

## **Analyzing the employment rate of the population, unemployment and vacancies in the economy**

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**Abstract.** *The year 2017 ended with positive results in terms of the working age population (15-64 years). Of the total population, a significant number, almost two-thirds, was in this category, occupied by the population, according to the methodology and terminology used by the official statistics.*

*At the same time, the authors conduct a study on how the unemployment rate evolved, so that the two indicators analyzed in correlation highlight the way in which the economic strategy aims at better employment of the population, simultaneously with the reduction of the unemployment rate. The authors pointed out that some measures had a decisive role to play in improving employment. The two indicators which we have mentioned are analyzed and correlated with the existence of vacancies in the economy, resulting in the fact that from time to time the number of vacancies increased. In the study, there is a greater possibility of using existing jobs, but it is concluded and concluded that measures must be taken to increase the number of jobs in the economy to ensure better employment of the population.*

**Keywords:** occupied population, unemployment rate, vacancy, investment, jobs.

**JEL Classification:** E24, J62, J63.

## Introduction

The study is based on the fact that in 2017 the employment rate of the working-age population is quite significant. We say this because new investments have been reduced in Romania, the development of trading companies has also been rather low, foreign direct investments have penetrated harder for our country, for various reasons, and the unemployment phenomenon, albeit temperate, continued to be at a sufficiently high level.

The authors also study the vacant vacancies resulting from the development of the already existing investments, some new investments and, in this context, comparing the level of the unemployment rate with the vacancies, it is clear that they are not occupied primarily due to the lack of professional conversion of those who I'm looking for a job.

The authors study carefully the three economic and social categories. The three indicators are relevant, and the authors give them due attention, highlighting how they have evolved and anticipating the evolutionary trend they will have in the future.

In the authors' study, not misusing, but carefully selecting the series of data (tables) and graphical representations, they sought to pinpoint as accurately as possible the way in which these indicators evolve. The data used shows that 2017 was a relatively positive year in terms of economic growth and, on this background, even in terms of the evolution of the employed population indicator, the unemployment rate and the number of vacancies in the economy.

## 1. Literature review

Anghel and Anghelache (2017) conducted a study on the evolution of the labor market in the European Union. Anghelache (1999-2016) elaborated a broad analysis of Romania's economic and social evolution, including the situation of pensioners. Anghelache, Anghel and Dumitrescu (2016) studied the changes in the structure of Romanian labor resources. Anghelache (2008) presented the statistical indicators used in economic analyzes. Belo, Lin and Bazdresch (2014) studied the correlation between employee workforce, investment and share income forecast. Betermier, Jansson, Parlour and Walden (2012) analyzed the relationship between the risk of income from work and financial investment decisions. Chen, Kacperczyk and Hernn (2011) investigated whether restrictions imposed by trade unions affect company capital costs. Chéron, Hairault and Langot (2013) investigated the range of jobs available throughout the life cycle. Daly, Hobijn, Sahin and Valletta (2012) examined the labor market and tried to identify whether the natural rate of unemployment has increased. Da Costa and Maestri (2007) studied aspects of human capital risk and government strategy design. Donangelo (2014) examined the effects of labor migration on asset price developments. Klein and Ventura (2009) investigated the consequences of the labor force movement on productivity. Kroft, Lange and Notowidigdo (2013) addressed issues related to employers' behavior and the duration of the unemployment period. Miyamoto and Yuya (2011) investigated the effect of long-term

productivity growth on unemployment. Mortensen and Pissarides (2011) presented elements of the unemployment theory of creating and destroying jobs. Silva and Toledo (2009) investigated aspects of the relationship between job vacancy developments, unemployment and labor cost.

## **2. Research methodology, data, results and discussions**

### **▪ The main methodological notions**

Data analyzed are based on the Quarterly Statistical Survey on Household Workforce (AMIGO), according to Council and European Parliament Regulation no. 577/1998 on the organization of a selective labor force survey in the European Community.

From an economic point of view, the active population encompasses all persons supplying available labor for the production of goods and services during the reference period, including employed and unemployed people.

By activity rate, we mean the share of the active population in the age group  $x$  in the total population of the same age group  $x$ . Thus, the activity rate of the working age population is the share of the active population aged 15-64 years in the total population aged 15-64 years.

The occupied population includes all persons aged 15 and over who have been engaged in an economic activity producing goods or services for at least one hour<sup>1</sup> during the reference period (one week) in order to obtain income in the form of salaries, in kind payments or other benefits.

From 2011 self-employed workers and unpaid family workers working in agriculture are considered to be employed only if they own the agricultural production they have obtained and meet one of the following conditions: agricultural production is intended, at least in part, for sale or exchange in kind and agricultural production is intended for own consumption if it accounts for 50% of the total household consumption.

Apart from the persons who have a job and worked during the reference week, regardless of their professional status, they are considered to be employed persons and persons who, during the reference week, have had some kind of paid work or income earners; paid apprentices and trainees, working full-time or part-time work, and members of the armed forces.

As a consequence, the employment rate expresses the share of the employed population in the age group in the total population of the same age group.

The grouping of the population by occupation refers to the function or occupation of the actual active persons, by occupation, meaning the useful activity that generates income for a person. In the survey, the normal work schedule of the employed persons was defined as complete or partial, according to the respondents' statement.

The unemployed category, according to the International Definition (ILO), includes persons aged 15-64 who simultaneously fulfill the following conditions: not to have a job; are willing to start work in the next two weeks; or have been in active search for a job at any time during the last four weeks.

Unemployment rate is the share of the unemployed, according to the International Definition (ILO), in the active population.

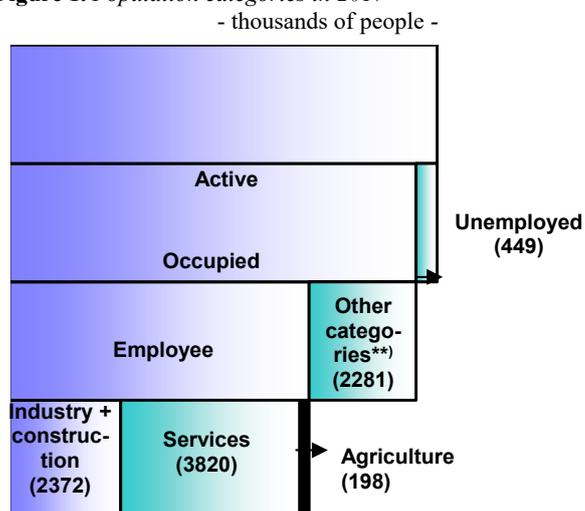
By the long-term unemployment rate we understand the proportion of unemployed for 12 months and over in the active population. The structure of labor force participation by sex and environment is summarized in Table 1.

**Table 1.** Participation of the population in labor force, by sex and environment, in 2017

	Total	Male	Female	Urban	Rural
	- thousands of people -				
Active population	9,120	5,184	3,936	4,994	4,126
from which:					
Occupied population	8,671	4,894	3,777	4,769	3,902
Unemployed	449	290	159	225	224
	- percent -				
<b>Activity rate</b>	67.3	76.2	58.2	67.9	66.6
20-64 years	72.3	81.8	62.6	72.3	72.3
15-24 years	30.0	34.6	25.0	21.5	37.5
25-54 years	83.4	92.2	74.2	86.1	79.9
55-64 years	46.0	57.4	35.7	41.4	52.5
<b>Occupancy rate</b>	63.9	71.8	55.8	64.8	62.7
20-64 years	68.8	77.3	60.2	69.2	68.4
15-24 years	24.5	28.4	20.4	17.1	31.1
25-54 years	79.9	87.6	71.8	82.8	76.0
55-64 years	44.5	55.3	34.9	39.9	51.1
<b>Unemployment rate</b>	4.9	5.6	4.0	4.5	5.4
15-24 years	18.3	18.1	18.6	20.8	17.0
25 years and over	3.9	4.6	3.0	3.8	4.1

▪ **The employment rate of the working age population (15-64 years old) was up 2017 compared to 2016**

Thus, in 2017, the occupancy rate of the 20-64 year-old population was 68.8%, 1.2% above the national target of 70% set by the Europe 2020 Strategy. Romania's active population was 9,120 million people, of which 8,671 million were employed and 449,000 were unemployed. Figure 1 shows the structure of the population (active, employed, employees) in 2017.

**Figure 1. Population categories in 2017**

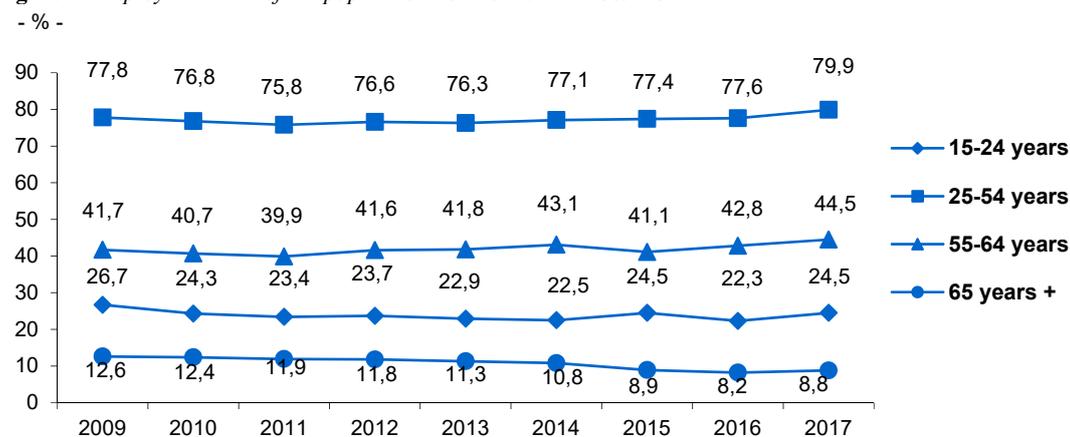
\* Including armed and assimilated forces and people working in the informal and black sectors.

\*\* Other categories: employers, self-employed workers, unpaid family workers and members of an agricultural or non-agricultural cooperative.

Source: National Institute of Statistics, Press release no. 99/18 April 2018.

The employment rate of the working age population (15-64 years) was 63.9% in 2017, up from 2.3% in the previous year. The employment rate was higher for males (71.8%, compared with 55.8% for women). The employment rate was higher in the urban area (64.8%, compared to 62.7% in rural areas). The employment rate of young people (15-24 years) was 24.5% and that of elderly people (55-64 years) of 44.5%. The employment of young people (15-24 years old) was 24.5% and that of the elderly (55-64 years) of 44.5%.

There is a lower number of the employed population in the 55-54 age group. These are synthesized in Figure 2.

**Figure 2. Employment rate of the population able to work in 2009-2017**

Source: National Institute of Statistics, Press release no. 99/18 April 2018.

The highest level of employment was registered among graduates of higher education (87.9%). 67.5% of people with average education and only 42.5% of those with low education. The number of employees has increased compared to the previous year (+189,000 persons), still holding the highest share (73.7%) in the total employed population.

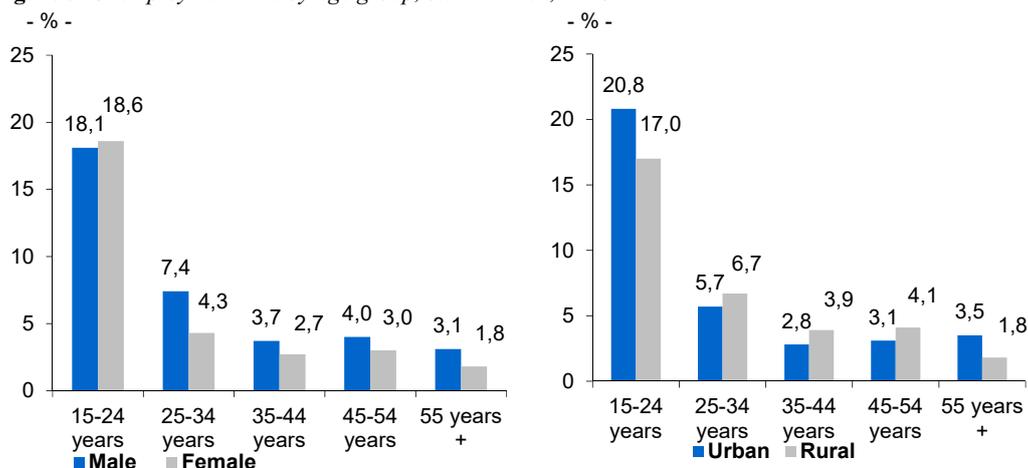
Self-employed and unpaid family workers accounted for 25.3% of the total employed population. In agriculture, forestry and fishing, skilled workers accounted for 19.2% of the total employed population. In the total employed population the qualified workers held 16.9%, the specialists in various fields of activity (15.4%) and the workers in the field of services (14.8%). 22.8% of employed persons worked in the agricultural sector, 30.1% in industry or construction and 47.1% in services. In the non-agricultural sectors, 6,696 million persons were employed, of which in manufacturing (24.9%), trade (18.0%) and construction (10.4%). Analyzing these data as compared to 2016, we find that the number of people employed in public administration and defense (-10,000 persons), as well as those in the extractive industry (-4,000 persons), real estate transactions (-3,000 persons) and hotels and restaurants (-2 thousand persons).

Increases over the previous year were recorded in manufacturing (+70,000 persons), trade (+30 thousand people), agriculture, forestry and fishing (+23,000 persons), professional, scientific and technical activities and transport and storage (+ 20,000 people).

Of the total employed, 682,000 people (7.9%) worked part-time, most in the agricultural sector (83.8%). During the analyzed period, the average working week for the main activity was 38.8 hours per week, 130,000 people who also pursued secondary activities, worked on average 13.3 hours per week. Please note that in 2017 the unemployment rate was 4.9%, down from 2016 when it was 5.9%.

By gender, the unemployment rate was 1.6% (5.6% for men versus 4.0% for women) and 0.9% for residential areas (5.4% in rural versus 4.5% in urban areas). It attracts the high unemployment rate -18.3% among young people (15-24 years).

**Figure 3.** Unemployment rate by age group, sex and area, in 2017



Source: National Institute of Statistics, Press release no. 99/18 April 2018.

Unemployment was higher among low and medium education graduates (6.8% and 5.1% respectively). In the case of people with higher education, the unemployment rate was only 2.4%. The long-term unemployment rate (one year and over) was down 2.0%. The share of long-term unemployment (one year and over in total unemployed) was 41.4%. In the case of the young unemployed group (15-24 years old), the long-term unemployment rate was 11.1% and the long-term youth unemployment rate of 60.4%.

▪ **Analyze the evolution of vacancies in 2017**

• **The main methodological aspects regarding vacancies in the economy**

Data on vacancies and job vacancies data are obtained through a quarterly selective statistical survey, having as reference period the middle month of the quarter.

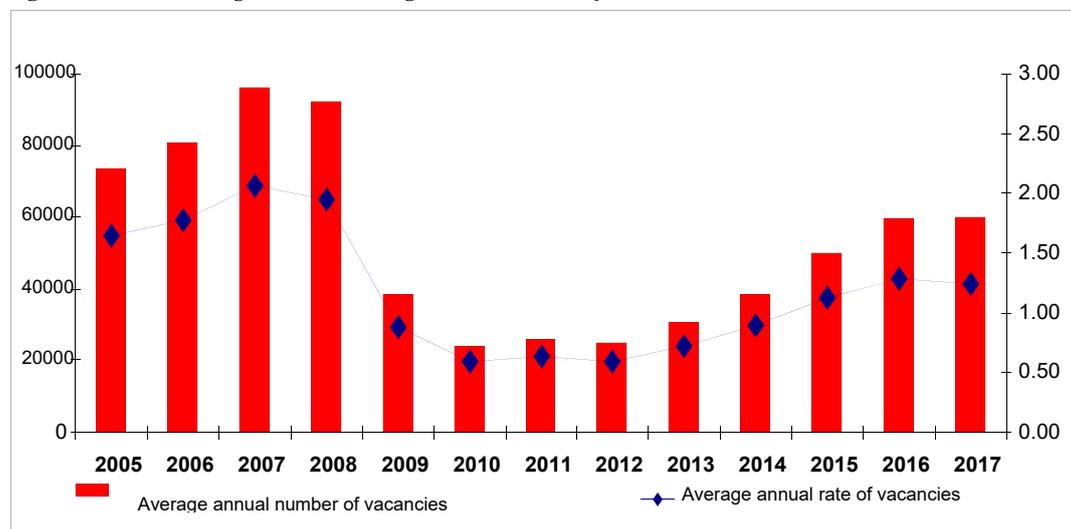
Aggregation of indicators is made after the main activity of the respondent economic-social unit, respectively by the main activity carried out by each of the subordinated local units.

The number of vacancies includes the number of paid, newly created, unoccupied or vacant posts for which: the employer takes concrete action to find a suitable candidate for the job and wishes immediate employment or within a specific period of time, established by the employer. Job vacancies and posts intended for people outside the enterprise, whether fixed or indefinite, with normal or part-time work, are considered as vacancies.

The average annual number of job vacancies is calculated as a simple arithmetic mean of the data for the four quarters, and the number of occupied posts is measured by the employee performance indicator at the end of the middle quarter of the reference quarter.

The average annual job vacancy rate is the ratio between the annual average number of vacancies and the total annual average number of jobs (occupied and vacancies). This indicator is calculated by:

In 2017, the average annual job vacancy rate was 1.24%, slightly decreasing (0.04 percentage points) as compared to the previous year and the average annual vacancy rate was 60.0 thousands, slightly increasing by 0.2 thousand vacancies compared to the previous year. Job vacancy data is presented in Figure 4.

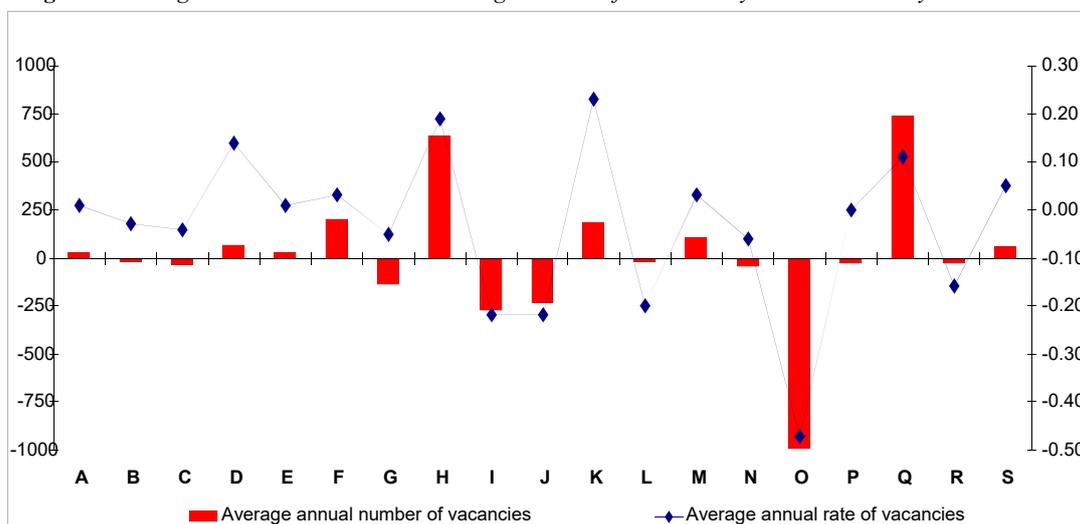
**Figure 4.** Annual average rate and average annual number of vacancies in 2005-2017

**Source:** National Institute of Statistics, Press release no. 99/18 April 2018.

In 2017, the annual average rates of vacancies with the highest values were registered in the public administration (3.26%), health and social care (2.79%), other service activities (2.48%), respectively activities entertainment, cultural and recreational activities (2.38%). In manufacturing, more than one fourth of all vacancies (15.8 thousand vacancies) concentrated and the average annual value was 1.33%. The lowest values in terms of both the rate and the average annual number of vacancies were registered in the mining and quarrying activities (0.16% and 0.1 thousand vacancies respectively).

The budget sector accounted for over one third of all job vacancies, most of them in health and social assistance (9.2 thousand vacancies), followed by public administration (8.7 thousand vacancies), respectively education 2.5 thousand vacancies. The most significant decreases in both the rate and the average annual number of vacancies were recorded in public administration activities (-0.47% and -1.0 thousand vacancies respectively), hotels and restaurants (-0.22%, respectively -0.3 thousand vacancies), information and communications (-0.22%, respectively -0.2 thousand vacancies).

The most relevant increases in the annual average rate of vacancies were recorded in the financial intermediation and insurance activities (+0.23%), transport and storage (+0.19%), the average annual number of places vacancies increased in health and social care (+0.7 thousand vacancies), respectively in transport and storage (+0.6 thousand vacancies).

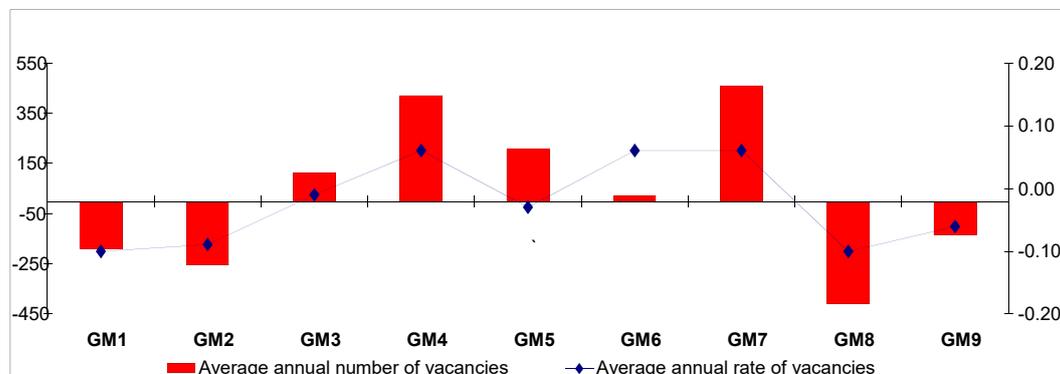
**Figure 5.** Average annual rate and annual average number of vacancies by national economy

Source: National Institute of Statistics, Press release no. 99/18 April 2018.

The highest demand for wage labor expressed by employers through the rate and the average annual number of vacancies was among the occupations of specialists in various fields of activity and the lowest availability of the demand for wages, was among the occupations of skilled workers in agriculture, forestry and fishing

Compared to 2016, decreases in the annual average rate of vacancies were among the occupations of members of the legislature, the executive, senior public officials, senior officials and senior officials. Decreases were among the occupations of operators in installations and cars; machine and equipment assemblers and specialists in various fields of activity. Slight increases in the annual average rate of vacancies were registered among the occupations of administrative officials, skilled workers in agriculture, forestry and fishing, respectively skilled workers and assimilated workers.

**Figure 6.** Average annual rate and annual average number of vacancies, by major occupation groups (%)

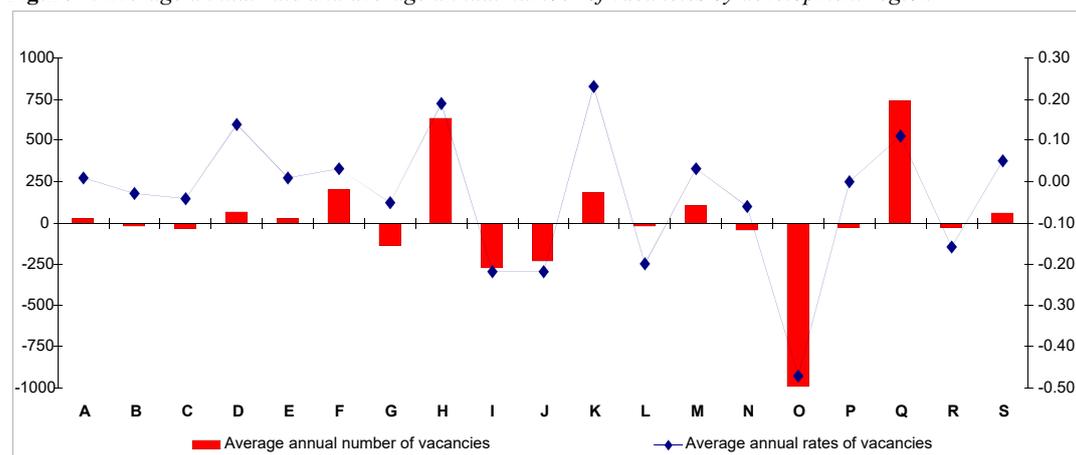


Source: National Institute of Statistics, Press release no. 99/18 April 2018.

In terms of territory, in the analyzed year, the highest annual average vacancy rates were registered in the West (1.75%) and Bucharest-Ilfov (1.52%) respectively. Regarding the average annual number of vacancies, employers showed the most significant demand for labor force in the Bucharest-Ilfov region, 16.3 thousand vacancies, which accounted for over 27% of the vacancies from across the country. The Northwest (9.3 thousand vacancies) and Western regions (8.6 thousand vacancies) accounted for almost 30% of the total number of vacancies.

The South-West Oltenia region recorded the lowest values (0.63% and 2.4 thousand vacancies respectively), followed by the South-East region (0.87% and 4.3 thousand vacancies respectively) together hold over 11% of total vacancies.

Figure 7. Average annual rate and average annual number of vacancies by development region



Source: National Institute of Statistics, Press release no. 99/18 April 2018.

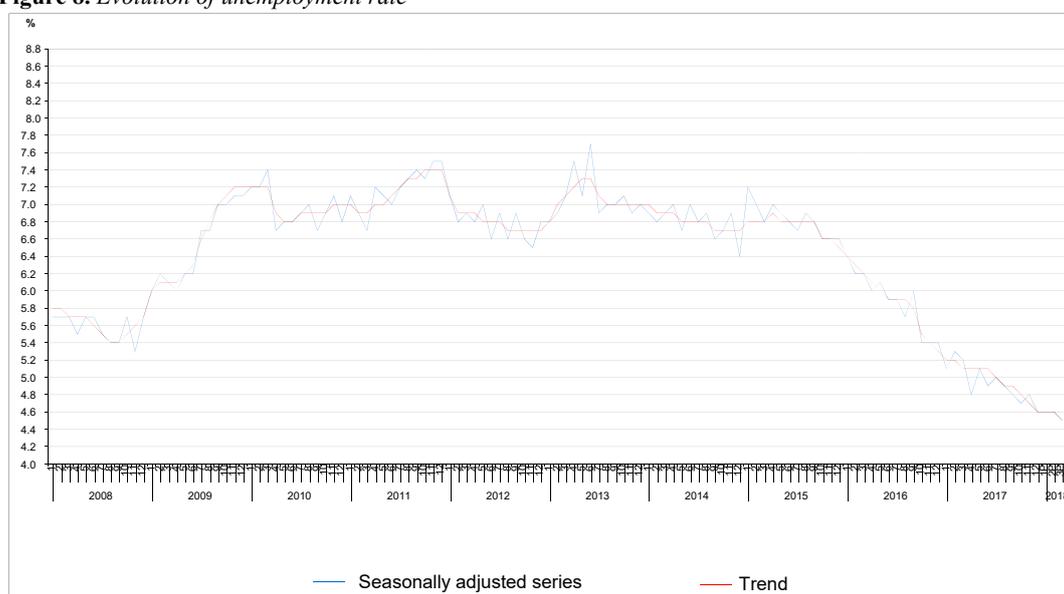
Compared to 2016, the annual average vacancy rate recorded increases in the South-West Oltenia (+ 0.12%) and Northwest (+ 0.05%) respectively.

The average annual number of job vacancies also increased in the above mentioned regions, Northwest (+0.6 thousand vacancies), respectively Southwest Oltenia (+0.5 thousand vacancies), alongside Bucharest -Ilfov (+0.3 thousand vacancies). Decreases in these indicators were recorded in the South-Muntenia region (-0.15% and -0.6 thousand vacancies respectively), followed by the West regions (-0.09% and -0.2 thousand vacancies respectively) and Southeast (-0.07%, respectively -0.2 thousand vacancies).

▪ **Evolution of the seasonally adjusted unemployment rate in the first quarter of 2018**

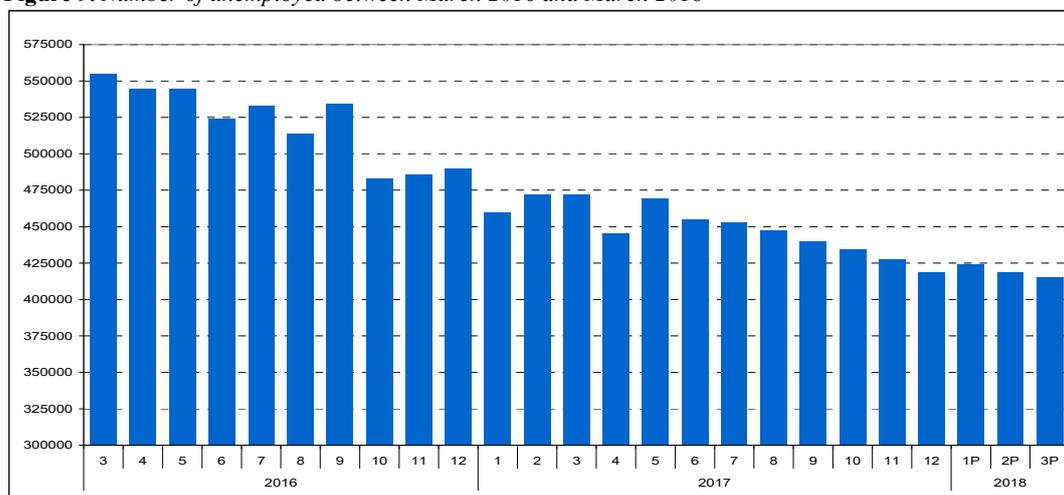
The unemployment rate in March 2018 decreased by 0.1 percentage points compared to the previous month, while in men it was 0.8% higher than in women. The evolution of the unemployment rate between 2008 and March 2018 is presented in Figure 8.

**Figure 8.** Evolution of unemployment rate



**Source:** National Institute of Statistics, Press release no. 105/02 May 2018.

The number of unemployed (aged 15-74) was 415,000 in March 2018, down from the previous month (419,000 persons), but also from the same month of the previous year (472,000 persons). The monthly evolution of the number of unemployed over the last two years is presented in Figure 9.

**Figure 9.** Number of unemployed between March 2016 and March 2018

Source: National Institute of Statistics, Press release no. 105/02 May 2018.

By gender, the male unemployment rate exceeded that of women by 0.8% (4.9% for males and 4.1% for females).

**Table 2.** Unemployment rate by sex in March 2017 - March 2018 (%)

	2017											2018		
	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. <sup>P</sup>	Feb. <sup>P</sup>	Mar. <sup>P</sup>	
Total														
15-74 years	5.2	4.8	5.1	4.9	5.0	4.9	4.8	4.7	4.8	4.6	4.6	4.6	4.5	
15-24 years	19.1	17.3	17.3	17.3	17.8	17.8	17.8	20.0	20.0	20.0	..	..	..	
25-74 years	4.2	3.8	4.2	4.0	4.0	4.0	3.9	3.6	3.6	3.5	3.5	3.4	3.4	
Male														
15-74 years	5.9	5.5	5.9	5.7	5.6	5.5	5.5	5.3	5.3	5.1	5.0	4.9	4.9	
15-24 years	19.4	17.2	17.2	17.2	16.8	16.8	16.8	19.2	19.2	19.2	..	..	..	
25-74 years	4.8	4.6	5.1	4.9	4.7	4.6	4.6	4.2	4.2	4.0	3.9	3.8	3.8	
Female														
15-74 years	4.3	3.8	4.0	3.8	4.1	4.1	4.0	4.0	4.0	4.0	4.1	4.1	4.1	
15-24 years	18.5	17.4	17.4	17.4	19.0	19.0	19.0	20.5	20.5	20.5	..	..	..	
25-74 years	3.3	2.9	3.0	2.8	3.1	3.1	2.9	2.9	2.8	2.8	2.9	2.9	2.8	

<sup>P</sup> Provisional data.

Source: National Institute of Statistics, Press release no. 105/02 May 2018.

For adults (25-64 years), the unemployment rate was estimated at 3.4% for March 2018 (3.8% for men and 2.8% for women). The number of the unemployed aged 25-64 represented 69.0% of the total number of unemployed estimated for March 2018.

## Conclusions

The survey shows that 2017 was a positive year with a sustained economic growth (6.9%), which is the highest of all EU countries and not only because of the other

European countries that are not members of the European Union the economic growth rate was somewhat lower.

Against this backdrop of positive economic outcomes, there was also an improvement in the employment rate of the working age population, as well as the level of retirement was high enough, exceeding the age limit of 64 years, activity specific to the age of the work.

Another conclusion is that unemployment has an acceptable level and, compared to that in the other EU Member States, is a positive level, but if we consider the existence of over 4 million Romanian citizens tax residents in other European states we find an element of concern.

Better employment, a context in which the unemployment rate will remain at a reasonable level or even fall, would be due to the increase in domestic investments, the use of foreign direct investments to be attracted to the economy of Romania by bringing legislation to a stimulating level for foreign investors and, above all, the use of European non-reimbursable funds as well as those which must be based on Romanian projects or projects to which Romania will cooperate in the European Union.

Another conclusion is that vacancies have shown a trend of growth but this is only partially positive because the newly created places are not in line with the level of professional training of the population that is out of employment or is in the unemployment sphere.

A program for the development of the Romanian economy based on the middle way (investment and consumption) will be able to ensure in the future the improvement of the employment of the working age population and the absorption of the unemployed population, together with a possible return and reintegration of the Romanians residing tax in other European countries.

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