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ИНСТИТУТ ЗА ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ НА БЪЛГАРСКАТА АКАДЕМИЯ НА НАУКИТЕ

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## CONTENTS

*Vassil Tsanov, Georgi Shopov* – Material Standard of Living and Energy Poverty in Bulgaria: State and Development 3
*Margarita Atanassova* – Employment in Bulgaria as Part of European Labor Market – Trends and Institutional Challenges 21
*Iskra Beleva* – The Labor Market – National and Regional Problems 29
*Pobeda Loukanova* – The Implementation of European Youth Guarantee in Bulgaria – Results and Perspectives 45
*Miroslava Peycheva* – Analysis of the Trends in Human Resources Activities and the Necessity of Redesign of the Education 56
*Maria Kotseva-Tikova* – Inclusive Development and Regional Policy 65
*Mariya Aleksandrova Ivanova* – The Social Reality of the Roma in Bulgaria (from the Value of Differences to Empowered Relationships) 75
*Iskra Bogdanova Christova-Balkanska* – Changes in International Trade and Investments after the Global Financial Crisis 85
*Stoyan Totev* – Structural Changes by Main Sectors in EU Countries 95
*Pavlinka Petkova Naydenova* – Motivation of Human Capital in the Business Organization 103
*Adelina Milanova* – The Relation Rationality – Irrationality in Business as a Determinant for Deviation 115
*Spartak Keremidchiev, Yana Kirilova, Dochka Velkova* – Financial Aspects of NPP Construction: Implications for NPP Belene 121
*Valeria Dineva* – The Modern Internal Audit in The Modern Company 130
*Tsanko Stefanov* – Management Policy of Company Key Customers 136
*Rossitsa Rangelova, Valentin Bilyanski* – Demographic Development of Bulgaria in a Regional Plan as a Basis for Economic Development 141
*Milkana Mochurova, Galia Bardarska, Tjaša Griessler Bulc* – Sustainable Water Resources Management (The Case of Natural Systems for Wastewater Treatment) 155
*Virginia Zhelyazkova* – The Road to Circular Economy: What Can Europe Learn from the Experionce of Germany and Japan? 167
*Aleksandr Trifonov, Zhechko Yordanov* – Integrated Decentralized Practices for Introducing Regional "Circular Economies" 178
*Mincho Hristov, Balin Balinov* – Economic and Environmental Challenges to Bulgarian Forests 187
Summaries 195

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# MATERIAL STANDARD OF LIVING AND ENERGY POVERTY IN BULGARIA: STATE AND DEVELOPMENT

*The report examines the territorial disparities in the standard of living at the level of European Union, regions and districts in Bulgaria. The standard of living is defined and assessed from the point of view of material living conditions, which include a number of indicators grouped in three thematic areas: economic development, income and consumption, inequality and poverty. Appropriate statistical indicators are used to assess disparities, and a specific methodology is applied for the assessment of the standard of living, that allows territorial units to be ranked according to the distance from the best value. The results of the empirical study for 2010-2017 show: (a) a low level of the standard of living in Bulgaria compared to the EU countries (28); (b) the disparities between the regions in the country are slightly diminishing and between the districts are preserved; (c) there are significant changes in the ranking of the regions and the districts. Energy poverty is studied and assessed on the basis of indicators identified by the "expenditure method" and the so-called "consensual method". The results for 2014-2016 show: (a) a growing range of energy poverty across all indicators; (b) Bulgaria is lagging behind the other EU member states in limiting energy poverty.*
*JEL: C43; I31; I32; I38; H41; H55; R11; R13*

## Introduction

The assessment of the standard of living of the population has been a subject of many studies over the last few decades. There is no single opinion in the literature on the conceptual nature of the definition "standard of living" and the methodological toolbox for its measuring. The common between the different definitions is that they define the standard of living as a multi-dimensional category that characterizes the degree of satisfaction with the daily needs of the population (material, financial and social). Differences relate to the scope of the aspects involved and the assessment methodology. In most studies, the living standard is considered in the light of material and financial aspects (income levels and income distribution, consumption and poverty levels (Corlett, Clarke, 2017; Atkinson, Marlier, 2010; Marinov, 2017, etc.). In other studies, the scope of the

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definition and measurement of the standard of living is expanded by including social and political aspects (access to education and health, social security, political freedom, etc.). The latter ensures a more complete presentation and assessment of the living standard.

With regard to assessment and/or measurement of the standard of living, there are also methodological differences that can generally be grouped into two groups. The first group is based on the identification of a set of indicators that are considered to reflect the standard of living to some extent. This group comprises almost all studies of the standard of living in national and international aspects. The second group of studies is based on the calculation of a composite index of the standard of living (welfare), which is determined on the basis of the indices of the statistical indicators included in the respective study. For this purpose, specific methodologies are developed which aim at classifying the individual indicators according to their weight in determining the standard of living (Sharpe, Arsenault, 2009; Osberg, Sharpe, 2009; Shopov, Tzanov, 2015).

This report studies the standard of living and the energy poverty of the population in Bulgaria. The standard of living is considered and assessed from the point of view of material welfare and its distribution. For this purpose, a number of indicators were selected, grouped into three thematic areas. The assessments of material standard of living are reviewed in national and territorial aspects. At a national level, the standard of living is studied in the context of the disparities across the countries in the European Union (EU), and at territorial level, disparities are assessed by regions (NUTS 2) and by districts (NUTS 3). The assessments are based on available and regular statistical data from the National Statistical Institute (NSI) and Eurostat.

The energy poverty of households is examined through four indicators defined by the "expenditure method" and one indicator calculated on the basis of the subjective/consensual method. Expenditure indicators reflect the *affordability* of energy prices for households depending on their income; they measure the *vulnerability* of energy consumers to the level of prices and price fluctuations in the context of households' disposable incomes and incurred costs. The indicators below are interpreted as measures of energy poverty precisely in this aspect. The subjective indicator takes into account also other aspects of this poverty related to housing conditions.

## 1. Assessment of the material standard of living (2010-2017)

### *1.1. Indicators and assessment methodology*

The selection of the indicators that describe the standard of living of the population has been made in order to reflect the material living conditions and the distribution relationships. National statistics generate a large number of such indicators, among which those of a general nature are selected. The selected indicators are grouped into three thematic areas as follows:

*Thematic area 1 "Economic development":*

- Gross domestic product (GDP) per capita – BGN (euro).

The economic development, measured by GDP per capita, gives an idea of the newly created value of goods and services distributed equally among the members of the respective territorial unit. This indicator relates directly to the standard of living in its material dimension. GDP growth means first, offering more goods and services to the population, and second, creating greater opportunities for their consumption.

*Thematic area 2 „Incomes and consumption“:*

- Total income per household member – BGN (euro).
- Total costs per household member – BGN (euro).
- Average wage – BGN.

The indicators of income and costs per household member are key indicators for assessing the standard of living. Total incomes form the purchasing power of household members in the individual territorial units. The level of consumption is measured by the indicator "Total cost per household member". It includes all costs for purchasing goods and services, incl. domestic consumption within the household. Since both indicators include all types of income and consumer cost, it may be considered that they describe adequately the overall purchasing power and consumption level. The average wage reflects, on the one hand, the cost of hired labour and, on the other, determines the quantitative and structural characteristics of household incomes.

*Thematic area 3 „Inequality and poverty“:*

- Relative share of the population at risk of poverty – %.
- Population at risk of poverty or social exclusion – %.
- Inequality in incomes distribution – Gini coefficient.
- The indicators of inequality and poverty give an idea of the social divide in society.

They have an important role in assessing the standard of living because they describe distributive and redistributive relationships in society. The indicators selected reflect different aspects of income inequality, poverty and social inclusion. The "Relative share of the population at risk of poverty" indicates how much of the population lives below the poverty line.[3] Estimates are derived on the basis of the respective poverty line by territorial units. On the other hand, the indicator "Population at risk of poverty or social exclusion" is a summary measure of the share of the population at risk of social exclusion. It is characterized as a multi-dimensional indicator that combines three basic factors: poverty level, material deprivation and low labour intensity of the working-age population. The Gini coefficient measures the degree of inequality in the distribution of household incomes.

The quantitative measures of the standard of living are derived on the basis of a procedure for scaling (standardization, harmonization) all indicators that form the standard of living. This way, all indicators are matched to the same scale. The standardization of the indicators is performed as the value of an indicator in one territorial unit is referred to the maximum

[3] Poverty line is determined at 60% of the median net equivalised income.

value of the same indicator in the total set of territorial units. For this purpose, the following formula is used:

$$H_{ij} = \frac{I_{ij}}{\max(I_{ij})} * 100 , \qquad (1)$$

where $H_{ij}$ is the standardized measure of the i indicator in j territorial unit, $I_{ij}$ – the value of the i-th indicator in j territorial unit, max ($I_{ij}$) – maximum value of the indicator in the respective group of territorial units, i – number of indicators, j – number of territorial units[4].

When the increase in an indicator leads to a decrease in the standard of living (as is the case for the indicators in thematic area 3 "*Inequality and Poverty*"), formula (1) should be adjusted to obtain comparable (harmonized) results. In this case the following formula is used:

$$H_{ij} = \frac{\max(I_{ij}) - I_{ij}}{\max(I_{ij})} * 100 , \qquad (2)$$

The calculation procedure consists in the following: first, the maximum value of the indicator $(\max(I_{ij}))$ is selected among all monitored territorial units; second, the difference between the maximum and the current value of the indicator is calculated; and third, the obtained difference is divided by the maximum value.

The two formulas for standardizing the indicators are fully equivalent, but are used in two different situations. Formula (1) applies when the changes of the indicator and the standard of living are unilateral, whereas formula (2) is used when the direction of change is different. Thus, the levels of each indicator are expressed as a percentage, with the top-level unit receiving 100%, and the rest – a percentage equal to the ratio of their value to the highest value.

On the basis of the standardized indicators, two types of aggregate measures of the standard of living may be assessed. The first measure evaluates the living standard in each thematic area[5], and the second provides an aggregate assessment of the standard of living for each territorial unit, comprising all indicators. Both types of aggregate measures are calculated as average unweights magnitude of the individual assessments Hij, multiplied by n number of individual indicators[6]. These measures are average arithmetic values of the constituent standardized indicators, expressed in percentage. The assessments show the remoteness of a territorial unit from the benchmark, represented by the best scores of the individual indicators. The territorial units are ranked in descending order.

The ranking of the territorial units allows three groups to be distinguished. The first covers those territorial units whose aggregate assessments are above the average level. The second group covers those whose aggregate scores are between the average and the so-called "critical threshold," defined as the difference between the average score and half the difference between the worst and the average score. The third group includes the territorial units whose scores are below the critical threshold.

[4] The average level of the total set of units is added to the territorial units with the purpose of comparability between territorial indicators and average level.
[5] Calculated on the basis of the indicators included in the thematic area.
[6] Known as the method of Bennett.

*1.2. Aggregate assessments of the material standard of living*

1.2.1. Standard of living in Bulgaria and in the EC member states

The available information from Eurostat has been used to assess the standard of living of the EU countries. The assessments are based on six indicators, as the data for the indicator "Average wage" does not cover the entire studied period.[7] Therefore, this indicator was not included in the assessment.

The ranking of the EU countries according to the magnitude of the aggregated assessments of the material standard of living for 2010, 2013 and 2017 is shown in Table 1. The ranking and the changes in the development of living standard over the period under consideration have several features.

Table 1

Aggregate assessment of the material standard of living of EC member states (%)

| 2010 | | 2013 | | 2017 | |
|---|---|---|---|---|---|
| Luxembourg | 90.8 | Luxembourg | 86.8 | Luxembourg | 81.8 |
| Denmark | 70.2 | Denmark | 71.8 | Denmark | 69.5 |
| Netherlands | 68.9 | Finland | 67.7 | Finland | 65.5 |
| Finland | 65.1 | Sweden | 67.4 | Sweden | 62.2 |
| Sweden | 63.6 | Netherlands | 67.4 | Netherlands | 62.0 |
| Austria | 61.2 | Austria | 62.9 | Austria | 61.5 |
| Belgium | 59.5 | Belgium | 60.0 | Ireland | 61.3 |
| France | 57.8 | France | 56.6 | Belgium | 57.2 |
| Germany | 56.5 | Germany | 55.8 | Germany | 56.6 |
| Ireland | 56.1 | United Kingdom | 53.5 | France | 56.4 |
| United Kingdom | 50.0 | Ireland | 52.8 | United Kingdom | 53.6 |
| Slovenia | 48.8 | Czechia | 47.3 | Czechia | 47.4 |
| Cyprus | 47.6 | Slovenia | 45.3 | Slovenia | 46.5 |
| Czechia | 47.2 | **EU (28)** | **45.3** | **EU (28)** | **45.6** |
| **EU (28)** | **46.6** | Slovakia | 41.8 | Slovakia | 42.3 |
| Italy | 45.4 | Cyprus | 41.3 | Malta | 42.0 |
| Slovakia | 40.1 | Italy | 40.4 | Cyprus | 41.4 |
| Malta | 39.6 | Malta | 40.1 | Italy | 38.8 |
| Spain | 37.6 | Spain | 34.2 | Spain | 34.0 |
| Greece | 35.9 | Portugal | 28.7 | Poland | 32.8 |
| Hungary | 34.9 | Estonia | 27.7 | Portugal | 32.6 |
| Portugal | 33.1 | Hungary | 27.2 | Hungary | 31.4 |
| Estonia | 30.3 | Poland | 27.1 | Estonia | 29.6 |
| Poland | 25.5 | Croatia | 23.7 | Croatia | 25.3 |
| Croatia | 22.8 | Greece | 22.8 | Greece | 24.3 |
| Lithuania | 15.9 | Lithuania | 20.3 | Latvia | 22.0 |
| Latvia | 14.8 | Latvia | 18.7 | Lithuania | 19.7 |
| Romania | 11.8 | Romania | 9.6 | Romania | 13.9 |
| Bulgaria | 9.9 | Bulgaria | 7.7 | Bulgaria | 7.0 |
| **Coefficient of variation** | **44.7** | **Coefficient of variation** | **47.0** | **Coefficient of variation** | **42.5** |

*Source: own calculations based on Eurostat data.*

[7] Available data cover the period 2010-2015.

The first feature is the stability of the positions of the individual countries over the overall analysed period. Differences exist within one or two positions. Also, the scope of the groups with a high, medium and low standard of living remains relatively constant. The group of the leaders includes mainly highly developed countries. Good positions are a result of high GDP per capita and high income and household consumption. It is worth mentioning that this group includes also countries with relatively lower indicators of economic development, income and consumption (the Czech Republic and Slovenia). In this case the good ranking of their standard of living is due to the leading positions in the area of inequality and poverty.[8] The group with medium scores of the standard of living comprises countries in Southern and Eastern Europe. For most of them, the medium scores are due to the average level of economic development and income (Italy, Spain, Portugal, Malta), while others are due to the relatively low level of inequality and poverty (Estonia, Slovakia, Hungary). The group of countries with the lowest scores of material standard of living consists of six countries throughout the overall period. The composition of the group remained virtually unchanged over the period, with the exception of Greece, which fell into this group in 2013, replacing Poland. Bulgaria ranks last over the whole analysed period. Its scores are two-three times lower than those of the other countries in the group.

The second feature consists in a reduction of the disparities in the living standards of the countries. This process does not flow evenly. The differentiation measured by the coefficient of variation slightly increased (by 2.3 percentage points) over the period 2010-2013, and declined (by 4.5 percentage points) in the period 2013-2017. Over the whole period 2010-2017 the disparities decreased by 2.2 percentage points. A similar situation is observed in the different groups. In the group of countries with a high standard of living the disparities are relatively low and decrease by 3.8 pp. They are the lowest in the group of countries with medium living standard, but the decline was the most pronounced in the period 2013-2017 (of 5.5 pp). The differentiation in the group of countries with a low living standard is relatively high and the decrease in the period 2013-2017 was low (2.4 percentage points).

Concerning the difference between the standard of living in Bulgaria and the other EU countries, different directions of development are observed. Compared to the leading country (Luxembourg), the difference, albeit extremely high, is decreasing. This is due to the quicker diminishing of Luxembourg's assessment rather than to improvement of the standard of living in Bulgaria. The situation is different when comparing to EU average. Differences are increasing, albeit poorly. In 2010, the difference in scores was of 37 p.p. in favour of the EU (28), in 2013 this difference increased to 38 p.p. and reached 39 p.p. in 2017.

The third feature refers to the changes in the countries' standard of living. For most of the countries, the aggregated assessments of the living standard show a decrease. For example, for the period 2010-2013, the scores of more than half of the countries (15 countries) decreased leading to a decrease in the EU (28) average score. In the period 2013-2017, the situation changed as the number of countries with lower scores decreased to 11. For the

[8] In the area "Inequality and poverty" Czechia occupies a leading position, while Slovenia ranks third after Finland.

overall period 2010-2017, the number of countries with reduced assessment was 15. Bulgaria ranks among the countries with a permanent decrease of the aggregate assessment. Over the same period, its assessment declined by 2.2 percentage points and in the period 2013-2017 the decrease was of 0.7 p.p. Among the countries with a positive growth in the standard of living, UK, the Czech Republic, Ireland, Lithuania, Latvia, Poland, Slovakia, Malta and Croatia stand out.

The described features in the ranking of the countries and the changes in the standard of living give grounds to make several conclusions. First, there are no significant changes in the ranking of the EC countries. The scope and the composition of the groups with high, medium and low standard of living remain almost unchanged. Second, the disparities between the countries, although slightly decreasing, are still significant. Particularly large is the disparity between the group of the leaders and the group of the countries that are lagging behind. Third, compared to the EU countries, Bulgaria is characterized by an extremely low assessment of the standard of living. Moreover, this assessment marks a steady downward trend.

### 1.2.2. Territorial disparities in the standard of living in Bulgaria

The territorial disparities in the country have been studied at region and district levels. In accordance with the applied methodology, the material standard of living of the territorial units has been assessed on the basis of an aggregate measure which includes the three thematic areas. The aggregate measure is calculated as average arithmetic (unweight) of the summarized assessments of the three thematic areas. Thus, all changes in the indicators that assess the standard of living are reflected in the aggregate assessment.

The ranking of the regions according to the aggregate assessment of the standard of living is shown in Table 2. South-West region had the highest standard of living in the three years. However, compared with 2010, in the next years it lost from its maximum score (100%) due to the deterioration of the situation in the area of poverty and inequality. Since 2013, North Central region has joint the group of leaders, jumping from fourth place in 2010 to second place in 2013 and 2017. The improvement of the standard of living is due to the high scores in thematic areas “Income and consumption” and “Inequality and poverty”. Certain improvement of the standard of living is observed in North-West region as well, but it is due only to the better characteristics of the indicators on poverty and inequality.

The highest decline in the standard of living was registered in South Central region in 2013. Compared to 2010, its aggregate assessment decreased of almost 18 percentage points, placing the region at the bottom of the ranking. The reasons behind this consist in aggravation of the situation in all the three thematic areas. Particularly serious is the situation in the areas of income, consumption, poverty and inequality. In the years of more stable economic development the situation has improved in all areas of the material standard of living and the region reached a position close to the average for the country, but definitely remained below it.

Table 2

Aggregate assessment of the material standard of living by regions (%)

| 2010 | | 2013 | | 2017 | |
|---|---|---|---|---|---|
| South-West | 100.0 | South-West | 83.5 | South-West | 88.9 |
| **BULGARIA** | **61.5** | North Central | 64.6 | North Central | 65.7 |
| South Central | 59.0 | **BULGARIA** | **55.2** | **BULGARIA** | **60.8** |
| North-East | 54.9 | North-East | 46.7 | North-West | 56.0 |
| North Central | 48.4 | North-West | 46.3 | South Central | 51.8 |
| South-East | 47.7 | South-East | 45.5 | North-East | 48.8 |
| North-West | 44.6 | South Central | 41.2 | South-East | 48.8 |
| **Coefficient of variation** | **35.1** | **Coefficient of variation** | **29.8** | **Coefficient of variation** | **25.8** |

*Source: own calculations.*

Disparities in the standard of living of the regions can be considered as moderate with a tendency towards convergence. For the overall period, the coefficient of variation decreased by more than 9 percentage points, most pronounced in the years of economic stagnation (2010-2013). Disparities are seen also within the groups above and below the average. The difference between the aggregate assessments of the two regions above the average was slightly increasing, while the differentiation of those below the average was decreasing. The gap between the aggregate assessment of Bulgaria and the region at the bottom decreased from 17 percentage points in 2010 to 13.9 percentage points in 2013 and 12 p.p. in 2017. Apparently, the convergence was taking place across the regions with relatively low standard of living.

The ranking of the districts by aggregate assessment of their standard of living (Table 3) marks some changes that can be characterized with the following features. First of all, there is a significant change in the number of districts in the individual groups. In the first group, the number of districts decreased from eight in 2010 to five in 2013 and increased to 14 in 2017. Only districts Sofia-city, Blagoevgrad and Rousse retained their positions in the top group over the three monitored years. The rest of the districts moved into lower groups. Two new districts (Gabrovo and Pleven) appeared in the top group in 2013 and remained in the group in 2017. Significant expansion of the group of the leaders was observed in 2017, including districts that regained their initial position (Plovdiv, Pernik, Sofia-region) and new districts from the group at the bottom (Targovishte, Silistra, Yambol and Razgrad).

The group of districts with a critically low standard of living has a steady downward trend. This tendency is most pronounced during the stagnation period (2010-2013), when its number decreased by more than half. In the period of more tangible economic growth (2013-2017), the group shrunk to four districts. Throughout the period under review, districts Lovech, Pazardjik and Sliven remain invariably at the bottom of the ranking.

Table 3

Aggregate assessment of the material standard of living by districts (%)

| 2010 | | 2013 | | 2017 | |
|---|---|---|---|---|---|
| District Sofia (city) | 90.2 | District Sofia (city) | 86.3 | District Sofia (city) | 83.0 |
| District Blagoevgrad | 62.1 | District Gabrovo | 62.8 | District Gabrovo | 62.4 |
| District Smolyan | 57.0 | District Rousse | 60.0 | District Pernik | 60.3 |
| District Rousse | 56.6 | District Blagoevgrad | 59.4 | District Stara Zagora | 59.0 |
| District Pernik | 56.0 | District Pleven | 56.7 | District Blagoevgrad | 58.9 |
| District Sofia | 55.6 | **BULGARIA** | **55.2** | District Sofia | 56.1 |
| District Varna | 54.9 | District Yabmol | 54.9 | District Pleven | 55.7 |
| District Plovdiv | 54.5 | District Kustendil | 54.8 | District Kustendil | 54.2 |
| **BULGARIA** | **53.9** | District Sofia | 54.7 | District Razgrad | 53.5 |
| District Gabrovo | 52.5 | District Dobrich | 53.9 | District Plovdiv | 52.6 |
| District Vratsa | 52.5 | District Plovdiv | 53.8 | District Targovishte | 52.5 |
| District Bourgas | 52.2 | District Varna | 52.9 | District Yabmol | 52.5 |
| District Stara Zagora | 51.6 | District Bourgas | 52.6 | District Silistra | 52.3 |
| District Kustendil | 50.9 | District V.Turnovo | 51.8 | District Rousse | 52.1 |
| District Dobrich | 48.0 | District Smolyan | 51.5 | **BULGARIA** | **52.0** |
| District Pleven | 47.2 | District Stara Zagora | 50.5 | District Dobrich | 50.0 |
| District Haskovo | 46.3 | District Montana | 49.6 | District Haskovo | 46.8 |
| District Kardjali | 46.0 | District Razgrad | 47.7 | District Varna | 46.5 |
| District Pazardjik | 43.3 | District Pernik | 47.5 | District Smolyan | 45.4 |
| District Montana | 41.6 | District Haskovo | 46.9 | District Bourgas | 44.7 |
| District Sliven | 41.4 | District Silistra | 46.6 | District Vratsa | 44.5 |
| District Vidin | 40.5 | District Targovishte | 45.1 | District V.Turnovo | 44.5 |
| District V.Turnovo | 40.3 | District Vratsa | 45.1 | District Montana | 44.0 |
| District Yabmol | 38.8 | District Shumen | 44.2 | District Shumen | 41.6 |
| District Razgrad | 38.6 | District Kardjali | 39.2 | District Vidin | 39.5 |
| District Shumen | 37.7 | District Lovech | 38.1 | District Pazardjik | 37.3 |
| District Targovishte | 37.0 | District Vidin | 33.7 | District Lovech | 35.9 |
| District Silistra | 36.3 | District Sliven | 33.6 | District Kardjali | 34.3 |
| District Lovech | 35.1 | District Pazardjik | 30.1 | District Sliven | 25.0 |
| **Coefficient of variation** | **22.8** | **Coefficient of variation** | **21.6** | **Coefficient of variation** | **22.0** |

*Source: own calculations.*

Serious shifts are also observed in the group of districts with medium standard of living. Its scope doubled in 2013 and decreased again to ten districts in 2017.

The second feature is the preservation at a relatively low level of the inter-district disparities in the standard of living. The coefficient of variation slightly changes. More significant disparities between districts are observed in the individual groups. There is a tendency for convergence in the top group. Confirmation of this is the following. First, the difference between the aggregate assessments of the leading district (Sofia-city) and the second district (Gabrovo) decreased. This is mainly due to the poorer assessment of Sofia-city. Secondly, the gap between the scores of the top district and the bottom district in the group also declined (from 35.7% in 2010 to 30.9% in 2017). Third, the variations of the

districts around the group's average position decreased (from 18.6% in 2010 to 13.5% in 2017).

In the group of districts with a medium level of standard of living, differences are increasing. The gap increased between the first and the last in the group from 6.5 percentage points in 2010 to 10.5 percentage points in 2017. Although this gap almost doubled, the coefficient of variation slightly increased (from 5.2% in 2010 to 7.2% in 2013 and to 6% in 2017).

In the group of districts with the lowest standard of living, the trend of divergence is clearly pronounced over the analysed period. The gap between the highest and lowest assessment in the group increased from 8.2 p.p. at the beginning of the period (2010) to 12.3 percentage points at the end of the period (2017). The variation between the aggregate assessments of the districts in the group increased more than twice (from 6.1% in 2010 to 14.5% in 2017). Obviously, shrinking the scope of this group is accompanied by an increase in the disparities in the standard of living.

The third feature consists in an improvement of the standard of living in some districts. More significant improvement is observed in the following districts:

- district Gabrovo – it passes from second into the first group, occupying second position after district Sofia-city. This is mainly due to improvements in the areas of income and consumption and inequality and poverty.
- district Pleven – the better position of the district is mainly a result of high scores in the field of inequality and income.
- district Silistra – it demonstrates a smooth and ascending transition from the penultimate position in 2010 through the second group in 2013 to the first group in 2017. The aggregate assessment of the standard of living in the district increased by 16 percentage points throughout the monitored period.
- district Razgrad – it demonstrates a smooth transition from the group of the lagging ones through the group in the middle to the group of the leading districts. The higher aggregated assessment is a consequence of reduced poverty and inequality in the district.

The conclusions to be drawn regarding the driving factors for these significant improvements in some districts are that they are mainly due to improvements of the area "Inequality and poverty" and, to a lesser extent, in "Income and consumption".

The fourth feature concerns the districts with a significant decrease in the aggregate assessment of the standard of living. Compared to 2010, the assessments of nearly half of the districts decreased. Among them, Sliven (16.4 p.p.), Kardzhali (11.6 p.p.), Smolian (11.6 p.p.) and Varna (8.4 p.p.) are among the most depressed districts. Sliven district, although standing at the bottom of the ranking in the overall period, has lost positions due to the strong decline in the areas of income and poverty. The aggregate assessment in the area of income and consumption declined from 76.8% in 2010 to 50.1% in 2017, and

inequality and poverty respectively from 26.1% to 2.1%. Kardzhali dropped down in the ranking mainly as a result of the lower assessment in the area of inequality and poverty[9]. The same reasons are valid for districts Smolyan and Varna. The assessment of inequality and poverty in district Smolyan dropped down by 32 percentage points and that of income and consumption – by 4.3 percentage points. In district Varna the decrease was less pronounced.

The changes in the aggregate assessments of the standard of living can be summarized as follows:

- A decrease of the aggregate assessments is observed in a significant part of the territorial units in the period 2010-2017. In half of the regions (South-West, South Central and North-East) the assessments decreased, the decline being most pronounced in South-West region (11.1 p.p.). The situation is similar at the district level.
- There are significant shifts in the ranking of territorial units at both region and district level – some units demonstrate improvement, while others – worsening.
- Changes in the standard of living of territorial units are mainly due to changes in inequality and poverty and, to a lesser extent, incomes and consumption. Economic development does not have a significant impact on this process, as the assessments in this area are quite constant.
- The disparities in the standard of living by regions and by districts are different. At regional level, they decrease strongly, whereas in the districts they remain almost constant.
- A progress in the positioning of territorial units is mainly observed in those with relatively low economic development but significant improvement of income levels, consumption, poverty and income inequality. Typical examples at the level of the regions are North Central and North-West, and at the level of the districts – Gabrovo, Kardzhali, Silistra and Pernik.

## 2. Energy poverty in Bulgaria (2014-2016)

*Methodology*

There is still no official definition of "energy poverty" in Bulgaria, as suggested in Art. 3, item 7 and 8 of the "electricity" Directive 2009/72/EC. The adoption of a definition depends on "who and what" the responsible institutions want it to be focused on, which requires a political decision. In turn, in order to be "informed", the decision should a priori be aware of the likely dimensions of the phenomenon, as well as to take into account the socio-economic characteristics of the country and its experience in the social protection of the poor. Therefore, it would be better to define the concepts related to energy poverty *after*

[9] The aggregate assessment in thematic area "Inequality and poverty" decreased by 28.5 p.p., and in thematic area "Income and consumption" – by 7.7 p.p.

defining its main dimensions in Bulgaria and summarizing the national experience in providing targeted social allowances for heating. **This approach is applied in this report**.

Several main indicators are used to measure energy poverty[10], based on different methods which may form two groups. The indicators from the first group are determined by the so-called "expenditure method" and **basically reflect the affordability of energy prices for households**, depending on household income. In other words, **they measure the vulnerability of energy customers to the level of prices and their fluctuations in the context of disposable income** and the costs they incur. Some European countries (England) include an indicator of this group in their national definitions of energy poverty. This clarification made, for the purposes of this report th**e indicators under consideration are interpreted as indicators/measures of energy poverty strictly in this aspect**. The indicators from the second group, which uses the so-called "consensual method", take into account other aspects of this poverty.

*Results*

A. Indicators determined through the "expenditure method"

**"Ten Percent Rule" (TPR)** – it identifies as energy poor those households whose energy costs are above 10% of their disposable income. This method only applies to the lowest three decile groups of households to avoid distortion in relation to high-income groups which do not self-impose restrictions on energy consumption at home and therefore the share of their costs may exceed the adopted threshold. This is one of the most widely used indicators in a number of studies, including in a World Bank report on the dimensions of energy poverty in Bulgaria (World Bank, 2017).

**"Relative Poverty Line" (RPL)** measures the energy poverty (respectively the affordability of energy prices for the population) based on disposable income after deduction of energy costs, compared to the relative poverty line: a household is considered as energy poor when its disposable income after deduction of energy costs is below the relative poverty line. According to the methodology of Eurostat, in the researches related to statistics on income and living conditions (SILC) the relative poverty line equals 60% of the median equivalised disposable income after social transfers.

The indicator **"Low-Income, High-Cost" (LIHC)** determines a household as energy poor if it meets the following two criteria:

- The household's energy costs are above the median costs.
- The disposable income after deduction of energy costs is below the relative poverty line (as per RPL).

[10] This section has been developed based on mainly the following publications: Thomson, H., C. Snell (2016), p.101-114; Flues, F. and K. van Dender (2017), p. 10-13. The publications of Buzarovski St. (2011), Pye, St., A. Dobbins (2015) have been considered as well.

This indicator for energy poverty was officially adopted by England in 2013, replacing the TPR.

The indicator **"Low-Income, High-Cost-Share" (LIHCS)** determines a household as energy poor if the household meets two criteria as well, but they are the following:

- The share of energy costs is above 10% of the household's disposable income (as per TPR).
- The disposable income after deduction of energy costs is below the relative poverty line (as per RPL).

This indicator combines the requirements of two others and (as well as the previous one) can be considered as particularly selective, because in order to be classified as energy poor, households need not only to spend a significant portion of their income on energy costs at home, but also to receive low income, so that they fall below the relative poverty line. Its **weakness**, which is common to all analysed indicators which are based on the expenditure method, is that it does not take into account the fact that low-income households restrict themselves to spend money and consume significantly less energy (of about 1/3 according to some estimates) than needed for normal heating and other housing uses. In Bulgaria, for example, in 2015 the weighted energy costs per capita from the first decile were 3.6 times lower than the same costs in the richest decile. In other words, the elasticity of their energy costs is (under pressure) relatively higher in order to meet their other acute basic needs (e.g. food, medicines).

The values of the indicators for Bulgaria in 2014-2016 are shown in Table 4 and illustrated in Figure 1 and Figure 2.

Table 4

Scope of energy poverty in Bulgaria based on expenditure indicators (2014-2016; % of total household number)

2014

| | TPR | RPL | LIHCS | LIHC |
|---|---|---|---|---|
| Decile 1 | 4.2% | 5.0% | 4.2% | 0.7% |
| Decile 2 | 4.9% | 6.1% | 4.9% | 1.7% |
| Decile 3 | 5.4% | 7.4% | 5.4% | 2.4% |
| Decile 4 | 5.7% | 7.6% | 5.3% | 2.7% |
| Decile 5 | 5.9% | 5.8% | 4.4% | 2.3% |
| Decile 6 | 6.9% | 4.2% | 3.6% | 1.7% |
| Decile 7 | 6.1% | 2.2% | 2.0% | 0.7% |
| Decile 8 | 6.0% | *0.9%* | *0.9%* | *0.6%* |
| Decile 9 | 6.3% | *0.2%* | *0.2%* | *0.1%* |
| Decile 10 | 5.3% | *0.0%* | *0.0%* | *0.0%* |
| All households | 56.6% | 39.4% | 30.9% | 12.9% |
| Decile 1-3 | 14.5% | | | |

2015

| | TPR | RPL | LIHCS | LIHC |
|---|---|---|---|---|
| Decile 1 | 4.7% | 6.1% | 4.7% | 1.4% |
| Decile 2 | 6.4% | 7.1% | 5.9% | 2.4% |
| Decile 3 | 6.7% | 6.4% | 5.3% | 2.2% |
| Decile 4 | 7.0% | 4.8% | 4.3% | 1.7% |
| Decile 5 | 6.8% | 3.9% | 3.4% | 1.1% |
| Decile 6 | 6.5% | 3.6% | 3.2% | 1.0% |
| Decile 7 | 6.3% | 1.8% | 1.7% | 0.8% |
| Decile 8 | 5.7% | *0.6%* | *0.5%* | *0.4%* |
| Decile 9 | 5.1% | *0.2%* | *0.2%* | *0.2%* |
| Decile 10 | 4.0% | *0.0%* | *0.0%* | *0.0%* |
| All households | 59.1% | 34.5% | 29.3% | 11.2% |
| Decile 1-3 | 17.8% | | | |

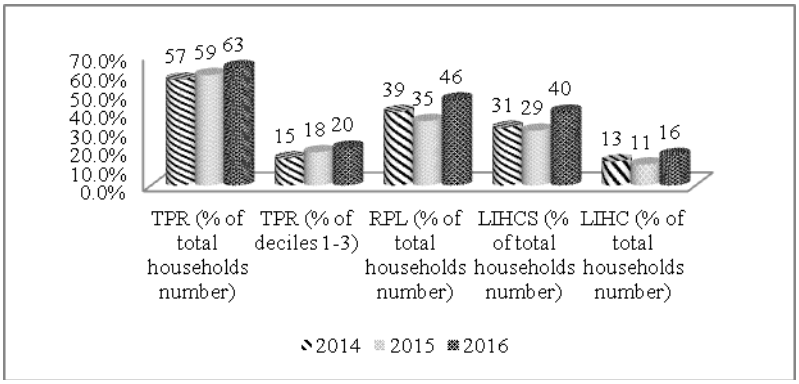
2016

| | TPR | RPL | LIHCS | LIHC |
|---|---|---|---|---|
| Decile 1 | 5.7% | 6.9% | 5.6% | 1.0% |
| Decile 2 | 7.2% | 7.9% | 6.7% | 2.4% |
| Decile 3 | 7.4% | 7.7% | 6.3% | 2.8% |
| Decile 4 | 6.1% | 5.8% | 4.8% | 2.1% |
| Decile 5 | 6.4% | 5.7% | 4.8% | 2.0% |
| Decile 6 | 7.1% | 4.6% | 4.2% | 1.5% |
| Decile 7 | 7.2% | *3.5%* | *3.2%* | *1.3%* |
| Decile 8 | 5.9% | *1.5%* | *1.4%* | *1.0%* |
| Decile 9 | 5.6% | *2.0%* | *1.9%* | *1.6%* |
| Decile 10 | 4.9% | *0.5%* | *0.5%* | *0.5%* |
| All households | 63.3% | 46.0% | 39.5% | 16.3% |
| Decile 1-3 | 20.2% | | | |

*Source: Own calculations performed by s.a. PhD Teodora Peneva based on data from Household Budget Survey in the Republic of Bulgaria, performed by NSI in the respective year.*

Figure 1

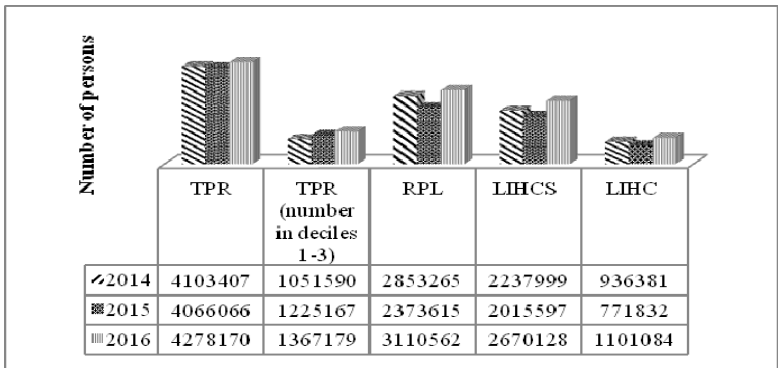
Share of energy poor households (2014-2016; %)




*Source: data from the tables above.*

Figure 2

Number of energy poor persons (2014-2016)




| | TPR | TPR (number in deciles 1-3) | RPL | LIHCS | LIHC |
|---|---|---|---|---|---|
| 2014 | 4103407 | 1051590 | 2853265 | 2237999 | 936381 |
| 2015 | 4066066 | 1225167 | 2373615 | 2015597 | 771832 |
| 2016 | 4278170 | 1367179 | 3110562 | 2670128 | 1101084 |

*Source: data from the tables above.*

The calculated through the individual indicators assessments differ, but they logically reflect the nature and the heuristic features of each one of the indicators described above.

First, in the analysed period, the scope of energy poverty increased by all indicators – both in relative share and in number households and persons. The following may be considered as main factors:

- An escalation of income inequality demonstrated by an increase of: a) the Gini coefficient from 37% in 2014 to 40,2% in 2016; (b) the ratio between the incomes of the poorest and the richest 20% of households from 7,1 in 2014 to 8,2 in 2016.
- An increase of the relative poverty line from 3910 BGN in 2014 to 4213 BGN in 2016. However, in 2015, a reduction was observed (3698 BGN), which influenced the decline in the values of some indicators against 2014.
- An increase of energy prices – e.g. electricity for consumers of less than 2500 kWh /year of around 6% : from 0,176 kWh in October 2014 to 0,186 kWh two years later.
- Restructuring of the energy costs per decile groups: in 2016 the energy costs in the first two decile groups decreased, while electricity costs increased. In the decile to the sixth, both energy and electricity costs expanded. In the deciles 7-10, the energy costs increased but the electricity costs decreased.
- Faster growth of the incomes in the fifth quintile (22%) compared to the first (20%), which is accompanied by a higher increase in energy costs of the highest income fifth quintile (30%) compared to the energy costs growth of the first bottom quintile (by 11%). The result is deepening differentiation between the two quintiles in terms of energy costs; these costs put more stress on the budgets of low-income households, making energy less accessible to them: in 2016, the share of energy costs in the net income of the first decile was slightly over 18%, while in the last decile it was by almost 10 p.p. lower (8.8%).

The 2015 decline of the values of the indicators which include an assessment against the relative poverty line may be explained mostly with the reduction of its amount set from 3910 BGN in 2014 to 3698 BGN in 2015.

Second, lowest, but also relatively close, are the values of the indicator of TPR, covering the first three lowest income deciles for which it is advisable to apply this indicator, as mentioned above, **as well as** the indicator LIHC[11]. They show that the scope of energy poverty ranges within 13-20%, i.e. in 2016, according to the TPR indicator, almost every fifth Bulgarian household had a problem in terms of affordability of energy prices and was vulnerable to price changes, which affected more than 1300 thousand people.

[11] From a methodological point of view, the values under this indicator may be considered as contingent because: (a) the median of household energy expenditure is calculated on the basis of actual costs incurred without applying an equivalised expenditure scale (similar to the equivalised income scale) that has not yet been defined in Bulgaria and there are no legal standards for minimum necessary energy costs for households with a corresponding equivalised costs scale of these; (b) at the same time, in the second limiter (RPL) an equalized income after deducting household energy consumption is applied.

The inclusion of the results of all deciles (which is doubtable from the methodological point of view) gives a 57% value of the TPR indicator for households whose energy expenditures exceed 10% of their net disposable income in 2014, which in turn coincides with the value of the same indicator in the cited report of the World Bank (57%). In 2016 it increased by 6 p.p.

Third, the values of the indicators RPL and LIHCS are relatively close and comparable: the first indicator varies within 35-46%, and the second – within 29-40%, which means some 3100 thousand energy poor people in 2016 as per the first indicator and around 2670 thousand as per the second indicator.

Fourth, based on the three indicators (RPL, LIHC and LIHCS) that use the relative poverty line, at the end of the period the energy poverty already covered also a small portion of the highest income 10$^{th}$ decile, and in the 8$^{th}$ and 9$^{th}$ deciles it occupied a higher share compared to the previous years (see Table 4).

**The empirical results produced, in addition to shaping the quantitative parameters of energy poverty *in the context of the affordability of energy prices of households*, can support the official institutional choice of one or another indicator for measuring this type of poverty, to be used as a landmark and starting point for elaborating the relevant definitions and national policies in this field.**

Б. Indicators determined through a subjective/"consensual" method

In addition to the expenditure indicators, an indicator (proposed by Healy, 2011) (Buzarovski, 2011, p. 2) has been calculated through a subjective/"consensual" method. The indicator is based on data from self-evaluation of the population received through empirical sociological surveys within SILC on issues regarding: affordability to pay on time energy bills; quality of dwellings (leaking roof, damp walls, floors or foundation, or rot in window frames of floor); heating in the dwelling during the winter season, etc.

Table 5

Energy poverty rate

| | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|
| EC-27 (p.p.) | 28.6 | 29.2 | 29.7 | 31.3 | 31.8 | 30.8 | 28.7 |
| Bulgaria (p.p.) | 98.0 | 98.3 | 75.5 | 76.1 | 75.5 | 70.3 | 67.7 |
| Bulgaria against EC-27: | | | | | | | |
| Absolute difference (p.p.) | 69.4 | 69.1 | 45.8 | 44.8 | 43.7 | 39.5 | 39.0 |
| Ratio | 3.42 | 3.37 | 2.54 | 2.43 | 2.37 | 2.28 | 2.36 |

*Source: own calculations based on the method of Healy and primary data of Eurostat for the respective indicators.*

The results of the assessment show (see Table 5) that Bulgaria sustains a trend of improvement of the indicator – the energy poverty rate decreased by some 30 p.p. in 2015 against 2009. On the other hand, the distance from the average European rate remains quite significant – over two times. This means that, here again, the country is lagging behind the other EU member states in the efforts to reduce energy poverty.

## Conclusion

First, the findings of the study on the material standard of living at territorial level can be summarized in the following key conclusions.

1. The methodology applied provides very good opportunities to rank territorial units according to their distance from the maximum value of the indicators applied. Thus, the ranking of the territorial units by individual indicators depends on the gap between the actual and the highest values of the indicator. The most suitable measure – coefficient of variation – has been used to evaluate the disparities between the territorial units. The methodological instruments applied give acceptable and appropriate assessments of disparities in the ranking of the territorial units according to the indicators of standard of living.
2. Appropriate and logically-based indicators were used for researching the features of the material standard of living that relate directly to the economic development, income, consumption, poverty and inequality. They have been selected in a way to reflect general trends in development without specifying group and intragroup particularities.
3. Compared to the EU member states (28), the standard of living in Bulgaria is at an extremely low level. The assessments mark a stable trend of decrease in the last decade. The aggregate assessments by thematic areas rank the country at the last position, the assessment in the area of inequality and poverty being extremely low.
4. The differences in the aggregate assessments of the standard of living of the territorial units in the Bulgaria show a mixed development over the period analysed. There is a slight tendency towards convergence between regions, while disparities between the districts sustain. In addition, the assessments of a significant proportion of the territorial units have decreased compared to 2010, which is a prerequisite for lowering the standard of living. Despite these unfavourable trends, there has been a decrease in the number of the thematic areas in critical situation.

Secondly, from the energy poverty study, the following conclusions and assessments can be drawn.

1. The outline of the main dimensions of energy poverty in Bulgaria by various indicators enriches the scientific knowledge about it, but also, in terms of policies, it supports the institutions in defining national concepts related to this poverty.
2. In this context, it is necessary to reach a common understanding on a number of methodological issues in calculating the indicators.
3. The range of energy poverty is increasing by all indicators. The fall in 2015 for some of them could be seen as a consequence of the decline in the value of the relative poverty line.
4. Differences in the scope of energy poverty stem from the construction of the individual indicators; at the same time, some of them report relatively close values:

- Under the TPR – for the first 3 deciles, and the LIHC, the values are between 13-20%.
- Under the RPL and the LIHCS, the values are between 30-46%.

5. At the end of the period, the energy poverty measured by indicators that use the relative poverty line, covers - albeit a very small part – high-income households. The inequality between households in terms of energy costs is deepening – energy consumption puts more stress on the budgets of low-income households, making it less affordable and accessible to them.
6. Bulgaria is lagging behind the other EU member states in the limitation of the energy poverty.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# EMPLOYMENT IN BULGARIA AS PART OF EUROPEAN LABOR MARKET – TRENDS AND INSTITUTIONAL CHALLENGES

*The dynamics of employment in Bulgaria in the first decade of EU membership reflects the impact of various factors, including the application of the principle of free movement of workers on the European labor market.The main goal of this study is to highlight institutional challenges facing the labour law compliance control (national system of labor inspection) and the social insurance contributions dynamics in Bulgaria in the context of EU workers mobility. The changes in employment in Bulgaria as part of the European labor market reveal both the free movement of EU workers and the attraction of third-country nationals. The diversity of the nationality of the employed is reflected in the legislation (Labour Migration and Labour Mobility Act, 13 April 2016), which regulates the main processes in relation with workers mobility. These trends are accompanied by changes and complicating the activities of institutions that have responsibilities in the field of labor law compliance control and social security in Bulgaria as part of the European labor market.*
*JEL: J21; J61; H55*

The employment transformations in Bulgaria as an EU member are related to the dynamics of various factors, among which stands out the territorial mobility of the workforce in the context of globalization, digitization and wide application of the right for free movement of workers. The effects of a country's economic integration in EU are spread overproduction, consumption, employment, income and a number of other socio-economic systems. Studies of the effects of economic integration on employment as a factor for growth include a focus on regional labor markets, with special attention to the dynamics of national and international labor markets, income policy and regional development. (Fertig, 2003; Huber, 2007; Marinov, 2015; Parushev, 2018; Conti, Sulis, 2016) Employment as a traditional parameter of a country's economic development plays a significant role in the state of public systems (with fiscal and non-fiscal functions), incl. social security. The main trends in the territorial mobility of the workforce in the EU are seen in the context of the existing differences in quality of life and the level of wages between the Member States. Certain EU countries are formed as attractive centers (Labour market attractiveness in the EU, 2018). From other Member States workforce flows out with all the ensuing consequences for their

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public systems, incl. the social insurance. These processes are accompanied by changes in legislation and in the functions of institutions that have responsibilities in the field of labor and social security relations.

The main goal of this study is to highlight institutional challenges facing the labour law compliance control (national system of labor inspection) and the social insurance contributions dynamics in Bulgaria in the context of free movement of EU workers. The focus is on the growing demand and expectations to the national system of labor inspection in the field of control of labor legislation on the free movement of workers within the EU and changes in the structure of insured persons by status and type of social insurance contributions. To achieve this goal a number of research tasks are carried out, conditionally divided into two main directions: major trends in employment in Bulgaria in the context of territorial mobility of workers within the EU and institutional challenges related to the labour law compliance control (national system of labor inspection) and to the social insurance contributions dynamics in Bulgaria. The complex and multi-faceted nature of the studied areas required to adopt a number of restrictions in the survey. The status and dynamics of employment in Bulgaria as a member of the EU in this study is mainly characterized by the quantitative indicators for the number of employed. The analysis of a number of significant qualitative parameters of employment is not commented. The changes in social insurance are focused on the dynamics in the structure of insured persons by employment status and type of social insurance contributions. Several other aspects incl. institutional transformations of social insurance system (Pandurska, R., 2018), financial reforms and etc. remain outside the scope of the study. The main sources of information are annual and periodical data from the administrative statistics of the National Social Security Institute (NSSI), the Employment Agency (EA), the National Revenue Agency and the Executive Agency of the General Labor Inspectorate (GLI EA), as well as from Eurostat and National Statistical Institute (NSSI) surveys – Employed persons, hours worked and labour productivity – ESA 2010, Labour Force Survey.

## 1. Employment changes in Bulgaria and workers mobility within the EU

Changes in employment in Bulgaria are considered in the context of the dynamics of employment in the EU in terms of the broad application of the right of free movement of workers. Official statistics show that in the EU over the last ten years, the number of employees has increased (by 2.2%) and in 2017 it has reached 221413 hl. (compared with 216 642 in 2007).The data shows an increase in the number of employed during the period in Germany, Poland, Hungary, Great Britain, Czech Republic (Table 1).

Table 1

Dynamics in the number of employed in the EU and some EU countries in 2007-2017 (thousand)

| | 2007 | 2008 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|
| Total EU 28 | 216 642 | 218 995 | 212 912 | 215 232 | 218 381 | 221 413 |
| Germany | 37 397 | 37 902 | 38 908 | 39 176 | 40 165 | 40 482 |
| Czech Republic | 4 856 | 4 934 | 4 883 | 4 934 | 5 016 | 5 094 |
| Poland | 14 996 | 15 557 | 15 591 | 15 812 | 15 902 | 16 079 |
| Great Britain | 28 622 | 28 827 | 29 559 | 30 016 | 30 424 | 30 783 |
| Hungary | 3 872 | 3 818 | 4 070 | 4 176 | 4 309 | 4 373 |
| **Bulgaria** | **3 209** | **3 306** | **2 927** | **2 974** | **2 954** | **3 073** |
| Spain | 20 437 | 20 316 | 17 211 | 17 717 | 18 183 | 18 649 |
| Romania | 8 842 | 8 882 | 8 254 | 8 235 | 8 166 | 8 363 |
| Portugal | 4 756 | 4 786 | 4 254 | 4 309 | 4 371 | 4 515 |
| Latvia | 1 016 | 1 009 | 859 | 868 | 862 | 862 |
| Lithuania | 1 422 | 1 397 | 1 288 | 1 301 | 1 318 | 1 306 |
| Greece | 4 476 | 4 523 | 3 480 | 3 548 | 3 610 | 3 683 |

*Source: Eurostat, Labor Force Survey http://appsso.eurostat.ec.europa.eu, 17.10.2018.*

Since 2007, the number of people employed has decreased in several of EU countries, including Greece, Latvia, Spain and Lithuania, where the decrease in the number of employed exceeds 8%. In some of these countries, growth in the number of employed has been recorded over the past 2-3 years, but this does not result in the 2007 level being reached. Bulgaria is also in the group, which reported a decrease (by 136 thousand) in the number of employees. In our country, in 2017 there is an increase (by 119 thousand compared to 2016), but the 2007 level is not reached. The dynamics of employment over the period show increasing the total number of employed in EU, but for a certain part of the countries last ten years have been accompanied by a decrease in the number of employed with all the ensuing consequences for long-term human capital development and the state of public systems (including social insurance) in the countries concerned. (Zareva, 2010; Beleva, 2012; Lukanova, Zareva, 2008)The employment dynamics in the EU countries are driven by a variety of factors, (linked to both the natural and mechanical movement of the population) which are the subject of in-depth analyzes (Zareva, 2018; Vladinirova, 2016; Nonchev, Hristova, 2018; Mintchev, Boshnakov, 2018) which is beyond the scope of this study. The dynamics of the number of employed in Bulgaria are analyzed in relation to the territorial mobility of workers in the EU, accompanied by a number of changes in the outflow and inward flow in the population. Article 45 of the Treaty on Functioning of the European Union and "Regulation No 492/2011 of the European Parliament and of the Council of 5 April 2011 on freedom of movement for workers within the Union" are in the basis of EU workers mobility. Data show that over the past ten years, the number of EU citizens living or working in another EU country has doubled and already reached 17 million. The increasing mobility of workers within the EU is also reflected by increasing number of EU citizens (over 1 million), which every day commute to another Member State to go to work. The number of posted workers (services in another Member States on a temporary basis) and workers in the road transport sector (crossing intra-EU borders on a

daily basis) exceeds 4 million (European Pillar of Social Rights, 2018) In the process of development of this study, no source of regular statistical public accessible information was found about the number of Bulgarian citizens who work (employed and self-employed) in other EU countries as well as the number of citizens of EU countries working in Bulgaria. For the purposes of traditional annual and periodic statistical employment and workforce surveys (including Labor Force Survey), the concept of EU citizens is used. The EU citizens have the right to look for a job in another EU member state and to work there without any work permission, under the same conditions as the citizens of the respective member state. Several specialized studies (Ruben, A.,et al 2016) show that significant groups of Bulgarian citizens flowed out from Bulgaria and choose to live and work in EU countries. A publication from 2018 (CEDR, 2018) shows that more than half a million Bulgarians aged 20-64 live in EU countries and 70% of them work. It is stressed that about 30% of Bulgarians living outside the country have higher education. In the group of countries with a high percentage of active citizens residing in another EU country, the following are mentioned: Romania – 20%, Lithuania, Croatia and Portugal – 14%, Latvia – 13%, Bulgaria – 12%. The growing demand for labor in Bulgaria (the relatively low wages in our country are a traditional factor for this employer's labor market behavior) is accompanied by the facilitation of the access of third country nationals to the labor market (including for short-term employment) in Bulgaria . Basic data on this process are provided by the EA – the number of short-term employment permits for persons from Ukraine, Moldova, and others are increasing. The short-term changes in employment in Bulgaria as part of the European labor market reveal both the free movement of workers in the EU (for these workers' movements within the EU there is still no publicly accesible regular statistical data) and the attraction of third-country nationals. The diversity of the nationality of the employed is reflected in the legislation (Labour Migration and Labour Mobility Act, 13 April 2016), which regulates the main processes in relation with workers mobility. The total number of employed in Bulgaria covers persons of diverse nationality, which can be grouped into three main sectors: Bulgarian citizens, citizens of other EU countries and third country nationals. The contemporary dynamics in employment in Bulgaria as part of the European labor market pose a number of institutional challenges both for the national labor inspection and the social insurance system.

## 2. Institutional Challenges

### *2.1. Labour law compliance control*

The labour law compliance control in Bulgaria is reglamented through a number of juridical acts, including the Labor Inspection Act (LIA), which states the leading role of the General Labour Inspectorate Executive Agency (GLI-EA). Among the main activities of GLI-EA stands the labour law compliance control, incl. the territorial mobility of workers. In recent years, the main focus in this area is the compliance with the regulations laid down in the Ordinance on the Terms and Procedure for Posting and Sending Workers in the Service *(29.12.2016).* According to the legislation, the main institution with responsibilities in the field of external movements of workers is the Employment Agency (EA). The data from the annual reports of the EA show that over the past three years the number of permits) for

access to the labor market of workers who are nationals of countries outside the EU has increased (from 490 in 2015 to- 785 in 2017). At the end of the period, the rapid increase in the number of short-term employment of third-country workers registered in the EA is also highlighted. EA has responsibilities in relation to the introduction and implementation of the new organizational forms of labor activities through the Enterprises Providing Temporary Work (EPTW) The data from the annual reports of the EA show that by the end of 2017 there are 151 EPTW with a valid registration. In connection with the changes in the labor force mobility legislation in Bulgaria as part of the European labor market in the last years in the control activity of GLI-EA , a growing attention is paid to the control of EPTW and to the inspections of employers who post and send employees within the provision of services in Member States. According to the GLI EA inspected enterprises send workers to over 250 Bulgarian enterprises users and abroad (France, Belgium, Holland, Britain, Italy, etc.) Employment models of EPTW includes relatively new to Bulgaria practices in human resources management and therefore the GLI EA control results show a number of violations of rules regarding the assignment of the job tasks, payment standards, job roles, training process, personnel documentation and others. Compliance with the standards in employment in EPTW and user enterprises can be supported by various management practices, incl. the systematic audit of human resources (Peicheva, M.,2015) In this context, the audit of human resources and social audit is regarded as an important tool for the prevention of violations of labor legislation and tackling undeclared work. Effective Labour law compliance control in Bulgaria as part of the European labor market is a major challenge to the national labor inspection system, whose priority areas for inspections in the next period are related to the territorial mobility of workers, EPTW and user enterprises; compliance with the legal requirements of employment of foreigners in Bulgaria, posting of workers in countries - EU members. The changes in employment related to the mobility of workers in the EU lead to complicating the subject of labour law compliance control and increasing the need for intensive communication and coordination with inspection bodies from other EU countries.

### *2.2. Social Insurance*

The widespread application of the fundamental right to free movement in the EU creates prerequisites for greater choice of workers and employers for the location of both employment and social insurance contributions. The characteristics of employment (salary, additional benefits, career opportunities, etc.) should be seen in a set with the characteristics of the social security system both from the positions of the workers and from the point of view of the employers interests (labour costs) on the European labor market. In the context of the free movement of workers in the EU, the person's nationality is not a sole determining factor for the location of employment and social insurance decisions. In this part of the study, specific information (from NSSI official administrative statistics and National Revenue Agency) on the dynamics and structure of the insured persons in Bulgaria is analyzed. Selected data in Table 2 show several structural changes in the group of insured persons – by labor status and by type of social insurance contributions

Table 2

Dynamics of insured persons in Bulgaria during the period 2014-2017

| Year | Insured persons* | | | Self-insured persons – subgroups by risks | |
|---|---|---|---|---|---|
| | Total | Incl. | | | |
| | | Insured by employer | Self-insured persons | Pension | All risks without accidents at work and unemployment |
| 2014 | 2735 | 2 501 | 234 | 79.9 | 120.3 |
| 2015 | 2756 | 2 514 | 242 | 76.7 | 130.7 |
| 2016 | 2765 | 2 515 | 250 | 77.8 | 134.4 |
| 2017 -total | 2780 | 2529 | 251 | 74.5 | 130.5 |
| Incl: other EU countries sitizens** | 18 | 12.3 | 5.7 | | |

*Source: * NSSI, Statistical guide, time series, 2018, p.63, **Administrative information provided by National Revenue Agency, 2018.*

According to official information for the period 2014- 2017 there is an increased number of insured persons (1.6%) in Bulgaria. The number of self-insured persons is growing more rapidly (by 7%) and the number of persons insured by employers is growing more slowly (by 1.1%) In the same period, the number of self-insured persons for all insurance cases without labor accident and unemployment, increases by over 8%. The briefly presented trends in the number and structure of insured persons in Bulgaria raise several questions three of which must be the starting point for future in-depth research. The first issue is related to the growing relative share of self-insured persons (from 8.5% in 2014 to 9% 2017) in the total number of insured persons. The second question is related to the gradual (albeit slow) increase of that part of the self-employed group, which is insured for all risks without accidents at work and unemployment. Thirdly we need to put the topic on the growing gap between the number of employed and the number of insured persons – in 2014 that difference represents 6.5% of the employed, and in 2017 reached 9.5% of the employed in Bulgaria. The outlined changes in the number and structure of insured persons (including by type of social insurance contributions) have the potential to affect the status of the main funds in the state social insurance and should be subject to in-depth future research. These changes must be analyzed in the context of the dynamics of citizens of other EU countries who are insured in Bulgaria. The data provided by the NRA's Register show that 18,000 citizens from other EU countries in 2017 are insured in Bulgaria. About 32% of the citizens of other EU countries insured in Bulgaria are Self-insured persons. These data should in the future be compared with information on the number of citizens of other EU countries working in Bulgaria.

The future in-depth study of the changes in the structure of insured persons in Bulgaria requires that a variety of factors be taken into account- including the capacity of the control institutions, methodological deficits of the registration system etc. In the context of the main goal of the study there is a focus on the expansion of employers 'and employers' opportunities in the EU to choose a preferred location for the social insurance contributions. Under the current legislation (Income Taxes and Natural Persons Act / ITNPA), the legal decisions and selecting the country where the person will pay social insurance contributions are associated with the concepts of "country of residence" and "center of interest".

Opportunities are regulated for one person to carry out his professional activities in Bulgaria but to be insured in another EU country. The basic rule is that the person is insured in the country where he/she carries out a significant part of his/her professional activities. According to Art. 4, of the ITNPA, the center of vital interests is located in Bulgaria, when the interests of the person are closely related to the country and in this decision we have to take into account the family, the property, the place from which the person performs labor, professional or economic activity, and the place where he/she manages her/his property. In each case, judgment is made to determine the center of vital interests that justifies the location of the person's social insurance contributions. In this context, there are legal possibilities for a person to work in Bulgaria but to have social insurance contributions in another Member State. Various legal rules are applicable in this regard, three of which are presented here: an employed person who does not carry out a significant part of his activity in the country of residence must be insured where the head office or enterprise of his employer is located; a person working for two employers whose headquarters are located in different countries (the one in the country of residence of the person) then there is a possibility for social security of the person to be performed outside the country of residence; a self-employed person who does not carry out a significant part of his activity in the country of residence must be provided where the center of interests of his activity is located. These varied social insurance opportunities are applied in practice and affect both the dynamics of the insured persons and the financial parameters of the social insurance system in Bulgaria.These changes complicate the subject of social insurance legislation compliance control and raise the issue of new requirements to the activity and capacity of the respective responsible institutions.

## Conclusion

The employment dynamics in Bulgaria as a EU member is a prerequisite for several challenges to the functioning of both the national labor inspection and the social system of insurance. Workers mobility in the EU is accompanied by legal selecting of the employment location and the types of social insurance contributions. For EU citizens the person's nationality is not a sole determinant in the employment location and social insurance decisions taken in the context of the free movement of workers. Under these conditions employment and social insurance in Bulgaria must be analysed and considered as part of the employment and social insurance in the EU. The results of the study show that workers mobility in EU leads to changes and an increase in the complexity of the functions and tasks of the institutions with responsibilities in the field of labor inspection and social insurance in Bulgaria. The briefly presented dynamics in the legislation regulating the flexibility of the social insurance regimes is the basis of a number of challenges for the labor and social insurance compliance control at a national level. The requirements for joint actions of the National Labor Inspection System in Bulgaria with the relevant institutions in the other Member States are increasing. The new European Labor Authority (the operating start is expected in 2019) primary objective is to contribute to the provision of fair labor mobility within the internal market. The European Labor Authority will enhance cooperation amongst EU countries and provide national authorities with operational and technical support. To achieve this, a key role will have the establishment of

an effective workers movements monitoring and an appropriate social insurance information system at EU level which take into account the new stage in the development of the European labor market.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# THE LABOR MARKET – NATIONAL AND REGIONAL PROBLEMS

*The article presents the trends in the main labour market indicators before and after the economic crisis in 2009 at national and regional level. It outlines the most specific features in the relation between economic and employment growth. At a regional level the article studies the deviations from the average values of economic activity, employment rate and unemployment rate on the regional and intra-regional level, pointing out the increasing deviations at intra-regional level as one of the main feature of labour market misbalances. It also defines some of the factors, causing these misbalances. Particular attention is paid on the role of regional employment programs and measures as an instrument to encourage labor integration through training and qualification; policies that have no alternative and aim at decreasing the social disparities and at the inclusion of risk groups in labor activity and at sustainable employment as a way to improve the standard of living.*
*JEL: J2; J4; J18*

The main objective of the present study is to analyze the tendencies in the development of the labor market after the crisis of 2008 and to highlight the national and regional specificities in its development, to outline the main factors for existing disparities and to point out the possibilities for undertaken respective policy that stems from them.

## 1. Economic and employment dynamic: does the growth stimulate employment?

The period after the economic crisis reflects a change in the growth model - from growth, which stimulates employment (2000-2008) towards growth that generates an unsustainable dynamic of employment (2009-2017).

The GDP growth decreased by minus 3.6% in 2009. While it's recovery is even since 2010 (when the growth rate is 1.3% and 1.9% in 2011), the dynamic of employment remains negative until 2012 (with the exception of 2010 when the growth of 0.7% is registered). It is only in 2014 and 2015 that employment increases more significantly – by 1.6% and 1.7% respectively and by 4.4% in 2017 (Figure 1).

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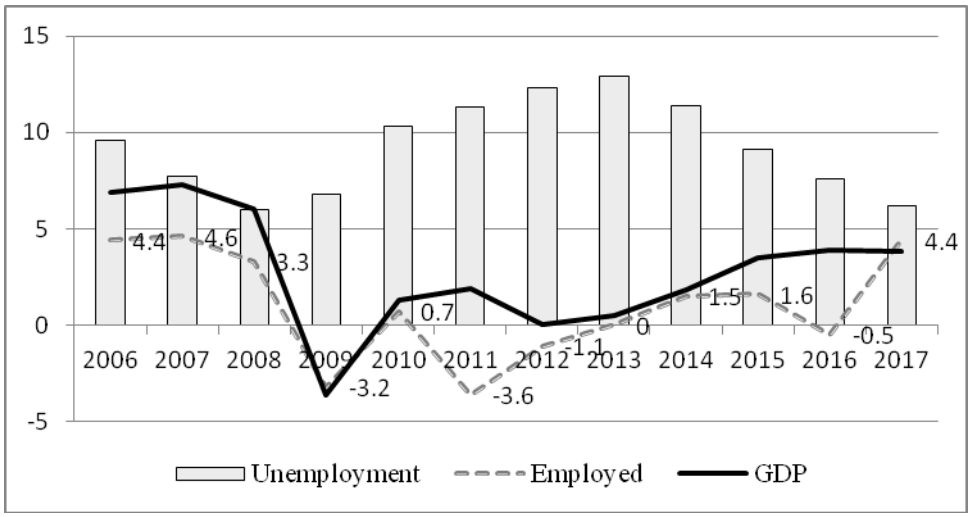
Figure 1

GDP, Employment and Unemployment Dynamic in Bulgaria (%)




*Source: data from NSI, Macroeconomic statistics, Labor market, annual data, https://infostat.nsi.bg/infostat/pages/reports/result.jsf?x_2=1169*

The comparison between two nine-year periods indicates that the growth in employment in 2000-2008 is 5.4 on average per annum, which definitely characterizes the economic dynamic as favorable and encouraging for employment. In the period 2009-2017 the average annual growth in employment is zero. The absolute number of the employed – 3150.3 thousand persons (in 2017) remains lower than the one in 2008 when employment amounted to 3360.7 thousand persons. In this context, the growth in the period after the crisis can be characterized as non-encouraging/unfavorable for employment (jobless growth).

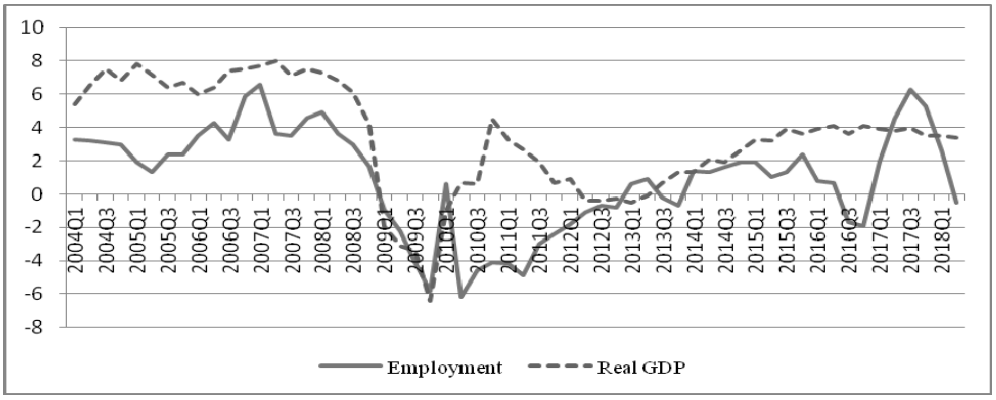
Another feature to be outlined is the decreasing time lag in which GDP dynamic influenced employment, i.e. the time, in which the growth of the economy begins to generate employment. The specificities of the link between growth and employment can be traced in greater detail via the quarterly fluctuations in the dynamic of GDP growth and employment (Figure 2). The data about the rate of GDP growth are expressed in 2010 prices, seasonally adjusted and compared to the same quarter of the preceding year, while the data for employment come from the NSI monitoring of "Employment and Unemployment" and include the employed persons ages 15 and up, relative to the same quarter of the preceding year.

Figure 2 pointed out that, for example, the growth that began in 2000 only managed to generate growing and stable employment between 2005-2007. It indicates that the collapse in the GDP dynamic in 2009 (-3.0%) manifests in decreasing employment (-3.2%) during the same year, in two-three quarters time lag. The discontinuation of the tendency in 2010 showed that the rates in which GDP revives leave behind that of employment. The recovery

of GDP growth begins in the second quarter of 2010, when a positive change in the growth of 0.7 is registered. On the other hand, employment continues to decrease until the second quarter of 2011, i.e. one more year after the change in the direction of GDP growth; yet despite that it remains negative until the end of 2012. I .e. a specific feature with regard to employment is its *very slow recovery in comparison to the recovery of the dynamic of GDP growth*. This specificity is not observed for the EU, where the expectation for continuous stagnation of employment are refuted by a significantly more dynamic recovery of employment.

Figure 2

GDP and Employment Dynamic (quarterly data) (%)




*Source: NSI, Macroeconomic statistics and Labor market, www.nsi.bg*

The slower restoration of employment after the crisis could be seen also in the correlation between the GDP growth index and the employment growth index. The comparison indicates that for the entire period 2000-2017 it is high – 0,735461, however, in the period 2000-2008 it was very high 0,805266, which shows that the factors of growth and investments, in particular, have impacted employment extremely favorably. In the period 2013-2017 the strength of the link between growth and employment is moderate – 0,615129, i.e. in the post-crisis period it weakens, possibly impacted by other internal factors, such as, for example, the lack of structural changes and/or impacts external to the system – declining labor supply due to demographic crisis and further emigration of the labor force, or changes in prices levels on international markets, etc.

The third specific feature of the link between growth and employment is the seasonality in the dynamic of the two indicators. At the basis of this seasonality is the significance of tourism and agriculture, both for generating Gross Domestic Product (GDP) and employment. In the period 2007-2017 employment increases in both sectors – respectively by 17 670 persons in agriculture and by 15 249 persons in tourism. However, the increase in employment in agriculture is accompanied by a significant decrease in its share in GDP – from 12.6 to 4.7% in the period 2000-2016, which indicates the decreasing labor productivity. The change in the share of the "tourism" sector in total GDP is insignificant –

2.2- 2.4%, but, as a whole, the increase in employment also leads to an increase in its' labor productivity.

*The comparison of the dynamic of employment and economic growth indicates that economic growth is more sustainable* – since the fourth quarter of 2013 GDP growth increases continuously and there is no change in the direction of its positive development, while the growth in employment is more unsustainable – after 2013 it decreases twice, hence changing the direction of its development, namely in the end of 2013 and in the end of 2016. One reason for this unstable employment growth is the increasing regional disparities.

## 2. Deviations from the average values of main economic parameters on a regional scale, defining factors and risks for the future development of the labor market

*Economic activity*

The dynamic of economic activity at the national and regional level, expressed by the coefficient of economic activity, is analyzed based on data of the national survey "Employment and Unemployment" of NSI.

The coefficient of economic activity (persons aged 15-64) increases in the years after the crisis to 71.3%, while the crossing of the threshold of 70% can be regarded as significant progress in the development of economic activity, caused by high demand for labor in the last years (Table 1).

Table 1

Coefficient of economic activity of persons aged 15-64 – total, by region and by district (%)

| Years | North-West | North-Central | North-East | South-East | South-West | South-Central | Total |
|---|---|---|---|---|---|---|---|
| 2008 | **63.8** | **64.2** | **67.9** | **66.2** | **73.1** | **65.8** | **67.8** |
| 2009 | 62.6 | 63.3 | 66.2 | 65.6 | 70.1 | 65.3 | 67.2 |
| 2010 | 61.8 | 62.5 | 66.6 | 66.1 | 71.7 | 64.9 | 66.7 |
| 2011 | 61.5 | 62.9 | 66.0 | 65.3 | 70.3 | 63.8 | 65.9 |
| 2012 | 61.2 | 64.8 | 67.4 | 66.5 | 70.9 | 66.1 | 67.1 |
| 2013 | 63.5 | 65.7 | 68.0 | 66.2 | 72.1 | 68.7 | 68.4 |
| 2014 | 64.2 | 66.3 | 68.6 | 66.0 | 72.7 | 69.9 | 69.0 |
| 2015 | 63.8 | 67.6 | 70.4 | 67.7 | 72.9 | 68.0 | 69.3 |
| 2016 | 61.4 | 67.9 | 69.8 | 67.7 | 72.6 | 66.7 | 68.7 |
| 2017 | **65.5** | **68.5** | **72.2** | **70.8** | **74.6** | **70.7** | **71.3** |

*Source: NSI, Demographic and Social statistics, Labor Market, www.nsi.bg.*

Two regions exceed the average levels of economic activity for the country in 2017 (71.3) – these are the North-east region (72.2%) and the South-west region (74.6%). At the other extreme are the North-west (65.5%) and the North-central region (68.5%), where the level of economic activity is lowest.

*The inter-regional disparities* are traced via the range and coefficient of variation:

The range of the variation represents the difference between the lowest and highest level of the indicator.

The coefficient of variation is the ratio between the standard deviation, divided by the average value of the indicator and indicates the difference in comparison to the average.

At the regional level the range of the variation is exceptionally dynamic - during the years it ranges from 8.5 (the lowest value) to 11.2 (the highest value), but its decrease in 2017 (on an year to year base) and in comparison to 2010 year can be characterized as a positive tendency (Table 2).

Table 2

Range and coefficient of variation of inter-regional disparities in economic activity, measured by the economic activity coefficient

| Regional | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| Range | 9.9 | 8.8 | 9.7 | 8.6 | 8.5 | 9.1 | 11.2 | 9.2 |
| Coefficient of variation (%) | 5.5 | 4.8 | 4.8 | 4.4 | 4.5 | 4.4 | 5.5 | 4.5 |

*Source: Calculations based on data from NSI, Labor market.*

The decrease in the deviation from the average value, reflected by the dynamic of the coefficient of variation, indicates positive tendencies of decrease in the inter-regional disparities in economic activity. To a large extent, these are anticipated tendencies caused by the intensified inter-regional migration of the labor force in the country in recent years in accordance with the demand for labor, incl. in other regions. Still, the North-west and North-central regions register lower values of the indicators for economic activity, while the South-west region is characterized by the highest economic activity, stimulated by higher labor demand therein.

The intra-regional disparities indicate significantly more unfavorable levels of economic activity (Table 3).

Table 3

Range and coefficient of variation of intra-regional differences of economic activity, measured by the economic activity coefficient

| Districts | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| Range | 25.2 | 19.6 | 17.1 | 16.8 | 19.2 | 20.5 | 18.8 | 15.5 |
| Coefficient of variation (%) | 8.0 | 6.4 | 6.3 | 6.9 | 7.1 | 7.7 | 7.8 | 6.1 |

*Source: Calculations based on data from NSI, Labor market.*

The disparities between the districts (the range of the variation) are high – *almost two times higher than the inter-regional disparity*. The positive tendency is its decrease, but despite that the range of the variation remains high and indicates that the economic activity differs significantly between the districts. The reasons for that are various, such as the demand for labor; the level of its remuneration, which may encourage or discourage economic activity,

the different level of employability and the aging of the labor force. However, as a whole, low inter-district mobility reflects the different level of "the fixed way of life" of the labor force. The specific reasons for that need to be examined locally and, depending on the results, policies need to be elaborated and implemented that address the stimulation of economic activity. The low economic activity of part of the young labor force as well as its absence from employment and training, i.e. from the labor market, raises a series of questions relating to specific ethnic and cultural specificities of a part of the labor force, such as hidden employment, livelihood by engaging in illegal activities, etc.

*Coefficient of employment (employment rate)*

The coefficient of employment is used for the purposes of the analysis of employment and is reported by the monitoring of "Employment and Unemployment" conducted by NSI (Table 4).

Table 4

Coefficient of Employment of persons aged 15-64 – total and by regions and districts (%)

| Years | North-West | North-Central | North-East | South-East | South-West | South-Central | Total |
|---|---|---|---|---|---|---|---|
| 2008 | **59.3** | **58.6** | **62.0** | **62.3** | **71.0** | **62.4** | **64.0** |
| 2009 | 57.5 | 57.9 | 59.2 | 61.2 | 70.4 | 60.5 | 62.6 |
| 2010 | 54.9 | 55.3 | 56.8 | 59.1 | 66.7 | 57.4 | 59.8 |
| 2011 | 53.6 | 54.9 | 55.8 | 57.7 | 65.0 | 55.5 | 58.4 |
| 2012 | 53.6 | 55.5 | 55.0 | 58.5 | 65.1 | 56.9 | 58.8 |
| 2013 | 59.5 | 55.5 | 56.5 | 57.5 | 65.0 | 59.4 | 59.5 |
| 2014 | 61.0 | 57.4 | 59.8 | 58.0 | 66.1 | 61.5 | 61.0 |
| 2015 | 62.9 | 60.4 | 63.1 | 60.6 | 68.0 | 61.6 | 62.9 |
| 2016 | 63.4 | 61.5 | 62.9 | 62.3 | 68.7 | 61.9 | 63.4 |
| 2017 | **66.9** | **63.7** | **65.4** | **65.7** | **72.1** | **67.0** | **66.9** |

*Source: NSI, Demographic and Social statistics, Labor Market, www.nsi.bg*

During the period 2008-2017 employment increases in all regions of the country. The highest dynamic of employment is registered in the North-west region – more than seven percentage points during the analyzed period. The changes in the employment rate clearly outline the crisis period, while the decrease in the coefficient of employment begins to be registered in 2009 and continues throughout 2010. In the following two years employment stagnates; it starts to increase in 2013 and the following four years are characterized by stable increase.

The South-west region registers the highest level of employment in 2017, followed by the South-central region. The lowest employment level is registered in the North-central region, while the North-east and North-west region have almost identical coefficients of employment.

Despite the general tendency of growth, the range of the variation indicates significant disparities between the regions (Table 5). Furthermore, *the disparities in the growth in employment increases in 2017*. The uneven economic development by regions in the

country is a negative tendency, which continues to develop and intensify over the last twenty years, which by itself leads to significant social and demographic problems, such as desolation of settlements, concentration of poverty, social isolation and marginalization.

Table 5

Range and coefficient of variation of inter-regional differences of employment, measured by the employment coefficient

| Regions | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| Range | 11.8 | 11.4 | 11.5 | 10.4 | 11.1 | 11.9 | 13.9 | 14.2 |
| Coefficient of variation (%) | 7.6 | 7.3 | 7.3 | 6.5 | 6.5 | 6.4 | 7.2 | 7.2 |

*Source: Calculations based on data from NSI, Labor market.*

The increase in the range of the variation indicates that the disparity between the regions with regard to the possibilities for finding employment are becoming more severe, while the advantages of the South-west and South-central region and limited possibilities in the North-central and North-west regions are becoming more pronounced.

The coefficient of variation after 2016 increases, which underlines the instability of the tendency of decrease in the disparities in comparison to the average for the preceding years. The further analysis of the inter-regional disparities highlights the investment intentions and the distribution of investments by regions as even more significant factors for them as well as the uneven distribution of labor resources, which turns them into a factor for limiting investment activity. The attractiveness of the individual regions for investors and the availability of sufficient labor resources are determining factors for the development of the regions, but, alongside that, the significance of other factors, such as the availability of infrastructure, incl. educational and healthcare, also increases. For example, the poor condition of rural transport infrastructure impedes the development of the small and medium-sized businesses in both the industry and in agriculture and tourism.

These problems are exacerbated even more at the intra-regional level, where the disparities are even more clearly pronounced (Table 6).

Table 6

Range and coefficient of variation of intra-regional differences of employment, measured by the employment coefficient

| Districts | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| Range | 22.6 | 17.2 | 16.2 | 19.3 | 19.2 | 22.5 | 22.5 | 19.3 |
| Coefficient of variation (%) | 9.6 | 7.8 | 7.7 | 8.2 | 7.9 | 8.7 | 8.6 | 8.0 |

*Source: Calculations based on data from NSI, Labor market.*

At the intra-regional level, the differences between the regions are more than 5 percentage points higher in comparison to the inter-regional; the same deviations are registered from the average value, indicated by the coefficients of variation.

What are the main factors, which impede the even development and growth in employment at the regional and municipal level? First and foremost, the capacity of the districts (natural,

labor, capital) differs significantly. These objective differences are supplemented by geographical specificities, which make certain districts more favorable than others with regard to transportation as well as the initiative and entrepreneurship of the local population and government. One study of the reasons for the limited investment initiatives among the districts indicates as *problematic the unresolved structural issues* (landfills, roads, water supply, power supply, schools, hospitals) as well as the inability of local authorities to actively cooperate in the process of attracting investors. The still *underdeveloped financial decentralization* significantly limits the economic initiative of district authorities, which once again raises the issue of the need for the development of financial decentralization by provision of part of the revenue (incl. corporate) generated at the district level.

*Coefficients of unemployment (unemployment rate)*

In 2017 unemployment is at the same level as in the pre-crisis year – 6.2%; this is one of the lowest levels of unemployment that the Bulgarian economy has had during the years of transition and market economy (Table 7).

Table 7

Coefficients of Unemployment for persons aged 15-64 – total, by regions and by districts (%)

| Years | North-West | North-Central | North-East | South-East | South-West | South-Central | Total |
|---|---|---|---|---|---|---|---|
| **2008** | **7.1** | **8.6** | **8.7** | **5.9** | **3.0** | **5.1** | **5.7** |
| 2009 | 8.1 | 8.4 | 10.5 | 6.7 | 4.2 | 7.3 | 6.9 |
| 2010 | 11.2 | 11.6 | 14.7 | 10.5 | 7.0 | 11.6 | 10.3 |
| 2011 | 12.8 | 12.8 | 15.5 | 11.6 | 7.5 | 13.0 | 11.4 |
| 2012 | 12.4 | 14.5 | 18.4 | 12.1 | 8.3 | 14.0 | 12.4 |
| 2013 | 14.1 | 15.5 | 16.9 | 13.1 | 9.9 | 13.5 | 13.0 |
| 2014 | 14.2 | 13.4 | 12.7 | 12.0 | 9.0 | 12.1 | 11.5 |
| 2015 | 12.1 | 10.7 | 10.4 | 10.5 | 6.7 | 9.3 | 9.2 |
| 2016 | 10.8 | 9.4 | 9.8 | 8.0 | 5.5 | 3.3 | 7.7 |
| **2017** | **11.4** | **7.0** | **9.4** | **7.1** | **3.3** | **5.3** | **6.2** |

*Source: NSI, Demographic and Social statistics, Labor Market, www.nsi.bg*

The disparities in both the level and dynamic of the development of unemployment are significant at both the regional and intra-regional level. For example, at the regional level the Northern regions of the country are clearly characterized by high unemployment, while the Southern regions register low unemployment rates and the difference between them is more than two times (North-west and South-central region in 2017). It is important to note the high dynamics, with which the unemployment rate decreases in the South-central region – from 14% in 2012 to 5.3% in 2017.

It is interesting to note that the South-east region manages to decrease its unemployment level to a single digit value in 2017 from the highest regional level of 18.4% registered in 2012. There are various policies, which underlie these disparities in the dynamic of the fluctuations in the unemployment rates, which are implemented at the regional level in as

far as the national anti-crisis policy puts the regions on equal grounds. The national anti-crisis policy of two governments Stanishev (2008) and Borissov (2009) targeted the stimulation of demand. For that purpose an investment fund was set up to the amount of BGN 500 million and allocated by the BNB; efforts were made to protect employment by transitioning to part-time employment and unpaid leaves of absence; nearly 60 anti-crisis measures to the amount of BGN 1.6 billion were implemented with the aim of stabilizing the state budget; additional expenditures are made for the purposes of social protection, repayment of government debt to companies and setting up an Intercompany Lending Assistance Fund.

Table 8

Range and coefficient of variation of inter-regional differences of unemployment, measured by the coefficient of unemployment

| Regions | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| Range | 7.7 | 8.0 | 10.1 | 7.0 | 5.2 | 5.4 | 5.3 | 8.1 |
| Coefficient of variation (%) | 21.7 | 19.8 | 23.9 | 16.6 | 13.1 | 16.3 | 20.2 | 32.0 |

*Source: Calculations based on data from NSI, Labor market.*

The deviations from the average unemployment rate for the country are very significant, reaching 32% in 2017. The tendency of those deviations increasing over time indicates the unequal positions, in which the different regions find themselves with regard to economic revival and recovery of the economy and employment.

The dynamic of the range of the variation is significant. After 2012 the range of the variation decreases and in 2016 it is already in half (5.3%). However, in 2017 it once again begins to increase, which cannot be regarded as a positive occurrence. It remains to be seen whether this tendency will be sustainable and will continue in 2018 and only then can the factors that cause this tendency be analyzed.

The inter-regional disparities in the unemployment level highlight tremendous inequality between the districts and deep economic and social problems, manifesting on the regional level (Table 9).

Table 9

Range and coefficient of variation of intra-regional differences of unemployment, measured by the coefficient of unemployment

| Districts | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|
| Range | 23.9 | 21.9 | 20.3 | 19.2 | 17.7 | 19.7 | 15.7 | 17.7 |
| Coefficient of variation (%) | 46.7 | 40.5 | 34.6 | 28.9 | 33.9 | 41.8 | 42.3 | 53.4 |

*Source: Calculations based on data from NSI, Labor market.*

A positive tendency is the decrease in the range of the variation, but its level is still rather high – 17.1. The disparity between the districts with regard to the deviation from the average level of unemployment for the country is extremely high – 53.4% and it reflects the fact that in some of the districts employment is at a very low level, while the demand for

labor is limited employment within the framework of the programs for subsidized employment implemented under the National Employment Action Plan.

## 3. Significance of the regional programs for temporary employment as an instrument for decreasing the disproportions in the demand and supply of labor

The National Employment Action Plan 2018 identifies the main objective of the regional employment programs as an instrument for increasing employment, decreasing unemployment and improving the quality of the labor force in the regions. In essence, they ensure subsidized employment for a period of up to 6 months.

The target group is broadly defined: youngsters, which are out of training, education and labor; unemployed persons aged 55 and above; unemployed persons with lower or no education; unemployed persons with disabilities.

The objective set for 2017 by the regional employment programs is for 2000 unemployed persons to be included in employment with a budget of BGN 7 920 thousand. All 28 districts in the country receive resources under this program, the highest budget is allocated to Vratsa district (BGN 454 619), the lowest is allocated to Gabrovo district – BGN 47925. According to the report of the Employment Agency in 2017 employment has been ensured under these programs for 1719 persons, while the allocated resources amount to BGN 6 609 thousand.

As the data in Table 10 indicate, the announced jobs under programs and measures from the active labor market policies vary: measured as a percentage of the total number of unemployed persons, the districts rank as follows: Montana (12.45%), Vidin (11.9%) and Vratsa (9.7%) and at the bottom of the ranking – Pazardjik (4%), Plovdiv (4%) and Stara Zagora (4.1%). This ranking can be anticipated in view of the high level of labor demand in Southern Bulgaria and the significantly slower revival of the labor market in Northern Bulgaria. In absolute terms employment under programs and measures from the active labor market policy encompasses around 1000 persons in the districts where the announced needs are highest, while the lowest number of requests for participation in regional employment programs have been submitted from Gabrovo district – 140 persons.

At the national level the regional employment programs in 2017 have included 12 699 unemployed persons, which represents an increase of 5.9% of all registered unemployed persons in the country and 7.7% of announced jobs on the primary market. These data show that the assessments of the scale of the regional programs is not ambiguous if it is conducted from a national or district standpoint. On a local scale, however, their existence has a more significant impact, since creating temporary employment constitutes significant support for the labor market as in the case of Montana – for 1000 persons given total unemployment of 7852 persons and demand for labor on the primary market of 2780.

Table 10

Announced jobs within programs and measures by district in 2017

| Districts | Announced jobs /number and as % of total unemployed /* | | Districts | Announced jobs /number and as % of total unemployed /* | | Districts | Announced jobs /number and as % of total unemployed /* | |
|---|---|---|---|---|---|---|---|---|
| Sofia - capital | 626 | 4,4 | Razgrad | 298 | 5,1 | Veliko Tarnovo | 466 | 7,2 |
| Pernik | 239 | 7,4 | Targovishte | 311 | 5,2 | Gabrovo | 140 | 6,2 |
| Sofia district | 620 | 7,5 | Dobrich | 189 | 4,5 | Burges | 473 | 6,4 |
| Blagoevgrad | 831 | 5,6 | Shumen | 456 | 5,2 | Sliven | 531 | 6,1 |
| Kustendil | 313 | 6,1 | Varna | 432 | 5,0 | Yambol | 221 | 5,5 |
| Plovdiv | 632 | 4,0 | Montana | 975 | 12,4 | Stara Zagora | 309 | 4,1 |
| Pasardjik | 448 | 4,0 | Vidin | 720 | 11,9 | Haskovo | 348 | 7,9 |
| Smolyan | 333 | 5,7 | Vratsa | 990 | 9,7 | Kardjali | 270 | 4,2 |
| Russe | 356 | 5,8 | Lovech | 284 | 4,6 | | | |
| Silistra | 257 | 4,5 | Pleven | 631 | 5,7 | | | |

** up to 1.09.2017*

*Source: National Action Plan on Employment 2018. Appendix 6.*

The significance of the regional programs for supporting employment may also be traced through the conducted assessments of the effect of the active labor market policy. According to one study from 2015 the share of the persons who have found realization on the labor market after participation in regional programs is 43.5%, which ranks them in 13th place among all 19 national programs. The largest share is registered by program "Start of the career" (81.4%).[2]

The assessment of the net effect from these programs (the net estimate of gross effects, substitution effects and displacement of "deadweight" effects) is 5.6 p.p. and is the lowest among the 19 national programs and projects.

It is interesting to note the regional aspect of the assessment of all 19 national programs and projects for active labor market policies conducted in the same study. Whether the effect of one program or project will be large or small depends, to a large extent, on the general condition of the labor market in the given region, i.e. on what the opportunities are to find work without participation in programs or projects. In that sense the more depressed the demand for labor in a given regional market, the lower the effectiveness of the active labor market policy. In that sense, on a regional scale, the lowest net effect from the active programs is evidenced in Sofia (5.3 p.p.), followed by Pernik (5.8) – the explanation for that stems from the intensified migration to the capital.

It can be concluded that the significance of the regional employment programs most clearly manifests at the level of the municipalities and individual settlements as well as in districts,

[2] Conducting assessments of the effect of the active labor market policy, financed with resources from the State budget, at the individual level, MLSP, 2017.

where there is bigger demand for labor and the labor market is significantly depressed. Their effect is temporary since they ensure employment for a certain period of time, while a little more than *one-third of the participants* in them find successful realization on the market after participating in such a program.

## 4. Sectoral changes as a factor for increasing the dynamic of employment

The structural changes are one of the main ways to overcome economic crises through recovery of the imbalances that are beyond the control of the market.

Table 11

Distribution of employed persons by main sectors – total and by regions

| Regions | | Total | Agriculture | Industry | Construction | Services |
|---|---|---|---|---|---|---|
| Total | **2012** | **100.00** | **19.7** | **20.3** | **5.4** | **55.3** |
| | **2016** | **100.00** | **18.0** | **20.2** | **5.0** | **56.6** |
| South-West | 2012 | 100.00 | 7.2 | 15.9 | 6.3 | 70.5 |
| | 2016 | 100.00 | 6.1 | 15.9 | 5.9 | 72.7 |
| South-Central | 2012 | 100.00 | 26.7 | 25.0 | 4.3 | 43.7 |
| | 2016 | 100.00 | 25.3 | 26.0 | 4.0 | 44.5 |
| South-East | 2012 | 100.00 | 23.2 | 22.1 | 6.1 | 48.5 |
| | 2016 | 100.00 | 21.1 | 23.3 | 5.5 | 49.9 |
| North-East | 2012 | 100.00 | 23.8 | 16.0 | 6.5 | 53.6 |
| | 2016 | 100.00 | 24.0 | 15.6 | 6.1 | 54.1 |
| North-Central | 2012 | 100.00 | 25.3 | 26.4 | 3.4 | 44.6 |
| | 2016 | 100.00 | 26.5 | 25.7 | 3.4 | 44.2 |
| North-West | 2012 | 100.00 | 26.6 | 23.8 | 3.6 | 42.1 |
| | 2016 | 100.00 | 28.5 | 23.4 | 3.1 | 44.7 |
| Sofia-capital | 2012 | 100.00 | 1.1 | 10.9 | 5.4 | 55.3 |
| | 2016 | 100.00 | 1.1 | 10.2 | 5.0 | 56.6 |

*Source: NSI, Macroeconomic statistics, Employed, regional level, www.nsi.bg*

The sectoral specificities of the restructuring of employment during the period 2012-2016 may be summarized as follows:

- Decreasing share of the employed in agriculture (from 19.7 to 18%) in total for the country and for the regions SW, SE, SC.
- Significant disparities in the employment level in agriculture by regions – given an average level for the country of 18% (2017), while for the capital this share is 1.1, and 6.1% in SW region.
- The dynamic of employment in the industry is almost unchanged at the national level (20.3% in 2012 and 20.2% in 2016).
- Increase in the share of the persons employed in the industry in SC and SE regions. The South-west region registers minimal decrease in the number of the employed as does the

Capital. The same applies to NW region, while the decrease is more significant in WC and WE regions, but it still remains below 1 p.p.

- The restructuring of the industry has not been a factor for significant fluctuations in the economic dynamic after the crisis, while the preservation of the employment level in it can be regarded as a good sign of post-crisis development.
- In the construction sector employment decreases and both for the economy as a whole and for all regions in the country, however, this sector is particularly strongly affected in the SE and NW regions.
- The development of the services sector and transition of employed persons towards it is a main feature of the restructuring of employment (55.3 in 2012 and 56.6% in 2016).
- The Capital, followed by SW region are characterized by the highest level of job openings and concentration of employment in the services sector – in 2017, 83.5% are employed in that sector, while their share in SW region is 72.7%.
- The other regions also register an increase (with the exception of NC region), but this increase is smaller and the level of employment in the service sector remains way below the average for the country. The assessment of these processes is not ambiguous, because the uneven development of the services furthers inter-regional imbalances and motives people to move to the Capital, which also exacerbate all resulting urban problems.

The intra-regional changes in the structure of the employed highlight even more clearly the movement of the labor resource between the main sectors of production and activities as a reaction to the influence of the crisis and as a means to escape it.

***The development of the services*** is a main factor for creating jobs and increasing the dynamic of employment. Furthermore, the current development of the services is linked to higher labor productivity as a result of a higher technological level. In the period 2012-2016 the South-west region leads in the development of the services as the number of the employed in the sector increases by nearly 56 thousand persons. The Capital has the main contribution to this increase; therein the persons employed in the service sector increases from 703 thousand to 769 thousand. The number of the persons employed in the services increases in Blagoevgrad district (by 2 thousand persons), while in the other districts from the region this share decreases – by nearly 3 thousand in Sofia district and by a little bit less than a thousand persons in Kustendil and Pernik districts. The decrease in the number of persons employed in the service sector in the smaller districts (Pernik, Kustendil and Sofia) and the registered increase in the larger ones (Capital, Blagoevgrad) characterizes the on-going processes.

An active intra-regional mobility of the persons employed in the services sector is also registered in the other regions. In SC region employment in this sector remains almost unchanged – around 289.5 thousand persons during the two periods, but the intra-regional mobility is very active – the persons employed in the service sector in Plovdiv district increase in number by nearly 4 thousand persons, in Haskovo district – by nearly 2 thousand persons, while that number decreases in Kardjali district (by a thousand persons),

in Pazardjik district (by 12 thousand person) and in Smolyan district (by 2 thousand persons).

In the North-east region the number of persons employed in the service sector increases in Varna district, remains almost unchanged in the districts Dobrich and Shumen and decreases in Targovishte district.

In the South-east region employment in the service sector increases in the districts Burgas, Sliven and Yambol; however, a significant decrease is registered in Stara Zagora district (by nearly 30 thousand persons).

In the NW region employment in the service sector decreases in all districts with the exception of Pleven district, where its level remains almost unchanged. Employment in the service sector also remains unchanged in the NC region, where insignificant increase is registered by the districts Razgrad and Russe, while a slight decrease is registered in the districts Veliko Tarnovo, Gabrovo and Silistra.

***The industry*** is of chief significance for the restructuring of employment in periods of crisis on the basis of technological modernization and increasing the labor productivity. The share of the persons employed in the industry in the post-crisis period remains almost unchanged – 20.2% (2017), while in 2012 it was 23%. This sustainability of employment in the sector at the national level is accompanied by an increase in the share of the persons employed in the industry in SC (from 25 to 26%) and SE (from 22.1 to 23.3%) and minimal decrease in the other regions.

The intra-regional changes reflect the decrease in employment in the enterprises, which are situated on the territory of the district, as well as of the closing or opening of new such enterprises. In the post-crisis period they are characterized by the decreasing share of the persons employed in the industry in all districts from the NW and NC region, slight increase in district Varna in NE region (while it decreases in all other districts); significantly more dynamic changes in the SC region, where increase in employment in the industry is registered in the districts Pazardjik, Plovdiv, Smolyan, while minimal decrease is registered in the other districts (Haskovo and Kardzali). SE region also registers increase in employment in the industry by nearly 6 thousand persons as a result of the increase registered in the districts Burgas, St. Zagora and Yambol; a minimal decrease is registered in Sliven district. SW region loses employment in the industry as a result of a decrease registered in the districts Blagoevgrad, Kustendil, Pernik and Sofia (Capital), while an increase is only registered in Sofia district.

***The agriculture*** is a sector, employment in which decreases at the national level to 18% of total employment (2016) as a result of a decrease in SW region (districts Blagoevgrad, Kustendil, Pernik, Sofia), SE region (Burgas, Sliven, Yambol districts), SC region (Kurdjali, Pazardjik, Plovdiv, Smolyan), NE region (Varna), NC region (Silistra) and Vidin, Vratsa and Lovech districts in NW region.

The share of the persons employed in the agricultural sector increases in the districts Stara Zagora and Haskovo as well as in the three Northern regions of Bulgaria, incl. Dobrich, Turgovishte and Shumen in NE region; Turnovo, Gabrovo, Razgrad, Russe in NC region and the districts Montana and Pleven in the NW region.

***The construction sector*** decreases in terms of the persons employed therein in the period of the crisis from 5.4 to 5.0%; a decrease is registered in the majority of regions and districts with the exception of Vidin and Montana (NW); Tarnovo, Russe and Silistra (NC); Kardjali (SC); Blagoevgrad, Pernik and Sofia (capital) (NW). The difficulty in overcoming this trend of decrease in investments in the county conditions the stagnation in this sector and the difficult recovery of the pre-crisis dynamic; a main source for maintaining it are the investments made under the Operational Programs and, as is evidenced by the presented data, they are focused mainly on the capital, where more large-scale projects are implemented.

As a whole, the summary of the sectoral changes at the national, regional and district level indicates the following:

- A significant change at the national level is the increase in the share of persons employment in the service sector with 1 p.p., a significant increase in this share in the Capital and South-west region and slow changes in the other regions.
- The intra-regional changes mainly boil down to changes in the balance between the districts – the increase in some is at the expense of a decrease in the same shares in others and this applies to changes both in the service sector and the sectors of the industry and agriculture.
- There is a tendency of profiling of the Southern and Northern part of the country as the Southern is differentiated as the industrial part, while Northern – as the more agricultural. Such division is unfavorable, because it faces problems with active mobility of the labor force and the stemming disparities in labor remuneration and standard of living.

## Conclusion

The conducted study indicates that while GDP growth in the years before the crisis was very favorable for employment, in the post-crisis period this tendency is not preserved, growth is slow, unsustainable and has a clearly pronounced seasonal character.

The comparison of the dynamic of main indicators of the labor market at the national, inter-regional and intra-regional level indicates that, while at the national level there are positive tendencies of increase in economic activity and employment and a decrease in unemployment, the inter-regional disparities are indicative of significant polarization in the direction North-South, i.e. the Southern regions register better values of the indicators and better tendencies in the development of the labor markets.

The intra-regional disparities are more significant and the range and variation of the analyzed indicators show significant disparities and clearly outline the strongly depressed municipalities with regard to the chronically low economic activity, employment and high unemployment.

There are policies on the labor market, which aim at a more balanced development at the regional level, but the effects from them are not particularly significant, since these policies are tied with the overall strategy for development of the regions of the country.

The restructuring of the economy is progressing slowly and could not be identified as a factor of main importance for the economic recovery after the 2008-2009 economic crisis.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# THE IMPLEMENTATION OF EUROPEAN YOUTH GUARANTEE IN BULGARIA – RESULTS AND PERSPECTIVES

*The report presents the main legislative, organizational and policy changes on youth employment in Bulgaria associated with the implementation of the European Youth Guarantee (EYG). Youth employment, unemployment and activity rates have changed in positive direction, but the quality of job offers for young people is still questionable. Some of the indicators follow the common tendency in the European Union (EU) and the youth inclusion in the labour market is an important challenge. The position of young persons on the labour market proves that they still do not benefit from the economic growth in a same level, as the other age groups.*
*JEL: J64; J08; J13*

## Introduction

Youth employment is of strategic importance for developing a prospective labour force necessary for the knowledge economy, alleviating the consequences of the current demographic crisis and ensuring revenues (including taxes and social security contributions) in the state budget. For strengthening this strategic position of youth, policy decisions have been adopted at European Union level to implement the priority initiative "European Youth Guarantee" (EYG) in the current programming period 2014-2020. Each member state should provide real guarantees for improving not only the position of young people on the labour market, but also their work and life conditions. In this regard, the EYG requires that a young person shall be assisted to get a job or participate in education or training (apprenticeship or internship) within four months after s/he became unemployed or left the formal education system. To meet these requirements, detailed national plans for 2014-2020 are being implemented in Bulgaria (and in the other member states).

What has been done so far in Bulgaria and to what extent the objectives of EYG have been achieved; what are the positive results, what has been omitted and what problems have been added during the implementation of the Youth Guarantee; what changes should occur and in which areas? These are topical issues that stand at the eve of the next programming period 2021-2027, with a view to finding more targeted and effective actions in working

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with youth. Responses to these issues are sought herein below in relation to youth's employment and position on the labour market and the quality of the jobs offered to young people.

## 1. Implementation of Youth Guarantee in Bulgaria

### *1.1. Changes in the legislation*

According to the changes in the Labour Code, an employment contract with provisions for training (apprenticeship) shall be treated as a typical employment contract with special protection of young people. It provides for on-the-job training for up to 6 months (with the exception of the dual training system) and a subsequent work contract of no more than 3 years after completing the training. Another amendment introduced an internship labour contract for a period of no less than 6 and no more than 12 months. Both types of contracts shall be signed while take into account the already acquired professional qualifications of young people, thus ensuring provision of a suitable job.

With an amendment to the Employment Promotion Act (EPA), the allowed period of youth subsidized employment (including for a first job) has been extended from 12 to 18 months. EPA stipulates that employers are entitled to certain incentives if they preserve the employment of the young persons at work after expiration of the subsidized employment contract.

Provisions have been adopted in the Vocational Education Act regulating the dual training. Since 01.08.2016, the system of pre-school and school education has been regulated by a new Law on pre-school and school education. Updated state educational standards have been introduced. Different forms of education – daily, distance and evening, as well as self-training are regulated as equivalent. These and other legal changes are intended to help reconcile employment and continuing education or return to the education system.

*The changes in legislation have a strategic importance for improving the position of young people on labour market. They allow corrections in already applied policies and the introduced new ones and their consolidation. The changes target is to assure a balanced security and flexibility at the different stages of the youth employment carriers. Their practical implementation, however, depends on many factors from the sides of employers' demand and labour supply, as it will be proved further. This way, the legislation is one of the prerequisites needed for a better position of young people on the labour market, but not the only one.*

### *1.2. Integrated organization for tackling youth problems*

The labour administration implements the policies on youth unemployed at regional level through the Directorates Regional Employment Services (RES) and at the municipal level through the Directorates Labour Offices (LOs). Labour administrations organize the implementation of activities that are included in national programmes and measures; provide services in the framework of employment mediation; maintain registers of

stakeholders; organize information campaigns, events and specialized job fairs. The activation of inactive youths is performed in cooperation with social partners, district and municipal authorities, NGOs, public administrations in the fields of education, healthcare, housing and social infrastructure and others.

At *local level*, partnership agreements were signed between the LO and municipal councils. Activities include provision of employment services for youths through on-site work, participation of young people in tripartite meetings with employers, field visits for meetings with inactive youths, organization of information campaigns, etc. In the partnership agreements, *the municipalities* are assigned the function to coordinate the activities for identifying young people NEET and activating them for integration on the labour market or return to school. For the implementation of the numerous activities, municipalities are assisted by hired with them youth mediators.

Another partnership is based on agreements for joint activities between labour offices and universities. In implementing such activities, the partners regularly exchange information on demand and supply of jobs for youth with higher education at the local labour markets. The main purpose is to ensure access to information about suitable work and activation of students for seeking employment through the labour offices.

*The practice until now prove that the realisation of the above partnerships depend largely on the capacity and motivation of the partners involved. However, even with a high level of commitment, the state of local economic and social conditions for their realization is of crucial importance.*

## 2. Mediation and policies on youth employment

### *2.1. Mediation*

EA, RES and LOs have recruited qualified staff to work with unemployed youths. *This is one of the recognized good practices in Bulgaria, where the hired young mediators (selected among unemployed young people) provide support to other young job seekers.* The main functions of the mediators working with the unemployed young people are to prepare individual work plans of jobs-seekers after their registration at a LO, to outline their personal profiles with information needed for placement to suitable jobs, to prepare agreements with long-term unemployed youths for integration into employment, requiring a personal commitment of the young person to executing assigned tasks and actions for overcoming his/her problems.

As a priority, young people are included in Ateliers for Job Seekers to the labour offices, where they gain knowledge and skills for job searching and personal behaviour in meeting employers. The ateliers prove to be a good instrument of guiding the transition of young people to employment.

Career consultants are also working at labour offices. Their main tasks are to provide information on opportunities for career development, guidance and counselling to unemployed youths, information about the local labour market, training on job search

strategies, planning of professional development. The labour offices' personnel comprise also psychologists and case managers who are qualified to work on youth unemployment. Roma mediators are appointed in the labour offices to address the specific needs of Roma youth. They hold formal and informal group and individual meetings with inactive young people of the Roma ethnic group with a view to stimulating their registration in a labour office.

Youth mediators are hired in the municipal administrations under the National Programme "Activation of Inactive Persons". They have to reach youths NEETs and activate them, in cooperation with the specialised labour administration. This is another good practice in Bulgaria that is also recognised at EU level.

Proven tools for the transition to employment of registered unemployed and inactive young people are the specialized youth job fairs, employer's day, career days, where face-to-face meetings occur between unemployed and employers. These forms of direct contacts have proven to be quite effective for young people in their job seeking efforts.

*The labour mediation to work of young people is a good example of the changes introduced due to the implementation of the Youth Guarantee, including new public employment services (PES), new tools and organizational issues that should be further developed and sustained.*

### *2.2. Programmes and measures financed from the state budget*

These are the National Programme "Career Start" (implemented before the start of the EYG) and the supporting programme "Activation of Inactive Persons". The objective of the first programme is to provide opportunities for young people (up to 29 years of age without work experience) with higher education to gain labour practice in public administration. The second programme's objectives are to activate and integrate in the labour market young people up to 29 years who do not work and do not study (NEETs group) and other groups of inactive youths (discouraged persons, long-term unemployed who receive social assistance allowances). Case managers and psychologists appointed under the Programme work with difficult clients and clients with specific needs of the LOs.

The measures for unemployed young people are regulated in the Employment Promotion Act. They include subsidised employment for a period of 18 months and subsidised apprenticeship (for those with basic or lower education and without any employment experience) and internship for 12 months with paid assistance of mentors. The scope of the measures was changed between 2008 and 2010 and in 2015, to make the employment periods longer and to stimulate the mentors engaged in the on-job-training, and thus – to stimulate the quality of training results.

The financial resources allocated from the state budget for programmes and measures are limited and decreasing after 2014; therefore the number (share) of unemployed, including young unemployed, covered by the measures, is also limited. *The mediation and the other PES to people on the labour market gain main importance for employment promotion in comparison with the financed by the Budget programmes and measures.*

### *2.3. Programmes for youth financed by the ESF and YEI*

The first project scheme financed at the beginning of the recent semester was the scheme "Youth employment". It provides traineeships and apprenticeships to young people. The programme's results prove that a short period of traineeships not requiring of further labour contracts with the trainees is the approach preferred by the employers.

The project scheme "Active people" comprises the activation and integration of young people aged up to 29 years, incl. NEETs, not registered at a labour office. The objectives are to identify and motivate inactive persons from the target group to behave actively at the labour market. Another project scheme ("Training and Employment of Youth") aims at integrating in employment unemployed youths up to 29 years registered in a labour office, by providing trainings and a subsidy to employers for long-term employment.

Some schemes were implemented in 2016 to increase youth's awareness about the EYG. Initiatives such as "Open Doors for Young People", information project "Stop Cycling", etc., were held to increase awareness among young people. In addition, regular information campaigns were organized by the EA.

## 3. Policies on identifying and activating young people not in education, neither in employment or training (NEETs)

The labour administration provides *support to NEETs on job searching*. After registering in a LO, the young person could receive information, consultations and motivation services in order to be included in training or re-enrolment in the education system.

In 2017 the innovative for the Bulgarian practice project "Ready for Work" (2017-2019) was launched, making the work with NEETs more effective. The objectives of the project are to investigate and find inactive youths, to provide topical information about the labour market, to motivate and encourage registration in the labour offices. Also it supports young people in job seeking through individual and group consultations in "Ateliers for Job Seekers" and their participation in job fairs for youth for facilitating the contacts between young people and employers. The target group comprises inactive young people. The activities include the identification of youths through suitable to the youth methods as information events all over the country[2]. Participating youths are invited to fill in a questionnaire with personal data and contact information for further communication. For reaching inactive youths, already established links and regular exchanges of information at municipal level between all relevant administrative structures are used. The registration of unemployed is rewarded with gifts (flash memory, umbrella, external phone battery, pen, notebook and information brochure).

[2] In large cities the events were combined with concerts of famous Bulgarian pop singers, while in smaller municipalities – with local cultural events and youth job fairs. At the information events the benefits of registering with a labour office and subsequent start of work are discussed and information materials are disseminated.

The Project also envisages improvement of existing infrastructure or new assets for established ateliers for job seekers in each labour office. Funding is provided for purchase of laptops with Internet access, multi-functional devices for document processing, multimedia, cameras, routers, screens, whiteboards and air conditioners.

The administrative capacity for the implementation of the project will be developed further by hiring an activation specialist and a professional consultant "atelier moderator" in each labour office; organising meetings for exchange of experience among the moderators; delivering seminars with experts outside the labour administration for acquaintance with new methods of working with inactive youths.

The Project applies partnership with other (external) organizations that have competences to apply specialised methods and approaches for identification and activation of the NEETs. At the end of 2018, a tender procedure was finalized to select competent partners that practically ensured such specialised NGO for each RES in the country. It is expected that the selected organizations shall have the capacity to apply innovative approaches in comparison with these already used by the labour administration and develop relevant methodological materials.

*Diverse policies and services are applied in order to meet the needs of young people in the labour market. The work with inactive young people includes also external organisations, which can differentiate the methods of working with youngsters and be more efficient than the work of the labour administration.*

## 4. Results

The National plan on EYG does not include performance indicators for its implementation in 2020. Some assumptions have been made that by the end of the year, 30% of persons included in employment and training programmes and measures shall be youngsters up to 29 years, and that more than 150,000 young people shall be included in employment and training in the overall period 2014-2020. These are too cautious target values of the indicators that are being successfully reached, as seen in Table 1. By the end of 2017, 102.6 thousand young people were enrolled in training or employment, and by the end of 2020 this indicator will be achieved and even exceeded. At the end of 2017, the share of youths in employment also exceeded almost twice the planned share.

Two groups of performance indicators on the labour market are presented in the annual EYG implementation reports. The first (see Table 1) consists of indicators that present EYG's direct results. The second group contains general results, which may depend, to a certain extent, on the Youth Guarantee implementation. According to aggregated reporting data, the results achieved through the work with registered unemployed youths until the fourth month of their registration, have significantly improved since 2014.

Table 1

Results from the implementation of the Youth Guarantee in Bulgaria (2013-2016)

| | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|
| 1. Number of registered unemployed young persons aged up to 29 years, as of 31.12. | 58771 | 49886 | 37667 | 32995 |
| Relative share in total registered unemployed (%) | 16.7 | 15.2 | 14.4 | 14.2 |
| 2. Number of registered unemployed young persons aged up to 24 years, as of 31.12. | 25000 | 19834 | 14095 | 12451 |
| Relative share in total registered unemployed (%) | 7.1 | 6.0 | 5.4 | 5.5 |
| 3. Total number of newly registered unemployed up to 24 years | 55369 | 46254 | 40306 | 34714 |
| 4. Number of newly registered youth unemployed included in training or employment | 29850 | 24869 | 25800 | 22084 |
| Relative share in total registered unemployed (%) | 53.9 | 53.8 | 64.0 | 64.0 |
| 5. Number of youth aged up to 24 years, whose duration of the registration in a labour office is less than 4 months | 12745 | 9795 | 8237 | 7340 |
| Relative share in the total number of registered unemployed youth up to 24 years | 51.0 | 45.4 | 55.9 | 56.8 |

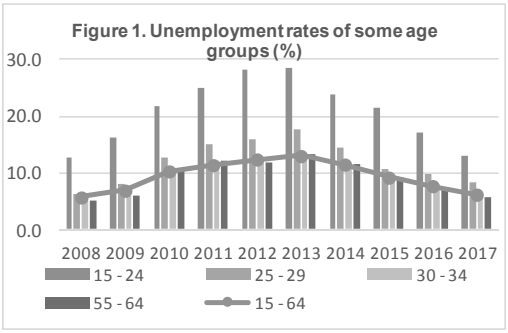
*Source: Annual reports on the implementation of the Youth Guarantee.*

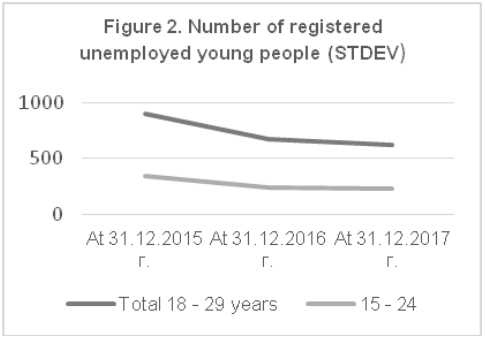
Based on the data in the above table it can be concluded that youth unemployment is decreasing and the response of labour mediators is adequate to set targets. The rationale behind this conclusion is the increase of the share of: (1) unemployed youths assisted in a short period of up to 4 months, combined with a total decrease in the number of registered unemployed youths; (2) the number of young people who started working on job vacancies announced by the labour offices on the primary labour market, as well as through other ways of finding a job.

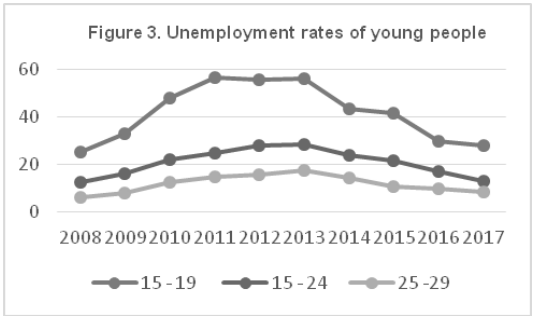
The second group of general indicators for youth employment, unemployment and inactivity (according to the NSI Labour Force Surveys) also registers a positive development, which is a common result of the implementation of the EYG, the economic conditions after 2012, the demographic situation in the country and the changes in the conditions of work and life and on labour remuneration in Bulgaria. An indicative fact about the realization of the EYG (as far as it is oriented towards the unemployed and inactive youths) is the definite decrease of total youth unemployment (Figure 1). Unemployment rates, however, do not reach the 2008 levels. The unemployment rate of persons in the age group 15-24 years remains the highest among all age groups, the disparity with the age group 55-64 being significant.

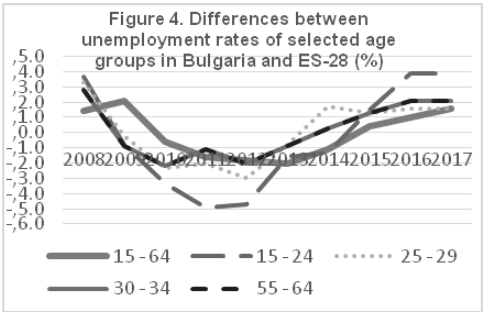
According to the 2017 Report on the implementation of the EYG in Bulgaria, the number of registered unemployed in the age groups 15-29 and 15-24 years decreased both average for the country and in almost all districts. The standard deviation in the number of youth by regions is also decreasing, indicating a process of overcoming the strong differences of the indicator across the regions (Figure 2). The decrease of the share of young people in the total registered unemployed by regions (with few exceptions) is also indicating positive changes. These changes are to be considered as a result of the application of the EYG and the impact of the demographic factor.

One of the achievements on the Bulgarian labour market, which is recognized at EU level, is the lower unemployment rate of young people aged 15-24 compared to EU-28 (Figure 4). In Bulgaria, as well as in the other European countries, young people aged between 15 and 19 years are in the most risky position on the labour market (Figures 3 and 4).



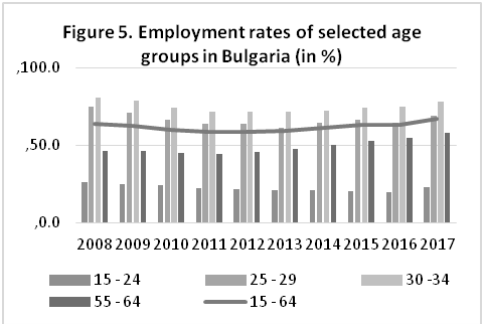



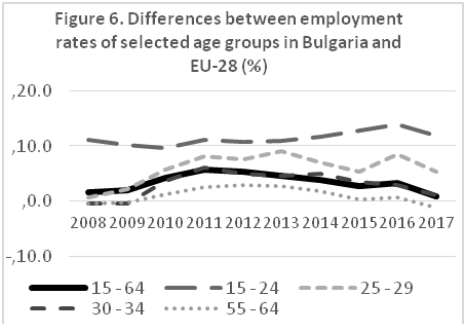




*Source: NSI, Labour Force Surveys.*

In 2017, the employment rates of young people aged 15-24 and 25-29 years have also not reached the 2008 rates (Figure 5), being lower respectively by 3.4% and 6.0%. The comparison between youth employment indicators in Bulgaria and in the EU (28 member states) shows that the largest distance from the general EU trend in Bulgaria is registered exactly for the age group of young people (Figure 6).




*Source: NSI, Labour Force Surveys.*

The rate of usage of youth workforce depends on the intensity of the transition of youths from unemployment and inactivity to employment, with equal other conditions. In 2017, 15% of unemployed young people aged 15-24 made a transition to employment, compared to 8% in 2016, 12% in 2015 and 9% in 2014.[3] By this indicator, Bulgaria falls in the group of member states which are far away from the general trend in the EU. In Estonia which is the leading country by this indicator, 44% of unemployed youths made a transition to employment, and in Denmark and Switzerland – 40%.[4] The comparison with the leaders and the other European countries prove a low intensity of the transition of unemployed youths to employment in our country. The intensity of the transitions of the young inactive to employment is also one of lowest in comparison with the other member-states.[5]

In addition, the share of inactive young people in Bulgaria is high and their relative share in the total number of young people in Bulgaria is sustainably kept as one of the highest compared to the other EU member states. In recent years, youth's inactivity is due rather to waiting for emigration opportunities (permanent or temporary) than to working in the grey economy. In case of temporary emigration, young people alternate periods of work abroad with stays in Bulgaria, during which they wait for a new job abroad and remain in the group of inactive people.

*It can be concluded that, despite a higher transition to employment, young people in Bulgaria still benefit from the economic growth opportunities after 2012 to a lesser degree than the other (higher) age groups. To some extent, this may be due to a lower efficacy of the Youth Guarantee than desired, to factors limiting the employers' demand for youth workforce, to other subjective factors stimulating the postponement of starting work in Bulgaria.*

## 5. Offering quality jobs for young people

A prerequisite for implementing the EYG is to ensure that young people have an access to quality jobs. According to the national definition, in order to be considered as qualitative, in the conditions of insufficient job vacancies a job offer should meet as many of the following criteria as possible: match the education/qualification of the young person, suitable for the person's health conditions, tailored to the young person's individual profile, offer employment sustainability, meet health and safety requirements, enables individual development. A quality job offer for young people aged 15-18 should be oriented primarily to returning to the education system as well as inclusion in continuing education and training and apprenticeship.[6]

There are difficulties in setting criteria and indicators to characterize quality job offers for young people and for employment in general. No answers have been given to questions regarding the minimum quality requirements, differentiation of criteria for different sectors

[3] Eurostat [lfsi_long_e02].
[4] Eurostat [lfsi_long_e01].
[5] Eurostat [lfsi_long_e06].
[6] Report on the execution of the National Plan on Youth Employment, 2017.

and jobs, etc. Eurostat data on overall quality of employment are not of a systemic nature yet. Subject of monitoring are mainly working conditions, duration of working time, share of fixed-term and part-time labour contracts, enforcement of labour legislation, and separate data for young people are not collected under each indicator.

The quality of jobs for young people, with equal other conditions, predetermine employment sustainability. This is evidenced by the changes in the employment rate of the higher age group of persons aged between 30 and 34 years. In 2017, only 28.6% of young people are known to be in a positive situation – education or employment, including internship or apprenticeship 6 months after leaving the Guarantee. This result is low and the situation is unknown for the majority of those leaving the Guarantee (71.2%).[7] Obviously, there is a need of changes and a systematic approach in applying the mechanisms for collecting information on the subsequent situation of young people who have benefited from subsidized employment or have returned to the education system. This implies both an expansion of the information databases (possible inclusion of civil sources/ registers), as well as improvement of the data collection methodology with ensured representativeness.

One of the groups of indicators that can be applied to characterize the quality of jobs for young people can be the level of their relative wages. On the one hand, due to the lower productivity of young people at the beginning of their careers, the gap between the remuneration of young people and of employees in the higher age groups is significant. On the other hand, however, the coefficients of dispersion of annual remuneration of youths are higher than the hourly rates. This can be due to the unstable employment of young people throughout a year and to their recruitment to unsustainable jobs (Loukanova, 2017, p. 291-299).

The requirement that the quality job offers for young people aged 15-18 should be primarily oriented towards returning to the education system is practically impossible to implement by the labour administration. If a registered unemployed youth requests information and counselling, s/he is only advised (directed) to continuing education. The specialists in the labour offices and the regional employment services, however, do not have the authority to place early school-leavers back into education, which ultimately depends on their personal choice.

Since 2017, new alternative forms of adult education have been applied, equal to the regular form of education. According to data of MES and NSI, they are still not well-known and, accordingly, are not widely demanded by secondary school dropouts. In 2017, only 3.7% of the total number of secondary education graduates[8] in Bulgaria were included in distance, evening, individual, independent and distance education. Also, it turned out that employers have not been sufficiently motivated to introduce dual education and the expectations for its massive application have not been met in 2017 and 2018. New changes in labour and tax legislation are needed to encourage employers to provide vocational training through work according to the requirements of the dual learning.

[7] Ibidem.
[8] NSI, www.nsi.bg/bg/content/3491/.

*It can be concluded that for now the quality of jobs for young people is not a realistic objective. It remains a good wish and it is unclear to what extent it has been realized. Young people in university and higher education employed in high-tech productions represent possibly an exception.*

## In conclusion

*At national level, good general results of EYG actions for young people on the labour market have been reported. These are mainly quantitative indicators that are influenced by the economic growth and the professional capacity of the labour administration to work with young people.*

*In Bulgaria, at regional and sector levels, differentiated policies to meet young persons' specific needs are poorly applied. Accounting for this specificity should be considered as a component of the quality of the assistance. In future periods, attention needs to be paid to the major problem of protecting the quality of jobs for young people and improving the monitoring and reporting of jobs' quality.*

*There are still issues of activation of NEETs. In the work with NEETs, the labour administration cooperate with partner organizations, with which it negotiates agreements and relies on the application of diversified methods of working with young people away from the labour market.*

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# ANALYSIS OF THE TRENDS IN HUMAN RESOURCES ACTIVITIES AND THE NECESSITY OF REDESIGN OF THE EDUCATION

*We are witnessing a dynamically changing environment that imposes a new way of thinking and new competencies. Human resources activity is no exception. A number of factors shape its new look. Digitization, globalization, intelligent learning platforms, virtual teams, new jobs and dynamic jobs, social responsibility, burnout, fraud from candidates for job vacancies and many other trends require human resources leaders to initiate and support the changing environment. All this implies new competencies of human resources specialists. For this purpose it is necessary to redesign the contents of the universities syllabus and to reorganize the way of their creation and development.*
*JEL: M12; M5; M51; M53; O15; I21; I23*

## 1. Factors that shape the new look of the activities of human resource management (HRM)

Global changes have led to a number of changes in organization's behaviour, the content of competencies, respectively the syllabus in universities which develop new knowledge and skills. Among the main factors behind the global change in all areas of the modern world are globalization and digitization. Organizations have begun actively introducing software products and artificial intelligence into the labour process. They also changed their way of working. Instead of permanent staff, they prefer temporary staff.

It is "The Rise of the Contracted Workforce" (Prinzlau, 2016) (including temporary workers, independent contractors, consultants), suitable for specific projects. This in turn led to the creation of teams (real and virtual) involving people from different ethnic backgrounds, with diverse cultural traditions and behaviours. All these social and economic transformations we are witnessing undoubtedly change the state of the activities of human resources management.

The Deloitte's Report (Gamelearn, 2017) identifies the 10 trends that will shape the future of human resources departments. Among them are: modern, dynamic and networking

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organizations; constantly trained employees, talent acquisition; improving employee's professional experience, maintaining culture, engagement and motivation; introducing new ways of evaluating employees, searching for a new type of leadership; digitization of the human resources departments and introduction of artificial intelligence in the activity; Human Resources decision making based on Big Data; promoting diversity and inclusion; striking a balance between machines and workers.

In addition, results from one more study suggest that in the first quarter of 2009, the number of LinkedIn users was 37 million, while in the third quarter of 2016 it was 467 million (Statista, 2018). Facebook's active users in the fourth quarter of 2017 are 2 billion and 200 million. More and more people are looking for and finding jobs through social networks."79% of job seekers use social media to find a job. This figure is increasing to 86% for young job seekers who are in the first 10 years of their careers" (Economy, 2018). 45% of job seekers use their mobile devices to look for work at least once a day (Economy, 2018).

The changing environment also influences the human resources training activities. "67% of people use their mobile devices to access training" (Elogic learning, 2017). "Approximately 77% of US companies offer online training as a way to improve the professional development of their employees" (Elogic learning, 2017). Although online training has often been underestimated, it has led to "42% increase in revenue for companies" (Elogic learning, 2017). More "In 2016, 98% of organizations said they would introduce videos as part of their digital learning strategy" (Elogic learning, 2017).

"Recently Evolv announced that its robots can view thousands of CVs and predict which employees are likely to stay in the company and which fit well in the environment" (Economy.bg, 2016).

The La Trobe University's robot named Matilda does one more thing – he reads the emotions of the candidates and on this basis judges who suits best to the position. At the same time, it takes care of the comfort and positive mood of the interviewed.

Robot Matilda uses 76 questions to assess the skills of candidates and draws up professional expertise. The duration of the interview is 25 minutes. The power and advantage of Matilda lies in the fairness and impartiality towards the candidates. Moreover, now it is not necessary to travel abroad for the interview for a vacancy. It is enough to include Skype.

The presented trends change the modern world, and thus the content and the nature of human resources activity, put requirements for new competences of the specialists in this field.

## 2. Proposal for a Competent Model of the Future Human Resource Management Professionals

The changing environment has set new requirements for HR professionals. New job titles have emerged like: internal human resources consultant, talent acquisition specialist, supply manager in HRM, specialist digital selection of talent, specialist and analyst of e-learning, specialist of accountant of bonuses, employee satisfaction specialist, career development analyst, analyst of human resource management information system, wage analyst, coach, welfare specialist, organizer of social initiatives and other. There are signs showing that fundamental knowledge needs to be built on new ones that respond to global and digital trends.

A proposal for a model of the knowledge and skills of human resource specialists corresponding to future trends is outlined in Table 1.

Table 1

A proposal model of knowledge and skills of human resources specialists in line with future trends

| Trends | Required competencies of human resources specialists |
|---|---|
| Digitization of the recruitment and selection process | Knowledge and skills to work with software products to attract and select staff, skype interviewing skills, non-verbal communication skills, active communication skills with potential candidates in social networks, skills to attract suitable candidate using social networking . |
| Online education/e-learning | Knowledge and skills for resource provision of e-learning. |
| Develop social responsibility of business | Knowledge and skills for developing strategies for social responsibility, organizing social business initiatives, preparing social responsibility reports, conducting internal and external social audits. |
| Big Data in Human Resources and Business | Knowledge and skills to maintain and analyze data in human resources and business. Budgeting, control and audit in the field of human resources. |
| Virtual teams | Knowledge and skills for building virtual teams, supporting their activities through organizing video conference meetings. |
| Increased stress at work | Knowledge and skills for creating and developing employee welfare programs |
| The introduction of robots into the labor process | Knowledge and skills for selecting robots, Robots / people ratio analysis in the work process. |
| International teams | Knowledge and skills for behavior in an intercultural environment. |
| Cyber fraud in the area of human resources | Knowledge and skills to prevent cyber fraud in human resources. |
| Developing social networks and communicating on the Internet | Business etiquette and communication skills for digital communication. |
| GDPR | Knowledge and skills for lawful creation, processing, use and storage of personal data. |

*Source: Systematized by the author.*

Analysed trends show the need for binding knowledge and skills for: working with technologies specific for human resources, maintaining, analysing and controlling a significant human resources database, conducting investigations and preventing workplace violations by potential and real employees, development of strategy for introduction of technologies in HRM, development of consultancy skills, communication skills for working with stakeholders in intercultural environment, auditing and monitoring of human the behaviour and quality of the HRM system; creating and organizing socially responsible initiatives and building a sustainable work environment to improve the well-being of human resources. All the knowledge and skills that are proposed in the competence model imply technical skills. They are necessary for survival and development in the present and the future. Are universities ready to provide this knowledge?

## 3. Current content of the Master's syllabus in which human resources specialists are trained in universities in Bulgaria and in foreign universities

Websites of national and international universities with information on HRM Master's programs are sources of information for the purpose of the diagnostic analysis of the current content of Master's syllabus for human resource specialists.

The analysis of the syllabus of universities in Bulgaria gives ground for at least four conclusions:

First. The information on the websites of some of the universities in Bulgaria regarding the content of the syllabus of HRM is limited to the name of the Master's program, which makes it difficult for the prospective students to choose.

Second. There is a variety of learning disciplines, predominantly with traditional, fundamental knowledge of human resource management. Some of the subjects are listed in Table 2.

Table 2

Subjects studied in the Master's programs in HRM at state and private universities in Bulgaria

| Studied subjects | | |
|---|---|---|
| Policies and tools for human resource development | Leadership | Organization of social security funds |
| Team management | Social Audit | Training and development of human resources |
| Business communications | Risk management | Business Strategies and Strategic Management of Human Resources |
| Financial and accounting aspects of HRM | Modern developments and innovations in human resource management | Staff Insurance |
| Standards for Health and Safety at Work | Organizational change and development | Human Resource Audit |
| Managerial skills and competence, coaching; | Learning organization | Optimizing job positions and staff selection |
| Strategic management of human resources and change management | Management and development of organizational culture | Planning and organizing human resources |
| Training, career development and employee appraisal | Innovation management | HR Information Systems |
| Conflict of interests | Corporate Entrepreneurship and Innovation | Remuneration management |
| Motivation | Organizational Behavior and Corporate Culture | Labor and social security law |
| Organizational behavior | Labor standards | Managing human capital |
| Communication skills | Industrial relations | Managing performance and individual performance |
| Conflict management | Social policies and social protection strategies | Changing and Strategic Management of Human Resources |

*Source: Summary by the author.*

Third. The analysis shows that private universities in Bulgaria have more emphasis on teaching subjects which build soft skills needed for human resources management, while public universities have more disciplines that form "hard" skills. Moreover, some of the subjects studied in HRM Master's Programs in private universities form knowledge that is significantly closer to the competencies of human resources specialists proposed in Table 1. Among the subjects providing this knowledge are: Globalization of business and International Human Resource Management, Talent Management, Organizational Analysis, Design and Development.

Fourth. The HRM Master's programs syllabus in foreign universities do not significantly differ from those in Bulgarian universities. Some of them are listed in Table 3.

Table 3

Subjects studied in HRM Master's programs in foreign universities

| Studied subjects | | | |
|---|---|---|---|
| Staffing, training, and development | The company and the competitive environment | Work psychology | Administration of staff |
| Compensation and benefits | Business strategy | Organisational Behaviour | Quality audit and process |
| Labor relations and collective bargaining | Finance and business planning | Leadership and team management | Payroll |
| Key concepts in HRM | Strategic management of human resources: approaches, trends and tools | Workforce diversity, inclusion and equal opportunity employment | Strategic Human Resources Management and Organisational Behaviour |
| Organizational behavior and theory | Job analysis and strategic planning of human resources | Internal communication | Managing and Coordinating Human Resources |
| Managerial economics and labor market analysis | Selection, hiring and retention | Change management | Leadership and Management Development |
| Data analysis | Development: coaching, counselling, mentoring | Human resources metrics | Contemporary Issues in Human Resources Management |
| Human Resources Planning and Staffing | Career plan and career development | Interpersonal communication techniques and NLP | Performance and Reward Management |
| Training and Development | Performance management and evaluation | People management in business strategy | Employment Legislation |
| Effective Performance Management | Global Compensation | Conflict management | Business Research Methods |
| Employment Relations and Practices | Organisational theories and development | Managing Diversity and Equality in Employment | Assessment and Individual Differences at Work |
| Ethics in Human Resources Management | Industrial relations and collective bargaining | Crisis communication | Contemporary Issues in Strategic HRM |
| Human Resources Research Methods and Analytics | Workplace health and safety | Skills management | Designing and Delivering Training |
| Employment Engagement and Well-being | International management of human resources | Training Policy and Engineering | Employment Law for HR Practitioners |
| International and Comparative HRM | Project management | Social relations | International HRM |

*Source: Summary by the author.*

The main differences between universities in Bulgaria and foreign universities are related to the diversity of HR programs offered in foreign universities. In addition to Master's programs with HRM fundamental knowledge, Master's programs are offered in: Human resources consultancy, International Human Resources Management, Strategic leadership in human resources, data analytics and human resource management, Human resources management and organizational consulting, International Human Resource Management and Development, Business Administration – Strategic Leadership in Human Resources,

Human Resources and Labour Relations, Adult Education – Human Resource Development, Global Human Resource Management, etc.

## 4. Conclusions from analysis

On the basis of the analysis, seven main conclusions can be made, related to: redesigning the content of universities syllabus in human resources, creating interdisciplinary Master's programs, changing the order for creating and developing syllabus at universities, active digitization of the learning process, presence of business in the creation of new Master's programs and syllabus, investing in teacher training and maintaining the professional qualifications of human resources specialists.

### *4.1. Redesign of university syllabus in Master's degree in human resources management*

The analysis showed that the offered Master's programs contain the fundamental knowledge in the field of human resources. It is good to think about diversifying supply. Legislative requirements place limitations on the number of courses and hours in one Master's program. This makes it impossible to upgrade the current Master's programs, which provide fundamental HRM knowledge. In order to respond to future trends, it is advisable to create Master's programs on individual HR functions.

For example, Building sustainable strategies for the digitization of human resources activities; Digitization in attracting and selecting human resources; Digitization of training and development; Building international virtual teams and skills to work in an intercultural environment; Communication skills for international human resource management; Budgeting, control and audit of human resources; Social Responsibility, Social Initiatives and Social Audit; Prevention of fraud and cybersecurity in human resources activities and others.

Increasing the number of Master's programs offered should not be considered as a threat. The client feels free when he can choose. Therefore, it is important that the Master's programs are distinguished by a variety of content and flexible forms of training tailored to the needs of the trainees. The same applies to the offered courses of study. It is good to create an environment with a variety of training courses, beyond the regulated ones. If interested, students could join them by paying extra courses. To overcome the conflict of interest, students who will study a selectable subject (taught by the teacher) should not be current students of the teacher.

### *4.2. Creating interdisciplinary Master's programs*

Analysed trends show that the diversity of competences needed for future human resources activity are many and vary. The creation of interdisciplinary Master's programs will contribute to the successful realization of the students. The proposal to create interdisciplinary Master's courses related to future competencies of human resources

specialists are: Cybersecurity in the field of human resources; Marketing and digitization in the process of attracting and selecting; Public Relations, Marketing and Social Responsibility Strategies; Accounting and financial analysis of human resources activities; Social Responsibility, Integrated Reports and Social Audit.

### *4.3 Change the order for creating and updating of the Master's programs*

At present, the way of creating Master's programs in the various universities is predominantly done in the following order: establishment and approval by departments, approval by faculties and/or committees, approval and/or academic councils. Often, this involves the inclusion of courses that do not meet the needs of students but protect the interests of some of the participants in the syllabus approval committees. Continuing this practice poses risks.

I accept that it is more sensible for any professor, who would like to create Master's programs, to have the opportunity to do this. The Master's program will not rely on the university's budget. The lecturer is responsible for the content of the Master's program and for the collection of a team of lecturers and/or guest lecturers from the business. He manages the whole process – from creating, advertising, attracting students and budgeting the program to graduating the students. Predominantly, universities have created online platforms that can be used to advertise the Master's program and/or to organize online training. Maintenance will be part of the fee that students pay. In this way, the risk of syllabus filling with unnecessary learning disciplines will be ignored. In this way, we can improve the competitive environment and the preparation of students.

### *4.4. Active digitization of the learning process*

Software products that are used in different human resource functions should actively present in the Master's degree training process. "The Global World Network is increasingly becoming a "parallel" virtual world with incredible possibilities ... But using these opportunities requires targeted work with an optimal organization because the global network also hides a number of risks to individuals and organizations "(Stefanov, 2015, 5). What better way to manage this risk, than adequate training in a real environment, with the right technical means and software products? Through this type of training – conducting a skype interview, salary analysis, job vacancy announcements, and CVs with software products, students' confidence will increase and the needs of future employers will be met.

The Implementation of this proposal requires the achievement at least two purposes. The first one is for universities. They have to digitize the learning process. Actions in this direction are necessary because "technical (digital) knowledge" is the necessary knowledge in the global economy (Atanasova, 2015, p.102). The second one is for companies offering HRM software products. They have to have the opportunity to conclude contracts with universities and offer training versions for quality student education.

*4.5. Presence of the business in the creation of new Master's courses and courses of study*

Businesses should be actively involved in the creation of Master's syllabus. It must be able to "order" (fund) Master's programs to provide the knowledge and skills it needs. Perhaps it would be necessary to make some legislative changes. The practice of free-of-charge participation in the teaching process of guest speakers from business is part of the social responsibility of companies and universities. This good practice should be continued. However, in order to meet the employer's future needs, it is imperative to provide opportunities for the development of Master's programs at the request of employers.

*4.6. Investing in teacher training*

It is not far the future in which robots will have a database of questions and they will do the exams. Probably they can also teach. In order to teach in a way relevant to the modern technical environment it is necessary to create a system for acquiring and improving the technical skills of the teachers. If this is not done, there is a risk that part of the teaching staff over forty could lose their jobs because of the inability to adapt to the changing environment in the next five to ten years. In this relation, it is good to think of a national strategy as well.

*4.7. Maintaining the professional qualifications of human resources specialists*

The re-qualification of human resources specialists is crucial to addressing the consequences of technological change. In this regard, it is good to consider introducing legislative changes in order to keep up-to-date the competences of people who have worked for several years (e.g. 3 or 5) in the human resources field. This requires a macroeconomic strategy.

## Conclusion

Competition in education has long overcome national borders. Students require education, which is expressed not only in obtaining a diploma but also and in real knowledge, because they are aware that in the search for paid employment they will face a global competition in which only the trained one succeeds. Therefore, if universities do not change themselves, the environment will change them. If the environment fails to change them, there is a real risk that employers will not require a higher education diploma as a condition for starting a job, for which a diploma was required by now.

The current analysis does not have claims for exhaustiveness but will help universities to take action not only to develop a strategy for training human resources specialists but also to develop a strategy for maintaining the teaching staff competences.

"The uncertainty of the surrounding environment is the only sure thing in today's business reality" (Dimitrova, 2017). In a situation where robots will occupy 5 million jobs by 2020 (Gang, 2018) and 75 million by 2025 (Dormehl, 2018), panic is not beneficial. There is a

need for socially responsible behaviour characterized by pooling the efforts of employers, policy makers and teachers to redesign syllabus at universities.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# INCLUSIVE DEVELOPMENT AND REGIONAL POLICY

*Growth for the purposes of growth is not a wise idea for the contemporary governments because of the increasing dissatisfaction due to the lack of real benefits for a huge part of the population and for some regions. Inclusive growth is focused upon the preliminary analysis of sources and limits of the sustainable development not only for one group – the poor. It aims to find out approaches for full usage of labour forces; especially the ones occupied with low productive activities or that are excluded from the market. The green economy and growth turn to be the modern answer to the need of new production ways as a result of the ecological problems and social disproportions. The aim of the report is to study the characteristics of the inclusive growth in the District of Vidin in the context of the regional policy of Bulgaria and the green economy opportunities as a mean for reaction to the negative social-economic effects.*
*JEL: O4; Q2; Q5; R1*

## Introduction

Different institutions try to elaborate instruments for evaluation of world development, prosperity and social equity. They admit that the inequality exists between the countries as well as within each state. This is a dangerous phenomenon for the stable economic development and needs special attention and appropriate policies to mitigate the negative consequences.

The aim of the report is to examine the characteristics of the inclusive development in the context of the regional policy of Bulgaria and the green economy opportunities as a mean for reaction to the negative social-economic effects. Several indexes characterize different aspects of the system of social-economic and ecological relations. They allow to outline some policy spheres, which are underestimated or overrated. Social progress index of the EU ranges the regions at NUTS-2 level. In order to define properly the specifics and problems of the development we study the districts, because each district unites several close municipalities and according to article 142 from the Constitution of Republic of Bulgaria it is an administrative-territorial unit for implementation of regional policy, for realization of state governance in place and for provision of compliance of regional to

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national interests." The municipality, on the other part, is an independent territorial unit, which executes the local self-governance. As Stefanova (Stefanova, 2017) underlines the creation of municipalities achieves "unity between the community of people and the territory, which they inhibit." The necessity of problem-solving on local level is supplemented by the importance for coordination of the regional decisions with a view to the national aims, achievement of effective resources management and their direction towards sustainable development. The local government together with the district governors could put in motion actions for mitigation and termination of negative social-economic tendencies in Bulgaria through appropriate measures with an accent on conformity to ecological limits and preservation of natural resources.

## 1. Growth, Prosperity and Social Progress

Different international institutions try to create instruments for the evaluation of world development, prosperity and social equity. They admit that the inequality exists between the countries as well as within each state. This is a dangerous phenomenon for the stable economic development and needs special attention and appropriate policies to mitigate the negative consequences.

According to Legatum Institute the world prosperity, measured through the Prosperity Index, increases in 2017, as well as in 2018 and at present it is at highest levels compared to data from the previous decade. At the same time the unequal distribution of income has deepened according to the World inequality lab. The public policies have to select instruments to cope with inequality as an alarming social-economic phenomenon, which undermines the development and brings instability. The world inequality has increased during the last 35 years, as it is lowest in Europe, where the richest 10% of the population possess 37% of national income. The reasons for such development are the existence of progressive taxation, education and income policies, directed towards a population with low and average income. The instruments for inequality decrease also include counteraction to tax frauds, profits and income hiding, education and well-paid working places provision, public investments in education, health care and environmental protection. Such initiatives support the overcome of increasing inequality in the countries, as well as decrease of the regional differences, which is a factor for sustainability of the development and for prosperity.

All we need is growth (Kotseva-Tikova, 2018) but besides the economic progress it is essential to measure some other aspects as the social wellbeing indicators. For that reason a suitable instrument is the Social Progress Index (SPI), which aim is to measure social progress without the inclusion of economic indicators. According to Social Progress Index (Scott Stern, Amy Awares, Tamar Apner, 2017) SPI of Bulgaria for 2017 is 74.42, which ranged the country 41$^{st}$ among 128 counties. In respect to the GDP ppp/capita Bulgaria is ranked 47$^{th}$ with an amount of $17 thousand. Since 2016 Bulgaria improves its position starting from 43$^{rd}$ and reaching 40$^{th}$ score in 2018, which describes its capability to develop socially.

The EU has modified SPI to measure 272 EU regions. SPI is an aggregate index of 50 social and environmental indicators that capture the same three dimensions of social progress: Basic Human Needs, Foundations of Wellbeing, and Opportunity. The EU Regional Social Progress Index (EU-RSPI) evaluates all the EU regions and puts two Bulgarian regions on the final positions: Severozapaden is ranked 271st and Yugoiztochen region is on the final position – 272nd. Sud Muntenia in Romania is 270th. The last 10 positions are occupied by 5 Bulgarian and 5 Romanian regions, as on the last places are regions that are located on both sides of the Bulgarian-Romanian boundary, i.e. despite that they are part of different countries the regions show similar slow development and the lowest values of the living conditions. The peripheral national regions need close cooperation of the regional with the transboundary policy. An important instrument for decrease of disproportions is the creation of special measures to intensify the relations and activities in respect to more green opportunities.

The low values of Severozapaden region are due to underperforming of three sections of dimension Opportunity – Personal rights, Personal freedom and choice, Access to advance education. In dimension Foundations of wellbeing it is recorded underperforming in Access to information and communication, as well as low results for Health and wellness. In the dimension Basic human needs it is recorded underperforming in Shelter (lack of adequate heating). The highest score is for dimension Foundations of wellbeing, where the Environmental quality is overperforming.

The indexes show almost similar results for Bulgaria. The differences can be found in respect to education, health and personal freedom, which are evaluated higher in the prosperity index and oppositely in SPI. The indexes will more fully estimate the human wellbeing and progress if indicators that evaluate cultural aspects of wellbeing are included.

The EU-RSPI is important because it describes the living conditions in the regions of Bulgaria in comparison with the rest. Only the region which includes the capital town – Sofia performs better as it outperforms all the regions in Bulgaria, 7 regions in Romania and 2 in Italy. The differences inside these regions are significant and it is useful for the state to have deeper look into the peculiarities of each district. In the next section the District of Vidin will be studied in order to see the specifics that stay behind the low EU-RSPI and are result of the applied national development policy. In contrast to low prosperity inequality in the EU, in Bulgaria the trend is toxic for several districts.

## 2. Social-economic Profile of the District of Vidin

The district of Vidin is analyzed in respect to the following indicators: demographic, healthcare, education, construction of flats, transport infrastructure, culture, environmental, security, economic, and renewable energy. In the district of Vidin there are 143 living places, incl. 7 cities. The most populated region is the municipality of Vidin – 63% of the population. The district shows negative tendencies in all spheres. In contrast to the indexes in the previous chapter here the development is studied through social, environmental, economic and cultural aspects. The trends in the district raise serious questions about the potential of the region and the country to develop inclusively and sustainably in future.

The main demographic trends of the region during the period 2011-2016 are:

- Population decrease by over 10%, as well as working population decrease by 11%.
- Birth rate diminishing by 26%.
- Constant negative population growth, increasing negative mechanical growth by over 4 times.
- The number of pensioners decreases and becomes 33% of the district population.

The district is subject to strong population decrease and worsened age structure, which lessens the human capital and undermines the stable regional development. The reasons for population emigration and mainly that with high working capacity are thoroughly economic, but of considerable importance is the availability of suitable living conditions – education, healthcare, security, technical infrastructure.

The healthcare in the region is provided by two hospitals with constant number of hospital beds – 365 and decreasing number of doctors – by 10% in comparison to 2011, which is in synchrony with the population decrease. The health centers are 7. The information from the Council of the district of Vidin shows that the provision of healthcare services is concentrated in the town of Vidin.

The education is defined by a decreasing number of crèches, kindergartens and schools, teachers and kids at kindergartens, pupils at schools as a result of the migration and population movements. The number of crèches lessens by 40%, the teachers in them – by 16% and the children – by 15%, which is a negative consequence of the contemporary processes and a strong symptom for the undermining of the stable ground of the wellbeing.

In contrast to the negative demographic situation and the decrease of healthcare and educational services there is a slow increase in the number of the constructed flats – by less than 1% for the examined period. The main problem here is the access to normal housing conditions especially in winter. The lack of enough heating puts the area on last positions in respect to the indicators in group Shelter of the EU-RSPI. The national policy towards decreasing heat consumption through increasing energy efficiency should be measured in respect to the positives from increased access to heat. The energy efficiency financing of family apartments by the government should also include measures for efficient stoves installation and replacement of coals with ecological heating.

The cultural life in the district according to NSI is not quite rich – 74 libraries, 2 radio stations, 1 TV operator, 2 museums. The films projected in the cinemas have increased. The information from the registry of the Ministry of culture of Bulgaria shows that there is one state puppet theater. The cultural life is provided mainly through state financing which is an important stimulus for holding the population in the region. The access to cultural events is not measured in the indexes of prosperity and development, which would enrich the evaluations and present it multidimensional. The broader access to different events and places with cultural and historical significance is part of the harmonious human development with positive externalities upon the creation of informed and independent citizenries.

The environment is in good state in respect to usage and preservation of waters and waste management. 99.7% of the population is provided with drinking water without restrictions. The basic disadvantage is the lack of wastewater treatment in the biggest towns as well as sewage systems in the small. 56.8% of the population has access to wastewater treatment, as for the period 2011 – 2016 this share has increased insignificantly – 0.9 percent points.

Since September 2015 the household wastes have been transported into a regional depot for waste that is not dangerous. Its construction was financed by the Operative programme "Environment 2007-2013" and it covers the needs of all 11 municipalities. As a result the old dung-hills were closed. For the period 2011-2016 the waste quantity has decreased by 24%, as the average annual quantity per capita has lessened by 12% and amounted to 294 kg annually per capita. The wastes in 2016 are at a higher quantity compared to the previous year, as in 2015 the waste was with the lowest quantity. Through the EU financing the waste and water management has improved. The problem that still exists is the lack of wastewater treatment for the total area. The construction of water treatment systems and adequate waste management are essential elements for environmental quality increase and a precondition for improvement of human health and business conditions in the context of the green economy (Mochurova, 2018). The treatment of different types of waters is in a very close relation with the necessity of reconsidering and establishing green infrastructure, which offers solutions to the environmental problems in a new way as, for example, differential wastes collection and their further processing.

The costs for fixed assets with environmental purpose acquisition have increased 3 times, as the main investments are executed in 2014, when the construction of the new depot started. These assets are hardly 3% of the fixed assets in the Severozapaden statistical area and insignificant when comparing with the national levels. The EU-RSPI gives an average score for the environmental conditions of the area, which shows an opportunity to conduct a greener policy, which can give a stimulus for development, turn the trend of the migration process, and provide inclusion of different skilled people. Usually the good environmental conditions reflect low economic development. Green economy does not share such prejudices but accepts the environmental wealth as a precious resource that needs a new approach to generate more value.

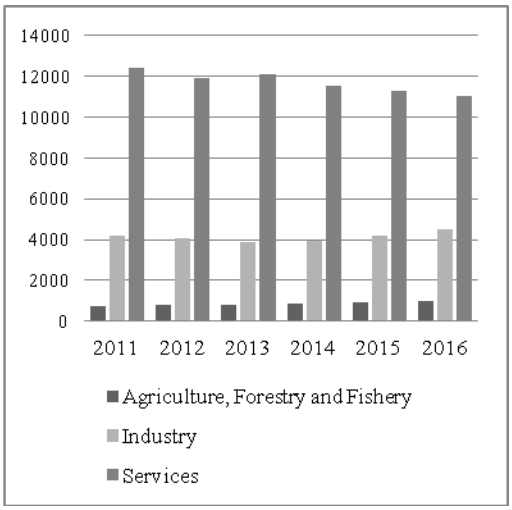
The security in the region has increased. The number of crimes decreases by 20% and they represent 1.6% of the total national crimes. The socially dangerous crimes have the highest share – 32%, followed by crimes against property rights – 22%. A positive tendency is the decrease of the crimes against property despite the fact that the EU-RSPI puts the region on the back positions in respect to safety.

The lack of highways is a serious problem for quick connection of the district with the developed commercial and production centers as Sofia. In winter it is difficult to access the region and to allow local citizens to reach the basic markets, although 212 km is the distance between the town of Vidin and the capital city. The region turns to be difficultly accessed and isolated, depending on the potential of the local initiatives.

The economic indicators do not show significant growth for the period 2011-2016. The results are modest, namely:

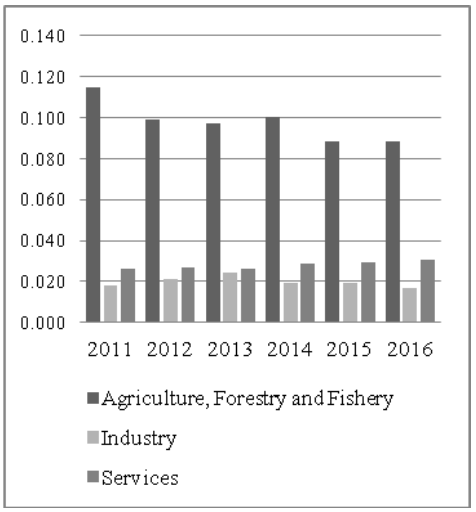
- Foreign direct investments increases by 11% in comparison to 2012, as there is a growth in 2015 and 2016;
- The costs for acquisition of fixed assets grow by 31%, as in 2016 their level is below the previous year.
- The amount of production increases by 18% during the period, as during the last 5 years it fluctuates at a constant level.
- The turnover increases slightly by 3%.
- The number of lodgings are constant but the realized sleeping decreases.
- The average number of employed decreases by 10% during the period (Figure 1). The only growth is seen in the processing industry, which provides employment for 20% of the employed. The other industries with high employment share are: trade and repair of automobiles and motorcycles (13%), public governance (10%), education (10%) and health and social activities (11%).
- GDP increases slightly by 3%, while GDP per capita – by 15%.
- The costs for research and development doubled in 2016, as the personnel occupied with it increased to 51 people;
- In 2016 the structure of gross domestic value is: services – 68%, agriculture – 17% and industry – 15%. Since 2014 the agriculture share has increased and exceeded the industry share (Figure 2).

Figure 1
Employed in the District of Vidin




*Source: www.nsi.bg/ Regional statistics*

Figure 2
Gross Added Value per employed (mln. BGN/employed)




*Source: own calculations*

During the examined period the employed in agriculture increase, which results in a decrease in the gross added value per person. Despite the drop the added value is 3 times higher in comparison to the services and more than 5 times higher than the industry gross added value. Agriculture, fishery and forestry give opportunities for sustainable production practices and for higher added value. The role of the green industries is underestimated. They could give a better perspective for the district sustainable development and provide full usage of labour forces, especially the ones that are excluded from the market.

The employment depends strongly on the public sector, education and healthcare. Around 1/3 of the employed are engaged in the public sector or activities, which are regulated and financed publicly. The average gross wage increases by 39% during the period as a result of the changes in the minimal wage, social security levels and rates.

All the aspects of the social, economic and environmental spheres in the District of Vidin depict a critical situation. It is characterized as a region with very low opportunities by the EU-RSPI because the Personal rights and Personal freedom and choice are very low valued, which is due to the lack of trust in the political and legal systems, as well as in police. These are very strong and serious problems of perception of the role and activity of the main democratic bodies of governance. A change in the functioning of the institutions could put in motion the existing production factors and attract new.

For the period 2005-2016, as well as for the sub-periods: 2005-2010 and 2011-2016, it is executed a correlation analysis of the ratios of:

- Average annual wage from employment for the District of Vidin and for the country;
- Number of unemployed, registered at labour offices, for the District of Vidin and for the country

In relation to:

- Turnover for the District of Vidin and for the country (Figure 3);
- Production for the District of Vidin and for the country (Figure 4)

The correlation could help outline the peculiarities and draw important conclusions about the potential for inclusive sustainable development of the District of Vidin.

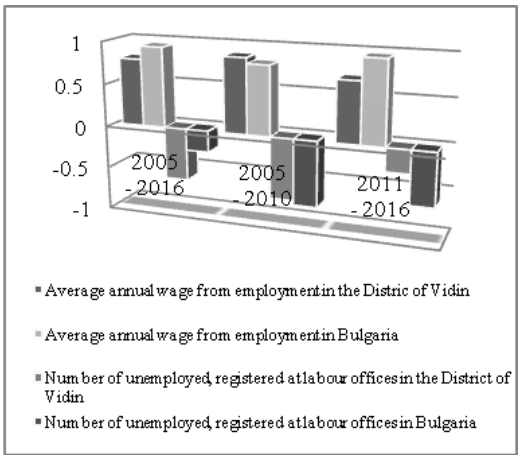
The relation between „Average annual wage from employment“ and „Turnover“ shows a strong positive relation for the District of Vidin, as well as for the country. During the first sub-period – 2005-2010 the correlation is stronger for the District, while for the country it increases during the second sub-period – 2011-2016, i.e. for the District of Vidin the strength decreases. During the first sub-period the wages of employed and the turnover in the district increase greater in comparison with the second, when both ratios change slightly. This is a result of the changes of the social security income, the high level of migration and the population aging, which decrease the wage significance for the turnover increase. The correlation with „Production“ shows similar tendency. Stimulus for employment other than wages are necessary for the region dynamic development, i.e. new forms of employment and business activity incl. for pensioners, that could create

opportunities to counteract to the current negative processes through creation of higher added value.

The correlation of „Number of unemployed, registered at labour offices“ to „Turnover“ is negative, as the tendencies for the District of Vidin and for the country are opposite.

Figure 4

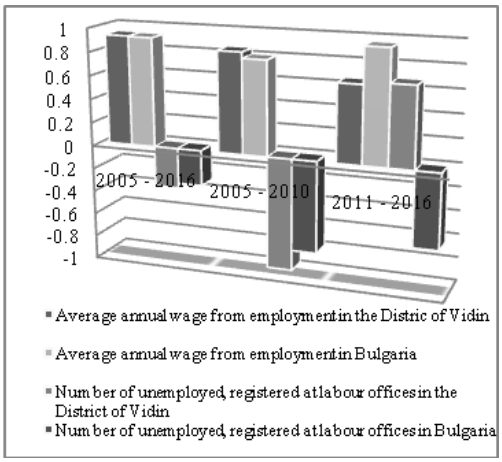
Correlation to Turnover




*Source: own calculations.*

Figure 5

Correlation to Production




*Source: own calculations.*

While the correlation for the District of Vidin is average for the whole period, it shows differences for the sub-periods: a strong relation for the first and weak for the second, i.e. the unemployment has slight influence upon the turnover, despite that it decreases to 6.3%. For the country the results are opposite: for 2005-2010 the relation is strong, while for 2011-2016 – average.

The correlation to “Production” has the same trend. For the District of Vidin it shows strong relation between the registered unemployed and production, as for the second sub-period it is positive. The last is due to the high unemployment decrease in 2016 accompanied by slight production diminishing. The improvement of labour sources quality and the measures to unemployment decrease through training and working places grants are important issues of the regional policy in order to decrease the migration processes. The lack of proper working skills requires measures for provisions of practical advises for employment. The formal and temporal employment does not meet the aim of sustainable development and progress. The leading part of the local and district governments is necessary because of their capability to evaluate the local deficits and to establish proper solutions, as well as to assist to prevent income hiding and tax evasion.

The weak economic development of the district looks dramatic when the data is compared to the region and the country. In 2016 the GDP of the District of Vidin is 9% from that in the Severozapaden statistic region and 0.6% from the national. The district has the lowest level of production in Bulgaria – it is lower by 19% than the GDP of District of Silistra,

which is positioned last but one in respect to that ratio. GDP per capita of the District of Vidin slightly increase and reaches a share of 48% of the average level for the country.

The weak economic development does not support stronger social prosperity. The negative tendency could be overcome through new activities. The green policy and greater usage of alternative energy sources is a possible solution. There are 57 objects, using renewable energy sources (RES), with installed capacity of 47,84016 MWt in the District of Vidin. The region possesses a small RES capacity with an insignificant share in electricity generation – 1.1% of national installed capacity. The main renewable capacities are established in 2012, when there was a peak in the installation of PVs in the country. The favorable regulation encouraged a large-scale construction of PVs in Bulgaria, as a result the country ranked 10th in the world in respect of the installed PVs. In the district of Vidin the process of renewable energy production is due to the same reasons as the speed is low and the capacity installed – small. In 2016 the renewable electricity production is 80 644,841 MWh and over 50% of it is a result of grid-connected PVs installations.

The modest results in green energy utilization reflect the national trend in new policy creation and execution. The benefits cannot be realized if they are not clear and supported with mechanisms for broader understanding, inclusion in the process of policy preparation and realization. The ready-made medicines are not a panacea and do not bring prosperity in all cases. The necessity of comprehensive policy impact evaluation is crucial and requiring enough time and large independent participation. Although local authorities are close to population in the district they are not active in the process of renewables usage planning and developing. They do not understand and do not stimulate RES.

The national economic policy aiming to keep the main macroeconomic indicators stable resulted in misjudging the dramatic emigration process of young people. It put an accent upon macroeconomic stability and budget deficit reduction accompanied by decrease of costs for healthcare and education, as well as dependence upon EU funding for main infrastructural projects, incl. environmental. Now the public authorities have to transform the priorities in their social-economic policy. The green types of economic activity are important in order to provide conditions for a third industrial revolution[2], which uses the benefits from the decentralized energy generation from RES (Kotseva-Tikova, 2016). The integration of the three sectors: energy, transport and information technologies is an important step toward the infrastructure establishment for a new industrial revolution. The undeveloped regions have to find the opportunities which the new economic media proposes and use them for regional stabilization.

## Conclusion

Several international institutions try to establish indexes to evaluate different aspects of national and regional development. The prosperity index measures the development, but the development is accompanied by the deepening of the income inequality. The EU has the

[2] Rifkin in his book The Third Industrial Revolution comments the possibilities for establishment of the necessary infrastructure for the execution of the third industrial revolution.

lowest rate of inequality increase, but the problem exists and requires appropriate solutions. The social development of the statistical regions gives more details of the picture of the living conditions in the union. When the districts in Bulgaria are analyzed, the great distinctions inside the statistical regions are viewed. Such differences undermine the conditions for national sustainable development and make it difficult to react and cease the negative demographic tendency. The macroeconomic policy needs to be enriched and reconsidered through the inclusion of instruments that stimulate the green industries that bring potential for the creation of favorable living and business conditions even for remote living places. Low carbon activities, biological production, energy efficiency, renewable energy, different environmental initiatives are some of the possible solutions to counteract to the present way of doing business and overcoming the regional disproportions in Bulgaria. The local authorities and the district governors should be engaged in the process of generation of green initiatives and infrastructure establishment that is favorable and stimulating innovative decisions in the use of the available resources.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
ECONOMIC STUDIES

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# THE SOCIAL REALITY OF THE ROMA IN BULGARIA (FROM THE VALUE OF DIFFERENCES TO EMPOWERED RELATIONSHIPS)

*The policies for the protection of the different ethnic communities of the European Community are integrated into national law. But the legal institutional framework is not enough to create a better world for "the different." The report classifies the peculiarities of the social reality of the Roma. The results of an empirical study of the problems of cohabitation of Bulgarians and Roma in Kremikovtsi, Garmen, are presented. An inductive approach has been used in which the localized case provides recommendations for resolving the pressing problems of minority inclusion towards universal values and ensuring equal working conditions. It is proposed to change the management approach by respecting the differences.*
*JEL: A12; A13; J01; J14; J15; J24; M14; M51; M54*

## 1. Introduction

The policies for the protection of the different ethnic communities of the European Community are integrated into national legislation. The legislative framework, however, is not enough to create a better world for "the different". Public, regional, national and urban initiatives and projects prove their vital role in addressing the pressing problems of minority inclusion towards universal values and ensuring a level playing field for training and work. It is necessary as a society to give ourselves a chance, to accept and understand the differences between us so that we can learn from them in order to be prudent and responsive. Above all, we must hear the "strangers" to help them develop themselves according to their desires and dreams, in harmony with our goals and dreams. Through good-faith dialogue and mutual tolerance, joint, purposeful and consistent efforts can achieve social and economic success as well as shared prosperity.

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## 2. Characteristics of the social reality of the Roma

Roma are the third largest ethnic group in Bulgaria with a tendency to increase. According to data from the National Statistical Institute (NSI), the population census in 2011, with 325343 people or 4.9% of Bulgarian citizens being identified as Roma. According to unofficial data from Roma organizations that have carried out their own census, the Roma population in Bulgaria exceeds about twice the official number, i.e. about 700,000 people, making them the most numerous minority.

The main characteristics of the social reality of the Roma are poverty, low standard of living, domestic violence, lack of perspective and lack of vision for the future. Problems with Roma illiteracy are a major factor in their segregation. There is a serious imbalance in the education of Bulgarians and Roma. The illiterate persons in self-identified as Roma are 11.8%, while for Bulgarians they are 0.5% (NSI, 2011). Roma report as reasons why they tear their children out of school – lack of clothing and teaching material; children take care of younger children or work; lack of motivation to learn as the school does not integrate them and children feel isolated, especially when they do not understand Bulgarian. Parents do not understand the role of the school in shaping the character and the values of the child. Education is not a conscious necessity and is not a value to most Roma. Roma do not see the importance of education due to the existing discriminatory attitude of employers and weaker opportunities for employment.

Roma are a specific vulnerable group characterized by low educational and professional levels, lack of built-up work habits for full inclusion in the labor market, which in turn leads them to their economic and social disintegration. The Partners of Bulgaria Foundation (2005) conducted a survey according to which "two-thirds of the Roma who have never worked are women". The results of a 2007 Amalipe Center survey on the status of the Roma woman support these data and strengthen them as a trend. According to him, only 31% of women work. The percentage of women retired by sickness (6%) is also relatively high (Kroumova and Ilieva, 2008).

Roma women who have completed primary and secondary education are respectively 36.9% and 4.23% of the Roma community (Pamporov et al., 2008). The main reasons why early Roma women drop out of school are: the status of the Roma woman in the family and its unjust position, which are determined by the ethnocultural model and the strong patriarchal character of the Roma community; the main traditional role of a woman related to childbirth, raising and upbringing. Their illiteracy or low education influences the child's educational aspirations and school success.

Some parents do not let their daughters at school for fear they will be stolen. Sexual maturity occurs when leaving school and marrying at a minor age. About 80% of Roma create families before the age of majority (Vassileva, 2009). According to data from the Amalipe Center Survey (2011), the average age of the first cohabitation for Roma people with unfinished primary education is 16 years.

Nearly two-thirds of the total number of Roma in Bulgaria are children and young people up to the age of 30, which determines the higher birth rate. During the period 2001-2003 it

is 26.7 per thousand (Tomova et al., 2004). In 2011, UNICEF (2016) found "the trend of increasing the number of girls born under 16.

The conclusion is that Roma are a community with the earliest marriages and family cohabitation in the country. This leads to the early dropping of Roma children from school, to their systematic fallout from the labor market, to mass and deep poverty, to living in segregated neighborhoods in poor housing conditions and diminishing control, hampering their socialization and transferring the values and norms of the macro-society.

## 3. The co-existence of Bulgarians and Roma with empirical research in comparative terms

The authors of the survey are inspired by the international initiative "Decade of Roma Inclusion", the European Parliament's Resolution on European Roma Strategy, the National Strategy and the Framework Program for Equal Integration of Roma in Bulgarian Society. The aim of the survey is to outline the main viewpoints of Bulgarians and Roma (majority/ minority) about their relationships, values, attitudes and practices in the period 2015-2017. The subject of the survey is the Roma in Kremikovtsi, Garmen, Blagoevgrad region. The subject of research is the relationship and co-existence between Bulgarians and Roma in this region.

### *3.1 Methodology of the study*

The basis of the study is the idea of social attitude based on the chance to act in a certain way. An important focus of the study is the attitude toward another and the degree of closeness. For the purposes of the study, social attitude is seen as a "subjective chance" when two actors have oriented their behavior bilaterally and orient their own actions to expectations. Social attitude is understood as an "objective chance" when an observer observes and "transcribes" that there is a mutual orientation between acting and social action as a "face-to-face".

Qualitative and quantitative methods have been applied in the process of empirical research. Quantitative research measures respondents' attitudes, attitudes, and behaviors by studying their socio-demographic and psychographic profiles. Qualitative research focuses on Roma and their real experiences. Reveals their conscious or unconscious attitudes or perceptions. The methods used for contacting the respondents are a direct personal interview and group discussions. In this way, the limitations of the two methods are overcome and the strength of the qualitative approach of research is increased. The aim is to understand the attitudes and practices of the Roma community in depth, to explore their perceptions of equality and integration of the Roma, to identify their needs for integration, training and work. The qualitative research attempts to explain the behavior of the Roma - "why" they act in one way or another, one or another choice is made, the motivation is established. Through the focus group the attitudes of people with Bulgarian citizenship to the Roma education and work opportunities were studied.

### *3.2 Results of the study*

Roma as an ethnically different community in Bulgaria

From a historical point of view, it is valid the idea of the Roma as people who are in a non-privileged position with regard to the other European different peoples – "... with the first attempts to construct the Bulgarian national identity the Roma appear in the position of the stranger, of the stigma another ... characteristic of the medieval Christian worldview, which, based on the Scriptures, divides the peoples of the world into three types - heirs of Noah's sons Sim (Asia), Ham (Africa) and Japheth (Europe) and the sin of his father Ham was cursed to be the slave of Shem and Japheth (Bit.9: 25-27). Behind such a mythological order is the hidden social notion that Gypsies are ethnos, which is below the rest of European peoples. "(Grekova, 2002). Although it is a mythological perspective, the idea of who/what is rom is knowledge that is transmitted without questioning from generation to generation.

In our modern state, the modern state claims that all people are equal, but at the same time it creates the thinking of ethnic difference as defining the alienation between Bulgarians and Roma. The language (mother tongue), domicile and name give grounds for identifying (outside) and/or identifying (inside) ethnicity. By meeting and already self-identifying through the ethnic in "us" also arouses and roots the desire to think, feel, speak, act like .... through the ethnic. "Ethnic self-awareness among Gypsies has a complex hierarchical structure, as well as a peripheral orientation towards other ethnic communities. The main model of ethnic self-consciousness among gypsies is three-tier - awareness of belonging to a group, awareness of belonging to the gypsy community and consciousness of belonging to the macro-society in which they live or lived before "(Pamporov, 2006).

Roma as a minority

The concept of "minority" arises on the basis of political emphasis on the importance of a particular social definition. People who are a minority are negatively marked "... as a difference shared by a number of people and / or attributed to them as significant. In fact, it is significant for us – "we" are normal because we have somehow been in the position of normative. "Minority" is a kind of "imagined community," but the essence is who, how, and why does it think it as "community": "inside" or "outside"... "(Grekova, 2002). The difference between a group of people is marked by origin. Outwardly, this distinction is called with certain and established features that are "known" to be typical of each "representative" of a particular minority, and that knowledge is passed on. By meeting and recognizing the other as belonging to a minority, he/she is misled under the appropriate type, and unqualified knowledge is reproduced.

Roma as different and therefore foreign

People from minority groups are identified through a negative distinction from "me" and others like me. The municipality of Gotse Delchev, the municipality of Garmen and the municipality of Hadjidimovo are places where Bulgarians, Bulgarians-Mohammedans,

Roma and Turks live in relative union – in school and factory, in the field, together celebrate their holidays. Nonetheless, the difference often sets a notion of the majority (the Bulgarians) of foreignness, not of "us", and consequently leads to the closure of "us" and the non-admission of the others.

When the difference of the other acquires a negative value for "me", i. whenever the world is enclosed in "our" world, I distinguish the other as a foreign one... "the alien yields characteristic dimensions – it is not everything that is different from" our "but only that which is different from ours, which ours labeled as alien .e. as incompatible, unacceptable, "abnormally different".

Relations between Bulgarians and Roma

Since the time of settling in Kremikovtsi, relations between them and the people living in the villages of Marchevo and Garmen have been maintained. By looking at the relationship between Bulgarians and Roma as time-consuming to understand the closeness between them, we distinguish a relationship with a knowledge and past experience with and for the Other, and we can together make a project about the future and entering the relationship with the other, with whom I have neither past experience nor knowledge.

Cultural difference

The cultural difference becomes a problem only in a specific interaction where one social actor looks at the interaction through the prism of his "cultural" specificity. Recognizing the "other" and perceiving it as a culturally different inevitably "he" becomes not of "our".

If I (the group/community/culture) sets the norm of action, behavior, practices, etc., in recognizing the other as being different to "our" we label the label as non-normal, "odd," and " my interest "

The cultural specificity was not observed in two variants:

- when the other is important to me only when doing something;
- when I treat one another as another - a unique human being.

Cultural difference is not a problem:

- when interactions are avoided with "abnormally" different;
- when interacting with a representative of the other cultural tradition;
- when the cultural identity is not noticeable or not significant in the interaction.

According to the survey, the following results are outlined as a barrier to relations between Bulgarians and Roma:

R: The neighborhood is separate from above. They took us all the fields there... They began to take in allowing themselves to pick from the ginkgo, vineyards and everything else that

is being grown by the people of Marchevo. They, even before the fruit is ripe, have been cut off, and we all, including us, have been forced to give up our lands there and leave them without sewing them.

I: In your opinion, why is the "theft"?

R: Hunger ...

... (Interview with a woman (former teacher) from Marchevo village)

In the narrative above, there is an attribution of guilt: "they took our lands," that is, the fault falls on the people living in Kremikovtzi district. People from the neighborhood take fruits, vegetables and other sown things from "foreign" gardens, and respondents of Bulgarian origin call it hunger. The reason is not enough when it comes to "their lands" and humanity is lost in the opposition "ours". Through this opposition, as Maya Grekova (1996) asserts, relations with others are being built. Admitting "them" not as "us", but at the same time in their "space", the knowledge "here and now" comes to life for them in "my experience."

"I" as an acting individual in the context of the other is immersed in ours – it is taken out of the flow of what is actually going on. The contact with the alien, as much as it is transmitted in itself ... however regulated, by the usual system, attitude, together with the contact with the foreign - immediately given and concrete individual. It is these particular experiences in the neighborhood between people of different ethnicity that turn into stories in the field of "our". Returning from "there" and telling "Me" for there-then, understands the story, but without the subjective meaning of the action and the experience of the past. And from this narrative that "I" speaks of his action with another "there and then", the other "here and now" has the opportunity to accept it because it is closer to "me" because I am (or objection), or to doubt, for the reason that he has ever told other things like "I", which are "false": "But if you tell me about what you have done action... there-and-then, as long as you do not / do it "here and now", I can understand your narrative (the narrative as here-and-now yours but not the subjective meaning of your "there-and-then" action. Or rather, I can "understand" your action there-and then, leaning it under some kind ... "

Concrete relationships between specific people "there-and-then" become stories that turn into transmitted knowledge. Here the question arises for interchanging of views: In what circumstances is it possible to put in place the other and when my "here" and its "out there" can be mediated by a common subject of interest?

In excerpts of the interview seems to be an attempt to understand the subjective motive, which carried further – why detaches fruit from a foreign land (P: Hunger), perhaps in past experience 'I' was also placed in similar situations or imagine if so, what would you do? When the land in question is "mine", there is no attempt to understand the Other and the action it has ever done – and the other is misled by the type.

This is an example of how it influences the environment in which individuals are and how integrated it is. Investigating the location of the neighborhood was an emphasis on the ring road, which was built about four years ago. The reason for the neighborhood, moving to the village of Leshten or Kovachevitsa, is the increased tourism. This intervention "from the outside" makes it possible to ask questions about the situation in the village of Garmen and

the quality of work of the municipality. In the past, the shops in the village of Marchevo and / or Gurmen have provided an environment in which Roma and Bulgarians are recognized, met and communicated. While "now" their relations are limited, because twenty-five years ago in Kremikovtsi quarter, a shop was built (by Bulgarians). To date, the shops are two, and this reduces the chance for meetings between Bulgarians and Roma in another place, except in an institution like the school. Based on measurement of social distance seems to be another field of analysis, so-called. "Aliens," which are people moving into the area "Padarkata" implemented conflict-free relations with the "old settlers."

### *3.3 Conclusions and recommendations from the study*

Ethnic groups, tolerance and acceptance of differences

The integration of the Roma population is a two-way process – it requires the participation of both the minority and the majority and does not exclude the preservation of diversity. Integration is focused on development – the minority has the same opportunities for personal and professional development as the majority population only if they have the chance to be in the same place (see Garmen case). Integrated people can identify themselves on the basis of ethnic or national origin, without creating tension or provoking intolerance. Under the social adaptation of the Roma, we understand the process of active adaptation to a particular environment, resulting in a balance between individual living activity and the environment.

Ethnic Tolerance in Job Selection

The culture of accepting differences in people and the diversity of ethnicities is a world cultural heritage. All Member States of the European Union are adhered to the UN Convention on the Elimination of Racial Discrimination (1969), which includes the term "racial discrimination" - color, race, origin, national or ethnicity. The European Social Charter states that "everyone has the right to the right conditions for vocational guidance to help him choose a profession commensurate with his personal abilities and interests," and the countries that have ratified the charter are committed to " worker to make a living with a freely chosen job".

Europe is moving towards an equitable society, full of diverse people, reciprocal, respectful, and learning from one another. This goal is a challenge requiring more than creating regulations and laws. It is necessary to take measures in each country, town, village to encourage people to accept others with positivism and sincere curiosity about their opinions and views.

In Bulgaria, through the legislative framework that is synchronized with the European one, the prevention of discrimination against Roma is sought and, through positive measures, seeks to implement a policy of equal opportunities. Employers have the freedom to manage their employees, taking into account the specifics of each person; have the opportunity to create the same regime for everyone in the organization; determine the conditions for qualification and re-qualification of the personnel. However, the availability of laws and

policies is not a guarantee that the notion of equality has become part of the minds of employers. The disadvantage of a Roma woman on the labor market is evidenced not only by the empirical study of the authors, but also by other independent studies. For example, according to a survey by Partner Bulgaria Foundation (2004), two-thirds of the Roma who have never worked are women, and the 2007 Amalipe Center survey shows that only 31% of women work.

In order to improve employers' attitudes towards the diversity of ethnicity, it is proposed to change the management approach from perceiving "different as alien" to "respect for differences".

Change in management approach

The approach to respect for diversity draws people's attention to building empowered relationships that enable them to work in a coherent and interdependent way, stimulating initiatives to increase education and lifelong learning.

A model of management through respect for differences has five steps: 1. Eradicating stereotypes about Roma; 2. Acquiring the ability to hear and study differences in the assumptions of others; 3. Building meaningful relationships with the "different" (Roma); 4. Strengthening the personal empowerment; 5. Exploration and identification of ethnic distinctive features.

The five-step management model, through respect for differences, would help employers cope with the problems arising from the diversity of ethnicities in the work environment.

This model requires targeted planned events and actions of leadership in the organization related to personal growth and development. The first four steps may be done spontaneously, but heel actions are mandatory after completing work on the first four.

The model of respect for differences is based on the fact that people work effectively when they feel appreciated, i.e. when they believe that their individual and group differences are taken into account. The key to empowerment is the ability to acquire knowledge from people considered different. When people feel valued and empowered, they can build relationships in which to work coherently and interdependently. These principles shape the content and stages of the process that assists individuals in sharing their beliefs and assumptions with respect to others and their individual and group distinctive features.

Possible prudent actions to tackle the problems posed by ethnic differences are:

- Too often, people take the time to get to know, trust, and depend only on those people they feel the most comfortable – usually those they think they have the most resemblance. They do not take the time to build relationships with people whose distinctive features force them to feel uncomfortable. To overcome this stereotype, it is necessary to encourage leaders to work with their teams to build meaningful relationships with those they think are different – the Roma.
- Enhancing the degree of personal empowerment leads to an open learning from the differences of others;

- Identifying the differences of ethnicity that shape the values of people and their views on norms of behavior or their interpretation of the rules. In some cases, the group's distinctive feature may be a general perspective resulting from the way it was treated by another group.
- Work on acquiring knowledge to respect differences is best implemented in small, event-driven discussion groups. The small groups are the laboratories in which people help in exploring controversial issues created by differences with others. Valuable feel when they know they will be heard, this is also the leader's first responsibility. When they feel appreciated and their value adds value, people are motivated to do their best.

Achieving respect for differences can create people who have a different way of thinking and understanding of the world. Sometimes a person may never understand the "different," but he will still accept and respect them.

This model of governance not only focuses on affirmative action and equal recruitment but is also a way of helping the person to think through his / her proposals and expectations about all sorts of differences – individual, cultural, geographic, ethnic and organizational. Consequently, respect for differences is an approach that focuses both on personal development work and on activity to increase organizational productivity.

The more people are empowered to deal with the problems created by ethnic differences and to use their leadership skills and responsibilities, the more powerful the organization's position is to establish specific strategies in order to benefit from its diversity and the coherence of differences, as sources of collective growth, creativity and strength.

## 4. Conclusion

Working with "different" is a unique opportunity for personal and leadership development. The approach of management by respecting differences is a natural progression of core corporate values. Encouraging a direct and frank survey of assumptions and stereotypes about the people and groups to which they belong is almost always a highly intense, emotional work. Thus, managers learn to "provide security for the different" and how to help them discover "what they are useful for themselves and for the organization." This approach helps managers to identify and eliminate the obstacles that arise when working in a multicultural environment.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# CHANGES IN INTERNATIONAL TRADE AND INVESTMENTS AFTER THE GLOBAL FINANCIAL CRISIS

*Over the last 20 years, the globalisation of the economic and financial environment has had an impact on world trade and investment and has modified the ways in which international trade and investment transactions are implemented. The expansion of the overseas operations of the international companies is an influential factor. The reduction of tariffs, the increase in the quality/cost ratio of international transport, and especially the deepening of information and telecommunications links, contribute to changes in the way in which international trade and investment transactions are carried out. The evolution of international trade and foreign direct investments (FDI) during the post-crisis period differs significantly from that during the pre-crisis period. The economic and financial environment is uncertain. Besides the global financial crisis, Europe is also experiencing the blows of the sovereign debt crisis – a fact that affects its rapid economic and financial recovery. Despite the liberal trade and investment relations, countries around the world apply non-tariff and administrative barriers in order to protect export-oriented production from external shocks. In recent years, protectionist trends are increasing due to the unilateral imposition of duties on certain goods by the American administration. Does this shift in trade policy mark a turning point in international trade and FDI?*
*JEL: F13; F21; F23*

## 1. Changes in international trade and investments after the global financial crisis (GFC)

### *1.1. Periods of development of international trade and foreign direct investments (FDI)*

*The first period* of the development of international trade after World War II is characterized by increasing regulation, the introduction of tariffs, quotas and various types of restrictions imposed upon foreign ownership. International trade mainly covers a number of specific products (and much fewer services). International trade is carried out as a means to tackle the scarcity of resources and goods, rather than as a way of servicing and promoting economic efficiency and growth namely in the European countries. Investments are relatively low and are implemented through state funding and official intergovernmental

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financial support. The creation of the European Coal and Steel Community (ECSC) in 1951 and the subsequent establishment of the European Community mark the strengthening of the economic co-operation and integration of the developed European countries.

*During the second period of the development of international trade,* the mobility of the factors of production increases. Since the 1980s, the capitals' mobility has made it possible to better realise the countries' comparative advantages and the growth of the international trade and investments has been increasing. The advantages of the free international exchange of goods and services are underpinned by the deepening of the multilateral negotiation process in the framework of the General Agreement on Tariffs and Trade (GATT)[2]. The gradual reduction of the tariffs and the abolition of foreign exchange controls and other restrictions pave the way for the liberalisation of international trade and foreign investments. The establishment of the World Trade Organization (WTO)[3] is an expression of efforts to liberalize international trade.

The removal of barriers to international trade development allows international companies (ICs) to expand their strategic commercial and investment projects. High competition on international goods and services markets is constantly putting pressure on the ICs towards the reduction of production costs and the improvement of the efficiency of foreign trade transactions. International companies are increasingly transferring their production process (or parts of it) overseas, mainly through FDI, in order to expand their business activity on new markets, to reduce the production costs, and to benefit from the comparative advantages of the host country.

Since the early 1980s, major European companies have been exporting labour intensive work abroad. The localisation of some industries or businesses abroad (offshoring, outsourcing) contributes to the expansion of the foreign trade activity of European companies and to the augmentation of their share on the international trade markets. The penetration on foreign markets has led to the increase of overseas European FDI. Overseas mergers and acquisitions, as well as the sale of licenses are increasing. This leads to structural changes in European industry and to the consolidation of the productive capital.

During the *third period* of the development of international trade and investments, the ICs significantly expand their foreign trade activity, mainly due to the new information and communication technologies (ICT). Modern technologies make it much easier to manage

[2] The General Agreement on Tariffs and Trade (GATT) was established at the Bretton Woods Conference (USA, 1944) as a means to restore the economies of the countries after the Second World War. The primary objective of the GATT is to reduce customs barriers to international trade. The GATT activity covers three periods: During the first period (1947-1950), the regulation of some goods is relieved; the level of customs duties remains unchanged. During the second period (1958-1979), three rounds of negotiations are held, resulting in a reduction in customs duties. During the third period (1986-1994), the GATT extends to new areas such as intellectual property, services, capital and agriculture.

[3] The WTO officially commenced on 1 January 1995 under the Marrakesh Agreement, signed by 124 nations on 15 April 1994, replacing the General Agreement on Tariffs and Trade (GATT), which commenced in 1948. It is the largest international economic organization in the world.

and coordinate the ICs from a single centre. They contribute to the faster integration of newly emerging partners on the international trade and investment market.

The dynamics of international trade and FDI is a result of the liberalisation of the economic relations, the upward economic cycle and the industrial development of Southeast Asian developing countries, which are attracting an increasing volume of FDI.

The structure of the European economies has changed considerably due to the relative narrowing of a number of traditionally developed European industries and the change in national production policies and EU directives. European countries are losing their comparative competitiveness in the production of traditional industrial goods, such as textiles, steel, etc. For European companies, the relocation to overseas markets is profitable. Gradually, the commodities produced in Asian countries, on the basis of industries which have been delocalised from Europe, are conquering the European market (according the R. Vernon conception). European countries are comparatively slower to adapt to the changes in the international goods and services market than the export-oriented Asian countries.

Nevertheless, the EU ranks first amongst the main trading partners in the world, accounting for 16.5% of total world imports and exports. The EU is the world's largest exporter of manufactured goods and services and the main importer of goods from more than 100 countries around the world (EU data).

Alongside the trade liberalization and the integration between the EU Member States with the establishment of the EU Single Market (with free mobility of goods, capital and people), the financial integration also deepens with the establishment of the Economic and Monetary Union (EMU) and the introduction of a single European currency.

A major change in international trade and investments is brought about by the appearance of the Global Value Chains (GVCs) in the 1980s and their expansion and diversification in the coming years. Their activity covers various types of production and services.

The industrial production is starting to become fragmented within the different regions and countries around the world.[4] Global Value Chains provide efficient services (telecommunications, logistics, business services, etc.) that bind production processes in a continuous chain and are a prerequisite for the rapid growth of international companies.

A number of studies have shown that in developing countries (those in the South), GVCs include low-paid and low-skilled peripheral-manufacturing activities. It is difficult to determine whether their activities are in line with the national economic development objectives and strategies of the developing countries.

Contrariwise, GVCs in the developed economies (those in the North) launch high-tech industries, which require a highly skilled workforce and good organizational skills. This suggests that the GVCs localized in developed countries provide additional opportunities

[4] The business of Global Value Chains consists of opening industries in different countries around the world. GVCs produce various goods, ranging from textiles to electronics. The services, related to industrial production are also located in different parts of the world, according to the needs of the whole production process.

for the industries there, working up high-tech production with higher added value, which is in turn beneficial for the expansion and the modernization of the other economic sectors.

China and India are an example of just the opposite. There, the GVCs' activities contribute to the economic development of these countries, and namely to that of innovative technological productions. The building up of China and India's innovative industries is strongly supported by their government policies.

### *1.2. The impact of the global financial crisis on international trade and investment*

The global financial crisis (GFC) (2008-2009) seriously distorts the commodity and capital flows in the world. European developed economies are struggling to cope with the downturn of the economies and the containment of shocks on banks and financial markets (*risk aversion*).

In Europe, the economic and financial decline is felt more markedly than in other regions of the world, because of the GFC and the sovereign debt crisis of 2010. It further hampers the recovery of the European economies and, respectively, the increase in EU international trade and FDI.

The main crisis transmission channel to the markets of developing countries is the strong decrease in the volume of international tradable goods and the slowdown of international capital flows. One of the main effects of the decline in international tradable volumes and the contraction in the volume of FDIs is due to the decrease in banks' loans for funding the foreign trade transactions of big companies. At the same time, the prices of raw materials are falling, which distorts and shrinks exports for a number of developing countries. There is a considerable supply in the oil and gas markets, but demand is rather weak, which results in a drop in energy prices and losses for oil-producing countries. Profits for the consumers of energetics are not particularly high, even with the downturn of prices.

The unfavourable economic and financial conjuncture is forcing international companies to reorient their trade direction and they are concentrating their trade activity on the domestic market in search of a greater stability and predictability of their deals. The decline in international trade is also due to the macroeconomic imbalances that have occurred in the European economies (with the exception of Poland). Household income is reduced, which limits domestic consumption, investment activity and economic activity.

Another aspect that hinders the relatively faster recovery of the world economy and trade is the mismatch between the behaviour of financial markets and the recovery of the real economy.

The main obstacle for EU economic growth is the restrictive monetary and credit policy, which ensures the liquidity in the financial markets. This effect is postponed over time because it is not clear to what extent the rise in asset prices would support the overall economic demand or the distribution of GDP and, respectively, the changes in wealth. It is obvious that the distribution of wealth after the crisis is concentrated in an ever smaller number of countries, international companies and individuals around the world. The exchange rates are volatile, and the prices and profitability of financial assets are down due

to financial markets turbulences. Financial uncertainty has a negative effect on international trade and investment deals.

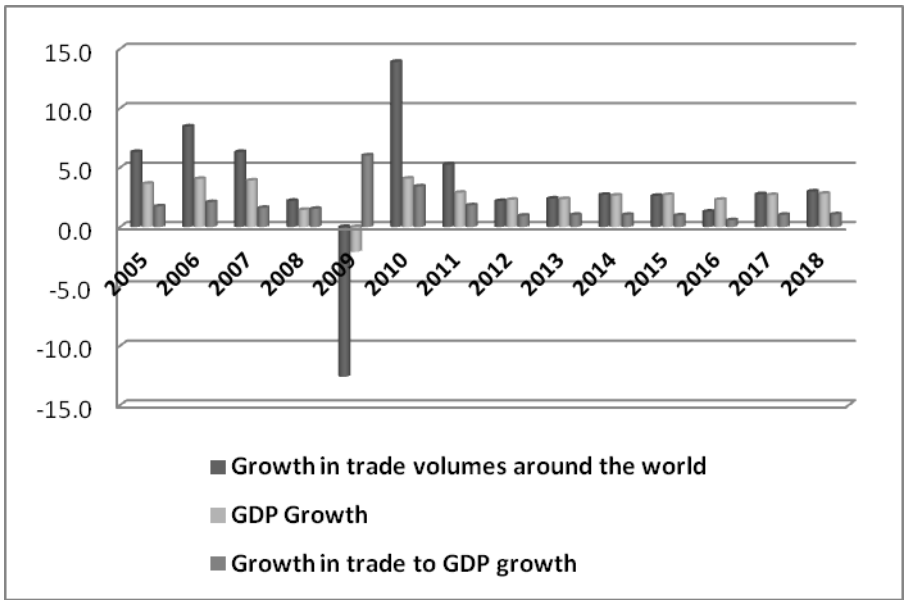
The world economy is torn by the growing and changing economic and political tensions. Not only does the economic growth not reach the pre-crisis levels in many countries, but the significant imbalances which have been accumulated since the beginning of 2000 cannot disappear quickly.

Under the conditions of low inflation, the monetary authorities in developed economies counteract unfavourable economic conditions by lowering key interest rates that fluctuate around zero. This raises a number of questions about overcoming the unfavourable trends and the effectiveness of this measure on international trade. Economic growth has not reached the pre-crisis levels in many countries around the world and one of the reasons is the incapacity of many countries to overcome the effects of the crisis. The new emerging countries register higher economic growth rates and they are developing faster because they have restructured their economies since the crisis of 1995-1996. International trade is also losing momentum due to export credit difficulties, which complicates and hinders the country's access to major international commercial markets. This trend has had an impact on international trade in 2018.

Figure 1

Ratio of world merchandise trade volume growth to world real GDP growth, for the period 2005-2018

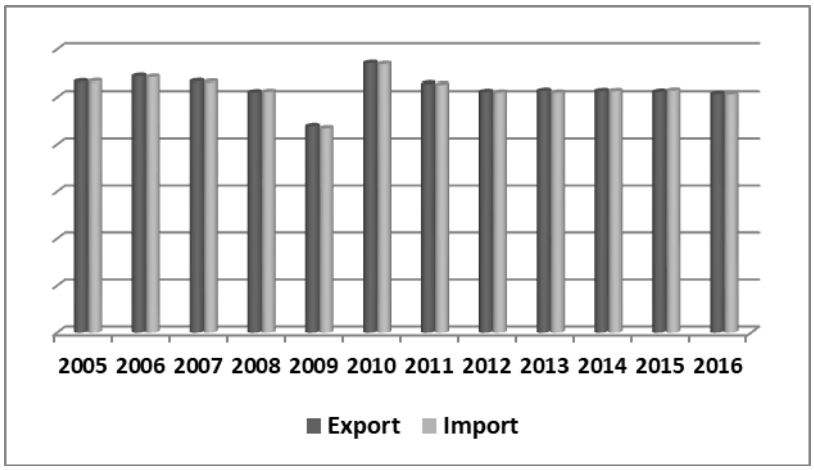
Annual percentage change and ratio




*Source: WTO consensus estimates for GDP based on reported data from a variety of sources including the International Monetary Fund, the Organization for Economic Cooperation and Development and the United Nations, among others.*

Figure 2

World Trade Volume Indexes. Previous year = 100, Total tradable goods




*Source: WTO data.*

Over the last ten years international trade has not risen at a high pace compared to the pre-crisis period. In the period 2010-2016, the annual growth in the global exports and imports of goods amounted to 2.8% and 2.7 %, respectively. The volume of international trade in goods has been positive in India and China, as these countries are experiencing higher export and import growth than the US and the EU Member States. The USA achieves higher annual growth rates on exports and imports than the EU Member States.

Between 2006 and 2016, the exports and imports of primary goods decrease by more than 33%, those of intermediate goods decrease by 10%, those of capital and consumer goods decrease by about 4%, and those of energy products decrease by about 37%. The overall decline in international trade is over 40% in 2015. Exports of agricultural commodities and ores also decline.

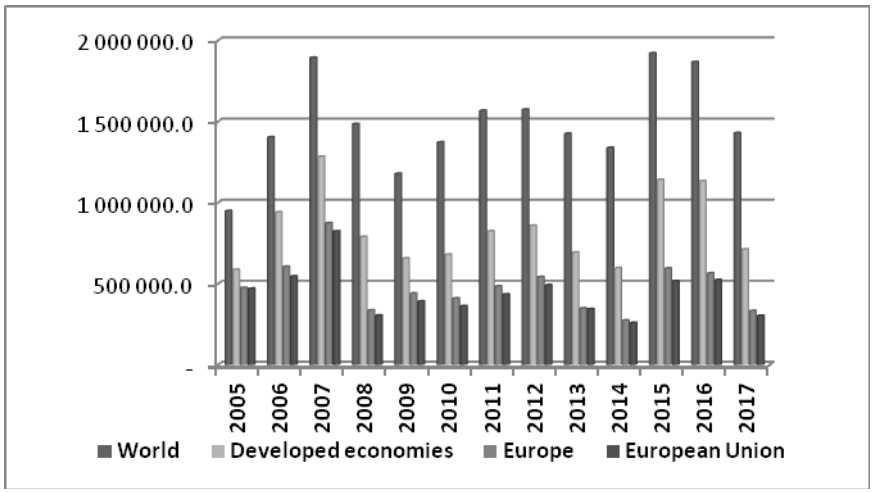
The EU remains an active player in world trade mainly through intra-sector relations between the EU Member States and the countries' dependence on export growth. The share of imports and exports of the EU Member States from Central and Eastern Europe exceeds by 20% that of the Western European countries.

Global FDI flows fell by 23 % to USD 1.43 trillion in 2017 from USD 1.87 trillion in 2016. The decrease in world FDI flows contradicts the behaviour of the other macroeconomic variables, such as world GDP and international trade, which are ameliorating.

FDI inflows into developed economies dropped by one-third (USD 712 billion), due to the increased activity of ICs in 2016, as well as due to cross-border M & A operations and company restructuring. The value of Greenfield investments, which is an indicator for the prospective tendencies in FDI inflows, also dropped by 14% (to USD 720 billion) in developed economies. Emerging economies attracted growing volumes of global FDI in 2017, accounting for 47% of the global FDI, compared with 26% in 2016.

Figure 3

FDI in the world, in developed countries, in Europe and in the EU (in USD)




*Source: World Investment Report, 2018, UN, UNCTAD.*

The European Union is attractive to FDI. FDI entries in the EU amount to EUR 5.4 trillion – or about 36% of the wealth produced annually by the EU countries. In the EU, 7.6 million jobs have been created due to FDI entries (EU data). EU FDI flows are oriented towards new technologies, towards the promotion of European research and innovation, and towards enhancing the competitiveness of high-tech export industries.

The EU is one of the main investors in third countries. The realised EU FDIs abroad amount to EUR 6.9 trillion, or about 46% of the wealth produced annually by the EU countries. EU FDIs to the third countries have contributed to the creation of 14.4 million jobs outside the EU area (EU data).

Global Value Chains from EU countries remain competitive on the world markets by investing abroad. About 80% of the global trade is currently being conducted through the international production networks of the GVCs.

The reforming of the EU's investment policy is based on the Lisbon Treaty (December 2009). The EU is expanding its FDI competencies as part of the EU single trade policy. The objectives of the EU's investment policy are identical to its objectives in the field of international trade. These include the opening of foreign markets to the European companies, the preservation of their interests on foreign investment markets, and the ensuring of the payments, capitals and workers of European companies which are investing abroad. The European Commission outlines its approach to investment policy (July 2010), according to which, so far, EU countries have signed 1400 bilateral investment agreements that protect European investors. In 2015, the EU publishes proposals for the right to regulation and for a new investment judiciary. The reforms are included in the EU proposal

for the Transatlantic Trade and Investment Partnership with the United States (TTIP) and other EU trade and investment negotiations.

## 2. Is the liberal model of international trade and FDI changing?

Economic crises are appropriate times during which governments and companies introduce protectionist measures to counteract low external and internal demand and can be used as a tool to reduce imports. The risks of introducing protectionist measures were taken into account as far back as the G20 meeting in London in 2009, when one of the main envisaged ideas was "to reject the dangers of introducing protectionist measures".

Historically, the large European companies, which are important for the structure of the economy, have been subject to a special State protection. The protection of the internal market from external competition is achieved through tariffs and subsidies, which are substantially reduced under the WTO oversight of the international trade policy. However, in the context of the free international exchange of goods, countries apply a number of quantitative restrictions to importers in the form of different kinds of allowances.

The imposition of administrative barriers is another measure which is aimed at discouraging importers by imposing additional requirements that protect the domestic producers. Safeguard measures are applied under special conditions, whereby an in-house producer must be protected by the international company that intends to invest and build a similar production in the host country.

The introduction of non-tariff barriers (NTBs) shows that in some cases, despite the liberalised international trade, countries apply NTBs when conflicting relations that have forced them to resort to such requirements arise. The countries' trade policies include an increasing number of protectionist measures in the form of restrictive and obligatory clauses, export subsidies that stimulate exports, as well as other requirements.

The liberalisation of trade and economic relations continues through the enactment of multilateral trade agreements that undertake the trade and investment intentions of the GVCs. In this context, the emergence of the Comprehensive Economic and Trade Agreement (CETA) between Canada and the EU and the start of the negotiations on the Transatlantic Trade and Investment Partnership (TTIP) in 2013 between the US and the EU are the significant examples.[5] The TTIP is an agreement that protects the economic interests of the EU and the US, aiming at boosting economic growth and creating new jobs.[6] These measures are directed at expanding the scope of the GVCs, which will be exempted from a

[5] The CETA is a trade agreement between the EU and Canada, aimed at facilitating the export of goods between trading partners. On 21 September 2017, the CETA was provisionally adopted; in order for it to enter into force, it must be ratified by the national parliaments of the EU Member States and the international regional authorities.

[6] The TTIP has been negotiated "behind closed doors" between the EU and the US. It is estimated that about 1 million jobs will be lost, and that the social responsibility of the European state will be reduced. EU food, environmental and labor standards will be changed, and US companies will have the right to sue others abroad in special courts.

number of import and export restrictions. The US international companies would like to receive the rights to impose their policy without external interference from the host country's legal authorities. The CETA and the TTIP have not yet entered into force.

These agreements are aimed towards the deepening of globalisation and towards rising irreversible barriers in front of countries that would like to protect the local production and the economy as a whole. The bilateral trade agreements, given that the tariffs have been significantly diminished over the past two decades, are instruments which do not allow the imposition of serious protectionist barriers on international trade. For this reason, public and policy concerns remain, that contracts such as the CETA or the TTIP may lead to violations of the established marketing standards and the requirements adopted between major trading partners.

In recent years, a change has occurred in the philosophy of the American administration as opposed to that of the WTO's multilateral trade policy. It is proposed that a duty of 25% on imports of steel and a duty of 10% on imports of aluminium from the EU, Canada and Mexico be introduced. The US announced in March 2018 that it would impose an "import tax" but that it is introducing temporary exceptions for the EU, Canada, Mexico, Brazil, Australia and Argentina (the last three countries have negotiated duty-free imports with the US). In 2017, the EU exports steel worth over EUR 5 billion and aluminium worth over EUR 1 billion to the US. The EU's symmetrical response is the introduction of US tariffs amounting to EUR 2.8 billion initially and EUR 3.6 billion for the duration of three years. At the same time, the EU will continue to abide by the WTO rules and decisions, stressing that "the current EU decisions are fully in line with international trade legislation".

A question arises, as to how international trade and FDI will develop? Are the retention in the growth rate of international trade and the contraction of FDI showing the changes in globalization? Do we move towards a new stage in economic, trade and investment relations?

Such questions come up because of the tensions that have arisen due to sharp political conflicts in the world. The EU faces the need to reform its main policies, due to the fact that Britain will leave the EU in 2019. The long-term negotiations process between the UK and the EU, which will bring about a lot of unclear questions including that of the trade relationship between them, are a prerequisite for future imbalances.

## Conclusion

Post-war globalisation, liberal international trade and FDI are contributing to the expansion of international trade, FDI and the expansion of the GVCs. The stages of international trade development and the growth of FDI have transformed the liberal concept that has dominated in the years leading up to the GFC. The consolidation of international capital and liberal multilateral trade make possible the industrialisation of Southeast Asian countries and the comparative narrowing of the European industry. Although Europe remains a strong pole of economic and international trade development, a producer of high

added value goods. In the years after the crisis, the global production, trade and economic relations of the GVCs have become much more limited.

The countries are imposing more and more NTBs and other administrative requirements to restrict the imports of goods for which the country has production capacities. Contrary to the multilateral trade and investment policy, the protectionist direction of the US trade policy sets a new framework of trade and investment behaviour.

Regardless of the flawed trends in international trade and FDI, this does not mean that free trade, as such, will cease to function and that global protectionism will be established. The growing and changing economic and political tensions will affect the world economy. The economic and political changes will be significant and free trade will be subject to significant tensions.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# STRUCTURAL CHANGES BY MAIN SECTORS IN EU COUNTRIES

The structural differences across main sectors within the EU countries are analysed. Defined is the extent to which the difference in labour productivity by main sectors determines the structural changes – to what extent the formed economic structures and their change is characteristic of the developed economies, those from Central and Eastern Europe and the Balkan countries. The analysis allows to get an idea of the general and specific in the structural development by main sectors of Bulgaria and the potential for realization of favourable structural changes.
*JEL: Q11; O52; P59*

In general, favourable structural economic development is associated with changes in the production structure made in branches and sectors for which higher labour productivity is inherent. The ability of an economy to adapt to changing economic conditions through structural change determines its ability to accomplish effective economic growth (Syrquin 2007, Memedovic and Iapadre 2010).

As labour productivity in the agrarian sector is lower than in the other two major sectors,[2] countries with a higher relative share of the agrarian sector are expected to be at an earlier stage of structural development, which implies that the potential of their economics is weaker. These differences are also a basic prerequisite for re-directing labour force from the agrarian sector to industry and services and thus accomplish favourable structural changes in the sense of achieving higher productivity

At the same time, when comparing the economic structures of the individual countries, it should not be forgotten that the structural changes in them are determined by the development opportunities of one or another sector, so that there is a need for certain conditions to achieve this redirecting of labour force – availability of relevant comparative advantages, investment, workforce preparedness and others.

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[2] The three main sectors are the "agrarian sector" (agriculture, hunting and fishing), "industry" (industry, including construction), "services" (general service activities). The data provided by Eurostat has been harmonized, which is a good basis for carrying out an adequate analysis of the effect of structural change. In order to easing the analysis, some EU countries are not included, those with small economies or those that differ significantly from Bulgaria, e.g. Luxembourg and Finland.

## 1. Agriculture sector

The coefficient of variation for the EU countries of the relative share of GVA in the agrarian sector for the years 2000, 2008 and 2014 is respectively 68%, 61% and 49%, while for the same years, those for the share of employed is 98 %, 93% and 93% This shows that if the relative share of the agrarian sector in the formation of GVA as a whole for the EU countries shows a narrowing of the differences, these differences remain high for the relative share of the employed and more importantly they are maintained for the observed years. Logically this leads to an increase of the differences in the relative labour productivity.[3] The coefficients of variation of the agricultural sector relative productivity are respectively 33% for 2000, 46% for 2008 and 50% for 2014. In other words, as regards the relative productivity of this sector by individual countries, the trend is to increase the divergence. In practice, the results show that keeping a high proportion of employed in agriculture is associated with a decline in the relative productivity of this sector.

The close correlation between the participation of the agrarian sector and the degree of economic development is confirmed by the negative correlation coefficients determined on the basis of a relative share of GVA produces in agricultural sector and GDP per capita. The increase in these coefficients over time shows that for EU countries, the share of GVA in the primary sector is more and more decisive for the per capita GDP level.

If exclude the new Central and Eastern European (CEE) member countries, this coefficient is significantly lower for each of the observed years; in this sense, it can be argued that the share of GVA produced in the agrarian sector for the countries of CEE is more relevant to the extent of their economic development than to the remaining EU countries. This can be explained by the fact that the processes of structural changes in the agrarian sector, little or much, in the mentioned "remaining" countries have largely undergone the stage of intensive structural adaptation as a result of the reduction of the employed in the sector.

Conversely, the CEE countries are in the process of visible adaptation, which also reveals the possibility of realizing structural changes leading to higher structural efficiency. The dependence between the relative share of the employed and the relative productivity of the primary sector is also negative and much more pronounced in the new member states from CEE.

The share of the employed in agriculture is highest for Romania, Bulgaria and Poland, but also for Greece and Portugal, which has an adverse effect on labour productivity for these countries in the primary sector. It is observed a process where differences between old EU members and new member states for this indicator are gradually being replaced by differences between countries with the weakest economies of the new and old EU member states and the rest of the countries.

The problem of low relative labour productivity for countries such as Romania and Bulgaria are less relevant to their specific level of productivity than the high share of

[3] The average relative productivity of given country is 100%, the relative productivity for each sector is determined by dividing the relative share of the GVA in the sector with the relative share of the employed in it.

employees in this sector – Slovenia has lower relative labour productivity than in Bulgaria, but the relative share of employed in this sector for this country is 8.3%, with 19.4% for Bulgaria and 30.0% for Romania in 2014.

It can definitely be argued that the magnitude of the relative share of GVA and especially of the share of employed in agriculture is an indicator that gives a clear idea of how a country is positioned in terms of the level of its economic development within the EU. The high relative share of the employed in agriculture is indicative of the fact that the processes of restructuring the economy by key sectors, such as shifting the labour force from the agrarian sector to higher productivity sectors, the industrial and services sectors exist as favourable possibility. The strength and dynamics of implementing such a process, especially in terms of the growth in the number of employees in the industry, depends on its competitiveness in a given country and the ability to grow the sector while retaining its labour productivity.

As a rule, the high share of people employed in the primary sector finds opportunities for labour transfer, above all in the industry. [4]The implementation of similar processes in Bulgaria is very limited, the reason for this is that the employed in agriculture are predominantly elderly people, which for a number of reasons is difficult to redirect to the industry; also lack of necessary qualification that impedes the redirection of labour forces from agriculture to industry.

At the same time, the population density in Bulgaria is much lower than that of almost all EU-28 countries, which is one of the reasons for the high relative share of the employed in agriculture (the picture for the employed per unit of arable land will in no case show such great differences as those obtained by comparing the relative share of the employed in agriculture.) In the case of Bulgaria, as a reason for preserving a high relative share of the employed in agriculture certain role play and the unfavourable demographic characteristics.

All this indicates that there may be real changes in the structure of the employed in the main sectors as a result of changes in the relative share of the employed in agriculture in Bulgaria, but they will be realized rather as a result of the decrease of the absolute employment in this sector, without resulting from the transfer of employees in the other two sectors, there will in practice be an increase in relative productivity in agriculture without, however, an absolute increase in the added value produced. So, in the case of a drop in agricultural employment, some increase in relative labour productivity in the agrarian sector may be expected, but there will be no significant overflow of employees in industry and services, which will increase economic efficiency in general.

Therefore, it must be assumed that the tendency in the countries with a high relative share of the agricultural population, which are also with a higher density of the population, to increase the number of employed in industry and services at the expense of the overflow of labour force from agriculture in the case of Bulgaria is very limited – a very large increase of the employed in the industry and the services on this line cannot be expected. It is obvious that for Bulgaria the share of the employed in agriculture will remain high

[4] It is accepted that the redirection of the employed from agriculture goes towards the industry and, to a lesser extent, to the services

compared to that of the other EU countries, which will lead to comparatively lower relative labour productivity in this sector.

## 2. Industry sector

The magnitude of the relative shares of GVA and those employed in the industry cannot be directly linked to the degree of economic development, at least in the way this can be done for the agricultural sector. Typical for the CEE countries is the higher share of both GVA and those employed in industry compared to the other EU countries. The average figures for these countries for GVA and employed in 2014 are respectively 30.7% and 28.4%, which determines a relative productivity of 108.1%. The value for the other EU countries is 21.3% for GVA and 19.4% for employees with an average relative productivity of 109.6%. It is clear that the difference in the relative participation of GVA and the employed in the two groups does not lead to a difference in relative productivity, in other words, the significantly higher share of industrial workers in the CEE countries in a sense is also the result of adaptation according to the magnitude of relative labour productivity.

The GVA coefficient of variation for the new member states from CEE is 13%, for the other countries is 27%, those coefficients for the employed are 13% and 20% respectively. These data outline the following general picture: a higher share of GVA and employed for the new member states from CEE and a smaller dispersion of these indicators for them. A comparison with the period before the economic crisis (2008) shows a general tendency after the crisis has passed, of changing the relative share of GVA and employed in the EU countries in a way that had an impact on the increase of the labour productivity. This tendency is typical for both observed groups of countries, with the increase in the relative shares of the CEE countries being much higher, resulting in an increase in relative labour productivity in these countries from around 99% to 108%.

To some extent, this more favourable development in CEE countries is also the result of better adaptation during and after the economic crisis. As a whole, the economic crisis has decreased significantly the relative participation of GVA in the industry and has negligible negative impact on those employed in the industry in EU countries. There is a more pronounced reduction in GVA in industry in 2009 and 2010, as a result of (a larger decrease in the share of non-construction industry in 2009 and a decrease in the share of construction in 2010). In these two years, the relative productivity of labour also declined. After these years, the general trend of changing of relative shares of GVA and that of employment is in a way that leads to increase the relative labour productivity, which, as mentioned above, happened mainly in the CEE countries.

For almost a 10-year period (2005-2014), the tendency in general is in decline of the relative shares of GVA and employed, which is higher for the employed, that as mentioned, determines a general trend of increase in the relative productivity of the industry. At the same time, this decline in both GVA and employed is not high, so there is no sharp decline in industry participation in GVA and employed as a whole.

The average relative labour productivity of the Bulgarian industry is slightly higher than that of the EU and substantially higher than the total for our country. This is a clear indicator of the favourable developments in the industry, which are reflected in the increased efficiency of this sector within the country's economy. Therefore, at least for the time being, the increase in the relative share of industry participation leads to an increase in the overall productivity of the country as a whole.

Bulgaria from the country with the highest share of the industrial sector in 1995 – a higher share than Romania and the lowest relative productivity has succeeded in adapting this sector relatively successfully. From relative productivity for the industry below the average as Bulgaria had in 2008 of 98%, now this productivity is 112.7%. This is the result of a higher increase in the relative share of GVA than the employed, a process that is observed in the other CEE countries and where Bulgaria has similarities to the average levels for these countries. This process can be considered positive, since the higher importance of GVA and those of employed in the CEE countries is associated with positive economic development.

## 3. Service sector

The development of the service sector in a sense is the result of the change in the other two major sectors. The fact that for them there are not noticeable any major fluctuations in them in the relative shares of the employed and the GVA, accordingly defines the lack of such and in the service sector. Over the last 10 years, the tendency in EU countries is to increase the number of employees in services exceeds the increase in the relative share of GVA, which means reducing the relative productivity of this sector and exhausting the possibilities for realization of favourable structural effect.

Romania, together with Bulgaria, are the two countries, which have from one hand a low share of employed in the service sector combined with the two highest levels of relative productivity for these countries. This is to some extent also a mirror reflection of the fact that the two countries have the highest share of those employed in agriculture, with low relative productivity of the agriculture.

The data on changes in GVA share and those employed during the monitored period unambiguously determine the tendency of the services sector to increase both in the formation of the GVA share and the share of the employed. Such a development can be expected on the basis of theoretical formulations for structural changes that suggest its growth. At the same time, this process will also depend on the extent to which changes in economic conditions will favour its development.

For countries with weaker economies such as Bulgaria, this process will be linked to an increase in the efficiency of the economies as a whole, due to the higher relative productivity of the sector. At the same time, the efficiency of service sector development, both for the weaker economies and the developed countries, will also depend on the implementation of structural changes in the direction of the development of more productive activities in this sector in accordance with the necessary prerequisites for this,

based above all, on the existence of comparative advantages (EU Structural Change 2015, p. 101).[5]

In contrast to the industry where the structure and comparative advantages of Bulgaria (EU Structural Change 2015, p. 100) are associated with low-tech and labour-intensive low-performing industries, which places our country at one of the last places in this respect, the picture is considerably more favourable for the service sector.

If we have to compare these sectors (industry and service) it can be noted that Bulgaria is structurally positioned, much better in the services – which, together with the fact that the relative share of those employed in this field is relatively low combined with comparative advantages in certain areas, would allow for the efficient development of the sector. Last but not least, the fact that service activities do not imply the need to make large investments would contribute to this development.

## 4. Summary for Bulgaria

It is interesting to assess the impact of structural changes on individual EU countries. [6] As a rule, economically more advanced countries have higher efficiency, while countries like Bulgaria and Romania have the most inefficient economic structures. The comparison of the economic effect of the structural changes in 2005 compared to 2014 speaks of a process of unification of the structures of the EU countries by major economic sectors. A process that shows that significant effects of structural change at the level of major economic sectors, at least for most countries, cannot be expected. Romania and Bulgaria make some exception with the relatively high effect of structural changes, but if this tendency persist, this effect will also decrease over time.

In general, Bulgaria shows changes in the structure, where the share of the sectors characterized by the participation of low technologies and low-performing industries is increasing. This development, as well as the fact that it is typical only for Bulgaria, shows that it may be the result of conjunctural specific reasons. Changes in this direction may lead to a reversal of the observed negative trend – after all it is a specific Bulgarian development that is not the result of objective economic circumstances valid for the CEE countries

The potential for developing low-performing industries is not a long-term perspective. In this respect, economic policy must be directed towards stimulating the development of industries characterized by the use of higher technologies, on the one hand, and on the other, where there is a prerequisite for this, defined by the existence of comparative advantages. As an example, can be given sub-branches of the manufacturing industry, such as the pharmaceutical and electrical industries, that fall in the group of the branches with

[5] Obviously, an increase of the service sector at the expense of increased administration will lead to a decline in the relative efficiency of this sector.

[6] Idea of the effect of the structural differences across major sectors for each country, can be obtained by assessing what productivity would be if the structure of the employed in the given sector is identical to the EU-28 average, thus eliminating the impact of the difference in structure of those employed in the given sectors.

approximately higher technology according EU Structural Change (2015, p.39), and in which Bulgaria has comparatively advantages, (EU Structural Change 2015, p. 100). Of course, such a policy must also be in line with a number of other economic circumstances, but these two indicators - the existence of comparative advantages and the possibility of developing industries with higher technology should be decisive in a targeted economic policy.

For Bulgaria the development of the services sector is related to the realization of favourable structural changes, but in general it can be assumed that with the approaching the levels of the participation of the services to the average European ones, the relative productivity of this sector will tend to the average level for the country. As with industry, the potential for effective development is to bring about structural changes in favour of developing service sub-branches with higher efficiency. This can be achieved through the development of specific activities, where Bulgaria has comparative advantages and also areas that have high efficiency. At the same time, unlike industry, the achievement of structural changes with the development of certain service activities, as was mentioned above, does not require high investment.

The potential for a high impact of structural change is diminishing at least what concerns main sectors. However, structural changes between those sectors and the intra-sectoral structural changes compare to the other EU countries will remain relatively higher. The nature of these structural changes will differ from those in developed economies where there it is observed a reduction in the participation of the industry sector at the expense of an increase in services. The process of restructuring of the Bulgarian economy compared to that of the developed countries will be different, insofar as in the near future it is not expected obvious reduce the participation of the industry at the expense of the services.

GDP growth per capita, and a narrowing of the gap with the EU-28 average, the increase in labour productivity will probably not continue to be at the relatively high rates so far, the tendency for them is to diminish over time. The objective assessment unambiguously shows that at least for the time being, Bulgaria has little potential to develop high-tech products on the basis of existing market opportunities. Definitely for that role has the influence of the so-called "geographic factor" (Totev, Sariiski and Stoicheva, 2016, pp. 17-19).

Similar findings are made in the EU Industrial Structure Report (2013, p. 84), when comparing the Economic Complexity Index (ECI) for the period 1995-2007 [7], it is said, "In general, it is expected that countries with low ECI in 1995 to increase over the monitored period as a result of a catch-up process. However, some countries (namely Turkey, Greece, Romania and Bulgaria) appear to be deprived of the benefits of globalization and market liberalization." Obviously, the difficulties faced by these countries are typical of these geographical regions. For this reason, whenever forecasts and comparisons are made about Bulgaria's economic potential, it is necessary to keep in mind that for one reason or another, things are not always following the way they are expected to be realized on the comparison with other countries.

[7] The Economic Complexity Index (ECI) is a composite indicator of the performance characteristics of an economic system (country).

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# MOTIVATION OF HUMAN CAPITAL IN THE BUSINESS ORGANIZATION

*Motivation is a competence and responsibility of the manager when managing human capital in a business organization. Motivation is based on the existence of an unsatisfied need in individuals who are the carriers of human capital and, driven by personal motives and reasoning, follow a certain behavior. By identifying and satisfying these needs, individual behavior can and should be guided by the management, in consideration with the objectives of the business organization. The ability to motivate the manifestation of human capital is the ability to manage a business organization. It is based on the specific traits and peculiarities of the human capital, on the company culture and the characteristics of the business environment.*
*JEL: M12; M51; M54*

## Introduction

A manager is responsible for the application and performance of knowledge (Drucker, 1993).

Managing a business organization means to encourage its employees to strive together to achieve the predefined organizational goals. In this sense, the "ideal" management is distinguished by its ability to guide the behavior of the people in the work process in a way that the main goals set by the executives in the organization become equally important for the employees and are achieved in a way that satisfies everybody in the organization.

Every manager would like their team members to perform their job in a manner which brings the best possible results. Therefore, the management must choose and communicate such signals, which would motivate the employees to be productive and do their job efficiently. This management practice characterizes the process of motivation and its main objective is to help the employees adopt that individual behavior, which aligns with the already established organizational strategy.

To motivate means to drive the individual behavior in the direction to achieve the goals of the organization; to encourage the individuals to work simultaneously for themselves and

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for the organization. Effective management depends on how team members are guided to achieve the established organizational strategy and what measures are being taken so that they are motivated to reach those objectives. This managerial responsibility implies stimulation of individual values, human energy and positive impulses through a system of business activities to attain both personal satisfaction and a sense of common purpose and strategy.

## Main subjects

In the specialized literature, the term "human capital" is defined and interpreted in different ways. In this paper the human capital in an organization is perceived as a set of traits and characteristics embodied in people (knowledge, abilities, skills, motivation) which have a certain value and are a source of future income for both – for the individuals as participants in the labor process and carriers of the human capital, and for the business organization which, under certain conditions, is using this capital.

Motivation is seen as a distinctive feature of the human capital, whose strength of impact is reflected on the manifestation of other features of the human capital in the work process. Stimulating motivation through various motivational techniques in the management mechanism depends equally on the individual characteristics of the carriers of such capital as well as on the organizational culture and its internal environment determined by the varying level of interaction, empathy, dialogue, partnership, trust and support. In this sense, creating conditions for effective management and development of human capital in the business organization is important both for the employees in it, and the management team.

Motivation as a distinctive feature of the human capital is the presence of incentive for a certain action, or inaction depending on the given situation. It is subjective and affects every individual in the workforce differently based on the signals which are sent to him from the economic, organizational and social environment perspectives in the business organization. Perceived this way, motivation precedes individual behavior in the work process and determines the activity and the extent to which employees in an organization devote their knowledge, intellectual and physical abilities, and skills.

In other words, motivation stems from the individual himself, and through the process of motivation, managers are merely encouraging and guiding it. The motivational process is a targeted individual behavior, in which a person performs certain actions with a specific goal, driven by personal motives and reasoning.

Once again, the well-known, widely discussed and difficult subject of the human nature is presented, since the motivational sphere of the individual behavior does not only depend on the human consciousness, but it is also a reflection of the human psyche.

In terms of motivation mechanism all motivational stimuli of the individual behavior are "internal". However, it is considered that motivation is determined by two groups of motivators: determined by the individual (sense of self-satisfaction, personal achievement and success, importance and responsibility) and determined by the environment (approval, recognition, promotion, remuneration).

The interaction between the two groups motivational determinants is reached as a key component of human capital management in the process of motivation, which is based on the needs, interests and goals on the one hand, and incentives and environmental factors on the other.

The human needs, interests and goals, for which the individual aspires, are at the basis of motivation. They are:

- the criterion of every individual's reaction in a particular situation – a choice of individual behavior;
- the basis for the manager to motivate a certain individual behavior.

Motivation is evoked by unsatisfied needs, which leads to a behavior aimed at satisfying them. Only needs that are not fulfilled, could be motivating for the behavior of an individual. Prerequisite for motivation are real opportunities to meet those needs adopting a certain behavior.

The process of motivation begins with identifying the unfulfilled needs. Needs are either natural instincts related to the human psyche and the biological nature as the embodiment of the internal impulse of self-preservation, or manifestations of higher forms of human intelligence and the related aspirations for self-esteem, self-realization, personal development, search for meaning. The role of the social interaction and the cultural image of the environment is significant to the form, extent and quantitative level, and less impactful to the qualitative nature of needs.

In the context of the organization, the essence of the motivational process is, after the personal needs are identified, the management should visualize a plan for their fulfillment, aligned with the organizational goals, as opposed to influencing the individual's aspirations with the goal of changing, redirecting or unifying them. Of paramount importance are both – the stimuli for the individual to do something, or the cause which leads him not to.

Motivation is dynamically changing phenomenon and motivating as part of the management process should be "adapted" to it in order to be useful and successful. Motivating as a dynamic process in the organization requires it going through all levels in the organization to be completely functional.

The goal of the motivational process is to trigger the intrinsic stimuli by achieving a direct and timely connection between the positive efforts an individual (or group of individuals) is making to meet his (their) needs and the overall achieved results. Therefore, an individual approach in this process is preferred.

However, there are certain limitations of motivating as a conscious/ deliberate process:

- The power of motivation cannot compensate for the lack of potential skills and capabilities of the individual (or group of individuals) – this means that insufficient knowledge and ability to perform a work-related task cannot be replaced by the highest degree of motivation to achieve the expected results.
- Preventing the motivation from exhaustion – this means its optimal threshold should not be surpassed as this would cause stressful effects on the individual behavior; for

example, elevated sense of biased job evaluation or a real threat of redundancy and unemployment, as well as excessive desire for success, may have burdensome impact on motivation and become the most paradoxical way towards both collective and individual failures.

Motivating means to apply equivalent stimuli to the individual's motivational values, meaning, to establish adequate synergy between the applied motivational techniques and the intrinsic values that motivate the individual. Exploring the process of motivation as an interaction of factors determined by both individuals and the environment, makes it a unique and multilayered phenomenon as a subject of scientific and applied research.

The term motivation is derived from the Latin word "movere", which means to move. In modern literature motivation is seen as a compound of psychological processes that encourage certain actions. Managers must understand these processes if they want to successfully manage their staff and encourage them to achieve the goals of the organization.

The most common model of the main interconnected components of the process of motivation include the following elements:

- identifying the lack of internal balance in the individual (needs, desires and expectations),
- defining objectives (visualizing balance),
- establishing and/ or selecting incentives (promoting balance), which leads to reducing the unbalanced satisfaction of needs,
- guiding the behavior of the individual (movement toward inner balance)

This model provides a framework for understanding the dynamic nature of the motivational process.

From the perspective of the individual, his behavior, influenced by motivation, can be interpreted as follows: after focusing on a specific need, the individual determines actions to fulfill it; the satisfied need then ceases to act as a stimulus and its place is taken by another unmet need, for the fulfilment of which another set of actions, different from the previously implemented ones, must be taken. This defines motivation, as well as the corresponding process of motivation, as dynamically changing determinants of individual behavior.

## Motivating individual behavior

Researches into the relationship motivation – process of motivation seek to answer questions such as: why different individuals choose the same way of behavior over another and why they continue to act in a certain manner, even when faced with difficulties and problems.

The answer to these questions is based on the understanding that motivation is very subjective – what can motivate the behavior of one individual might not affect in any way the behavior of another.

The process of motivation has been studied by several prominent economics and management schools, each of which is based on a different concept of motivation and the process of motivation of individual behavior.

Classical school (Frederick Taylor, Henry Fayol, Henry Ford) offers the so-called rational economic concept according to which the motivation of the individual is caused solely by economic needs. The representatives of this school believe that in relation to the work process, motivation is related solely to obtaining the highest possible payment, and the choice of individual behavior and the corresponding process of motivation (selection of motivational techniques) is solely based on this assumption.

This understanding of motivation is criticized by the school of human relations (Elton Mayo, Mary Follett, Oliver Sheldon, Robert Owen). According to the researches of its supporters in the field of social psychology, a human works not only for remuneration, but also to satisfy broader range of personal and social needs: communicating with others, self-realization, personal development, which complicates the choice of individual behavior and elaborates the motivation process (motivational techniques).

Another approach towards motivation presents the behavioral school of management (Douglas McGregor, Frederick Herzberg, Chris Argyris, David McClelland, Victor Vroom). It puts the accent on the ability of the leader to adapt during the motivational process. In other words, it stresses on his ability to react through an individual approach with the appropriate motivational techniques and according to the motivation of each person, bearing in mind the objectives of the organization which are influenced by multiple factors with different characteristics. On the one hand, each individual is trying to achieve important for himself goals to restore their inner balance through respective individual behavior. On the other hand, a question of managerial skill is how and to what extent individual behavior should be stimulated without harming the interests of the company, since no organization has unlimited possibilities and resources to meet all needs.

Theoretical knowledge and practical experience in the field of motivation are systematized through motivational theories, divided into content and process.

Content motivational theories (Maslow, 1943; Alderfer, 1969; Herzberg, 1968; McClelland, 1987) emphasize the subjective motivators such as instincts and needs, whose fulfilment generates goal oriented individual behavior. Process motivational theories (Vroom, 1964; Adams, 1963; Porter&Lawler, 1967; Skinner,1938; Latham&Locke, 1979, 1990) explain how a certain behavior is formed and encouraged by the interaction of the individual with his environment, which includes the process of motivation as a management approach. Content theories are static and relatively easier to comprehend, while the process theories are dynamic and more complex to adopt. The aim of every motivational theory is to explain the choice of individual behavior and to suggest respective motivational approaches.

There are several dissimilar methods to explain individual behavior, which is explored as a reaction to the personal motivators and external stimuli through the implementation of adequate motivational techniques by the management team.

Undoubtedly, the instincts associated with the biological substance and the psyche of the individuals affect motivation. They represent an inherited or congenital predisposition to a certain behavior. Supporters of this argument believe that the choice of individual behavior is based more on unconscious motives, rather than on conscious ones, which eliminates the opportunity for serious research in this area. The theories based on instincts were criticized in the late 20s of the 20th century by scientists in the field of psychology, which in this period emerged as a science. The instinct theories gradually give way to the theories of needs – physiological, psychological, social.

According to various theories of needs, internal imbalance gives the individual behavior purpose and direction. Theorists in this area provide a better explanation of the various selection methods of individual behavior in terms of unsatisfied needs, rather than based on unrelenting instincts. In contrast to the sustainable nature of instincts, needs can change and are influenced by the characteristics of the environment. Individual behavior depends on the strength of motivation to meet these and other needs, and the stimulation of specific individual behavior suggests good knowledge of the content motivational theories by managers to implement the suitable motivational techniques.

As stated above, the process theories of motivation are more complex and difficult to implement. They are characterized by taking into account the variations of the individual's motivation as well as the conscious choice of individual behaviors influenced by the external environment. Process theories develop and support different theses on the implementation of the motivational process.

For example, according to the popular idea of the role of rewards (and punishments), the selection of individual behavior is determined not by personal instincts or needs but rather by the consequences of certain behaviors. In accordance to this statement, individuals consciously follow the behavior that has favorable outcomes and avoid behavior that has adverse consequences. It is obvious that the rewards (and punishments) can have a motivating effect, however, they are often perceived as the primary stimulus for the choice of individual behavior. Unfortunately, the role of rewards (and punishments) is validated in the practice, especially amongst staff members with lower educational and intellectual level.

Opposite theoretical idea examines the individual behavior as a result of a conscious choice between different behavioral alternatives. This choice is determined by the subjective knowledge of the individual's interaction with the surrounding environment formed by his expectations, values and other mental abilities. In practice, this statement only confirms the need for individual approach and the consideration of the employee's knowledge, skills and values when motivating his behavior.

The idea that motivation and choice of individual behavior are determined by the specifics of the individual's work has an increasingly wider application. In fact, boring and monotonous work suppresses motivation, while interesting and challenging work increases

it. When encouraging individual behavior, managers should bear in mind that the three main components of an attractive job are: diversity, independence and the opportunity to make decisions, and two popular ways to diversify routine work are enriching it and rotating the tasks the job requires.

Of course, the relation between motivation (choice of individual behavior) and the type of work should not be absolutized. The idea is that the quality of how a person performs its job does not only depend on motivation, and neither is encouraging individual behavior a sufficient factor for that, even though it is considered a necessary. Erroneous assumption leads to inaccurate management decisions regarding which appropriate motivational techniques should be implemented.

Managers could define and correct problems related to the work performance, when anticipating that poor performance is not entirely due to insufficient internal motivation or inappropriate motivating process. Awareness of this fact can lead to more honest relationship between the management team and their subordinates.

How could the management affect individual behavior in an organizational environment?

An interesting solution in this direction gives the reinforcement theory of B. F. Skinner (Skinner, 1953). It is based on the understanding that the manager can influence the formation of a certain type of individual behavior. In this theory a great importance is emphasized on the relationship between the manager and his team member, as well as on the choice of motivational techniques. They are used to encourage a certain behavior or to show that the behavior is inappropriate. Four basic techniques are used, called:

- Positive reinforcement
- Negative reinforcement
- Punishment
- Extinguishing

Positive reinforcement – providing active support to the desired behavior through feedback and a set of rewards, praise, more responsibilities at work, etc.; negative reinforcement – refraining from punishments for inappropriate behavior; punishment – active elimination of inappropriate behavior by remarks, assigning undesirable work, demotion, etc.; extinguish – passive elimination of the unwanted behaviors when the manager refrains from positive influence. The main thesis of this theory is that the more people are satisfied with the work assigned to them, the better they carry it out and the more motivated they are at work.

Modification of individual behavior is associated with the achievement of a particular behavior through systematic impact on its prerequisites and consequences. Crucial role in the formation of individual behavior is the process of motivation. Therefore, attention is directed to the selection of specific individual incentives. Once the choice is made, these incentives are arranged in a logical and understandable for the individual way. The effect of the chosen behavior depends on:

- evaluation by the individual, whether the degree of correlation between the conditions, behavior and consequences is strong or weak;

- evaluation by management team, whether it should be further encouraged or suspended depending on the achieved results.

**Motivating through goal setting**

Individuals as carriers of human capital are the most essential part of any organization. It is their behavior and their actions that determine how to achieve organizational goals and to what extent human capital in the organization will contribute to this.

The theory of motivating by objectives was proposed by Peter Drucker (Drucker, 2010) and it is seeking the point where the organizational goals meet those of the individual. Here, the emphasis has been placed on the idea that when a person is directly involved in setting the goals, which later he seeks to achieve, a sense of commitment to working towards meeting the targets is established. There are several requirements on goal setting and how to manage their accomplishment. The goals should be difficult, but at the same time achievable. Easy targets are often underestimated and extremely difficult ones can demotivate people. Complex but achievable goals create a challenge to meet the personal need of achievements. For this purpose, a system of criteria for the evaluation of the already realized goals needs to be developed to get a more accurate information on the process of their implementation.

Edwin A. Locke (Locke, 1968) developed the theory of motivation through goal setting. He claims that individual goals and intentions are the first determinants of individual behavior.

According to the theory of goal setting the level of work performance indirectly depends on four characteristics of goals: complexity, specificity, acceptability, attractiveness. They affect both the goal itself and the efforts, which the person is willing to allocate in order to achieve it. The following patterns are typical for those characteristics: the more complex the goal, the better the achieved results; the specificity of the goal reflects its clarity, precision and certainty; acceptability of the goal reflects the extent to which individuals perceive it as his own; attractiveness expresses readiness to invest certain efforts to achieve the goal.

Logically constructed, the theory of goal setting is not easy to implement in practice as there is no single path for its execution. It does not have universal application (goal setting varies by gender, age, education, type of activity) – for example, a clear goal and its acceptability are more important for people with low levels of education and more modest skills. For people with higher education and advanced skills more important is the presence of a challenge, the opportunity to show creativity. Moreover, there is no definite answer on how and who sets the goal – an unequivocal answer on where the process of motivation should be directed and which motivational techniques are best suited, could not be given.

It is important to determine to what extent the organization and the employees in it are prepared to establish the process of goal setting, to conduct practical preparation for the introduction of the process of goal setting, to develop recommendations for further implementation of the process of goal setting.

Motivation mechanism for goal setting is based on the following assumptions:

- The goals draw attention. The meaningful goals draw the attention of the individual to what is significant and valuable for a given period of time. For example, working on a certain project focuses the individual's attention exclusively on completing the job within the set deadlines.
- The goals guide the effort. The goals do not only draw attention selectively, but also guide the efforts towards achieving them. For example, focusing on the goal compels the individual to engage with it as much as possible.
- The goals enhance consistency. In the context of goal setting, goals not only guide the efforts of individuals to perform certain tasks, but also enhance the tenacity in chasing the goal. For example, stimulating perseverance means adoption of the difficulties and the problems as a challenge to overcome, rather than as a reason to quitting.

Goals encourage the development of strategies and support planning activities by decomposing the strategies to achieve the set goals – individual and organizational.

**Results from empirical studies**

The presented theories and research are supported by empirical studies, wherein the author participated (Milanova, Naydenova, 2014, 2015). As a result, an attempt to build a motivational profile of employees in a business organization is made. The motivational profile presents the level of satisfaction according to the influence of the main motivational techniques. Conducting studies on motivational attitudes by itself does not solve the motivational problems. It is a mean, a tool in the hands of managers for developing and implementing activities which derive from the empirical research. Based on the obtained results, directions and priorities for improving the incentive policy of the organization can be determined. However, standardized motivational program cannot be applied because developing one would require a lot of knowledge and facts about the actual status and potential of the organization. Based on the empirical studies a few indications regarding the motivational mechanism can be formulated that can be further developed and applied in managing an organization.

Empirical studies suggest the following arrangement of the most popular motivational techniques in the business practice:

Payment or financial incentive is a motivational technique placed on one of the first spots by all respondents. The paramount importance, which is given to the stimulus "monetary reward", is comprehensible in today's economic conditions, especially in our country. Money in the form of salary or other economic remuneration (bonuses, percentage of sales) is among the most exploited and obvious opportunities for motivation. Money is a factor to which hardly anyone is indifferent. But the role of money as a motivator can be called into doubt, in the sense that their absence may lead to dissatisfaction and their presence does not always lead to a complete and lasting satisfaction. This is true especially for hourly employees. They feel good when their wages are increased, but as soon as the euphoria is

worn, they focus their attention on the unsatisfied needs from the "hygiene factors according to the Herzberg's Two-Factor Theory" (Herzberg, 1968). Money, however, provides means to achieve various other things and this makes it a very powerful motivator. Since the objective of the research is to follow the motivational effect of various "external" incentives two important psychological aspects, concerning the amount of pay, should not be forgotten: first, the fairness of own salary in comparison with other wages within the business organization, and when reliable data available, compared to the wages in competing organizations; second, self-assessment of own contribution to the business organization. These are subjective, which means that individuals always appreciate their own abilities higher than their actual skills. Moreover, the higher remuneration does not always lead to higher quality. The conclusion we have is that the salary increase is a temporary effect on the individual behavior in the work environment.

The second place in the empirical studies is dedicated to the incentive "diverse and attractive job". This motivator is crucial, since when there is a lack of interest in the job itself, it becomes boring and monotonous, and the results quickly deteriorate. Tedious and dull work leads to loss of motivation and disinterested individual behavior, which in turn causes high turnover for the business organization and new job hunt for the individual.

"Recognition and trust from the management" as well as "favorable working atmosphere and collegial relationships" are ranked next as incentives. They earn a high degree of satisfaction when the business organization has considerable achievements and positive image. Loss of trust and deteriorating relationships in the team affect negatively the motivation and the behavior of the individuals.

Significant attention is paid to the possibility of further professional training and career development. This incentive is directly connected with the desire and necessity to receive higher qualification. However, the empirical studies reveal some discrepancies in the importance of this motivator for employers and employees. Career development has unexpectedly powerful motivating effect on employees. Merely changing the title of the position, while maintaining the same responsibilities, can reflect positively on motivation and individual behavior. "Elimination of duties" that are perceived annoying and time-consuming has extremely motivating effect by itself. On the other hand, 'promotion' as a result of acquiring additional qualifications and professional experience is not the favorite motivational methods for the management of a business organization, which is not a good testimonial for its managerial skills.

An important incentive for employee motivation is "improvement of the working conditions", which entails improvement of the office environment, purchasing new equipment, replacement of lighting or air conditioning system and other similar enhancements.

The empirical studies give a reason to believe that the application of appropriate motivational techniques in different combinations and in accordance with an individual approach to each employee would lead to a change in the quality of the management of human capital (improve the motivating process), synchronized with alternations in the business environment and organizational culture.

## Conclusion and recommendations

In conclusion, the following interesting findings stand out:

First, the change in the motivation of the individual is not an easy task. The efforts to achieve it are not always justified. Most certainly, the motivation of individuals to work and be responsible in the work process is preset, and to change it would require years of hard work, which makes the efforts aimless to a significant extent. The manager cannot change the motivation, but he can explain to his employees what results can be expected in different work environments. Maintaining a systematic personal communication between the manager and the employee aims to identify the appropriate incentives, which may lead to the stimulation of his behavior in the interest of the organization.

Secondly, it is demotivating to assign a task, which is not in accordance with the psychological profile of the individual or to assign work which fits with the psychological profile but exceeds his abilities and knowledge. This leads to confusion, despair, loss of faith in individual's own abilities and is a considerable waste of time and financial resources. Therefore, it is necessary that the manager makes an initial assessment of the skills of every new employee and assign job-related tasks, whose level of difficulty should be aligned with his or her capacity. Overwhelming expectations are not desirable – the skills of employees advance when their professional experience increases, however, this process is very slow and sometimes it requires time for a new employee to learn how to build on their own physical and intellectual capacity.

Third, a person is a psychological system of probabilistic effects and too complex an organism for his behavior to be "categorized" in defined frames. Even when the reactions of the individual are predictable, the multifaceted nature of human relationships can lead to unexpected actions. Therefore, people should be observed in their work environment and the appropriate conclusions regarding the impact of the environment on motivation and individual behavior should be drawn. In order to achieve an additional effect when applying motivational techniques is necessary to conduct experiments on regular bases and the results of those experiments should be subjected to constant analysis and evaluation.

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# THE RELATION RATIONALITY – IRRATIONALITY IN BUSINESS AS A DETERMINANT FOR DEVIATION

*According to behavioral economics, the interactions in an economic unit reflect not only the rationality, but also the irrationality in the behaviour of the individuals and the groups of individuals, which influences the display of human capital in the given organizational structure. Questions about the way of communicating the specific characteristics of rationality and irrationality as socio-psychological characteristics concerning the interactions in the organization are risen: their influence on the economic behavior of the individuals, the management of the processes and the goals achieving. In order to build up a complete of the business behavior and to overcome any negatives, leading to ineffectiveness, it is necessary to identify and analyse the determinants for the deviation in the corporate environment. A new vision of the condition of Bulgarian companies is needed, in order to identify the problematic areas in their management and a critical evaluation of their business practices is needed, in order to note down ways of formulating and improving the micro-policies.*
*JEL: A12; A13; M14; Z1*

The expansion of social sciences allows for deeper evaluation of our current problems. In the economics literature, despite the still predominant concept of the rational person (Homo Oeconomicus), ideas, viewed as heretical or heterodoxal, are positively and definitively being established. They broaden up the business analysis on several levels. For example, just as in macroeconomics, in the science of corporate management credits are given to the interdisciplinary method in the identification and analysis of issues, in the search for strategic solutions, and the development of good practices, optimizing the business processes.

The results of the research in the area of social, economic, and business anthropology are undeniable, while in the last decades a new peak has become the behavior economics. Behavioral economics states that people's real behavior should not be identified with the concept of absolutization of rationality as an immanent characteristic of the "economic person," who possesses a strictly ordered list of preferences and ideal information, and is as well gifted with boundless abilities for calculation of optimal benefits. In many different situations, the behavior of real economic agents is at best rationally limited, if not limited obviously irrationally at the worst possible scenario.

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The comprehension and argumentative explanation of this fact would contribute to the adequate management of the human capital at a corporate level. Simultaneously, the answer to a key question could be found or at least opportunities for its proper interpretation could be identified, namely the deviation and its consequences. All deviations and specifications, overleaping the boundaries of their own ethnicity, turn into determinants considering the display of bad practices, related to making improper strategic decisions and the consequent ineffective results. Some researchers, mainly in the area of sociology, highlight social anomie as a key reason (Chengelova, 2017). We believe that the anomie itself is caused by the insufficient comprehension and attention paid to the socio-cultural context, in which the relation rationality-irrationality is observed. When this context is neglected in the business area, the consequences for the economic unit, its "life" and development are all doubted. The disregard of the context is a key precondition for the expansion of irrational actions, which cause the indiviudals' choices to be with undefined preferences. These choices are also known as process of "construction of preferences," as called by economists (Payne, Bettman, 1992; Slovic, 1995), which process reflects on the deviations from the theory of rational choice-making by "modeling" the preferences.

The rational and irrational characteristics, incorporated in corporate culture, influence very specifically the formation, organization, and management of the human capital and are sine qua non for effective management and business results. Usually, culture is a dichotome system of rational and irrational components, which when combined with good business traditions and philosophies of the the economic structures can be managed and contribute for a larger effectiveness, while simultaneously they can lead not only to deviations but also to undesired and hardly overcomeable displays of the human capital in a corporate environment.

The culture of the individual business unit includes a set of characteristics that determine its unique nature and the ability of individual members of the company to identify themselves through it. In summary, the values that determine the behavior of the company build its culture and direct its activity, which is a factual behavioral formalization and is largely dependent on the validation of specific practices (Riviere, 1995; Milanova, 2008). This conclusion once again confirms the fundamental nature of the question whether corporate culture is ultimately rational in nature and rationalizes the behavior of corporate structures or, on the contrary, it has encoded irrational components in its nature and must be managed and directed in a specific way in the process of the corporate governance.

With the availability of appropriate specialists, each company or corporation could develop partial and concrete conceptual models for mastering and even managing irrational manifestations in the relationship between national and corporate culture, taking into account the manifested characteristic features and the conceptualization of the reciprocal links between social capital and cultural dimensions .

It was found (Milanova, 2008; Milanova, Naydenova, 2017) that the deficit of modern corporate culture results from the lack of maturity in the case of business – maturity, which in itself leads to deviations.

This fundamental feature – business maturity that is relevant to business culture – is seen as a rational factor for corporate governance, but at the same time, irrational behavioral

dimensions are also emerging when it is endorsed. In some cases, they can play both a positive and a negative role, precisely because maturity of business refers specifically to the interrelated National Cultural Dimensions and Organizational Cultural Dimensions (NCD and OCD) as its parameters.

Values and norms are not the result of discretionary or informal bargaining, but are passed on from generation to generation through a process of socialization. Under such established values and norms, habits and traditions are more important than reason, and this provision is also valid for the manifestation of human capital at the corporate level.

The thesis that the subjects of economic behavior are not strictly rational creatures appears among various representatives of orthodox or heterodox economic studies, but finds a definitive expression in behavioral economists. As pointed out at the outset of the project, economic subjects, in addition to rational ones, can be irrational in their behavior: they are subject to emotions, intuitions, beliefs, sometimes short-sighted, as well as moral and social norms, which provoke loyalty, sympathy, solidarity, i.e. they are not only aimed at increasing their own economic benefits.

In the process of shaping the behavior of individuals, social identity plays a significant role. Where there is significant social capital, strong social relations, and high levels of mutual trust, the sense of social identity is increasing, and the impact of foreign behavior on individual behavior is growing. Thus social norms and individual behaviors are mutually conditioned in the process of continuous development and change. And this is of particular importance in determining the main values that form the basis of a corporate culture. The introduction of behavioral heterodoxy is potentially applicable in corporate governance. For example, when a behavior qualifies as undesirable, it could be sanctioned by anticipating the effect, depending on how the subject assesses the sanction.

Here, so far, although positive dynamics has been established and confirmed, both the "strong" and the "weak" corporate cultures are determined by the national specifics, and it is still quite difficult for the national "mind programming" to yield in front of the company's "software" (especially in the case of Bulgarian).

Research has been carried out among various "corporate strata" within selected corporate structures in Bulgaria. The study was carried out by a team led by Assoc. Prof. Adelina Milanova and Assoc. Prof. Pavlinka Naydenova from the Economic Research Institute at the Bulgarian Academy of Sciences. It is interesting to assess the vision of experts about the big problem of management related to the consolidation of the "rational" corporate culture, which increasingly takes into account the specifics of the Organizational Cultural Dimensions (OCD) and overcomes, to some extent, the characteristic determinations of the National Cultural Dimensions (NCD).

The conducted in-depth interviews prove the presence of both similar and divergent positions, but at the same time in some of the interviewees predominant were their personal perceptions, which they are convinced about and which can not be identified as directly related to their workspace.

With regard to corporate social capital problems, the conversations with managers demonstrate a desire for trust optimization, both horizontally and vertically. The responses

and comments of the employee segment of the various companies are intriguing, as they, after necessary clarification, determine the category as a result of unpredictable irrationality rather than as a manifestation of rational determination. Such an almost unanimous interpretation proves that the microclimate is still built up predominantly by irrational characteristics related to the socio-cultural dimensions, which in turn means that the application of good practices would encounter barriers or, at the very least, deviate in the wrong direction. This fact warrants the search for concrete measures in different directions, in order to overcome the inconsistencies and deviations in the context of the behavioral behavior of organizational behavior.

Experts are firmly convinced that management's "weakness" is to achieve consistency between personal goals and interests and those of the organization. Improving managerial competencies is possible through vocational training and exchange of positive experience, but to in order to reach this point it is necessary first and foremost that management teams understand that irrationality in the manifestation of corporate human capital cannot be overcome but can be realized and perceived as the subject of important and urgent management decisions.

"The exchange of experience, i.e., participation in different forums is more than necessary, both in terms of contacts for further collaboration and sharing different perspectives and values. Rational managerial behavior, in my opinion, is to guarantee material incentives and provide opportunities for personal enrichment" (Employee – lecturer, science and education).

Experts' views on the purpose of non-material incentives are related to the importance and innovativeness of the work or personal involvement and expression, but their impact on individual behavior and the manifestation of corporate human capital is rather unconscious (irrational) if the effect of material incentives is not achieved.

"I have not thought about human capital and whether I am rational or not, but the incentives are important, both for life and for personal satisfaction. But... if I have a personal contribution that does not count, does it mean that I am irrational or that the manager acts irrationally? " (Employee – pharmaceutical industry).

Interesting results are reached in the study of the issues related to the relation between the socio-anthropological aspect and the formation of the middle class in the Bulgarian society. It is well known that the values of the middle class have a greater influence on the build-up and consolidation of institutions in a given country (Hofstede, 2001). The process of formation of the middle class and the nature of the institutions in Bulgarian social reality is more specific. The hypothesis regarding the rationality/irrationality of corporate culture as a prerequisite is confirmed in favor of the second option (chronologically and as a result of different accumulations), but given the global process mentioned above, Bulgaria is definitely showing prominent deviations. The explanation could be as much in the sphere of the specificity of the national cultural genotype as it is related to the undeniable historical specificity in the formation and affirmation of the cultural matrix itself.

This issue raised a number of questions and specific interpretations, mainly from the segment of managers, as well as some representatives of the science and education areas.

The explanation is that obviously these individuals are perceived, with a great deal of justification, as representatives of the middle class of the Bulgarian society, and at its upper levels. The big question remains whether and to what extent the degree of education is an essential and respected prerequisite for the formation of the middle class in our country and what is the exact algorithm – business success – education or vice versa.

"I did not have a special education, but I had a hard job - I created my own company, my accountant was a well-educated person, now I have two accountants working for me. Then I graduated ..... at TU and now I have education. The company is fine, there is a prospect. Then, do my values, as you said, affect the institutions; now I wonder what my culture is. Is this all rational or I have not understood? " (Manager 3 – Construction).

Obviously deviant manifestations are diverse and sometimes ambiguously interpreted. In principle, deviation is defined as a manifestation of irrationality, but in certain situations, especially typical in the case of uncertainty about socio-anthropological dimensions and their combination at different levels, deviance may be observed in some rational actions. In this sense, deviance itself should be defined more as a reason for anomalies, not vice versa. We tend to perceive deviance as a supreme abstract category that has different pragmatic manifestations that can be identified on the basis of social empirics.

It is a fact that in the conditions of a crisis/transition, etc., the culture of compromise and reconciliation is disintegrating and this further stresses the society, its institutions and its separate structures. However, this stress results from the irrational combination of parameters in the cultural matrix due to the poor understanding and operation of the main national and cultural dimensions. This is, in fact, the popular value disorientation, reproducing the unlawful combinations, in the sense of the above, which produces deviance. And from its production and dissemination, it follows the anomalies that are typical not only for the whole society in the context of the paradigm of holism but also for separate structures and units such as companies, corporations, business units.

As a result of research, additional observations and theoretical insights, our conviction is that corporate deviance is definitely influenced by the relationship rationality - irrationality, but not always unambiguous or one-way. In this sense, the options for overcoming or even preventing it should be sought deep in the overlapping of cultural and sub-cultural disparities, as well as based on the preliminary definition of the optimally adequate combinations of the various constructs of cultural and socio-anthropological nature.

This finding also appeals to the wider entry of business anthropologists at the corporate level to identify and predict different behavioral deviations that have a different impact on management and its efficiency.

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# FINANCIAL ASPECTS OF NPP CONSTRUCTION: IMPLICATIONS FOR NPP BELENE

*New technical safety requirements for the future NPP have been set after the Fukushima accident in 2011. This has led to costs increase and new models for NPP construction financing. Along with these models the article discusses technical problems associated with the building of a financial model to determine the financial viability of a project for a new NPP construction, and the decision to be made in defining its main parameters. The outcomes of the study have direct implications and applications that may be used in studies and decision for constructing NPP Belene.*
*Keywords: financing, financial models, nuclear power plant.*
*JEL: G11; G17; G32*

## 1. Introduction

The nuclear energy is a leader in the electrical energy production in the EU among other fuel and types of energy production facilities. In 2016, the nuclear energy generates about 28% of the electricity in the EU. It is expected that this share will diminish by 2050 to 18% of the energy production at the account of the increase of renewable sources share (EC, 2016). Nuclear energy plays an important role in combating $CO_2$ emission reduction by ensuring half of the low-carbon production (EC, 2017).

Despite a reduction of nuclear energy share in the coming decades is expected, the future plans envisage investing only in the EU between 349 and 456 billion EUR in new nuclear plants with a capacity of 95 GW (EC, 2017). The largest NPP market is assumed to become Asia, China and India taking lead positions as they are in urgent need to replace their very polluting coal-fired thermal power plants.

The new investments in nuclear energy however have an alternative. After the 2011 Fukushima accident as a result of the new technical requirements for higher safety for future NPPs the costs for NPP construction and operation increase. The safety costs per

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nuclear reactor increase according to different estimates from 35 to 140 million EUR (EC, 2017). The lifetime extension costs per reactor grow between 5 and 25% after Fukushima, representing 63 EUR/kW on average (EC, 2017). These new requirements are the main reason for the rise of the levelised cost of electricity (LCOE) of the nuclear energy (Figure 1).

The NPP cost structure is dominated by the investments with a share from 60% to 85%, followed by the operating costs – with a share 10-25%, fuel – with a share of 7-15% and decommissioning costs – up to 1% (NucNet, 2014).

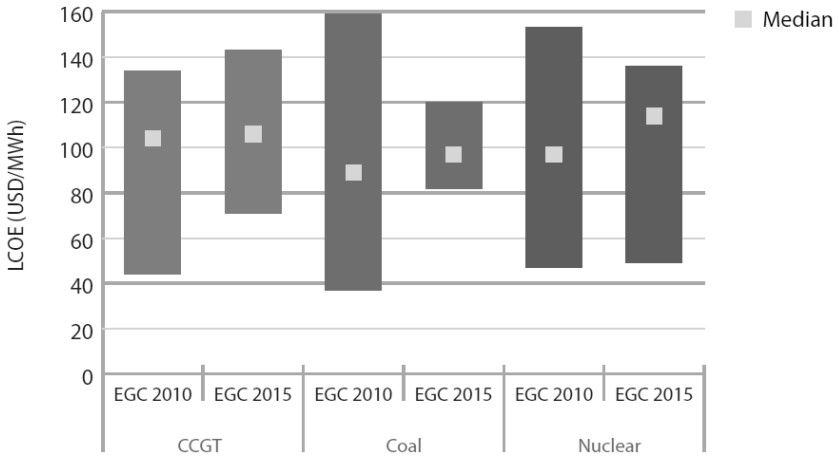
Besides the high investment costs, the nuclear energy entails a long period of construction and operation, complex technology, high regulatory and political risk.

These features of the nuclear energy go along with the imposed restrictions in the banking schemes after the 2008 crisis. Europe has introduced the Basel Accords II and III for the sector, while the USA – special regulations such as the Dodd-Franck Act, the Volcker rules. These rules are related to regulation of the capital adequacy of the banks, their liquidity and responses to stress market situations. This leads to increase of the requirements of the banks for financing large infrastructure projects, incl. for NPP construction.

The Fukushima and other accidents with NPP operation in the last years, the increased public pressure in some big countries and the and the traditionally negative attitude of the "green" to nuclear power have led to the withdrawal of international development banks from funding nuclear projects. All this over time creates a crisis in the financing of new NPPs, which on the other hand induces the development of new models of such financing.

Figure 1

Levelised cost of electricity (LCOE) in 2010 and 2015 for various technologies at 10% discounting rate




*CCGT refers to energy production through cogeneration.

*Source: OECD-NEA & IEA, 2015.*

The report focuses on these funding models and discusses recent developments and features related to the construction and use of financial models to calculate the viability of new NPP projects. The obtained outcomes of the study are interpreted in terms of their applicability making the decision to build the Belene NPP.

## 2. Models for NPP construction financing

The financing of NPP construction and operation projects is a complex economic and political task. The huge investment costs of nuclear projects require taking serious risks (D'haeseleer, 2013). For this reason, the allocation of risks is a primary task in clarifying the concept of financing nuclear projects.

Each project has an owner who either independently or through the assignment of a special project company starts to develop the project. An important part of the project idea development is the project financing structure and exploring the opportunities for attracting investors who are external for the owner as well as finding the external capital.

The literature and practice distinguish four "pure" NPP financing models. These are the models of financing through state funds, corporate financing, cooperative financing and project financing.

The initial and traditional model of NPP financing is through state funds, also called national model (Lucet, 2015). This model was widely used from 1960s to 1980s in France, USSR and USA, marked by a peak in NPP construction. This model is still used mainly in regulated markets, e.g. China (Qinshan 1 и 2), UAE (Barakah). Typical for this model is that the NPP ownership and operation is done by a state enterprise. The state funds are used for both direct financing of the project company capital and indirectly – for providing a state loan guarantee for the project company.

A mixed company with a capital of 4.7 billion USD is established for the NPP Barakah, as the capital is provided by the state corporation ENEC and the prime contractor – the South Korean company KEPCO (Table 1). The debt financing of 19.6 million USD comes from four sources: the UAE Ministry of Finance, four investment banks, the Korean and the American export crediting agencies. Thus, the necessary financing for the NPP construction to the amount of 24.4 billion USD has been secured.

Table 1

Sources of financing the construction of NPP Barakah

| SOURCES OF FINANCING | Billion USD |
|---|---|
| Equity, incl.: | 4.700 |
| ENEC | 3.904 |
| KEPCO | 0.976 |
| Debt, incl.: | 19.600 |
| Ministry of Finance | 16.900 |
| National Bank of Abu Dhabi; First Gulf Bank; Bank Standard Chartered; HSBS | 0.250 |
| KEXIM | 2.500 |
| USEXIM | 0.732 |
| Project budget | 24.400 |

*Source: Compiled on the basis of IAEA data, 2018.*

A version of this financing model is the intergovernmental loan for NPP construction. Usually such contracts contain clauses falling outside the nature of nuclear power plant construction. Such examples exist in China lending to Pakistan, the Russian Federation used that model to credit the construction of NPPs in Belarus, Bangladesh and India.

The corporate financing model uses the balance of the project company to attract funds. There two options as well – financing through participation in the project company or through providing credit. The project company bears the entire risk in this model.

Examples for using this model can be found in NPP constriction in China, Finland, France, India, Japan, South Korea, Russia and the USA. In case of state ownership of the NPP it is assumed that this model is close of the state financing model.

A version of this model is the provision of financing by the Engineering, Procurement and Construction (EPC) Contractor, mainly used for NPP construction. In that case the contractor ensures the financing usually through credits from investment banks, export credit agencies, and in some cases directly from the state. It is also possible to ensure financing through debt emissions (most often corporate bonds), or participation in the capital of the contractor. There is a large participation of the state when the contractor is a state-owned company. Then, this model is also close to the model of state financing. This model is applied for nuclear projects in the Russian Federation, China and France, which give credits to their own companies implementing nuclear project. In Japan this model is used by emitting bonds on the capital market. Similar tools are used in China by the China National Nuclear Corporation (CNNC) and China Guangdong Nuclear Power Holding (CGNPH). The project risk is assumed by the contractor in this model.

The third financing model is called the model of cooperative or hybrid financing. This model is also known as Mankala following Finland's experience. Large industrial consumers take part in the NPP capital and in proportion receive a quota and an obligation to buy the produced electrical energy. Additional funds are ensured by the EPC contractor, banks and export credit agencies (OECD, 2017). In case of surplus electricity, part of it may be sold on the free market. The advantages of the model are guaranteed prices for the consumers, which are independent of the volatility of the liberalized market and the dispersion of risk among the participants in the project company. Besides, the plant provides lower prices as it does not work to generate profit. This model is used for NPP Fennovoima and NPP Olkiluoto 3 in Finland. The shareholders in NPP Fennovoima are E.ON with 34% participation in the capital and a consortium of 69 Finnish energy and industrial companies from the mining sector, steel production and trade, as well as municipal and regional energy companies. This consortium forms 66% of the NPP capital.

A similar practice is applied in France by Exeltium, which is a consortium of 26 electricity intensive French companies (Lucet, 2015). They started negotiations with EDF in 2006 for signing a long-term contract for buying electrical energy against provision of funding (take-or-pay contract). The contract was signed in 2008 under the following conditions – total financing of 4 billion EUR within 24 years and provision of 311 TWh. The first stage began in 2010 as Exeltium provided in advance 1.7 billion EUR, with the obligation to buy 148 KWh in the next 24 years at the price of 42 EUR/KWh, as the mechanism for price indexation is clearly set. The second stage of the project scheduled to commence in 2011

was postponed due to the decrease in the prices for the coal electricity production and the 2008 financial crises.

The forth model – the project financing is also known as limited recourse financing. A Special Purpose Vehicle – SPV is established that becomes the project owner. The contractor, other sector companies and financing institutions can be shareholders in the SPV. Banks provide long-term credits to the project company backed usually by the assets and guarantees for the project future cash flows. The project risks are clearly identified and traceable. The crediting party assumes larger part of the risk in this model, which makes the finding of such institutions difficult. Such financing has not been applied yet for nuclear projects and there is very little likelihood in the foreseeable future (IEA/OECD/NEA, 2009).

In the last years, under the new conditions, there is a crisis in the four models for NPP financing. New models start to develop and be used in order to fill the vacuum. Such are the cases of NPP financing in the United Kingdom and Turkey.

In the United Kingdom during the construction of Hinkley Point C NPP two instruments are used - state-backed loan and contract for difference (IAEA, 2018). The project envisages the construction of two EPR reactors with capacity of 1,630 MW each. The project value is approximately 19-20 billion GBP. The French company EDF is the contractor. It organizes a project company which owns 66.5%, and the remaining part of the capital of 33.5% is held by two Chinese companies - CNNC and CGN. The Chinese companies take part only in the financing, and not in the plant construction.

The British government backs a loan of 17 billion GBP. The entire financing of the project will be secured by the loan, sale of non-strategic assets, and emission of corporate bonds by EDF. The contract for differences to be signed guarantees an indexed strike price of £92.50/MWh (2012 prices) for 35 years from the end of construction reducing to £89.50/ MWh (2012 prices) if EDF takes a final investment decision on their proposed Sizewell C project. The contract for differences ensures the payment of a subsidy by the government in case the market price is below the strike price. In the reverse case, EDF will return the difference above the strike price to the government.

The NPP Akkuyu project in Turkey envisaged the construction of 4 units VVER type, each with 1,200 MW capacity. The construction began in 2018 by using the model „Build - Own - Operate - BOO". Here the project contractor assumes the commitment to find financing, build, operate and maintain the plant. A project company was established to that end, as initially the contractor Rosatom was supposed to own 51%, and the remaining 49% to be owned by Turkish energy companies (Atiyas, 2012). This idea does not happen and Rosatom becomes the sole owner of the project company's capital. This company will receive financing amounting to 22 billion USD from Russia. The Turkish state company TETAŞ guarantees a buyback contract for 70% of the electricity produced by units 1 and 2, as well as 30% of the electricity produced by units 3 and 4 for the first 15 years of operation at an average price of 123.5 USD/MWh. The remaining quantity will be sold on the market. After the end of the buyback contract 20% of the company's profit will be provided to Turkey (Schneider § Froggatt, 2018).

The financing of nuclear projects should not be regarded as static and firmly set in the preparatory project phases. These projects are very long and risk curve varies in the different NPP lifespan phases, which may be used for favourable crediting of the NPP construction and operation. For example, after the completion of the construction phase the construction risk disappears and that may be used for attracting a new shareholder or refinancing at more favourable conditions than the initial ones.

## 3. Aspects in building a financial model for determining the viability of a new project for NPP construction

The purpose of the model is to determine the viability of a project for NPP construction and operation – outlining the critical values and assumptions, which make the project viable. The financial model should be structured in such a way so as to encompass the entire information needed to the financial analysis, namely: input parameters, production program and outcomes.

The input parameters cover a wide set of assumptions for: project timing – building and operation; operation and power load (e.g. duration of the working cycle with one nuclear fuel loading; duration of short-term, mid-term and long-term forced outage; dispatching rate; investment costs; depreciation and reinvestments; net working capital; credit parameters; electricity prices; debt/equity ratio.

The assumptions are traditionally developed in several options and their combining leads to the forming of different scenarios for the construction and operation of an NPP. As a minimum the scenarios must study the viability of the model in the different options of the debt/equity ratio, prices and value of investment costs.

The production program includes the calculation of the amount of produced electricity, the operation revenues and costs.

The data generated by the model enables the evaluation of the LCOE and evaluation of the Net Present Value (NPV) and the Internal Rate of Return (IRR) of the project.

**Evaluation of the LCOE**

The LCOE is the ratio of the discounted project costs and the amount of the produced electricity for the entire project reference period.

The indicators is uniform for the entire project i.e. there are no options or scenarios for it. The indicators is calculated based on the following formula:

$$LCOE = \frac{\sum (Capital_t + O\,\&\,M_t + Fuel_t + D_t) * (1+r)^t}{\sum MWh_t * (1+r)^{-t}},$$

where:

$Capital_t$ – is the total project capital costs for the year $t$

$O\&M_t$ – is the total operation and maintenance costs for the year $t$

$Fuel_t$ – is the total costs for nuclear fuel for the year *t*

$D_t$ – is the total costs for management of nuclear waste and decommissioning of nuclear facilities for the year *t*

$MWh_t$ – is the total produced amount of electricity for the year *t*

$(1+r)^{-t}$ – is the discount rate for the year *t.*

The value of this indicator shows the price at which the project becomes profitable *(break-even),* i.e. the project starts to generate enough cash flows not only to cover all costs but also to ensure return on the invested capital that is comparable to the return on alternative investments but not higher. This approach eliminates the need to project the future electricity price levels, which implies a degree of uncertainly and often depends on political decisions, non-market decisions, subsidies, etc.

*Evaluation of the NPV and the IRR*

The project NPV is calculated through discounting the nominal net cash flows by applying an adequate discount rate. The NPV value is significantly influenced by the applied discount rate, the duration of the project reference period as well as the price level. In this relation it is presumed that if the NPV is a positive value then the project is profitable.

The project IRR is the discount rate at which the project NPV equals 0. The project is profitable if the IRR equals or is higher than the discount rate applied in the calculation of the NPV.

Both indicators are calculated as follows:

*Net cash flow = EBITDA – Capex – CWC – T,*

where:

*EBITDA (Earnings before interest, taxation, depreciation and amortization)* is the difference between the project revenues and costs before the payment of the interests and the accounting of depreciation)

*Capex* – is the project capital costs

*CWC* – is the change in working capital

*T* – is the value of corporate tax.

A key moment in the calculation of NPV and the evaluation of the IRR is the applied discount rate. The setting of an adequate discount rate requires analysis of the Weighted Average Cost of Capital – WACC. The cost of the capital depends on the sources of financing (debt/equity ratio) and the return that these financing sources get as compensation for providing this financing. The financing institutions seek lower return on their funds considering the fact that they are ahead of the private investors on the "queue" for receiving funds (the payments on interest and principal are done before the calculation of profit and the payment of the dividend). The persons advancing equity get return in the form of

dividends (in case of sufficient positive cash flows) or in the form of eventual growth in the price of their shares, which depends on the market trends.

The WACC is determined by applying the approach that the capital costs of a company are the average weighted value of the costs for the equity and the costs for the debt, as follows:

$$WACC = \frac{E}{(D+E)} * \mathrm{Re} + \frac{D}{(D+E)} * Rd * (1 - Tc),$$

where:

*WACC* – is the weighted average costs of capital

*D* – is the amount of debt financing

*E* – is the amount of equity financing

*Re* – is the return that is sought by the persons advancing equity

*Rd* – is the price of debt

*Tc* – is the corporate tax rate.

The price of debt (Rd) is calculated through the calculation of the IRR of the financial flow of the debt. This flow includes all debt parameters: initial fee; utilized funds for each year; interest during construction; commitment fee on the non-utilized amount of the loan; repayments on the interest and principle. These amounts are allocated depending on the years in which they occur and based on this the IRR of the financial flow of the debt is calculated. The parameters considered in the calculation of the price of debt depend on the total amount of the investment, the debt/equity ratio and the loan conditions.

The return that is sought by the persons advancing equity - $R_e$, is determined by the application of the *Capital Asset Pricing Model (CAPM)*. This is a standard theoretical framework for evaluation of the sought return from equity. The model presumes that the return from equity may be determined as a sum of: the value of return from non-risk financial instruments; risk supplement for the country (e.g. asymmetrical risk connected with the country); supplement for business risk; and a supplement for asymmetrical project risk.

## 4. Conclusion – applications for Belene NPP

The conclusions from the analysis related to the Belene NPP project are in several directions:

- The reduction of market risk could be achieved by signing of contracts for difference and contracts for buying the produced electrical energy at previously determined price. These risks are assumed by the government. Due to the significant political element in the nuclear projects the commitment of the government is a necessary condition for the success of these projects.

- The ensuing of the necessary project financing often becomes a commitment of the contractor of the EPC contract. If this funding is not entirely provided by the government, then the contractor will have to raise funding from the widest possible range of financing institutions. This range encompasses investment banks and funds, development banks and export credit agencies. There are also used state guarantees for obtaining such credits. The contractors themselves may provide funding by issue of corporate bonds. The financing of nuclear projects is attractive also for large industrial users, energy companies and even for neighbouring countries which could ensure electricity for a longer period at certain conditions.
- If a decision is made that the construction and the operation of Belene NPP is to be done by a private contractor without any state participation then the capacity of the state institutions control and regulate its activity should be assessed.
- The financing of nuclear projects should not be regarded as a fixed process. Depending on the project progress and the financial markets there could be used also other instruments like refinancing, sale of the share of the project company's capital and attracting new investors in it.
- The financial model for calculating the viability of a nuclear project is a complicated combination of assumptions as input parameters, the production program and the final outputs. The minimum criteria in the selection of a nuclear project should be the positive cash flows and an internal rate of return that is higher than the discount rate applied.

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# THE MODERN INTERNAL AUDIT IN THE MODERN COMPANY

*The mission of the modern internal audit is to support the development of the company and to contribute to the achievement of its objectives. In this context, the need for the internal audit to meet the expectations of stakeholders is becoming increasingly important. Moreover, it requires a proactive role, which includes to provoke needs, provide advice, and to offer opportunities. The modern internal audit must go beyond its traditional role of observer, finder and corrective, and become the engine that inspires changes in the company. In order for this transformation to take place, it is necessary to change the objects and subjects of the internal audit. Corporate culture, corporate social responsibility, ethics, cybersecurity, risk-culture, innovation, strategies, etc. are joined of the objects of internal auditing. All this implies new competences, attitudes and skills of internal auditors.*
*JEL: M42; M14; G34*

## 1. Characteristics of modern internal auditing stemming from the conceptual framework for internal auditing

The characteristics of modern internal auditing are determined by the nature of internal auditing, its principles, mission and objectives. The International Professional Practices Framework (IPPF) for internal auditing containing definition, principles, standards and guidelines, sets specific requirements for internal auditing, which will be discussed below. Internal auditing is an activity designed to contribute to adding value, improving the organization's performance, and helping to achieve its goals. The mission of internal audit is to support the strengthening and protection of the organization, which is achieved through the provision of risk-based and objective assurance and through advice based on in-depth knowledge of the activity. Among the basic principles defined in the conceptual framework, we should distinguish those relevant to this study, namely, the principles that demonstrate the relationship and interaction of the internal audit with the company. In particular, these are the principles that require that the internal audit should be aligned the organization's strategies, goals, and risks, and should be penetrating, proactive, and forward-looking; it should promote improvements in the organization, demonstrate quality of work and continuous improvement.

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## 2. Interaction and interrelation between the subject and the object of the internal audit

The manifestations of the characteristics of the internal audit and its definition as modern or obsolete depend to a large extent on the environment in which it is located and on its object and subject.

The subjects of the internal audit are the audit structures, the auditors, the head of the internal audit, and all who plan, conduct and analyze the audit process. The objects of the internal audit may be the organization, its structural units, separate functions and activities, certain systems, specific processes. The object and the subject have, on the one hand, a relatively independent development and, on the other hand, they develop as a result of their interrelation and interaction. For example, the above-mentioned objects are under the influence of other subjects other than the internal audit, such as senior and operational management; external auditors, regulatory and other bodies as well as clients. These versatile effects change the object by bringing it to a new quality level. Any change to the object create new requirements for the internal audit subjects, requiring a change in both quantitative and qualitative aspect. It can be said that internal auditing and its subjects depend on the maturity level of the company and on the maturity level of the internal audit function itself. In the development of the object and the subject, as well as in the interaction between them, different hypotheses can be outlined. For example, the object (the company) may have advanced role compared to the subject (internal auditors), i.e. the object may excel the subject in qualitative aspect. In this hypothesis the company is dynamic and innovative and it introduces new technologies, its corporate social responsibility is integrated into its business and management, and it has to manage many inherent risks. At the same time, internal auditors have no understanding of the business, no knowledge of new technologies, do not understand their role in innovation and related processes, have no capacity and potential to innovate in their own field, are not familiar with CSR standards, do not know cyber-risks, etc. The audit plan includes traditional accounting audits, audits of certain operations, compliance audits, and other conventional audits. The opposite hypothesis is when the internal audit has a more advanced role. Internal auditors have individual and group competencies that surpasses the company's needs. Under this hypothesis, the internal audit could be the engine to promote the development of the company, to provoke needs, and to inspire change. For these purposes and their implementation, it is necessary to have interaction and synchronization with the other subjects of the company, in particular the support and the actions of the internal stakeholders (the management, the Board, etc., the managerial bodies of the company). Undoubtedly, the best hypothesis is when the modern company has a modern internal audit. Under this hypothesis, the object (the company) changes dynamically. The change can be quantitative, which is expressed in new activities, products, technologies, as well as qualitative as a consequence of the quantitative changes or improvements of the existing activities, products, technologies, etc. All this necessitates a change in the subject (internal auditors). New skills are needed, such as knowledge, innovativeness, etc.

## 3. Challenges to internal auditing stemming from society's needs and the requirements of the business environment

The modern business environment is characterized by complexity and dynamism. It is necessary to take into account not only the economic stakeholders but also the non-economic stakeholders. The social element is seeking its wider space in management and is imposed as a need for the business. The expectations for a "social image" of today's companies are growing, and, in response to these expectations, they seek to change. " The most fundamental change has already happened in most global companies, namely the explicit recognition that social issues are business issues and that business issues are social issues." (Amos and Sullivan, 2015, p. 4).

In their resolutions on corporate social responsibility of 6 February 2013: "Corporate social responsibility: accountable, transparent and responsible business behavior and sustainable growth" (P7_TA (2013) 0049) and "Corporate Social Responsibility: promoting society's interests and a route to a sustainable and inclusive recovery "(P7_TA (2013) 0050), the European Parliament "acknowledged the importance of businesses divulging information on sustainability such as social and environmental factors, with a view to identifying sustainability risks and increasing investor and consumer trust." (ECIIA2015, Non-Financial Reporting: Building trust with internal audit p. 5).

A study (PWC, 2017) on the state of internal audit outlines future likelihood of disruptive events for the next three years, namely: new regulations, cybersecurity, technology advances, digital innovation, change in business model/strategy, changes in customer preferences, financial challenges, changes in human capital, culture and compensation change, operational changes. It is logical that modern internal auditing should go towards these areas in order to be useful to the company.

A study (European Institutes of Internal auditors 2018) conducted in 2017 identifies 10 hotspots for internal auditing in 2018. In comparison to the study said above, several areas coincide, namely innovation, corporate culture, cybersecurity, and regulations.

A study (KPMG, 2016) on the internal audit risk areas also identifies regulations, corporate culture and behavior, and cybersecurity.

Based on the studies above, some interesting areas relevant to the scope of internal auditing can be summarized.

*Regulations* are associated with many risks for the company. It is no accident that they fall into the problematic areas. Regulations are a traditional area for the internal auditing. A study by the Institute of Internal Auditors Research Foundation (IIARF) shows that compliance audits are one of the most common audits performed by internal auditors (76%).

*Cybersecurity* is an area of major importance for the companies. This importance will remain in the future. The threat of cyber-attacks is significant and steadily increasing. One estimate suggests that cybercrime could cost businesses over $2 trillion by 2019, nearly four times the estimated 2015 expense (Deloitte, 2017, p.1). Obviously this is and will be a key area on which internal auditing should focus.

With regard to *innovation*, including digital innovation, internal audit could play a significant role. "Internal auditors are ideally positioned to play a leading role in the success of their organizations with their unique understanding of business goals and strategic objectives, and their ability to see the impact of risks across the entire enterprise. In addition, internal audit opinions can contribute to innovation and performance improvement" (Harrington, 2015, p. 26). In order to fulfill this role, internal auditors also need to be innovative. In this sense, innovation can be seen as an object and at the same time as a tool of the internal audit (Dineva, 2015, p. 669-676).

Regarding *corporate social responsibility*, it can be said that it should be durable within the scope of internal auditing. Internal auditing has a good position to know the processes and systems in the organization. This gives an opportunity to provide in-depth assessments and implement an integrated CSR approach as part of the management system and in synergy with other activities. However, a number of studies show that audits on CSR or concepts close to CSR are poorly covered in internal auditing. According to a study by the Institute of Internal Auditors Research Foundation (IIARF), social audits and sustainability audits (corporate social responsibility, environment, etc.) were included in the scope of internal auditors at just 20%. This type of audits is among the least practiced, ranking among the last five positions in the list of types of audit engagements, far from operational audits (89%) and compliance audits (76%). Data from a study conducted in Bulgaria (Peycheva, Miteva, Harizanova-Bartos, 2017, p. 81-91) show that internal auditors are not familiar with the standards of social responsibility and its individual aspects, and this applies to both the public and the private sector. In all responses regarding all standards related to social responsibility, all internal auditors, i.e. 100% of the respondents, respond that they are not familiar with the standards. At the same time, they are firmly convinced (100% of all respondents) that internal auditors should audit social responsibility. The analysis of these results outlines a gap in internal auditors' knowledge and thus a need for training on this subject.

The importance of corporate culture for modern enterprises is undeniable. Looking at the essence of corporate culture, Yanitza Dimitrova emphasizes that "its overall conceptual framework includes the whole body of traditions passed down in time, values, business style, and a public image created by a company during its existence." She further states that the culture of an organization is determined by its senior management." The general conclusion that "Corporate culture is much more than a system that solves internal and external problems. It is a shared scheme that serves as the primary function of overcoming cognitive uncertainty" (Dimitrova, 2015, p. 65, p. 70-71) is also interesting. The essential characteristics of corporate culture naturally include it in the scope of internal auditing either in the form of a stand-alone engagement or as part of another engagement.

## 4. Conclusions and recommendations

On the basis of the studies conducted, the following conclusions and recommendations can be drawn and made:

- The modern enterprise needs modern internal auditing;

- The modern internal auditing is proactive, business-oriented, and risk-based;
- The modern internal auditing goes beyond its traditional role of observer, finder and corrective and becomes an engine that inspires changes in the company;
- In order to meet the modern requirements and challenges, internal auditing should expand its scope and include important and problematic business areas, potential sources of irregularities, such as cybersecurity, innovation, corporate social responsibility, corporate culture, etc.;
- The modern internal auditors need to be innovative, insightful and visionary;
- There is a need for continuous improvement of the competence of internal auditors, both at individual and group level;
- Essential to internal auditing is the presence, development, retention and attraction of talents that will make it modern and keep it at the level and height of the modern enterprise. It's no coincidence that "Recruitment and Retaining Talents" was among the top 10 risk areas for internal audit in 2016, according to a KPMG survey (KPMG, 2016). "In this regard, the Internal Audit Unit should expand its perimeter of recruitment by attracting, retaining and motivating the best members of their team who are able to anticipate rapid changes and thus understand the activities and functions of the organization" (Harrington, 2015, p. 23).

In conclusion, it can be summed up that the requirements and challenges to internal audit place and set its modern characteristics as discussed above. They all matter for both the internal audit and the modern business. The overall transformation towards modern internal auditing is unthinkable and impossible without strong leadership in the internal audit, which can be determined by the explanation "We lead our profession in the use of technology and will continue to update our audit approach for changes the global business environment so that we can provide the corporation with quality audits. We create a participative environment that challenges our staff and allows it to fully utilize of their talents" (Sawyer, 2003, p. 868).

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# MANAGEMENT POLICY OF COMPANY KEY CUSTOMERS

*Leading companies try to build a complete partnership with their customers. For this purpose, they develop loyalty and retention programs for their key customers. Marketing experts try to provide these customers with constantly high value and satisfaction. They also use specific marketing tools to develop stronger relations with these users. The main purpose of this paper is to study in theoretical and practical terms the specifics of the relationship management in regard to the company key customers.*
*JEL: M30; M31*

## 1. Introduction

Leading companies try to build a complete partnership with their customers, especially with solvent ones. For this purpose, they develop loyalty and retention programs for their key customers. Marketing experts try to provide these customers with consistently high value and satisfaction. They also use specific marketing tools to develop stronger relations with these users. Customer relationship management aims to create a solid base of current and potential customers over a long period of time.

The main purpose of this paper is to study in theoretical and practical terms the specifics of the relationship management in regard to company key customers.

The object of research is the policy for working with key customers of the "M" organization and the subject is the achieved advantages of the established system for customer relationship management.

The main tasks related to the goal are:

- theoretical presentation of customer relationship management;
- examining the peculiarities in managing customer relationships;
- analysis of the policy for working with key customers of the "M" organization.

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## 2. Basic approaches to defining CRM

Managers of large organizations are fully aware that they need to do everything they can to satisfy their key customers. Numerous studies have shown that a high level of customer satisfaction brings a company greater loyalty to it, and this is a prerequisite for a better financial result. "A fundamental rule of modern customer relationship management theory is for companies to understand customers and then to acquire and develop resources to ensure their satisfaction and retention" (Anastasova, 2008, p. 68).

Inventive managers aim to fascinate their customers by promising them only what they could deliver and later delivering more than what they have promised. Their customers do not just re-purchase but become the so-called "missionary customers" attracting additional users to the company. "Customer retention is not only re-purchasing from a particular provider. Customer retention is a manifestation of their loyal behavior towards the seller based on satisfaction with the overall offer" (Stanimirov, 2013, p. 16).

Three approaches to defining CRM that form the so-called "CRM continuum" (Payne and Flow, 2005, p. 168) are reflected in the literature:

- Tactically defined CRM;
- CRM, customer-oriented;
- Strategically defined CRM.

Although customer-oriented CRM stands out, this does not mean that tactical and strategic CRMs do not have user orientation.

At the strategic level, CRM is not only perceived as a software or technology. CRM is a concept and business strategy focused on creating a sustainable business in the heart of which a user-oriented approach has been incorporated. CRM is distinguished from the traditional marketing approach by creating value together with the user. "CRM is a technology aimed at acquiring, satisfying and retaining solvent clients" (Goranova and Kuznetsov, 2010, p. 22).

At the core of CRM there is the process of creating and distributing value between business partners. Relationship management emphasizes customers who are able to create more added value. On this basis, companies use a differentiated approach for different customer groups.

In order to group customers of different value for the seller, Peter Doyle proposes the following four distinctive criteria to be used (Doyle, 2001, p. 128):

- Strategic importance – it depends on three factors: interest, growth prospects, and propensity for recommendations. Companies should target those customers who are interested in the value offered by the seller. Among the most desirable users are those who have good growth prospects. Some customers are opinion leaders and may influence other potential users by recommending the product of the respective provider;

- Importance of the user, determined as the relative share which the respective customer has in the total income or profit of the provider;
- Customer's profitableness – it is formed by comparing the income accumulated from the customer to the costs for attracting and retaining him/her;
- Loyalty coefficient – if a company wishes to establish long-term partnerships, it must identify and strive to attract and retain those customers who are inclined towards such contacts. Some customers tend to behave loyalty upon establishing contacts with a provider. Others do not want to engage in partnerships, regardless of the level of service they receive from the provider.

Each of the criteria indicated by Peter Doyle must be evaluated within a certain timeframe because each customer could have high and low income at different time intervals. "Customer relationship marketing is complemented by a strategic vision for business development – customer management, including customer analysis and the benefit / contribution of each of them, analysis of their life cycle, etc." (Goranova, 2013, p. 59).

Once an organization's key customers are identified, processes and actions should be initiated to ensure the effective implementation of the CRM concept.

By building a new base for working with key customers, their needs are met better and information on the opportunities for collaborative work is collected directly. It is important for the company to build a specialized communication system that contains adequate and timely information for creating quality sales plans and customer loyalty programs, which also leads to establishing a mutually beneficial long-term partnership.

An interesting aspect in understanding the strategic role of CRM at corporate and company level is proposed by Roberts, Lui and Hazard (Roberts, Liu and Hazard, 2005). Their model offers the sequence of actions in implementing the CRM activity practically. Its focus is on the basic requirements in corporate and marketing aspects so that the process can be implemented successfully. "Quality assurance cannot absolutely guarantee quality service, but it makes it possible for specific reasons for any inconsistency and omission in the service to be identified and subsequently strategies for overcoming them to be developed" (Ilieva, 2016, p. 159).

## 3. Key customer management policy of the M organization

The managers of the M company clearly understand that customers are the most important factor for progressive business development. The organization operates in a specific industry where new customers are found relatively rare. Another characteristic is the realization of a large part of the positive financial result from a relatively small share from the customers.

The M organization operates on the B2B market (Business to Business market) which is why it is of utmost importance for it to create and maintain long-term relationships and trust relationships with partners. Relationship management prioritizes profitable loyal users with the highest return on resources. Efforts at building strategic partnerships are not

focused on all customers but only on "previously selected customers; on "loyal and profitable users" and on "the most valuable company customers".

The M company strives for continuous technological development and expansion of the product range. Based on this the company works on attracting and retaining its key customers.

A control mechanism for user access levels is implemented in the organization's CRM system. The following units are differentiated in the system:

- "Contacts";
- "Activities";
- "Opportunities";
- "Problems";
- "Products";
- "Documents";
- "Administration".

The capabilities of the system are manifested on a flexible, individualistic, structural basis enabling the organization "M" to adapt the respective decisions in time, depending on the changing needs.

## 4. Conclusion

By examining the characteristics of the CRM system incorporated in the M company, we could present the main advantages for the company as:

- Increased sales (respectively profit) as a result of well planned and effective marketing;
- Finalizing transactions and sales opportunities;
- Concentration of the management on fundamental tasks;
- Accumulation in a unified database with controlled access to information concerning partners and users;
- Possibility to control the activity of each employee;
- More service and customer satisfaction.

In general, modern market relations imply a quest for better service in relation to competing companies. And the introduction of a CRM system is a quick step in this direction, creating the foundation for competitive company development.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# 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

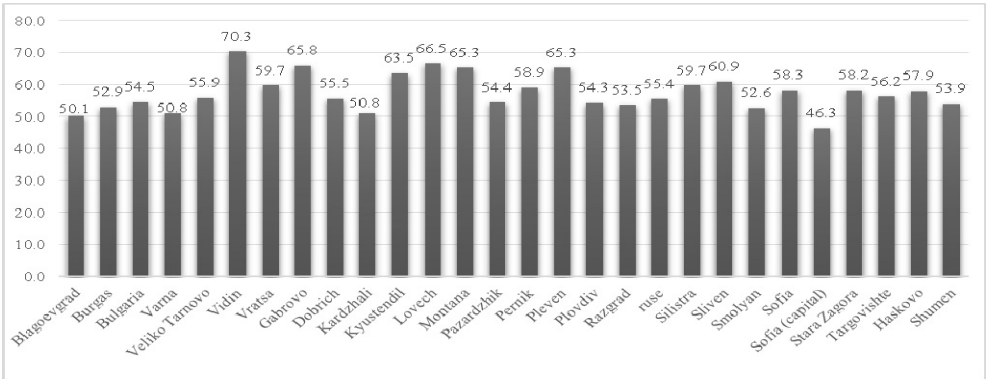
The imbalance in the territorial distribution of the population continues to deepen. Only two districts – Sofia (capital) and Kardzhali – increase their population in 2017 compared to 2016 – respectively by 0.1% and 0.2%. In all other districts, there is a decrease, the highest being for the districts 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

Age dependency ratio by districts for 2017 (%)




*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.

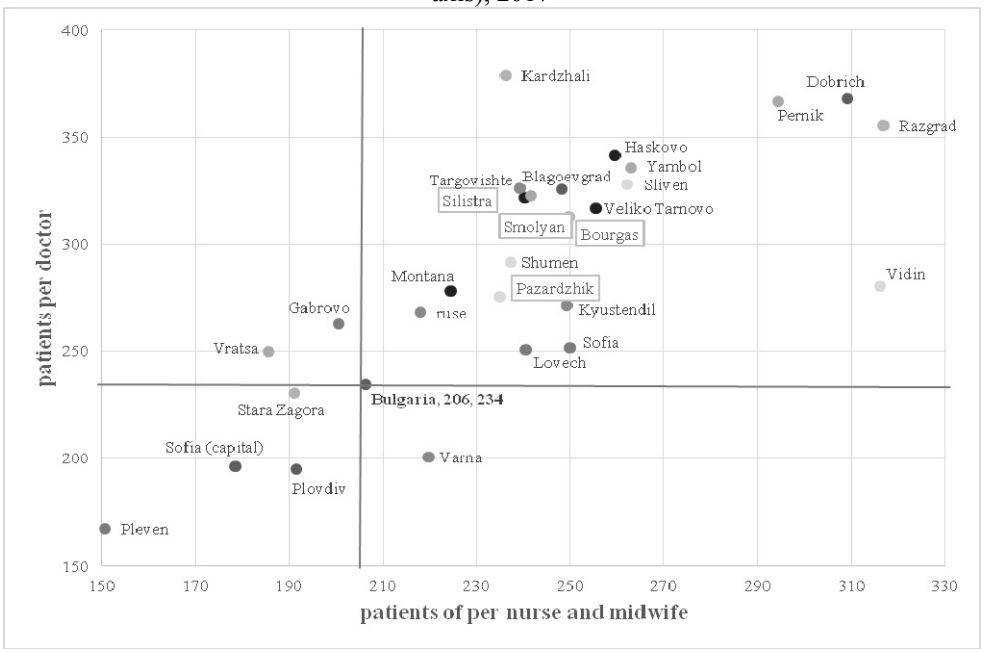
The shortage of certain types of medical staff is becoming increasingly apparent. The largest decrease in the number of doctors in 2017 compared to 2001 is in the following districts: Pernik – 27.5%, Vidin – 21.5%, Dobrich – 20.7%, Smolyan – 13.3%, Gabrovo – 12.5% and Veliko Tarnovo – 10.5%. The number 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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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# SUSTAINABLE WATER RESOURCES MANAGEMENT (THE CASE OF NATURAL SYSTEMS FOR WASTEWATER TREATMENT)

*The paper presents the concept of sustainable water resources management in the context of United Nations' sustainable development goals (UN SDG) and in relation to policies for water resources management in Bulgaria. The natural systems for wastewater treatment are discussed as an example for sustainable management. They could be used without the application of complex equipment or chemical processes. The economic and social advantages of these systems are discussed too.*
*Keywords: UN SDG 6.5.1, integrated water resources management, natural systems for wastewater treatment*
*JEL: Q25; Q58; Q5*

## 1. Introduction

A survey on the implementations of the integrated water resources management (IWRM) was conducted in 2017 and 2018 in 172 countries, which is about 90% of the United Nations (UN) member states. It is SDG indicator 6.5.1 for sustainable development (UN Water, UN Environment- DHI Centre, Global Water Partnership, UN Environment, 2018). The survey included a questionnaire concerning the status of national policies and legislation, institutional capacity, management instruments and financing in order to assess the degree of IWRM implementation to achieve "by 2030 integrated water resources management at all levels, including through transboundary cooperation as appropriate" as stated in 2030 Agenda for Sustainable Development.

The first part of the current paper presents the results of this survey, including also the results for Bulgaria. Second, the natural systems for wastewater treatment are discussed as a

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good practice, which is not only a part of the IWRM, but also meets the UN SDG indicator 6 “Ensure availability and sustainable management of water and sanitation for all”.

## 2. Sustainable development, integrated water resources management

The 80s of the XX century called for the idea about the interrelation among the economic, social and environmental issues, which has been articulated in the concept for sustainable development. It was defined most clearly in 1987 in a report by UN World Commission on Environment and Development. Sustainable development can be classified as a development that meets the needs of the present without compromising the ability of future generations to meet their needs. The definition has become very popular. However, the main challenge is how to achieve such development in practice. Later, sustainable development has started to be discussed through the prism of green economy policies (Barbier, 2011; Kotseva-Tikova, 2018). These policies are supported and encouraged on an international level. In 2000 the UN adopted the Millennium Declaration and defined respective development goals in the three major spheres – economic, social and environmental. Analyses made after several years show that some progress was achieved, but the formulated goals were criticized. It was difficult to evaluate implementation and assess if they were achieved in reality – some of them were not time-limited and measurable (Attaran, 2005). In 2015 UN member states adopted new post-2015 development agenda. The agenda includes 17 Sustainable Development Goals (SDG) and 169 targets for the means of implementation, global partnership, monitoring and review. SDG indicator 6 concerns water – the goal is to ensure availability and sustainable management of water and sanitation. It also encourages integrated water resources management. The mechanisms for measuring of IWRM, included in the SDG Agenda, are an example for overcoming the deficiencies of the previous UN development goals.

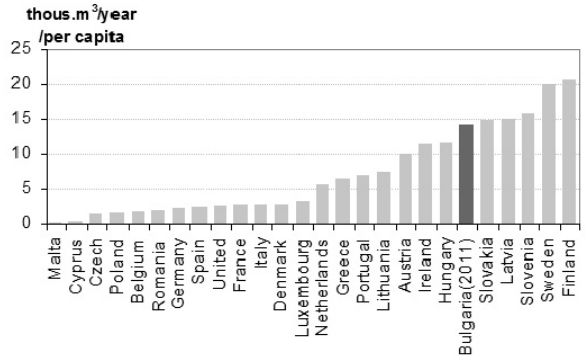
Water resources have been managed “in pieces” for many years, because the decisions were usually dominated by engineers and the long-term economic, social and environmental consequences of these decisions were not taken into account, i.e. the far-reaching effects of: discharging untreated wastewater in rivers, heavily modifying water bodies, building artificial water reservoirs, etc. The policies have been changing gradually and the management approach has been transformed from a fragmented towards an integrated one. Integrated water resources management is “a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems" (Global Water Partnership, 2000). In contrast to the traditional fragmented management approach, the IWRM concept concerns both the management of demand and supply of water resources.

## 3. Water resources management in Bulgaria

The freshwater resources of Bulgaria are estimated at 106.7 billion $m^3$ annually, including the Danube river (long-term average, 1961-2011) and they are distributed unevenly on the territory of the country. A predominant part of water resources consists of external flow (84%), as in most countries in the Danube basin. Characteristic of the country are the high costs of precipitation for evaporation (75%). Water resources vary a lot from country to country in Europe depending on the climatic and hydrological conditions. Freshwater resources of Bulgaria are about 14 000 $m^3$/year/capita and Bulgaria is among the first ten European countries according to this indicator. Considerable water quantities are used by the energy sector for cooling purposes. On average water for cooling is about 60% of the annual surface water abstraction in Bulgaria, however after using these waters are returned back to the source. Nevertheless, some regions in the country could experience water shortages because of the uneven territorial allocation of water resources.

Figure 1

Annual freshwater resources per capita in some European countries




*Source: http://eea.government.bg/bg/soer/2011/water/water1*

In 2016 the fresh surface water abstraction is 5128,29 million $m^3$, and groundwater abstraction – 560,98 million $m^3$. According to the 4 Second River Basin Management Plans (RBMPs) 2016-2021 out of 955 surface water bodies with 44082 km length and 1720 $km^2$ area, heavily modified are 201 bodies with 7146 km length and 175 $km^2$ area. The condition of the groundwater bodies (GWBs) is as follows, quantity status: good status – 161GWBs with 156314 $km^2$ area and bad status – 8 GWBs with 2288 $km^2$ area; quality status: good – 111 GWBs with 87662 $km^2$ area and bad – 58 GWBs with 70939 $km^2$ area.

After 1990, freshwater abstraction decreased quickly because of the economic restructuring and especially the collapse of agriculture, and the fall in irrigated land. The structure by economic activity has been relatively stable in the recent years, after 2000 the annual water abstraction is between 5.8 and 6.9 billion $m^3$. Water stress measured by the water exploitation index (WEI+) on a national level is below 10%, i.e. the water abstraction does not cause stress on water ecosystems. Public water supply systems ensured the access to drinking water for 99.3% of the population in 2016 (Table 1). During the same year

seasonal water supply restrictions faced 1.9% of the population and year-long restrictions – 0.2%. As a result of the absorbed EU funds the number of constructed wastewater treatment plants increased, but mainly in the big agglomerations with above 10 000 p.e.

Table 1

Share of population with water services in Bulgaria

| Indicator | 2010 | 2016 |
|---|---|---|
| Population connected to public water supply | 99.1 | 99.3 |
| Population connected to drinking water purification plants | 46.3 | 48.9 |
| Population with water supply regime: | 1.0 | 2.1 |
| seasonal (below 180 days) | 0.9 | 1.9 |
| all year (over 180 days) | 0.1 | 0.2 |
| Population connected to wastewater treatment plants: | 47.8 | 63.2 |
| primary treatment (mechanical stage) | 2.7 | 1.3 |
| secondary treatment (biological stage) | 18.3 | 17.2 |
| tertiary treatment (N and P removal) | 26.8 | 44.7 |
| Population connected to public wastewater collecting systems without treatment | 22.9 | 12.6 |
| Population connected to wastewater collecting systems - total | 70.6 | 75.7 |
| Independent wastewater treatment | 29.4 | 24.3 |
| Total connected to wastewater treatment | 77.2 | 87.5 |

*Source: National Statistic Institute (NSI).*

Due to funds from the Operational Programme Environment (OPE) 2007-2013 water supply network totaling to 1038 km was built and reconstructed, as well as 50 wastewater treatment plants (WWTP) were built and reconstructed and 1536 km sewage network. Grant contracts were concluded within the framework of OPE 2014-2020 for: supporting the regional investment planning in the water supply and sewage (WSS) sector and preparing tender documents for financing of 14 consolidated regions of 14 WSS operators and the territory of Sofia city; supporting efficiency, management and institutional capacity related to the reforms in WSS sector; improvement of monitoring networks of water quantity; RBMP 2016-2021, which are already adopted.

The Water Act (adopted in July 1999, last amendments in February 2017) regulates the ownership and management of water on the territory of the Republic of Bulgaria as a common national indivisible natural resource, as well as the ownership of water systems and infrastructure. According to article 2 the purpose of the law is to ensure integrated water management in public interest and for protecting the health of the population. The water management on a national level is conducted by the minister of environment and water. Higher Consulting Water Council has been established within the Ministry of Environment and Water (MoEW) with members – representatives of MoEW, other ministries, Bulgarian Academy of Sciences, municipalities, environmental non-governmental organisations (NGOs), business, etc. The basin management is conducted according to the basin territories and four basin directorates are established (Danube, Black Sea, East Aegean and West Aegean Directorate).

## 4. Assessment of integrated water resources management implementation in Bulgaria

The SDG indicator 6.5.1 tracks the degree of IWRM implementation, by assessing the four key components of IWRM (*UN Water, UN Environment- DHI Centre, Global Water Partnership, UN Environment. 2018*):

- Enabling environment;
- Institutions and participation;
- Management instruments;
- Financing.

Each section contains two sub-sections, the first covering the national level, and the second covering all other levels, which includes sub-national, basin/aquifer and transboundary levels as appropriate. For each question, a score between 0 and 100 may be selected. The score selection is guided by a descriptive text for six thresholds, which are specific to each question:

- 0 – <=10: *Very low:* development of elements of IWRM has generally not begun, or development has stalled;
- >10 – <=30: *Low*: implementation of elements of IWRM has generally begun, but with limited uptake across the country and potentially low engagement of stakeholder groups;
- >30 – <=50: *Medium-low*: elements of IWRM are generally institutionalised and implementation is underway;
- >50 – <=70: *Medium-high*: capacity to implement elements of IWRM is generally adequate and elements are generally being implemented under long-term programs;
- >70 – <=90: *High*: IWRM objectives of plans and programmes are generally being met, and geographic coverage and stakeholder engagement is generally good;
- >90 – <=100: *Very high*: the vast majority of the elements of IWRM are fully implemented, with objectives consistently achieved, and plans and programmes periodically assessed and revised.

Data on SDG indicator 6.5.1 is collected through an UN questionnaire and responses are consolidated through consultations between relevant stakeholders, such as national and subnational line – ministries and institutions involved in water resources management and other stakeholders such as NGOs, academia and business. It takes into account the various users and uses of water, with the aim of promoting positive social, economic and environmental impacts at all levels, including the transboundary level, where appropriate.

The assessment of the degree of IWRM implementation in Bulgaria took place in the period February – March 2018. Average results are as follows: average rating for Bulgaria – 60 points and by components: for funding – 52 points, and for the other three components – 62 points (Table 2).

Table 2

Selected average results of the assessment of IWRM implementation in Bulgaria

| Indicators and points | Short comment on the evaluation |
|---|---|
| *1. Enabling Environment: status of policies, laws and plans to support IWRM at the national level and other levels (basin, transboundary etc.)* | |
| National water resources policy, or similar – 60 points | Water management is carried out in accordance with the EU and national legislation – Environment Protection Act, Water Act, regulations, national strategic and planning documents – National Strategy for Management and Development of the Water Sector, River Basin Management Plans (RBMPs), Flood Risk Management Plans (FRMPs), Marine Strategy, national programs in the field of protection and sustainable development of waters. Measures for sustainable use and development of water resources on the basis of IWRM concept are part of: the four RBMPs and FRMPs; national strategy on water sector management, and national forestry strategy; the program for rural areas development, etc. |
| National water resources law(s)- 60 points | Water Act and relevant sub-documents are being applied by the majority of relevant authorities. |
| National integrated water resources management (IWRM) plans, or similar - 60 points | The involvement of a large number of state institutions, as well as the municipalities, the private sector and European funding will ensure the implementation of a big part of the measures in RBMPs/FRMPs 2016-2021, based on integrated water resource management. |
| Sub-national water resources policies or similar –40 points | Progress towards IWRM over the past decade is significant, but much more efforts need to be made to coordinate planning on sub-national levels. |
| *2. Institutions and Participation: status of institutions for IWRM implementation at the national level* | |
| National government authorities' capacity for leading implementation of national IWRM plans or similar – 80 points | The 4 Basin Directorates developed the first RBMPs for 2010-2015 and its subsequent update (RBMP 2016-2021 and the FRMP 2016-2021), which include measures for the implementation of IWRM. |
| Coordination between national government authorities representing different sectors on water resources, policy, planning and management – 80 points | A Coordinated Water Council at Ministry of Environment and Water has been established with an official representation of all state bodies. |
| Public participation in water resources, policy, planning and management at national level – 60 points | The Bassin Council have been created at each Bassin Directorate with the participation of all stakeholders on a quota principle. RBMPs and FRMPs are approved after public consultations. There is an opportunity for public participation online though the sites: *www.strategy.bg*, *www.moew.government.bg* |
| Developing IWRM capacity at the national level – 40 points | Normally limited - to short-term activities. |
| *3. Management Instruments: status of management instruments to support IWRM implementation at the national level and at other levels (basin, transboundary etc.)* | |
| National monitoring – 60 points | Monitoring is being carried out, but with insufficient coverage and limited use by stakeholders. |

| Indicators and points | Short comment on the evaluation |
|---|---|
| Basin management instruments – 60 points | Programmes of measures for each river basin include specific management tools appropriate for the specific basin/sub-basin and in coordination with measures in neighbouring basins , ensures a cumulative effect. |
| *4. Financing: status of financing for water resources development and management at the national level and at other level (basin, transboundary etc.)* | |
| National budget for investment including water resources infrastructure - 40 points | Co-financing in the frame of EU Operational Environment Programme 2016-2021 for water infrastructure which is not sufficient. |
| National budget for the recurrent costs of the IWRM elements – 60 points | National budget for policy, lawmaking and planning, institutional strengthening, coordination, stakeholder participation, research/studies, environmental assessments, data collection and monitoring of IWRM elements. |
| Sub-national or basin budgets for investment including water resources infrastructure – 40 points | There is no separate budget in sub-national or basin investment plans. But there is a limited municipal budget and funding from water and sewerage operators. |
| Revenues raised from dedicated levies on water users at basin, aquifer or sub-national levels – 60 points | Revenue generated by fees is not directly linked to the financing of IWRM activities. However, it is possible to finance some of the IWRM activities. |
| Financing for transboundary cooperation – 40 points | Financing by the Danube Strategy, the Black Sea Cooperation Program, and the Interreg Programme which is a series of five programmes to stimulate cooperation between regions in the European Union, funded by the European Regional Development Fund. |

*Source: UN SDG 6.5.1, Bulgaria Country Questionnaire.*

The data collection for SDG indicator 6.5.1 on the Degree of implementation of IWRM was completed in 2017 and 2018, a total of 172 countries submitted their assessments on the status of implementation of IWRM (*UN Water, UN Environment- DHI Centre, Global Water Partnership, UN Environment. 2018*). Country implementation of integrated water resources management ranges from very low to very high, with a global average 6.5.1 score of 49 on a scale of zero to 100:

- An estimated 40 percent of countries are implementing most elements of IWRM through long-term programmes (medium-high and above);
- Another 41 percent of countries have adopted most elements of IWRM and implementation is underway, but uptake of arrangements and stakeholder engagement may be relatively low (medium-low);
- The remaining 19 percent of countries have only started developing elements of IWRM (low and very low).

The SDG indicator 6.5.1 score (points) of the countries is presented in Table 3 (UN Water, UN Environment- DHI Centre, Global Water Partnership, UN Environment. 2018).

Table 3

SDG indicator 6.5.1 score (points) of UN member countries

| Very low | Low | Medium-low | Medium-high | High | Very-high |
|---|---|---|---|---|---|
| 10 (Somalia) | 30 (Antigua and Barbuda, Gambia, Kazakhstan, Peru, Serbia, Tonga); 29 (Haiti); 27 (Myanmar); 26 (Comoros, Solomon Islands); 25 (Grenada, Guatemala, Iraq, Papua New Guinea, Sri Lanka, Trinidad and Tobago); 24 (Equatorial Guinea, Guinea); 23 (Chile, Sao Tome and Principe); 22 (Saint Kitts and Nevis, The former Yugoslav Republic of Macedonia); 21 (El Salvador, Honduras); 20 (Belize); 19 (Sierra Leone); 16 (Guyana); 15 (Liberia, Suriname); 14 (Gabon, Timor-Leste); 12 (Afghanistan) | 50 (Bangladesh, Colombia, Niger, Pakistan, United Republic of Tanzania); 49 (Bolivia, Ghana, Mexico); 48 (Algeria, Indonesia); 47 (Libyan Arab Jamahiriya, Tuvalu); 46 (Cambodia, Zambia); 45 (Mauritania, Seychelles, Uzbekistan); 43 (Albania, Costa Rica, Jamaica, Malaysia, Mongolia); 42 (Barbados, Ecuador); 41 (Botswana); 40 (Bahrain, Dominica, Egypt, Malawi, Poland, Saint Lucia, Sudan); 39 (Ukraine, Vanuatu, Yemen); 38 (Argentina, Belarus, Democratic People's Republic of Korea, Micronesia, South Sudan, Viet Nam); 37 (Angola, Panama); 36 (Andorra, Armenia, Dominican Republic, Madagascar); 35 (Georgia, Maldives, Nigeria, | 70 (Liechtenstein, Samoa, Turkey); 68 (Republic of Korea); 66 (Azerbaijan, San Marino, Slovakia); 65 (South Africa); 64 (Cape Verde, Latvia, Mauritius, Morocco); 63 (Benin, Burkina Faso, Jordan, Norway); 61 (and Herzegovina, Zimbabwe); **60 (Bulgaria)**; 59 (Iran, Namibia, Uganda); 58 (New Zealand, Slovenia); 57 (Lithuania, Saudi Arabia); 55 (Italy, Mozambique, Tunisia); 53 (Kenya, Mali, Senegal, Swaziland); 52 (Iceland); 51 (Brazil, Philippines) | 90 (Croatia, Luxembourg, Monaco); 89 (Sweden); 88 (Germany); 86 (Australia); 85 (Israel); 83 (Greece); 82 (Kuwait, Qatar, Spain); 81 (Ireland, Switzerland); 80 (Cuba, Estonia); 79 (Czech Republic, Russian Bosnia Federation); 78 (Belgium); 77 (United Kingdom of Great Britain and Northern Ireland); 75 (China, Finland, Malta, United Arab Emirates); 74 (Portugal); 73 (Hungary); 72 (Romania) | 100 (France, Singapore); 94 (Japan); 93 (Denmark, Netherlands); 91 (Austria, Cyprus) |

| Very low | Low | Medium-low | Medium-high | High | Very-high |
|---|---|---|---|---|---|
| | | Rwanda); 34 (Cameroon, Montenegro); 33 (Bahamas, Lesotho, Marshall Islands, Nepal, Oman); 32 (Bhutan, Burundi, Chad, Congo, Côte d'Ivoire, Lebanon, Paraguay, Republic of Moldova, Togo); 31 (Central African Republic, Democratic Republic of the Congo, Ethiopia) | | | |

The assessment of SDG 6.5.1 for Bulgaria (60 points) is within the European average, indicating that the country has achieved a relatively good implementation of the principles of IWRM (for Europe SDG indicator 6.5.1 ranges from 53 points to 67 points – medium to high level of application of IWRM). The RBMPs/ FRMPs of the 4 Basin Directorates in the country are well developed, but an issue stands out concerning their practical application and the adequate financing of the measures. Another important problem is the frequent change in legislation, the need of security and predictability of the processes, the lack of high institutional capacity and good management. The problems are aggravating especially on a regional level – the scores of a component of IWRM on a basin level are lower than those on a national level.

## 5. Natural systems for water treatment

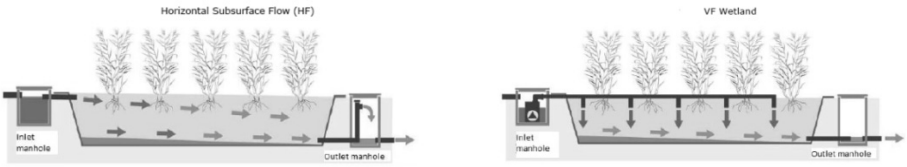
The topic of the UN World Water Development Report of 2018 (UN Water, 2018), presented at the 8th World Water Forum in the town of Brasilia, is on natural water-based solutions. A successful public discussion in the European Parliament of this report is organised in the framework of the Bulgarian European presidency. Natural water-based solutions will contribute to achieving the UN's sustainable development goals by 2030, also they may be instrumental in the EU's circular economy.

Natural treatment methods are mainly used for wastewater treatment from decentralized houses, small settlements, dwelling, hotels, recreational facilities, restaurants and summer camps, smaller municipalities or their parts, usually up to 2000 p.e. According to the

composition of wastewater, these methods are also applicable for treatment of industrial wastewater from the food processing industry, trade facilities (workshops) and selected small industrial plants, landfill leachate treatment, organically low-loaded agricultural runoff and wastewater agricultural facilities, polluted stormwater runoff, erosion washes of polluted surface water and backwashing filters water of drinking water purification plants. There is a great need for wastewater treatment for all sources of pollution < 2,000 p.e. in Central and Eastern Europe and there is an obvious potential for natural treatment systems. In recent years the most widely used are the treatment wetlands (*TW*) usually planted by *Phragmites australis* (reed), which appear to be an alternative to the conventional method of wastewater treatment of small agglomerations (Rozkošný et al., 2014). TW as a method of water purification are part of green infrastructure and are defined as an ecosystem approach in the development of water infrastructure projects. TW are watertight beds filled with filter material and planted with local plant species – most often with reed (Figure 2) (Masi et al., 2017). The filter layer with a root zone and attached microorganisms must comply with predefined requirements in terms of hydraulic conductivity and pollution load, including specific substances (removal of phosphorus, heavy metals etc.).

Figure 2

Treatment wetlands with horizontal and vertical water flow




The investment of TW for wastewater treatment of village Dobeno, Slovenia, with a population of 223 inhabitants is 146818.94 euro, and operating annual costs 2289.40 euro or annually 10.27 euro per capita (Masi et al., 2017). The TW includes an equalizing tank – 3 $m^3$, chambers with siphons for loading the first and the second stage of the TW with an area of the first stage of the TW of 288 $m^2$ and with an area of the second stage of the TW of 224 $m^2$, a sump at the outlet for sampling and infiltration area for treated wastewater.

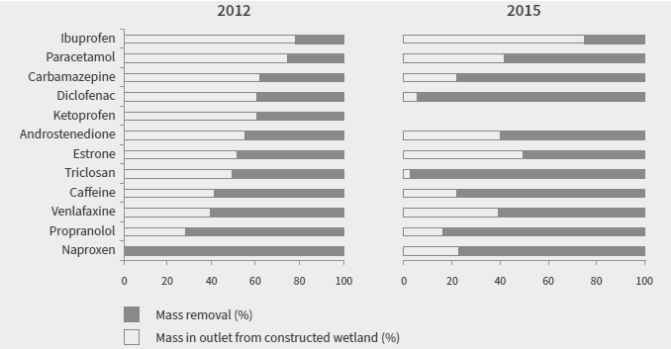
When designed appropriately TW can be also efficient for removal of pharmaceuticals (Figure 3). Initially, when entering the wetland to create a well-developed root system, the treatment effect was smaller, but subsequently increased. This is established on a pilot TW in Ukraine, built in 2012 (Figure 3) (information by GWP-Ukraine).

The main advantages of TW are: a) aesthetic integration into the environment, b) increasing the biodiversity of the landscape by creating an artificial wetland; c) a favorable impact on the microclimate in the immediate vicinity (cooling effect); d) an energy-efficient method of treatment, as it uses gravity instead a power supply; e) the costs of operation and maintenance are moderate; f) a relatively simple construction with possibilities to be constructed by local resources (manpower, machines); g) a proper design can achieve high effects in the removal of organic substances, pathogens, metals, pharmaceuticals, etc.; h) the intermitted flow provides additional oxygenation of the filter material and removal of

ammonium nitrogen; i) the removal of heavy metals can achieve efficiences of: 81% for Mn, >82% for Cu, > 91% for Al and > 98% for Zn (Rozkošný et al., 2014).

Figure 3

Removal of pharmaceuticals from wastewater by a pilot TW in Ukraine




The lower removal effeciency can be recorded by the horizontal TW (*HF*): $BOD_5$ – 85%; COD – 75,%; SS – 80%; $NH_4$-N – 30% and total P – 35% (Rozkošný et al., 2014). Normally, the sorption P-capacity is from 0.93 to 1.15 g of phosphorus per 1 kg of the filter material. When zeolite is used as a filter layer, sorption capacity increases to 2.15 g P per 1 kg zeolite. In the study of 70 species of pathogens were removed in the first meters from the inlet of the 3 TW-HF for 150, 200 and 300 p.e. in the Czech Republic. No significant seasonal fluctuations in the performance efficiency were reported. The TW - VF in the Netherlands achieved the treatment effeciency of 98% for *Escherichia coli* and *F-specific RNA bacteriophages*.

In Slovenia, 99% reduction of coliforms and 98% of fecal streptococci (*enterococci*) were achieved for wastewater from a food processing industry by TW-HF (Zupančič Justin et al., 2009).

The disadvantages of TW for wastewater treatment are: when used as a main step of treatment, a large area is needed – from 2 to 5 $m^2$/p.e.; there is a risk of clogging of the filter bed as a result of inappropriate design of the preliminary treatment stage or inappropriate operation and maintenance of mechanical pre-treatment installations; difficult to regulate the ongoing processes, especially in case of need for rapid response to corrections and changes (Rozkošný et al., 2014).

In spite of some penetrable shortcomings, the TW are suitable for areas with dispersed settlements, because they present robust solution with no need for highly educated operators.

## 6. Conclusions

The assessment of SDG indicator 6.5.1 provides a wealth of data and a comprehensive global picture on the progress of IWRM implementation in countries. It will serve as a baseline for continued tracking of progress towards 2030 Agenda and future global IWRM implementation assessments. Bulgaria is in the group of countries with a mean-high IWRM score, i.e. these are countries that have staked the integrated management of water resources in long-term programmes. It is believed that these countries will be able to achieve the global goal of the UN Agenda, but it is necessary to make efforts until 2030. The use of natural wastewater treatment systems as an alternative to the conventional treatment method provides affordable sanitary services for the population of small settlements, as well as for people with low income. The construction of a treatment wetland is not only an environmentally friendly solution, but it also has a proven socio-economic impact.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# THE ROAD TO CIRCULAR ECONOMY: WHAT CAN EUROPE LEARN FROM THE EXPERIENCE OF GERMANY AND JAPAN?

*The transition from linear to circular economic model has gradually become an imperative for all countries in the world. Negative phenomena, which are the result of prolonged environmental pollution, affect all economic actors and reveal the defects of the linear economic model. The clarity of the need to abandon it, however, faces the complexity of its replacement. It is becoming increasingly obvious that this will be a long and complicated process in which the state will have to play an active role.*
*Some countries have moved in this direction relatively earlier than others. Such are Germany and Japan.*
*The aim of the present study is to present in a general analytical and comparative plan the main policies that these two leading economies in the world have conducted over the years as their experience would be of significant benefit to the successful realization of the actions - part of the transition to a circular economic model, in the countries of Europe and in particular those in the EU.*
*JEL: E20*

## 1. Introduction

The transition from a linear to a circular economic model has gradually become an imperative for all countries in the world. Negative phenomena, which are the result of prolonged environmental pollution, affect all economic actors and reveal the defects of the linear economic model. Kitanov stressed that "the acute need to solve the environmental problems that are increasingly global in nature is realized today in all countries" (Kitanov, 2015, p. 5). He further argues that these problems "….materialize in domino effects of negative events such as air pollution, spreading of diseases such as allergies and respiratory problems, soil and water pollution and the consequent plant and food contamination with harmful substances." (Kitanov, 2018, p. 154). The clarity of the need to abandon the linear economic model, however, faces the complexity of its replacement. It is becoming increasingly obvious that this will be a long and complicated process in which the state will have to play an active role. Some countries have moved in this direction relatively earlier than others. Such are Germany and Japan. The experience of these two countries would be

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of significant benefit to the successful implementation of the actions – part of the transition to a circular economic model – in the countries of Europe and, in particular, those in the EU.

## 2. Germany's policy towards circular economy

Germany is among the most active countries in the EU in the efforts to move towards circular economy and a major supporter of this policy at EU level. Since 2000, the effective use of natural resources, the recycling of objects and materials, the closure of the production cycle to minimize waste, are at the heart of Germany's sustainable development policy. The drive of the German governments is to turn the environmental challenges into economic opportunities. In addition, the country has to provide a certain amount of metals for its export-oriented economy and seeks to do so, as far as possible, on the basis of recycling, thereby optimizing the extraction and import of these metals.

In Germany a Law on the Promotion of the Circular Economy and for Environmental and Rational Waste Management was adopted and is in force. Within the framework of this law, the following definition of circular economy is given: "prevention and recycling of waste". The circular economy, as interpreted by this law, covers several important aspects of economic activities. In the first place, there is directly related to strengthening the control over waste management activities. Secondly, the rules for monitoring the fate of waste products that are exported from Germany and which the German economy is actually losing. Next, very important for the functioning of the circular economy is consumer awareness. Last but not least comes the role of municipalities in the proper management of the waste collection process.

The importance of following clear rules is emphasized, paying particular attention to the separate disposal of recyclable materials in specially designated containers.

Another important step in Germany's policy towards the transition to the circular economic model is the declaration in 2002 in the sustainable development strategy of the need to differentiate the efforts to realize economic growth from the increase in the use of resources. The German government has set itself the ambitious goal of doubling the productivity of the raw materials used in the various industries between 1994 and 2020. The goal thus put, forced Germany to initiate detailed work on identifying the specific parameters to help it materialize.

First of all, serious analytical work is underway on identifying the potential of resource efficiency in the various industries. Analyzes are then made on what measures should be taken to actually use this potential. Thirdly, the possible micro- and macroeconomic effects of these measures are explored in detail. To this end, a comprehensive program for the study of these issues was set up in 2007, with 31 organizations under the leadership of the Wuppertal Institute (CGDD, 2014).

Based on the results of three years of research, the German government has created and deployed the so-called the PROGRESS program, which aims to increase resource efficiency (Federal Ministry for the Environment, 2016). This program, in practice,

complements Germany's environmental policy by covering a category of resources that have not been covered by then – raw materials that are not energy-producing and not related to food production. The aim of the program is to make the fight against undesirable environmental consequences a viable option from an economic point of view. Thus, on the one hand, as a result of the government's efforts outlined in the program, it aims to achieve security of supply, increase the competitiveness of enterprises, secure the leading position for German manufacturers in the future. On the other hand, objectives related to the state of the environment are pursued, such as the reduction of the use of raw materials and other materials, which contributes to the preservation of nature.

It should be emphasized here that again, as in Japan, the state plays a key role in the implementation of the planned activities within the policy line. In practice, a variety of levers are being mobilized to promote activities aimed at the circular economy. At federal as well as at local level, agencies, offices and other bodies are set up at different ministries to build the necessary competencies for managing resource-efficient processes (CGDD, 2014).

There are four guiding principles in the program:[2]

- Reconciliation of environmental imperatives with economic opportunities, support for innovation and social responsibility;
- Integrating the global dimension into resource-efficient policy, taking into account the influence that this policy of Germany will have on the rest of the world (a feature that is also observed in Dutch policies);
- Accelerating efforts in Germany to increasingly less raw material dependence at the expense of developing closed-loop management in different production areas;
- Ensuring the sustainable use of natural resources in the long run and the orientation of the whole society towards the quality of growth.

In addition to these four guiding principles, five strategic objectives are also outlined in the plan:[3]

- provision of so-called sustainable raw materials. This should be done by implementing a strategy on raw materials by the German Government as well as by increasing the share of renewable raw materials in production;
- increasing efficiency in the use of resources in production. This could be done by enhancing the role of innovation and enterprise competitiveness though the development and the dissemination of a variety of highly efficient resource production methods (different raw materials for production as well as energy raw materials). Other

[2] For further information, please see Overview of the German Resource Efficiency Programme (ProgRess). Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, n.d., available at: http://www.bmub.bund.de/en/topics/economy-products-resources/resource-efficiency/deutsches-ressourceneffizienzprogramm/german-resource-efficiency-programme-progress/, retrieved 21 August 2016.

[3] Ibidem.

important levers in this direction are such as informing and encouraging the use of environmental management systems, any innovative activities aimed at integrating the resource efficiency criteria into product concepts, integrating resource conservation into standardization processes;

- sharpening public awareness on the issue of the types of products consumed. Gradually, awareness should be raised that resource-efficient products should be preferred; by introducing new certification systems to strengthen the existing ones, and by using the so-called "green government purchases" as an instrument to strengthen the implementation of the principles of resource efficiency;
- strengthening the management of the closed-end resource use cycle;
- the use of different working tools to support of the chosen policy line. These instruments include, for example, various measures to increase the market penetration of such resource-efficient products and services; eliminating subsidies to encourage the use of different types of conventional resources; supporting research and knowledge in this area; extension and upgrading of the legislative framework in this field both in the country and in the EU and internationally, etc. (CGDD, 2014).

The government is actively helping individual companies in their efforts to implement resource-efficient methods. This is being done mainly through the provision of political and institutional support in addition to government guarantees for foreign investment. These are particularly needed, since, as Kitanov notes, "each investor is interested in the future income and therefore in the evaluation of the risks related to particular investment decisions" (KItanov, 2016, p. 332), and resource-efficient methods are often associated with relatively high risks and therefore high rate of returns.

In addition, it is important to note that there are four basic principles in the PROGRESS program:

- increasing producers' responsibility for the ways in which they produce and market their products;
- studying the possibility of setting targets for the collection of raw materials from specific products rich in minerals critically important to the economy of the country;
- setting targets for municipal waste as well as for building and demolition activities;
- combating illegal export-related activities and supporting the recovery of resources in developing countries.

These four principles can also be found in the Law on Promoting the Circular Economy and on Environmental and Rational Waste Management.

Germany is among the EU countries that have begun systematic efforts to impose the circular model at the earliest. What is special is that this country is highly export-oriented, its industry consumes huge quantities of raw materials and produces output for markets around the world. In order for German goods to compete on the world market, they must be produced with the most efficient use of resources. This, to a certain extent, naturally

requires the need to work hard to study resource efficiency, search for funds to be continually upgraded, to stimulate various innovations to support this process, and last but not least – the cultivation of the corresponding awareness in society that supports these efforts.

## 3. The experience of Japan in the transition from linear to circular economy

Historically, Japan is the first country in the world to systematically apply the principles of the circular economy in its development. The basis of the policy pursued in Japan is the so-called 3 R (Reduce, Reutilize, Recycle) – reduction, re-use and recycling. The roots of this policy should be sought in the geographic, geological and historical realities of this country. Territorial constraints, coupled with a scarcity of natural resources, have forced over time the governments of Japan to seek ways to organize the economy and society so as to consume a minimal amount of resources.

The oil shocks in the 1970s played a particularly strong influence on the formation of such a policy by Japanese governments. These episodes clearly showed the country that, in order to be a leading economic power, it must find a way to reduce its dependence on imported fuels as far as possible. However, this could only be done by redefining the economic model and directing it to the optimal use of different types of resources. Of course, such a quest would not have been feasible unless there was the necessary knowledge and level of consciousness in the society of Japan. Governments systematically strive to build a comprehensive culture in the country aimed at optimizing the use of resources at all levels. This is not very difficult, as such a way of thinking has been embedded in the Japanese culture for centuries.

Ji, Zhang and Hao highlight three phases in the development of Japan's circular economy (Xiujun Ji et al., 2012).

The first phase covers the 1970s and 1980s and represents a transformation of the state's policy on conventional energy sources. After the oil shocks, the Japanese governments began to pursue a two-dimensional policy. On the one hand, they are focusing on diversifying the use of conventional energy sources, with the participation of an increasing share of coal and gas in the country's energy mix at the expense of oil. On the other hand, active energy efficiency actions are initiated at all levels of production. This is possible both because of energy saving measures, and as a result of directing the industry from energy-intensive sectors such as the production of metals, for example, to the high technology sectors. In this way, the country has progressively made significant progress not only in terms of energy consumption but also in the area of development and use of its relative advantages.

The second phase is characterized by the development of a strategy for the use of renewable energy sources. In 1994, Japan prepared a plan for the exploitation of energy from alternative sources. For the purposes of the plan, these sources are divided into categories depending on the time needed for their recovery. For example, solar, wind and hydropower recover in a very short time, while biomass sources (forests, animal species, etc.) require a

longer recovery period. The use of renewable sources has become national priority and contributes to building a circular economy in the country.

The third phase is related to the formation of such public awareness in Japan that supports governments' efforts to achieve the goals set. In this direction, the Japanese state has been working hard over the years, so that through the educational system and the upbringing of individuals as part of the optional institutional measures, the need for the most efficient use of natural resources is achieved.[4] It can be said that there is practically no need for public debate in Japan at the moment (end of 2018) as to whether the circular economy is an appropriate model of economic development.

As Ji, Zhang and Hao point out, Japan's legislative system is designed to support the functioning of the circular economy. Over the past 25 years, since 1993, a number of laws have been adopted that stimulate the various aspects of the circular economy. The first category is fundamental, the second – the all-embracing and the third – the specific ones.

Generally speaking, Japan's legislative framework is built on three levels: the 2000 Framework Framework for the Establishment of a Circular Society, the Resource Efficiency Promotion Act, and the Waste Management Act of the same year, as well as on some sectoral laws dealing with specific aspects of the circular economy (CGDD, 2014).

It is an idiosyncrasy of Japanese legislation, that it has been developed in detail according to the specifics of the individual economic sectors. This is because of the need to take into account the specificities of the individual products in terms of the materials they are made of and the length of their lives. Since waste processing is organized by sector, regular monitoring of the activities related to it is of great importance.

Another feature of the Japanese model is the continuous tracking of the extent to which waste recycling targets are feasible for individual sectors and product types. This tracking is done with the assistance of independent experts.

During the first stage of the creation of the legislative framework for the transition to a circular economy in Japan, the Law on the Promotion of the Use of Recyclable Resources was adopted in 1991. This law acts in parallel with the Waste Management Act adopted in 1970 and has since undergone numerous amendments and additions. The Waste Management Act mainly addresses the life of the product when it is out of use and has to be discarded. In 2000, the Recycling Act was renamed the Resource Efficiency Act and underwent an amendment, adding to it the subject of waste reduction and re-use.

In fact, it is these two laws that are the basis for Japan's Fundamental Law for the Establishment of a Circular Society. This law defines the principles of the circular economy. These principles include the so-called hierarchy of waste, its cascade use and the specific responsibilities of the different parties in the process.

In order to meet the requirements described in the legislative framework, the Japanese governments initiated the preparation of plans that are complemented by specific action

[4] More on the need to build awareness can be found in Rangelova, 2014.

programs in the different areas. Interestingly, the progress made by the Japanese governments on their own initiative was discussed and evaluated at the G-8 meetings in 2004 and 2008.

It is important to note that, in order to support the success of the policy towards establishing a circular economy, the Government of Japan uses a number of measures to act as a kind of incentive for individual groups of economic actors. Various types of competitions have been set up for representatives of the different economic sectors, as well as awards for organizations that achieve the best results. In this way, through the transparency of the efforts of all, public awareness is stimulated and the activities in the field of the circular economy are gaining momentum. Examples of such initiatives are the "top runner" programs, the eco-label "e-Mark", programme "Eco Town", which are discussed below.

The "top runner" program aims at increasing energy efficiency. It covers 21 categories of products such as cars, various items for everyday use, and more.

Once the minimum energy consumption for each of the product groups covered by the program is established, it becomes the target standard for all other products in the same group. They must reach this goal within a certain period of time. These standards are set by a special Committee on Standards for Energy Consumption of the Ministry of Economy, Trade and Industry.

Labeling initiative, the so-called eco-labels, on products showing how close to the energy standard for their class the particular products are, even though the placement of e-Mark is voluntary for companies, appears to be widely applied. Putting eco-labels contributes significantly to meeting Japan's energy efficiency targets, because it promotes the competition element amongst individual companies. Interestingly, labels and the achievement of energy-saving targets per unit of product are closely monitored by the Committee. In cases where objectives are not achieved, it has the power to impose sanctions. At the same time, information on the products for which the highest energy efficiency is achieved is published twice a year in a special catalog.

The next effective initiative aimed at achieving circular economy is known as "Eco Town". It was carried out between 1997 and 2007 under the supervision and support of the two key ministries – the one for economy, trade and industry, on the one hand, and for the environment, on the other. This initiative has two main objectives. The first is to create eco-industrial parks, i.e. places where it is possible to close the production cycle so that the waste products of a given production becomes raw material for another, while minimizing waste. The second is, within these parks, to create the necessary conditions for the revival of certain economic sectors such as the heavy industry, which will already function under the new conditions for the treatment of waste products. At present, there are over 60 such projects in Japan.[5]

[5] For further information, see Overview of the German Resource Efficiency Programme (ProgRess). Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, n.d., available at: http://www.bmub.bund.de/en/topics/economy-products-resources/resource-efficiency/deutsches-ressourceneffizienzprogramm/german-resource-efficiency-programme-progress/, retrieved 21 August 2016.

There are three types of ecosystems in the country. The first category is located in large urban agglomerations and in large cities. The second is positioned on the islands. The third one – in areas that cover many secondary cities for whose waste solution is sought towards the centralization of the recycling activities at the regional level.

The order of approval of a project for the eco-designation is as follows: the municipality, within which the eco-construction is planned, together with the companies that wish to participate (the consortium), draw up a plan in which they outline their project. The consortium defends the necessity of its realization, its economic sustainability, its profitability, what innovations are expected to be introduced and whether the best existing technologies will be used. In addition, the project must demonstrate having a very important quality for the Japanese government – to be able to serve as an example to other similar initiatives, and this must be reflected in the plan for its implementation. The plan is submitted for approval to the two Ministries - the one for economy, trade and industry, and the one for the environment. If it is received, the state grants funding and, in some cases, local authorities support the project by providing loans for the purpose.[6]

The main source of funding for projects aimed at the realization of a circular economy is the Development Bank of Japan. This particular activity is part of the Japanese state policy of promoting sustainable governance as a whole. The concrete financing of individual projects is done through private banks. Three interest rate levels for borrowers are defined. The particular level of interest at which funding will be received depends on the answers provided by the applicants to 120 questions pertaining to different aspects of their activity that are relevant to the environment. It could be rightly said, therefore, that the Development Bank of Japan in this respect acts as a "green bank" in terms that "green banking in its essence is actually the provision of loans, deposits and other banking products (mutual funds and other investment products, custodian services etc.) that would have positive impact on the environment." (Zhelyazkova, Kitanov, 2015, p. 309).

Essential to achieving the goals set out by the government of expanding the scope of the circular economy is the existence of an active governmental policy which, as has become clear, is manifested in a number of activities and, most importantly, in the overall governance of the process. Under the Ministry of the Environment and the Ministry of Economy, Trade and Industry, the state monitors compliance with the energy efficiency norms defined for individual product groups and products, imposes sanctions for non-compliance and rewards in different ways, distinguishing top runners and thus setting examples for the rest. Furthermore, as already mentioned, these two ministries are reviewing and approving the ecotourism plans provided to them by the municipalities jointly with the interested companies and subsequently, upon approval, the Development Bank of Japan provides funding.

In addition to these very important activities for the success of the policy carried out, in 1994 the state prepared and introduced a specific plan according to which all deliveries to parliament, the government, the various agencies to it and, in general, all governmental institutions, need to meet certain environmental criteria. This is a very powerful tool which

[6] Ibidem

encourages all suppliers for the huge government administration to move on to new production standards. And not only this. With the introduction of such a plan, the state gives an unequivocal signal to the other economic actors in which direction their production and consumption patterns should be targeted, that the current (until the introduction of the plan) mode of work is clearly unacceptable to the government, and that it will use all measures to achieve change at both macro and micro-level.

In addition to this plan in 2000, the Law on the Promotion of Green Purchases entered in force.[7] As a result, from its active policies towards the transition to circular economy, Japan stands out as a country ahead of the most active countries in Europe – Germany and Sweden.[8]

Another important policy direction characteristic for Japan is the introduction of standards for the quality of recycled products, as their lack is a serious obstacle to selling them on the market. Local authorities in Japan play a key role in implementing this important step as they actively inform central authorities about this problem and require their decision in order to make purchases of recycled products.

Progress in establishing a circular society is being followed closely and continuously. According to a 2010 report, when looking at the results of the measures taken under the first plan, Japan has achieved very high results. For example, in the packaging sector almost 100% recycling of materials has been achieved, with the exception of cardboard and glass packaging. In the household appliances sector, 85% is recycled, and in the construction waste segment for some materials such as concrete and wood 95% recycling is achieved, with batteries between 50% and 80% by category. As Stoichkova rightly notes, "environmental standards and their norms are established by governments and by local administrations in view of local specificity" (Stoichkova, 2008).

Table 1

Standards for harmful elements in water (mg/l)9

| № | Components | National Standards | Standards of Kanagawa prefecture |
|---|---|---|---|
| 1. | Biological oxygen demand | 160 | 20.000 |
| 2. | Chemical oxygen demand | 160 | 20.000 |
| 3. | Solid fragments | 200 | 50.000 |
| 4. | Phenols | 5 | 0.005 |
| 5. | Phosphorus | 15 | 0.500 |

*Source: Stoichkova, O. (2008)*

The table shows environmental standards established by the Japanese government and a separate prefecture.

[7] See further: http://www.env.go.jp/en/laws/policy/green/1.pdf.
[8] For further information see: Comparaison internationale des politiques publiques en matière d'économie circulaire, Études & documents, Commissariat général au développement durable n° 101, Janvier 2014, p. 22.
[9] Ibidem.

It can be summed up that Japan is a pioneer in the efforts to establish a circular economic model. Long before the idea of a circular economy acquiring public significance globally, it has been embedded in the very foundation of the Japanese state philosophy. Of course, the roots of this philosophy should be sought in the historical past of the country as well as in its geographical peculiarities. Consciousness of the need to ensure optimal efficiency of all economic processes is part of the Japanese culture. It is precisely this culture and public awareness that is in the core of the success of the state policy in the realization of circular economy.

## 4. Conclusion

The leading developed countries in the world have already recognized the need for an active governmental policy to shift the economic model from linear to circular. Japan and Germany are among the leaders in this respect. These countries create and implement state policies and good practices to set an example for the rest of the world. In the end, as Dobreva points out, "institutions are part of the social order of society and they govern the expectations of individuals while regulating business operations and ethics" (Dobreva, 2018, p. 119), it is therefore impossible to make a transition from one to another economic model without their active participation. In addition, as she stressed out in another publication, "internal transformation must be done in close cooperation with the external environment" (Dobreva, 2016, p. 339), i.e. it is necessary for the management of the institutions themselves and the individual business organizations to realize the need to make the change and to strive to implement it, taking into account the context of the external paradigms.

Despite the stated desire to change the economic model, the efforts of individual countries, even within the EU, remain fragmented. In Japan, it can be said that the circular economy is at the center of economic life. Comprehensive legislative frameworks have been developed defining the rights and obligations of individual economic actors. There are a number of specific incentives and sanctions for the individual actions they take. Such detailed legislation is not yet a fact in the EU as a whole, which can draw a lot from the good practice in Germany. Individual countries within their borders conduct their own national policies, have their own priorities and principles.

In order for change to take place, all countries around the world need to follow a common management philosophy. This is due to the fact that the modern globalized world is open and the countries consume many goods that are not produced on their territory, so it is very difficult to independently conduct an effective policy aimed at circular economy. The policies of Japan and Germany are indicative in this respect - they seek to take into account the influence of imports and exports when they form their decisions to act in different aspects of the circular economy. However, this practice must be transferred to all countries in order to ensure the effectiveness of the efforts.

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# INTEGRATED DECENTRALIZED PRACTICES FOR INTRODUCING REGIONAL "CIRCULAR ECONOMIES"

*Consider and demonstrate opportunities to meet the requirements underpinning EU regulations and adopted in December 2015 year, a package of measures for the introduction of the "Circular Economy" on the one hand and, on the other hand, the implementation of the decisions of the United Nations Conference on Climate Change in Paris December 2015, incl. and the "4 on 1000: Soils for Food Security and Climate" initiative was adopted.*
*A possible model for a sustainable circular economy in the agricultural sector will be analyzed taking into account sources of funding in line with current local legislation.*
*JEL: Q50; E17*

*"The simultaneous improvement of our economic wellbeing and our environment was once considered an "impossible solution". Now called circular economy."*

*Jan Potočnik, Commissioner for the Environment*

One of the strategic directions of visions, strategies, programs, guidelines for development in the fields of environment, agriculture, energy and economy, regional policies, human resources, etc. developed in the European Union for the next programming period up to 2030 year is the introduction of integrated practices for the realization of both regional economies based on resource recovery, regenerative practices for the restoration of the main elements of the environment – soils, water, air, micro and macroflora.

These practices are directly aimed at mitigating climate change, adaptation to climate change, management and information related to climate change.

At the World Climate Summit in Paris, December 2015, the "4 on 1000: Soils for Food Security and Climate" initiative was adopted and supported by Bulgaria, putting in place the introduction of low carbon decentralized practices with a view to regenerating basic nutrients of soils to achieve integrated results, incl. re-carbonization of soils to ensure their

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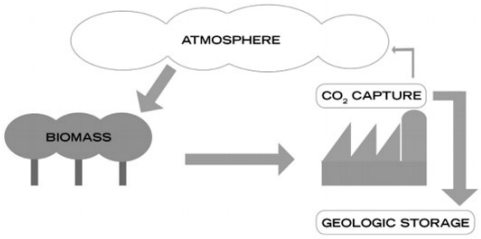
soil fertility and feeding the population. At the same time, the implementation of so-called BioCSS (Biomass carbon capture and storage) practices, namely the development of technologies that lead to an overall reduction in greenhouse gas concentrations in the atmosphere by providing a negative carbon balance

Figure 1

BioCCS in cellulose production




Unfortunately, in our national papers there is no realistic assessment of the ever-increasing effects of non-fulfillment of some of the strategic tasks in the management of our national economy: guaranteeing the population's nutrition, securing public health through management for the main components of the environment – soil , water and atmospheric air, ensuring the sustainability of ecosystems and territories.

Evidence of the above conclusion are the following documents and facts:

1. The Conclusion of the EU Report on Bulgaria Review of the Implementation of EU Environmental Policies (1): **"To date in Bulgaria there is no comprehensive circular economy policy program. Despite growing demand for environmentally friendly products and services, stakeholders are still refraining from investing in these areas."**

2. The assessments and recommendations given in the UN Economic Commission for Europe Review: Bulgaria's Environmental Performance Review, Third Review: Recommendation 8.3: **"The new EU Circular Economy Package means higher targets for the resource recovery of waste. It is already doubtful whether Bulgaria is able to achieve its current goals, such as recycling, not to mention the more ambitious goals in the "Circular Economy" package.**

3. The inactivity of the Ministry of Agriculture, Food and Forestry to implement the fair European principle of "polluter pays". The following amendments and supplements were adopted by the adopted Bill on amendment and supplement to the Waters Act, № 502-01-26, submitted by the Council of Ministers on April 7, 2015:

- in Art. 192, al. 1 (1) Economic regulation is based on the following principles:

1. reimbursement of the cost of water services, including those for the environment and the resource;

2. the polluter pays.

– in Art. 194, para. The right to use water is paid for:

3. pollution charge:

a) for the discharge of waste water into surface water;

b) for the discharge of pollutants into groundwater;

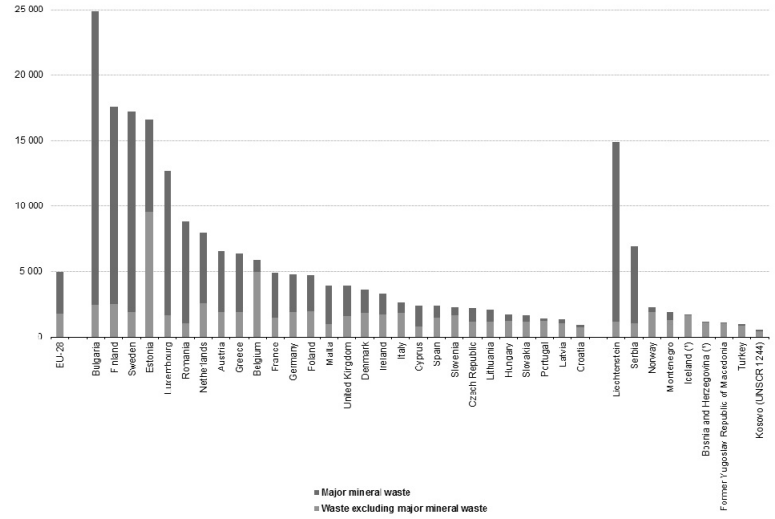
c) diffuse sources from agriculture; this fee shall not be paid if a fee is payable under ”a” or ’’b”.

The above mentioned mandatory payments by farmers for the use of mineral nitrogen fertilizers in the practice of European countries are summarized under the general name "nitrate imprint", which is determined and paid by the farmer on the basis of the pound of nitrate fertilizer per hectare.

Despite the fact that the official data of the National Statistical Institute on the "Agricultural, Forestry and Fisheries Report for 2017" and the "Waste Activity Report for 2017" have not yet been published, codes 02 01 - 02 07 , preliminary assessments of the generated waste resources suitable for secondary utilization indicate the possibility of resource utilization of annual quantities within 1 million tonnes of household waste and about 9 million tonnes of recoverable waste from the agriculture and forestry sector.

Figure 2

Generated waste per capita according to Eurostat data from 2014




For Bulgaria is particularly remarkable, as an average of 24.9 tonnes of waste per capita is generated in 2014 – five times as much as 4.9 tonnes per capita in the EU-28.

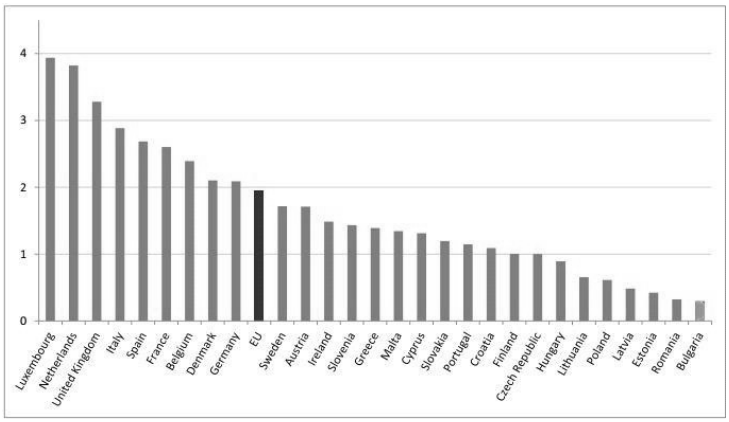
4. Bulgaria is the last in the EU on the productivity of its natural resources. The country lags behind the improvement of the indicator by more than 21% from 2002 to 2014. Bulgaria is the last in the European Union (EU) on the indicator of "resource productivity" with a level of EUR 0.30 / kg, according to Eurostat data for the effective use of natural

resources in 2014. Resource productivity measures the relationship between economic activity (GDP) and consumption of natural resources, revealing how effectively these resources are used.

At the top of the resource productivity ranking last year were Luxembourg – 3.94 euro / kg, the Netherlands – 3.82 euro / kg and Great Britain – 3.28 euro / kg.

Figure 3

Productivity of resources in EU countries in 2014 Graph: Eurostat




The generated waste in agricultural products, processing plants and wood processing is over 9 million tons per year.

In its opinion of 27 February 2014 of the European Economic and Social Committee on "The contribution of woodworking to the carbon balance" notes:

2.1 The European woodworking industry generates an annual turnover of around EUR 122 billion for a production value of over EUR 115 billion. According to Eurostat data in 2012, more than 311 000 companies were involved in woodworking.

About 1,600 companies work in the furniture business. About 40,000 woodworking companies work in the narrow sense of the word, while in other sub-branches of woodworking products there are about 145 000 companies **and recommends**:

4.2 ... to take into account the recommendations made in the Good Practice Guidance on the Sustainable Mobilization of Wood in Europe (2010) and to develop further, if necessary."

5. Apply the principles set out in the recent Commission Communication on "Towards a Circular Economy: An EU Zero Waste Program" 2010 and the measures adopted in 2014 that underpin the formulation: "Moving towards a circular economy is not only it is also profitable, but it will not happen without appropriate policies. "

According to Deputy Minister of Economy Lilia Ivanova, the private investments in the economic sectors in Bulgaria, which are important for the circular economy, are estimated

at about 81 million. This is estimated at 0.18% of the country's gross domestic product for 2017 and is above the EU average of 0.12%.

The European Parliament in its European Parliament resolution on the implementation of the circular economy package: options for addressing the issues of the interaction between chemicals, products and waste legislation (2018/2589 (RSP) of 10.09.2018) "welcomes the Commission Communication and the Commission staff working document of 16 January 2018, as well as the consultation process, but awaits rapid action to address the issues of "synergies"; supports the Commission's overall vision , which is in line with the objectives of the Seventh Environmental Action Program (EAP)";

The circular economy promotes sustainability and competitiveness in the long run. It can also help:

- Resource conservation – including some that are exhaustive and difficult to access;
- new business opportunities;
- environmental protection;
- creation of new technologies, respectively. new industries;
- opening new jobs.

For its successful implementation and management, it is appropriate to apply the model of the pyramid.

This is the simplest, with the least party spatial structure that can be the most universal. Each tip directly contacts the others, allowing to describe and simulate different situations. From a sample model it is easier to model private cases. Each peak can be described as an energy potential that affects positively and negatively various factors.

Figure 4

Recommended option

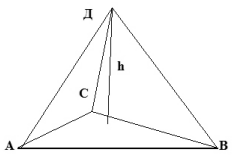
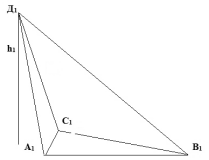



Figure 5

Critical option




The tracing of the individual elements in the case study "Circular Economy in the Agriculture Sector" is:

Peak A reflects the potential of an economy to exploit waste;

Peak B – the potential for generating products and waste;

Peak C – the potential of resources – human, financial;

Top D – State intervention to regulate this case-regulation of business relations, investment stimulation, tax rates, licensing and licensing regimes, sanctions, etc.;

h – the height of the pyramid, which shows the state's distance from the problems in the industry – the freedom of economic players to licensing and restrictive regimes, normative acts, taxes and fees.

Base area S – ABC represents the amount of tangible and intangible product that can be produced with available assets, labor and scientific excellence, whether own or foreign.

The volume of pyramid V – represents the gross national product of the respective branch, in the case of agriculture.

Most resistant is the option where the pyramid tip is projected into the center of the base, but if it emerges from the base, the pyramid may fall – A1B1C1D1.

The **peak A** has a positive impact on the increase, renewal and modernization of investments, negative – lack of interest and incentives for the utilization of the products without waste or the generated waste.

On the **peak B** the positive impact is the growth of the agricultural production and its processing in the country, and negative – the import of the crop and/or the limitation of its processing in the country.

On the **peak C** the positive impact is the growth the stimulation of innovation activity – innovation creation, implementation and realization, stimulation of research, state/financial support in waste processing, and negative - underestimation of the waste as a raw resource and implementation of the principles of the circular economy as well as development of new products/varieties, new crops, and productions.

The positive impact of **peak D** has stable and predictable economic conditions, stable political system and social peace, stimulating economic development legislation, and negative – corruption at all institutions and levels, non-transparent litigation

In order to develop an appropriate mathematical tool for describing the pyramid model, the following should be considered:

⇒ Each peak represents a potential in the economic system, which is influenced by many factors and has a distinct effect;

⇒ The distance between the peaks reflects the strength of the interaction between them;

⇒ The model should allow dynamic state analysis (rather than static), i.e. it must allow dynamic at distances between peaks;

⇒ The control of dynamics of the changes of the distances should allow for predicting the occurrence of critical events that would remove the system from equilibrium.

Convenient for these purposes is the metrics tool, or so on. metric geometry. The logical explanation for this is that the peaks form a metric space, and each peak can be considered a geometric space. The first introduces the concept of metric space and its description French mathematician Morris Frees. Subsequently, the metric finds development from

Gromov-Hausdorff and reflects on the theorems of Hopf and Rinn. This approach can be seen as a particular case of the application of Fensler's geometry created by Paul Finsler and developed by Singh, Taylor, Bertwald, Kartan, Wagner, Buzeman, Round, Minkovski and the contemporary American scholar Shen.

In the analysis of Fig. 4 and Fig. 5, the following conclusions can be drawn:

- In reducing the interaction (increasing the distance) between the economy and the structures (A1 → B1) generating waste, it can not be expected to realize a sustainable one, incl. and circular economy;
- Reducing the funding opportunities for science-intensive and innovative projects (the deviation of the C1 peak from B1) also fails to expect a successful circular economy;
- Inefficient legislative activity, not geared to the problems of the sector, will have a negative impact on general economic development. An illustrative example of this is the repeal of the Public-Private Partnership Act, which deprived municipalities of the possibility of solving waste problems by building with the private capital of industrial enterprises for their recycling or re-use;

There are three main objectives for resource utilization of waste from agricultural activity to regenerate the basic elements of the environment:

**At the first** due to the mass degradation processes, the extremely low organic carbon content in the soils on the territory of Bulgaria (below the boundary guaranteeing the soil fertility of the Bulgarian soils), the carbonization of soils, the lack of essential nutrients (eg phosphorus), it is necessary to import a standardized product recoverable agricultural waste with the quality of growth promoter ie. a product that supports the soil structure, introducing nutrients but also a wide range of growth promoters.

**The second objective** is to use biodegradable waste to ensure the use of such practices and such a process control system as to ensure 100% sanitization of the final products.

To achieve **the third objective** – sustainability which, in our view, is through the use of available resources, the production of products with high competitiveness and high added value, which will ensure through tax the public benefit and the most important recovery of the resources used, and major elements of environmental soils and water for subsequent use.

**Is needed the following sequence of actions:**

1. Estimation of the consequences of drought, erosion and destruction, the outlined trends of losses in the content of organic carbon, humus and severely degraded soil microbiology, the emerging persistent tendencies of loss of soil fertility both in the main grain-producing regions of Bulgaria and in semi-mountainous and mountainous areas occupied with permanent grassland and high nature value agricultural land.
2. Development and implementation of integrated measures and practices for:
    - reduction and prevention of atmospheric pollution from agriculture, etc. activities on the one hand and the creation of conditions for sustainable management of the

main components of the environment – soils, waters and atmospheric air to guarantee soil fertility, stable water-resistance, storage and maintenance of the soil microflora;

- introduction of decentralized systems for economically feasible energy production and stable accumulation and storage of organic carbon in soils to reduce on the one hand the amount of carbon monoxide, methane and nitrous oxide generated in the atmosphere and, on the other, to create the possibility of rapid recovery of damaged soils from increasing forest fires by restoring basic nutrients and topsoil and preventing groundwater pollution, regenerating soil microflora and fertility;

3. Introduction of municipal low-carbon heating systems with multiplier economic effect – on the one hand, reducing the costs of the waste management system to 70% and eliminating the cost of fossil fuels: natural gas, petroleum derivatives, wood, pellets and others.
4. Introduction of highly efficient settlement ecosystems for extraction and retention of $CO_2$ for sustainable prevention of natural disasters due to climate change.
5. Introducing BECCS practices that are considered as one of the most socially acceptable and recommended by the UN, EU, World Bank, World Population Organization – FAO practices to mitigate global impacts of climate change.
6. Forests and forestry. Estimation of basic eco-services guaranteed by forests and creation of objective and appreciable mechanisms for their compensation for infrastructure projects that disturb the forest areas and use of basic eco-sources – soils and waters.
7. Introduce effective practices for the restoration of forests with the utilization of waste generated during their management.
8. Introduce based system for sustainable development of the region and mitigate the effects of climate change through low carbon practices such as suspending the burning of stubble and prevent large-scale forest fires and air pollution, create economic incentives for reasonable utilization of waste biomass recovery and improvement of the quality of the main elements of the environment related to one of the main sectors for the region – agriculture, incl. soils, groundwater, guaranteeing soil fertility for the introduction of high-efficiency productions in farming, livestock and the processing industry.
9. Characterization of management objects by standardized methods and standardized tools;
10. Planning and implementation of projects to implement measures and practices for integrating environmental policies and climate change policies into their cost-benefit assessment.
11. Implementation of circular economy projects using products and waste from agricultural production through demonstrable socially acceptable Public-Private Partnerships through the creation of consortia with private entrepreneurs in

compliance with the laws on municipal property protection and the Law on Local Administration and Local Self-Government.

12. Integrated ecological and zero waste projects through consortia with private investors. This would compensate for the Government's refusal to implement the Implementing Agreement 1303/2013 in the use of funds from the European Funds for the 2014-2020 programming period. "At present, no implementation of the integrated territorial investment approach within the meaning of Regulation 1303/2013. There is targeted support for the development of the Northwest region (see 3.1.6). "(P.146 of the Agreement). Art. 36 Integrated Territorial Investments of Chapter III Territorial Development of Regulation 1303/2013 reads: "1. Where an urban development strategy or other territorial development strategy or territorial pact referred to in Article 12 (1) of the ESF Regulation requires an integrated approach involving ESF, ERDF or Cohesion Fund investments in more than one priority axis of one or several operational programs can be implemented as an integrated territorial investment (ITI)."

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ИКОНОМИЧЕСКИ ИЗСЛЕДВАНИЯ
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# ECONOMIC AND ENVIRONMENTAL CHALLENGES TO BULGARIAN FORESTS

*In recent years, global climate change has a particular place on the agenda of society. These changes are related to a number of natural disasters - droughts, fires, floods, hailstorms, hurricane winds, landslides, etc. Exploded globally, these problems pose serious environmental, economic and social problems to mankind. Undoubtedly, one of the reasons for part of these regional problems is the loss of forest land. The present study aims to reveal some of the reasons for the loss of part of the Bulgarian forest and the problems that this loss predicts. Particular attention is paid to the shortcomings in the Bulgarian legislation, which help the felling, arson and eradication of part of the forest massifs. The lack of an overall economic assessment of forests creates additional negative consequences. The scarcity of the environmental benefits of forests leads to their destruction in key places with severe social consequences.*
*JEL: D04; O1; Q5; E7; L51*

## Introduction

The main problems of the Bulgarian forests can be systematized as – fires, illegal logging, extraction and exporting of timber. Diseases, pests, climate change also undoubtedly influence the Bulgarian forests, but the purpose of the present study is to be limited mainly to the human factor, the economic interest and the short-sighted policy of the Bulgarian political elite. Looking for profit at all costs is the basis of many of the problems of the Bulgarian forests. Particularly important is whether and to what extent the laws are adequate to solve the problems.

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## 1. Forest fires

One of the main factors for the loss of forest land, farm buildings, housing, wildlife fund and sometimes human casualties are forest fires. It is quite difficult to determine the causes of these fires, especially when they are deliberate and are caused by certain economic interests. Therefore, any statistics can be accepted as conditional. According to official data, forest fires have burned hundreds of thousands of ha in the past 10 years. It is a critical year for 2007 with 1479 fires with 429 99,0 ha of forest area affected, while in 2017 there are 513 affected with 45 69,4 ha of forest.

Table 1

Forest fires

| Years | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Registered forest fires (number) | 1479 | 582 | 314 | 222 | 635 | 875 | 408 | 151 | 429 | 583 | 513 |
| Affected forest territories in general (ha) | 42999.0 | 5289.2 | 2276.4 | | 6882.6 | | 3313.9 | 916.0 | 4312.8 | 6338.9 | 4569.4 |
| Out of them high fires (ha) | 7033.5 | 654.6 | 83.2 | | 498.5 | | 486.6 | | 166.7 | 715.6 | 989.0 |

*Sources: Annual Reports of the Executive Forest Agency 2006-2017*
*http://www.iag.bg/docs/lang/1/cat/4/index*

The largest share of the burnt areas in 2017 is state property – 70%, municipal – 13%, private – 15%, and 2% are owned by legal entities. According to official data from the 513 fires that occurred in 2017, 3% are natural causes of lightning, 6% are deliberate, 78% are caused by human negligence, and 13% are for unknown reasons (Gogov, 2017, p.14). It is likely that intentional fires here are lowered at the expense of those of negligence and unknown causes. An in-depth analysis of who buys and where it sells the burnt wood and whether there is a change in the designation of certain forest areas could give some answers.

The direct damage from the forest fires in 2017 is estimated at almost 4 mln BGN, which is below the average of about 5 mln levs for the last 10 years. The rating is actually very low. This amount does not include the costs necessary to restore the forest fires that have been burned in the next three years by state-owned enterprises and other forest owners. These financial indicators do not include the costs of Ministry of Interior, Ministry of Defense, district administrations, municipalities, volunteers and other owners of forest areas for fire suppression. And what is most important – does not include damage to nature, flora and fauna, and long-term damage to the ecosystem (Gogov, 2017, p. 15).

In 2017, in connection with the implementation of the National Strategy for Development of the Forestry Sector in the Republic of Bulgaria for the period 2013-2020 and of the

Strategic Plan for Development of the Forest Sector in the Republic of Bulgaria 2014-2023, developed and approved.[3]

"Practically forest fires can occur anywhere. Especially dangerous is the summer season, when hundreds of tourists make excursions to the countryside. Potentially endangered are all Bulgarian mountains during periods of prolonged drought. However, fires can occur not only in the mountains. Annually, authorities warn farmers to take measures in the heat of outdoor work. A serious fire hazard occurs during harvesting in the regions of Dobroudja, the Danube Plain, Thrace, Sofia Field, etc. where large distances and the lack of sufficient quantities of water nearby hamper the rapid response to fire suppression" (Bourlando, et al., 2016, p. 23).

"Some of the factors contributing to fires are the abandonment of farmland (which increases the size of areas with natural and uncontrolled vegetation) and the disappearance of traditional use of forests by rural communities that have in the past harvested wood, herbs or resins. Another factor that deserves to be noted is the climate and its impact on the number of fires. The statistics match for years of severe drought and years of torrential rains. From the point of view of the affected areas (burned land), the state and the landscape of the forests influence. Most fires nowadays are caused by people." (Bourlando, et al., 2016, p. 28).

"From the point of view of prevention, technology has many applications for preventing and timely detection of forest fires. National Park for example, Devesa (Spain) has an automatic fire detection system designed to identify and locate fires at an early stage.

The system, which started in 2002 and operates continuously, is called DISTER (locating fires using heat sensors). It was developed by the Polytechnic University of Valencia in cooperation with the fire department of the Valencian City Council" (Bourlando, et al., 2016, p. 31).

"It is important to recognize the fact that while old firefighting tactics remain effective, tactics and fire prevention strategies have changed. We can no longer afford to invest all our resources in personnel, equipment and fire-fighting strategies. "Reactive" firefighting programs should develop into "proactive" fire management programs that effectively apply techniques to prevent fires and reduce the amount of hazardous fuels. The goal is only to reduce the number of unwanted incendiaries, but also to minimize the damage and hazards to which the staff is exposed." (Bourlando, et al., 2016, p. 35).

Unfortunately, innovative practices in fire prevention and detection at an early stage are poorly addressed in Bulgaria. The localization and elimination of fire outbreaks at this stage ensure the minimization of losses and the saving of huge resources. In this respect, large-scale thermal cameras and thermosensors could be used as part of a uniform early warning system, the deployment of old military equipment in risky areas, which could be retrofitted for blasting and firefighting. Such a proposal was given by one of the authors in 2006 in the Bulgarian Parliament, but unfortunately, it received no support. Much of the tanks and

[3] "Forest Fire Protection Program" with a period of operation until 2023. "The program is published on the website of the Bulgarian Academy of Sciences in the section" Projects / Programs / Strategies "under the section" Documents "(http://www.iag.bg / docs / lang /1/ cat / 5 / index).

armored machines were cut and handed over to scrap. The use of satellites to cover, particularly critical areas, would also be realistic and particularly effective. Unfortunately, the Bulgarian state does not take real action in this direction, even though such an investment would save a huge amount of money. Especially critical is the situation with regard to fire-fighting aircraft – helicopters and airplanes. At present, Bulgaria has no such instrument that borders on a crime. Instead, however, several Bulgarian governments and parliamentary majorities find money for new government aircraft or the purchase of several military aircraft worth nearly 1.5 billion euros. The availability of fire-fighting aircraft is perhaps the most effective way to counteract forest fires as they operate in difficult-to-reach and intersected terrain, and the speed at which they can respond guarantees the extinguishing of fires before they develop a wide front and encompass huge areas. Underestimating and neglecting the need for firefighting equipment by the Bulgarian political elite is one of the major crimes against the Bulgarian forest.

## 2. Legal issues

The lack of adequate legislation, the neglect by the politicians of the opinion of the foresters – specialists and their professional community lead to severe consequences for the Bulgarian forest. For example, several specific legislative decisions could help to reduce intentional fires. The introduction of strict state control over the exploitation of burned timber, a ban on changing the use of forest areas affected by fires for at least 20-25 years, a drastic increase in sanctions in the Penal Code for intentional burning. For example, Cyprus has introduced up to 20 years in prison and a fine of 50,000 euros for arson perpetrators and deliberately caused forest fires.

A major problem is the fact that state-owned forest enterprises are registered under the Commercial Act but do not represent commercial companies. They can not go bankrupt because they protect the public interest in forests. The mistake so far has been that their top priority was to maximize their profits, which is not difficult with the resources they have (Dimitrova, 2017).

It was wrongly believed that this was in the interest of the state. This philosophy will be changed. In the interest of the state, it will no longer be possible to achieve maximum profit, but to keep the forest fund in optimal condition. Otherwise, state forest enterprises will continue to turn the forestry into logging.

Another important problem is whether the control of the Bulgarian forests is effective enough and the offenders are actually punished. According to the WWF international nature conservation organization, Al-Dunchev comments that illegal logging in Bulgaria is between 10 and 25%. If that is true, illegal logging forms a shady business for nearly 50 million euros.[4] In fact, if the legal or semi-illegal harvesting is combined, the utilization of fire-burned (often intentional) wood, the figure is many times larger.

[4] Illegal logging in Bulgaria is between 10% and 25% of ... https://novini247.com/novini/nezakonniyat-darvodobiv-v-balgariya-e-mejdu-10-i-25-ot_67716.html.

Direct control in the country is carried out by 407 forest inspectors in RDF. In 2017 a total of 19 995 violations of forest legislation were found. In the forest territories – state property, with acts and founding protocols a total of 8479 violations were found, in municipal property – 508, in private ownership – 5305 violations. Under the Forestry Act, 13 637 acts were drawn up. How do criminal procedures work and how many offenders are actually punished? 11,117 punitive decrees were issued, 412 cases were canceled by the directors of the regional forest directorates. 2985 files were sent to the Prosecutor's Office, of which 758 were without a decision, 1989 were returned for administrative proceedings, and 238 were initiated for criminal proceedings. Put directly – out of 2985 files sent to the prosecutor's office, only 238 criminal proceedings were instituted. Taking into account the practice of the Bulgarian court, it is likely that the vast majority of these 238 criminal proceedings have resulted in acquittals. This, in essence, means a denial of justice to the perpetrators of such acts. Penalties and penalties imposed by penal sanctions (PA) amount to a total of BGN 1,794,883, with the punitive decrease in force at the amount of BGN 1,161,293. BGN 165,786 were collected from the enforced punitive decrees, which represents only 14% collection (Gogov, 2017). This low collectability largely explains the infidelity and the sense of impunity of the offenders with respect to the Bulgarian forest.

In order to form an objective attitude towards the forests and the legislation that is in their defense, the creation of conditions for economic and ecological evaluation of the benefits they provide, but also the influence of the social aspects in their realization, comes to the fore. More and more in the specialized literature is the term ecosystem benefits of forests. That is why their knowledge and ecological and economic assessment is an important factor for the forestry legislative activity.

## 3. Aspects of the forest ecosystem

Forests protect us from climate change by swallowing large amounts of CO2 from the atmosphere and storing it in the trees, vegetation and soil. Over 40% (1.77 million square kilometers) of the EU's land territory is occupied by forests. Unlike many other parts of the world, forest cover in the EU is increasing – by 0.4% per year. Forest habitats are almost 20% (over 14 million hectares) of the Natura 2000 network. European forests are facing the challenge of climate change, so they need to be managed appropriately. Most forestry laws are determined by EU countries alone. However, the Union is an active participant in international forest talks around the world. Deforestation and degradation of forests in developing countries account for about one-sixth of the world's CO2 emissions (European Commission).

There is no single term in the specialized literature, and scientists prefer the use of the term environmental service in some of their publications. Recently, the term “environmental benefit” has also begun. This is also reflected in Forest Law The need for accurate terminology is important for legislative work in this area. Ecosystem benefits (services) are an integral part of natural renewal capital. They enter into the content of natural capital in the sense of a natural fact that provides economic value. Ecosystem benefits (services) are the benefits, direct or indirect, that people receive from the functioning of ecosystems.

## 4. Natural capital

Natural capital, these are all stocks of natural assets, the soil, forests, the planet's water resources, the species, the landscapes, the wetlands formed over the millennia. The created assimilation abilities of nature are another reason to be included by some authors as natural capital, as well as the effects of biochemical cycles and energy flows. The characteristic of appreciation is the tendency to give a price to everything produced by man and to have almost no value given by nature. The purpose of evaluating is to create conditions for preserving non-renewable capital and developing the renewable (such as forests), which is a good basis for the balance of nature in the direction of sustainable development. The correct definition of "Natural Capital" is that part of the natural resources that is actually involved in economic turnover. It is an economic asset in the process of public reproduction (which allows it to be assessed) and can participate in the legislative process as a terminology.

For economists exploring national wealth, natural capital is the natural resource that is involved in economic turnover and brings income to its owner. Natural capital, which is determined by the value of inventories of renewable and non-renewable resources such as farmland, pastures, productive forests, more natural products, forest areas, protected areas, oil, coal, natural gas, metals and precious minerals. Old traditional indicators of the value of natural resources in the second half of the last century are usually based on direct pricing parameters of the individual components of the raw material flows involved in the production of consumer goods and services. Not always important environmental and life-sustaining functions of natural systems are always taken into account, the existence of which is, in fact, a necessary condition and opportunity for production processes.

Traditional methods for measuring the value of products and services based on market assessments of only processed raw materials directly engaged in business turnover. In addition, the total does not include the cost of maintaining national parks, nature reserves and other protected areas, as well as the variety of local recreational resources needed to organize complete recreation of the local population and profitable international tourism. The debate on valuation depends on the understanding of the benefits and costs of assessing the different options. In a very broad sense, valuation techniques provide a set of tools that help people compare the benefits and costs associated with the different options.

The predominant patterns of production, consumption and distribution become extremely irrational.[5] Human activity, as well as evidence of excessive and sometimes reckless exploitation of natural resources, leads to the loss of important habitats and biodiversity. Contamination of soil, seas and the atmosphere are becoming more and more obvious. Thanks to scientific explanations, there is a clear picture of what enormous economic, social and environmental issues are related to threats such as climate change and the loss of important ecosystem benefits (services) stemming from the fact that humanity is approaching the so-called “planetary boundaries” or have already been crossed in terms of the environmental footprint of a number of developed countries around the world.[6]

[5] 2011, Goals and Conferences, Conferences Organizations Nationals on Sustainable Development, see A / CONF.216 / PC / 7.
[6] Intergovernmental Panel on Climate Change, 2013, Rockstrom and others, 2009.

Figure 1


*Sources: Gore, A., The Inconvenient Truth, 2006 Schafter,K., National Geografhic (14).*

The concept of ecosystem services is a relatively new element in environmental and forestry experiences. It is documented by the Millennium Ecosystem Assessment (MEA, 2005), the speed at which ecosystems change as a direct or indirect consequence of human activity, and is unprecedented.

The Millennium Ecosystem Assessment (MEA, 2005) distinguishes between the following four types of ecosystem services: provision of services such as food, water, timber and fibers; regulatory services, such as flood regulation, drought, land degradation, diseases and others; supporting services such as soil formation and nutrient circulation; cultural services such as recreational, spiritual, religious; non-pecuniary benefits.

The Millennium Ecosystem Assessment was conducted between 2001 and 2005 under the auspices of the United Nations. The aim is for nations to assess the impact of human ecosystem changes on human well-being and to establish the scientific basis for actions needed to improve the conservation and sustainable use of ecosystems and their contribution to human well-being.

## 6. Conclusion

The lack of interest and the lack of political will to solve the problems of the Bulgarian forest - fires and fires, illegal logging, the lack of adequate penal policy towards offenders, the lack of listening by the political elite to the established specialists leads to serious negative consequences – deforestation, erosion processes, problems with water resources, flora and fauna. Especially scandalous is the unwillingness of Bulgarian politicians to pay attention to the creation and development of fire aviation, one of the most effective means of combating forest fires. The reluctance to invest funds in this direction, as well as a

modern and effective early warning system, including thermosensors, satellites and terrestrial specialized equipment, is perplexing against the backdrop of enormous and often unjustified costs in terms of public interest. For example, for party subsidies, more than EUR 250 million have been spent in recent years, for projects to purchase combat aircraft – about EUR 1 billion for the purchase of armored infantry – over EUR 700 million for a new multi-purpose warship – 500 million dollars euro. The latest military projects have been voted by the National Assembly literally in recent months. The lack of adequate legislative measures against those who cause severe damage to the Bulgarian forest is particularly perplexed. It is unclear the fact that the direct control over the forests of Bulgaria is carried out by only 417 employees. It is hardly a problem for the Bulgarian state to double or triple their composition, to improve their working conditions and, more importantly, to guarantee their inviolability by the frequent harassment of poachers. It is scandalously quoted above that a total of 11,217 penalties were issued in 2017 and only 238 criminal proceedings were instituted. This, in essence, means a denial of justice for the perpetrators of such acts and stimulates the encroachments on the Bulgarian forest. The long-term environmental and economic consequences of such a policy would be extremely severe. Examples of climate change and the transformation of forest massifs into deserts are numerous – Afghanistan, North Africa, and so on. It is therefore necessary to change the overall state strategy regarding the Bulgarian forest. An issue that is directly related to political will and political representation.

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# *SUMMARIES*

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*Georgi Shopov*

## MATERIAL STANDARD OF LIVING AND ENERGY POVERTY IN BULGARIA: STATE AND DEVELOPMENT

The report examines the territorial disparities in the standard of living at the level of European Union, regions and districts in Bulgaria. The standard of living is defined and assessed from the point of view of material living conditions, which include a number of indicators grouped in three thematic areas: economic development, income and consumption, inequality and poverty. Appropriate statistical indicators are used to assess disparities, and a specific methodology is applied for the assessment of the standard of living, that allows territorial units to be ranked according to the distance from the best value. The results of the empirical study for 2010-2017 show: (a) a low level of the standard of living in Bulgaria compared to the EU countries (28); (b) the disparities between the regions in the country are slightly diminishing and between the districts are preserved; (c) there are significant changes in the ranking of the regions and the districts. Energy poverty is studied and assessed on the basis of indicators identified by the "expenditure method" and the so-called "consensual method". The results for 2014-2016 show: (a) a growing range of energy poverty across all indicators; (b) Bulgaria is lagging behind the other EU member states in limiting energy poverty.
JEL: C43; I31; I32; I38; H41; H55; R11; R13

*Margarita Atanassova*

## EMPLOYMENT IN BULGARIA AS PART OF EUROPEAN LABOR MARKET – TRENDS AND INSTITUTIONAL CHALLENGES

The dynamics of employment in Bulgaria in the first decade of EU membership reflects the impact of various factors, including the application of the principle of free movement of workers on the European labor market.The main goal of this study is to highlight institutional challenges facing the labour law compliance control (national system of labor inspection) and the social insurance contributions dynamics in Bulgaria in the context of EU workers mobility. The changes in employment in Bulgaria as part of the European labor market reveal both the free movement of EU workers and the attraction of third-country nationals. The diversity of the nationality of the employed is reflected in the legislation (Labour Migration and Labour Mobility Act, 13 April 2016), which regulates the main processes in relation with workers mobility. These trends are accompanied by changes and complicating the activities of institutions that have responsibilities in the field of labor law compliance control and social security in Bulgaria as part of the European labor market.
JEL: J21; J61; H55

*Iskra Beleva*

## THE LABOR MARKET – NATIONAL AND REGIONAL PROBLEMS

The article presents the trends in the main labour market indicators before and after the economic crisis in 2009 at national and regional level. It outlines the most specific features in the relation between economic and employment growth. At a regional level the article studies the deviations from the average values of economic activity, employment rate and unemployment rate on the regional and intra-regional level, pointing out the increasing deviations at intra-regional level as one of the main

feature of labour market misbalances. It also defines some of the factors, causing these misbalances. Particular attention is paid on the role of regional employment programs and measures as an instrument to encourage labor integration through training and qualification; policies that have no alternative and aim at decreasing the social disparities and at the inclusion of risk groups in labor activity and at sustainable employment as a way to improve the standard of living.
JEL: J2; J4; J18

*Pobeda Loukanova*

## THE IMPLEMENTATION OF EUROPEAN YOUTH GUARANTEE IN BULGARIA – RESULTS AND PERSPECTIVES

The report presents the main legislative, organizational and policy changes on youth employment in Bulgaria associated with the implementation of the European Youth Guarantee (EYG). Youth employment, unemployment and activity rates have changed in positive direction, but the quality of job offers for young people is still questionable. Some of the indicators follow the common tendency in the European Union (EU) and the youth inclusion in the labour market is an important challenge. The position of young persons on the labour market proves that they still do not benefit from the economic growth in a same level, as the other age groups.
JEL: J64; J08; J13

*Miroslava Peycheva*

## ANALYSIS OF THE TRENDS IN HUMAN RESOURCES ACTIVITIES AND THE NECESSITY OF REDESIGN OF THE EDUCATION

We are witnessing a dynamically changing environment that imposes a new way of thinking and new competencies. Human resources activity is no exception. A number of factors shape its new look. Digitization, globalization, intelligent learning platforms, virtual teams, new jobs and dynamic jobs, social responsibility, burnout, fraud from candidates for job vacancies and many other trends require human resources leaders to initiate and support the changing environment. All this implies new competencies of human resources specialists. For this purpose it is necessary to redesign the contents of the universities syllabus and to reorganize the way of their creation and development.
JEL: M12; M5; M51; M53; O15; I21; I23

*Maria Kotseva-Tikova*

## INCLUSIVE DEVELOMENT AND REGIONAL POLICY

Growth for the purposes of growth is not a wise idea for the contemporary governments because of the increasing dissatisfaction due to the lack of real benefits for a huge part of the population and for some regions. Inclusive growth is focused upon the preliminary analysis of sources and limits of the sustainable development not only for one group – the poor. It aims to find out approaches for full usage of labour forces; especially the ones occupied with low productive activities or that are excluded from the market. The green economy and growth turn to be the modern answer to the need of new production ways as a result of the ecological problems and social disproportions. The aim of the report is to study the characteristics of the inclusive growth in the District of Vidin in the context of the regional policy of Bulgaria and the green economy opportunities as a mean for reaction to the negative social-economic effects.
JEL: O4; Q2; Q5; R1

*Mariya Aleksandrova Ivanova*

## THE SOCIAL REALITY OF THE ROMA IN BULGARIA (FROM THE VALUE OF DIFFERENCES TO EMPOWERED RELATIONSHIPS)

The policies for the protection of the different ethnic communities of the European Community are integrated into national law. But the legal institutional framework is not enough to create a better world for "the different." The report classifies the peculiarities of the social reality of the Roma. The results of an empirical study of the problems of cohabitation of Bulgarians and Roma in Kremikovtsi, Garmen, are presented. An inductive approach has been used in which the localized case provides recommendations for resolving the pressing problems of minority inclusion towards universal values and ensuring equal working conditions. It is proposed to change the management approach by respecting the differences.
JEL: A12; A13; J01; J14; J15; J24; M14; M51; M54

*Iskra Bogdanova Christova-Balkanska*

## CHANGES IN INTERNATIONAL TRADE AND INVESTMENTS AFTER THE GLOBAL FINANCIAL CRISIS

Over the last 20 years, the globalisation of the economic and financial environment has had an impact on world trade and investment and has modified the ways in which international trade and investment transactions are implemented. The expansion of the overseas operations of the international companies is an influential factor. The reduction of tariffs, the increase in the quality/cost ratio of international transport, and especially the deepening of information and telecommunications links, contribute to changes in the way in which international trade and investment transactions are carried out. The evolution of international trade and foreign direct investments (FDI) during the post-crisis period differs significantly from that during the pre-crisis period. The economic and financial environment is uncertain. Besides the global financial crisis, Europe is also experiencing the blows of the sovereign debt crisis – a fact that affects its rapid economic and financial recovery. Despite the liberal trade and investment relations, countries around the world apply non-tariff and administrative barriers in order to protect export-oriented production from external shocks. In recent years, protectionist trends are increasing due to the unilateral imposition of duties on certain goods by the American administration. Does this shift in trade policy mark a turning point in international trade and FDI?
JEL: F13; F21; F23

*Stoyan Totev*

## STRUCTURAL CHANGES BY MAIN SECTORS IN EU COUNTRIES

The structural differences across main sectors within the EU countries are analysed. Defined is the extent to which the difference in labour productivity by main sectors determines the structural changes – to what extent the formed economic structures and their change is characteristic of the developed economies, those from Central and Eastern Europe and the Balkan countries. The analysis allows to get an idea of the general and specific in the structural development by main sectors of Bulgaria and the potential for realization of favourable structural changes.
JEL: Q11; O52; P59

*Pavlinka Petkova Naydenova*

## MOTIVATION OF HUMAN CAPITAL IN THE BUSINESS ORGANIZATION

Motivation is a competence and responsibility of the manager when managing human capital in a business organization. Motivation is based on the existence of an unsatisfied need in individuals who are the carriers of human capital and, driven by personal motives and reasoning, follow a certain behavior. By identifying and satisfying these needs, individual behavior can and should be guided by the management, in consideration with the objectives of the business organization. The ability to motivate the manifestation of human capital is the ability to manage a business organization. It is based on the specific traits and peculiarities of the human capital, on the company culture and the characteristics of the business environment.
JEL: M12; M51; M54

*Adelina Milanova*

## THE RELATION RATIONALITY – IRRATIONALITY IN BUSINESS AS A DETERMINANT FOR DEVIATION

According to behavioral economics, the interactions in an economic unit reflect not only the rationality, but also the irrationality in the behaviour of the individuals and the groups of individuals, which influences the display of human capital in the given organizational structure. Questions about the way of communicating the specific characteristics of rationality and irrationality as socio-psychological characteristics concerning the interactions in the organization are risen: their influence on the economic behavior of the individuals, the management of the processes and the goals achieving. In order to build up a complete of the business behavior and to overcome any negatives, leading to ineffectiveness, it is necessary to identify and analyse the determinants for the deviation in the corporate environment. A new vision of the condition of Bulgarian companies is needed, in order to identify the problematic areas in their management and a critical evaluation of their business practices is needed, in order to note down ways of formulating and improving the micro-policies.
JEL: A12; A13; M14; Z1

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## FINANCIAL ASPECTS OF NPP CONSTRUCTION: IMPLICATIONS FOR NPP BELENE

New technical safety requirements for the future NPP have been set after the Fukushima accident in 2011. This has led to costs increase and new models for NPP construction financing. Along with these models the article discusses technical problems associated with the building of a financial model to determine the financial viability of a project for a new NPP construction, and the decision to be made in defining its main parameters. The outcomes of the study have direct implications and applications that may be used in studies and decision for constructing NPP Belene.
Keywords: financing, financial models, nuclear power plant.
JEL: G11; G17; G32

*Valeria Dineva*

## THE MODERN INTERNAL AUDIT IN THE MODERN COMPANY

The mission of the modern internal audit is to support the development of the company and to contribute to the achievement of its objectives. In this context, the need for the internal audit to meet the expectations of stakeholders is becoming increasingly important. Moreover, it requires a proactive role, which includes to provoke needs, provide advice, and to offer opportunities. The modern internal audit must go beyond its traditional role of observer, finder and corrective, and become the engine that inspires changes in the company. In order for this transformation to take place, it is necessary to change the objects and subjects of the internal audit. Corporate culture, corporate social responsibility, ethics, cybersecurity, risk-culture, innovation, strategies, etc. are joined of the objects of internal auditing. All this implies new competences, attitudes and skills of internal auditors.
JEL: M42; M14; G34

*Tsanko Stefanov*

## MANAGEMENT POLICY OF COMPANY KEY CUSTOMERS

Leading companies try to build a complete partnership with their customers. For this purpose, they develop loyalty and retention programs for their key customers. Marketing experts try to provide these customers with constantly high value and satisfaction. They also use specific marketing tools to develop stronger relations with these users. The main purpose of this paper is to study in theoretical and practical terms the specifics of the relationship management in regard to the company key customers.
JEL: M30; M31

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*Valentin Bilyanski*

## 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

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*Tjaša Griessler Bulc*

## SUSTAINABLE WATER RESOURCES MANAGEMENT (THE CASE OF NATURAL SYSTEMS FOR WASTEWATER TREATMENT)

The paper presents the concept of sustainable water resources management in the context of United Nations' sustainable development goals (UN SDG) and in relation to policies for water resources management in Bulgaria. The natural systems for wastewater treatment are discussed as an example for sustainable management. They could be used without the application of complex equipment or chemical processes. The economic and social advantages of these systems are discussed too.
Keywords: UN SDG 6.5.1, integrated water resources management, natural systems for wastewater treatment
JEL: Q25; Q58; Q5

*Virginia Zhelyazkova*

## THE ROAD TO CIRCULAR ECONOMY: WHAT CAN EUROPE LEARN FROM THE EXPERIENCE OF GERMANY AND JAPAN?

The transition from linear to circular economic model has gradually become an imperative for all countries in the world. Negative phenomena, which are the result of prolonged environmental pollution, affect all economic actors and reveal the defects of the linear economic model. The clarity of the need to abandon it, however, faces the complexity of its replacement. It is becoming increasingly obvious that this will be a long and complicated process in which the state will have to play an active role.
Some countries have moved in this direction relatively earlier than others. Such are Germany and Japan.
The aim of the present study is to present in a general analytical and comparative plan the main policies that these two leading economies in the world have conducted over the years as their experience would be of significant benefit to the successful realization of the actions - part of the transition to a circular economic model, in the countries of Europe and in particular those in the EU.
JEL: E20

*Aleksandr Trifonov*
*Zhechko Yordanov*

## INTEGRATED DECENTRALIZED PRACTICES FOR INTRODUCING REGIONAL "CIRCULAR ECONOMIES"

Consider and demonstrate opportunities to meet the requirements underpinning EU regulations and adopted in December 2015 year, a package of measures for the introduction of the "Circular Economy" on the one hand and, on the other hand, the implementation of the decisions of the United Nations Conference on Climate Change in Paris December 2015, incl. and the "4 on 1000: Soils for Food Security and Climate" initiative was adopted.
A possible model for a sustainable circular economy in the agricultural sector will be analyzed taking into account sources of funding in line with current local legislation.
JEL: Q50; E17

*Mincho Hristov*
*Balin Balinov*

# ECONOMIC AND ENVIRONMENTAL CHALLENGES TO BULGARIAN FORESTS

In recent years, global climate change has a particular place on the agenda of society. These changes are related to a number of natural disasters - droughts, fires, floods, hailstorms, hurricane winds, landslides, etc. Exploded globally, these problems pose serious environmental, economic and social problems to mankind. Undoubtedly, one of the reasons for part of these regional problems is the loss of forest land. The present study aims to reveal some of the reasons for the loss of part of the Bulgarian forest and the problems that this loss predicts. Particular attention is paid to the shortcomings in the Bulgarian legislation, which help the felling, arson and eradication of part of the forest massifs. The lack of an overall economic assessment of forests creates additional negative consequences. The scarcity of the environmental benefits of forests leads to their destruction in key places with severe social consequences.
JEL: D04; O1; Q5; E7; L51