Sector policies and their role for the growth of the Bulgarian economy

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Abstract. Changes in the sectoral structure of the economy illustrate many processes and are an indicator of the nature and speed of economic development in the country. The industry structure is also an important part when analyzing the rates and proportions of economic development. The significance of these changes in individual sectors is determined by their place and role in the production process. Therefore, the correct assessment and the possibilities for their accelerated development can actively contribute to the acceleration of economic growth.

The object of research in this article is the structure of the Bulgarian economy and the changes that occurred in it in the period 1995-2022. The purpose of this article is to track and analyze changes in the sectoral structure of the economy by means of appropriate statistical and econometric tools.

The dynamics of development of the three economic sectors (agriculture, industry and services) in the economy are different. In general, industry and services are growing more. The conclusion we reach is that the changes in the structure of the economy are more due to the differences in the rates of decline, and not so much in the rates of growth of some of the sectors.

Key words: Economic Development; Economic Growth; Economic Sectors; Gross Value Added; Sectoral Changes

1 Introduction

The overwhelming number of growth theories created and launched into the public sphere by the middle of the twentieth century aimed at growth mainly within the national economy. Regardless of the fact that they are not so extreme in delineating the scope of the analysis, most economists from both the 19th and the first half of the 20th century refer to the national economy in macroeconomic analysis as the macro environment in which processes and phenomena that are the subject of their scientific interpretation.

Economic growth can be defined as an increase in the value of the production of goods and services by a given economy over a period of time, which can be evidenced by a continuous increase in gross domestic product (GDP). It is one of the most enduring goals of economics because it determines the total wealth in terms of a nation's production and consumption. Economic development includes, along with the increase in material production, all other socio-economic processes and changes. The economic development of an economy is associated with structural changes. The economic development of the...
country will be achieved through greater participation of the processing capacity of industrial production (secondary sector), and at higher levels is increasingly dominated by service sector (tertiary sector) (Ivic 2015, 56).

In the conditions of a changing environment, the effect of the economic policy finds expression in the results of the functioning of the economic sectors. The crisis of 2009 and now in the current period, related to the consequences of the coronavirus and the accumulation of negative effects in the economic and social sphere, brings to the fore the problem of the leading sectors of the economy that could play the role of a locomotive for economic growth of the country in the current conditions.

In a number of programs for the development of the country (such as the National Program for the Development of Bulgaria 2030; the Convergent Program of the Republic of Bulgaria, etc.) priority areas for development are indicated to help realize economic growth, some of which are:
- Priority 1: Accelerated economic development;
- Priority 2: Demographic upsurge;
- Priority 3: Reducing inequalities.

The topicality of the issue under consideration is determined by the need to seek appropriate reforms in the construction of the strategy and policy for the development of individual economic sectors in Bulgaria and to create a development model supporting accelerated economic growth.

The object of research in this article is the structure of the Bulgarian economy, presented through its main economic sectors. The subject of the development is the structural changes within the period determined for analysis - 1995-2022.

The purpose of this article is to track and analyze changes in the sectoral structure of the economy by means of appropriate statistical and econometric tools, after which to assess the strength of these changes and establish the relationship of the given structure with economic growth in the country.

2 Research methods and approaches

Analyzing the structural changes in the economy helps to solve a number of practical asks, since the sectoral structure of production is closely related to the efficiency and growth of the economy. For this purpose, the gross added value (GVA) of the main economic sectors (agriculture, industry and services) is examined, and thus the structural changes in the economy are tracked. In this way, the degree to which they can withstand crises, as well as their ability to stimulate economic growth, can be reported [1-5].

The research methodology includes the application of the following traditional methods: literature review, theoretical and logical analysis, statistical methods, comparative and complex approach. A summary assessment of the degree of changes in the economic structure in a given year compared to another is provided by the integral coefficient for structural changes (ICSC). To calculate this coefficient, data from the national accounts are used (National Statistical Institute – NSI, 1995-2022).

The integral coefficient of structural changes, which we use in the study, provides an opportunity to make a comparison between economic sectors for different periods and to establish the extent of changes over time. The indicator takes into account both the differences between the compared relative shares and their size. Through its application, the absolute and relative structural changes are evaluated at the same time (Gatev, 2007, 44-52). The possibility of using a unified methodological approach in the study of structural changes and unevenness was indicated for the first time by Prof. K. Gatev. The basis of this approach is the integral coefficient for structural changes. For greater completeness of the
analysis, the integral coefficient of structural changes is calculated in two variants - on a constant and chain basis [6-14].

To obtain the values of the indicator on a permanent basis, the following formula is applied:

$$K_s = \frac{\sum (v_i - v_0)^2}{\sqrt{\sum v_0^2 + \sum v_i^2}}$$

where:

$v_i$ – relative share of the economic structure in a given year of the analyzed period;
$v_0$ – relative share of the structure in the initial (base) year of the period.

The values of the indicator on a chain basis are obtained by applying the formula:

$$K_s = \frac{\sum (v_i - v_{i-1})^2}{\sqrt{\sum v_{i-1}^2 + \sum v_i^2}}$$

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3 Economic growth in Bulgaria and growth of gross added value by economic sector

The problem of economic growth is one of the most important in the world. Ways to stimulate and existing types of economic growth are the subject of numerous studies that examine long-term processes in the sphere of production and consumption, their results and consequences. Economic growth is the increase in the total volume and value of goods and services produced by an economy in a given period, compared to a previous one (www.investopedia.com). Economic growth is usually measured as a percentage increase in real gross domestic product (GDP) relative to a given base period.

Gross value added, known by its abbreviation GVA, is a macroeconomic quantity that measures the total value created by a sector, country or region. It is the value of the set of
goods and services that are produced in a country during a given period of time, net of indirect taxes and intermediate consumption.

The issue of realization of economic growth and setting the priorities in the Bulgarian economy is one of the most discussed in more the following years (Statev 2009, 78); (Stefanov 2012, 125); (Rangelova 2013, 48); (Iliev 2014, 12); (Vladimirov 2015, 118); (Mavrov 2019, 25) and many others.

The structural changes in Bulgaria's economy became the reason and main impulse for economic growth and for the faster and more effective structural adaptation of the national economy to the modern economic realities of the 21st century. Economic growth is closely related to these changes, and the relationship is bidirectional – from growth to structure and from structure to growth. The dependence and interplay between them is too complex.

In order to examine the internal structure of the economy, it is considered as a set of sectors and activities connected in a certain way. For this purpose, the relative shares of the economic sectors and activities in the total GVA are taken into account. They show within the general increase in production to which sector belongs the leading role (see table 1).

Table 1: Sectoral structure of the economy in % in Bulgaria for the period 1995 - 2022 (Source: NSI and author’s calculations, 2023)
In the study of structural changes in the gross added value, data obtained from various sources of NSI were used, as well as individual and generalizing measures of structural changes and differences. By means of these indicators, it is tracked in which years significant changes are observed in the structure of the produced GVA by sector. As a criterion for distinguishing the stages in the development of the Bulgarian economy, the
change in the growth rate of the service sector compared to other sectors is used, as an indicator of this is the ratio coefficient according to the share of the sectors in the gross added value. The coefficient is calculated as a ratio between the relative GVA services sector and the sum of the relative shares of the agriculture and industry sectors (see column 6 of table 1). If the value of this coefficient is greater than two, it means that the service sector is developed at a high level, if it is between one and two, there is an average level of development, and if it is below one - a low level of development. As a criterion for distinguishing the stages in the development of the Bulgarian economy, the change in the rate of growth of the service sector compared to other sectors is used, as an indicator of this is the ratio coefficient according to the share of the sectors in the gross added value.

At the beginning of the considered period in the Bulgarian economy, this coefficient was above 2 (1995 and 1996), between 1997 and 2012 it was already between 1 and 2 (with the exception of 2003 and 2010), i.e. there is an average level of development of services, after which this coefficient is increasing, and after 2013 it already exceeds 2 and the sphere of services occupies a predominant share in the creation of gross added value.

The realized added value for the year 2022 from all subjects of the national economy is BGN 145,613,854 million. With the largest relative share in GVA is the services sector with a share of (65.5%), followed by industry (29.5%) and agriculture (5%). The reported added value from the agricultural sector in 2022 is BGN 7,275,966 million. For the period from 1995 to 2022, its relative share in the added value is constantly decreasing, from 10% in 1995 to 5% in 2021 and 2022 and by another 2.1 and 2.2 points in the period 2018 and 2019. For 2021 and 2022, the share of agriculture in GVA is 5%, but it is still high compared to that of the countries of EU and USA, where it is below 3%.

The industry sector significantly increases its relative share in the gross added value of the economy by 10.1% for the period under review, from 19.4% in 1995 to 29.5% in 2022. This is not the case with the services sector, which over the years has relatively maintained its relative share in GDP (with slight increases and decreases over the years) in the economy. Activities mainly contributed to this with significant functions not only for the service sector, but also for the entire economic system such as transport, communications, trade, finance, credit and insurance, financial and business services. The relative share of the gross added value realized by activities in the service sector in 2021 reached 71.2%, which is more than 17% compared to the initial year 1997.

Therefore, for the considered period, the industry significantly changed its relative share in the gross added value, in the direction of increase, in contrast to agriculture, whose share decreased. The decrease in the share of agriculture is reflected in an increase in the share of industry and services. These changes also lead to the continuous increase in the integral coefficient of structural changes on a base basis (ICSC), which increases 6 times in 2022 compared to 1995 (see table 2).

4 Changes in the sectoral STRUCTURE of the Bulgarian economy

occurred in the period 1995–2022, an
Table 2: Integral coefficient of structural changes (ICSC) on a permanent bases in Bulgaria for the period 1995 - 2022 (Source: NSI and author’s calculations, 2023)

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The values of the integral coefficient, calculated relative to the base year 1995, show that during the individual years of the researched period, the industry structure changes and
moves away from the base year. The degree of structural change was greatest in 2007, when the highest value of the coefficient was recorded for the period of analysis. The observed structural changes can be categorized as relatively weak, i.e. the sector structure is relatively stable.

The values of the integral coefficient, calculated relative to the base year 1995, show that during the individual years of the researched period, the industry structure changes and moves away from the base year. The degree of structural change was greatest in 1997, when the highest value of the coefficient was recorded for the period of analysis. The observed structural changes can be categorized as relatively moderate, i.e. the sector structure is relatively stable. Weak structural changes are observed in the period 2018-2020, and very weak in 1996, 2000, 2002, 2004, 2010 and 2014.

In order to measure the intensity of the structural changes, a comparison of the structure of sector revenues for each of the years selected for analysis with their structure for the previous year was also carried out (see Table 3).

Table 3: Integral coefficient of structural changes (ICSC) on a chain basis in Bulgaria for the period 1995 - 2022 (Source: NSI and author’s calculations, 2023)
The calculated chain values of the integral coefficient of structural changes show very weak structural changes in the sectoral economy compared to previous years. The most significant is the structural change in 1997 compared to 1996. During the years 2014 and 2020, no structural changes were observed compared to the previous years 2013 and 2019, which also shows the ICSC, which for these years is 0. The calculated chain values of the integral coefficient of structural changes show very weak structural changes in the sectoral economy compared to previous years. The most significant is the structural change in 1997 compared to 1996. In the years 2014 and 2020, no structural changes were observed compared to the previous years 2013 and 2019, which also shows the ICSC, which for these years was 0. Almost throughout the studied period, very weak structural changes were observed in a given year compared to the previous one.

5 Conclusion

The dynamics in the development of the three economic sectors are different and this reflects the structural changes in the economy. The difference in the growth of the three sectors is not significant, but in general, industry and services are growing more because these two sectors have more investment and many more firms working in these sectors during this period.

Before the development of agriculture in Bulgaria, there are many restrictions such as fragmented ownership, problems with funds and programs from the EU, etc., in addition, the decrease in the share of agriculture in the gross added value is mainly due to the slow and unsustainable growth in the sector, which is the result of the slow process of its restructuring. The decline of the relative share of the agricultural sector in the GVA is remarkable.

Changes in the structure of the economy are more due to differences in the rate of decline and not so much in the rate of growth of some of the sectors. Sectoral restructuring basically consists in changing the proportions and priorities in the economy. The main factors that led to these changes are the changing way of life and the new needs of production and consumption.

Increased labor productivity and new technologies allow society to use less and less labor to produce goods and more and more to provide services in both personal consumption and production. Services help to better organize people's lives, and also to increase their free time and make better use of it. In addition, the service they free industry and agriculture from uncharacteristic and labor-intensive activities and thus help to increase their efficiency.

The structure of the Bulgarian economy is beginning to approach that of developed countries, where the share of the agricultural sector is below 3%, of industry around 30%, and that of services is over 65%.
As a result of the state and development of individual sectors in the country and the measures taken regarding them in the main programs and policies, the following recommendations can be made to the country's policy regarding the development of economic sectors:

- Currently, the country does not have a comprehensive, justified and complete national strategy to determine whether the sectoral priorities;
- Structural changes regarding employment were not included in the National Development Program of Bulgaria (2012-2020) (www.strategy.bg), and the heavy impact of the employment crisis and the imbalance in the labor market exacerbated the problems of restructuring in this area;
- Factor for the economic growth of the national economy in recent years is the development of the infrastructure. The construction of highways and the repair of roads became of paramount importance after 1998, and especially in recent years with a special emphasis on this issue. As laid down in the National Reform Program (2011-2015), the priority of the economic policy of the Bulgarian government and a factor for sustainable economic growth is the development of infrastructure.

References