detailed analysis of the construction sector in Macedonia has not been done, with this paper we aim at giving a humble contribution, which would clear the way for further analyses and researches of this relevant sector of the economy.

Keywords: *construction, cost index, Macedonia, EU.*

30) Such projects in Macedonia are 'Skopje 2014', as well as the project for subsidizing loans for purchasing or renovating dwellings.

1. Introduction

The construction costs index (CCI) (sometimes referred to as contruction input price index) is an indicator of business cycles which shows the trend of costs of construction companies that occur in the process of construction of new buildings. It is a composite index which combines the index of material costs and the index of labour costs, which actually comprise the leading group of expenses of construction companies in the process of construction of residential buildings.[31]

The construction costs index (CCI) measures the development trends of input prices paid by construction companies during the construction process. Therefore it is necessary to distinguish this index from the output price index, which shows changes in prices paid by the client to the construction contractor. The output price index includes changes in productivity as well as changes in profit margins of construction companies. Also, the CCI index differs from the selling price index, which shows changes in prices paid by final owners, which vary substantially in time and place, depending on market conditions and competition.[32]

From the beginning of 2011, the State Statistical Office of the Republic of Macedonia (SSO) began calculating and regularly publishing the construction cost index, taking 2005 as a base year. A special methodology for calculation of the construction cost index was developed for that purpose, which is completely adapted to the appropriate methodology of short term statistics of Eurostat.

The results of the research are presented in this paper. The paper continues as follows: the second part explains the basic reasons and needs for following the construction costs; the third part presents the basic ways - indices for calculation of construction costs; the fourth part gives a review of possible approaches for calculation of construction indices, and a separate part is dedicated to the methodology for calculation of the construction cost index used by the SSO; the fifth part analyses the construction sector and construction costs in RM and the sixth part reviews the construction sector trends in EU. The last part of the paper presents the conclusions from the research and certain recommendations for calculation of new indices related to market prices of buildings.

2. Why calculate and analyze construction costs

Having in mind the significance and role of the construction sector in an economy, it is logical to find the need for establishing a system for an overall following of the activities and growth dynamics of this sector. The theory has concluded, and the practice confirmed numerous times that the dynamic trends in construction reflect multiplicatively on the general economic activity of a country. More specifically, the заживувањето of the construction sector activity stimulates a revival of the total economic activity. Hence, the growth in this sector stimulates a faster economic growth of the country. The governments of many countries, including Macedonia, through macroeconomics policies encourage and stimulate construction activities with an ultimate goal to sooth the recession trends in the economy. In order to reduce unemployment and strengthen aggregate demand, especially in crisis times, governments often engage in financing and building public premises.[33]

This imposes the need for calculation of construction price indices, in order to provide following of the real changes in the output of construction sector activities. These indices do not provide information about the

31) Eurostat “Construction cost index overview”

32) See Eurostat **Methodological manual**, p.75-77

33) Until recently, in Spain, the government aimed at achieving a higher growth by providing incentives in the residential construction. However, due to the latest economic crisis, which reflected also on a slow down of real sector activities, the positive effects of such a policy lack behind. In Macedonia, the projects ‘Skopje 2014’, and the project for subsidizing loans for purchasing or renovating individual dwellings, among others, have the goal of stimulating the country’s economic growth through dynamyzation of the construction sector activities.

situation on the real estate markets, but give basis for forming prices in the purchase contracts, as well basis for indexation of insurance companies'needs.

The statistical practice of analyzing construction sector prices uses the following types on indices: index of output prices in construction, index of selling prices in construction and index of construction costs. The construction cost index is most commonly used to follow the construction of new residential dwellings. This index measures the relation between costs, at constant technology and input mix at constant volume of construction work and it shows the price changes of the factors of production which are used by the construction sector.[34] The construction cost index incorporates the costs for energy and fuel, machines and equipment, transport etc. The costs of architectural projects are not included in the calculation of the construction costs index.

The main goal of the calculation of CCI is the opportunity to follow costs that appear in the construction of new individual dwellings process. This enables the involved construction companies, as main users of this index, to include the changes in construction costs on time when signing contracts for construction of new buildings.

The significance of this index will be even higher when the analysis of changes in construction costs trends are to be connected with the analysis of changes in selling prices of dwellings on the real estate market. Taking into account that the latest financial crisis of 2007 erupted on the mortgage loan market, where the basis for credit risk trade was the uncontrolled demand for residential dwellings, which on the other hand stormed the housing price up to unrealistically high ceilings, then it is essential to follow the correlation between construction costs changes and market price changes of dwellings. This information would help banks and insurance companies to make more careful business decisions.

The information gathered from the analysis of the trend of changes in construction costs are an important factor in creation and evaluation of the effects of macroeconomic policy aimed at stimulating the economic growth rate of a country.

3. How to follow construction costs and trends

The term construction covers a variety of activities from residential and nonresidential dwellings, building of bridges, roads, damns, to small construction works that include repairs, restorations, and maintenance of existing objects. This variety of construction activities presents one of the main problems in composing construction price indices, which renders the international comparison of data more difficult. Different countries use different rules and standards for calculation of these indices. Namely, some countries take into account (while others don't) costs related to land acquisition, acquiring building licenses, transport costs, costs of consulting services, energy costs etc.

There are basically three main approaches to composing construction prices indices: input price index, output price index and seller's price index.[35] The scope and structure of each of these is different and corresponds to the place of origination and the activity subject burdened with the costs.

The input price index measures changes in the prices of inputs used in the building process, by monitoring separately the cost of each factor. In fact, this index represents a weighted index of material costs and labour costs (otherwise known as construction cost index or construction factor price index). This index does not provide information on the movement of market prices of built objects, since it does not incorporate data on the changes in productivity, profit margins and trade conditions in the real estate market.

The output price index measures changes in the price of output produced by companies involved in construction activities. Those are the costs paid by the client to the engaged enterprise for the performed construction activity. This index incorporates costs for materials, equipment, labour, land preparation costs, architect's fees and other costs.

34) Eurostat, Methodological Manual, pp.76.

35) Sources and Methods – Construction Price Indices, p.12

The seller's price index measures changes in prices of built dwellings paid by purchasers or final users of these objects. This index includes the total purchase price of a completed construction, which beside material and labour costs, includes land costs and other direct or indirect costs, such as the profit margin of the seller.

4. Methodology used by the SSO to calculate construction costs in Macedonia

The methodology for calculation of construction cost indices used by the State Statistical Office is entirely prepared according the relevant methodology of short term statistics of Eurostat. As most EU countries, Macedonia uses the method of construction input price index. From this reason, we will refer to the procedure for calculation of the construction cost index for dwellings just dryly/drily/laconically.

The index of costs of construction of new dwellings (CCI) is a composite index composed of two parts: construction materials cost index and labour cost index. CCI is calculated as a weighted average of these two indices:

$$CCI = w_1 * CTM + w_2 * CTL$$

where CTM represents the construction materials cost index, CTL the labour cost index, and w1 and w2 are the corresponding weights.

The weights for calculation of the construction cost index for new dwellings are based on the data from the 'Annual accounts of business subjects', which are classified by their main activity in the Construction sector according the National classification of activities Rev.2.

Data sources for calculation of the construction material cost index are the existing data on prices of sellers of industrial products on the domestic market for materials used by construction companies. The index includes 92 different products sorted in 27 classes according to the National nomenclature of industrial products from 2008. The necessary data for calculation of the material cost index are received from selected data providers which are obliged to inform the SSO, by filling forms on a monthly basis, about their prices of a selected group of products. The weights for calculation of the construction material cost index are based on the value of used materials from the 'Annual report on used construction materials' in 2005.

The labour cost index shows the trend of paid average gross salaries per employee in the construction sector. The average gross salary per employee includes net salaries, calculated/estimated contributions and calculated tax. Data from labour market statistics which refer to monthly data on paid average gross salaries per employees in the construction sector by departments are used for calculation of this index. The classification by departments is according the 'Nomenclature of construction objects and construction works' and the structure of the value of performed activities in the 'Annual report on construction objects which have been worked on' in 2005.

The calculation of the material cost index and the labour costs index is done the use of the Lasper formula, taking 2005 as base year. Starting in 2011, the SSO calculates and publishes CCI quarterly.

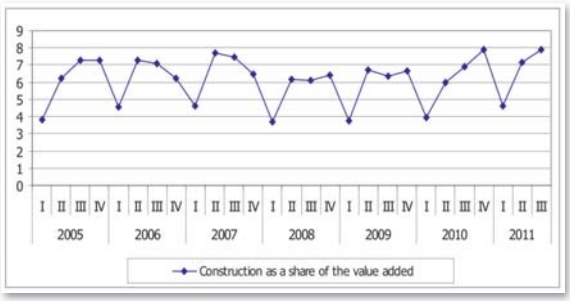
5. Analysis of construction trends in the Republic of Macedonia

The following of the trends of construction indices in the Republic of Macedonia is to a certain degree handicapped, because the time series of data on construction indices that the SSO disposes starts in 2005.

Figure 1:

Share of construction in the value added

(in %)



Source: SSO

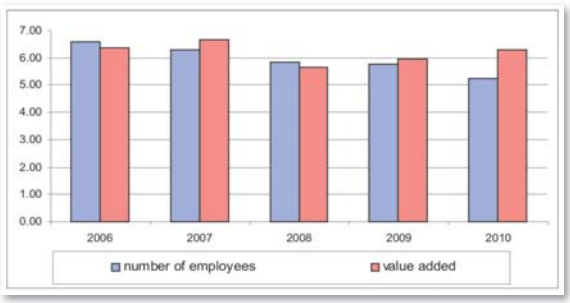
The data on Figure 1, from the first quarter of 2005 to the third quarter of 2011, shows the seasonal character of the construction activity, noticeable by the lower activity level in the first quarter of each year.

In almost the entire period (I.2005 - III.2011) the construction sector in the Republic of Macedonia, as a share of the value added, registers a stable trend. The lowest registered level is 3,7% in the first quarter of 2007, while the highest level is 7,9% in the third quarter of 2011. In the years after the financial/economic crisis (which started in the USA in 2007) a small annual decrease can be noticed in the construction share in the gross value added, having the largest fall on an annual basis in 2008 (14,7%). Yet, data for 2010 (6,3%), as well as on the first three quarters of 2011 (6,6%) show a return on the pre-crisis level (2006 – 6,4% and 2007 – 6,6%).

If we compare the data from 2007 with data on value added in the European Union members, we can notice that the share of the construction sector in the value added is almost by one third higher than in the Republic of Macedonia. While in the EU countries the construction contributes approximately 9% in the value added, in Macedonia its share is 6,6%.

Figure 2:

Value added and employees in the construction sector (in %)



Source: State Statistical Office

The analysis of the number of employees in the construction sector shows an average fall of 4,5% in the last five years. However, this reduction can't be directly related to the beginning of the financial/economic crisis from 2007, since the trend of reduction of the number of employees in the construction sector begins earlier, in 2005,[36] having the largest annual fall of 7% in 2010 (compared to 2009). The persistent decrease in the employee number in the construction sector caused a decrease in its share in the total number of employees in the economy. So, if in 2005, 7% of the total number of employees belonged to the construction sector, in 2010 this share was reduced to 5%. It should be emphasized that salaries in construction continually lack behind the average salaries on the level the total economy. On average, construction sector salaries are around 25% lower than the average gross salaries in the economy. Despite this, the salaries in the construction sector have risen in the past 6 years at almost the same pace as the average gross salary in the economy.

36) The available data series for construction sector employees is from 2005 onward.

Figure 3

Gross salaries

Source: State Statistical Office of the Republic of Macedonia

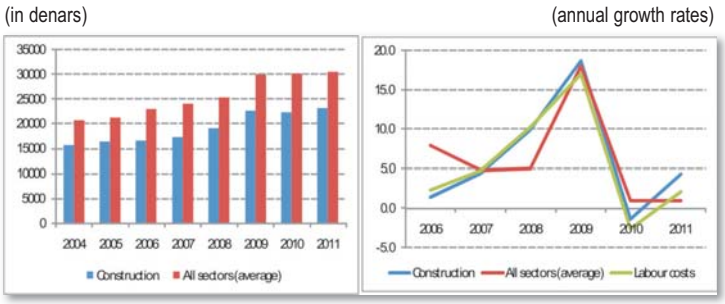


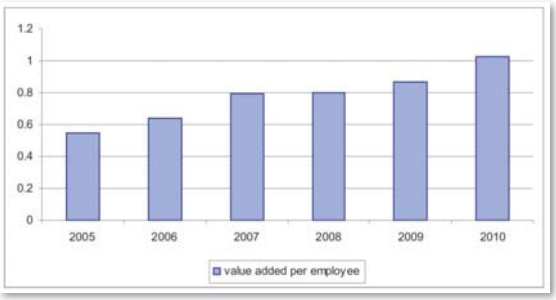
Figure 4 below shows the value added per worker for the period of 2005 to 2010. Following the previously said, as a result of a relatively steady/stable level of value added in construction, and with a persistent reduction of the number of employees in the same sector, we can conclude from figure 4 that the value added per worker in construction registered a continual increase (on average by 13,6% annually).

Figure 4:

Value added per employee in construction

(in million denars)

Source: State Statistical Office

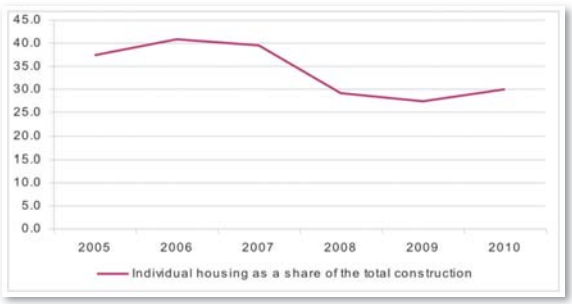


Similar to EU countries, in Macedonia, a significant place of total construction work belongs to activities related to construction of individual dwellings. On average, for the period 2005-2010, the share of activities related to construction of individual dwellings in total construction activities was 34,1%. If we look at the data series, we can notice thata these activites had the most significant influence in the first three years, that is the period 2005-2007 (39,3% on average), while in the following three years this share began to decline. The largest annual fall was in 2008 (10,3%). Considering the fact that the construction indices in those years remained relatively on the same level, or increased, in a situation of decrease in individual dwellings construction, we can assume that in these years (2008-2010) other construction activities had a higher influence on the increase in construction activities, amongst which are the ones related to the project Skopje 2014 of the Government of the Republic of Macedonia, which started in that period.

Figure 5:

Individual housing as a share of total construction (in %)

Source: State Statistical Office



According to the available data, construction costs for new individual dwellings, in the period 2005-2011 have a continuing rising trend (except for 2010). The total (cumulative) growth rate of these costs in the analyzed period is 21,4%, or on average 3,6% annually. The two main components (material costs and labour costs) also increased, labour costs having higher growth intensity than material costs. Namely, the cumulative increase in labour costs in the period 2005-2011is 34,0% (5,7% annual growth) and it is more than double the increase in material costs for the same period, which was 17,1% (2,8% annual growth).

Figure 6

Annual growth rates of new residential buildings (in %)

Source: State Statistical Office of the Republic of Macedonia

Despite the higher increase in labour costs, the direction and intensity of movement of construction costs for new individual dwellings, on average, is almost equally determined by the movement of both components - material and labour costs. This is due to the relatively higher share of material costs (about 73%), compared to the 27% share of labour costs in the total construction costs for new individual dwellings.

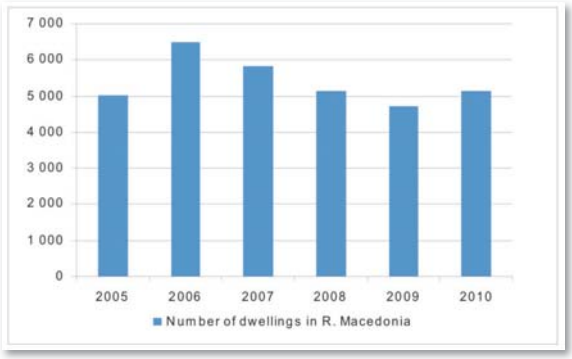
Dynamically analyzed (by separate years), up to the first quarter of 2007, the trend of material costs has been the main and dominant determinant of the movement of total construction costs for new dwellings. In this period, material costs registered a more significant annual increase with an average growth rate of approximately 10%. At the same time, the average annual growth of labour costs has been more moderate at around 2%. However, starting with the second quarter of 2007 labour costs register more significant quarterly increases (on an annual basis) compared to material costs, due to which in most of this period they appear as the main determinant of the movement of total construction costs for new dwellings. This was especially pronounced in 2008 and 2009, when labour costs registered relatively high annual growth rates of about 10% and 17%, respectively, against the moderate growth of material costs of about 3% and 2%, respectively.

2010 should be pointed out as an year with annual decrease in material costs (around 2%) and labour costs (around 3%), which determined also a decrease in total construction costs for new individual dwellings (around 2%). The decrease in these costs in 2010 mostly corresponds to the lower aggregate demand which resulted from the world recession trends and their spillover/преносни effects on the Macedonian economy. In 2011, under the influence of increased demand, there is a certain increase in construction costs for new individual dwellings, mainly because of higher labour costs.

Data on total built dwellings in the Republic of Macedonia (figure 7) show a higher level of built dwellings in 2006, when the total number of new dwellings was 6.493. Right after the beginning of the financial crisis in 2007, there is an annual fall from this peak of 10,4% and the fall continues in the following years (2008 and 2009). /the decreasing trend continues to last until 2010, when compared to 2009, the number of built dwellings increased by 9,4%, but was still on a far lower level than the one in 2006 (lower by 20,6%).

Figure 7:

total number of built dwellings in the Republic of Macedonia

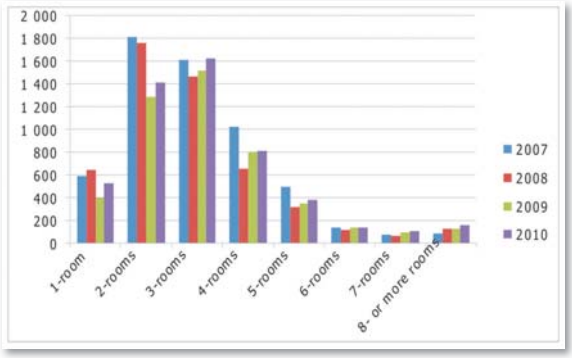


Source: State Statistical Office

If we analyze the built dwellings by room numbers (figure 8), in the period 2007-2010, we can notice that in all years there was a larger offer of two roomed and three roomed dwellings (the average share for this period was around 30%). However, if we look at the dynamics of movement of the type of built dwellings by year, we can notice an increase in larger dwellings (6 roomed, 7 roomed and 8 and more roomed), as well as in three roomed.

Figure 8:

Number of build dwellings by number of rooms



Source: State Statistical Office

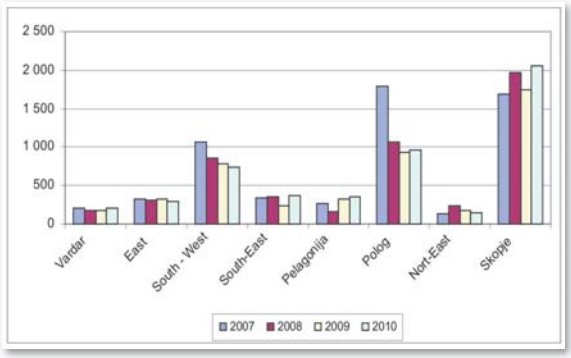
Analyzed by regions, the highest intensity in regard to construction of individual dwellings is registered in Skopje. This corresponds to the data on internal migrations, which show highest intensity of people moving to Skopje. In 2007 the number of built dwellings in the Skopje region participates with as much as 29% in the total built dwellings in the Republic of Macedonia. This percentage increases in the following years. In 2010 it was as high as 40%, stating this region as far most attractive in regard to dwelling offer.

The second most significant region is the Polog region, with a share of 31% in total built dwellings in 2007, and it registered a significant decrease of around 12p.p. in 2010. Compared to the other regions, this decrease is the largest decrease of built dwellings offer for the period 2007-2010. The fall results from the decrease in built dwellings in all municipalities in the Polog region.

In the same period the number of built dwellings in the southwest region also registered a continual decrease. In 2007, the share of this region in the total number of built dwellings was 18%, while in 2010 it fell to 14%. We can recognize the lower dwelling offer in Ohrid (which continually falls) as the main reason. One of the reasons behind this could be the continuous high number of emigrants from the municipality of Ohrid, beginning from 2008.

Figure 9:

Number of built dwellings in the Republic of Macedonia – by regions



Source: State Statistical Office

The data allows for a conclusion that beside the decreasing trend of total built dwellings in the period starting from 2007, the Skopje region as a whole shows signs of continuing maintenance or growth in the offer of finished dwellings. This only confirms the attractiveness of the Skopje region as a place of living (internal migration of the population) or as a place that the people recognize as a possibility for a long-term capital investment.

6. International experiences - EU

Construction indices represent significant indicators for determination of the trend of costs incurred by construction companies in the process of construction of buildings. Construction indices are calculated through labour costs and material costs, weighted accordingly. Therefore any distortions in the labour market or material prices used in construction affect changes that would appear in the construction indices.

The analysis of construction indices has really become important, especially in the last decade, when, from year to year, they registered a significant increase. Thus, starting from 1998, construction activities data show a significant and stable growth in all countries in the Union. In the last years construction activities have been especially significant in Spain, Poland and Cyprus. Txyc, in 2007, as much as one quarter of non-financial sector employees in Poland worked in the construction sector.

An analysis of types of construction activities shows that a higher influence on the growth trend of construction activities is due to the growth of residential and nonresidential buildings, rather than to general construction works, such as road, bridges, damns etc. Thus, in EU-27 the construction of residential and nonresidential buildings accounts for 78% of total construction activities, leaving only 22% for other types of construction activities.[37]

Eurostat data show that the relative contribution of the construction sector in the value added in 2007 was 19,4% in Cyprus, 18,1% in Poland and 17,6% in Spain, while the least specialized EU countries in the construction area were Slovakia and Hungary, with a share of the construction sector between 4,7% and 5,5%.

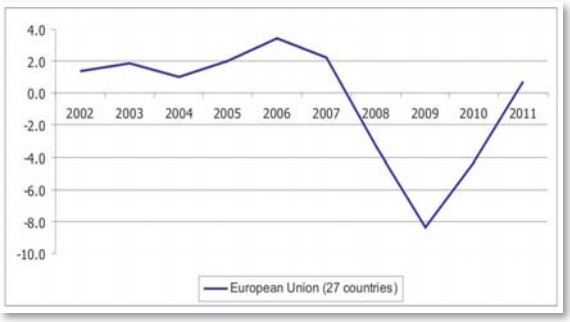
Regarding the number of employees in the construction sector, starting from 1999, the construction sector in Spain, Portugal and Ireland is most important among all EU countries. In 2007 the total number of employees in the construction sector in Spain was 13,3% of the total number of employees, which is also 15,1% of the total number employees in the construction sector in all countries of the European Union (EU-27).[38]

37) http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/

38) Eurostat database

Figure 10:

Construction index in EU-27, annual percentage change



Source: Eurostat database

The rising trend in the construction sector lasted until the beginning of the financial crisis of 2007, when in three years the construction index fell to the pre-1999 level.[39] One of the reasons for this was the structure of types of construction activities, which were actually the main reason for the previous growth. Namely, since most of the construction activities were related to residential and nonresidential buildings, the beginning of the financial crisis at the same time marked the beginning of the decreasing trend of construction activities, which simultaneously marked a decrease in employment rates in a large number of EU countries. On the other hand, remaining types of construction marked very small deviations even in the years of financial crisis. This can partly be a consequence of the determination of governments for maintaining the level of costs intended for public infrastructure projects.

In a number of countries the decreasing trend began as early as 2006 and had a slower intensity in the following few years (for example, France and Hungary), while in other countries the fall appeared later, but in an instant, as was in Lithuania, which registered an annual fall in the construction index in 2009 of 48,5%.

Among the countries with most severe consequences from the financial crisis on the construction sector was also Spain, which, after having a strong rise/ascent in this sector in the pre-crisis years, starting from 2007 registers a continuing noticeable fall of 14,1% on average in the years since the beginning of the crisis (2007-2011).

Table 1 presents the annual relative changes in the construction index in several countries which registered largest decreasing trends after the beginning of the crisis in 2007. The table shows that some countries had a relatively high growth of the index in the pre-crisis years, while after the crisis took off; they had a significant decreasing trend. This is especially the case in Spain and Ireland. Another group of countries experienced consequences from the crisis with a certain time lag, from 2008 (Estonia) or 2009 (Bulgaria, Latvia, Lithuania, Romania and Slovenia).

Table 1: Percentage annual change in construction indices for selected EU countries (in %)

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Bulgaria	3.8	4.6	35.3	31.8	24.8	26.7	12.6	-14.2	-17.9	-12.7
Denmark	-1.2	2.2	-0.2	2.8	3.2	-5.2	7.5	-12.2	-9.9	:
Estonia	22.6	6.1	12.5	22.4	26.9	13.5	-13.3	-29.8	-12.4	:
Ireland	1.9	7.3	24.9	10.3	3.0	-13.8	-29.1	-36.2	-30.4	:
Greece	39.1	-5.7	-15.9	-38.7	3.6	14.3	7.7	-17.5	-31.6	:
Spain	0.6	7.2	2.3	10.9	2.2	-4.3	-16.3	-11.3	-20.2	-18.4
Latvia	12.1	13.1	13.1	15.5	13.3	13.6	-3.1	-34.9	-23.4	12.5
Lithuania	21.7	27.9	6.8	9.9	21.7	22.2	4.1	-48.5	-7.7	22.2
Portugal	-1.1	-8.6	-4.4	-4.5	-6.3	-4.0	-1.2	-6.6	-8.5	-9.4
Romania	4.5	3.2	1.4	6.6	15.6	33.1	26.7	-15.2	-13.4	3.1
Slovenia	7.5	9.6	0.7	2.0	15.7	18.5	15.5	-20.9	-16.9	-25.4

Source: Eurostat database

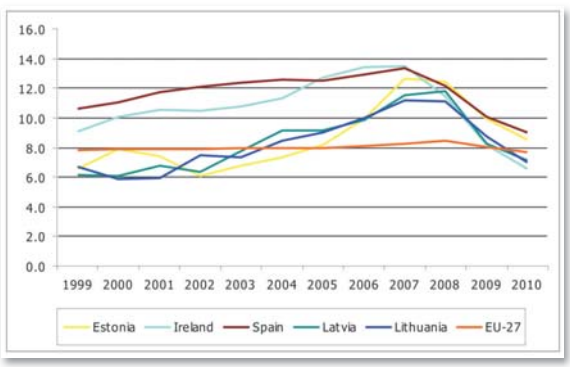
39) Eurostat database

If we look at the annual data on number of employees in the construction sector as a share in total number of employees (figure 11), the countries with the largest shift in construction index, experienced a reduction in the number of employees in the construction sector, with a small time lag. The downward trend is most evident for Spain and Ireland, which in 2007 had the largest number of construction sector employees, compared to other EU countries. Therefore, by comparing this data for 2007 with the data for 2010, we can see that in Spain there was a reduction in the share of construction sector employees in the total number of employees by 4,3 p.p., and in Ireland by 6,9 p.p.

An analysis of the same data on an aggregate level for EU-27 shows that, beside the significant decrease in some countries, on the Union level this indicator does not vary drastically, i.e. for the same period it decreased by only 0,5 p.p. Still, it is a fall of 6,5% of the share of construction sector employees. This reduction comes from the reduction in the number of employees of 7,7% in times of a reduction of the total number of employees of 1,2%.

Figure 11:

Share of number of employees in the construction sector in the total number of employees in selected countries (in %)



Source: Eurostat database

7. Concluding remarks and recommendations

The following of the trends of construction indices in the Republic of Macedonia is to a certain degree more difficult because the time series of data on construction indices that the SSO disposes starts in 2005.

The share of the construction sector in the value added in the European Union is almost by one third higher than in the Republic of Macedonia. While in the EU countries the construction contributes approximately 9% in the value added, in Macedonia its share is 6,6%.

In the entire period (I.2005 - III.2011) the construction sector in the Republic of Macedonia, as a share of the value added, registers a stable trend. The lowest registered level is 3,7% in the first quarter of 2007, while the highest level is 7,9% in the third quarter of 2011. In the years after the financial/economic crisis (which started in the USA in 2007) a small annual decrease can be noticed in the construction share in the gross value added, having the largest fall on an annual basis in 2008 (14,7%). Yet, data for 2010 (6,3%), as well as on the first three quarters of 2011 (6,6%) show a return on the pre-crisis level (2006 – 6,4% and 2007 – 6,6%).

The analysis of the number of employees in the construction sector shows an average fall of 4,5% in the last five years, which can be directly related to the beginning of the financial/economic crisis from 2007. The largest annual fall of 7% appeared in 2010 (compared to 2009). The persistent decrease in the employee number in the construction sector caused a decrease in its share in the total number of employees in the economy to 5%. On the other hand, salaries in construction continually lack behind the average salaries on the level the total economy (on average by 25%). Despite this, the salaries in the construction sector have risen in the past 6 years at almost the same pace as the average gross salary in the economy.

The value added per worker in construction registered a continual increase (on average by 13,6% annually), as a result of a relatively steady/stable level of value added in construction, in time of a persistent reduction of the number of employees in the same sector.

Similar to EU countries, in Macedonia, a significant place of total construction work belongs to activities related to construction of individual dwellings. On average, for the period 2005-2010, the share of activities related to construction of individual dwellings in total construction activities was 34,1%.

The largest annual fall was in 2008 (10,3%). Considering the fact that the construction indices in those years remained relatively on the same level, or increased, in a situation of decrease in individual dwellings construction, we can assume that in these years (2008-2010) other construction activities had a higher influence on the increase in construction activities, amongst which are the ones related to the project Skopje 2014 of the Government of the Republic of Macedonia, which started in that period.

Construction costs for new individual dwellings, in the period 2005-2011 have a continuing rising trend (except for 2010). The total (cumulative) growth rate of these costs in the analyzed period is 21,4%. The two main components (material costs and labour costs) also increased, labour costs having higher growth intensity than material costs. Namely, the cumulative increase in labour costs in the period 2005-2011is 34% and it is more than double the increase in material costs for the same period, which was 17,1%.

The highest level of built dwellings was in 2006, when the total number of new dwellings was 6.493. Right after the beginning of the financial crisis in 2007, there is an annual fall from this peak of 10,4% and the fall continues in the following years (2008 and 2009). /the decreasing trend continues to last until 2010, when compared to 2009, the number of built apartments increased by 9,4%, but was still on a far lower level than the one in 2006 (lower by 20,6%).

In the Republic of Macedonia, we can notice that in all years (2007-2010) there was a larger offer of two roomed and three roomed apartments (the average share for this period was around 30%). However, if we look at the dynamics of movement of the type of built apartments by year, we can notice an increase in larger apartments (6 roomed, 7 roomed and 8 roomed and more), as well as in three roomed.

The highest intensity in regard to the construction of individual dwellings is registered in Skopje. This corresponds to the data on internal migrations, which show a highest intensity of people moving into Skopje. In 2007 the number of built apartments in the Skopje region participates with as much as 29% in the total built apartments in the Republic of Macedonia. This percentage increases in the following years. In 2010 it was as high as 40%, stating this region as far most attractive in regard to apartment offer.

The second most significant region is the Polog region, with a share of 31% in total built apartments in 2007, and it registered a significant decrease of around 12p.p. in 2010.

A third most significant region is the southwest region, which accounted for 18% of the total built dwellings in 2007, and 14% in 2010.

The other regions have by far smaller contribution in the number of built dwellings in the Republic of Macedonia, which indicates the lower attractiveness of these regions as a place of living (internal migration of the population) or as a place for a long-term capital investment.

We offer several recommendations in order to enable a more detailed following of the activities and growth dynamics of this sector in R. Macedonia:

- Development of a sellers price index in construction, which would measure changes in sellers prices of new built dwellings;
- Development of indices for measurement of changes in real estate market prices for individual dwellings. The need for this index is especially pronounced after the start of the latest economic crisis in USA and EU. The IMF and the Bank for International Settlements both point to the emergence of the need for

development of this type of index, which would be used as an indicator of the real conditions on real estate markets, and for avoidance of the risk from an irrational rise in market prices of dwellings;

- The development of these two indices, together with the construction cost index will provide solid indications for an overall following of the activities and dynamics of the construction sector development on one side, and on the other side would create conditions for a more realistic following of market conditions on the real estate market and avoidance of creation of price bubbles in this market segment. Banks and insurance companies would also be supplied with real and consistent information necessary for making business decisions related to investments and insurance in the construction sector, especially in the new dwellings segment.

According to types of construction activities, we can conclude that a higher influence on the growth trend of construction activities is due to the growth of residential and nonresidential buildings, than to general construction works, such as road, bridges, damns etc. Thus, in EU-27 the construction of residential and nonresidential buildings accounts for 78% of total construction activities, leaving only 22% for other types of construction activities.

EU data show that the relative contribution of the construction sector in the value added in 2007 was 19,4% in Cyprus, 18,1% in Poland and 17,6% in Spain, while the least specialized EU countries in the construction area were Slovakia and Hungary, with a share of the construction sector between 4,7% and 5,5%.

Regarding the number of employees in the construction sector, starting from 1999, the construction sector in Spain, Portugal and Ireland is most important among all EU countries. In 2007 the total number of employees in the construction sector in Spain was 13,3% of the total number of employees, which is also 15,1% of the total number employees in the construction sector in all countries of the European Union (EU-27).

Since most of the construction activities were related to residential and nonresidential buildings, the beginning of the financial crisis at the same time marked the beginning of the decreasing trend of construction activities, which simultaneously marked a decrease in employment rates in a large number of EU countries. This is especially the case in Spain and Ireland. Another group of countries experienced consequences from the crisis with a certain time lag, from 2008 (Estonia) or 2009 (Bulgaria, Latvia, Lithuania, Romania and Slovenia).

An analysis of the number of employees in the construction sector on an aggregate level for EU-27 shows that, beside the significant decrease in some countries (most evident in Spain and Ireland), on the Union level this indicator does not vary drastically, i.e. for the period 2007-2010, it decreased by only 0,5 p.p. Still, it is a fall of 6,5% of the share of construction sector employees. This reduction comes from the reduction in the number of employees of 7,7% in times of a reduction of the total number of employees of 1,2%.

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