

Gross Domestic Product of Bulgaria – Dynamics and Structure

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Abstract

The presented paper assesses the dynamics and production structure of Bulgaria's gross domestic product (GDP) for the period from 2000 to 2022. Minor changes are noted both in the period surrounding the country's accession to the EU and during the two global crises – financial and Covid-19. The changes reflect the process of convergence with the rest of the EU countries. The author has arrived at the conclusion that, although it has a number of shortcomings, the Gross Domestic Product metric provides the most comprehensive insight into the current state, developments and trends in the economy and is justified in being used as the main measure of economic activity.

Keywords: Gross domestic product, Economic activity, Economic growth.

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Introduction

The gross domestic product (GDP) is the main measure of economic activity, which provides the most comprehensive insight into the current state, developments and trends in the economy. This is one of the main macroeconomic indicators that characterize the level of production and consumption and outline the economic preconditions for the standard of living and quality of life of the population. It helps trace the dynamics of the national economy, outline the trends in its development and identify the reasons for any changes that have occurred. Economic activity, assessed on the basis of gross product dynamics, expresses the change in the amount of final output (as physical units) that is produced in the economy and is directly related to economic growth¹. GDP is also the main indicator for determining economic policy at the macro level, it is easily interpreted and is among the most frequently used in international practice.

The subject of this paper is the dynamics and production structure of Bulgaria's GDP in the period from 2000 to 2022. The goal is to analyze the changes and evaluate the role of GDP as an indicator of economic activity.

1. Methodology

The gross domestic product is the main measure of economic activity, and although it has a number of shortcomings, it is the indicator that provides the most comprehensive insight into the current state and development of and trends in the economy. In order to improve the indicator, Bulgaria's National Statistical Institute (NSI) has repeatedly made adjustments, the most significant being those of 2013. Since then, components from the grey and black sectors have also been included in the composition of the Gross Domestic Product, which has also to do with revising old data. The information on GDP has been collected from Eurostat, Infostat and official information from NSI published in statistical yearbooks, with the earliest available revised data being from the year 2000. There are some discrepancies in the information from the different sources, which are probably the result of possible reporting inaccuracies. These cause inevitable statistical errors that can lead to some inaccuracy in econometric modeling, especially in the short run. This would create more significant problems in international comparisons of countries operating under different methodologies, but within a single economy, they are minor and may become more significant only

¹ This refers to the so-called actual rather than potential growth, which is short-term in nature and reflects the fact that the economic system has reached equilibrium at a higher GDP compared to a previous period.

when the methodology is changed. From this point of view, for the purposes of studying macroeconomic activity in Bulgaria, the dynamics and structure of GDP should be preferred as an indicator over others.

In order to achieve maximum accuracy of the evaluations, this study relies on the theoretical and descriptive long-term analysis, based mainly on data from own calculations. All indicators of growth rates, relative share and contribution to GDP growth have been calculated by the author on the basis of data from official statistics on the value of the indicator and its components. NSI data have been used in the analysis of the components forming GDP: at current prices when measuring the relative share, and at prices from 2015 when measuring their dynamics.

2. Dynamics of the Gross Domestic Product

During the twenty years of Bulgaria's economic development examined here, three major events have occurred: the country's accession to the EU, the global financial crisis and the Pandemic. These set the background and overall environment in which the economy functions, and have brought about additional rules, norms, standards and effects, simultaneously with new opportunities and new restrictions. Bulgaria's membership in the EU ensured a stable and predictable business environment and gradual convergence with the rest of the EU countries by a number of important economic indicators. The consistent tax policy has created a favorable environment for investment in the economy. The global crises played the role of an external shock that brought uncertainty to economic entities, slowed down business activity and set new challenges to macroeconomic policy, necessitating the search for new opportunities to deal with the manifestations of instability and stimulate activity.

In the studied period from 2000 to 2022, the market value of the final goods and services created annually in the Bulgarian economy increased significantly both in nominal and in real terms. According to NSI data, the nominal value of GDP grew from BGN 28125 million to BGN 167809 million and almost doubled in real terms (Table 1).

The stability of the national currency, ensured by the Currency Board, contributes to the consistency and predictability of the monetary policy, and the maintenance of monetary stability and budgetary discipline lead to acceleration of GDP growth rates and substantial real growth. All programmes adopted jointly with the IMF have been successfully implemented and the first ten years of the Board's operation have resulted in over fifty percent real GDP growth. A substantial contribution for this result has, of course, the significant growth of GDP by seven percent yearly (2005 and 2006) after the signing of the Treaty on Bulgaria's accession to the EU.

The crisis in the world economy affected Bulgaria's GDP most noticeably in 2009, when its value fell by 3.0%². The recovery took three years and in 2011 the indicator reached the level before the decline. Bulgaria's EU-membership has created a stable and predictable business environment, and despite the fact that growth after 2007 has been uneven (and in 2009 there was a decline), real GDP growth until 2020 has been significant – by twenty-six percent.

The spread of Covid-19, which started in 2020, led to unprecedented restrictions on people and their economic activity in order to reduce the local and global spread of the virus. This caused a significant decrease in the real value of final production in Bulgaria (by 4% in 2020), but the subsequent massive measures for financial aid and support to businesses and households compensated for the losses from the pandemic. In just one year, GDP recovered and grew in real terms. The average annual growth rate of real GDP over the entire twenty-year period is 3.3 percent, peaking in 2021 when growth was 7.6%.

² By definition, a recession is a drop in GDP in two consecutive quarters, which was not observed in Bulgaria. In this sense, its manifestation is atypical. (See Ganev et al., 2015, p. 39).

Table 1. Real GDP, rate, growth rate and GDP per capita in Bulgaria and its share compared to the EU-28 from 2000 to 2022.

Year	Real GDP prices from 2015 (BGN mill)	Growth rate real GDP (%)*	Rate real GDP (%)	GDP per capita (€)	GDP per capita as share of EU-28 (27) (%)
1	2	3	4	5	6
2000	53562		100	2990	13,0
2001	55601	3,8	103,8	3220	13,7
2002	58782	5,7	109,7	3420	14,4
2003	61884	5,3	115,5	3620	15,1
2004	65883	6,5	123,0	3870	16,0
2005	70512	7,0	131,6	4170	16,9
2006	75323	6,8	140,6	4490	17,6
2007	80284	6,6	149,9	4800	18,3
2008	85196	6,1	159,1	5120	19,5
2009	82666	-3,0	154,3	4970	19,8
2010	83960	1,6	156,8	5080	19,9
2011	85713	2,1	160,0	5320	20,5
2012	86333	0,7	161,2	5390	20,6
2013	85800	-0,6	160,2	5390	21,0
2014	86631	1,0	161,7	5470	21,1
2015	89600	3,4	167,3	5700	21,3
2016	92323	3,0	172,4	5910	21,8
2017	94869	2,8	177,1	6120	22,1
2018	97441	2,7	181,9	6330	22,4
2019	101365	4,0	189,2	6400	23,1
2020	97351	-4,0	181,8	6630	24,2
2021	104785	7,6	195,6	6950	24,8
2022	108305	3,4	202,2	7680	26,5

Source: Author's calculations based on NSI data from Statistical Yearbook 2004; 2008; 2012; 2018; 2022 and Infostat.

** Calculated on a chain basis at 2015 prices.*

The changes in the GDP per capita indicator are also positive – the increase is more than twofold (col. 5 of Table 1)³. In an environment of membership in the EU, real conditions are being created for the gradual convergence of Bulgaria with the other countries of the Union, and although Bulgaria has the lowest GDP per capita, this indicator improved from 13.89 to 22.83 percent of the EU average (col. 6)⁴. The relative catch-up that the Bulgarian economy managed to achieve was thanks to the higher growth rate than the average in the EU and the Eurozone. It has been higher throughout the period, and the reported decline in the crisis year 2009 was lower than average (Figure 1).

During the EU membership, the macroeconomic activity measured by the GDP growth rate again exceeds average levels, but the differences are no longer so significant.

³ Of course, the fact that the population of Bulgaria decreased by more than 1 million during this period should not be ignored.

⁴ Most of the member states that joined the EU in 2004, 2007 or 2013 moved closer to the EU28 average levels, despite some setbacks during the global financial and economic crisis (according to Eurostat).

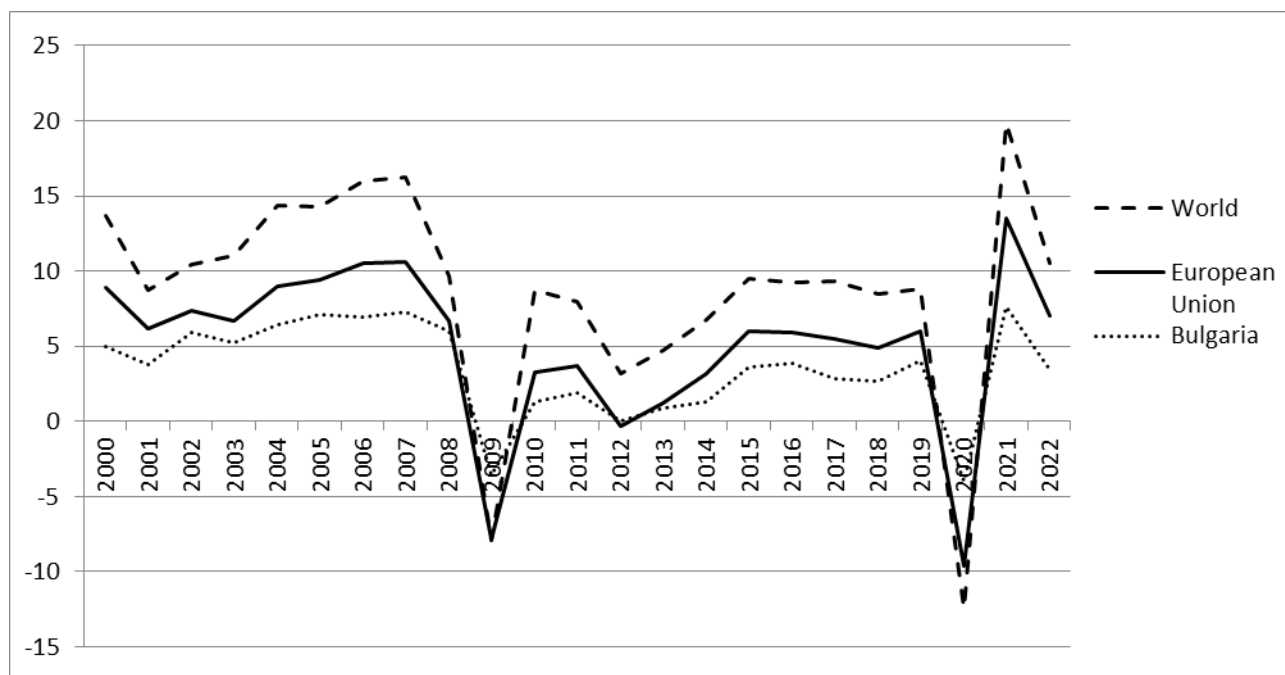


Figure 1. Annual growth rates of GDP per capita for Bulgaria, EU 28(27) and all the World

Source: IMF

If only the dynamics of GDP is evaluated, it can be concluded that at the macroeconomic level, the Bulgarian economy was affected to a lesser extent by the economic crisis compared to other European countries, the decline was milder, and the recovery process was more tangible⁵. In order to improve the accuracy of evaluations and to avoid hasty conclusions, GDP dynamics should be combined with other indicators, and above all, its structure should be taken into account.

3. Production structure of the Gross Domestic Product

Macroeconomic activity is measured not only by the dynamics, but also by the structure of GDP. It is both a cause and effect of fluctuations in volume. The subsequent analysis of the GDP structure shows what are the main sources of fluctuations in the aggregate, allows to deduce and calculate the contribution of individual components to GDP growth and to identify any interdependencies between them and the final consumption expenditures of households, which is one of the objectives of this study.

The production structure of the Gross Domestic Product reflects the share of individual sectors in the creation of the Gross Added Value⁶. Of the three sectors that participate in the

⁵ Emphasizing the one-sidedness of this type of analysis, the Bulgarian Chamber of Commerce claims in a report that deep internal economic wounds have been inflicted. The State has transferred the negatives of the crisis onto businesses and the population and, above all, onto small and medium-sized businesses, creating conditions for the nation's social well-being (2017, p. 4).

⁶ Under the production method, GDP is calculated as the sum of GVA at basic prices for the economy as a whole and allowances that include net taxes on products, non-deductible value added tax and import duties, i.e. the difference between the value of the gross output of goods and services and the value of their intermediate consumption plus import duties. This is how the participation of each production unit, a resident of the country's economic territory, in the creation of GDP is determined, expressed through added value.

creation of GDP⁷, the largest share is accounted for by the services sector, on average 52.5%, followed by industry and construction with 23.5%, and the smallest is that of the agrarian sector (agriculture and forestry) – 7.1% (see Fig. 2).

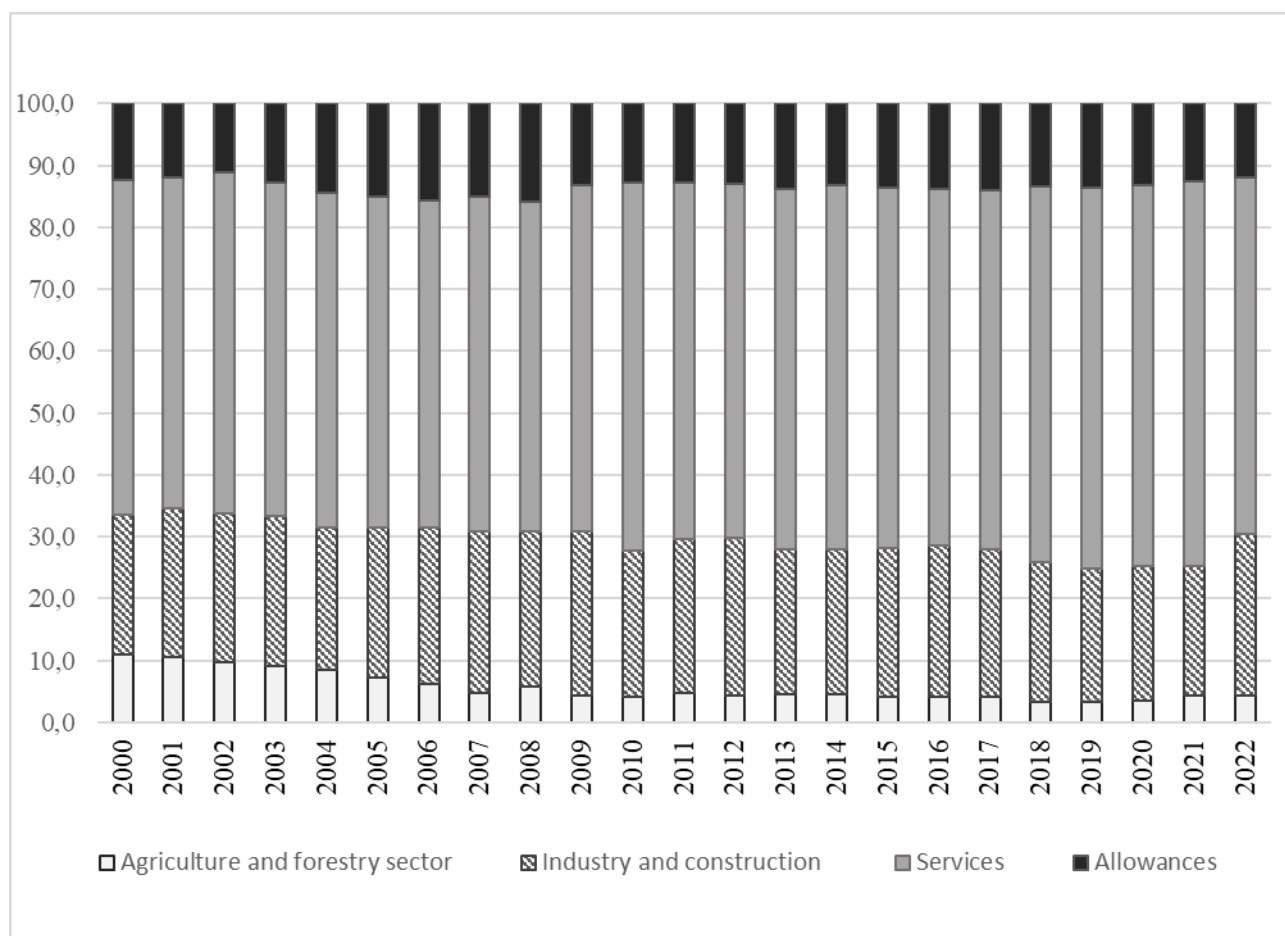


Figure 2. Relative share of individual sectors in the GDP of Bulgaria⁸

Although the positions of the sectors did not change during the examined period, they underwent substantial fluctuations as a consequence of structural reform, demographic crisis, change in needs, expansion of exports to new markets, changing lifestyles. The process of restructuring the economy leads to the rapid development of some sectors and an increase in their share in the economy, and causes the share of others to shrink and decrease.

The most significant changes have occurred in the share of the agriculture and forestry sector. It has fallen from 11% to 3% of the total for the country. By themselves, these results do not reflect any negative processes, because they could be due to the faster growth of the other sectors, but in this case the relative decline is the result of the absolute decline of the output (Fig. 3)⁹. Against the background of the growth of the national economy, this sector exhibits variable dynamics with a certain cyclicity. The fragmentation of land use and the low degree of

⁷ The three sectors – agriculture and forestry, industry and services – form the Gross Added Value. GDP is calculated after adding the so-called allowances, including indirect taxes (customs and excise duties, VAT) less business subsidies and financial intermediation services indirectly measured.

⁸ Based on NSI data and author's calculations.

⁹ According to a report by the Academy of Agriculture and the Institute of Agrarian Economics (2017), the decline after 2000 “was due not to the absolute decrease in production and in the added value of the sector, but to the faster and upward overall development, especially in the service sector.”.

specialization is combined with low labour productivity, inefficient land use and declining investment efficiency.

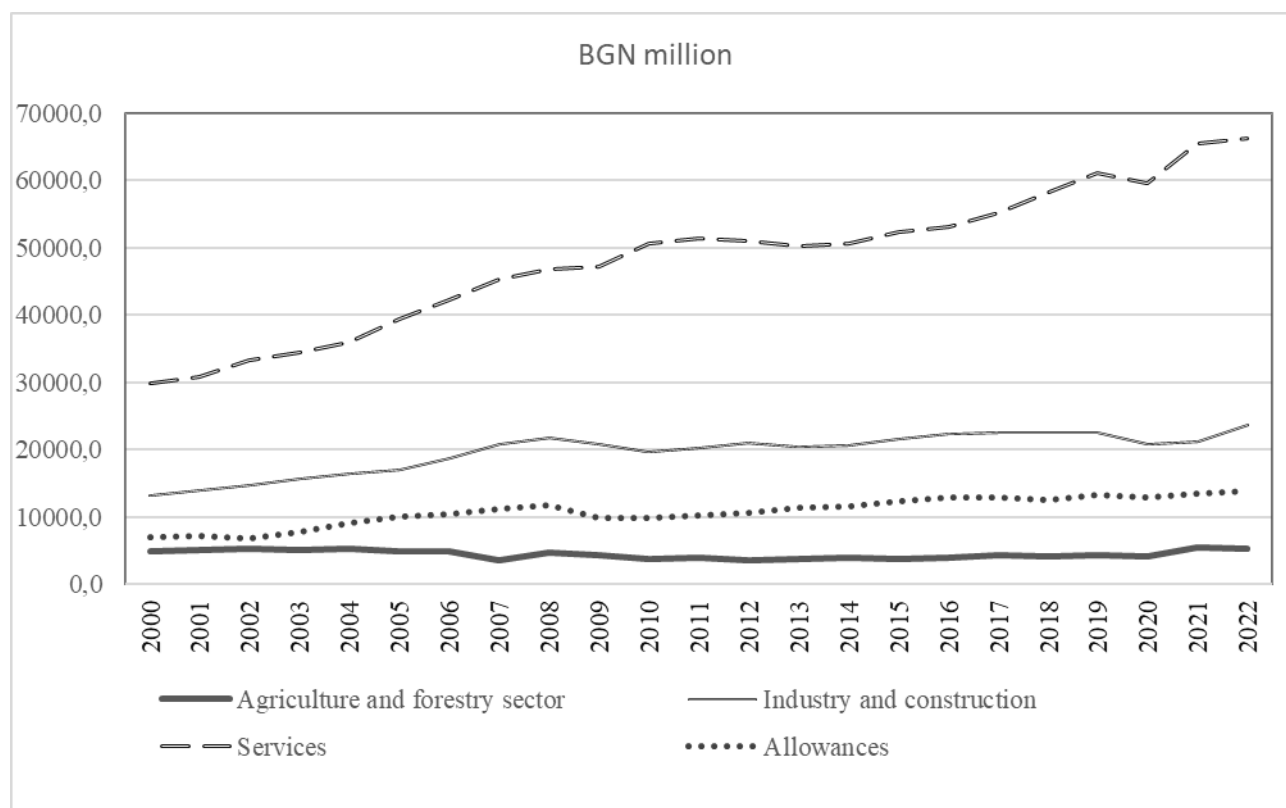


Figure 3. Values of the output created in the sectors of the Bulgarian economy from 2000 to 2022 at 2015 prices, in BGN million¹⁰

The problem with the downward trend in the relative share and in absolute terms is the result of interrelated causes within the sector of structural, market, production, land resource and investment nature.

After the country's accession to the EU, the downward trend in the sector changed and, albeit weakly, the added value in it has been growing. The policy of providing aid to this sector through subsidies and programmes, as well as through providing external markets for the production, has had a slightly positive role, which has not been sufficient to revive it yet, but has nevertheless at least shifted the trend.

Significant changes in both absolute and relative value are also observed in the gross added value created in the service sector – it increased from BGN 29825,4 million to BGN 66149,8 million (at 2015 prices)¹¹. The increased added value is a consequence of the increase in employment in the various branches of the sector as a result of the ongoing restructuring processes. Research on the sector indicates that deindustrialization and the onset of the crisis reduced the role of the real sector, as it relied on exports, but traditional foreign trade partners were in crisis or had lost interest in industrial production, and therefore it declined, and real production followed suit. As a result of all

¹⁰ According to Infostat/ NSI.bg data and author's calculations.

¹¹ These data are aggregated for the entire sector. They include: trade, repair of cars and motorcycles; transport, storage and postal services; hotels and restaurants, information and creative products; telecommunications; financial and insurance activities; real estate operations; professional activities and research; administrative and auxiliary activities, public administration; education; human health and social work, culture, sport and entertainment; other activities; activities of households as employers; undifferentiated activities of households in the production of goods and services for own consumption; activities of extraterritorial organizations and agencies.

this, resources were transferred to the service sector, which for its part is not so dependent on exports, since most of the services are performed locally, and therefore the transfer of resources from agriculture and industry to services is a natural process (Gospodinova, 2010, p. 91). With this, the positions of the sector as a leader in the production structure of the Bulgarian economy have strengthened with a share of more than 55% in GDP and 69% in GVA.

The industry and construction sector has maintained its positions and comes out as a slowly developing sector. With certain fluctuations during the crisis years, the added value in absolute terms increased from BGN 13134,2 million in 2000 to BGN 23584,9 million against the background of severe decrease throughout the EU. This growth is not substantial, but it shows that in place of liquidated and shut-down giant enterprises, new ones have been established, ready to fit into the market economy. The main driver is the increase in productivity of companies as a result of the accumulation of physical capital in the years after the reforms began in 1997. As this increase is accompanied by GDP growth, the share of this sector in the economy remains around 25% and puts Bulgaria among the top ten countries in Europe, based on Eurostat data. In the last year the leading positions were occupied by Ireland (36.2%), the Czech Republic (33.2%) and Poland (30.3%), and the lowest share of this sector was in Cyprus (10.8%) and Luxembourg (12.1%) (See Fig. 4).

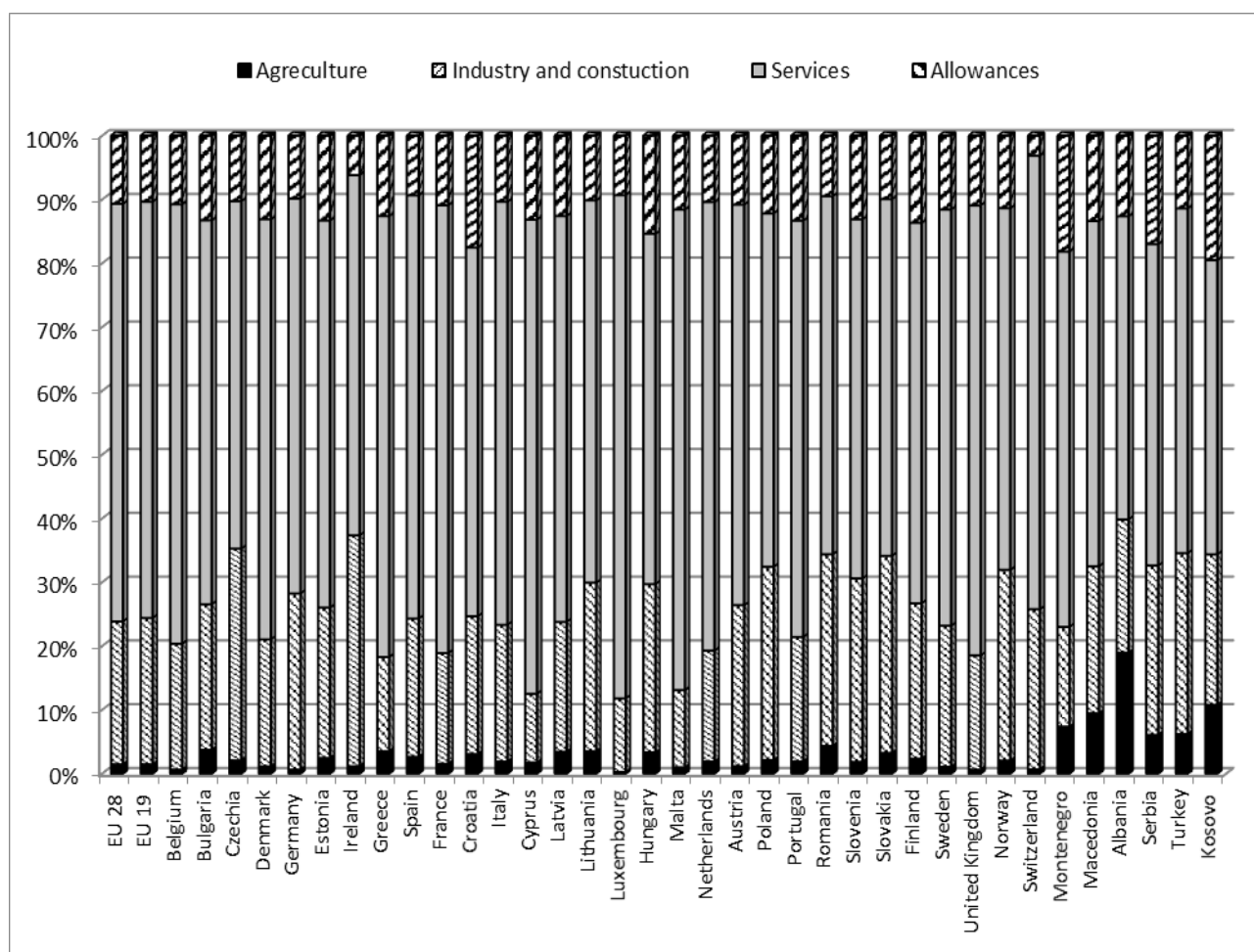


Figure 4. Sectoral structure of the GDP of the countries in Europe and the EU in 2017¹².

¹² Based on Eurostat data and author's calculations

A significant part of GDP (over 13%) is allowances¹³. Bulgaria is an established leader in the ranking by share of indirect taxes in the total tax revenues of the state. Among the EU countries with a larger share of allowances for 2017 are only Hungary and Croatia, and in Europe – Montenegro and Kosovo (Fig. 4). They are unrelated to production and GVA, but are directly related to consumption expenditure and GDP. Unlike the share of the GVA components, which show a clear trend either towards growth or decline, the dynamics in the share of allowances is variable and shows some cyclicity. From the beginning of the period until the crisis year of 2008, this share grew annually, peaking at 16.7%, when a proportional tax of 10% on income and profits was introduced and the social security payables were reduced. These factors undoubtedly affect the volume of purchases by households and businesses and revenues from VAT, customs and excise duties. In reality, allowances reflect the difference between costs and production. The increase in their share indicates an outpacing increase in costs compared to production. Similar processes have been observed in recent years, and the share of allowances is again significant.

Table 2. Growth rate and contribution of the sectors to the creation of the GDP of Bulgaria

Year	Growth rate ¹⁴ (%)				Contribution of the sectors to the creation of the GDP ¹⁵ (%)			
	Industry & construction	Agriculture & forestry	Services	Allowances	Industry & construction	Agriculture & forestry	Services	Allowances
2001	6,3	0,6	3,2	2,1	3,8	1,5	0,1	1,7
2002	4,6	5,2	8,4	-6,9	5,7	1,1	0,5	4,6
2003	7,7	-1,6	3,0	14,0	5,3	1,9	-0,1	1,6
2004	4,0	3,7	4,8	17,7	6,5	0,9	0,3	2,6
2005	4,3	-8,5	9,3	10,6	7,0	1,1	-0,6	5,0
2006	9,0	-0,9	7,2	4,9	6,8	2,3	-0,1	3,8
2007	11,8	-27,1	7,5	6,8	6,6	3,1	-1,3	4,1
2008	4,7	31,8	3,1	5,9	6,1	1,2	1,9	1,7
2009	-4,1	-8,9	1,2	-16,1	-3,0	-1,1	-0,4	0,7
2010	-5,7	-10,9	6,9	-0,3	1,6	-1,4	-0,4	4,1
2011	2,7	5,7	1,6	3,4	2,1	0,7	0,3	0,9
2012	4,3	-11,0	-0,5	4,2	0,7	1,1	-0,5	-0,3
2013	-2,7	3,6	-1,6	6,9	-0,6	-0,6	0,2	-0,9
2014	0,6	7,0	0,6	0,9	1,0	0,1	0,3	0,4
2015	4,4	-7,9	3,3	6,4	3,4	1,1	-0,3	1,9
2016	3,9	7,5	1,7	5,9	3,0	1,0	0,3	1,0
2017	1,0	8,5	4,0	-0,6	2,8	0,2	0,3	2,3
2018	0,0	-2,0	5,3	-2,2	2,7	0,0	-0,1	3,3
2019	-0,1	4,1	5,1	6,1	4,0	0,0	0,1	3,1
2020	-8,2	-3,3	-2,5	-3,7	-4,0	-1,8	-0,1	-1,5
2021	1,7	28,8	9,9	5,3	7,6	0,4	1,3	6,1
2022	11,9	-0,8	1,0	2,8	3,4	3,1	0,0	0,6

¹³ Allowances = net taxes (taxes minus subsidies) on products – Financial Intermediation Services Indirectly Measured (FISIM).

¹⁴ Measured as the hourly absolute change and value in the previous period at 2015 prices.

¹⁵ Measured as the product of the sector's share of GDP and its growth rate. The resulting value shows how many percentage points of the total GDP growth was achieved by the respective sector.

Based on the data on the absolute values of the product and the relative share of the sectors, their growth rates and the share of each of them in the GDP growth have been calculated (see Table 2). The data show that the sector with the largest share (services) also has the fastest rate of development. This also makes it the most significant sector for GDP growth¹⁶. In 2005 and 2021, the growth rates of services were 9.3% and 9.9%, respectively, whereby they provided 5% and 6.6% annual growth of the economy¹⁷.

The dynamics of the allowances also show very large fluctuations. In 2004, they grew in absolute value by a record 17% on an annual basis, while the decline in 2009 was 16.5%.

Allowances indicate the deviation of aggregate costs from production volume, and their increase reflects an outpacing increase in final use relative to value addition. This is most noticeable in the period from 2003 to 2005. The increased collection by revenue agencies is also a factor. The decline in 2002 is a reflection of the lagging growth, and in 2009 – of the outpacing fall of costs relative to gross added value.

Conclusion:

The current structure of the national economy is the result of the processes of a stable expansion of branches within the service sector and a drastic decline in agriculture and forestry. These processes were noticeable at the beginning of the period under study (they actually started even before it), continued until 2010 and brought the production structure of Bulgaria's GDP closer to that of the EU countries. The changes that have occurred are the cumulative result of political, demographic, domestic and foreign economic processes, which cause multidirectional and multilevel changes in the product created in the various spheres.

Although it has a number of shortcomings, the Gross Domestic Product provides the most comprehensive insight into the current state, developments and trends in the economy and is justified in being used as the main measure of economic activity. If it is combined with other indicators, its structure is taken into account and non-existent characteristics and opportunities are not attributed to it, the accuracy of the evaluations made on its basis can be significantly improved.

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¹⁶ The presented data are aggregated for the entire sector and do not provide insight into the dynamics of each of the activities, as the research task does not require decomposition.

¹⁷ According to NSI data for 1999, communications and financial and credit services had the greatest growth, and in 2005 this position was occupied by hotels and restaurants and car trade and repairs.