

DEMOGRAPHIC DEVELOPMENT OF BULGARIA IN A REGIONAL PLAN AS A BASIS FOR ECONOMIC DEVELOPMENT

The article analyzes the main demographic and migration processes in Bulgaria by districts and their impact on the formation of human resources and thus on the economic development of the country. The aim is to highlight current and future trends and specificities in intraregional plan for Bulgaria by districts. It is argued that these regional differences pose additional economic problems both for the country as a whole and on the territorial level. Demographic collapse not only reduces the workforce but also aggravates its age and professional structure, which limits its entrepreneurship and flexibility. Under these demographic conditions, it is difficult to achieve high labor productivity and an accelerated catching up development of the EU.

JEL: J11; J21; R11; R23; R58

1. Introduction

One of the more acute problems during the transition to a market economy in Bulgaria is the growing territorial inequality, strongly expressed in favor of Sofia (capital) at the expense of other regions in the country. The ongoing unfavorable demographic changes have a significant impact on the formation of labor and human capital, hence on economic development at a regional and macroeconomic level.

Regional disparities in Bulgaria are increasing even at the level of planning regions despite the European funds that are being used to overcome these disparities. The poorest are the Northwest and North Central regions, and the richest – the Southwest. In 2017, the Northwest region has the lowest share of the population in Bulgaria – 10.7% and a contribution to GDP of 6.6%. It is followed by North Central with a share of the population of 11.3% and 7.8% of GDP; Northeast – 13.2% of the population and 10.6% of GDP; Southeastern – 14.7% of the population and 13.0% of GDP; South Central – 20.1% of the population and 14.0% of GDP. The largest and richest region is the Southwest, where Sofia (capital) is located. It accounts for about one-third of the population (30%) and produces

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nearly half of GDP (48%), which is nearly as much as all other regions. Independently Sofia (capital) forms 40% of Bulgaria's GDP for 2017, and the share of the region in the total population of the country is 18.8%. In Northern Bulgaria, 35.2% of the population lives and only 25% of the country's GDP is produced.

In Bulgaria, a significant number of demographic and socio-economic surveys are carried out for the country as a whole and for individual territorial units. For example, Blagoevgrad (Ravnacka, 2014), Kardzhali (Ribov & Cherkezova, 2014), Plovdiv (Dimova-Gencheva, 2014), Smolyan (Rangelova & Bilyanski, 2018). For many years, professionals have been monitoring and analyzing the ongoing demographic and migration processes in the country and have accumulated knowledge about it. Such studies are useful and should be used for specific policies at local or national level to reduce inter-regional disparities, enhance socio-economic development and living standards.

The article focuses on basic demographic characteristics and trends across the country's districts in terms of opportunities to form human resources. The aim is to highlight current basic phenomena and specifics in an intra-regional plan for Bulgaria.

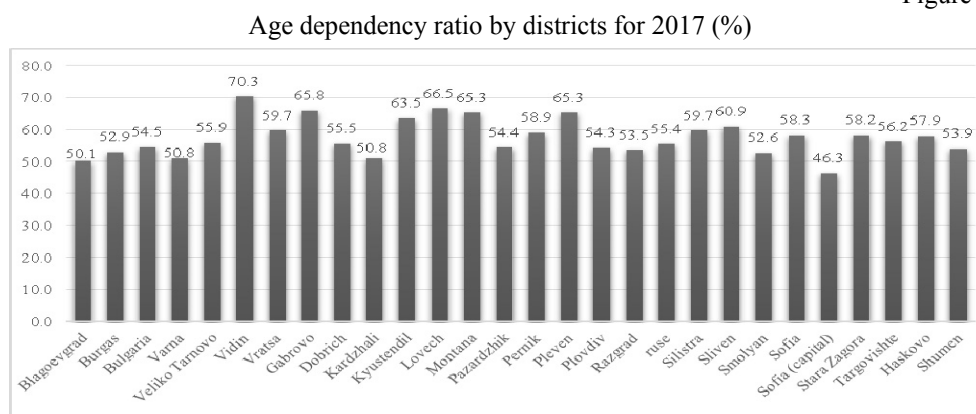
2. Demographic characteristics

The imbalance in the territorial distribution of the population continues to deepen. Only two districts – Sofia (capital) and Kardzhali – increase their population in 2017 compared to 2016 – respectively by 0.1% and 0.2%. In all other districts, there is a decrease, the highest being for the districts of Vidin – by 2.2%, and Smolyan – by 2.0%. Nearly three-quarters of the country's population lives in the cities (73.5%) and a little over a quarter (26.5%) – in the villages. This, of course, reflects the economic potential and, in particular, the human resources in the individual regions.

The share of women aged over 65 is 24.4% and that of men – 17.4%. This shows that the aging process is more pronounced among women than among men, due to the higher mortality rate among men and, as a consequence, to their lower average life expectancy. The share of people aged 65 and over is highest in the districts of Vidin (29.3%), Gabrovo (28.2%), Kyustendil (26.9%) and Lovech (26.6%). In nineteen districts this share is above the national average (21%). The lowest is the share of the adult population in Sofia (capital) – 17.2%, and Varna – 18.6%.

The total age dependency ratio for the country in 2017 is 54.5% and shows the relative share of the population in the "dependent" ages (population aged under 15 and aged 65 and above) per 100 persons of the "independent" population ages (from 15 to 64 years). The highest is the coefficient in the districts of Vidin (70.3%), followed by Lovech (66.5%), etc., and this indicator is higher than 50% in 10 districts of the country. The lowest ratio is in Sofia (capital) – 46.3% and it is the only under 50% (Figure 1). Similar is the trend with respect to old dependency ratios. They also experience large imbalances by districts and it is deepening.

Figure 1



Source: NSI, *Demographic and Social Statistics, Population - Demography, Migration and Forecasting, Population Structure by Place of Birth, Sex Ratio and Age Dependency Age Dependencies*.

The average age of the population in Bulgaria is also growing – from 39.9 years in 2000 to 41.5 years in 2007 and 43.7 years in 2017. The most aging population is again in Vidin, with the average age there being 47.6 years compared to 41 years in Sofia.

A consequence of the demographic changes is the worsening age structure of the population in various districts. Even in a relatively short period, such as 2010-2017, there is a marked decrease in the number and proportion of the working-age population in the country (from 62.6% in 2010 to 60.3% in 2017) and an increase in the over-working age (from 22.7% to 24.6%), with a very small increase in the already low percentage of the coming generation in the under-working age – from 14.6 to 15.1%. These structural changes are more pronounced in villages than in cities and towns and in women than in men. The relative share of persons in over-working age in the cities for 2017 is 22.5% and in the villages 30.5%. The relative share of women in over-working age in 2017 in cities is close to 64% and in men – 36%.

According to NSI's long-term forecasts of population, numbers in all three scenarios (realistic, optimistic and pessimistic), besides decreasing numbers, show that depopulation of the province at the expense of the Capital will intensify. This will aggravate all the indicators under consideration to a varying degree by individual territorial units.

The first indicators in relation to the natural movement of the population are the birth rates and mortality rates that determine its natural growth (Table 1). In general, they follow the tendencies for the country as a whole – decreasing birth rate, high and rising mortality. With crude birth rate of 9‰ for the year 2017 (and 9.1‰ for 2016), it is the highest in the region of Sliven – 12.5‰, followed by the capital Sofia (10.2‰) and it's the lowest in Gabrovo district – 6.5‰.

The mortality rate of men in Bulgaria is 16.5 ‰ in 2017, which is significantly higher than that of women (14.6‰). The mortality rate is much higher in villages than in towns (Table

1). There are large differences in mortality in the country depending on the regions. The lowest is in Sofia - capital (11.6‰), and the highest is in poor settlements like those in the Northwest region (Vidin – 22.7‰, Montana – 21.1‰, Lovech – 21.1‰, etc.). The tendencies described predict the natural growth by districts. These regional imbalances further complicate demographic problems in the country.

Table 1

Natural population movement by districts, 2017 (‰)

	Fertility rate			Mortality rate			Natural increase		
	Total	In the towns	In the villages	Total	In the towns	In the villages	Total	In the towns	In the villages
Country Total	9.0	9.2	8.5	15.5	13.2	22.0	6.5	-4.0	-13.5
Blagoevgrad	8.7	9.4	7.8	13.3	12.1	15.0	-4.5	-2.7	-7.3
Burgas	9.5	9.3	10.1	13.8	12.2	19.0	-4.3	-2.9	-8.9
Varna	9.3	9.5	8.6	12.9	11.4	20.7	-3.6	-1.9	-12.1
Veliko Tarnovo	8.7	9.1	7.7	17.8	13.3	28.3	-9.1	-4.2	-20.6
Vidin	6.5	6.7	6.2	22.7	15.0	36.7	-16.2	-8.3	-30.5
Vratsa	7.9	7.7	8.2	20.1	14.7	27.6	-12.2	-7.1	-19.4
Gabrovo	6.5	6.7	5.7	20.9	17.2	37.5	-14.4	-10.5	-31.7
Dobrich	7.9	7.8	8.2	16.7	14.0	22.6	-8.8	-6.3	-14.4
Kardzhali	9.1	10.5	8.1	13.0	11.9	13.8	-3.9	-1.3	-5.7
Kyustendil	7.2	8.2	4.9	20.7	17.5	28.0	-13.5	-9.4	-23.1
Lovech	7.9	8.3	7.2	21.1	16.9	28.1	-13.2	-8.6	-20.9
Montana	7.6	7.5	7.8	21.1	15.3	31.3	-13.4	-7.8	-23.5
Pazardzhik	9.0	9.1	8.9	16.0	14.6	18.3	-7.0	-5.5	-9.4
Pernik	7.5	8.2	4.8	19.9	17.0	30.5	-12.4	-8.8	-25.7
Pleven	8.6	8.4	8.9	18.8	15.2	25.9	-10.2	-6.8	-17.0
Plovdiv	9.6	9.7	9.1	14.7	12.8	20.8	-5.2	-3.1	-11.7
Razgrad	7.7	7.2	8.1	17.0	16.0	17.9	-9.3	-8.8	-9.8
Ruse	7.6	7.6	7.4	16.5	14.0	25.3	-8.9	-6.4	-17.8
Silistra	8.3	7.5	9.0	17.1	16.9	17.3	-8.8	-9.4	-8.3
Sliven	12.5	11.2	15.1	15.3	13.5	18.7	-2.7	-2.3	-3.6
Smolyan	6.8	7.2	6.3	16.3	13.3	20.2	-9.5	-6.1	-13.8
Sofia	8.5	9.0	7.6	18.4	14.8	24.2	-10.0	-5.7	-16.6
Sofia (capital)	10.3	10.4	7.9	11.6	11.4	15.2	-1.3	-1.1	-7.3
Stara Zagora	9.6	9.4	10.0	16.6	13.7	24.2	-7.1	-4.3	-14.2
Targovishte	8.3	8.0	8.7	16.3	13.7	19.5	-8.0	-5.7	-10.8
Haskovo	8.7	8.9	8.1	17.0	13.8	25.5	-8.3	-4.8	-17.4
Shumen	8.1	7.8	8.5	15.7	14.3	17.9	-7.6	-6.5	-9.3
Yambol	9.4	9.7	8.6	17.8	13.4	28.4	-8.5	-3.7	-19.8

Source: NSI, Demographic and Social Statistics.

The total fertility rate (TFR) also shows the weaker position of Bulgaria compared to the EU-28 average. From 1.81 in 1990, this ratio decreased to 1.23 in 1995 and then rose to 1.54 in 2016, but remained below the EU average. As a rule, TFR in rural areas is higher than in urban areas – total for the country in 2017 is 1.56, including 1.47 in towns and 1.82

– in villages. Several of the country's districts have been characterized with high TFRs in the countryside for years, though declining around and above 2.00. Among them are the following: Sliven – 2.34 (2.52 for 2016), Yambol – 2.00 (2.39 for 2016), Stara Zagora – 1.80 (2.03 for 2016), Pleven – 1.79 (2.23 for 2016) and so on. The lowest is in Sofia (capital) – 1.29.

The average life expectancy at birth of the population in Bulgaria is increasing and for 2015-2017 it is 74.76 years, which is, however, more than 6 years lower than the average in the EU-28. Regarding the internal regional aspect, the highest life expectancy in Sofia (capital city) is 76.44 and the district of Kardzhali is 76.43 years. The lowest life expectancy is between 72 and 73 years in the Northwest region – the districts of Montana and Vratsa. The average life expectancy in the country and particularly in the districts increases over time; it is higher for women by about 7 years compared to men.

3. Migration

Emigration from Bulgaria was more intense in the 1990s than in the years of EU membership. Since 2007, the number of people leaving the country is increasing, with a peak in the years of the world economic and financial crisis (2009-2010) and then in 2014 and 2015, but despite that the number of Immigrants in the country rose sharply, the migration balance remained negative and even increased. The motives for the domestic migration of the population are the same as for external migration - job search, higher salary, better working conditions and security, better professional realization, better or appropriate education of children, etc.

A more general picture of the migration by districts can be obtained from the data, published by NSI, about the immigrants and emigrants, whether within the country or abroad. Over the period 2010-2017, the trend of more emigrants than immigrants by region and consequently negative migration balance continued.³ According to NSI in 2017, the number of immigrants in Bulgaria was 139,068 and the emigrants – 145,057, resulting in a negative migration balance of -5,989 (Table 2).⁴ In some districts, there is a positive migration balance, and these are mainly the largest ones: Sofia (capital) – 3572, Plovdiv – 1698, Varna – 1148, Kardzhali – 863, Burgas – 670 and Pernik – 174. The migration balance is negative in all other districts, with the highest being: Pleven (-1415), Smolyan (-1113), Pazardzhik (-1045), Vratsa (-1043), Blagoevgrad (-1040), etc.

³ Since 2007, the migration of the population includes not only internal migration but also the external migration.

⁴ When examining migration, persons who have changed their usual residence (current address) are surveyed. The data source is the Unified System for Civil registration and Administrative Service of Population. According to the NSI methodology, migration growth (balance) of a given country or territory is the difference between immigration to and emigration from the area during the calendar year. Net international migration is the difference between immigration into and emigration from the country.

During the period 2010-2017, the negative migration balance remained, although it improved significantly – from -24 190 people to -5989 people or it decreased fourfold (Table 2). Net migration per 1,000 people decreased from -3.2 to -0.8. By this indicator, the districts can be divided into four groups that clearly show population movements:

- a) districts with positive migration growth over the two years under consideration – Sofia (capital), where this growth is almost 3 times lower (from 7.6 to 2.7 per 1,000), Varna, where migration growth has grown considerably – from 0.3 to 2.4 and Burgas, where from zero it grows to 1.6;
- b) districts where the negative migration growth became positive - Kardzhali, where this change is significant (from -6.8 to +5.7), Plovdiv (from -4.1 to +2.5) and Pernik (from -1.9 to +1.4);
- c) the predominant number are districts with improving negative migration growth – Smolyan, where it decreases, but this district remains the only one with double-digit negative migration growth in 2017, Lovech (decreased almost three times), Razgrad, Sliven, Yambol, Targovishte, etc.;
- d) The only district where the negative migration growth deteriorated further was Pleven – from -5.3 to -5.8 per 1000 people.

In 2017 the districts with the highest number of emigrants per 1,000 people are among those who are characterized with unfavorable economic and social conditions: Vratsa – 32.9, Vidin – 31.2, Montana – 28.2, Targovishte – 27.5, Razgrad – 27 etc. The smallest number of emigrants was registered in Sofia (capital) – 14.6, Plovdiv – 16.4, Pazardzhik – 16.7, Ruse – 17.1, etc. The most affected district by migration processes is Smolyan (the highest levels of negative net migration per 1000 people), followed by Vratsa, Vidin, Pleven, etc., while in the best position - the highest positive net migration per 1000 people is Kardzhali district, followed by districts with big cities like Sofia (capital), Plovdiv, Varna, etc. (but the level of the indicator in these districts is two times lower than Kardzhali).

NSI data by district provides an opportunity to determine the structure of the emigrants in the country – whether they do this within the given district, outside this district, but within the country or abroad (Table 3).⁵ It is obvious that the migration of the population is mainly within the country, with the prevalence of movement from one district to the other rather than movement within the given district. The share of external emigration (abroad) is the largest in Razgrad (36.6% of all emigrants), Kardzhali (33.3%) and Kyustendil (30%). Considering the least relative emigration abroad (below 15% of the all emigrants from the district) the following districts stand out: Veliko Tarnovo (12.6%), Stara Zagora (13.6%), Plovdiv (14.7%).

⁵ For a more detailed study of the regional disparities by districts for the period 2010-2012 (Yankova, 2014). Regional development and migration movements of the population. In: The demographic situation and the development of Bulgaria. Forum 2014. Institute for Population and Human Studies at the Bulgarian Academy of Sciences. Academic Publishing House "Prof. Marin Drinov ", pp. 193-205.

Table 2
Immigrants, Emigrants and Migration increase per 1000 people by districts

Districts	2010			2017		
	Immigrants	Emigrants	Migration increase	Immigrants	Emigrants	Migration increase
Country Total-number	155 212	179 402	-24 190	139 068	145 057	-5 989
Country Total	20.7	23.9	-3.2	19.7	20.6	-0.8
Blagoevgrad	14.6	19.0	-4.4	17.5	20.9	-3.4
Burgas	26.3	26.3	0.0	23.3	21.7	1.6
Varna	23.8	23.5	0.3	21.3	18.8	2.4
Veliko Tarnovo	25.7	32.5	-6.8	22.1	26.1	-3.9
Vidin	23.1	29.4	-6.2	25.3	31.2	-5.9
Vratsa	21.2	27.7	-6.5	26.6	32.9	-6.3
Gabrovo	18.5	26.8	-8.3	16.9	21.3	-4.4
Dobrich	19.2	24.8	-5.6	17.4	21.6	-4.2
Kardzhali	19.0	25.8	-6.8	30.7	25.0	5.7
Kyustendil	16.8	24.4	-7.6	17.4	23.0	-5.6
Lovech	16.1	28.3	-12.2	20.4	24.9	-4.5
Montana	23.0	29.2	-6.2	23.2	28.2	-5.0
Pazardzhik	12.6	18.6	-6.0	12.6	16.7	-4.1
Pernik	24.5	26.4	-1.9	19.9	18.5	1.4
Pleven	18.5	23.8	-5.3	17.6	23.4	-5.8
Plovdiv	18.9	23.0	-4.1	18.9	16.4	2.5
Razgrad	16.8	30.0	-13.2	21.6	27.0	-5.5
ruse	19.6	23.1	-3.5	16.3	17.1	-0.7
Silistra	19.0	26.7	-7.7	19.6	23.4	-3.8
Sliven	16.0	27.8	-11.8	18.8	23.3	-4.4
Smolyan	14.5	28.0	-13.5	15.4	25.8	-10.4
Sofia (capital)	24.0	16.3	7.6	17.3	14.6	2.7
Sofia	20.4	22.5	-2.1	21.6	22.9	-1.3
Stara Zagora	22.6	27.5	-4.9	20.4	20.6	-0.1
Targovishte	21.2	30.7	-9.5	24.8	27.5	-2.8
Haskovo	18.3	24.8	-6.6	22.2	23.1	-0.9
Shumen	21.0	26.2	-5.2	23.4	24.5	-1.1
Yambol	22.5	34.3	-11.8	18.7	25.2	-6.5

Source: NSI, Demographic and Social Statistics.

Table 3

Structure of immigrants by districts, 2017

Emigrants from:	Immigrants in:					
	The same district		other district in the country		Foreign country	
	Number	Share (%)	Number	Share (%)	Number	Share (%)
Blagoevgrad	2 467	38.4	2 290	35.6	1 669	26.0
Burgas	3 892	43.6	3 095	34.6	1 945	21.8
Varna	3 386	38.1	3 514	39.5	1 991	22.4
Veliko Tarnovo	2 285	36.7	3 162	50.7	785	12.6
Vidin	1 199	44.1	996	36.7	521	19.2
Vratsa	2 246	41.2	2 157	39.5	1 054	19.3
Gabrovo	693	29.5	1 045	44.6	609	25.9
Dobrich	1 464	38.6	1 452	38.2	883	23.2
Kardzhali	1 468	38.9	1 048	27.8	1 255	33.3
Kyustendil	715	25.7	1 235	44.3	835	30.0
Lovech	1 006	31.8	1 485	46.9	674	21.3
Montana	1 429	38.4	1 603	43.0	694	18.6
Pazardzhik	1 370	31.8	1 947	45.2	990	23.0
Pernik	795	35.1	1 089	48.0	384	16.9
Pleven	1 912	33.5	2 686	47.1	1 106	19.4
Plovdiv	5 483	49.9	3 890	35.4	1 618	14.7
Razgrad	892	29.0	1 058	34.4	1 125	36.6
ruse	1 390	36.7	1 663	44.0	730	19.3
Silistra	952	36.8	1 134	43.9	500	19.3
Sliven	1 288	29.4	1 980	45.1	1 120	25.5
Smolyan	682	24.7	1 352	48.8	732	26.5
Sofia (capital)	2 127	11.0	12 152	62.8	5 082	26.2
Sofia	1 467	27.6	2 962	55.8	880	16.6
Stara Zagora	2 751	41.9	2 920	44.5	893	13.6
Targovishte	1 229	39.7	1 138	36.7	731	23.6
Haskovo	1 799	33.7	2 290	42.8	1 253	23.5
Shumen	1 494	35.3	1 808	42.6	935	22.1
Yambol	898	29.6	1 541	50.8	592	19.6

Source: author calculations based on NSI data on migration.

4. Other Indicators of Territorial Differences by Districts

The study of territorial differences suggests an in-depth analysis of many different indicators. Some of them, related to other dimensions of territorial differences are mentioned here. One indicator refers to the activity of the labor force at working age (Table 4).

Table 4

Selected economic indicators by districts, 2016

Districts	Average annual wages and salaries of the employees under labor contract		Economic activity rate - 15 - 64 completed years	Foreign direct investment in non-financial enterprises at cumulative base as of 31.12.2016	
	BGN	Share, %	%	Euro, '000	Share, %
Country Total	11 379	100.0	68.7	23 508 865	100.00
Sofia (capital)	15 658	137.6	75.4	12 211 562	51.94
Stara Zagora	11 250	98.9	65.0	920 971	3.92
Sofia	11 230	98.7	62.2	1 313 943	5.59
Vratsa	10 988	96.6	57.9	76 903	0.33
Varna	10 773	94.7	70.9	1 785 198	7.59
Plovdiv	9 911	87.1	66.5	1 731 002	7.36
Razgrad	9 694	85.2	65.5	131 300	0.56
Burgas	9 540	83.8	69.9	1 746 015	7.43
Gabrovo	9 498	83.5	72.2	302 616	1.29
ruse	9 287	81.6	66.8	367 855	1.56
Shumen	9 026	79.3	74.2	103 093	0.44
Targovishte	8 963	78.8	59.1	227 261	0.97
Veliko Tarnovo	8 934	78.5	70.3	147 375	0.63
Pazardzhik	8 721	76.6	65.3	480 425	2.04
Dobrich	8 705	76.5	69.2	244 206	1.04
Pleven	8 630	75.8	66.5	187 588	0.80
Yambol	8 625	75.8	71.7	56 527	0.24
Montana	8 624	75.8	56.6	36 978	0.16
Lovech	8 604	75.6	56.9	139 150	0.59
Smolyan	8 504	74.7	74.1	83 761	0.36
Pernik	8 449	74.3	70.7	186 558	0.79
Sliven	8 438	74.2	64.8	124 199	0.53
Kardzhali	8 335	73.2	61.0	153 124	0.65
Silistra	7 967	70.0	62.8	32 685	0.14
Haskovo	7 964	70.0	69.2	120 400	0.51
Kyustendil	7 942	69.8	69.9	43 720	0.19
Blagoevgrad	7 658	67.3	69.8	482 987	2.05
Vidin	7 522	66.1	68.2	71 466	0.30

Source: NSI, Regional statistics and indicators for monitoring.

The economic activity rate of the population between 15 and 64 years of age in 2016 was 68.7%, with the highest in Sofia (capital) – 75.4%, followed by Shumen, Smolyan, Gabrovo, etc. The coefficient was at lowest level in the following districts: Montana, Vratsa, Targovishte, Lovech. Another production factor (apart from labor force participation measured through activity rate) are investments, in this case foreign direct

investment (FDI), which are too unevenly distributed. In 2016 more than half of them were in Sofia (capital), followed by a much smaller share of the districts with the big cities - Varna, Burgas, Plovdiv. Not surprisingly, the districts of Silistra, Montana, Kyustendil, Yambol, Vidin and Vratsa had the smallest shares. If the average salary is accepted as a result of the economic activity, again in a favorable position was Sofia (capital) - 137.6% with an average for the country 100%. Quite further behind Sofia (capital), but still a little off the 100%-mark were average salaries in Stara Zagora, Sofia district, Vratsa, Varna, Plovdiv, etc.

The overall assessment of the state of the healthcare varies from extremely unsatisfactory to destruction. One of the most unfavorable changes relates to the availability of medical staff. The analysis of quantitative indicators shows two main negative trends: (a) the concentration of health workers in a small number of large regional centers and significant shortages in other cities/districts, and especially in some municipalities, and (b) a drastic shortage of certain types of specialists, mainly nurses, but also doctors in certain specialties.

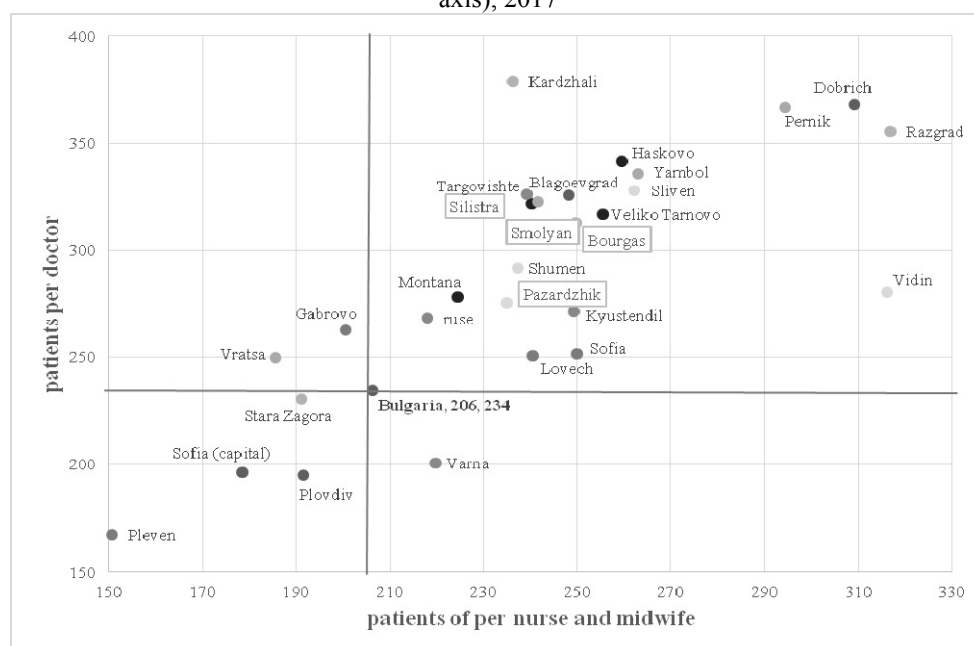
The first problem is related to the concentration of medical personnel and leads to the formation of small number of major medical centers like Sofia (capital), Plovdiv, Varna, Pleven, Stara Zagora and Burgas. In 2017, over a fifth of the physicians and the medical specialists on health care and over a quarter of the dentists worked in Sofia. For this there are objective reasons of different nature – concentration of the population in the mentioned districts, the more developed economy in them, respectively more solvent clients, development of specialized medical activities, which are not justified in the maintenance of small towns, etc.

The shortage of certain types of medical staff is becoming increasingly apparent. The largest decrease in the number of doctors in 2017 compared to 2001 is in the following districts: Pernik – 27.5%, Vidin – 21.5%, Dobrich – 20.7%, Smolyan – 13.3%, Gabrovo – 12.5% and Veliko Tarnovo – 10.5%. The number of nurses in Vidin decreased by 44.7%, Sofia district – 32.7%, Razgrad – 26.3%, Dobrich – 24.4%, Lovech – 22.6% and Veliko Tarnovo – 21.8%. In nine more districts the decrease is between 10% and 20%. The shortage of medics is even more acute in smaller and more remote settlements, which directly limits the access of the population to health services. The problem with declining medical staff is likely to deepen given the high average age and the steady trend of emigration of medical staff in the last few years. According to data from representatives of the Bulgarian Medical Association (BMA) in 2017, 60% of GPs are over 55 years of age and the average age of nurses and midwives is over 53, which means a huge deficit is expected in only a few years. Some 400 to 500 doctors per year leave the country and go to work abroad and these are mostly young specialists.

The concentration of medical staff places the above-mentioned districts in better position in terms of the number of patients per doctor or per nurse and midwife (Figure 2). With highest levels of the indicators is Pleven, where there are 167 patients per physician and 151 patients per one nurse and a midwife. With better levels of the indicators than the country average are only Sofia (capital), Plovdiv and Stara Zagora. As a second group, with relatively good levels, are Varna, Ruse, Gabrovo, Vratsa and Montana. In the third, most numerous group, there are almost all other districts that are relatively close to each other by the availability of medical staff. With the lowest provision of medical staff relative to the

population are the districts of Pernik, Razgrad and Dobrich. For them, the number of patients per one doctor or nurse and midwife is more than twice as high as the best performing Pleven district.

Figure 2
Number of patients per physician (vertical axis) and per nurse and midwife (horizontal axis), 2017



Source: NSI, *Demographic and Social Statistics, Health*.

Over the last two decades, the number of patients per doctor or per nurse and midwife has been almost constantly decreasing, except for Dobrich, Pernik and Sofia (district). However, this cannot be considered as a favorable trend, given that it is caused by population decline and migration to larger cities and not by the steadily rising number of medical staff. The analysis of such data should also consider the rapid aging of the population, which is also associated with an increasing need for medical care. For dental practitioners in all districts of the country, there is a significant decrease in the number of patients per dentist. Unlike other medical staff, the number of dentists is growing steadily across the country.

The comparison of these indicators between Bulgaria and other EU members is very interesting. Concerning the number of patients per doctor, Bulgaria is performing well, ranked seventh (2015). In better position are only Greece, Austria, Portugal, Lithuania, Sweden and Germany. The situation is quite different regarding the nurses and midwives, where only Greece (290 patients per nurse and midwife) has worse level of the indicator than Bulgaria (234). Interesting information also shows the ratio between nurses and

midwives and doctors by country. By this indicator, Bulgaria is in the penultimate position, with 120 nurses and midwives per 100 doctors, i.e. a sharp shortage of nurses. With lower figures, again, only Greece is the one where doctors are twice as many as nurses (50 nurses per 100 doctors). In most EU countries this ratio is 200 or more nurses per 100 doctors.

5. Conclusion

1. The process of decline and aging of the population in Bulgaria continues. The number of live births and the overall birth rate are decreasing, deaths and overall mortality rates are increasing. There are increasing imbalances in territorial distribution of the population. Positive thing is the reduction of child mortality and increasing average life expectancy. These trends are more drastic in villages than in cities. Half of the people in the country live in Southwestern and Southern Central Bulgaria, while the Northwest Region has the smallest share – only 11%. The Northwest is also with the largest negative population growth. Four of the six cities with a population of over 100,000 are in Southern Bulgaria - Sofia, Plovdiv, Stara Zagora and Burgas. The other two are Varna and Rousse. This creates specific conditions for the economic development of the country on a territorial level.

According to NSI forecasts, these processes will continue in the future, with depopulation in some districts even greater, which will lead to further critical depopulation of individual settlements. The issue is to seek urgent policies to reduce this depopulation and these drastic territorial imbalances, because there are critical moments after which the settlements cannot function normally, and any efforts to create economic activity and infrastructure will not make sense.

2. Demographic collapse not only reduces the workforce but also worsens its age and professional structure, which limits its entrepreneurship and flexibility. Such a structure increases the burden on the state budget by spending on pensions and medical care for the elderly. There has been an adverse change in the available workforce as a quantity and quality. Under these demographic conditions, it is difficult to achieve high labor productivity and accelerated catching-up economic development.
3. Now the country is likely to suffer the consequences of the former opinion among experts on the benefits of cheap labor and the modest opportunities of the Bulgarian economy. Emigration of skilled labor disputes the advantage of low labor costs. The question of low pay has long been discussed, and it must find an urgent solution by abruptly changing the artificially depressed wage in many areas over many years. Moreover, in the past thirty years, the link between the change in average wage and labor productivity has not been confirmed. The successful realization in the labor market is becoming more and more dependent not only on the opportunities for professional qualification and working conditions, but also on the complexity of other social prerequisites for living standard and long life in good health.

A logical and most often proposed means of reducing regional disparities is the proposal to reallocate resources to the less developed territorial units. The income gap between less

developed regions and Sofia can be reduced by greater efforts to attract local and foreign investment, quality and continuing education and training, infrastructure development, and a better business environment to promote entrepreneurship. To this end, an adequate and purposeful strategy is needed to indicate how to achieve these goals. Such a strategy must be based on the regional (specific) economic potential of the districts and must seek to maximize the combination of regional policy and economic efficiency.

4. The worrying in the case of Bulgaria is that the territorial imbalance problems have not found at least a partial solution during the period under review, during which the country received considerable European funds financing over the two programming periods: 2007-2013 and 2014-2020. The EU places emphasis on Cohesion Policy (Convergence) in the economic, social and environmental spheres between less developed and more developed European regions and cities. The European Commission evaluation report on cohesion policy programs 2007-2013, focused on the European Regional Development Fund and the Cohesion Fund, notes that the gap remains relatively unchanged. In another report, the EC acknowledges that regional disparities in Bulgaria remain high, especially between the South-West region of Sofia and the rest of the country (European Commission, 2018).

In 2014-2020, Bulgaria will receive around EUR 7.6 billion (current prices) of the total amount of Cohesion Policy funding. Of these, funds from the European Regional Development Fund (ERDF) - € 5.09 billion and € 2.28 billion from the Cohesion Fund, the European Territorial Cooperation - € 165.7 million, the Youth Employment Initiative - € 55.2 million.

5. Regional development would be sustainable if it is based on well-integrated economic, social, environmental and institutional development in regional context. It is associated with working institutions, involved in solving the problems of creating and reviving economic activity, reducing income inequality, activating the labor market and reducing unemployment. We are all aware that a lot of hard and lengthy work and radical changes are necessary to move on such a trajectory.
6. The territorial redistribution of the population in the country proves to be one of the reasons for deepening the differences in living conditions between towns and villages. The spatial dimension of poverty (cities vs. small settlements) is exacerbated by poor infrastructure. The change in the scope and the territory of the six statistical regions in the country, which has been contemplated and discussed in recent months, can narrow somewhat drastic territorial differences (and why not improve), but the districts and municipalities cannot rely on territorial redeployment.

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