

---

# Worrying Labour Market Tendencies in the European Union

**Annamaria Artner, Krisztina Sőreg<sup>1</sup>**

**Abstract:** *The authors examine the developments that have characterized the European Union labour market in the past decades, relying mainly on Eurostat data. They focus on the tendencies of employment and unemployment in general, the changing conditions of work, the development of “atypical” forms of employment, the associated fluctuations of the social situation reflected in the different measures of poverty and social exclusion, and the distribution of incomes. The researchers touch upon the question of migration from the viewpoint of the European labour market and provide an overview of the community policies of the EU that have aimed at alleviating the problems of employment since 1970. The authors conclude that the EU labour market has been significantly differentiated during the past few decades and the precarious forms of “atypical employment” have grown in weight. The common policies have not been able to prevent the deteriorating tendencies of employment and they do not seem to be more successful in the near future either.*

**Keywords:** *atypical employment, European Social Fund, labour market, precariat, social conditions.*

**JEL classification:** *I32, I38, J21, J28*

---

## Introduction

This article aims at offering a snapshot of the labour market status in the European Union starting with the year 2001, based mainly on Eurostat data. Given the complexity of the topic chosen for this research, the overview may not be wide-ranging, but it can be suitable for pointing out some decisive tendencies.

We intend to present an overview that concentrates on the main developments associated with the period of 2000 - 2016, depending on the annual data availability. At the time of writing this article, full year data for 2017 had not yet been available. First, we are going to survey some changes that have occurred with relation to employment, unemployment as well as poverty and their composition (e.g. youth unemployment, the working poor, the precarious and various dimensions of poverty). To continue, we are also discussing the extent of the “atypical” forms of employment as well as their effect on labour market. We will also touch upon some aspects of migration; however, the current issue of migration crisis will not be detailed since it represents an entirely different problem and would definitely require a

---

<sup>1</sup> **Annamaria Artner** is a senior research fellow at the Institute of World Economics of the Centre for Economic and Regional Studies of the Hungarian Academy of Science and professor of King Sigismund University, Budapest. Her main study fields include labour markets, crisis and world system. E-mail: [artner.annamaria@krtk.mta.hu](mailto:artner.annamaria@krtk.mta.hu).

**Krisztina Sőreg** is a PhD candidate at the Faculty of Science of Public Governance and Administration of the National University of Public Service, Budapest. She focuses on the economic growth of the developing countries, persistent growth slowdowns and income traps. E-mail: [krisztina.soreg@gmail.com](mailto:krisztina.soreg@gmail.com).

separate study (see e.g. Attina, 2016). Finally, we outline what the Union has carried out on the community level from the 1970s in order to solve the labour market problems and the social tensions which have definitely become more and more complicated and severe.

Technological development has always had a substantial influence on employment. This is the case with the current technological change that is called “Industry 4.0” or the 4<sup>th</sup> Industrial Revolution, including the increasing use of smart and interconnected IT tools, the “Big Data”, robotics, the cloud technology or the “Internet of things” in general. Many believe that the spread of latter technologies may cause the rise of unemployment, affecting particularly but not exclusively, the low skilled jobs, and emphasise the role of education as a primer tool in solving the problem (Flynn et al. 2017, Mařovćiková 2017, Walwei 2016, World Bank 2016). We do not intend to discuss this problem in the frames of the current paper but we have to mention that concerns about technological unemployment go back to the 18<sup>th</sup> century’s first industrial revolution, in spite of the fact, that the technology determines only the amount of working hours it needs, but reveals nothing about how many workers, for what type of wages, in which form of employment or under which working conditions should carry out these working hours.

Piasna (2017) investigated how the quality of jobs had changed between 2005 and 2015 in Europe. She constructed the so called “Job Quality Index”, which encompasses several work and employment characteristics and as such, serves as a synthetic measure of the overall job quality. She concludes that although there has been a great variation and an increasing polarization among EU member states, the overall picture shows a sluggish wage growth and a worsening of non-wage job quality. Furthermore, the increase of employment in the last years of the examined period can be labelled as “a ‘bad jobs’ recovery, marked by a return to nonstandard forms of employment and with average levels of job quality in the EU remaining below pre-crisis levels” (Piasna 2017:35). Our findings are in line with this. The trends revealed by the data analysis suggest that the labour market of the EU has significantly differentiated over the past few decades and on the lower end of this spectrum there is an increasing number of people living and working under insecure conditions, thus earning low incomes. This social layer has been recently called precariat, although the spread of the precarious forms of employment concerns more people on the labour market. This phenomenon basically derives from free market mechanisms. Their negative impact on relative wages has been further strengthened by labour migration shifting from poorer member-states towards the EU-countries that offer higher income opportunities. Unfortunately, common policies have not yet been able to halt this inherent worsening of the European labour market.

### **Employment and unemployment**

The welfare systems of the European Union are considered highly advanced and extensive in international comparison. These systems had been developed until the 1970s in Western and also Eastern Europe. Thereafter, over the last few decades – and especially due to the austerity policies after the 2008 crisis – the systems have been cut concerning their extent, conditions as well as the spectre of benefits.

The decrease of the “generosity” of welfare systems might be detected, first of all, in the change of pension schemes. This is reflected in the fact that between 2001 and 2016, the duration of working life and the employment rate of the 55-64 age group – with the exception of Romania and Greece – has increased in every EU Member State. The upward trend of the employment of elderly people continued in the first three quarters of 2017.<sup>2</sup> At the same time, it is quite informative that the longest duration of working life can be observed in case of the most developed welfare systems: the top 6 countries of Europe are Sweden, the Netherlands, the non-EU-member Switzerland, Norway and Iceland, followed by the United Kingdom, Germany and Finland. On one hand, an extensive working life makes possible to finance well-being and on the other hand, welfare (including health care system, education, recreation, etc.) enables people to spend their later years meaningfully, while being economically active. However, it should furthermore be underlined that the raising of retirement age, the increase of the age at which full pension can be drawn and the reduction of the relative value of pensions (Carone et al. 2016) contribute to welfare decrease even if the elderly people’s ability to work is protracted. Work and wage labour are not equivalent concepts, such as that being able to work at an older age does not correspond to being obliged to wage work.

Between 2001 and 2016, the employment rate of the total population (15-64 age group) and of the 20-64 age group increased in most Member States and these trends continued in 2017 as well (in 2017Q3 the employment rates reached 67.8 and 72.3 percent respectively). Steeper decline could be experienced only in the case of Greece, Cyprus and Portugal, while a more moderate one was produced in Romania, Denmark and Ireland. The most dynamic (of more than 8 percentage points) growth was presented by the southern periphery of the Union, by Malta and – from the 2000s, due to the labour market related “Hartz-reforms” – by Germany as well. However, for the majority of Member States, among 15-64-year-old, the rate does not achieve 70 percent and is far from 75 percent in the 20-64 age group, targeted within the Europe 2020 strategy (see Figure 1).

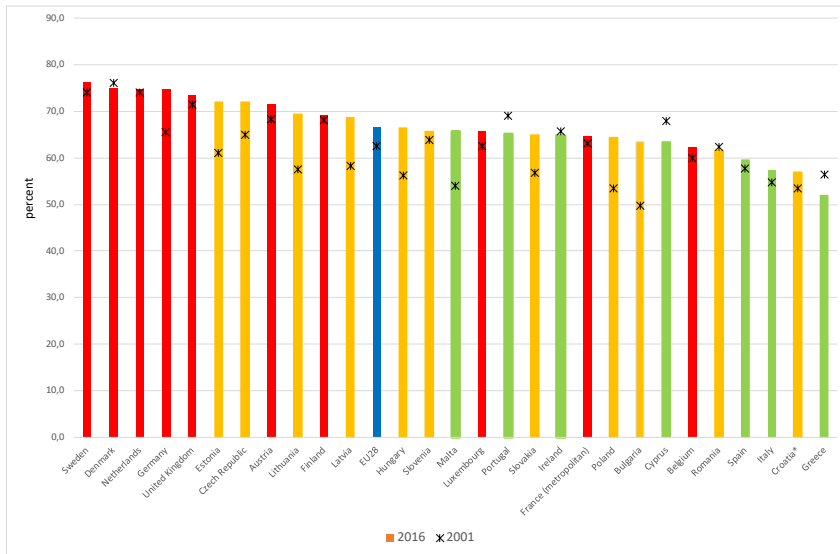
Since the beginning of the 2000s, the share of the 11 Central Eastern European Countries (hereinafter the CEEC-11) from the total employment of the European Union (EU-28) has been essentially unchanged, around 20 percent. However, their proportion from total Community GDP shows different tendency, increasing from 4.7 to 8 percent between 2000 and 2008 and since then it has remained flat.<sup>3</sup> On one hand, it indicates that the region’s production is much more labour intensive compared to the more developed countries of the EU (including the average of the southern and north-western periphery based 7 Member States – hereinafter SNW-7<sup>4</sup>) and on the other hand, the effectiveness of the region’s production (GDP per person employed) had been growing dynamically enough to produce convergence to the more developed ones. There had been some convergence before the 2008 crisis, but following it, the process has stopped. At the same time, in case of the CEEC-11, real production per hour was growing much faster in the pre- and post-crisis periods than in other economies of the EU (Figure 2). In order to answer the question of why it had not had

<sup>2</sup> Eurostat online database, Duration of working life – annual data (lfsi\_dwl\_a) and Employment and activity by sex and age – annual data (lfsi\_emp\_a) and quarterly data (lfsi\_emp\_q)].

<sup>3</sup> Own calculations based on Eurostat online database, GDP and main components [nama\_10\_gdp].

<sup>4</sup> Cyprus, Greece, Ireland, Malta, Italy, Portugal, Spain.

Figure 1. Employment rate within the EU-28 Member States in the 20-64 age group, 2001 and 2016, percent



\*: In Croatia 2003 instead of 2001

Note: red: Core-10, green: SNW-7, orange: CEEC-11

Source: Eurostat online database, Employment and activity by sex and age – annual data (lfsi\_emp\_a)

an effect on the further growth of the CEEC-11 weight within EU-28's GDP following 2008, some further research has to be carried out. It may relate to the more intensive decrease of the full-time contract (declared) working hours' number within the region in contrast with other Member States. Partly due to the working abroad tendencies, the number of people having a second job has also fallen after 2008 in CEEC-11's labour market, while in case of the 10 strongest economies (Core-10)<sup>5</sup> there has been an increase and concerning SNW-7, the number has not changed.<sup>6</sup>

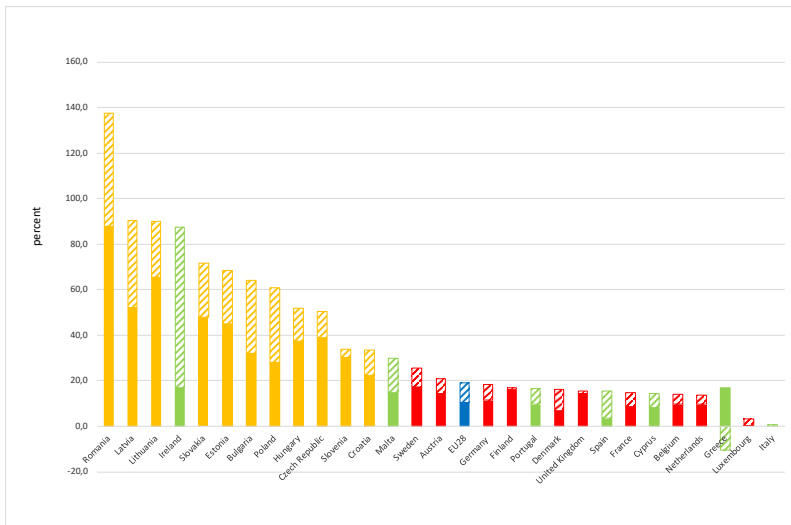
Since the 1970s, Europe's unemployment has been higher than that of the US or Japan. In 2000 the average unemployment rate of EU-28 and Euro-19<sup>7</sup> was approximately more than double of the US' and Japan's value. Although due to the impact of the 2008 crisis the indicators have slightly converged, Europe has been lagging behind the two developed economies again: in 2017 the unemployment rate of EU-28 was 7.6 percent, in case of the 19 Eurozone members it was 9.1 percent, in the US 4.4 and in Japan only 2.8 percent.

<sup>5</sup> Austria, Belgium, Denmark, the United Kingdom, Finland, France, the Netherlands, Luxembourg, Germany, Sweden.

<sup>6</sup> Eurostat online database, Average number of usual weekly hours of work in main job, by sex, professional status, full-time/part-time and economic activity (from 2008 onwards, NACE Rev. 2) - hours [lfsa\_ewhun2] and Employed persons having a second job by sex and educational attainment level (1 000) [lfsa\_e2ged].

<sup>7</sup> The founding „Six” (Be-Ne-Lux, France, Germany, Italy), the Mediterranean „Three” (Greece, Portugal, Spain), two of the northern developed small states (Finland, Ireland), the Baltic states (Estonia, Latvia, Lithuania), three Central European countries (Austria, Slovakia, Slovenia) and two Mediterranean islands (Cyprus and Malta).

Figure 2. The change of real productivity per hour over the periods of 2000 to 2008 and 2008 to 2016, 2000=100, percent



Note: red: Core-10, green: SNW-7, orange: CEEC-11, homogeneous column part: 2000-2008, striped column part: 2008-2016

Source: Author's own calculations on the basis of the Eurostat online database labour productivity and unit labour costs [nama\_10\_lp\_ulc], Real labour productivity per hour worked

Following the turn of the millennium, the number of unemployed in the EU has risen by more than one million, though the growth has been concentrated on the older Member States (EU-15). Among the “newly” – in and after 2004 – integrated 11 Central Eastern European Countries, unemployment has dropped by half and thus the share of CEEC-11 residents has significantly declined in the total unemployment of the EU-28.<sup>8</sup> The explanation of these trends lies partly in the reallocation of the more labour-intensive phases of production to the eastern periphery of the EU and partly in the labour migration flowing from East to West. Besides, in certain places (like for example in Hungary), workfare activities sponsored by the state also play a relevant role in this issue. It is clear that Western European employers willingly occupy Eastern European labour force – what we will discuss later. Women’s unemployment rates have been usually considerably higher than that of men but the gap has narrowed in the last decades (Eurostat, 2017b).

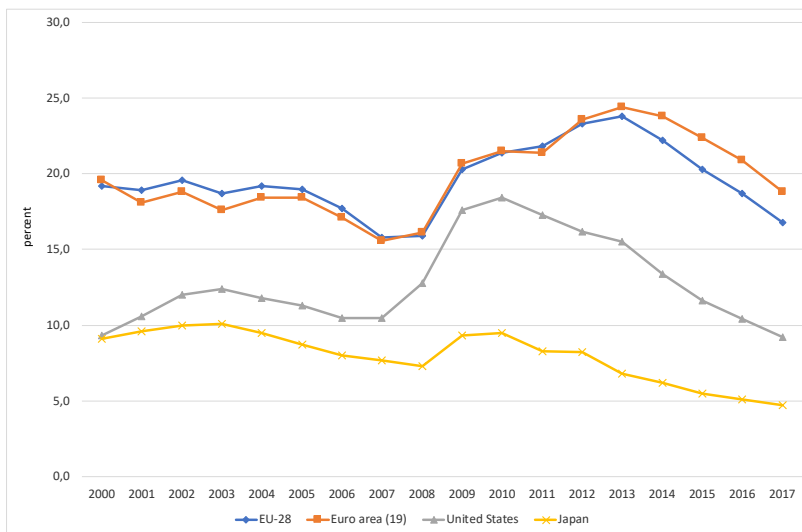
The unemployment rate expresses the number of unemployed as a percentage of the total number of the economically active (i.e. employed plus unemployed) population. Since school attendants do not constitute economically active people, unemployment rate is always higher in case of the youth (among 15-24-year olds) than among the older groups. Nonetheless, the youth unemployment is a sensitive issue for the society because if someone does not manage to find an appropriate job after finishing school, is more likely to become unemployed and poor later in his/her life as well (Mroz and Savage 2006, Scarpetta et al. 2010). However, youth

<sup>8</sup> Author's own calculations based on Eurostat online database, Unemployment by sex and age – annual average (une\_rt\_a).

unemployment cannot be examined independently from the general situation of labour market. Young people are new entrants on the labour market and the expansion or shrinkage of employment affects recruitment first (in case of expansion recruitment increases and when the market is narrowing, recruitment is the first one to cease). Therefore, the question of youth unemployment cannot be understood or handled properly without dealing with the general problems of labour market and also without their correct interpretation and effective management (for more details see Artner 2013).

Over the last two decades the youth unemployment rate of the EU-28 has fluctuated around 20 percent, rising sharply to 23% in 2012 and 2013 and falling back to 16.8 percent in 2017. Due to the high values experienced in Spain and Greece, the Eurozone is suffering from a higher overall youth unemployment: in 2017 the average rate of the 19 countries was 18.8 percent (Figure 3).

Figure 3. Youth unemployment rate of the less than 25-year-olds, 2000-2017, percent



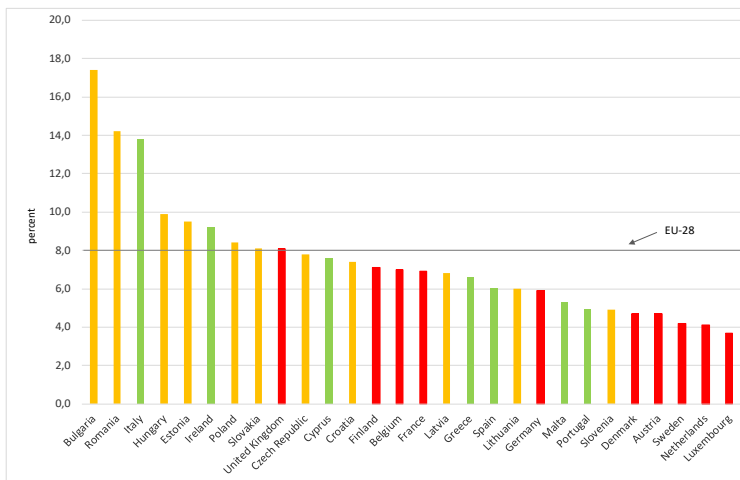
Source: Eurostat online database, Unemployment by sex and age – annual average (une\_rt\_a)

When examining youth unemployment by groups of countries, some interesting results may be revealed. Following the demographic trends (the fall of youth percentage in total population), the ratio of the less than 25-year-olds unemployed within the total pool of the unemployed has been decreasing since the 2000s in the CEEC-11 and the SNW-7 on average, while it has been growing in case of the Core-10. The percentage of young people within the unemployed in the Core-10 has lessened only after 2012, however, it is still higher nowadays than in the early 2000s. This also implies that in the Core-10, on average, the share of youth in total unemployment is much more over-represented relative to their share in the population, than in the CEEC-11 and SNW-7. One explaining factor to this situation is young people's migration from the peripheries to the core, that contributes to the fall of labour supply in sending countries and an increase of it in host countries.

The problem of young people who are neither in employment nor in education or training (NEETs)<sup>9</sup>, is another concept for measuring youth unemployment. Although the NEET-phenomenon became a topic of debate in England as far as the 1980s and it has been well-known also in Latin America for decades, it seems that public politics has not been able to remedy it so far. NEETs related data are available from 2004 in the Eurostat database<sup>10</sup>. According to it, the proportion of NEETs within the 15-29 age group was 8 percent in 2016 which is slightly lower than the 8.2 percent of 2004. The ratio of those who were unwilling to work, reached 4.7 percent in 2016 which shows a slightly lessening tendency compared to the 5 percent occurring between 2004-2005, but it also reflects that almost two thirds of the NEETs have no intention to be integrated in the labour market under the present conditions. A higher percentage of women are inactive and show no intention to work compared to men that can be explained with women's role in the families.

In contrast with the youth unemployment rate, which is typically higher in centre countries, the NEET-rates are higher on the peripheries (CEEC-11, SNW-7) and the lowest rates can be noticed in developed centre countries (see Figure 4). This is due to the more developed active labour market policies in the advanced economies.

Figure 4. **The share of the inactive non-studying people (NEETs) compared to total population within the 15-29 age group, 2016, percent**



Note: red: Core-10, green: SNW-7, orange: CEEC-11

Source: Eurostat online database, Young people neither in employment nor in education and training by sex, age and labour status (NEET rates) (yth\_empl\_150)

### Social situation in the labour market

Everyone is probably aware of the striking differences in the average or minimum wages in Europe, while less attention is given to the working poor who are present in all countries.

<sup>9</sup> Youth unemployment = unemployed persons+ unemployed persons in training. NEET = unemployed persons+ inactive persons who are not in education or training.

<sup>10</sup> Eurostat online database, Young people neither in employment nor in education and training by sex, age and labour status (NEET rates) (yth\_empl\_150).

These are the people who are employed but earn less than 60 percent of the median income of the given country – that is being poor where they live regardless of their income level compared to other, lower income countries' average workers. Between 2005 and 2016 the proportion of this in-work-at-risk-of-poverty relative to total adult (more than 18 years old) population has increased from 8.2 to 9.6 percent in the EU. There are only 6 countries where the rate of the in-work-poverty has definitely decreased, in other economies it has grown or has essentially stagnated.<sup>11</sup> However, the number of working poor depends not only on their income but on the level of the national median income as well. This can create some odd situations, like for example in Greece during the last couple of years: since the median income has been declining for years due to the crisis, many of the previously poor managed to upgrade from this group if their income had not fallen or had decreased at a smaller rate than median income. It means they might have become impoverished but are not considered poor as others had grown poor at an even higher rate.

This problem is also true for income poverty in general. In aggregate level in the EU the “at-risk-of-poverty rate” increased from 16.5 in 2006-2008 to “only” 17.3 percent in 2016 compared to the median of the respectable year. However, Eurostat provides income poverty rates for fix dates as well, i.e. compared to fix median incomes. On this basis, by 2016 the share of the income poverty had increased more sharply in comparison with 2008; growth was spotted in 15 countries, poverty lessened in 11 economies and there was no substantial development in two countries.<sup>12</sup> The at-risk-of-poverty rate compared to 2005 is lower but shows a similar increase.

Low-wage earners are those employees (excluding apprentices) who earn two-thirds or less of the national median gross hourly earnings in the given country. In 2014 their proportion relative to all employees reached 17.2 percent in general and 30.1 percent for the less than 30 years old population, both shares showing a slightly increasing trend since 2006. The growth has been characteristic mostly for Core-10, where in seven of the ten countries the weight of the low-wage earners has grown, while eight CEE-11-countires and two of SNW-7 have experienced a decline.<sup>13</sup>

Income related poverty is not the only form of the poverty. The EU is also recording the number of those who are vulnerable for other reasons, e.g. suffering from severe material deprivation (affording themselves at least 4 consumer categories from 9) or living in households with very low work intensity. These groups as well as the above-mentioned income poor compose the group of people “at risk of poverty or social exclusion”. According to the Europe 2020 strategy accepted in June 2010, the Union aims at raising 20 million people from this group by 2020. In 2008 – as a reference year, against which the 20 million decrease should be realized – 117.23 million people, namely the 23.7 percent of total population were at risk of poverty or social exclusion excluding. Due to the crisis of 2008, the number of people at risk of poverty or social exclusion has grown and in 2012 peaked at 123.6 million (24.7% of EU population). Since then, the number is thankfully declining, however, in 2016

---

<sup>11</sup> Eurostat online database, In-work at-risk-of-poverty rate by age and sex - EU-SILC survey (ilc\_iw01).

<sup>12</sup> Eurostat online database, At-risk-of-poverty rate by poverty threshold, age and sex - EU-SILC survey (ilc\_li02) and At-risk-of-poverty rate anchored at a fixed moment in time (2008) by age and sex - EU-SILC survey (ilc\_li22b).

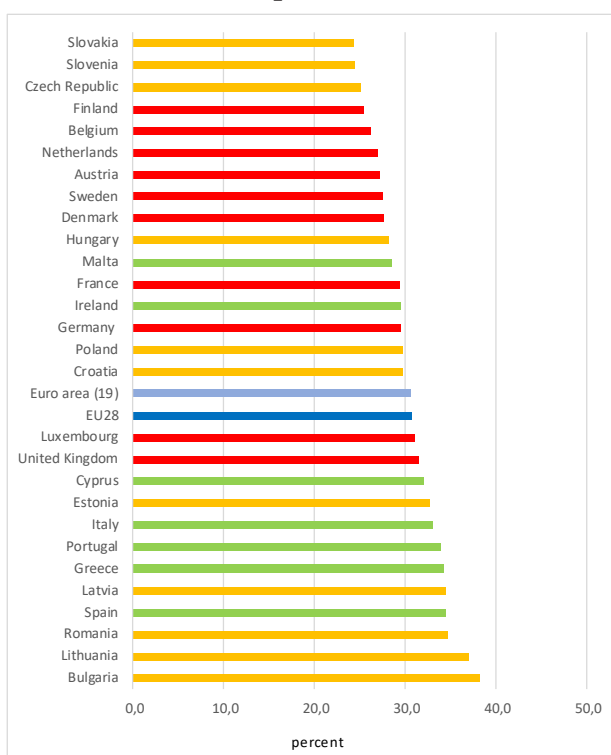
<sup>13</sup> Eurostat online database, Low-wage earners as a proportion of all employees (excluding apprentices) by age (earn\_ses\_pub1a).



it was still 118.036 million (23.5%), with 806 thousand more than in 2008.<sup>14</sup>

In the EU-28, the indicator of inequality, i.e. the Gini coefficient before social transfers (pensions excluded from social transfers) is steadily fluctuating around 36 percent reaching 36.2 percent in 2016. Social transfers have been improving the situation but at a decreasing rate over time what is reflected in the increase of the value of the Gini index after social transfer in the majority of Member States and in the Eurozone on average. Its value reached 31 percent for the EU-28 in 2014–2015 and was 30.8 in 2016 (see Figure 5). In frames of capitalism the “classical” equal society can be characterized with a 24–25 Gini coefficient after social transfers. Nowadays there are only six countries with such a low ratio in Europe. Three Post-Soviet states – Slovakia, Slovenia and the Czech Republic – and also three northern states, Finland and the non-EU-members Iceland as well as Norway.

Figure 5. Gini coefficient in the European Union after social transfers, 2016, percent



Note: red: Core-10, green: SNW-7, orange: CEEC-11

Source: Eurostat online database, Gini coefficient of equalized disposable income - EU-SILC survey (ilc\_di12)

The slow but steady progress of social polarization is reflected in the changing share of the income deciles in national income. At aggregate level, data are available only for EU-27 and only since 2005. They indicate that the poorer part of the society, i.e. the total share of the

<sup>14</sup> Eurostat online database, People at risk of poverty or social exclusion by age and sex (ilc\_peps01).

lower five (1-5) income deciles from the total equivalised disposable incomes declined from 29.8 percent to 29.1 percent between 2005 and 2016 and therefore, the share of the upper five (6-10) deciles increased.<sup>15</sup>

### **Atypical forms of employment**

The social system evolving in Europe after World War II has generalized a form of employment significantly different from the previous periods, both in the eastern and western part of the continent, providing security and predictability for millions of people in frames of employment contracts of indefinite duration, eight-hour day, six and later five working days per week. By the 1970s, this form of employment had become widespread or “typical” and the other forms of employment were called “atypical”. However, after the 1980s, due to technological changes, the needs of the globally flowing capital for flexibility and also the harmonization of the legislation within the EU, the role of “atypical” employment has been increasing and some new forms of the non-typical employment have also emerged.

Atypical forms of employment are first of all, the following: part-time, fix-term, contracted work, teleworking, casual labour, self-employment, work through employment agency (“temporary agency work”), “zero-hour contracts” or “opt-out” clause-based contracts (enabling more working hours than the legally maximized 48 hours per week), etc. Apart from these, we can consider some other, at first glance “typical” forms of employment as “atypical” if these are organized in a special work schedule (for example field work, 24-48-hour system or flexible working time). New business solutions – built on the information technologies, the deregulation of labour market and entrepreneurship rules, the polarization of livelihood opportunities, the increasing social uncertainty etc. – are also playing a vital role in the spread of the “atypical” employment. The so called “sharing” or “gig” economy” also belongs to this category.

These new forms of employment are spreading so dynamically that the “atypical” already seems to be the “typical” – especially in the case of the newly employed.

According to the European Parliament (2016), there is an increased risk of precariousness in the following cases: part-time and specifically constrained part-time jobs (when the given person would rather work more hours), self-employment, fixed-term employment, temporary agency work and posted work, zero-hour contracts, internships, informal (undeclared) labour. These are the forms of employment that are called as “atypical” employment. Following this, trends related to these employment forms will be described with the help of Eurostat data. These will refer to EU-28, the 15-64 age group and the period between 2002 and 2016, unless otherwise indicated:

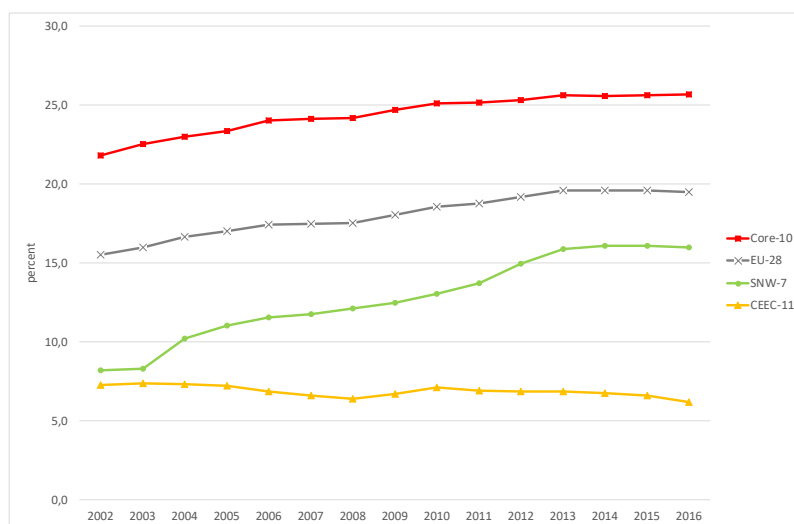
- *Part-time work* is considered as one of the most popular types of atypical employment. Although its impact and change vary considerably among countries, it can be observed that the number and proportion of part-time workers is increasing within total employment. In 2016 their number exceeded 42 million and their share approached 20 percent (in 2017Q3 the data were 42.8 million and 19.3 percent). In absolute and relative terms, most part-time workers are employed in Core-10 countries (31.8 million people, or 25.7 percent of

---

<sup>15</sup> Eurostat online database, Distribution of income by quantiles - EU-SILC survey (ilc\_di01).

employment in 2016) while both their number and share in employment is much lower and decreasing in CEEC-11 (2016: 2.7 million people or 6.1%). In SNW-7 average, the share of part-time employees in total employment between 2002 and 2016 doubled and reached 16 percent (8.1 million people) in 2016 (see Figure 6). The growth of part-time employment primarily affects the new entrants on the labour market, i.e. the 15-24 age group.

**Figure 6. The share of part-time employees compared to total employment (15-64 age group) 2002-2016, percent**



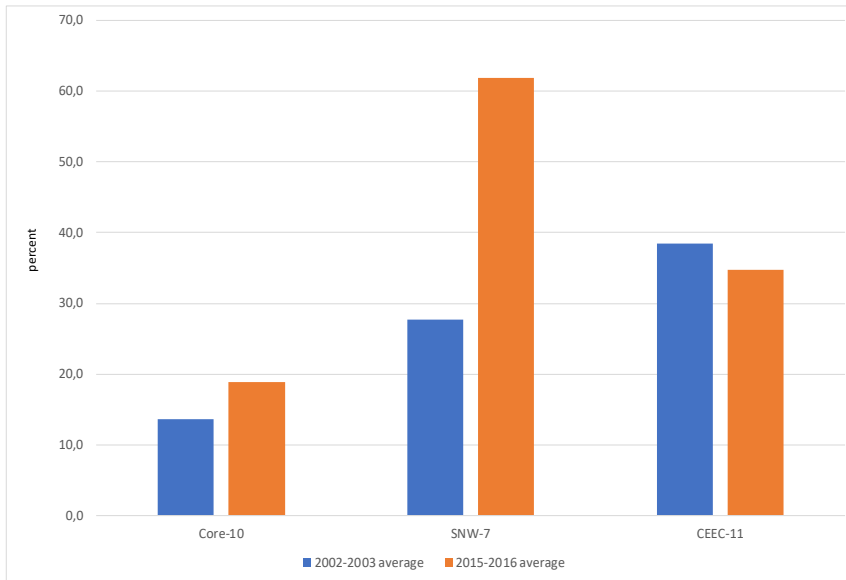
Source: Author's own calculations according to Eurostat online database, Full-time and part-time employment by sex, age and educational attainment level (1 000) (lfsa\_epgaed)

- The proportion of such “involuntary part-time employees”<sup>16</sup> compared to total part-time employment in EU-28 has increased by 10 percentage points since 2002, achieving 27.7 percent in 2016. This growth is principally attributed to the crisis-affected southern peripheries. Nowadays, in SNW-7 countries involuntary part-time workers represent two-thirds of total part-time employment in contrast with the Core-10 economies’ much lower values of 18 percent. CEEC-11 can be ranged between the two categories where the ratio of involuntary part-time workers had been decreasing by 2008, however, since then it has been growing and in 2016 peaked at 33 percent, being lower by a few percentage points than the 2002 value (Figure 7).

- Three quarters of part-time employees are women and the ratio of involuntary workers within this group is lower: in 2016 it was 24.6 percent contrary to the 37.6 percent that is typical of men. Although involuntary part-time workers do not represent a significant ratio compared to EU-28’s total employment (approximately 5%), it is still worth to underline that over the past one and a half decade the number of those who are eager to work (and earn) more than the labour demand allows, has increased by 6.4 million and reached almost 12 million in 2016.

<sup>16</sup> Source of the abovementioned group: Eurostat online database, Involuntary part-time employment as percentage of the total part-time employment, by sex and age (%) (lfsa\_eppgai).

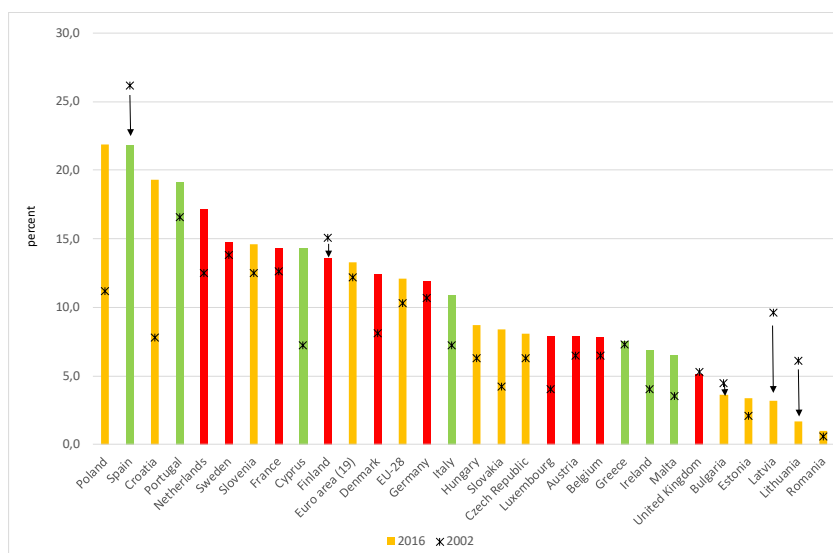
**Figure 7. Change in the share of involuntary part-time employees compared to total part-time employment in EU country groups between 2002-2003 and 2015-2016, percent**



Source: Author's own calculations based on Eurostat online database, *Involuntary part-time employment as percentage of the total part-time employment, by sex and age (%) (lfsa\_eppgai)*

- Another characteristically atypical form of employment is the *temporary employment* (fixed-term contact, or a job which terminates if certain objective criteria are met as e.g. the completion of an assignment). Although the frequency and duration of temporary contracts are very different by countries, there is still a trend of increase in their number from 20.8 million (10.3 percent of total employment) in 2002 to 26.4 million (12.1%) in 2016 for the 15-64 years old group of the EU-28. The increase continued in 2017 exceeding 28.1 million in the third quarter of that year. The share of temporary employment decreased in only five EU-countries between 2002 and 2016 (to a larger extent in Spain, Latvia and Lithuania, to a lesser extent in Bulgaria and Finland) and remained low in the UK. Its share increased at the highest pace in the peripheral countries (Poland, Croatia, Cyprus, Slovakia, Italy, Ireland and Malta) and similar dynamics could be observed in the Netherlands, Luxembourg and Denmark (see Figure 8). Accordingly, the average weight of the temporary employment in the CEEC-11 country group caught up with, and from 2013, has overachieved Core-10's average and in 2015-16 the share was around 12 percent which is broadly consistent with EU-28 average. The share has been higher and more fluctuating (from 13.6 to 16.6 percent between 2002 and 2016) in the SNW-7 on average (Figure 9). It is important to note that the temporary employment concerns mostly lower status employees: in most EU-countries the incidence of limited duration contracts is the smallest in the case of managers (Eurostat, 2017a).

**Figure 8. Share of temporary employees (fixed-term contracts) in total employment in the EU-28 Member States, 2002 and 2016, percent**



Note: red: Core-10, green: SNW-7, orange: CEEC-11

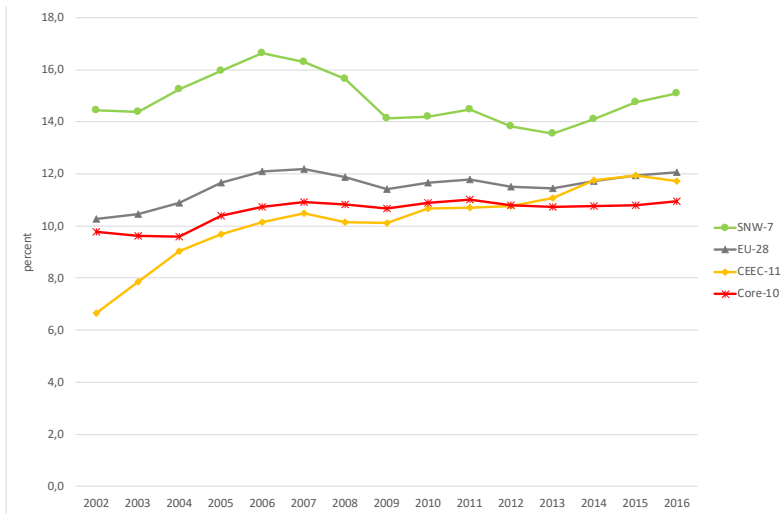
Source: Eurostat online database, Employment and activity by sex and age – annual data (lfsi\_emp\_a) and Temporary employees by sex, age and educational attainment level (1 000) (lfsa\_etgaed)

- The number of people having a *second job* was 9.1 million in the EU and continued to increase in 2017. The picture, however, differs a lot by country groups. In the examined period the number of second jobs has decreased by more than a half million in CEEC-11, has remained nearly unchanged in SNW-7, while, interestingly, in Core-10 it has grown by 2.3 million. In this field, Germany plays a vital role, providing more than a half (1.4 million) of this increase. It is due to the German labour market reforms – the so-called Hartz-reforms – introduced at the beginning of the 2000s which stimulated employment by creating the so-called Mini-jobs system (minimally paid employees – „Geringfügig entlohnte Beschäftigte”). Nowadays in Germany more than 7.5 million people are engaged in such “mini” jobs that provide a 450 EUR monthly income with only minimal social insurance contributions. Among the 7.5 million, 4.8 million workers are exclusively in the mini-jobs category, while 2.7 million people take it as a second job<sup>17</sup> which indicates that it is more and more difficult to maintain a living relying exclusively on a single job (White, 2014). Between 2002 and 2016 the number of second jobs significantly grew also in the Netherlands (by 220 thousand) and in France (by a half million) as well<sup>18</sup>.

<sup>17</sup> <https://statistik.arbeitsagentur.de/Navigation/Statistik/Statistik-nach-Themen/Beschaeftigung/Beschaeftigung-Nav.html>

<sup>18</sup> Eurostat online database, Employed persons having a second job by sex and educational attainment level (1 000) (lfsa\_e2ged).

Figure 9. Share of temporary employees (fixed-term contracts) in total employment in certain country groups of the EU, 2002-2016, percent



Source: Author's own calculations on the basis of Eurostat online database, *Employment and activity by sex and age – annual data (lfsi\_emp\_a)* and *Temporary employees by sex, age and educational attainment level (1 000) (lfsa\_etgaed)*

- The number of *self-employed* grew moderately and their share in total employment has not substantially changed in the EU-28 as a whole since 2002 (it was 14% in 2016 and 13.7% in 2017Q3). However, this relative stagnation is explained by the increase in Core-10 countries and a decline in SNW-7 and CEEC-11 economies where self-employment is otherwise higher.<sup>19</sup>

- The so called “*zero-hour contract*” is one of the most popular forms of precarious employment. In this contract the employer does not take responsibility for the employment and also the wage of the worker. The worker has to be immediately available while is employed occasionally. For now, in most EU countries such contracts are forbidden, restricted or not being used. However, in half a dozen Member States (Cyprus, Ireland, Finland, Malta, Sweden, the United Kingdom – as well as the non-EU Norway) it is a legally recognized form of employment (KBS, 2017). The zero-hour contracts are particularly popular in the United Kingdom, where between 2000 and 2016 the number of those who are employed under these terms grew more than fourfold achieving 905 thousand people and their share within the total employment increased from 0.8 to 2.8 percent (ONS, 2017).

- Although the ratio of temporary *agency workers* in the EU-28 was only 1.7 percent in 2016 and has not grown since 2006, this represents more than 3.7 million people not being able to foresee even their next day work. A much more significant proportion can be observed in Slovenia (5.2 %), the Netherlands (4.1%), Spain (3%) and a much smaller one in

<sup>19</sup> Eurostat online database, *Self-employment by sex, age and educational attainment level (1 000) (lfsa\_esgaed)*.

Norway (0.2%) or Hungary (0.3%).<sup>20</sup> The income of temporary agency workers is generally lower than of those who are directly employed by companies. In the United Kingdom their number reached 865 thousand in 2016, their salary was 22 percentage point lower than that of the non-agency workers. If the employer is the agency itself, the salary of the workers may be even 45 percentage point lower. The set of those having zero-hour contract and being employed via agencies partially overlap each other. In 2016, 14 percent of agency workers had zero-hour contracts in the UK. 40 percent of them are migrants, mainly from other EU-countries (Blitz, 2016).

The volume, the physical and mental impact of work are also making an essential part of working conditions. In connection with these, the statistical data show the following.

- The rate of those working (officially) more than 44 hours per week in total employment, shows a decreasing tendency in EU-28 as general, and between 2002 and 2016 the average number of working hours per week (both full-time and part-time employment) declined from 38.2 to 37.1 (in 2017Q3 it was 37.2). Nevertheless, the situation is quite different in case we decompose this statistical population to full and part-time employment. We find that in full-time employment the number of average working hours per week has decreased from 41.6 to only 41.4 hours while in part-time employment the weekly volume of work has increased from 19.9 to 20.3.<sup>21</sup> This means that most of the significant (more than one hour) decline of the average working hours in the total employment is due to the increasing share (from 15.5 to 19.5 percent) of part-time workers (see Figure 6).

- In the examined period, the proportion of those who *work also on weekends*<sup>22</sup>, has increased significantly, from 18.4 to 27.3 percent compared to EU-28's total employment which can probably be explained with the expansion of services, commercialization of free time and the constant boost of consumption. However, disparities among Member States, partly by reason of structural characteristics of the economies are indeed, serious. In Greece, a country relying on tourism and being severely stricken by the crisis, more than 40 percent of the population works on weekends, while in Hungary or Portugal this rate is only slightly more than 10 percent.<sup>23</sup>

- Between 2007 and 2013 (surveys have been carried out only for these years) in EU-28 the rate of workers in the 15-64 age group who reported *exposure to risk factors* that can adversely affect mental well-being, increased from 25.1 to 28 percent. More than 80 percent of the risk factors were due to time constraints and overtime. The highest rate of complaints arrived from people employed in developed countries (e.g. France, Luxembourg, Austria and Sweden). Among the more qualified, the proportion was higher (one third in 2013) than the less educated, and employees of bigger companies also reported at a higher rate than workers from smaller firms.<sup>24</sup>

<sup>20</sup> Eurostat online database, Temporary employment agency workers by sex, age and NACE Rev. 2 activity (lfsa\_qoe\_4a6r2).

<sup>21</sup> Eurostat online database, Average number of usual weekly hours of work in main job, by sex, professional status, full-time/part-time and economic activity 1983-2008, and from 2008 onwards, (lfsa\_ewhuna) and (lfsa\_ewhun2).

<sup>22</sup> Those working at least two Saturdays (or Sundays) during a four-week reference period before the interview.

<sup>23</sup> Eurostat online database, Work on weekends by sex, age, professional status and occupation (lfsa\_qoe\_3b3).

<sup>24</sup> Eurostat online database, Persons reporting exposure to risk factors that can adversely affect mental well-being by sex, age and educational attainment level (hsw\_exp1).

- It may, perhaps, be surprising that in Europe of the third millennium, there are even more *physical threats* on workplace and their number increases more dynamically than the mental threats. In 2007 “only” 37.7 percent of workers reported exposure to risk factors that can adversely affect physical health at their workplace, while in 2013 already 50.9 percent reported similarly. The largest proportion, more than 75 percent, was represented in France, Estonia and Portugal and the lowest rate – below 30 percent – in Norway and Malta. There were no significant differences among survey proportions concerning the size of the enterprises. Along with difficult work postures and movements as the most important threats, visual concentration<sup>25</sup> requiring major efforts, became the leading factor, which obviously refers to the constant looking at screens.

### Migration

In 2016 within EU-28 only 3.8 percent of the population (19.3 million people) lived in another EU-member country than their country of birth. The number of people born in non-EU countries was 35.1 million, which means 6.9 percent. Together they add up to 54.4 million people and 10.7 percent of the population of the EU.<sup>26</sup> According to citizenship, figures are lower. In 2016 36.9 million (7.2%) did not live in the country of which citizens they were (in 2013 their proportion achieved 6.6 percent).<sup>27</sup>

Regarding migrants arriving from non-EU countries as well as asylum applications, data are available from 1998 in Eurostat database (until 2007 for EU-27, after that for EU-28). The number of the submitted asylum applications per year was fluctuating: between 1998 and 2001 it increased from 314 to 424 thousand and then in 2006 it fell under 200 thousand. Hereupon, it started to increase slowly and from 2013 at a steeper rate, in 2015 it doubled and exceeded 1.3 million. In 2016 the number was almost the same and it fell to 704.6 thousand in 2017.<sup>28</sup> The number of extra-EU citizens receiving residence permit of any duration for the first time was 2-2.5 million between 2008 and 2014, increasing to 3.4 million in 2016 or 0.6 percent of population.

Migrants traditionally represent good – cheap and hard-working – labour force for employers. Within the Union, migration mostly flows from east to west and Western European countries owe much to the migrating labour force of eastern peripheries. According to the European Commission (EC, 2016), the age of migrants arriving from Eastern European countries which had joined the EU in 2004 or after, is lower, their level of qualification is higher and their expertise is more sophisticated than that of the host countries’ native jobseekers in general. They are also much more motivated in finding work. Eastern Europeans migrants find work 1.78 times and Western European ones 1.3 times easier than the native unemployed people of the host countries. The study also confirms that Eastern Europeans are also much more hardworking. On the other hand, the emigration of the best

---

<sup>25</sup> Eurostat online database, Persons reporting exposure to risk factors that can adversely affect physical health by sex, age and size of enterprise (hsw\_exp10).

<sup>26</sup> Eurostat online database, Immigration by age group, sex and country of birth (migr\_imm3ctb).

<sup>27</sup> Eurostat online database, Population on 1 January by age, sex and broad group of citizenship (migr\_pop2ctz).

<sup>28</sup> Eurostat online database, Asylum and first time asylum applicants by citizenship, age and sex Annual aggregated data (rounded) (migr\_asyappctza).



workforce dampens economic growth and innovation within the home countries, i.e. in Central and East Europe. The study estimates that the growth deficit in Bulgaria, Romania and Lithuania is between 5 and 11 percent of GDP. Between 2004 and 2013 Romania had the highest rate of active, highly educated people having left the country (9 percent of its population) being followed by Lithuania (7.2%), Slovakia (6.5%), Latvia and Poland (both 6.2%).

The EC (2016) report states, that due to demographic problems (ageing European population and the increase of dependency rates), the EU would need 30 million more extra-EU immigrant workers by 2060 compared to the situation where the employment rate would be 75 percent on average in the 20-64 age group. However, if this immigrant surplus would not be permitted, the employment rate should be increased to 86 percent which would require the intensification of the intra-EU labour mobility. The optimal solution is the combination of the third country based and inner increase of migration. Especially, because qualified labour force is needed and the extra-EU immigrants' qualification is generally lower, and thus they need some kind of education and training before being suitable for replacing the missing workforce of the EU.

### **Common policies to alleviate the problems of the labour market**

In the beginning, the European Union did not have a common labour market policy. During the 1950s and 1960s, there was no need for that, since full employment was almost achieved with a 2-3 percent structural-frictional unemployment. Only the Southern European peripheries represented an exception as well as Italy as a founding Member State that gave two thirds of the unemployment of the 6-member community in 1957 (EC, 2007:10). The labour market of the Community was characterized by increasing wages and improving life quality which was also fostered by welfare redistributive systems stimulated by the Eastern European "socialist" model.

The European Social Fund (ESF) was created together with the foundation of the Community, but at the beginning it promoted only mobility, education and training. Change was brought by the crisis of the 1970s when it turned out that the higher rate of unemployment would be the new norm. This made necessary the extension of the ESF.

The budget of the Fund was somewhat increased in 1971, but more serious changes were brought only during the following years. These were inspired not only by oil price shocks but also by the enlargement of the EU with the United Kingdom, Ireland and Denmark in 1973 that led to the establishment of the European Regional Development Fund (ERDF). Its main mission was the infrastructural improvement of the less developed territories complementing the labour market activity of the ESF. ERDF and ESF together were called "structural funds".

The rapidly increasing overall unemployment of the 1970s was accompanied by the problem of youth unemployment – that is natural since unemployment affects new entrants among the first – so it was the first time when ESF paid attention to the youth. Besides, it was also the first occasion when women became a target group because their integration to labour market represented a relevant economic issue due to the structural economic change destroying heavy-industry structures which used to employ mainly men, so an increased

need could emerge for women employment in the service sector as well as in fields where the automatization had already been advanced. ESF increased its focus on the disabled and elderly (aged over 50) people as well. The Fund also opened towards enterprises and civil society organizations enabling them to apply for its resources.

Since the end of the 1980s, education and training in general and the support of people living in lagging behind regions have gained more emphasis. This meant that the bigger part of the Fund was directed towards Greece, Ireland, Mezzogiorno, Northern Ireland, Andalusia, Portugal and other underdeveloped territories (EC, 2007: 23). In 1988 the Community decided to turn to medium-term planning and the ESF was also renewed: its budget was increased, its sources were provided for more years in advance, which helped to build them into the national development strategies of the Member States and formulate long-term strategies for the problematic regions and vulnerable social groups. It also enabled – which has become very essential after the crisis of 2008 – to bring forward the sums from the following years. According to estimations, in the 1990s, after the implementation of the reforms, the Fund contributed to the vocational qualification or employment of more than 2 million people per year (EC, 2007:26).

However, the unemployment continued to grow, to which the Union reacted with the foundation of the Employment Strategy (1994) and raised the employment policy to community level (Treaty of Amsterdam, 1997). From 1998, Member States have been working out common employment guidelines and adapting their national policies to these. The guidelines are renewed every 3 years and since 2004 have been integrated with the economic policy guidelines.

In the course of renewing the ESF, three new community programs were brought during the 1990s: to promote vocational training and employment (EUROFORM), to train disabled people (HORIZON) and to support women's participation in employment (NOW: „New Opportunities for Women”). These were later followed by several other programs including YOUTH START that concentrates on the young generation (EC, 2007:31-32). In 1992, the Member States decided to increase the sum of the structural funds. As a result, in the 1994-1999 period the budget of ESF was almost twice as high as in the 1988-1993 period. In 1994 the Cohesion Fund was established. This extended toolbox considerably increased the support for the labour market, which was hit hard by the continuing liberalization, deregulation and privatization.

However, the results have been below expectation: unemployment and poverty have not improved, catching-up has developed slowly – still, all these would have probably been much worse in lack of the funds' activity. Partly due to economic environment and partly to the above-mentioned Community funds and programs, unemployment fell by 3 million, employment increased by 9 million between 1994 and 1999 and the gender pay gap fell from 40 percent in the 1960s to less than 20 percent (EC, 2007: 35-36).

Nevertheless, at the end of the 1990s, the average employment rate of the Union was relatively low in international comparison while its competitiveness gap became even more obvious. In order to remedy this situation, in 2000, in the frame of the Lisbon Strategy, the Union set a target to become the world's most dynamic and competitive knowledge-based region in the world by 2010 and produce a 70 percent employment rate within the

working age population (15-64 years old people). Thus, such issues as life-long learning, active labour market policies, promoting entrepreneurship, supporting small and medium-sized enterprises and providing equal opportunities, have been prioritized. Later, due to demographic tendencies and increased migration from the East after 2004, the promotion of social integration and active ageing have also become top priorities.

The Lisbon Strategy has not proved to be successful. Moreover, the crisis of 2008 hit hard the labour market, and increased inequalities. In 2010, the Europe 2020 strategy set the objective to increase employment rate up to 75 percent of the population aged 20-64, to cut the share of early school leavers below 10 percent, to raise the ratio of people with tertiary degree to at least 40 percent in the 30-34 age cohort and to decrease the number of people at risk of poverty or social exclusion by 20 million compared to 2008.

According to the actual data of the Eurostat, the second and third objective are close to realization: the rate of early school leavers fell from 14.7 percent in 2008 to 10.7 percent in 2016 and the ratio of those with tertiary degree in the 30-34 age group increased from 31.1 to 39.1 percent. Still, the employment rate is hardly growing: in 2008 it was 70.3 percent and eight years later it achieved only 71.1 percent. However, the situation is the worst relating the number of people at risk of poverty or social exclusion. Not only the 20 million decrease has not occurred, but the number of the affected EU citizens was still by some 0.7 million higher in 2016 than in 2008.<sup>29</sup>

The 2014-2020 financial framework should serve the above-mentioned targets. Within this period the ESF aims at promoting sustainable and quality employment, labour force mobility, combat poverty and social integration, vocational training, life-long learning and the increase of public administration effectiveness (EU, 2013).

The “Youth on the Move” initiative, launched in 2010, is one of the flagship projects of the Union. Besides promoting education, vocational training and mobility it pays special attention to youth unemployment. A part of this initiative is the €8 billion Youth Guarantee program, which aims at ensuring that all young people, under the age of 25 living in territories where youth unemployment rate is above 25 percent, find a job, obtain further qualifications or launch their own businesses within four months of leaving school (EU, 2010).

The ESF is the primary tool of the EU to help labour market and social situation in the community. For this, it is worth also to know, how much money the member states have been ready to devote to finance its activity.

In the beginning, the ESF budget composed only 1 percent of the total community budget and although its share had achieved 10 percent by the 2000s (EC, 2007:3), it is still a relatively small amount if we take into account that the Union's budget is only 1 percent of the Member States' overall GDP. What is more, during the last two and a half decades the share of the Regional Fund has permanently increased within the structural funds – at the expense of the ESF. This unfavourable process was ended by the 2014-2020 framework, when the ESF's share was minimized in 23.1 percent within the cohesion policy and a decision was set fixing that 20 percent of the nation state payments should flow to the European Social Fund.

---

<sup>29</sup> Europe 2020 strategy headline indicators, EU-28, <http://ec.europa.eu/eurostat/web/europe-2020-indicators> and Eurostat online database, People at risk of poverty or social exclusion by age and sex [ilc\_peps01].

Paradoxically, it has not generated larger budget for the ESF: it has to finance its activity from 74 billion euro between 2014 and 2020 which is one billion less than during the 2007-2013 period. It cannot be sufficiently explained by the fact that the total EU budget has also decreased by 3.7 percent compared to 2007-2013, because the cohesion budget declined at an even larger extent, by 8.4 percent (Somai, 2014).

## Conclusions

On the basis of the available data, we found that despite the high level of the economic, technological and social development of Europe, a number of negative tendencies have been intensifying in the labour market. Yet the situation varies from country to country, there are certain tendencies which can be clearly specified as being characteristic to most of the countries.

In the EU-15 both the overall and the youth unemployment rates are considerably higher today than they had been until the 1970s. In the EU-28 in general the number of working years and the employment of the elderly people have been clearly growing since the first years of the 2000s and it is also true for the proportion of the part-time jobs and their involuntary form, the temporary employment, the precarious employment, the working poor, the low-wage earners and the people at risk of poverty or social exclusion. The Gini coefficient showing income inequalities is also producing a growing trend regardless the fact it is calculated before or after receiving social benefits. Atypical forms of employment are irreversibly spreading, which can make easier the situation of workers in several aspects but also opens possibilities for precarious employment and other forms of increased exploitation of workers. These affect primarily new market entrants (or re-enterers), especially young people, women and migrant employees.

These developments can be only partly explained by the 2008 crisis. As the OECD states, atypical jobs “have been on the rise in the decade previous to the crisis. Overall, non-standard jobs accounted for more than half of the growth in employment in the EU since 1995 in the period up to the global economic crisis” (OECD, 2017:13).

Community policies, principally organized around the European Social Fund, have always attempted to adapt to the given situation and provide help where it was needed the most. However, Member States have not been keen to contribute with significant and increasing sums to community policies. This has decreased the effectiveness of the actual spending and attributed to the high, multidimensional and still growing inequalities within and between the labour market of the Member States.

Our results correspond to that of Piasna (2017), who found that “bad jobs” have been on the rise since the middle of the 2000s. Our overview also showed that the labour market of the EU has been significantly differentiated during the past few decades and a vulnerable layer, called precariat, has emerged and grown in weight. Yet its proportion on the labour market is still low, it is a matter of great concern that neither its formulation nor expansion could have been prevented by community policies. Looking at the decrease of community budget, the inter-Member States conflicts, Brexit and the still threatening Grexit, etc. the current

situation does not even foreshadow that there might be positive changes in the management of labour market problems in the near future, which could reverse the tendencies that have been undermining the European societies.

**References:**

- Artner, A. (2013): Is Youth Unemployment Really the Major Worry? *Debatte: Journal of Contemporary Central and Eastern Europe*. 21(2-3): 183-205 DOI: 10.1080/0965156X.2013.863998
- Attinà, F. (2016): Migration Drivers, the EU External Migration Policy and Crisis Management, *Romanian Journal of European Affairs* Vol. 16, No. 4, December, pp. 15-31.
- Blitz, R. (2016): UK to have 1m agency workers by 2020. *Financial Times*, 5 December 2016, <https://www.ft.com/content/ff371b92-ba32-11e6-8b45-b8b81dd5d080> Downloaded: 02.02.2018.
- Carone, G., Eckefeldt, P., Giamboni, L., Laine, V., and Sumner, S.P. (2016): *Pension Reforms in the EU since the Early 2000's: Achievements and Challenges Ahead*. European Commission, Directorate-General for Economic and Financial Affairs. European Economy, Discussion Paper 042
- EC (2007): European Social Fund. 50 years investing in people. European Commission, Luxembourg: Office for Official Publications of the European Communities. [http://ec.europa.eu/employment\\_social/esf/docs/50th\\_anniversary\\_book\\_en.pdf](http://ec.europa.eu/employment_social/esf/docs/50th_anniversary_book_en.pdf) Downloaded: 25.12.2017.
- EC (2016): Employment and Social Developments in Europe 2015. Chapter 2.2. Mobility and Migration. Commission Staff Working Document. European Commission, Brussels, 21.1.2016, SWD(2016) 7 final, PART 6/10.
- EU (2010): Youth on the Move. An initiative to unleash the potential of young people to achieve smart, sustainable and inclusive growth in the European Union. European Union. Luxembourg: Publications Office of the European Union.
- EU (2013): Regulation (EU) No 1304/2013 of the European Parliament and of the Council of 17 December 2013 on the European Social Fund and repealing Council Regulation (EC) No 1081/2006
- European Parliament (2016): Precarious Employment in Europe: Patterns, Trends and Policy Strategies. A study prepared by the Policy Department A at request of the Employment and Social Affairs Committee. P/A/EMPL/2014-14.
- Eurostat (2017a): Employment statistics. Eurostat Statistics Explained. Data from June 2017. [http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics) Downloaded: 23.03.2018.
- Eurostat (2017b): Unemployment statistics. Eurostat Statistics Explained. Data up to January 2018 [http://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Unemployment_statistics) Downloaded: 22.03.2018.

- Flynn, J., Dance, S. and Schaefer, D. (2017): Industry 4.0 and Its Potential Impact on Employment Demographics in the UK. In: *15th International Conference on Manufacturing Research*, 2017-09-05 - 2017-09-07, University of Greenwich.
- KBS (2017): *A Study on the Prevalence of Zero Hours Contracts among Irish Employers and their Impact on Employees*, 2015. Kemmy Business School, University of Limerick, Ireland.
- Maťovčíková, D. (2017): Industry 4.0 as the Culprit of Unemployment. In.: *12<sup>th</sup> IWKM 2017*, 12 – 13 October 2017, Trenčín, Slovakia
- Mroz, T. A. and Savage, T. H. (2006): The Long-Term Effects of Youth Unemployment. *The Journal of Human Resources* 41(2): 259-293.
- OECD (2017): Understanding the Socio-Economic Divide in Europe. Background Report. 26 January 2017. OECD, <https://www.oecd.org/els/soc/cope-divide-europe-2017-background-report.pdf> Downloaded: 20.03.2018.
- ONS (2017): Labour Force Survey: Zero-hours contracts data tables. Office for National Statistics (ONS), United Kingdom, Online Dataset. <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/earningsandworkinghours/datasets/zerohourssummarydatatables> Downloaded: 02.12.2017.
- Piasna, A. (2017): 'Bad jobs' recovery? European Job Quality Index 2005-2015. European Trade Union Institute, Working Paper 2017.06. <https://www.etui.org/Publications2/Working-Papers/Bad-jobs-recovery-European-Job-Quality-Index-2005-2015> Downloaded: 02.03.2018.
- Scarpetta, S., Sonnet, A., Manfredi, T. (2010): Rising youth unemployment during the crisis: how to prevent negative long-term consequences on a generation? OECD Social, Employment and Migration Working Papers, No 106. DELSA/ELSA/WD/SEM(2010)6 OECD Publishing. <http://www.oecd.org/employment/youthforum/44986030.pdf> Downloaded: 02.03.2018.
- Somai, M. (2014): Az EU 2014-2020-ra szóló közös költségvetési kerete, különös tekintettel a kohéziós és az agrárpolitikát érintő változásokra (vitaanyag). [The 2014-2020 Financial Framework of the EU with special regard to the changes in the cohesion and agrarian policies.] Európai Tükör, 19(3): 23-38.
- Walwei, U. (2016): *Digitalization and structural labour market problems: The case of Germany*. ILO Research Paper No.17. International Labour Office, Geneva. [http://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms\\_522355.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_522355.pdf) Downloaded: 12.10.2017.
- White, C. (2014): Are "Mini-Jobs" a Responsible Substitute for Canada's Temporary Foreign Workers? Scotiabank Economics, 15 August. [http://www.gbm.scotiabank.com/English/bns\\_econ/mini-jobs.pdf](http://www.gbm.scotiabank.com/English/bns_econ/mini-jobs.pdf) Downloaded: 02.10.2017.
- World Bank (2016): World Development Report 2016: Digital Dividends. Washington, DC: World Bank.