

## REGIONAL SPECIALIZATION OF ECONOMIC SECTORS IN BULGARIA

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### Abstract

The importance and contribution of individual regions in the national economy is extremely important. In recent years, regional specialization has changed as a result of globalization, the penetration of new technologies and the need for more services from consumers

The aim of the present study is to analyze the regularities in the economic development of the regions in Bulgaria and to reveal the interregional differences in three main sectors - agriculture, industry, and services. For data sources, we mainly use those published by the National Statistical Institute. The study period is from 2007 to 2016.

As can be seen the share of economic sectors in the gross added value in Bulgaria in 2016, was respectively, agriculture has a share of 4,7 %, the industry contributed approximately 28% and the services sector contributed about 67 percent.

**Keywords:** *regional specialization, economic sectors, gross added value, intersectoral linkages, Bulgaria*

### Introduction

The aim of the paper is to study the share of the key sectors and regions of Bulgarian national economy and to identify how this structure determines the different roles and importance of sectors in the economy.

In fact, the realization of the goal is related to several main tasks:

- to established the contribution of the main sectors of the Bulgarian economy to the share of gross value added;
- to assess the degree of concentration of the main sectors, by statistical regions, as well as the changes in them;

Of course, the structure of the economy is defined as the components of the macroeconomic aggregates and the patterns of interactions between them [1]. Exploring the impact of individual sectors on economics is a topic of great popularity. Many foreign authors work on this issue and come to different conclusions:

Thakur [1] studied the most important sectors in the European Union as a whole with the most important sector in each country. The author comes to the conclusion that from the 22 EU countries, 19 of them had the sector other business services as one of the best authorities and hubs; exceptions are Lithuania, Romania, and Sweden.

Alatraste-Contreras [2] found that the sectors with the highest shares on GDP are not the top most important sectors in the EU. However, the sectors with the highest shares have above average centralities. This indicates that the most central sectors may also have a large share in the economy.

In the same way, some of our authors [3] are also working on regional differences in economic terms. In their survey, the objects are the statistical regions in Bulgaria for the period 2000-2012. Their conclusion is that the development of the productive structure by main sectors after 1995 has been in the direction of increasing the relative share of services (from 56.4% in 1995 to 64.1 % in 2011) and industry (from 27.8% in 1995 to 30.5% in 2011). This, of course, affects the share of agriculture and forestry (from 15.8% in 1995 to 5.4% in 2011). The service sector is dominating and is characterized by high growth rates.

The same conclusion is reached by Gospodinova [4] namely that the service sector for the period 1997-2008. increased its total contribution from 45.9% to 61.3%. The largest contributors to this growth were sub-sectors: financial intermediation with a growth of 5.8% to 14.2% and real estate and business services from 6.8% to 12%.

### Material and Methods

From the point of view of clarifying the peculiarities of the economic development of the regions, it is appropriate to study the production structure by main sectors - agriculture and forestry, industry and services. The distribution gives the percentage contribution of *agriculture, industry, and services* to total gross added value.

Agriculture includes farming, fishing, and forestry.

The industry includes mining, manufacturing, energy production, and construction.

Services cover government activities, communications, transportation, finance, and all other private economic activities that do not produce material goods.

The division of the statistical regions in Bulgaria will be based on the new Regulation (EC) No. 176/2008 of the European Parliament. Bulgaria has 6 NUTS [5] *Northwestern, Northern Central, Northeastern, Southeastern, Southwestern, and Southern Central*.

One of the traditional measures of the importance of a sector is its share in the total GDP of the national economy. Another important indicator is the share of gross value added (GVA) in the national economy. On the other hand [6], the gross added value is the difference between the production value and the intermediate consumption. GVA is a very accurate measure of the economy when considering the supply of goods or services (from the agriculture, industry, and services).

For that reason the change in gross value added over a given period of time in the sector is a sign of structural transformations that may occur in two directions:

- Domestic regional transformations - due to the increase (decrease) of value added in a given sector (eg agriculture) due to a decrease (increase) in the other two main sectors (industry and services). In this scenario, we do not have major changes in the region's share of the national economy.
- Interregional transformations - in this variant we have a change in the share of the region in the national economy.

For data sources, we mainly use those published by the National Statistical Institute [7]. The study period is from 2007 to 2016.

### Results and Discussion

First, the gross value added in the agriculture sector varies around 5% (**Figure 1**). At the same time, the gross value added in the industrial sector is the highest value of 30.8% in 2007; It drops to 27.6 in 2016. The largest share of the service sector - and it has reached 67% in the last 3 years.

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Figure 1 Contribution of the different sectors in the national economy for the period 2007-2016  
Series 1: Agriculture; Series 2: Industry; Series 3: Service Source: NSI data

According to Lubenov [8], the dependence of agriculture on other sectors of the economy is asymmetrical, ie agriculture as the smallest sector is much more dependent on the other two major sectors - industry and services.

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Figure 2 Changes in the sectors of the national economy for the period 2007-2016  
Series 1: Agriculture; Series 2: Industry; Series 3: Service

The smallest change was observed in agriculture with only 0.78% decline (**Figure 2**). We have the same situation in the industry with a decrease of 2.5%, which leads respectively to an increase in services of 3.3%.

Let's look at the changes in the three main sectors: agriculture, industry, and services for the period 2007-2016. (Table 1)

Table 1 Share of individual regions in total added value (in %)

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As a result of the data analysis (**Table 1**) we come to the following conclusions:

The most important region for the development of the services and industry sector is the Southwest. In 2016 it contributes to 57,1 % of the gross value added in the services sector and 31,7 % in the industry. If we pay attention to agriculture, the importance of the Southern Central Region is weakening from 24.5% to 20.5%.

Table 2 Change in economic sectors by regions (in % for the period 2007-2016)

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Source: National Statistical Institute data and own calculations

In general, structural transformations across sectors (**Table 2**) have a very strong impact on southern statistical regions than on northern ones. As a result, the total changes in the three southern regions are 23.09% and in the northern ones only 11.75%. This means that the three economic sectors of southern regions are changing twice as fast as the northern ones. The largest changes in absolute value - 11.22% are observed in the South-West region, which includes the capital. It is the closest approach to the global trends for an ever-increasing occurrence of the service sector.

The most affected by the changes is the Northeastern Region with only 2.36% over 10 years. Three of the other four regions, namely Northwestern, Southeastern and Southern Central, have changed within the range of 5.5-6%.

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Figure 3 Changes in the agricultural sector by statistical regions for the period 2007-2016

In fact, the production of agricultural products (**Figure 3**) begins slowly but permanently shifts from the southern to the northern regions. As a consequence, the three northern regions of Bulgaria add a total of around 6% for the period 2007 to 2016. The region with the most positive change was Northwestern + 2.65%, and the biggest loser was Southern Central with a decline of 4.04%.

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Figure 4 Changes in the industry sector by statistical regions for the period 2007-2016

Therefore, the region with the most positive change (**Figure 4**) in the industry sector is Southeastern + 5.28% and the highest decline is the Southwestern with 4.70%. Apparently, the conditions for the development of the industry that offer the Eastern Regions are better than those in the Western ones.

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Figure 5 Changes in the service sector by statistical regions for the period 2007-2016

As you can see there is a concentration and shifting of a service sector (**Figure 5**) in the Southwestern region, which includes the capital Sofia and its share rises by 4.62%. All other regions suffer the consequences of this concentration of services in the capital and show a decline, with the most tangible one in the Northwestern region - 1.72%.

### Conclusion:

Obviously, the aim of any government policy is to seek a balance between the developments of economic sectors in the different regions. On the one hand, the region may have an orientation for a type of production, but on the other, the transformation to this activity could cause other economic problems, such as high unemployment in other economic sectors. As shown above, similar processes are observed in Bulgaria as in other EU countries:

First – a growth of the services sector and concentration in the regions with the largest population;

Second- the higher speed of transformation between economic sectors is observed in the southern compared to the northern regions;

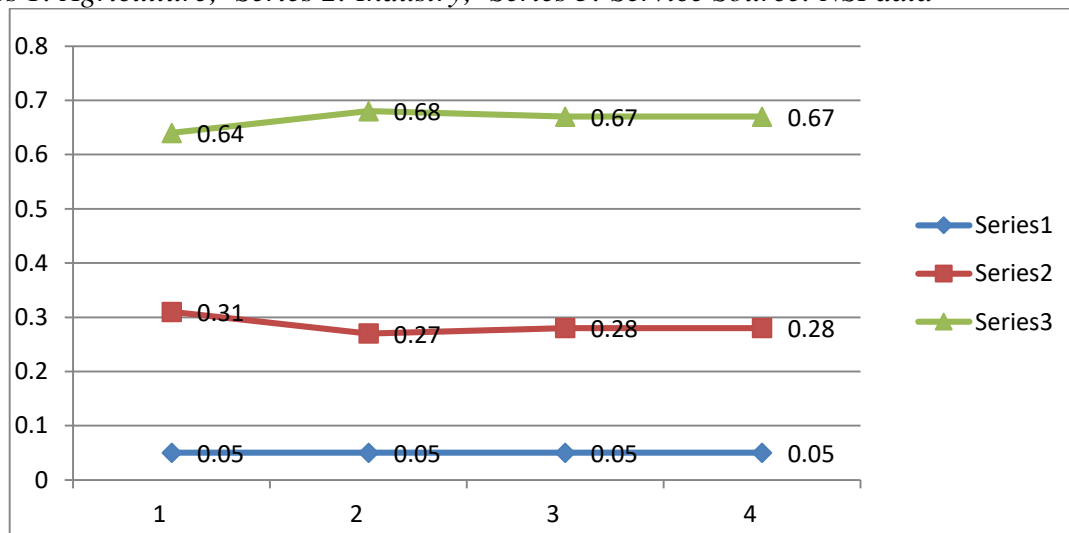
In the end- the agriculture sector retains a relatively stable share in the Bulgarian economy

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*Figure 1 Contribution of the different sectors in the national economy for the period 2007-2016*

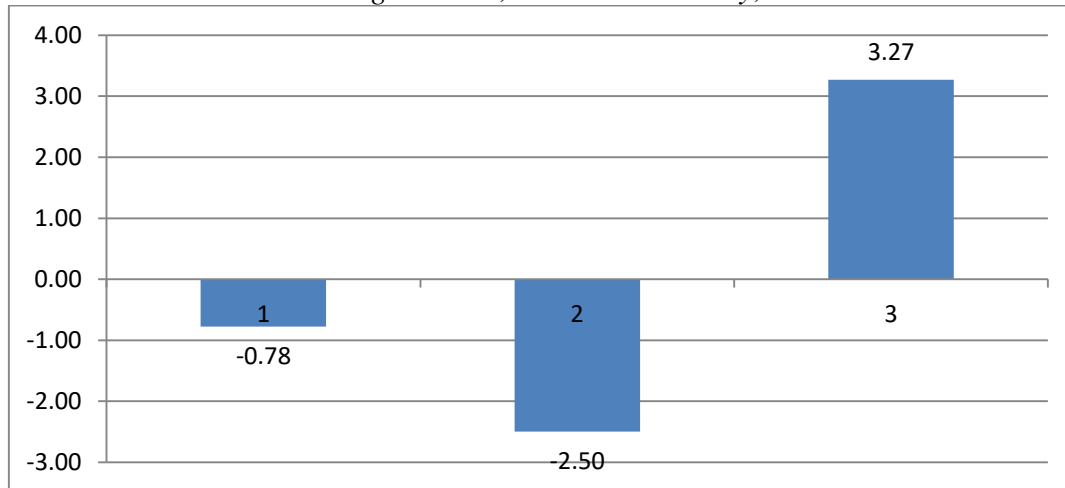
*Series 1: Agriculture; Series 2: Industry; Series 3: Service Source: NSI data*



## Science & Research

*Figure 2 Changes in the sectors of the national economy for the period 2007-2016*

*Series 1: Agriculture; Series 2: Industry; Series 3: Service*



*Table 1 Share of individual regions in total added value (in %)*

	2007			2010			2013			2016		
	Agricultural sector	Industry sector	Service sector	Agricultural sector	Industry sector	Service sector	Agricultural sector	Industry sector	Service sector	Agricultural sector	Industry sector	Service sector
<b>Northwestern</b>	16,3	9,1	7,1	17,0	8,0	6,3	16,8	8,3	5,8	18,6	7,6	5,3
<b>Northern Central</b>	14,6	9,3	7,8	15,2	8,6	7,2	17,0	9,8	6,8	15,5	9,6	6,6
<b>Northeastern</b>	13,6	11,7	10,6	15,7	10,5	10,3	16,1	11,3	10,3	16,3	11,0	10,1
<b>Southeastern</b>	14,4	16,0	9,8	14,0	17,2	9,7	14,3	18,6	9,7	14,5	21,3	9,3
<b>Southwestern</b>	16,5	36,4	52,5	15,4	37,1	54,8	13,9	33,6	55,6	14,6	31,7	57,1
<b>Southern Central</b>	24,5	17,5	12,2	17,0	8,0	6,3	22,0	18,5	11,8	20,5	18,8	11,6
<b>Total</b>	100	100	100	100	100	100	100	100	100	100	100	100

Source: National Statistical Institute data and own calculations

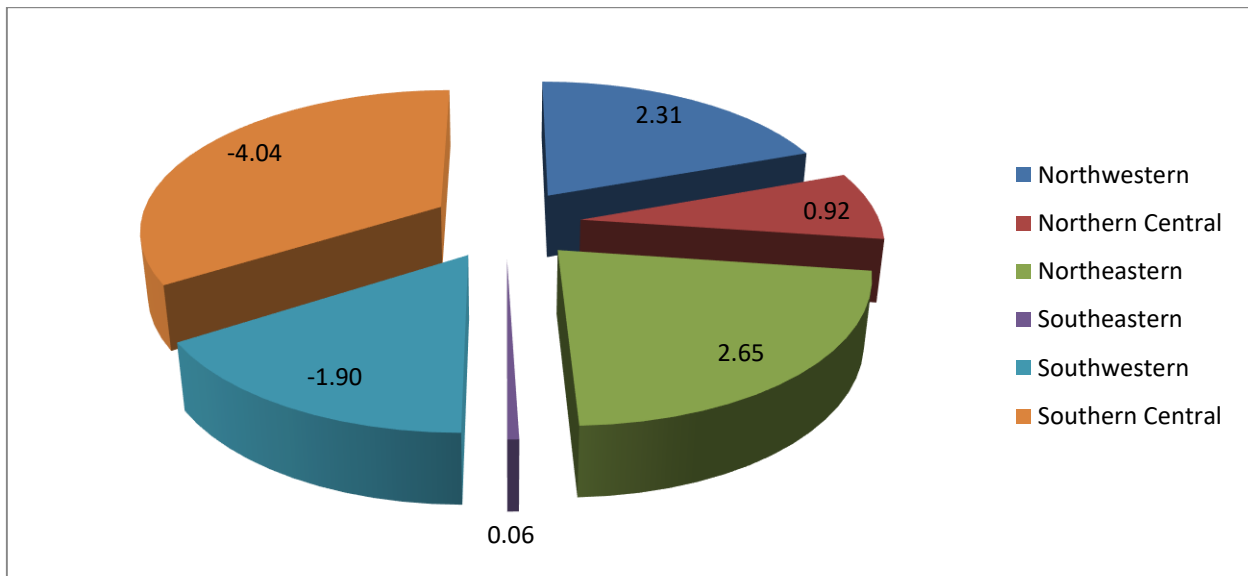
## Science & Research

*Table 2 Change in economic sectors by regions (in % for the period 2007-2016)*

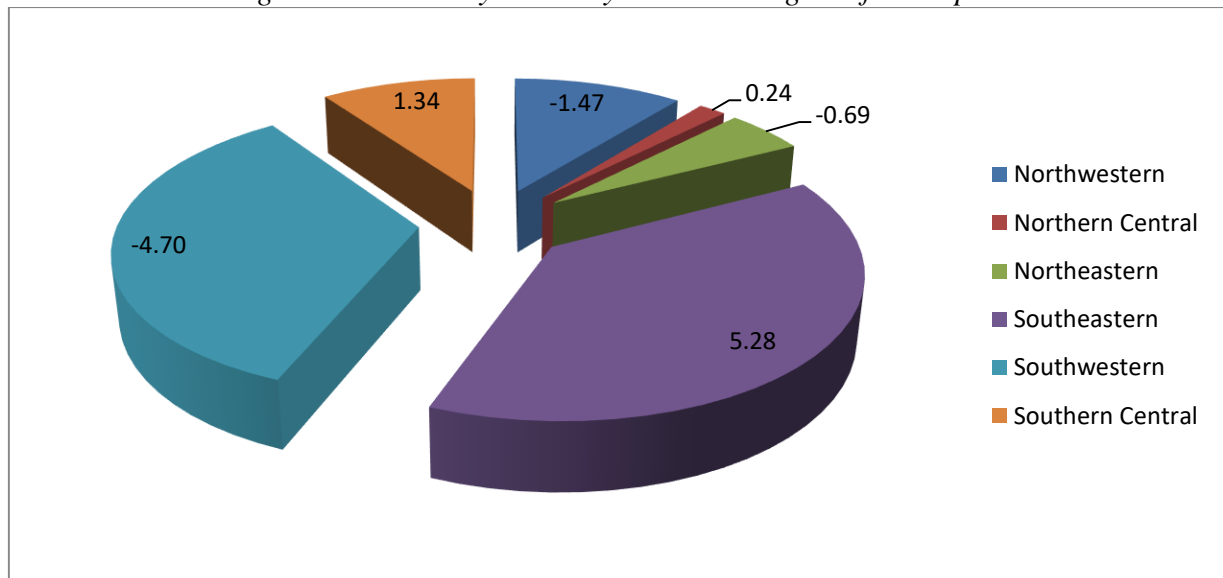
	% change in Agricultural sector	% change in Industry sector	% change in Service sector	Total % change =Sum  % in agriculture  + % in Industry + % in Service
<b>Northwestern</b>	2,31	-1,47	-1,72	5,50
<b>Northern Central</b>	0,92	0,24	-1,20	2,36
<b>Northeastern</b>	2,65	-0,69	-0,55	3,89
<b>Southeastern</b>	0,06	5,28	-0,48	5,82
<b>Southwestern</b>	-1,90	-4,70	4,62	11,22
<b>Southern Central</b>	-4,04	1,34	-0,67	6,05

Source: National Statistical Institute data and own calculations

*Figure 3 Changes in the agricultural sector by statistical regions for the period 2007-2016*



*FIGURE 4 Changes in the industry sector by statistical regions for the period 2007-2016*



*FIGURE 5 Changes in the service sector by statistical regions for the period 2007-2016*

