

Mariusz Zieliński

Opole University of Technology

e-mail: m.zielinski@po.edu.pl

ORCID: 0000-0002-2121-1339

IMPACT OF THE EMPLOYMENT AND UNEMPLOYMENT LEVEL ON THE USE OF FLEXIBLE FORMS OF EMPLOYMENT IN EU COUNTRIES

WPŁYW POZIOMU ZATRUDNIENIA I BEZROBOCIA NA WYKORZYSTANIE ELASTYCZNYCH FORM ZATRUDNIENIA W KRAJACH UE

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Summary: The aim of the article is to examine the correlation between changes in the level of employment and unemployment rate and the share of non-standard (flexible) forms of employment in the countries of the European Union in the long-term perspective. The hypothesis is that changes in the employment level and unemployment rate are related to the changes in the share of non-standard forms of employment in overall employment. The assessment of the relationship between the studied values refers to the age group of between 15 and 64-year olds. Coefficients of linear correlation and determination between the studied values in 2006-2017 were calculated in order to verify the hypothesis. The results of the research indicate that the situation is very different in different national labour markets, both in terms of the share of non-standard forms of employment and their reactions to changes in employment and unemployment.

Keywords: non-standard forms of employment, level of employment, unemployment rate, EU countries.

Streszczenie: Celem artykułu było zbadanie zależności między zmianami poziomu zatrudnienia i stopy bezrobocia a udziałem form niestandardowych w zatrudnieniu w krajach Unii Europejskiej w perspektywie długoterminowej. Przyjęto hipotezę, że zmiany poziomu zatrudnienia i stopy bezrobocia są związane ze zmianami udziału niestandardowych form zatrudnienia w zatrudnieniu ogółem. Ocena zależności między badanymi wielkościami dotyczy grupy wiekowej 15-64 lata. W celu weryfikacji hipotezy obliczono współczynniki korelacji liniowej i determinacji między badanymi wielkościami w latach 2006-2017. Wyniki badań wskazują na duże zróżnicowanie sytuacji na rynkach pracy różnych krajów, jeśli chodzi zarówno o udział niestandardowych form zatrudnienia, jak i ich reakcji na zmiany w zatrudnieniu i bezrobociu.

Słowa kluczowe: elastyczne formy zatrudnienia, stopa bezrobocia, poziom zatrudnienia, kraje UE.

1. Introduction

The scale of occurrence of non-standard forms of employment in particular economies is determined by the offer from the demand side (enterprises) and the interest from the supply side (employees). The basic forms of non-standard (flexible) employment are: limited duration employment, part-time employment and self-employment [Burgess, Connel 2006].

The aim of the article is to analyze to what extent the structure of employment (through the prism of the share of non-standard employment) reacts flexibly to changes in the level of employment and unemployment rate and whether this reaction is similar in all the analysed countries. The research on relations between employment and unemployment was conducted at the same time, because the reaction of flexible forms of employment to changes in the unemployment rate is not a mirror reflection of the reaction to changes in the level of employment, due to changes in the level of economic activity and the number of people of working age.

Articles on the issues raised usually discuss individual national labour markets. This article compares data for all EU countries regardless of their size, level of development, and time of joining the EU. The article allows grouping them from the point of view of the employment structure response to changes in the labour market.

The hypothesis is that changes in the employment level and unemployment rate are related to the changes in the share of non-standard forms of employment in the overall employment. The article raises three research questions: is the share of non-standard forms of employment stable in individual countries? Are the labour markets of the EU countries characterized by similar flexibility from the perspective of changes in the share of non-standard forms of employment? Do the changes in the share of non-standard forms of employment depend more on the change in the level of employment or the level of unemployment? The research period covers the period from 2006 to 2017, the last year for which comparable data are available.

The following parts of the paper present a review of literature, the applied methodology, an analysis of the changes in the unemployment rate and the share of non-standard employment in total employment and the analysis of the correlation and determination occurring between these values. The paper ends with a discussion and conclusions.

2. Relationships between non-standard forms of employment and the labour market situation

Non-standard (flexible) forms of employment, including employees with a contract of limited duration, part-time employed, and self-employed are beneficial for employers, because they allow to reduce labour costs, it is also easier in their case to terminate the contract with an employee [Hauseman 2001; Kalleberg et al. 2003]. Employers are interested in increasing the share of non-standard employment in

total employment because it facilitates the adjustment of demand for labour to the changing economic situation [Noe et al. 2006; Bloisi 2007].

Employees are reluctant to accept non-standard forms of employment due to: the risk of remaining in a flexible segment of the labour market, the higher probability of becoming unemployed, worse working conditions, lower wage and social benefits levels, and fewer opportunities for development and promotion [Need et al. 2005; Redpath et al. 2009; Fouarge et al. 2012]. Non-standard forms of employment may be the employee's choice if he/she uses them to earn extra income or if non-working duties prevent him/her from taking up full-time employment (e.g. taking care of children or elderly people) [Kossek et al. 1999; Amuedo-Dorantes, Serrano-Padial 2010].

If high unemployment occurs periodically on the market, employers have a negotiating advantage and may seek to expand non-standard forms of employment. For example, an increase in the share of temporary employment enables greater flexibility in the demand for labour, no need to renew the employment contract, no need to pay severance pay, and often also workers employed in this form receive lower wages than those working in the standard form [Debels 2005].

Creating part-time jobs may result from the specificity of the job position (no full-time workload for it), "job sharing" in periods of economic downturn (it is a way of retaining qualified staff, while it allows employees to keep incomplete employment, but without the need to look for a new job), or supplementing the staff during the economic boom with people who cannot or do not want to take up full-time employment [Gaston, Kishi 2007]. Changes in the share in part-time employment in accordance with the direction of changes in the economic situation occur when persons constituting auxiliary staff are employed in these forms (increased in the peak of the economic situation, limited in periods of economic downturn). Contrary to changes in the economic situation, the number of part-time employees changes if job sharing is used.

Self-employment, as a form of running a small business, can be undertaken on one's own initiative or under pressure from the previous employer. In periods of economic downturn, employers may reduce their permanent employment within the framework of restructuring by partially outsourcing their tasks. These tasks can be outsourced to existing employees after they set up their own companies (which increases the scope of self-employment). The share of the self-employed in employment reacts to changes in the economic situation, depending on the proportion taking up self-employment on their own initiative and forced to do so by the employer [Hölscher et al. 2011; Blundell et al. 2014]. If the latter group dominates among the self-employed, the share of the self-employed in employment is increasing, while the unemployment rate is rising.

3. Methodology

The assessment of the relationship between changes in the level of employment and unemployment rate and the share of non-standard forms of employment in the countries of the European Union was made on the basis of data published

by Eurostat. All data used in the article refer to the age group between 15 and 64 year olds. The introduction to the analysis is a comparison of the changes in the level of unemployment rate in the EU 28 and the share of non-standard forms of employment in 2006 and 2017. Data on shares in employment of employees with a contract of limited duration and part-time employed were directly available, the share of self-employed was calculated as a quotient of the number of self-employed and total employment. A comparison of the appropriate values allows us to answer the first of the research questions posed in the article. In the next part of the article, in order to answer the second and third questions posed in it, linear correlation and determination coefficients between changes in the level of employment and the unemployment rate and employment in three basic flexible forms were calculated. A linear correlation analysis was selected for the purposes of the article, because if non-standard forms of employment are used to balance economic changes, a linear relationship between the level of employment / unemployment and the share of these forms in employment should be expected. An Excel spreadsheet was used for the calculations. Due to editorial constrictions of the article, no determination calculations were given (in Tables 2 and 3), but these values were referenced in the relevant parts of the data analysis. The level of linear correlation between 0.01 and 0.05 was assumed to be statistically significant (confidence coefficients 0.99 and 0.95 respectively). The time series covers 12 years of observation, dating back to the period preceding the most recent economic crisis.

4. Relationships between non-standard employment and the situation on the labour market in EU countries

Table 1 presents changes in the level of unemployment rate and shares of non-standard (flexible) forms of employment at the beginning and end of the analyzed period for 28 countries belonging to the European Union.

During the eleven years covered by the analysis of changes from the perspective of labour market imbalances in particular national markets, the changes were diametrically different. We can observe a significant decrease in the unemployment rate in the new member states of the European Union, e.g. in Poland (a 9% drop), the Czech Republic (a drop to the level of frictional unemployment), Slovakia and Hungary. Germany is also one of the countries with the highest drop in unemployment. At the other end of the spectrum, Spain and Greece have experienced a significant increase in labour market imbalances. In the case of participation in employment of non-standard forms of employment, the specificity of individual national labour markets deserves attention. The share of limited contracts in total employment exceeds 20% in Spain and Poland, while in the Baltic countries (Estonia, Latvia and Lithuania), Romania and the UK their share does not exceed 5%. There is an even greater variation in part-time work, whose share in the Netherlands approached 50%, in Belgium, Denmark, Germany, Austria, Sweden and the UK exceeded 20%, while in Bulgaria and Hungary it did

Table 1. Unemployment rate and the share of non-standard forms of employment in 2017 in EU countries (in brackets the rate / share change compared to 2006)

Country	Unemployment rate	The share of non-standard forms of employment (%)		
		Limited contact	Part-time	Self-employment
Belgium	7.1 (-1.2)	9.0 (+1.6)	24.5 (+2.5)	13.0 (-0.1)
Bulgaria	6.2 (-2.8)	3.9 (-1.2)	2.2 (+0.5)	11.0 (-0.3)
Czechia	2.9 (-4.2)	8.0 (+1.3)	6.2 (+1.8)	16.0 (-0.5)
Denmark	5.7 (+1.8)	11.9 (+3.8)	25.3 (+2.4)	7.5 (-0.5)
Germany	3.8 (-6.3)	11.7 (-1.2)	26.9 (+1.7)	8.9 (-2.0)
Estonia	5.8 (-0.1)	2.8 (+0.4)	9.5 (+2.7)	9.6 (+1.7)
Ireland	6.7 (+1.9)	7.8 (+0.1)	20.1 (+2.7)	13.5 (-0.8)
Greece	21.5 (+12.5)	7.6 (+0.6)	9.7 (+4.2)	29.4 (+0.8)
Spain	17.2 (+8.7)	22.4 (-5.7)	14.9 (+3.3)	15.5 (-0.8)
France	9.4 (+0.6)	14.8 (+1.7)	18.2 (+1.1)	11.2 (+0.9)
Croatia	11.0 (-0.6)	18.2 (+7.1)	4.8 (-2.3)	10.4 (-8.3)
Italy	11.2 (+4.4)	12.1 (+2.3)	18.5 (+5.4)	20.7 (-3.0)
Cyprus	11.1 (+6.5)	13.5 (+2.9)	12.2 (+5.6)	11.8 (-6.7)
Latvia	8.7 (+1.7)	2.6 (-3.8)	7.7 (+1.8)	12.7 (+3.3)
Lithuania	7.1 (+1.3)	1.5 (-2.3)	7.6 (-2.4)	10.3 (-2.4)
Luxembourg	5.6 (+1.0)	8.1 (+2.5)	19.5 (+2.4)	8.2 (+0.6)
Hungary	4.2 (-3.3)	7.9 (+1.9)	4.3 (+0.6)	9.7 (-2.3)
Malta	4.0 (-2.8)	5.1 (+1.9)	13.7 (+4.0)	15.8 (+3.1)
Netherlands	4.9 (-0.1)	18.1 (+3.8)	49.8 (+4.0)	15.4 (+3.0)
Austria	5.5 (+0.2)	8.1 (+0.3)	27.9 (+6.4)	10.7 (-0.6)
Poland	4.9 (-9.0)	20.9 (+0.1)	6.6 (-2.3)	17.4 (-2.1)
Portugal	9.0 (+0.1)	19.0 (+2.7)	8.9 (+0.7)	13.3 (-5.6)
Romania	4.9 (-2.3)	0.9 (-0.3)	6.8 (-1.8)	15.6 (-2.6)
Slovenia	6.6 (+0.6)	15.2 (+0.6)	10.3 (+2.3)	11.7 (+1.4)
Slovakia	8.1 (-5.4)	8.0 (+3.7)	5.8 (+3.1)	14.9 (+2.3)
Finland	8.6 (+0.9)	13.9 (-0.4)	15.0 (+1.5)	11.1 (-0.5)
Sweden	6.7 (-0.4)	14.7 (-0.6)	23.3 (-0.3)	8.5 (-1.2)
United Kingdom	4.4 (-1.0)	4.8 (-0.1)	24.8 (+0.6)	14.0 (+1.4)

Source: Eurostat database.

not exceed 5%. Greece and Italy had the highest shares of self-employment in total employment, while Denmark and Luxembourg had the lowest shares.

Changes in the share of particular forms of non-standard employment in total employment are relatively small in individual countries. More than 5% change in the share of contracts can be seen only in Spain (a decrease) and Croatia (an increase).

In the case of changes in the share of part-time work, they exceeded 5% in Italy, Cyprus and Austria (an increase). More than a 5% change in the share of self-employed occurred in Croatia, Portugal and Cyprus (a decrease).

Table 2. Correlation between employment level and share of non-standard forms of employment

Country	Correlation between employment level and share of non-standard forms of employment		
	Limited contact	Part-time	Self-employment
Belgium	0.472838	0.848478**	0.171394
Bulgaria	0.105389	-0.60836*	-0.14384
Czechia	0.60064*	0.62353*	-0.25044
Denmark	0.301625	-0.36506	-0.11331
Germany	-0.84815**	0.878224**	-0.97971**
Estonia	-0.50087*	-0.62245*	-0.27173
Ireland	-0.89344**	-0.88151**	-0.22397
Greece	0.340993	-0.92372**	-0.87799**
Spain	0.862792**	-0.90873**	-0.29198
France	0.653475*	0.290964	0.271393
Croatia	-0.34536	0.331618	0.243367
Italy	-0.02329	-0.59486*	0.1306
Cyprus	-0.48958	-0.41651	-0.00898
Latvia	-0.03901	-0.8747**	-0.6012*
Lithuania	0.46645	0.022397	0.644903*
Luxembourg	0.884066**	0.894864**	0.629933*
Hungary	0.308434	-0.26784	-0.84684**
Malta	0.662006*	0.800986**	0.419441
Netherlands	-0.21475	-0.43296	-0.4394
Austria	0.408216	0.954951**	-0.6704*
Poland	0.268625	-0.88102**	-0.94991**
Portugal	-0.12575	-0.8625**	0.63861*
Romania	-0.05366	-0.11504	-0.01315
Slovenia	0.469059	-0.41267	-0.77547**
Slovakia	0.566755*	0.53361*	0.081322
Finland	-0.00343	-0.73469**	-0.28203
Sweden	0.153974	-0.49385	-0.95397**
United Kingdom	0.060174	0.033465	0.77466**

*statistically significant correlation at significance level of 0.05

**statistically significant correlation at significance level 0.01

Source: calculations based on Eurostat database.

Table 2 concerns the correlation between the level of employment and the share of flexible forms in employment.

The reaction of non-standard forms of employment to changes in the level of total employment is different in different national labour markets. The results of the correlation show that there is no statistically significant correlation between these figures for five countries, i.e. Denmark, Croatia, Cyprus, the Netherlands and Romania. At the other end of the spectrum were Germany and Luxembourg, where the correlation between the size of employment and all forms of non-standard employment in question turned out to be very strong (above 0.01), additionally in all cases the determination (not included in Table 2) was higher than 70%. As relatively flexible markets in which the share of non-standard forms of employment reacts to changes in the level of employment, Greece, Spain and Poland can also be considered. In these countries, two out of three non-standard forms of employment showed a high correlation with the level of employment (0.01), confirmed by high determination coefficients.

Wherever correlation with the level of employment proved to be statistically significant, often it was of a different nature. In relation to contracts, there was usually a positive correlation between them and the level of employment (in six countries), rather than a negative correlation (in two countries). Most often a negative correlation between employment and non-standard employment occurred in the case of part-time work, with a negative correlation in ten countries and a positive correlation in seven countries. In the case of self-employment, a negative correlation prevailed (eight countries compared to two countries with a positive correlation).

Table 3 shows the correlation between the level of unemployment rate and the share of non-standard forms of employment.

The correlation results show that there is no statistically significant correlation between the share of non-standard forms of employment and the unemployment rate for three countries, i.e. the Czech Republic, Slovakia and Croatia. The only country where the correlation between the unemployment rate and all forms of non-standard employment turned out to be very strong (above 0.01), in addition, in all cases the determination (calculations not included in Table 3) was at least 67%, was Germany. As relatively flexible markets, in which the share of non-standard forms of employment reacts to changes in the unemployment rate, we can also consider: the Netherlands and Cyprus (all three non-standard forms correlated with the level of the unemployment rate, including two at the level of 0.01, confirmed by determination coefficients exceeding 50%), Luxembourg, Italy and Slovenia (all three non-standard forms correlated with the level of the unemployment rate, including one at the level of 0.01, confirmed by determination coefficients exceeding 50%), and Ireland, Greece, Spain, Poland, France and Romania (two out of three non-standard forms of employment showed a high correlation with the unemployment rate (0.01), confirmed by determination coefficients exceeding 50%).

In cases in which correlation with the unemployment rate turned out to be statistically significant, often its nature was different. In relation to contracts, there

Table 3. Correlation between unemployment rate and share of non-standard forms of employment

Country	Correlation between unemployment rate and share of non-standard forms of employment		
	Limited contact	Part-time	Self-employment
Belgium	-0.37421	0.017187	0.802763**
Bulgaria	0.172624	0.578701*	0.340393
Czechia	-0.44598	-0.374	0.417014
Denmark	-0.00611	0.721379**	0.243639
Germany	0.820141**	-0.89352**	0.884661**
Estonia	0.447123	0.549691*	0.142713
Ireland	0.863045**	0.90199**	0.311326
Greece	-0.34805	0.897139**	0.901468**
Spain	-0.95753**	0.842047**	0.16166
France	0.334162	0.891037**	0.837767**
Croatia	0.329184	-0.40411	-0.31909
Italy	0.610789*	0.966478**	-0.61758*
Cyprus	0.960926**	0.942247**	-0.66712*
Latvia	0.436761	0.840936**	-0.01837
Lithuania	-0.25834	0.034147	-0.72528**
Luxembourg	0.787139**	0.706662*	0.539044*
Hungary	0.077498	0.633748*	0.589559*
Malta	-0.47192	-0.64521*	-0.55376*
Netherlands	0.594681*	0.744171**	0.731987**
Austria	-0.07141	0.666645*	-0.1673
Poland	-0.21106	0.72975**	0.886831**
Portugal	-0.1599	0.892335**	-0.249
Romania	0.243384	0.815459**	0.768994**
Slovenia	-0.53914*	0.564299*	0.854775**
Slovakia	-0.33628	-0.25908	0.177958
Finland	-0.173	0.712165**	0.346097
Sweden	-0.41852	0.577824*	0.373395
United Kingdom	0.333718	0.633535*	-0.16628

*statistically significant correlation at significance level of 0.05

**statistically significant correlation at significance level 0.01

Source: calculations based on Eurostat database.

was usually a positive correlation between them and the unemployment rate (in six countries), rather than a negative one (in three countries). Most often a positive correlation between employment and non-standard employment occurred in the case

of part-time work, while it turned out to be positive in 21 countries and negative in two countries. In the case of self-employment, a positive correlation prevailed (ten countries compared to four countries with a negative correlation).

5. Conclusions

Individual labour markets in the EU countries were characterized by different changes in the unemployment rate between 2006 and 2017. Regardless of the scale of changes in the labour market situation, the relative stability of the share of non-standard forms of employment in particular national markets is noticeable, which indicates the dominance of institutional factors (legal solutions and relations between employers and employees).

The hypothesis presented in the introduction was not confirmed in the majority of the analyzed countries. If we treat the relationship between changes in non-standard forms of employment, employment levels and unemployment rates as an image of labour market flexibility, Germany has become the most flexible economy (both in terms of responding to changes in level of employment and unemployment rates). In the case of reaction to changes in the level of employment, the labour markets in Luxembourg, Greece, Spain and Poland were characterized by relatively high flexibility. In the case of reactions to changes in employment levels, the labour markets of as many as the 12 analyzed countries proved to be flexible. The labour markets of Denmark, Croatia, Cyprus, the Netherlands and Romania reacted least flexibly to changes in employment, and the markets of the Czech Republic, Slovakia and Croatia reacted least flexibly to changes in the unemployment rate.

Comparing the number of statistically significant correlations between the changes in the level of employment and unemployment rates and non-standard forms of employment, it can be noticed that in the case of contracts, positive correlations dominate, both in relation to changes in employment and unemployment rate, and the number of significant correlations is identical. In the case of the two other non-standard forms, statistically significant correlations with the unemployment rate are more frequent. In addition, in the case of self-employment, correlation signs are clearly different (negative ones dominate with employment, positive ones with unemployment rate), which indicates that self-employment is often used in periods of economic downturn to reduce the level of labour costs.

Answering the research questions posed in the introduction, the participation of non-standard forms in employment is stable, the labour markets of EU countries are characterized by varying flexibility from the point of view of changes in the share of non-standard forms of employment, and changes in the share of non-standard forms in employment depend slightly more on changes in the level of unemployment than changes in the level of employments.

The direction of further research is to determine the reasons for such different reactions of the labor markets in individual countries. A decisive role is probably

played by broadly understood institutional conditions, in particular relations between employers and employees.

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