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tel.: 89 523 36 61, fax 89 523 34 38
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EMPLOYMENT AND LABOUR PRODUCTIVITY VS ECONOMIC DEVELOPMENT OF POLISH REGIONS (2000–2013)[1]

***Wacław Jarmołowicz*[1], *Sławomir Kuźmar*[2]**

[1] Institute of Finances
Higher School of Banking in Poznan
e-mail: waclaw.jarmolowicz@wsb.poznan.pl
[2] Department of Macroeconomics and Development Studies
Faculty of Economics
Poznan University of Economics and Business
e-mail: slawomir.kuzmar@ue.poznan.pl

K e y w o r d s: employment, labour productivity, economic development.

A b s t r a c t

The main goal of the present article is to identify the main determinants and mechanisms through which the level and growth rate of labour productivity as well as selected aspects of employment influence the economic development of Polish regions over the 2000–2013 period. The conducted analysis suggests that among such productivity and employment-related factors as hourly labour productivity, total hourly work time per person employed, effectiveness of labour market, level of participation rate and demographic structure, of greatest importance for the economic development of Polish regions is their inner effectiveness reflected by the level of hourly labour productivity.

ZATRUDNIENIE I WYDAJNOŚĆ PRACY A WZROST GOSPODARCZY POLSKICH REGIONÓW (W LATACH 2000–2013)

***Wacław Jarmołowicz*[1], *Sławomir Kuźmar*[2]**
[1] Instytut Finansów
Wyższa Szkoła Bankowa w Poznaniu
[2] Katedra Makroekonomii i Badań nad Rozwojem
Wydział Ekonomii
Uniwersytet Ekonomiczny w Poznaniu

S ł o w a k l u c z o w e: zatrudnienie, wydajność pracy, wzrost gospodarczy.

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Abstrakt

Przedmiotem opracowania jest próba określenia podstawowych determinant i zależności, przez które poziom i dynamika wydajności pracy oraz wybrane aspekty zatrudnienia wpływają na kształtowanie się rozwoju gospodarczego polskich regionów w latach 2000–2013. Przeprowadzone badania wykazały, że spośród takich wybranych obszarów w zakresie wydajności i zatrudnienia, jak: godzinowa wydajność pracy, całkowity godzinowy czas pracy przypadający na jednego zatrudnionego, efektywność rynku pracy, poziom aktywności zawodowej oraz struktura demograficzna, czynnikiem decydującym dla wzrostu, a w konsekwencji i rozwoju społeczno-gospodarczego polskich regionów, jest ich wewnętrzna efektywność odzwierciedlana godzinową wydajnością pracy.

Introduction

The recent growth of interest in the meso-economic level of analysis of economic phenomena, including those related to the situation on regional labour markets, is a result of considerable variations in the socio-economic situation within individual countries. The growing importance of regional economic research can be observed especially as regards the analyses devoted to countries, which are members of the European Union. The economic policy of the EU is a significant factor increasing this interest and encouraging analyses at the regional level, since it is conducted not only by governments, but also by local government authorities of individual regions.

Taking into account the persistent or even growing disparities among the regions of various countries – which are often ignored in the analyses at the national level – it seems important to identify the reasons for those differences and their exact nature. In the most general sense – and in light of the findings of economic theory – it has been argued that the disparities are probably a result of unequal spatial distribution of the factors of production and, on the other hand, of varying degrees of using them effectively. As regards the most direct measures which enable identification of the amount of resources available in the given economy (including those at the regional level), as well as the degree of their effective use, usually the categories related to employment and labour productivity are employed (JARMOŁOWICZ, KUŹMAR 2014, p. 333). Therefore, in order to identify the key factors responsible for the emergence of significant disparities among regions as regards their economic growth, it is necessary to take into account and evaluate the evolution of specific parameters concerning especially employment and labour productivity.

The paramount importance of employment and labour productivity in creating the social well-being of individual countries or regions constitutes one of the so-called stylized facts present in economic theory and referring to findings, which are so consistent that they are accepted as truth. At this point, it needs to be pointed out that these are precisely the categories, which are

primarily responsible for the level of gross domestic product (GDP) and, consequently, economic growth.

Taking into account the above mentioned circumstances, the present study aims at defining the main determinants and mechanisms through which the level of labour productivity as well as the level, growth rate and structure of employment influenced the dynamic of economic development of Polish regions in the years 2000–2013.

Therefore, the point of departure in this analysis is an attempt to identify the theoretical impact of employment and labour productivity on the economic development. The next step will consist in presenting an economic and statistical evaluation of the significance of selected areas and measures which were applied to them and which are related to labour resources and labour productivity, as well as their role in shaping the economic growth of Polish regions. The study is concluded by a short summary pointing out the most important implications resulting from the analysis conducted.

Employment and labour productivity vs economic development – a theoretical framework

The fundamental role of employment and labour productivity, as the key factors in shaping economic development (in a narrow sense, identified with the volume of production available to the population of the given area) was emphasized by A. Smith. He argued that the yearly production of each society can be increased only in two ways: either by increasing the productivity of the labour force currently employed in the given society or by increasing the amount of employed labour (SMITH 2015b, p. 326)]. This basic relation (the "fundamental identity") can be presented nowadays in an expanded form, by means of the following relation (LANDMAN 2004, p. 7):

$$\frac{\text{Gross Domestic Product (GDP)}}{\text{population}} = \frac{\text{GDP}}{\text{total working time (h)}} \cdot \frac{\text{total working time (h)}}{\text{people employed}} \cdot \frac{\text{people employed}}{\text{labor force}} \cdot \frac{\text{labor force}}{\text{working age people}} \cdot \frac{\text{working age population}}{\text{population}}$$

At the risk of simplification, the above elements and relations can be synthetized and presented as a template characterized by the following parameters:

economic development = labour productivity · work time per person · effectiveness of labour market · participation rate · demographic structure

The above demonstrate – rather unambiguously – that five principal areas determine the level and growth rate of economic development[2], namely: labour productivity measured by the value of product per working hour, total hourly work time (during the year) per one person employed, the effectiveness of labour market, understood as a relation between people employed and those professionally active, the level of participation in labour market and the demographic structure of population. Additionally, the above findings provide a basis for further theoretical and empirical considerations related to factors determining economic development.

Labour productivity is commonly considered to be one of the main values measuring the effectiveness of managing human labour resources, both at the national and regional level and at the level of individual companies. A. Smith commented on this issue as well, suggesting that labour productivity is a potential source of the wealth of each nation; he argued that it depends on two features: first, on the abilities and skills and expertise with which the given job is performed, and, secondly, on the proportion of those who work usefully and the number of those who do not (SMITH 2015a, p. 4). Moreover, some economists point out the leading role of this category. For example, P. Krugman argues that labour productivity is not everything, but in the long run it is almost everything. Individual countries' ability to improve their standards of living depends almost entirely on their ability to raise their output per worker (KRUGMAN 1990, p. 9). In addition, A. BLINDER and W. BAUMOL (1993, p. 778) argued that over long periods of time even small differences in rates of labour productivity, like interest in a bank account, can make an enormous difference to a society's prosperity. The two authors point out nothing contributes more to the reduction of poverty, growth of freedom and the country's ability to finance education, public health or environment protection, than productivity growth.

Furthermore, hourly work time (understood as the average number of hours worked by one person during the year) is determined – on the one hand – by the legal regulations concerning maximum work time and public holidays, and on the other hand – and in a simplified sense – its value depends on the decisions made by individual participants of the labour market, as regards the allocation of time available to them for work and leisure time. Those types of decisions are conditioned first and foremost by circumstances such as: the pay offered by employers, the given people's individual preferences as regards the

[2] The authors of the present study wish to emphasize that they are aware of some limitations resulting from adopting the level of gross domestic product per person inhabiting the given area (region) as a measure of economic development. Their approach was dependent on methodological issues (an attempt at analysis of fundamental identity) and the availability of reliable statistical data at the regional level.

level of spending and the amount of leisure time, as well as the value of non-wage benefits they own. As has been indicated in the relevant literature, there exist other elements, which may influence the decision to take up employment and the amount of work on offer. Among them, there are factors such as: place of work (costs of commuting), type of work performed, tax burden, division of labour in the household to which the labour market participant belongs, or the insecurity concerning the expected earnings in the future (BLUNDELL, MACURDY 1999, p. 1586–1607, BOSWORTH et. al. 1996, p. 25–64).

Taking into account the issue of the effectiveness of labour market, understood as a relation between workers and people who are professionally active in the given labour market, it should first be emphasized that it defines the degree of utilizing (or not utilizing) the resources available on the said market. The higher (or lower) the relation, the smaller (or larger) the percentage of professionally active people who remain unemployed. The relevant literature shows that thus indicated level of effectiveness of labour markets is influenced especially by the economic situation and broadly understood labour market institutions. These institutions are defined as a set of legal rules, norms or conventions establishing limitations or incentives which influence individual decision as regards the exchange of labour services or wages (OSTOJ 2012, p. 42, WOŹNIAK-JĘCHOREK 2013, p. 3). Additionally, in the global research labour market institutions are analysed mainly using the framework proposed by J.R. Commons, according to whom institutions are norms defining the activity of labour market participants. More specifically, institutions are working systems (including their rules of functioning), from family, through corporations and trade unions, to the state proper (CHAMPLIN et al. 2004, p. 5, COMMONS 1934, p. 146). To give an example of a different approach, T. BOERI and J. VAN OURS (2011, s. 41) posit that these institutions are a product of collective choices and that they influence the exchange of labour services in return for wages.

Participation rate – analysed as a condition of economic development – points to the scale of participation of working-age people in the labour market. It is also – and perhaps most importantly – a result of individual decisions made by people entering the labour market as regards taking up and doing jobs at a specific location and time and under specific requirements. Nowadays of great importance for the size and structure of the professionally active population is, among other things, the considerable growth of women's professional activity. For instance, P. SAMUELSON and W. NORDHAUS (2012, p. 254) estimate that the rate of women's professional participation in the United States increased from 34% in 1950 to ca 60% in 2012. Various bibliographic sources indicate the fact that such a thorough transformation of

professional activity among women is determined not only by economic factors, but also by social changes related to the role of women as active labour market participants. The changes are especially striking as regards the evolution of the contemporary family model. By breaking with the traditional gender roles in favour of partnership, this model is conducive to an increase in women's professional activity (MAZUR-ŁUCZAK 2010, p. 17, 18, KALINOWSKA-SUFINOWICZ 2013, p. 13–24).

A greater flexibility of the labour market is an important factor contributing to the growth of women's professional activity. This is achieved through the development of flexible forms of employment, such as: part-time jobs, self-employment, solutions concerning flexible working hours, or remote working and teleworking. The flexible forms of employment are all the more important from the point of view of women, who still perform most child-rearing and care responsibilities (HAPONIUK 2014, p. 2, 3). Yet another element which can have a significant influence on the development of the given population's professional activity, and which is related directly to the decision to remain on the labour market despite reaching retirement age, is the growth of professional activity in the elderly population, i.e. people at post-working age who have already acquired pension rights. According to the literature and statistical analyses, this group typically consists of people who are 65 years of age or older (HAIDER, LOUGHRAN 2001, p. 1, SCHIRLE 2008, UPPAL 2010, p. 5).

The last aspect of the so-called fundamental identity discussed in the present article refers to the demographic structure of the population. The higher the share of working age population is in the total population of the given country or territory, the more favourable this structure is. At the same time the structure is a result of three basic processes, i.e. birth rate, age structure of the population and migratory flows. While mentioning the importance of birth rate as a factor, one should note that it influences the given working age population in the given time frame with a considerably delay. It is, after all, relatively easy to estimate that the increase or decrease of birth rate at any given moment will have an influence on the size of labour supply after many (from fifteen do twenty) years, depending on the moment in which the given person reaches productive age and will make a decision concerning professional activity (BLOOM, FREEMAN 1988, p. 63, 64).

Additionally, in the literature several factors have been identified which influence birth rate; for example, a significant role is ascribed to the level of family's income and the costs of supporting children. In order to offer a more detailed picture of the issue, J. BONGAARTS (1978, 1984) identifies two basic groups of determinants influencing the fertility rate: direct (biological) and indirect. Among the direct factors, he enumerates getting married, fertility, the duration of postnatal infertility, abortions performed and the use and

effectiveness of contraception. As regards the indirect factors, the author distinguishes socioeconomic factors as well as conditions related to culture or environment.

Taking into account the age structure of the population, life expectancy is equally important as birth rates. Furthermore, the decision to take up employment by individuals may be motivated not only by the wish to maximise usefulness at the given moment in their lives, but also by the wish to maximise it throughout their lives. Since the average level of remuneration for younger workers and the oldest workers is usually lower than in the case of middle-aged workers, the level of employment in the former groups is lower as well (BORJAS 2005, p. 70). Moreover, as I. KOTOWSKA (2008, p. 15) and others indicate, due to the fact that young people enter the labour market with delay, while the older workers leave the labour market earlier, the period of employment is becoming shorter despite increasing life expectancy.

Migratory flows constitute one more demographic factor, which may have an influence on the volume of labour supply in the given moment and in the given area. The mobility of labour resources may, on the one hand, contribute to the growth of the volume of labour resources in the case of countries or regions in which positive net migration is recorded, but, on the other hand, it can also reduce the labour supply for those areas, which are affected by negative net migration.

Employment and labour productivity vs economic development in Poland and its regions – an empirical approach

Economic and statistical analysis and evaluation of the areas of the so-called fundamental identity in Polish regions has been carried out on the basis of the data made available by the Central Statistical Office (GUS) in Poland as part of the so-called Regional Data Bank (BDL). Additionally, data obtained from the European Regional Database and processed by Cambridge Econometrics (CE) have been used. Taking into account the availability of data, the temporal scope of the analysis has been limited to the 2000–2013 period. In order to ensure the comparability of the data used, the value of gross domestic product and, consequently, the value of labour productivity derived from GDP, were expressed in constant prices from the year 2010. On the other hand, the data concerning the level of employment and professional activity were aggregated in accordance with the methodology of Labour Force Survey (BAEL)[3]. The data gathered in table 1 show basic descriptive statistics concerning the economic values for the selected years.

The data presented in Table 1 make it possible to conclude that among the economic values under analysis (and related to employment and labour productivity in Polish regions) the greatest variation and considerable positive dynamic were observed in regard to the level of GDP and labour productivity, which increased from ca PLN 24 thou. (GDP) and PLN 31 (hourly labour productivity) in the year 2000 to PLN 37 thou. and PLN 45 in the year 2013, respectively. At the same time, it should be observed that despite these positive changes, in the year 2013 the values of these variables in the region with the highest levels were more than two times bigger than in the regions with the lowest levels.

Table 1

Areas of fundamental identity in Polish regions

Year	Statistics	GDP per capita	Labour productivity	Work hours per person [h]	Effectiveness of labour market	Participation rate	Demographic structure
2000	average	23,851	31	2,068	0.83	0.57	0.81
	Var. Coeff. [%]	21.9	25.5	3.2	3.8	3.5	1.6
	min.	18,054	22	1,919	0.76	0.52	0.78
	max	39,393	48	2,132	0.88	0.60	0.83
2006	average	28,935	37	2,057	0.86	0.57	0.84
	Var. Coeff. [%]	24.3	22.9	2.5	2.1	3.7	1.2
	min.	21,401	26	1,935	0.83	0.54	0.83
	max	50,441	58	2,110	0.89	0.61	0.86
2013	average	36,565	45	2,049	0.89	0.55	0.85
	Var. Coeff. [%]	25.2	22.3	2.1	1.8	3.7	1.0
	min.	28,584	32	1,960	0.86	0.52	0.84
	max	64,613	69	2,120	0.92	0.6	0.87

Note: Var. Coeff. [%] – the coefficient of variation determined as a quotient of variability of the given characteristics – standard deviation – and mean value of the characteristics.
Source: author's own research on the basis of data: GUS, CE (access: 29.08.2016).

While analysing the hourly work time, it is worth noting a small decrease of interregional differentiation. The average number of hours worked per person decreased from 2,068 in the year 2000 to 2,049 in the year 2013. On the decidedly positive side, the increase in the effectiveness of labour market resulted in the decrease in unemployment rate. The data presented in the table demonstrate that the unutilized part of labour resources (unemployment rate) decreased from the level of ca. 16% in the year 2000 to ca. 11% in the year 2013. The scale of variation decreased considerably too (the drop of the coefficient of variation from 3.8% to 1.8%). Taking into account the state of professional

[3] In accordance with this methodology, the working age population encompasses people who are at least 15 years old.

activity, it is possible to conclude that in the period under analysis it was relatively stable, both in terms of volume and its regional differentiation (the coefficient of variation remained at the level of 3.5%). Nevertheless, taking into account the demographic structure as well as the average levels of professional activity in the developed EU countries (cf. KNAPIŃSKA 2012, p. 124–135) – the level of this activity seems to be far too low. As regards the indices related to the demographic structure, it is possible to observe a small (and at the same time decreasing) scale of its interregional differentiation. The increase of the average percentage of the working age population in relation to the total population, from 0.81 in the year 2000 to 0.85 in the year 2013 shows a positive trend. Nevertheless, it should be emphasized that the change was probably a result of entering the labour market by the persons born during the baby-boom of the 80's., and of significant external migrations (ORGANIŚCIAK-KRZYKOWSKA, PIOTROWSKI 2011, p. 106, 107).

More detailed data – which takes into account individual regions' features – is presented in Table 2. It demonstrates that both in the year 2000 and 2013 the highest level of GDP per capita was recorded in the following regions: Mazowieckie, Dolnośląskie, Wielkopolskie, Śląskie and Pomorskie.

Table 2

Economic development and its determinants in Polish regions

Region	GDP per capita	Labour productivity	Work hours per person	Effectiveness of labour market	Participation rate	Demographic structure
1	2	3	4	5	6	7
2000						
Mazowieckie	39,393	46	2,113	0.87	0.60	0.82
Dolnośląskie	27,829	48	2,018	0.83	0.56	0.82
Wielkopolskie	27,439	31	2,092	0.86	0.58	0.80
Śląskie	26,478	36	2,087	0.79	0.55	0.82
Pomorskie	25,849	35	2,100	0.81	0.56	0.81
Łódzkie	25,601	37	2,130	0.83	0.55	0.80
Małopolskie	23,544	28	2,107	0.82	0.56	0.80
Zachodnio-pomorskie	23,084	24	2,125	0.83	0.57	0.83
Lubuskie	23,020	32	2,078	0.79	0.55	0.80
Kujawsko--Pomorskie	22,471	27	1,985	0.88	0.57	0.80
Opolskie	21,390	28	2,073	0.85	0.56	0.81
Świętokrzyskie	20,224	27	2,120	0.76	0.56	0.79
Podlaskie	19,796	23	2,063	0.84	0.52	0.81

cont. Table 2

1	2	3	4	5	6	7
Warmińsko-Mazurskie	19,248	23	2,132	0.85	0.59	0.80
Podkarpackie	18,198	22	1,947	0.86	0.60	0.80
Lubelskie	18,054	26	1,919	0.84	0.58	0.78
2013						
Mazowieckie	64,613	69	2,060	0.92	0.60	0.84
Dolnośląskie	45,150	61	2,040	0.89	0.54	0.86
Wielkopolskie	43,208	52	2,090	0.91	0.58	0.84
Śląskie	42,027	51	2,010	0.90	0.55	0.86
Pomorskie	38,796	48	2,065	0.90	0.56	0.84
Łódzkie	37,691	37	2,050	0.89	0.58	0.86
Małopolskie	35,733	46	2,000	0.89	0.56	0.84
Zachodnio-pomorskie	33,614	49	2,065	0.90	0.53	0.85
Lubuskie	33,559	41	2,060	0.90	0.54	0.85
Kujawsko-Pomorskie	33,086	44	2,080	0.88	0.56	0.85
Opolskie	32,546	47	2,015	0.91	0.54	0.87
Świętokrzyskie	29,470	32	2,105	0.87	0.54	0.86
Podlaskie	29,441	37	2,120	0.90	0.56	0.85
Warmińsko-Mazurskie	28,869	38	2,065	0.89	0.52	0.84
Podkarpackie	28,658	39	1,960	0.86	0.56	0.84
Lubelskie	28,584	32	2,000	0.90	0.57	0.85

Source: author's own research based on the data from: GUS, CE (access: 29.08.2016).

On the other hand, the lowest percentages of economic growth in the period under analysis were recorded in the following regions: Świętokrzyskie, Podlaskie, Warmińsko-Mazurskie, Podkarpackie and Lubelskie. Particularly striking is the significant and persistent advantage of the Mazowieckie region (the GDP in the second-ranked Dolnośląskie region constituted merely ca 70% of the GDP of the Mazowieckie region).

Table 3

Determinants of economic growth of Polish regions (Poland = 100)

Region	GDP per capita	Labour productivity	Work hours per person	Effectiveness of labour market	Participation rate	Demographic structure
Mazowieckie	177	153	101	103	108	99
Dolnośląskie	123	135	100	99	98	101
Wielkopolskie	118	116	102	102	105	99
Śląskie	115	112	98	101	100	101
Pomorskie	106	107	101	101	101	98
Łódzkie	103	82	100	99	105	101
Małopolskie	98	101	98	100	101	99
Zachodnio-pomorskie	92	108	101	100	95	100
Lubuskie	92	91	101	101	99	100
Kujawsko--Pomorskie	90	97	102	98	101	100
Opolskie	89	104	98	101	97	102
Świętokrzyskie	81	71	103	97	97	101
Podlaskie	81	81	103	101	101	100
Warmińsko--Mazurskie	79	85	101	99	94	99
Podkarpackie	78	86	96	96	102	99
Lubelskie	78	71	98	100	103	100
Polska	100	100	100	100	100	100

Source: author's own research on the basis of data: GUS, CE (access: 29.08.2016).

In light of such a significant and at the same time persistent disparity as regards the level of GDP per capita, it is vital to establish which areas of fundamental identity are primarily responsible for the emergence of those considerable differences. The data presented in table 3, in turn, show that in the year 2013 hourly labour productivity was a particularly important factor contributing to the significant disparities as regards the growth associated with GDP per capita. Differences in the levels of professional activity (participation rate) proved to be yet another factor, which to some degree – though not as much as the differences in levels of labour productivity – influenced the disparities among Polish regions as regards their economic development.

For example, a significantly higher (over 5%) than average level of professional activity was recorded in the Mazowieckie, Wielkopolskie and Łódzkie regions, whereas the regions in which participation rate negatively (level lower than average by 3%) impacted the growth of GDP included: Warmińsko--Mazurskie, Zachodniopomorskie, Opolskie and Świętokrzyskie. While analys-

ing the data in the table, it is possible to observe in the case of the Podkarpackie region the negative impact of such factors as total work time and effectiveness of labour market.

Conclusion

The aim of the present study, that of defining the main determinants and mechanisms through which labour productivity and employment influence the economic growth of Polish regions in the years 2000–2013. On the basis of an expanded fundamental identity between the volume of product of the given economy, its labour productivity and employment, five main determinants of the level and rate of economic growth were identified, namely: labour productivity measured by the value of hourly labour productivity, total hourly work time (during the year) per person employed, labour market effectiveness resulting from the relation between people employed and those professionally active, the level of participation rate and the demographic structure of the given economy.

The analysis conducted shows that the highest levels of GDP per capita in the period under analysis were recorded in the following regions: Mazowieckie, Dolnośląskie, Wielkopolskie, Śląskie and Pomorskie. On the other hand, the lowest level of economic growth was recorded in the following regions: Świętokrzyskie, Podlaskie, Warmińsko-Mazurskie, Podkarpackie and Lubelskie. The decisive and continuing predominance of the Mazowieckie region deserves particular attention (the level of GDP in the second ranked Dolnośląskie region constituted merely ca 70% of the level in the Mazowieckie region).

The evaluation of the determinants of economic growth under analysis proved that hourly labour productivity is of particular importance for the significant disparities among Polish regions as regards economic growth. Therefore, the findings indicate that the key factor determining the socio-economic development of Polish regions is their inner effectiveness, reflected by the level of labour productivity. However, the role of factors related to the level, growth rate and structure of employment is much more limited.

It is also worth emphasizing that the present article can be treated as a point of departure for more thorough analyses identifying the key factors responsible for the level and growth rate of labour productivity in Polish regions – a particularly significant parameter as regards their development.

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MIGRATION AND THE LABOUR MARKET – THE CASE OF POLAND AND THE BALTIC STATES

***Agnieszka Piekutowska*[1], *Jerzy Grabowiecki*[2]**

[1] Faculty of Economics and Management
University of Bialystok
e-mail: piekutowska@uwb.edu.pl
[2] Faculty of Economics and Management
University of Bialystok
e-mail: j.grabowiecki@uwb.edu.pl

K e y w o r d s: emigration, labour market, Poland, Baltic States.

A b s t r a c t

This article aims to examine the economic impact of emigration on labour market developments in Poland, Lithuania, Latvia and Estonia (since EU accession) in a comparative perspective. The realization of this goal required an analysis of the literature as well as statistical analysis. The impact of emigration on the unemployment rate reduction, the issue of labour shortages and the wage effect of emigration and rising inflation were analysed.

The main conclusion of the study is that the nature of these effects seems to be country-specific. The analysis indicated that along with reduction in labour supply, the unemployment rate reduction, the wage growth pressure and inflation were observed in all of the analysed countries. However, the strength of these developments varied among them. This differentiation can be attributed firstly to a different scale and intensity of emigration. Furthermore, differences among the analysed countries in the scope of wage pressure and inflation should be explained in the context of changes in the domestic workers productivity.

MIGRACJE A RYNEK PRACY NA PRZYKŁADZIE POLSKI I PAŃSTW BAŁTYCKICH

***Agnieszka Piekutowska*[1], *Jerzy Grabowiecki*[2]**

[1] Wydział Ekonomii i Zarządzania
Uniwersytet w Białymstoku
[2] Wydział Ekonomii i Zarządzania
Uniwersytet w Białymstoku

S ł o w a k l u c z o w e: emigracja, rynek pracy, Polska, kraje bałtyckie.

Abstrakt

Celem artykułu jest analiza wpływu emigracji na sytuację na rynku pracy w Polsce, na Litwie, na Łotwie i w Estonii (od przystąpienia do UE) w perspektywie porównawczej. Realizacja tego celu wymaga analizy literatury oraz analizy statystycznej. Przedmiotem analizy jest wpływ emigracji na zmniejszenie stopy bezrobocia, problem niedoboru siły roboczej wraz z wpływem emigracji na kształtowanie płac i presji inflacyjnej.

Głównym wnioskiem z przeprowadzonych badań jest swoisty charakter konsekwencji emigracji w poszczególnych krajach. Analiza wykazała, że wraz ze zmniejszeniem podaży pracy we wszystkich analizowanych krajach wystąpiło obniżenie stopy bezrobocia, presja na wzrost płac i presja inflacyjna. Siła tych zmian jest jednak różna w analizowanych krajach. To zróżnicowanie może być wyjaśnione przede wszystkim różną skalą i intensywnością emigracji. Ponadto różnice między analizowanymi krajami w zakresie presji na wzrost płac czy inflacji mogą być wyjaśnione zmianami w produktywności pracowników krajowych.

Introduction

Poland, Lithuania, Latvia and Estonia have extensive experience in migration both as sending and receiving countries. In the second half of twentieth century, the shape of migration flows in the Baltic States was influenced, inter alia, by relations with the Soviet Union. While the Polish labor force also found employment in the countries of the Council for Mutual Economic Assistance, it is worth pointing out that the directions of emigration were more diverse. Between 1981 and 1988, 830,000 people emigrated to Western European countries (MAREK 1992, p. 18). In the years 1991–2001, the main destination countries for Polish emigrants were: Germany (178,000 people), the USA (27,000 people) and Canada (14,400 people) as well as Austria and Italy (STACHOWIAK 2004, p. 216, see also: MAREK 1991, *Zewnętrzne migracje zarobkowe...* 2000).

The circumstances which affect migration patterns in Poland and the Baltic States have changed greatly over the last dozen years. When Poland, Lithuania, Latvia and Estonia joined the European Union in 2004, the citizens of these countries gained the right to move and reside freely within the territory of the EU (taking into consideration restrictions for movement that terminated on 1 May 2011). Not surprisingly, none of the countries under consideration sought transitional periods during negotiations, which resulted from the assumption of the predominance of gains over costs stemming from the free movement of workers. Inasmuch as not all expectations were met, the aim of the paper is to examine the economic consequences of emigration on Poland, Lithuania, Latvia and Estonia (since EU accession) from a comparative perspective. Firstly, the main determinants of the different scale and intensity of emigration in the four countries will be indicated. Then, the

differentiated impact of emigration will be analysed (including *inter alia:* the wage effect of emigration, the impact of outflow on the unemployment rate reduction, the issue of labour shortages together with the rising inflation). The analysis is expected to show that the nature of these effects seems to be country-specific.

In the light of theory, international labour movement can enhance the world economy's efficiency. As far as the destination country is concerned, an increase in labour supply leads to a decline in wages. On the contrary, as a result of a reduction of labour supply (through emigration), wages rise in the sending country (CARBAUGH 2015, p. 316, 318). This simple theoretical model does not take into account the consequences of wage growth in excess of productivity growth. As will be shown, on the basis of the analysis of emigration from Poland and the Baltic States, the consequences of emigration for the sending country include not only a decline in unemployment but an increase in wages. Emigration is also accompanied by negative phenomena such as inflation or labour shortages.

In spite of the enlargement of the EU in 2004 and a significant increase in emigration from the EU-10 and increased research into the issues concerning the economic consequences of migration, the research was mainly written from the perspective of the host countries. On the other hand, studies on the effects of emigration from the sending countries point of view were often conducted for a group of countries (as a whole) – EU-8 or EU-10. Thus, the motivation of this paper was twofold: firstly, to show the impact of emigration on the labour market from the sending countries' point of view and secondly, by adopting a comparative perspective to present differences among Poland, Lithuania, Latvia and Estonia as far as the impact of emigration on labour development is concerned.

The scale and the determinants of migration in Poland and the Baltic States

Poland, Lithuania, Latvia and Estonia have a slightly different emigration experience as far as the scale of emigration and its intensity in particular periods are concerned. In Lithuania and Latvia emigration rose shortly after the EU accession – in 2005 and 2004 respectively. In Poland and Estonia, a significant increase in emigration came later – in 2006.

What is common for all of the analysed countries is the second wave of emigration that took place a few years later: in Lithuania and Latvia, emigration started to grow again from 2008 and reached its peak in 2010. In Poland emigration reached the highest value later – in 2013, whilst in Estonia – in 2015 (see Fig. 1).

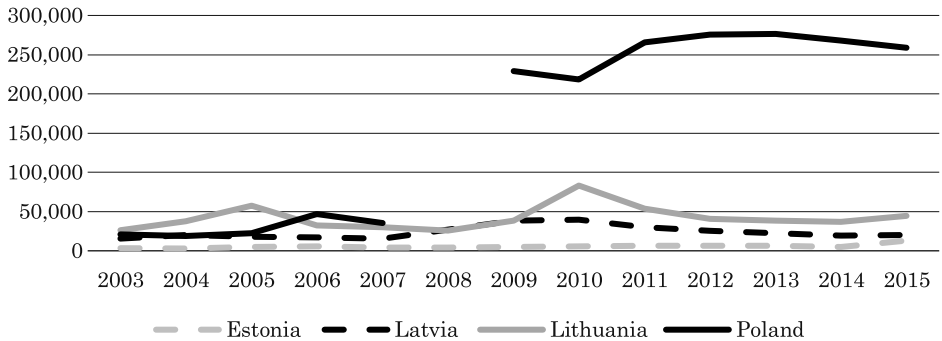

Fig. 1. Emigration flows from Poland and the Baltic States between 2003–2015 (no data available for Poland for 2008), in thousands
Source: own elaboration based on Eurostat database (Eurostat 2017).

As one can notice, not surprisingly, being the biggest country of the region, Poland recorded the highest emigration flows in absolute terms. However, such an approach carries the risk of a misleading interpretation: it is desirable in comparative studies to present the data in relative terms (see Fig. 2), especially when countries taken into account are of such different sizes. A relative approach also allows us to reveal the importance of the phenomenon from the sending countries point of view.

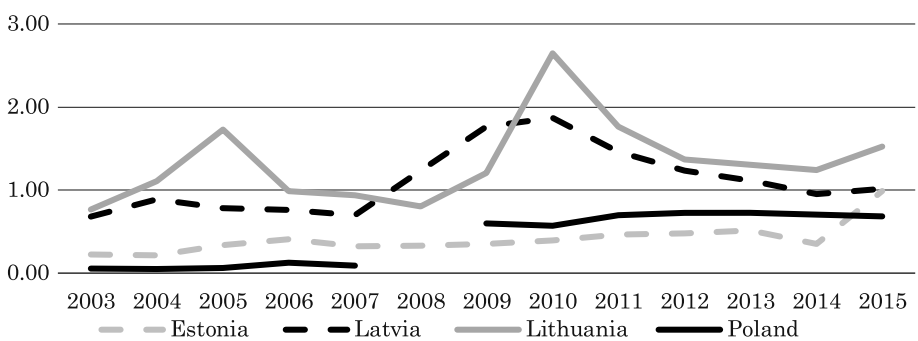

Fig. 2. Emigration rate in Poland and the Baltic States between 2003–2015 (no data available for Poland for 2008), in %
Source: own calculation based on Eurostat database (Eurostat 2017).

Country statistics show that in relative terms (i.e. in relation to the population of the country) emigration was the strongest in Lithuania and Latvia. With the exception of 2008 and 2009, the emigration rate was the highest in Lithuania, reaching 2.65% in 2010 (for a country with approximately 3.1 million people then, emigration of 83 thousand people represents

a sizable proportion of its population). Latvia also recorded a high emigration rate with its peak (at the level of 1.87%) in 2010. Thus, although Poland was the main sending country, it was not Poland that was most affected by the phenomenon of emigration.

Furthermore, the analysis of the emigration impact on the labour market requires referring to the data on the decline in the working age population. The number of Lithuanian, Latvian, Polish and Estonian emigrants between 2004 and 2007 accounted for respectively: 5.22% of Lithuania, 3.95% of Latvia, 2.32% of Poland and 1.49% of Estonias' working age population. Consequently, Lithuania and Latvia felt the most negative impact in the decline of the working age population (D'AURIA et al. 2008, p. 5, KAHANEC, ZIMMERMANN 2008, p. 9).

In conclusion, one may distinguish two types of countries as far as migration patterns after the EU accession are concerned: with regards to a high scale of migration – Poland, and with regards to high intensity of migration – Lithuania and Latvia. Estonia recorded quite modest migration processes as compared to Poland, Lithuania and Latvia.

Taking into account these findings, it is reasonable to detect the reasons for the differentiation among the analysed countries in terms of the scale of emigration. Analysing the main push factors: the level of GDP and unemployment rate (as compared to the EU), one can find the reason for the modest emigration rate in Estonia on the one hand and high emigration recorded in Poland, on the other hand. In the year of accession to the EU, Estonia recorded the lowest – among the analysed countries – unemployment rate, at the level of 10.2% and at the same time, the highest level of GDP per capita. Poland, on the contrary, recorded the highest unemployment rate – at the level of 19.1% (with regards to the level of GDP, Poland took next to last place, ahead of Latvia only).

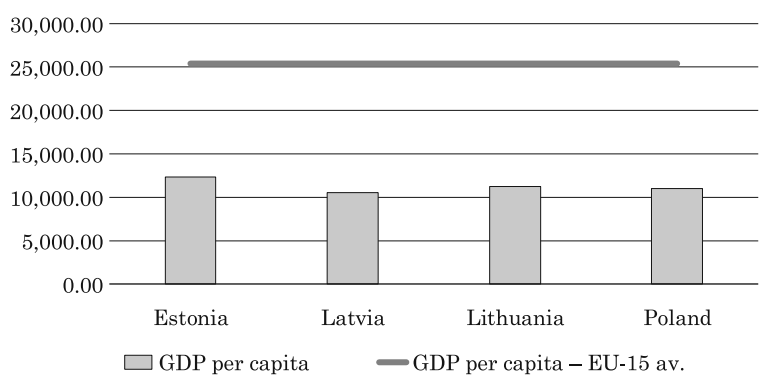

Fig. 3. GDP (PPS per capita) in Poland and the Baltic States compared to the EU average in 2004
Source: own elaboration based on Eurostat database (Eurostat 2017).

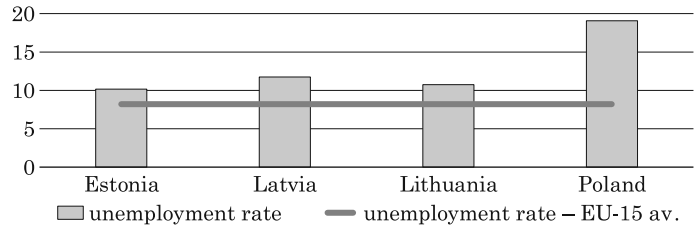

Fig. 4. Unemployment rate in Poland and the Baltic States compared to the EU average in 2004 (in %)
Source: own elaboration based on Eurostat database (Eurostat 2017).

Nevertheless, all the analysed countries had strong incentives to emigrate: the unemployment rate both in Poland as well as in all the Baltic States was higher than the average for the EU-15 (Fig. 4). GDP per capita in Estonia, Latvia, Lithuania and Poland accounted for – respectively: 48%, 41%, 44% 43% of the average for the EU-15 (Fig. 3).

The effects of emigration on the labour market of Poland and the Baltic States

The accession of Poland, Lithuania, Latvia and Estonia to the EU was preceded by lengthy and active negotiations, also in the area of free movement of the workforce. It is worth noting that the objective of all the analysed countries was to achieve the shortest possible transition periods, which indicates a conviction of the superiority of benefits over costs stemming from that freedom. Therefore, the public discussion which lasted parallel to the negotiations stressed mostly the former, indicating the possibility of a significant drop in unemployment.

The impact of emigration on the unemployment rate is not easy to determine. The degree of the impact depends, among others, on the migrants' structure and their status in the labour market before deciding to emigrate. While in the case of people who decided to emigrate due to the lack of employment in their country, an outflow causes a drop in the number of unemployed (the effect of exporting unemployment), whereas in the case of people who emigrated in spite of having a job (and the reason for the migration was e.g. low wages), emigration results in an increase in the number of vacancies. Here emigration may indirectly affect the reduction in the level of unemployment, when vacancies can be filled by the existing unemployed. However, in the absence of volunteers to work, vacancies may remain unfilled.

Certain migration strategies have no impact on reducing the level of unemployment. For instance, in the case of temporary migration, employment

abroad, when one emigrates during holidays (as the emigration of Polish teachers to another Member State during the summer break), will not have the substitutional character in relation to their employment in the country of origin. Emigration can also indirectly influence the decrease in unemployment by increasing employment through the multiplier effect associated with the increase in consumption by households receiving remittances from abroad.

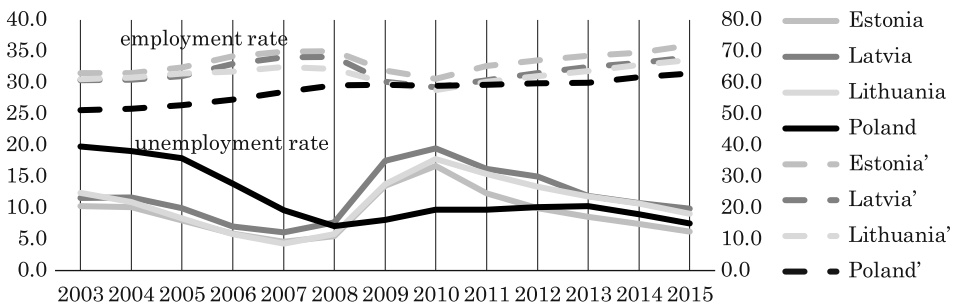

Fig. 5. Unemployment rate (left axis) and employment rate (right axis) in Poland and the Baltic States between 2003–2015

Source: own elaboration based on Eurostat database (Eurostat 2017).

As one can notice from the data in Figure 5, since the accession to the EU, the unemployment rate in Poland and the Baltic States started to decline. The decrease was significant, especially in the first years after accession: in Poland from 19.1% in 2004 to 9.6% in 2007; in Lithuania to the level of 4.3% in 2007. The decline in unemployment is connected with the phenomenon of emigration after the accession to the EU (HAZANS, PHILIPS 2011, p. 3, KAHANEC et al. 2009, p. 30). However, in all of the analysed countries after 1 May 2004 there was also an increase in the demand for labour[1]. For example, in Poland, the number of newly created jobs – between 2005 and 2007 amounted to more than 1,350 thousand (*Popyt na pracę w 2005 r.* 2006, p. 15, *Popyt na pracę w 2006 r.* 2007, p. 50, *Popyt na pracę w 2007 r.* 2008, p. 50). Identifying the factor, which had a strong impact on unemployment reduction (emigration or increasing labour demand) is straitened. A study by SCHREINER (2008, p. 87) indicates that in Poland and the Baltic States the unemployment reduction was to a significant extent driven by an increase in employment. Another study – devoted to emigration from eight Central and Eastern European countries

[1] Due to the lack of the data for all analysed countries about the number of newly created jobs in the analysed period, labour demand was identified as employment level (i.e. number of available jobs). Such approach is not perfect – the level of employment does not include job vacancies (i.e. unsatisfied labour demand).

(EU8) that joined the EU in 2004 – points out that emigration reduced unemployment in 2009 by 0.27 of a percentage point in the EU8 (ZAICEVA 2014, p. 6).

Along with unemployment reduction, a problem of unmet demand for labour occurred. One can distinguish three periods: 2005–2007, 2008–2010 and 2011–2015. In all of the analysed countries, between 2005 and 2007 as well as between 2011 and 2015 the unemployment rate reduction was concurrent with an increase in the job vacancy rate. Between 2008 and 2010 the unemployment rate rose in all analysed countries. What is worth highlighting are the similar changes of the Beveridge curve in all analysed countries (Fig. 6).

At the beginning of 2005 in all of the analysed countries, a high unemployment rate and a low job vacancy rate occurred. Inasmuch as those points are to the right of the 45 ray, this would indicate that there was a demand deficiency (*Structural Unemployment*... 2012, p. 3). Analysing movements along the curve between 2005 and 2007 one can notice the counter-clockwise movements, typical for a business cycle pattern of the falling unemployment as vacancies increased. The job vacancy rate increased significantly in all the analysed countries: from 0.7% to 1.5% in Poland, from 0.7% to 2.1% in Lithuania, from 1.5% to 2.1% in Latvia, and from 2.4% to 3.3% in Estonia. Thus, the problem of satisfying labour demand occurred. Two comments are indispensable here. Firstly, with the recruitment difficulties, employers took a number of measures, including an increase in salaries. This issue will be described later in the paper. Secondly, one can notice that in Poland – as opposed to the Baltic States – although unemployment declined, it was still high in 2007 (at the level of 9.6%). Thus, the high job vacancy rate and recruitment difficulties (while 1,766 thousand people were simultaneously unemployed) indicates labour mismatches.

Since 2008 the worldwide recession took hold and affected labour markets. This was manifested in the unemployment rate soaring and job vacancies plummeting at the same time, represented by a south-eastern movement on the Beveridge curve in all analysed countries. By 2010, unemployment rose significantly to 19.5% in Latvia, to 17.8 in Lithuania and to 16.7% in Estonia. Only in Poland, the increase in unemployment was moderate – to 9.7% in 2010.

Since 2011 Lithuania, Latvia and Estonia have been experiencing a drop in unemployment rates and a moderate increase in the rate of job vacancies. In Poland there are changes in the same direction, but it started later – in 2014. These changes are represented by a north-western movement on the Beveridge curve in all analyzed countries. However, unlike the changes between 2005 and 2007, there has been no such significant increase in the rate of job vacancies. Over the analyzed period (i.e. between 2005 and 2015), in all analyzed countries, it was in 2007 when there were the biggest labor shortages.

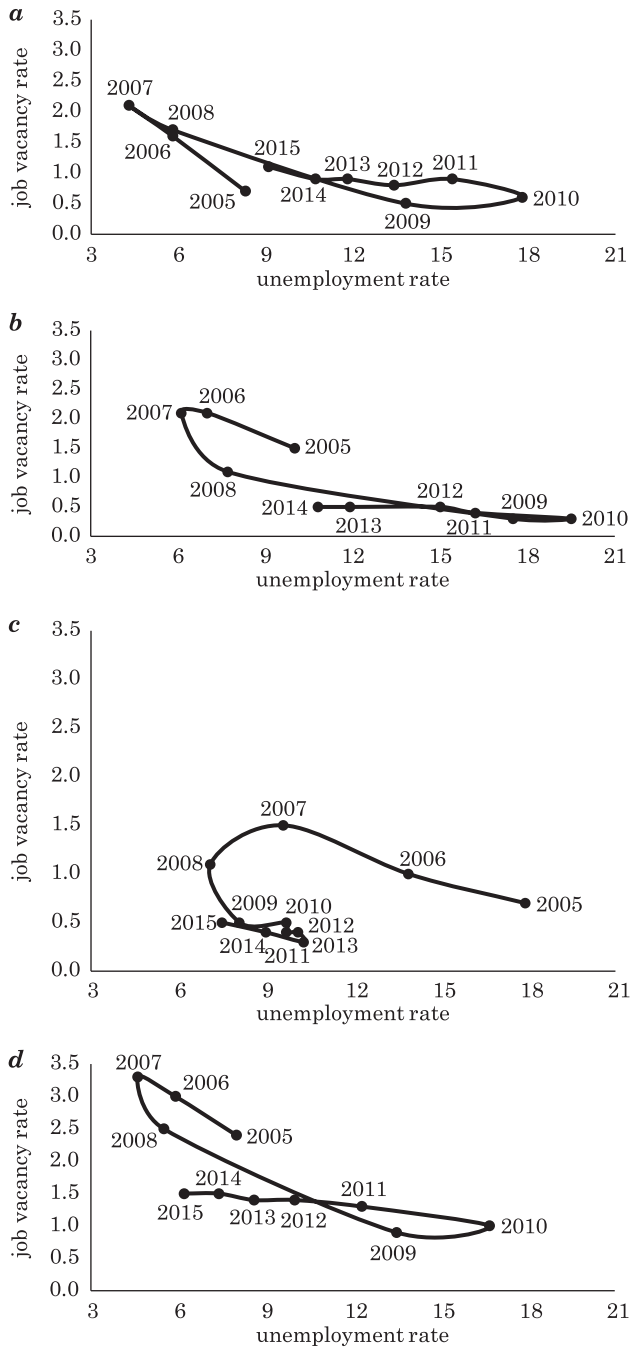

Fig. 6. Beveridge curve for Lithuania (*a*), Latvia (*b*), Poland (*c*) and Estonia (*d*) in 2005–2015
Source: own elaboration based on Eurostat database (Eurostat 2017).

Reducing the unemployment rate, which in part can be attributed to emigration after the 1 May, 2004 affected the bargaining position of workers. In response to recruitment difficulties, especially in 2007, one of the actions taken by employers was an increase in wages. Under conditions of rapid economic growth (and the creation of many new jobs) this led to an upward pressure on wages. Indeed, between 2005 and 2007, all the analysed countries were affected by increases in wages, however, with different intensity (Fig. 7). Latvia recorded the highest annual percentage change of compensation with its peak in 2007 – compensation increased by 35%. Estonia was also significantly affected by the wage increase – in 2007 compensation grew by 24.8%. In Lithuania and Poland wage growth was significant but more modest. Against the background of the economic recession, wages started to decrease, with the exception of Poland only, where wage growth slowed down, but was still positive. Since 2011, in the group of analyzed countries, wage growth has been rather stable – with the exception of Latvia in 2011 (when wages increased by 17.2%) and Poland in 2015, where wages fell.

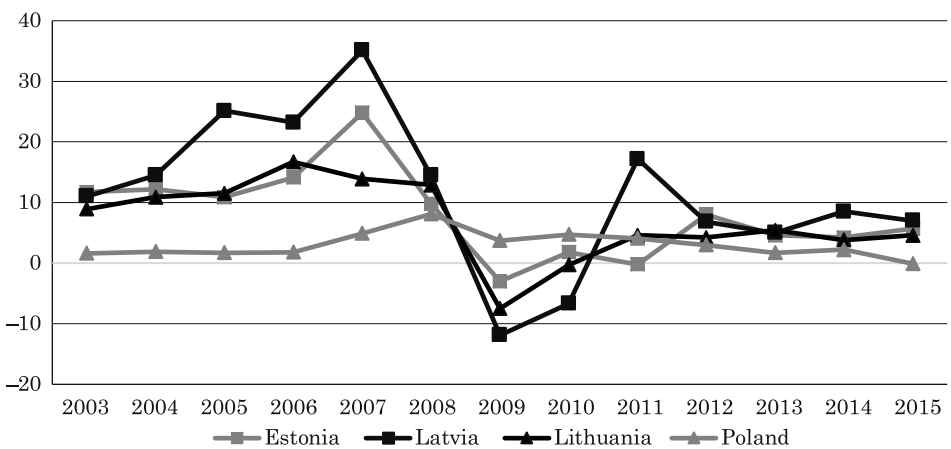

Fig. 7. Annual percentage changes of compensation per employee in Poland and the Baltic States, 2003–2015

Source: own elaboration based on: *Convergence Report* (2010, p. 100, 122, 140, 176), *Labour Market Developments in Europe* (2013, p. 109, 117, 118, 124), *Labour Market and Wage Developments in Europe* (2016, p. 115, 123, 124, 130).

The growth of wages was not necessarily the result of growth in productivity. The consequences of the increase in wages depend on whether or not it is accompanied by an increase in labour productivity. If wages increase faster than labour productivity, than an increase in unit labour cost occurs, affecting the level of competitiveness of the country[2].

[2] Unit labour cost is the ratio of labour costs to labour productivity.

In all of the Baltic States, between 2003 and 2008, as well as between 2012 and 2015 productivity grew slower than wages (Fig. 8). In Poland, wage growth exceeded productivity growth in 2005, 2007–2009, and between 2012 and 2014.

As a result of wage growth exceeding productivity growth, the unit labour cost increases. All analysed countries experienced this phenomenon, but at a slightly different time and with different intensity (Fig. 9), with the sharpest increase in Latvia at a level above 27% in 2007. In Lithuania the increase of unit labour cost was the biggest in 2006 (12.1%) whilst in Estonia – in 2007 (at the level of 16.8%). In case of Poland, a significant increase in the unit labour costs came later – in 2008 when the unit labour cost increased by 7.8%.

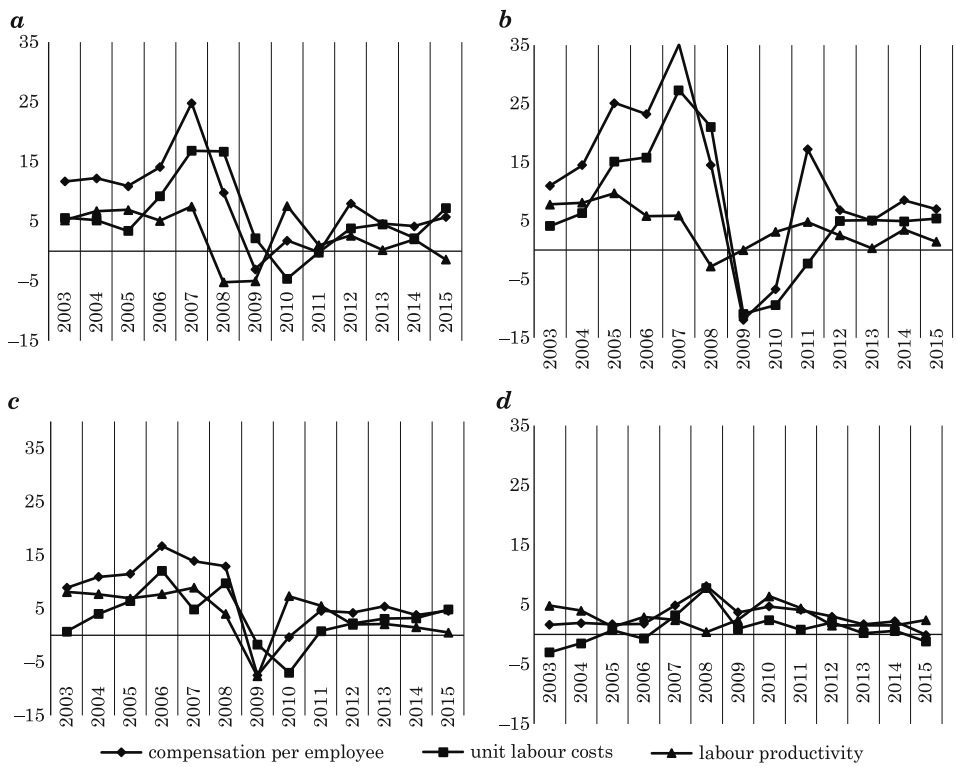

Fig. 8. Annual percentage changes of compensation, labour productivity and labour unit cost in the Baltic States (*a* – Estonia, *b* – Latvia, *c* – Lithuana) and Poland (*d*), in 2003–2015
Source: own elaboration based on: *Convergence Report* (2010, p. 100, 122, 140, 176), *Labour Market Developments in Europe* (2013, p. 109, 117, 118, 124), *Labour Market and Wage Developments in Europe* (2016, p. 115, 123, 124, 130).

The consequence of a unit labour cost rise is an increase in prices (if the enterprises shift the burden of rising labour costs to consumers). Indeed, as one can notice from Figure 9, the annual rate of HICP inflation was at a low level in 2003, but started to pick up rapidly thereafter, reaching the highest level in all of the analysed countries in 2008, i.e.: 15.3% in Latvia, 11.1% in Lithuania, 10.6% in Estonia and 4.2% in Poland. The underlying inflation pressures were caused by substantial wage increases. This is especially true for the Baltic States between 2006 and 2008 and to a lesser degree for Poland in 2008.

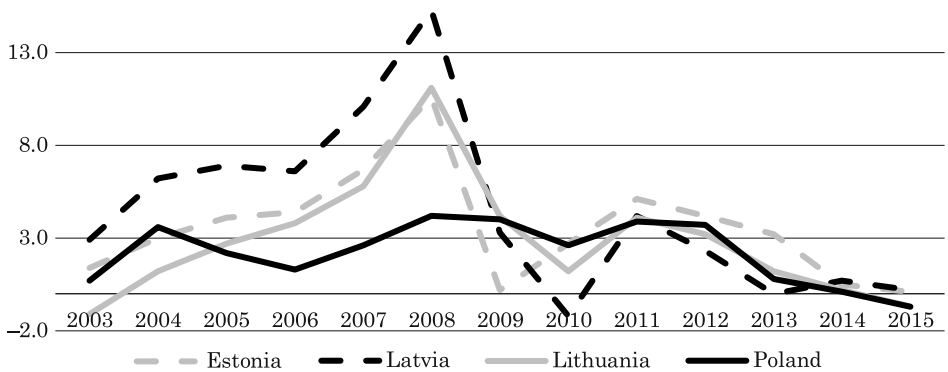

Fig. 9. Price developments in Poland and the Baltic States, in 2003–2015
Source: own elaboration based on: (*Convergence Report* 2010, pp. 100, 122, 140, 176; *Labour Market Developments in Europe* 2013, pp. 109, 117, 118, 124; *Labour Market and Wage Developments in Europe* 2016, pp. 115, 123, 124, 130).

Conclusions

In this paper, the impact of emigration on the labour markets of four countries: Poland, Lithuania, Latvia and Estonia has been explored. As the supply of labour decreased, the unemployment rate was reduced, and wage growth pressure and inflation were commonly observed in all of the analysed countries. However, the strength of these developments varied between member states. This differentiation can be attributed firstly to a different scale and intensity of emigration. Although all of the analysed countries recorded accelerating emigration after the EU accession in 2004, the scale and the intensity of the phenomenon varied across the countries. On the one hand, Poland recorded the largest emigration flows in absolute terms; on the other hand, Lithuania and Latvia recorded the highest emigration rate – in relation to their population – and they have been the most affected by the phenomenon of emigration. Estonia stood out, with moderate emigration compared to the

other countries. Nevertheless, in light of the analysis of the push factors, these observations are not astonishing.

Secondly, different labour market developments can be ascribed to a different initial situation: in the year of the EU accession, the unemployment rate in Poland was nearly twice as high as the unemployment rate in the Baltic States. Thus, although all the analysed countries recorded an unemployment rate reduction together with the rising job vacancy rate, the problem of labour shortages in Poland was more moderate. On the other hand, high initial job vacancy rates in Estonia (with a fall in the unemployment rate) resulted in a meaningful deepening of the problem connected with labour shortages.

Furthermore, together with the decrease in the labour supply and the rising problem of labour shortages, wage pressure in all of the analysed countries took place. Still, one can indicate differences among the analysed countries in this respect, which should be explained in the context of changes in the domestic workers productivity. All of the analysed countries experienced periods when productivity grew slower than wages. This was especially true for the Baltic States, which recorded – as a result – a significant increase in the nominal unit labour cost. Hence, the internal and the external factors influenced the inflation rate, and the Baltic States recorded high inflation growth that even reached 15.3% (in Latvia in 2008). However, it must be remembered that such developments – regarding price changes – were influenced not only by wage pressure but also by other factors.

To conclude, the consequences of emigration from Poland and the Baltic States after joining the EU go beyond reduction in unemployment. There were also negative effects such as wage growth in excess of productivity growth or labour shortages. The scale of these negative phenomena was determined by the initial situation in the labour market. The scale and dynamics of emigration, as well as labour market developments, influenced employee productivity. Still, the aim of presenting both the positive and negative consequences of emigration from the perspective of the sending country is not to question the win-win-win scenario (for migrants, destination countries and countries of origin), but to underline the need for a deeper reflection and ex-ante analysis that go beyond the basic theoretical foundations.

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MAKING WORK SUSTAINABLE IN BUSINESS AND SOCIAL ENTERPRISES

***Agnieszka Furmańska-Maruszak*[1], *Agata Sudolska*[2]**

[1] Social Policy Unit
Institute of Sociology
Nicolaus Copernicus University
e-mail: afmaruszak@umk.pl
[2] Department of Enterprise Management
Faculty of Economic Sciences and Management
Nicolaus Copernicus University
e-mail: aga@econ.uni.torun.pl

K e y w o r d s: sustainable work, organization's innovation philosophy, social enterprises.

A b s t r a c t

The aim of this paper is identification of the activities supporting the implementation of a sustainable work concept both in firms and social enterprises operating in Poland. The paper focuses on activities with regards to the quality of the job and work environment, improving employee health, safety and well-being, introducing flexible hours, developing employee skills and reconciling working and non-working life. Moreover, the paper is an attempt to identify the components of an organization's philosophy favorable to innovations that mostly support the implementation of the sustainable work concept. The research findings presented in the paper prove that firms are focused mainly on introducing new solutions related to employee health and safety as well as social and living condition improvement. On the other hand, social enterprises are more active in implementing the solutions enabling employee reconciliation between work and personal life. The paper also presents the correlation coefficients between chosen components of an organization's philosophy favorable to innovations and the need for introducing solutions oriented toward a sustainable work concept. The research findings point out the importance of making innovation management the central element of organizational strategy. The second important component of an organization's philosophy relates to focusing on positive relations between employees, both at the organizational level and in teams. Additionally, in the case of social enterprises, the paper highlights the importance of involving people undergoing the reintegration process in creating innovations.

DZIAŁANIA WSPIERAJĄCE PRACĘ ZRÓWNOWAŻONĄ W PRZEDSIĘBIORSTWACH I PRZEDSIĘBIORSTWACH EKONOMII SPOŁECZNEJ

***Agnieszka Furmańska-Maruszak*[1], *Agata Sudolska*[2]**

[1] Zakład Polityki Społecznej
Instytut Socjologii
Uniwersytet Mikołaja Kopernika w Toruniu
[2] Katedra Zarządzania Przedsiębiorstwem
Wydział Nauk Ekonomicznych i Zarządzania
Uniwersytet Mikołaja Kopernika w Toruniu

S ł o w a k l u c z o w e: praca zrównoważona, filozofia innowacji w organizacji, przedsiębiorstwa ekonomii społecznej.

Abstrakt

Celem artykułu jest identyfikacja działań wspierających pracę zrównoważoną w firmach oraz przedsiębiorstwach społecznych w Polsce. W artykule skoncentrowano się na identyfikacji określonych działań z zakresu kształtowania warunków pracy, w tym bezpieczeństwa i higieny pracy, stosowania elastycznych form zatrudnienia i organizacji pracy, rozwoju kompetencji pracowników, a także wprowadzania udogodnień dotyczących godzenia pracy zawodowej z obowiązkami domowymi w firmach oraz podmiotach ekonomii społecznej. Ponadto artykuł stanowi próbę identyfikacji stymulatorów wdrażania koncepcji pracy zrównoważonej wynikających z występującej w badanych organizacjach filozofii innowacji. Zaprezentowane wyniki badań wskazują, że firmy są zorientowane przede wszystkim na wprowadzanie rozwiązań związanych z bezpieczeństwem i higieną pracy oraz poprawą warunków socjalno-bytowych swoich pracowników, natomiast przedsiębiorstwa społeczne są bardziej aktywne we wdrażaniu działań związanych ze wspieraniem równowagi między pracą a życiem osobistym. W artykule przedstawiono także zależności między wybranymi elementami filozofii innowacji a wdrażanymi przez badane podmioty działaniami związanymi z koncepcją pracy zrównoważonej. Przedstawione wyniki badań wskazują na szczególne znaczenie eksponowania innowacji w strategii przedsiębiorstwa oraz pozytywnych relacji, zarówno na poziomie całej organizacji, jak i zespołów pracowniczych, jako stymulatorów działań związanych z wdrażaniem koncepcji pracy zrównoważonej. W przypadku podmiotów ekonomii społecznej na podkreślenie zasługuje także stymulujące oddziaływanie czynnika, jakim jest włączanie osób reintegrowanych w proces tworzenia innowacji.

Introduction

Sustainable work means that "working and living conditions are such that they support people in engaging and remaining in work throughout an extended working life" (Eurofound 2015a, p. 2). This approach requires that the needs of individuals as well as the demands of work that change over the life cycle are met. Taking into account individuals who change throughout their life course one should take into account their abilities, health, skills, their experience and motivation as well as their personal obligations and needs including care responsibilities. Work requirements are related to the characteristics of the job and the work environment. They are first and foremost associated with job quality that is expressed in the following aspects (Eurofound 2015a, p. 4, 5): earnings, prospects (job security, career, contract quality); intrinsic job quality (physical and social environment, work intensity, skills and discretion) and working time (duration, flexibility, scheduling).

Both job quality and the characteristics of the individual are determined by various policies, regulations and practices set at the institutional, company and individual level (Eurofound 2016, p. 5). In particular, the concept of Corporate Social Responsibility, which is becoming more and more popular among Polish organizations, points out the issues concerning job quality and the work environment (VAN MARREWIJK, WERE 2003, p. 107–119, MCWILLIAMS et al. 2006, p. 10–18). In this paper, we focus on company policies including workplace practices both in business and social enterprises that make people

eager to remain engaged in their work. These practices lead to a better quality of life for employees as well as the improved functioning of an organization and are often related to the concept of workplace innovation (WPI). It refers to practices that enable workers to participate in organizational change that leads to improvement of the quality of their working life as well as company performance (Eurofound 2015b, p. 5).

Introducing such practices requires from an organization the openness to change. For several businesses and social entities implementing new solutions, real innovations are related to work organization or to a reconciliation between work and personal life. Innovation is understood to be an intentional introduction and application within an organization of ideas, processes, products or procedures, new to the relevant unit of adoption, and is designed to significantly benefit the individual, the group, the organization or society (OSBORNE, FLYNN 1997, WEST, FARR 1990, DE DREU 2006). This article treats new solutions concerning sustainable work as innovations. Therefore, it is assumed that both business and social enterprises focusing on developing or implementing the concept of sustainable work need a specific philosophy favorable to any kind of innovation.

The aim of our paper is to contribute to the knowledge and research on the implementation of sustainable work concept both in firms and social enterprises. Firstly, we attempt to identify if the dimensions of the sustainable work concept are present in the analyzed enterprises. These include: reconciliation between work and life, developing employee skills, and improving employee health and well-being. Secondly, we attempt to identify those components of the organizational philosophy favorable to innovations that mostly support the aforementioned dimensions of the sustainable work concept.

Dimensions of sustainable work in business and social enterprises

Sustainable work is beneficial for individuals (helping them to make easier transitions between their life stages), society (a better situation in the labour market, and lower pressure on public spending) as well as the company (helping employers to make better use of their workers' potential and increase work efficiency) (Eurofound 2016, p. 6). These strategies may be beneficial for both for-profit companies as well as social enterprises willing to gain a competitive advantage along with meeting their social goals (often related to social and vocational reintegration of their workers). Due to this fact, social enterprises make a tremendous effort to compete with for-profit companies by better flexibility and openness to new solutions as well as empowerment and coproduction orientation (RYMSZA, RYMSZA 2015, p. 330).

There are four dimensions of quality of work and employment that might be easily combined with sustainable work (Eurofound 2016, p. 9): career and employment security, health and well-being of workers, skills development and reconciling working and non-working life (WLB). In our study we take into account a company level where a better fit between the needs and abilities of workers and the requirements of the job can be achieved (Eurofound 2015a, p. 10). Due to data availability, we take into consideration three dimensions of sustainable work:

– health and well-being of workers (implementation of solutions aimed at improving employee working conditions as well as the implementation of solutions aimed at improving the social and living conditions of employees);

– skills development (implementation of activities aimed at the personal and professional development of employees);

– reconciling working and non-working life (implementation of individual solutions concerning work organization and time schemes as well as the implementation of solutions enabling reconciliation between work and personal life for employees).

Improving employee health and well-being

Considering employee health, we should take into account physical health, psychological health and the perception of health (Eurofound 2012, p. 12). Company-level health management requires a holistic approach (Eurofound 2015a, p. 10). Improving working conditions and work hygiene also requires the improvement of the psychological work environment which is predicted to deteriorate in the years to come (*Pan-European poll on occupational...* 2012). In Poland up to 70% of survey respondents believed that in the next five years the number of people suffering from work-related stress is going to rise (Eurofound 2016, p. 40). Work overload and the fear of being dismissed are among the key stressors in today's working life. Companies engaged in helping their employees to manage stress are less likely to pay the high costs of absenteeism, sick leaves or productivity as well as work quality drops (ROSSI et al. 2014, p. IX).

Developing skills of employees

At the company level it is important to promote participation in learning by workers of all ages who are facing technological, organizational and legislative changes. Older workers in managerial and professional occupations as well as

those employed in large companies are more likely to participate in training. The relationship between skills investments, productivity and competitiveness has been widely presented in the literature. It is referred to as being positive, since employee skills are not only developed but also used (FIELD 2015, p. 316, 317). It is worth remembering that formal education and formal training contribute only a small part of what is learnt at work (BURKE 2015, p. 330). Therefore it is crucial for today's companies to go further – to create and develop a workplace learning culture bearing in mind the potential of their multi-generational workforce.

Reconciliation between work and life

Working time arrangements as well as access to care facilities at a company level can make the reconciliation between work and private life possible. Shorter working hours (including the possibility of working part-time), employee-friendly flexible hours (flexitime or being able to take time off at a short notice) as well as predictable working hours can reduce the work-life conflict (Eurofound 2015a, p. 10). Access to facilities such as a company kindergarten or a room for breastfeeding mothers can make the life of working parents easier. Considering those who look after their aging family member, workplace-based eldercare support might include both policies and programs that are introduced by the HR department and supported by upper-level management, as well as informal practical help and emotional support provided by co-workers and supervisors. Formal eldercare support might be classified in the following categories: counselling and referral services, training for managers, flexible work arrangements and subsidies for services (CALVANO 2015, p. 168).

Mangers are interested in supporting eldercare policies and programs as long as they do not cost their institutions money or have a positive return on investment (CALVANO 2015, p. 168). Generally the need for WLB programs might be related to a general approach to innovation creation in a particular company. Social companies are more focused on meeting social needs both internally and externally and may be more open to support their employees in this field.

Organizational philosophy supporting innovations

Bearing in mind the importance and benefits of a sustainable work concept being alive in an organization, we need knowledge concerning the factors that influence its implementation. While considering the factors supporting sus-

tainable work implementation in a particular company, considerable attention should be placed on its philosophy (approach) supporting innovations. Such a philosophy is a multi-dimensional issue involving a wide range of components. The reference literature presents a variety of frameworks examining crucial components of organizational philosophy favorable to innovations. Among the crucial variables of organizational philosophy fostering innovations we can indicate: organizational strategy and mission clarity, leadership and supervisory encouragement, organizational culture and values, supporting employee development, challenging and interesting work, employee feeling of freedom and autonomy, positive interpersonal exchange, positive peer group, employee trust and openness, freedom from workload pressure, debating and tolerance for criticism, rewarding creative performance, approval of flexibility and risk-taking, sufficient resources facilitating the process of creating innovations (AMBILE et al. 1996, LOEWE, DOMINIQUINI 2006, HUNTER et al. 2007, ISAKEN, EKVAL 2010).

Organizational philosophy supporting innovations also concerns respect for employee needs. Nowadays, the leaders who want their subordinates to be open to innovation and be engaged in creating new solutions need to focus on meeting the working needs of their employees (BAL-WOŹNIAK 2013, p. 405, 406). Responding to these needs, organizations should aim to be innovative and actively engage in the field of employee satisfaction measurement. It is indisputable that satisfied employees are loyal to their employers and highly engaged in accomplishing organizational goals. Moreover, they are more eager to learn new things and they spread positive word-of-mouth which creates positive interpersonal relationships as well as positive feelings at the workplace (GREGORY 2011). Undertaking activities oriented at satisfying employee needs requires feedback from the workers. Such activities very often focus on providing employees the opportunity for personal and professional development, but they may also concern such areas as their health and well-being or reconciling working and non-working life. Regardless of the particular category of employee needs related to their work, it is crucial to investigate and then try to satisfy those needs as much as possible. This will certainly pay off in terms of employee work commitment. Moreover, assuming that one of the crucial barriers to innovation is people's fear of change, we can say that by introducing "pro-employee" innovative solutions the organization can bring the benefits resulting from the new solutions to the employees attention.

Summing up, enhancing an organization's ability to innovate seems to be a necessity today, the managers of both companies and social enterprises should be conscious about the variables constituting the philosophy supporting innovations. Without this knowledge they are not able to create and implement

any kind of innovation, including new solutions related to sustainable work. This in turn will make them take a step backward instead of taking a step forward and outstrip the competition.

Research problems and methodology

In this paper, we study both firms and non-profit enterprises by addressing two following research problems:

1) Are the three aforementioned dimensions of work sustainability (improving employee health and well-being, developing skills of employees and reconciliation between work and life) present in companies and social enterprises?

2) What components of organizational philosophy supporting innovation stimulate the three aforementioned dimensions of work sustainability the most?

The study is based on the statistical analysis of data obtained in a survey being an element of the comprehensive research project "Innovation among people. The analysis of innovation creation and its implementation in companies and social economy enterprises operating in Poland". The project was funded by the Polish National Science Centre grant on the decision number DEC-2013/11/B/HS4/00691. The research was conducted using the CATI technique (Computer Assisted Telephone Interview) on a sample of 200 firms (randomly selected from among the "Business Gazelles" and the "Deloitte Technology Fast 50 in Central Europe") and 140 social enterprises. The investigated sample of 200 businesses consisted of: enterprises from the commerce sector (98 entities), industry (76 entities), services (57 entities), construction (29), IT (6), transportation (6), agriculture (9), energy (3) and publishing (3). The representatives of firms were mainly human resource managers, marketing managers, specialists and other persons in managerial positions. The analyzed group of social enterprises was composed of 40 centers of social integration and 100 social cooperatives. The respondents from this group were mainly heads of cooperatives and directors of centers of social integration, managers and coordinators of different projects. Most of the investigated non-profit companies operated in the service sector (127) and trade (18). Only 4 of the studied non-profit enterprises represented industry, 7 were in the IT sector and the rest described their field as "other". In the questionnaire survey, research participants were asked to provide their assessments by answering the question "to what extent, in your opinion, each of these statements characterizes your company?". The scale ranged from 0% ("I fully disagree") to 100% ("I fully agree").

Employee health and well-being, skills development and work-life balance in business and social enterprises – results

The first research problem of the paper was to answer the question: Are the three aforementioned dimensions of work sustainability present in companies and social enterprises? The data concerning this issue is given in Table 1.

Table 1
Work sustainability dimensions that have appeared in business and social enterprises over the last 3 years

Work sustainability dimensions	Innovations	Social enterprises [%]	Business enterprises [%]
Improving employee health and well-being	implementation of solutions aimed at improving employee work conditions	74	96
	implementation of solutions aimed at improving employee social and living conditions	54	83
Developing skills of employees	implementation of activities aimed at employee personal and professional development	68	60
Reconciliation between work and life	implementation of individual solutions concerning work organization and time schemes	72	77
	implementation of solutions enabling employee reconciliation between work and personal life	69	46

Source: own calculation.

Firms focus more on health and well-being issues due to the fact that first of all they are aimed at productivity and performance. While considering work-life balance, they mainly chose time and work organization arrangements. On the other hand, non-profit companies are more active in the field of work-life balance facilities including eldercare support. As far as employee health and well-being is concerned, both companies and social enterprises implement the solutions oriented on employee working conditions improvement. However, the activities in the field of improving employee social and living conditions are much more visible in the group of companies.

The second research problem of the paper was to identify which components of the analyzed organizational philosophy support innovation the most. These dimensions of work sustainability included: improving employee health and well-being, developing employee skills and reconciliation between work and life.

The data collected in the course of the survey enabled us to calculate Pearson correlation coefficients between the need for caring out the activities concerning the sustainable work concept and chosen components of an organization's approach towards innovation for the group of business and social enterprises.

Improving employee health and well-being in business and social enterprises

The analysis of correlations presented in Table 2 proves the relationship between the need for implementing solutions oriented toward improving employee working conditions and the positive relationship between employees in the organization. Bearing in mind that positive relationships between co-workers, among others, involve mutual trust between people, we assumed that in such a positive atmosphere employees are open and frank with one another. Thus, they are more eager to propose innovations (changes) related to work sustainability. The idea is that they believe they can count on each other for any kind of support. Based on the literature, we can point out that trust resulting in a positive atmosphere at the workplace highly positively influences optimism for the future as well as people's goodwill (LEWICKI, BUNKER 1996, MCKNIGHT, CHERVANY 2001, PIRSON 2008). And these are obviously necessary while implementing new solutions concerning a work sustainability concept.

In social enterprises the need for improving working conditions is positively correlated with positive relationships in work teams and the fact that the organization cares about the attractiveness of the employee premises. The latter seems to be positively correlated to the need of improving social and living conditions of workers. There is also a positive correlation between the fact that the company involves people being under reintegration in the process of creating innovation and the need for implementing solutions aimed at improving employee social and living conditions (health and well-being of employees).

Skills development in business and social enterprises

The data presented in Table 3 indicates quite a high positive correlation between the need to carry out the activities supporting employee personal and professional development and the fact that in a company there are intentionally created teams dedicated to creating innovations. Taking into account this relationship, we assume that firms are strongly oriented on efficiency

Table 2

Pearson Correlation Coefficients between the need for introducing solutions oriented toward employee work as well as social and life conditions improvement and chosen components of an organization's approach towards innovations

The components of an organization's approach towards innovations		Managing innovations is the central element of our strategy	In our organization there are teams dedicated to creating innovations	In our organization the way of proposing innovations is formally described	In our organization people being under a reintegration process participate in creating innovations	In our organization we focus on positive relationships in work teams	In our organization relations between employees are generally positive	While creating working teams, the character of interpersonal relations of team members is considered	In our organization frequent employee satisfaction assessments are conducted	In our organization we care about the attractiveness of employee premises
Solutions oriented to employee working conditions improvement	business	0.226**	0.193**	0.158*	X	0.343**	**0.404****	0.117	0.064	0.249**
	social	0.270**	0.143	0.198*	0.194*	**0.408****	0.239**	0.161	0.172*	**0.435****
Solutions oriented to improving employee social and life conditions	business	0.155*	0.163*	0.139	X	0.287**	0.287**	0.192**	0.179*	0.287**
	social	0.294**	0.012	0.298**	**0.331****	0.247**	0.085	0.108	0.187*	**0.344****

* – correlation is significant at the 0.05 level (two-sided), ** – correlation is significant at the 0.01 level (two-sided).

Source: own calculation.

Table 3

Pearson Correlation Coefficients between the need for introducing solutions aimed at developing employee skills and chosen components of an organization's approach towards innovation

Activities supporting employees' personal and professional development	The components of an organization's approach towards innovation								
	Managing innovations is the central element of our strategy	In our organization there are teams dedicated to creating innovations	In our organization the way of proposing innovations is formally described	In our organization people being under a reintegration process participate in creating innovations	In our organization we focus on positive relationships in work teams	In our organization relations between employees are generally positive	While creating working teams, the character of interpersonal relations of team members is considered	In our organization frequent employee satisfaction assessments are conducted	In our organization we care about the attractiveness of employee premises
Business companies	0.340**	**0.414****	0.222**	X	0.286**	0.223**	0.296**	0.339**	0.259**
Social enterprises	0.342**	0.233**	0.266**	**0.416****	**0.408****	0.311**	0.335**	**0.402****	**0.484****

* – correlation is significant at the 0.05 level (two-sided), ** – correlation is significant at the 0.01 level (two-sided).
Source: own calculation.

and performance. Thus they mainly focus on the dimensions of work sustainability (skills development) directly connected to the results delivered by employees.

According to the research findings in social enterprises, the highest positive correlations existed between the need for caring out the activities supporting employee personal and professional development and some components of the organization's approach towards innovation. Namely, we can see that in non-profit enterprises involving people being under reintegration in the process of creating innovations and caring about the attractiveness of the employee premises constitute very important aspects. Due to the aforementioned statement, we assume that the investigated organizations aimed at having a social impact rather than making a profit, and they focused more on the issues related to preventing social exclusion through occupational and economic activation of particular groups of people. Thus, the fact that those who are under reintegration participated in the process of creating innovations leads directly to the need for improvement of their skills. Therefore, the companies were supporting the personal and professional development of employees making them more employable. We also assume that the focus on making the workplace more attractive for employees and people under reintegration shows that the company is really caring about them and supporting their motivation to work and efficiency.

As is evident in Table 3, there is also quite a high correlation between the fact that the company focuses on positive relationships in work teams and the need for caring out the activities supporting employees' personal and professional development which is also quite highly correlated with implementing solutions aimed at employees' working conditions improvement (Table 2 mentioned above). As was mentioned earlier in the paper, positive relationships among people who perform some tasks together are fundamental for their behavior, motivation and performance. While feeling safe in the company, employees and people under reintegration are more open and eager to come up with the ideas concerning their needs related to work. What is interesting, the correlations presented in Table 3 also prove the relationship between the fact that the company frequently conducts the assessment of employee satisfaction and the need for for carrying out the activities supporting employees' personal and professional development. It is indisputable that the feedback from employees is the starting point to enhance their potential, skills, motivation but also a sense of security. It is also the source of information which the enterprise should and could do in order to activate its workers.

Work-life balance in business and social enterprises

In the group of investigated firms, the highest positive correlation existed between the need for implementing individual solutions concerning work organization or time schemes and the fact that a company has a strong strategic focus on managing innovation. This is not surprising, as generally an organization's concentration on the issues is related to any kind of innovation that naturally results in the openness to several new solutions, including these that concern work organization. It also confirms the openness of enterprises to new concepts in the field of human resource management which consider, among others, reconciling working and non-working employees' lives. Moreover, as is evident in Table 4, there is a relatively high positive correlation between the need for implementing individual solutions concerning work organization or time schemes and the fact that the organization considers the character of interpersonal relations of team members in the process of creating work teams. The importance of interpersonal relations seem to also be proven by the correlation between the need for implementing individual solutions concerning work organization or time schemes and the fact that the enterprise focuses on positive relationships in work teams as well as by the correlation between the need for implementing individual solutions concerning work organization or time schemes and the fact that in the company the relations between employees are generally positive. The aforementioned data prove the studies highlighted by several researchers. Namely, positive relationships between employees are a kind of base for introducing any changes and progress within the organization. Positive relationships between people in the workplace result in their feeling of psychological safety and mutual trust. This, in turn, makes them more open to any innovations and bring the need for introducing new solutions within a company (CHIABURU, HARRISON 2008, CARMELI, BRUELLER, DUTTON 2009).

In social enterprises there seems to be no link between the positive relations between employees and the need to introduce individual solutions concerning work organization and time schemes. What matters is considering the character of interpersonal relations while creating work teams and frequently conducted employee satisfaction assessments. It might be related to specific relations between reintegrated workers and other employees in social enterprises.

The last relationship worth mentioning concerns the impact of the fact that the company involves people being under reintegration in the process of creating innovation and the need for implementing solutions focused on reconciliation between work and personal life (including care facilities

Table 4

Pearson correlation coefficients between the need for introducing solutions concerning work organization or time schemes as well as solutions enabling WLB and chosen components of an organization's approach towards innovation

The components of an organization's approach towards novelty		Managing innovations is the central element of our strategy	In our organization there are teams dedicated to creating innovations	In our organization the way of proposing innovations is formally described	In our organization people being under a reintegration process participate in creating innovations	In our organization we focus on positive relationships in work teams	In our organization relations between employees are generally positive	While creating working teams, the character of interpersonal relations of team members is considered	In our organization frequent employee satisfaction assessments are conducted	In our organization we care about the attractiveness of employee premises
Individual solutions concerning work organization or time schemes	business	**0.459****	0.347**	0.114	X	**0.415****	0.402**	0.443**	0.295**	0.360**
	social	0.297**	0.269**	0.209*	0.258**	0.285**	0.068	**0.360****	0.387**	0.274**
Solutions enabling employees reconciliation between work and personal life	business	0.085	0.093	-0.079	X	0.258**	0.165*	0.283**	0.223**	0.113
	social	0.195*	0.162	0.143	**0.344****	0.194*	0.072	0.083	0.254**	0.239**

* – correlation is significant at the 0.05 level (two-sided), ** – correlation is significant at the 0.01 level (two-sided).
Source: own calculation.

and eldercare support). In for-profit companies, the need to introduce solutions facilitating WLB seems not to be strongly stimulated by various components of organizational philosophy supporting innovations (Tab. 4).

Conclusion

The research findings prove that the investigated business and social entities are active in sustainable work concept implementation. Companies seem to be mainly focused on efficiency so the dimensions of sustainable work in this group concern mainly enhancing employee potential by improving their working conditions, changing their work organization or developing employee skills. On the other hand, social enterprises, which due to their nature focus on providing social benefits to society, concentrate more on the needs related to the widely understood concepts of employee satisfaction and their sense of security. While considering the insight into relationships between particular components of organizational innovation philosophy and implementing a sustainable work concept, the greatest stimulators were a strategic focus on innovation management and an organization's attention to create positive relationships between co-workers, in particular in work teams. Our research findings demonstrate that positive relationships at work highly stimulate the organization to carry out the activities related to work sustainability. This phenomenon is especially visible in social enterprises where the relationships in work groups also depend on people being under reintegration. As they participate in social enterprise processes, including creating innovations, the entities seem to particularly focus on their satisfaction by developing their skills as well as enabling all workers to reconcile between work and personal life. We believe that our findings provide useful managerial implications as without knowledge concerning the factors that mostly support the implementation of a sustainable work concept, neither companies nor social enterprises will be successful in this new management field.

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CHANGES IN THE LABOUR MARKET FOR THE WARMIA-MAZURY VOIVOD AND POLAND IN 2005–2014

Magdalena Wysocka

Department of Social Policy and Insurance
Faculty of Economic Sciences
University of Warmia and Mazury in Olsztyn
e-mail: magdalena.wysocka@uwm.edu.pl

K e y w o r d s: labour market, activity rate, employment rate, unemployment rate.

A b s t r a c t

The aim of this article is to show the relationship between the number of employees and economic activity of the population in the Warmia-Mazury Region and in Poland from 2005 to 2014. This situation on the labour market was characterised by the values of factor activity, employment rate and unemployment rate. The source of information for the calculation was data from statistical offices – the provincial, Central and Regional Labour Office. The study showed positive changes expressed by increasing employment mostly in private enterprises belonging to the SME sector. These changes were significantly correlated with the values of unemployment rate.

ZMIANY NA RYNKU PRACY W WOJEWÓDZTWIE WARMIŃSKO-MAZURSKIM I W POLSCE W LATACH 2005–2014

Magdalena Wysocka

Katedra Polityki Społecznej i Ubezpieczeń
Wydział Nauk Ekonomicznych
Uniwersytet Warmińsko-Mazurski w Olsztynie

S ł o w a k l u c z o w e: rynek pracy, współczynnik aktywności zawodowej, wskaźnik zatrudnienia, stopa bezrobocia.

A b s t r a k t

Celem artykułu jest ukazanie zależności między liczbą pracujących a aktywnością ekonomiczną mieszkańców województwa warmińsko-mazurskiego i Polski w latach 2005–2014. Sytuację na rynku pracy charakteryzowano wartościami współczynnika aktywności zawodowej, wskaźnika zatrudnienia

oraz stopy bezrobocia. Źródłem informacji do obliczeń były dane urzędów statystycznych – wojewódzkiego i głównego oraz Wojewódzkiego Urzędu Pracy w Olsztynie. Przeprowadzone badania wykazały pozytywne zmiany wyrażane zwiększającym się zatrudnieniem, głównie w przedsiębiorstwach prywatnych należących do sektora MSP. Zmiany te były istotnie skorelowane z wartościami stóp bezrobocia.

Introduction

Individual countries and regions undertake various activities aimed at building the competitiveness of their economies, which in turn should lead to the increasing economic wealth of the population. The ability to achieve this is determined by many factors, the amount of labour being one of the most important. The amount of this labour and the access to it is variable and dependent on a number of phenomena, such as globalization, technological change, demographic change, multiculturalism resulting from population movements, or economic crises occurring periodically. These processes result in turbulence in the economy and labour markets. The scope, intensity and frequency of these pulses should be a factor in the search for optimal ways of managing labour resources.

Rational management of labour is dependent, among others on employment policy, which is implemented by the authorities of the country, on models and personnel strategies implemented in specific organizations. In this context, it is reasonable and important to monitor the activity status of the population in the country or the selected local area. E. KWIATKOWSKI (2013, p. 36 et seq.), D. KOTLORZ (2012, p. 231, 232), D. KOTLORZ and A. SKÓRSKA (2013, p. 93–108), and W. JARMOŁOWICZ and B. KALINOWSKA-SUFINOWICZ (2014, p. 19) pay attention to the issues of resource streaming and economic values, which are discussed in the analysis of the labour market.

Over the years, the situation in the labour market of the Warmia-Mazury Region has not been profitable, which reflected (in low employment rates, activity rates and high levels of unemployment, among others) when relatively comparing Warmia-Mazury to other provinces in the country. It means that the labour resources have not been fully used. Detailed analysis signaled phenomena can be a valuable source of data for the size and structure of labour resources. Then, there may be a contribution to more effectively forecast, plan and (in the operational dimension) better use resources to support people looking for work.

Analysing the status of labour resources makes it possible to test their changes in terms of the number of employees and structure. W. KWIATKOWSKA writes (2007, p. 20, 21) that these changes are "an objective process in any dynamic economy". In another study, the same author emphasizes that "the changes in resource workers (...) have led to the creation of the modern employment structure". Furthermore, she adds that "it should be the struc-

ture for improved competitiveness and innovation of the economy of the country (province) and also effective for high productivity and quality of production" (KWIATKOWSKA 2011, p. 11, 12).

Nationally, various aspects of the state of labour resources are presented in studies by the Central Statistical Office; published systematically and at the provincial level – in studies performed by the Provincial Statistical Offices. These issues are also the subject of numerous scientific research institutions. For example, for many years the University of Warmia and Mazury in Olsztyn together with the Institute of Labour and Social Affairs in Warsaw have published the results of scientific inquiry and research in the labour market of science representatives from various universities, both in Poland and abroad (see: *Changes in the labour market in Poland* 2015, *The labour market in the era of innovation* 2014, *Dilemmas of the labour market* 2013).

Methodology of research

The aim of the study is to show the changes in the economic activity of the population and to demonstrate the relationship between the values of measures of the economic activity (the activity rate, employment rate and unemployment rate) and the number of employees in the Warmia-Mazury Region and Poland in the years 2005–2014. The research is therefore a key indicator of the national and regional labour market[1] with the subject of research being the people employed in enterprises in the Warmia-Mazury Region and in Poland.

The research problem was formulated in the form of a question: what changes occurred in the economic activity of the population and whether there was a statistical relationship between the number of employees and the basic measures of the labour market?

In light of the objective and research problem, it was hypothesized that entities in Warmia-Mazury and Poland between 2005–2014 had changes in employment resulting in changes in the value of the activity rate, the employment rate and unemployment rates, wherein significant correlations appeared due to changes in the number of employees in private entities belonging to the SME sector.

During the research the following methods were used: literature studies and the comparative method. The comparative method allowed an analysis to be performed of the state of the labour market in the Warmia-Mazury Region with reference to the situation in Poland. The research technique was to study the source documents. Research tools were reports developed by the Warsaw

[1] The division of labour markets adopted for classification E. KWIATKOWSKI (2013, p. 17, 18), accepting reservation, that there is no complete adequacy between the concepts of state-region.

Central Statistical Office, Provincial Statistical Office and the Provincial Labour Office in Olsztyn.

Completed findings are of secondary research. The analyses and assessments used absolute measures (for example the number of unemployed) and relative measures (for example the unemployment rate). In order to examine the interaction of variables the Pearson correlation coefficient was used, which indicates whether there is a statistical relationship or not between the analyzed variables. It also provides the direction and intensity (force). The critical values of the Pearson correlation coefficient were read from *Statistical tables* (ZIELIŃSKI 1972, p. 211 et seq.). The relationships between variables were analyzed with consideration at three levels of significance α: 0.01; 0.05 and 0.1; and for 10 observations (2005–2014). To explore the significance of the correlation coefficient, the t test of significance for small samples was used.

Results of studies

The number of labour resources is due to the state of the population of a given area. The Warmia-Mazury Region is the fourth largest region in Poland, but the population is only 3.8% of the Polish population[2]. In the period under study, the region had an increase in population of 1.2%, while there was 0.8% growth reported in Poland overall. Changes were observed in all subsets of forming labour resources, although their direction and intensity were different (Tab. 1).

By comparing the states of labour resources at the beginning and at the end of the test period, it can be said that in the Warmia-Mazury Region there was an increase in employment of 1.1% and the number of unemployed decreased by 45%. There has also been a marked reduction in the number of people without a job, up to 2008.

However in the last analysed year, the unemployed in the Warmia-Mazury Region accounted for 5.4% of the total unemployed in the country. It was also noted that the indicators for the Warmia-Mazury Region are largely consistent with the trends taking place in Poland.

The situation on the labour market in the Warmia-Mazury Region and Poland are given in Table 2. During the analysed period, the value of the activity rate decreased in the province and in Poland. In the region at the end of 2014, its value was 5.2% lower than the average value in Poland. Similar trends occurred in the values of the employment rate. However, characteristic sub-periods appeared in the values of unemployment rates. During good economic times (2005–2008) the unemployment rates decreased, while in

[2] Own study based on *The characteristics of Warmia and Mazury*, online (access: 28.08.2016).

Table 1

The state of labour resources in Poland and in Warmia-Mazury (in thousands)

Specification		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Total population	PL	38,157.0	38,125.0	38,116.0	38,136.0	38,167.0	38,530.0	38,538.0	38,533.0	38,495.7	38,478.6
	W-M	1,426.6	1,426.9	1,426.2	1,427.1	1,427.1	1,453.8	1,452.6	1,459.7	1,446.9	1,444.0
Population in production age	PL	26,079.7	26,119.9	26,110.7	26,110.7	26,072.9	26,066.1	26,066.1	25,875.7	24,422.2	24,230.0
	W-M	9,84.6	988.2	989.6	990.6	989.0	1,007.2	1,002.1	994.8	935.7	931.7
Economically active	P L	16,966.0	16,800.0	16,734.0	16,876.0	17,128.0	17,413.0	17,646.0	17,844.0	17,414.0	17,427.0
	W-M	607.0	605.0	602.0	624.0	624.0	627.0	593.0	569.0	608.0	609.0
Economically inactive	PL	14,097.0	14,427.0	14,416.0	14,224.0	14,149.0	13,832.0	13,782.0	13,825.0	13,621.0	13,543.0
	W-M	553.0	556.0	555.0	553.0	547.0	546.0	548.0	549.0	570.0	583.0
Employed	PL	8,786.7	8,965.9	9,387.7	9,767.0	9,768.0	9,745.8	9,801.9	9,787.3	10,405.0	10,666.0
	W-M	262.6	268.4	272.3	271.1	271.2	272.3	272.4	272.5	263.2	265.6
Unemployed	PL	2,773.0	2,309.0	1,746.0	1,473.0	1,892.0	1,954.0	1,982.0	2,136.0	2,157.9	1,825.2
	W-M	150.9	127.6	99.0	87.4	109.2	105.9	107.3	113.2	115.9	98.1

PL – Poland, W-M – Warmia-Mazury Region.
Source: own study based on *Statistical Yearbook* (2006, p. 165, 174, 2010, p. 169, 351), *Statistical Yearbook of Labour 2015* (2016, p. 23, 106, 110), *Population. State, structure and the movement of natural territorial division in 2015* 2016, p. 12, 37).

Table 2

Economic activity of the population

Specification		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
The activity rate	W-M	67.5	66.8	66.7	66.1	67.2	68.1	67.1	51.4	51.6	51.1
	PL	69.8	69.2	69.1	69.9	70.9	71.9	72.4	55.9	55.5	56.3
The employment rate	W-M	49.0	50.7	54.4	55.8	56.1	56.0	55.0	45.8	46.9	47.5
	PL	53.0	54.5	57.0	59.2	59.3	59.3	59.7	50.2	49.3	51.7
The registered unemployment rate	W-M	27.2	23.6	18.7	16.8	20.7	20.0	20.2	21.3	21.6	18.7
	PL	17.6	14.8	11.2	9.5	12.1	12.4	12.5	13.4	13.4	11.4

PL – Poland, W-M – Warmia-Mazury Region.
Source: own study based on reports of *The Regional Labour Office* in Olsztyn in the years 2006–2013, Local Data Bank GUS (2016).

2009–2012 – in Poland and in 2009–2013 – in the Warmia-Mazury Region, there was an increase. In the last year of the analysed time the unemployment rates decreased in the Warmia-Mazury Region and in Poland. The differences between the values of unemployment rates in Poland and in the region have also changed. In 2005, the difference was 9.6 p.p., and in 2014 – 7.3 p.p. In those years, the growing unemployment rates were associated mainly with the unfavourable economic situation which was an economic effect of the global financial crisis[3].

In the total number of all registered entities in the region and in Poland, the private sector clearly dominates (Tab. 3). Between 2005–2014 their number increased approximately 14%. At the same time, the number of public institutions decreased.

Table 3

Employed by sector of ownership (in thousands)

Specification	Number of employees			
	public sector		private sector	
	W-M	PL	W-M	PL
2005	111.9	3,346.0	285.0	9,230.3
2006	111.8	3,320.8	294.3	9,584.6
2007	111.0	3,305.7	311.2	10,151.3
2008	111.3	3,295.1	315.2	10,416.0
2009	111.6	3,273.7	300.4	10,175.8
2010	110.9	3,242.1	312.4	10,536.2
2011	107.9	3,165.1	315.0	10,746.1
2012	106.5	3,427.0	311.6	10,745.0
2013	104.1	3,375.0	315.5	10,869.3
2014	97.0	3,377.1	322.6	11,186.3

PL – Poland, W-M – Warmia-Mazury Region.
Source: own study based on *The Local Data Bank*, online, *Statistical Yearbook of the Republic of Poland 2014* (2015, p. 238), *Statistical Yearbook of Labour2015* (2016, p. 120, 127).

Data presented in the table shows that during the analysed period in the Warmia-Mazury Region employment in the public sector decreased, but increased in the private sector (by 13.3%). Nationally, employment increased significantly in the public sector (by 0.9%) and clearly in the private sector (by 21%). In the region and in Poland, both sectors recorded a comparable structure of employees. Approximately 77% of all employees worked in the sector of private entities, and 23% in public institutions.

[3] Detailed analysis of changes in the values of unemployment rates in the Warmia-Mazury Region in 2006–2012 represent Cicha-Nazarczuk and Nazarczuk (2014, p. 158–169).

The significance of the relationship between employment in companies distinguished by the property sector and the basic measures of the economic activity of the population in the Warmia-Mazury Region and in Poland are summarized in Table 4.

Table 4

Number of employed by ownership sector and the economic activity of the population

Specification		Employment	
		public sector	private sector
		Pearson correlation coefficient	
The activity rate	W-M	0.7659[b]	-0.2388
	PL	-0.8173[b]	-0.2514
The employment rate	W-M	0.4086	0.4056
	PL	-0.8785[a]	0.3208
The unemployment rate	W-M	0.1740	-0.8955[a]
	PL	0.3311	-0.6977[c]

[a, b, c] – coefficients statistically significant at the significance level of $\alpha = 0.01, 0.05, 0.1$, respectively.
PL – Poland, W-M – Warmia-Mazury.
Source: own research.

The values of the Pearson correlation coefficients in the table above indicate the occurrence of the statistically significant correlation between the employment and the unemployment rate in the private sector.

In the Warmia-Mazury Region and in Poland workplaces were mainly created by SME entities. During the study, the quantitative growth of these entities was noticed at both the national and provincial levels. The entities that employed workers were mostly small institutions (Tab. 5).

Table 5

Employed by size classes entities (in thousands)

Specification	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Warmia-Mazury										
Micro and small	158.5	161.7	171.2	177.6	171.8	176.8	174.2	173.8	173.0	175.4
Medium-sized	–	88.9	90.1	88.1	83.1	81.5	84.7	81.4	89.0	83.2
Large	–	71.2	73.7	68.8	63.3	65.7	61.8	68.4	62.3	66.0
Poland										
Micro and small	4,833.0	4,968.1	5,221.6	5,409.6	5,328.2	5,314.0	5,420.9	5,420.8	5,437.4	5,608.9
Medium-sized	–	2,415.2	2,498.1	2,535.2	2,483.0	2,490.0	2,496.9	2,461.7	2,453.7	2,494.2
Large	–	3,431.7	3,646.6	3,675.5	3,546.9	3,630.0	3,641.3	3,615.8	3,651.4	3,756.9

Source: own study based on *The activity of non-financial corporations in 2013, 2014.* (2014, p. 49, 74), *Employed in the national economy*, online (access: 27.08.2016).

The data in the table indicate that by the year 2012 in the Warmia-Mazury Region, employment increased only for small and micro entities. Despite the decline in employment for these entities in 2013–2014, in the last year of the study, people working for SMEs accounted for nearly 60% of all employees in the region.

Others worked in large and medium-sized entities (a fifth of the total employed). Table 6 shows the impact of changes in employment for entities distinguished by the number of employees, on the basic measures of the labour market in the Warmia-Mazury Region.

Table 6

Number of employed by size entities and the economic activity of the population

Specification		Employment		
		micro and small entities	medium-sized entities	large entities
		Pearson correlation coefficient		
The activity rate	W-M	-0.1124	-0.8150	-0.4664
	PL	0.5829	0.2575	0.3298
The employment rate	W-M	0.9594[a]	-0.5859	-0.5303
	PL	0.9846[a]	0.7840[b]	0.7298[b]
The unemployment rate	W-M	-0.9151[a]	-0.0999	-0.0571
	PL	-0.8846[a]	-0.9496[a]	-0.8432[a]

[a, b, c] – coefficients statistically significant at the significance level of $\alpha = 0.01, 0.05, 0.1$, respectively.
PL – Poland, W-M – Warmia-Mazury Region.
Source: own research.

Based on the results received, it can be concluded that hiring workers in micro and small entities which operate in the Warmia-Mazury Region, had a significant impact on the employment rate. During this time, employment in medium-sized and large entities declined and therefore had a negative correlation which was statistically insignificant. Whereas in Poland, the increase in the employment rate was due to a simultaneous increase in employment in all entities classified according to the level of employment, the number of employees in small and micro entities had the greatest influence in the Warmia-Mazury Region. A similar trend had also occurred in the decline of the unemployment rate, which decreased in Poland due to an increase in employment in all types of entities, and in the Warmia-Mazury Region only as a result of employment in micro and small entities.

In the analysed period, most of the employees in companies registered in the Warmia-Mazury Region worked in the service sector, and the least number of employees in the agricultural sector (Tab. 7).

The amounts shown in the table demonstrate a decreasing number of employment in the agricultural sector and an increasing number in the industrial and service sectors, which means that there is a movement of labour resources from agriculture to other sectors.

Table 7

Employed by economic sectors (in thousands)

Specification	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Warmia-Mazury										
The agricultural sector	79.0	79.0	71.0	71.0	72.0	69.0	60.0	60.0	70.0	70.4
The industrial sector	147.0	149.0	175.0	187.0	170.0	177.0	175.0	164.0	118.9	121.7
The service sector	257.0	281.0	292.0	301.0	321.0	321.0	305.0	291.0	230.7	234.2
Poland										
The agricultural sector	2,452.0	2,304.0	2,247.0	2,206.0	2,107.0	2,050.0	2,045.0	1,908.0	2,382.1	2,388.1
The industrial sector	4,127.0	4,374.0	4,681.0	5,036.0	4,934.0	4,813.0	4,933.0	4,778.0	3,665.1	3,752.7
The service sector	7,531.0	7,912.0	8,309.0	8,549.0	8,819.0	9,087.0	9,147.0	8,940.0	7,872.6	8,096.6

Source: own study based on *Economic activity of the population* (average data), *Employed by economic sectors and sex* (1995–2012), *Local Data Bank*, online (access: 27.08.2016), *Statistical Yearbook of Labour 2015*. (2016, p. 25, 27, 122).

In 2014 employees in the agriculture sector accounted for respectively 97.4% and 89.1% of the workforce recorded in 2005 in Poland and the Warmia--Mazury Region. The diagnosed trend occurred in entities in the Warmia--Mazury Region and across the country. It is also consistent with the work flow processes between the sectors working in European countries. It should be noted, however, that these relations in Poland, and thus also in the individual provinces[4], are significantly different from the states recorded in highly developed economies. For example, in 2011 there was about 1.5% of the total working population employed in German agriculture (*The agricultural population*... 2013, p. 368), in Poland 13.3% and in the Warmia-Mazury Region – as many as 26.7%. There were fewer employees the industrial sector in Germany (around 24.0% of the total) than in Poland and the Warmia-Mazury Region. In turn, the service sector employed 74.5% of all employees (*The structure of employment in* terms... 2007-2013, p. 241).

[4] Results obtained in the Warmia-Mazury Region are consistent with the results of research in the province Lodz (Kwiatkowska 2011, p. 23–25).

The significance of the impact of changes in employment for entities, distinguished by economic sectors at regional and national levels, on the values of the labour market's measures is shown in Table 8.

Table 8
The relationship between the number of employed by economic sector and the economic activity of the population

Specification		Employment		
		agricultural sector	industrial sector	service sector
		Pearson correlation coefficient		
The activity rate	W-M	0.5569	0.0873	0.1131
	PL	0.4425	0.0302	-0.0937
The employment rate	W-M	0.0145	0.7040[c]	0.7048[c]
	PL	-0.0883	0.6152	0.4418
The unemployment rate	W-M	0.4859	-0.9459[a]	-0.7122[b]
	PL	0.4634	-0.8931[a]	-0.6166

[a, b, c] – coefficients statistically significant at the significance level of $\alpha = 0.01, 0.05, 0.1$, respectively.
PL – Poland, W-M – Warmia-Mazury Region.
Source: own research.

Values shown in the table above indicate the presence of the statistically significant correlation between the number of employees and the employment rate in the Warmia-Mazury Region, in both the industrial and service sector. A significant correlation also appeared between the employment and the unemployment rate in the industrial sector (in both the Warmia-Mazury Region and Poland), but in the service sector – only in the Warmia-Mazury Region.

Conclusions

The aim of the study was to show the changes in the economic activity of the population and to demonstrate the relationship between the number of employees and the basic measures of the labour market in Warmia-Mazury and in Poland in 2005–2014. Data collected during the empirical research positively verified the hypothesis and allows us to formulate the following findings:

– potential labour resources in Poland and in the Warmia-Mazury Region gradually increased, which was demonstrated by the increase in the number of people of working age, people economically active and unemployed actively seeking work;

– working people were employed mainly in the private sector, where changes in the number of employees were significantly correlated with the values of unemployment rates;

– in the Warmia-Mazury Region and in Poland, workplaces were mainly in micro and small entities (classification by number of employees), in which an increase in employment had a significant impact on the values of the employment and unemployment rates;

– in entities registered in the region and in Poland, the movement of employees between economic sectors was reported; significant correlations occurred between changes in employment in industry and services, and the employment rate and unemployment rates.

The above findings lead to the following conclusion: the changes which have occurred at the national and regional labour market should be assessed positively. This statement results from the following fact. After the global financial crisis of 2008 had adverse effects that spilled over into the economies of individual countries and regions, the basic labour market measures improved; even though the improvement was much slower as compared to the pre-crisis years of good economic performance, ie. in 2005–2008.

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THE LABOUR MARKET IN THE VISEGRAD GROUP COUNTRIES – SELECTED ASPECTS

Agata Szymańska

Institute of Economics
Faculty of Economics and Sociology
University of Lodz
e-mail: agata.szymanska@uni.lodz.pl

Key words: unemployment, unemployment benefits, Visegrad Group.

A b s t r a c t

The aim of this paper is to compare selected aspects related to the labour market in the Visegrad Group countries. In particular, attention is paid to the analysis of labour force inactivity, the period of being unemployed and selected institutional arrangements related to the unemployment benefit systems. The research method is based on the analysis of statistical data and a review of institutional arrangements existing in each of the four countries. The analysis shows that there are differences related to the duration and the generosity of unemployment benefit systems. In terms of unemployment, the worst situation is to be found in Slovakia (especially, due to problems with an unemployment rate above the EU average, a high youth unemployment rate, and a significant proportion of long-term unemployed). In 2016 the shortest statutory duration of unemployment benefits was in Hungary, while the relatively least favourable benefit system seemed to exist in Poland.

RYNEK PRACY W PAŃSTWACH GRUPY WYSZEHRADZKIEJ – WYBRANE ASPEKTY

Agata Szymanska

Instytut Ekonomii
Wydział Ekonomiczno-Socjologiczny
Uniwersytet Łódzki

S ł o w a k l u c z o w e: bezrobocie, zasiłki dla bezrobotnych, Grupa Wyszehradzka.

A b s t r a k t

Celem artykułu jest porównanie wybranych aspektów dotyczących rynku pracy w państwach Grupy Wyszehradzkiej, ze szczególnym podkreśleniem bierności zawodowej, okresu trwania bezrobocia oraz rozwiązań instytucjonalnych w obszarze zasiłków dla bezrobotnych. Metoda badawcza obejmuje analizę danych statystycznych oraz przegląd rozwiązań instytucjonalnych w każdym z czterech państw. Na podstawie przeprowadzonych analiz wskazano, że w poszczególnych

państwach istnieją różnice między długością pobierania zasiłków oraz ich hojnością. Szczególnie niekorzystna sytuacja w obszarze bezrobocia kształtuje się na Słowacji (stopa bezrobocia powyżej średniej dla UE, wysokie bezrobocie w grupie ludzi młodych i znaczny odsetek długookresowo bezrobotnych). Konstrukcja systemu zasiłków dla bezrobotnych najkrótsze okresy poboru zasiłków w 2016 r. przewiduje na Węgrzech, z kolei relatywnie najmniej korzystny system świadczenia wydaje się występować w Polsce.

Introduction

The labour market can be analysed by many indicators. Especially, attention should be paid to the structure of unemployment analysed by age, gender, level of education, or the length of being unemployed. Important elements of the labour market are also those related to institutional issues such as: the existing system of employment agencies, minimum wage policy, active labour market policy and passive forms of labour market policy – mainly the unemployment benefit system. The latter is an essential condition of the labour market because it can affect the behaviour of the unemployed – the unemployment benefit system improves the material conditions of the unemployed, however it can also affect them negatively.

The negative impact of a generous unemployment benefit system on the activity of the unemployed is supported in the literature, which most often points to arguments linking the unemployment benefit system with incentives to work. The literature highlights the negative impact of the unemployment benefit on searching for employment (MORTENSEN 1977), as well as emphasizes its impact on increasing the duration of unemployment (CARD, LEVINE 2000). Support in the form of unemployment benefits may increase the risk of long-term unemployment. The longer the benefit period is, the higher the percentage of long-term unemployed will be when compared to the total number of those collecting benefits (NICKELL, LAYARD 1999). A generous system of unemployment benefits increases wage expectations (PARSAD 2003), moreover periods of high unemployment are usually accompanied by periods of more generous unemployment benefits; and as a result the unemployed demonstrate a lower ability and willingness to work (SCARPETTA 1996, NICKELL 1997).

The aim of this paper is to present selected aspects related to the labour market in the Visegrad Group countries and compare selected characteristics of the unemployment benefit system in these countries. The structure of this paper is as follows. The first part presents, in general, aspects of activity, inactivity and unemployment in these countries, the second – the characteristics of the unemployment benefit system, and the next shows information about minimum wage and benefit payments. The final part is a conclusion.

Activity in the labour market and the unemployment rate in the Visegrad Group countries

I begin with an analysis of the activity in the labour market of the Czech Republic, Hungary, Poland and Slovakia. The highest activity rate in the Visegrad Group countries (the 4V henceforth) was observed in the Czech Republic, where in the years 2004–2006 and 2013–2015 the average activity rate in that country (70.2% and 73.5% respectively) was above the EU average (69.7% and 72.3% respectively). A high activity rate inside the 4V group was also observed in Slovakia (nearly 69.2% over the period 2002–2015). In Poland, in 2015, the activity rate was 68.1% and it was the lowest among the 4V countries (in the Czech Republic it was 74% while the average for the EU28 was 72.5%). It should be noted that after 2010, there was a gradual increase in the activity rate (see Figure 1 for details).

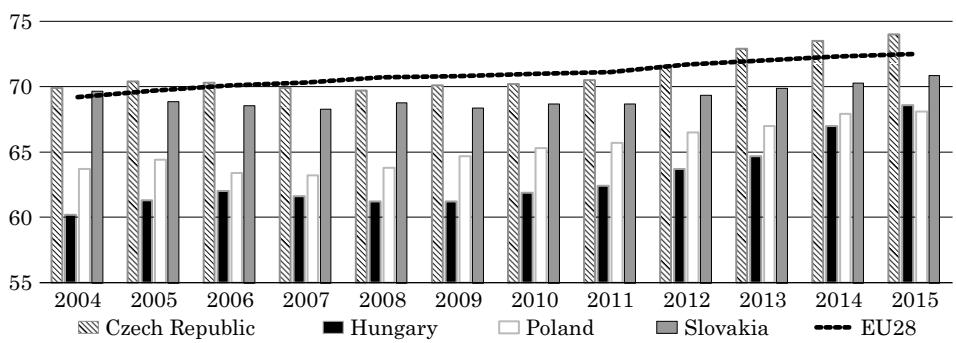

Fig. 1. Activity rates in the Visegrad Group countries
Source: author's own compilation based on the Eurostat database.

As opposed to the growing activity rate, the indicator of inactivity exhibits a decreasing trend. Despite the financial and economic crisis, the EU demonstrated a decrease in the inactivity rate – from 31.4% in 2002 to around 27.5% in 2015. It should be noted that in the 4V countries, the highest decrease of inactive people aged 15–64 took place in Hungary (a decrease of about 9.1 p.p. over the years 2002–2015) and the Czech Republic (a decrease of about 3.6 p.p.). In Poland the decline was nearly 3.2 p.p., while the smallest was in Slovakia, where in 2015, the inactivity rate was lower by about 1.4 p.p. in comparison to 2002.

Despite the declining rate of inactivity, in 2015 about 27.5% of the EU population aged 15-64 remained outside the labour market. Table 1 shows the most frequently indicated reasons for being outside the labour market (in % of

Table 1

Inactive population – Main reason for not seeking employment (in %)

Specification	Awaiting recall to work (on lay-off)	Own illness or disability	Other family or personal responsibilities	Looking after children or incapacitated adults	In education or training	Retired	Think no work is available	Other reasons
2009								
EU-28	0.4	13.6	8.0	9.5	31.9	21.5	4.2	10.9
Czech Republic	0.2	3.3	0.3	15.7	41.1	37.0	0.6	1.8
Hungary	0.8	14.8	1.1	11.4	33.1	27.1	5.4	6.3
Poland	0.1	18.3	7.6	8.6	35.1	23	4.5	2.9
Slovakia	na	15.0	1.6	14.2	44.2	23.4	1.4	na
2015								
EU-28	0.4	15.4	6.8	9.7	35.1	16.2	5.2	11.2
Czech Republic	0.7	4.7	1.0	17.8	39.6	33.8	0.8	1.7
Hungary	1.0	17.8	1.0	14.1	34.8	21.4	4.2	5.7
Poland	0.1	19.1	10.5	9.2	32.9	20.3	6.0	1.9
Slovakia	na	17.2	2.1	16.1	39.0	23.4	2.0	na

Source: author's own compilation based on the Eurostat database.

responses, Eurostat data). The data are presented for two years: 2009 (a year of severe recession in the EU) and 2015 (due to the latest available data).

Table 1 shows that studying or participating in training (in general – taking part in education) and reaching retirement age were the main reasons for being outside the labour market in the EU. In 2009, about 4.2% of the inactive population justified their inactivity with lack of work which they could take. In 2015, this percentage increased slightly to 5.2%. In the 4V countries two main reasons for not seeking a job were similar to those in the EU as a whole: education and retirement. In Poland, as opposed to the rest of the 4V countries, a relatively high proportion of inactivity was observed and explained by the necessity to perform personal or family responsibilities (10.5% in 2015) which were not associated with the need of caring for children – it was shown to be a relatively low proportion of the reasons for withdrawing from the labour market due to the need to look after children or incapacitated adults (9.2% responses in 2015).

More than 50% of men and women aged 15–24 are outside the labour force in the EU. Labour market inactivity of young people is mainly due to participation in education. Inactivity is also high among people aged 55+, especially due to earlier retirement or incapacity to work resulting from illness or disability.

It is worth mentioning that the EU services analyse a special phenomenon, the so-called NEET – i.e. "not in education, employment or training". This phenomena concerns young people aged 15–24, however for policy analysis including those aged 15–29[1]. The concept was first used in the UK in the 1990s to describe a certain category of young people and to prepare an adequate policy for them (ISTANCE et al. 1994, MACDONALD 2011, *NEETs – Young People...* 2012, *Exploring the Diversity of NEETs* 2016). The difference in calculating the youth unemployment rate and NEET rate is as follows. The NEET rate is a percentage of the population of a given age group (as mentioned mainly 15-24) who are not employed and not involved in further education or training as a share of the total youth population, whereas the youth unemployment rate is a share of the unemployed among the economically active young population. For this reason, despite that in absolute terms the overall number of NEETs is higher than the overall number of young unemployed, the NEET rate is lower than the youth unemployment rate (*Exploring the Diversity of*

[1] According to the latest data (*NEETs – Young People...* 2016) in 2015 the lowest NEET rate (below 8%) for young people aged 15–29 was in Denmark, Luxembourg, the Netherlands, and Sweden while the highest rate was in Greece and Italy (24% or more). In case of the "core group" aged 15–24 the highest NEET rate was in Italy (21.4% while their unemployment rate was 40.3%), Greece (17.2% with the highest unemployment rate in the EU28 of 49.8% for those aged 15–24) and post-communist countries like Bulgaria, Romania, Croatia. The lowest NEET rate was in the Netherlands (4.7%) and in three countries Denmark, Luxembourg and Germany (with NEET rate 6.2% in each country).

NEETs 2016). According to the latest Eurostat data, the average NEET rate for youth aged 15–24 in the EU28 was 12.0% while the unemployment rate for them was 20.3%. In the case of the 4V countries the lowest NEET rate for those aged 15–24 was in the Czech Republic (7.5%, while their unemployment rate was 12.6%), Poland (11%, unemployment rate 20.08%), Hungary (11.6%, unemployment rate 17.3%) and in Slovakia (13.7%, with the highest unemployment rate in the 4V for those aged 15–24 – 26.5%). The figure below presents both rates averaged to 4V and EU28 levels.

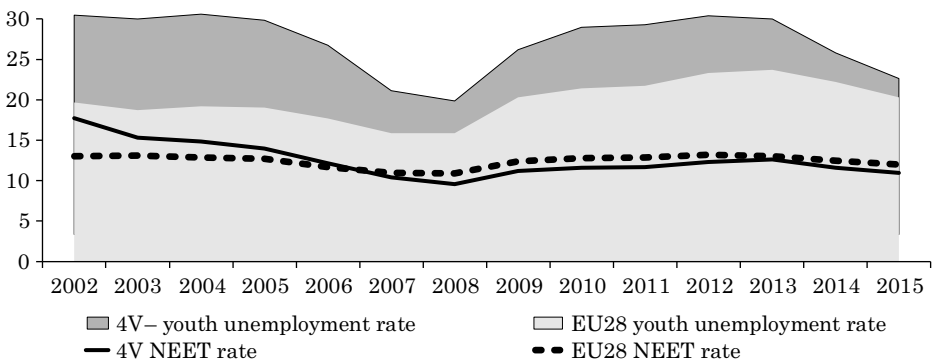

Fig. 2. NEET rate and unemployment rate among youth aged 15–24 in the years 2002–2015
Source: author's own compilation based on the Eurostat database.

In general, the unemployment rate for those aged 15–24 was highest in the case of the 4V. The analysis of statistical data shows that the development of the NEET rate in the 4V and in the EU28 was similar, but after 2008 an increase in both rates was observed mainly as a consequence of the crisis period. However, the macroeconomic conditions and consequences of the crisis had a stronger effect on the unemployment rate than on the wider exclusion from the labour market measured by the NEET rate – during the crisis period the unemployment rate increased more than the NEET rate.

The level of the unemployment is an important object of interest in the analysis of the labour market. It can be analysed by many aspects, including gender, education, age etc. Taking into account gender, in general, the unemployment rate for women is higher than men in the 4V countries. For example, in Slovakia in 2015 the unemployment rate among women was about 13%, while in the Czech Republic 6.2% whereas an overall unemployment rate for those countries was 11.5% and 5.1% respectively. Moreover, in 2015 the average unemployment rate in the EU countries was 9.4%, in the 4V 7.7%, while in Poland 7.5%, and 6.8% in Hungary.

Table 2

Unemployment rate in the years 2004–2015

Specification	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Czech Republic	8.3	7.9	7.1	5.3	4.4	6.7	7.3	6.7	7.0	7.0	6.1	5.1
Hungary	6.1	7.2	7.5	7.4	7.8	10.0	11.2	11.0	11.0	10.2	7.7	6.8
Poland	19.1	17.9	13.9	9.6	7.1	8.1	9.7	9.7	10.1	10.3	9.0	7.5
Slovakia	18.4	16.4	13.5	11.2	9.6	12.1	14.5	13.7	14.0	14.2	13.2	11.5
4V	13.0	12.4	10.5	8.4	7.2	9.2	10.7	10.3	10.5	10.4	9.0	7.7
EU28	9.3	9.0	8.2	7.2	7.0	9.0	9.6	9.7	10.5	10.9	10.2	9.4

Source: author's own compilation based on the Eurostat database.

Table 2 presents the development of the overall unemployment rate over the period from 2004 to 2015. It shows that from 2004 to 2012 the average unemployment rate in the 4V was higher than in the EU28. Moreover, the declining trend lasted until the crisis was observed – in 2009 the situation in the labour market deteriorated. However, despite the economic crisis, the unemployment rate in 2010 in each of the 4V countries was lower than in the year of its accession to the EU, for example in 2010 in the 4V the unemployment rate was on average lower by 2.3 p.p., and in the case of Poland almost 9.4 p.p. lower in comparison to 2004.

In 2015, more than 48.5% of all unemployed aged 15–64 were long-term unemployed in the EU. The percentage of the long-term unemployed was similar regardless of the gender (almost 49% for men and 48% for women). In 2015, about 39.3% of all unemployed in Poland were people out of work for longer than 12 months, while the highest percentage was observed in Slovakia – about 65.8%. It should be noted that in Poland the share of the long-term unemployed to the total number of the unemployed was relatively low compared to the situation in other 4V countries. What is more, the long-term unemployment rate in 2015 in Poland was 3.0%, in Slovenia 4.7%, in Hungary 3.1% and in the Czech Republic 2.4%, whereas in the EU28 it was 4.5%. In Poland, the long-term unemployment rate declined in the mid-2000s, however it increased slightly during and after the crisis – in fact the overall impact of the global crisis on the Polish economy and labour market was rather modest (MAGDA, LEWANDOWSKI 2016). Moreover, the policy towards long-term unemployed is inadequate to improve their situation (MAGDA, LEWANDOWSKI 2016). The main support provided to the long-term unemployed in Poland includes: apprenticeships with employers for up to 6 months for those over 30 years old, referral to socially useful jobs and public works in municipalities, or participation in training (see: *Country Factsheet...* 2016). Thus the decline in the

long-term unemployment rate between the year of Poland's accession to the European Union and 2015 was almost 7.4 p.p (from 10.4% in 2004).

Duration of unemployment and benefit systems in the 4V

Figure 3 shows the duration of unemployment in months. In most countries people remained unemployed for more than one year. The longest duration of unemployment was observed in Slovakia, which is a country struggling with a high unemployment rate. In 2015, people remained unemployed for 31.5 months on the average in Slovakia, while the EU28 average was about 16.2 months (almost 2 times shorter). In Poland, the unemployed remained without a job for over 12 months. It should be noted that the duration of unemployment in Poland was lower than the average for the EU28 and other Visegrad countries.

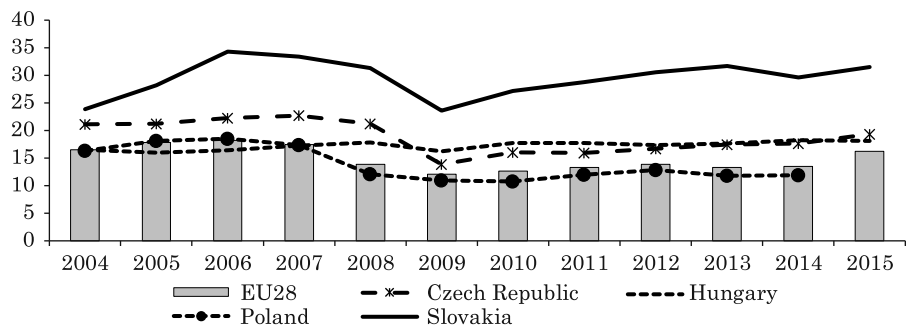

Fig. 3. Average duration of unemployment in months
Source: author's own compilation based on OECD data.

It is interesting to compare the presented characteristics of unemployment with the design of unemployment benefit systems. The analysis below presents selected aspects of the current (2016) unemployment benefit systems in the 4V countries.

In Poland, according to the Ustawa z 20 kwietnia 2004 roku o promocji zatrudnienia i instytucjach rynku pracy (Journal of Laws of 2004, no. 99, item 1001) the eligibility period for unemployment benefit („zasiłek dla bezrobotnych") depends on the unemployment rate in the region where the unemployed live and other individual conditions. The maximum statutory period for receiving unemployment benefit in Poland is as follows: (*) 180 days (for the unemployed living in the period of receiving benefits in the area of a county ("powiat" in Polish administrative division) where on 30 June of the year

preceding the date of the benefit eligibility the unemployment rate did not exceed 150% of the average unemployment rate in the country), or (*) 365 days (for the unemployed:

– living in the period of receiving benefits in the area of a county (i.e. "powiat") where on 30 June of the year preceding the date of the benefit eligibility the unemployment rate exceeded 150% of the average unemployment rate in the country;

– the unemployed was over 50 years of age with at least a 20-year eligibility period;

– the unemployed who have at least one dependent child under the age of 15 and the spouse of the unemployed is also unemployed and had lost the right to receive benefits due to special conditions;

– single parents with at least one dependent child under 15).

As of 1 June 2016 (based on the Ministry of Family, Labour and Social Policy data 2016) the base amount of the unemployment benefit is PLN 831.10 per month during the first three months of receiving the benefit, and PLN 652.60 per month in the remaining period of receiving benefits (see Tab. 3). The amount of the benefit may be reduced (80%) or increased (120%). The amount of the unemployment benefit depends on the seniority of the unemployed person. In the case where eligible seniority is less than five years then the benefit is paid in the reduced amount of 80% of the basic benefit, if the work experience ranges from 5 to 20 years then the unemployed person receives 100% of the basic benefit, and when the period is at least 20 years then the amount of the benefit is 120%. In addition, the unemployed person can receive a scholarship during the period of training, continuing learning, internship, adult vocational training and so on. The current benefit amount (valid till 31 May 2017) has not been annually adjusted since 2014.

Table 3

Base amount of the unemployment benefit (PLN)

Benefit	2011	2012	2013	2014	2015	2016
First three months	761.40	794.20	823.60	831.10	831.10	831.10
Remaining period	592.20	623.60	646.70	652.60	652.60	652.60

Source: author's own compilation based on the data of the Ministry of Family, Labour and Social Policy.

Hungary designed a special system of allowances for job seekers, which consists of two tools of support: job seeker's allowance (*Álláskeresési járadék*) and job seeker's assistance before pension (*NYEÁS – Nyugdtj Elötti Álláskeresési Segély*) (Gazdaság-Index 2016). In 2016, the support could be given to a person who meets the eligibility criteria including the eligibility period, i.e.,

has worked at least 360 days in the last three years before registration. What is more, the unemployed could apply for allowance regardless of the way in which he or she lost a job (i.e., being dismissed by the employer or the termination of the employment by mutual agreement). The benefit amount for such persons is determined on the basis of the average monthly salary (it applies to earnings from which social security contributions have been paid) during a period of the last 4 quarters before losing the job. The amount of the allowance is calculated as 60% of the base; however, the allowance cannot be higher than the minimum wage. In detail, the daily amount may not be higher than the lowest daily amount of the mandatory minimum wage in force on the day on which the person's entitlement to the allowance starts. The eligible person may receive one day of a job-seeker's allowance for every 10 days of eligibility. Thus the allowance is paid for a minimum period of 36 days (for min. 360 required days of eligibility period) and up to 90 days. The 3-month period was adopted to motivate the unemployed to seek work faster. In 2016 the minimum wage, which sets the upper limit of the benefit, was 111,000 Hungarian Forints (HUF) per month (i.e., HUF 5,110 per working day). In the case of benefits paid in the form of job seeker's assistance before pension the benefit amount accounts for up to 40% of the minimum wage, i.e., HUF 44,400. In a special report, the European Commission points out that the period of paying job-seekers' allowances in Hungary is the lowest in the EU and significantly shorter than the average time necessary to find a job (*Commission Staff*... 2016).

In the Czech Republic in 2016 (based on *Základnt poučení*... 2016, *Podpora v nezaměstnanosti*... 2016), benefits (*podpora v nezaměstnanosti*) were granted to the unemployed who had registered and were seeking work through registry offices. To obtain the benefit, they had to meet among other the following conditions: they must have been employed at least 12 months during the two years prior to registering or performed other gainful activity constituting the basic obligation to pay insurance for old age pension and contribution to the state employment policy. It was possible to achieve the required insurance period through so-called substitute periods. The statutory length of receiving benefit depends on the age of the unemployed person and is as follows:

– a person under the age of 50 can receive the benefit for a period of 5 months;

– a person aged 50-55 can receive the benefit for a period of 8 months;

– a person aged 55 or more can receive the benefit for a period of 11 months.

The amount of the benefit depends on the amount of the average net monthly salary at the last workplace. It should be noted that a high salary from the last job does not guarantee high benefits, because the amount of the benefit

is limited to 58% (or, in the case of retraining, to 65%) of the average monthly wage in the national economy in the period from the first to the third quarter of the calendar year preceding the year in which the registration was made. For example, in the period between the 1st and the 3rd quarter of 2015 the average monthly wage in the national economy was CZK 25,903, which means that the maximum amount of the unemployment benefit in 2016 could not exceed CZK 15,024 per month. Through the retraining scheme the benefit could rise to 60% of the average net monthly salary, i.e. approximately CZK 16,837 per month (but not more than 65% of the special base, as mentioned above). If the unemployed person receives a special severance pay – the payment of the unemployment benefit is deferred. Generally, the amount of the unemployment benefit, as already mentioned, is calculated on the basis of the average net monthly salary at the last workplace. Normally, for the first two months the unemployed person receives the benefit in the amount of 65% of the average net monthly salary at the last job (i.e., the base), for the next two months 50% of the base, and in the following months – until the end of the period of entitlement to benefit – 45% of the base. If employment had been ended due to the unemployed person (including by mutual agreement) then the benefit is determined as 45% of the basis for the entire period of eligibility for receiving the benefit. Note that all these amounts mentioned above were valid unless the unemployed reached the maximum allowable benefit.

In Slovakia (based on *Dávka v nezamestnanosti* 2016), an unemployed worker must register at the employment office and satisfy the eligibility requirements: e.g. in the general provision during three years before registering the unemployed must have been covered by the unemployment insurance for at least two years, i.e., 730 days[2]. The eligibility to receive unemployment benefit (*dăvka v nezamestnanosti*) is therefore dependent on the period of paying insurance. The law also provides special conditions for entitlement to receive unemployment benefit, including, e.g., registered unemployed police officers or soldiers after the termination of their service.

The unemployment benefit is granted for the following periods:

– six months (if the right to unemployment benefit was established based on the condition of paying unemployment insurance for at least 730 days in the last three years before registering as a job seeker),

[2] Entitled to the unemployment benefit is also the insuree who within the past four years before being included into the registry of unemployment job seekers achieved at least two years of insurance related to the labour relation concluded for a definite period, or two years of the voluntary insurance, and at the same time was not insured for the purposes of unemployment due to other activity as an employee.

– four months (the same as above but the period includes the last four years before registering as a job seeker or with at least 2 years of the voluntary insurance, and at the same time was not insured for the purposes of unemployment due to other activity as an employee).

If these conditions are not met – the unemployed is not entitled to the benefit.

The benefit amount is calculated taking into account the number of days in a month and a special daily assessment base (precisely: a half of this base). Daily assessment base (*denny vymeriavact základ* (DVZ)) is calculated by using a special formula which includes, among others, the sum of all the bases on which unemployment insurance contributions have been paid divided by the corresponding numbers of days or is based on other special regulations. Without any special exceptions, the DVZ is based on the two years preceding the date of entitlement to unemployment benefits. The calculated amount of the DVZ should be rounded to 4 decimal places. For example, the DVZ for the period covering the second half of 2015 and the first half of 2016 was EUR 56.4165. This means that the maximum benefit amount for a 31-day month was EUR 874.50, and for a 30-day month – EUR 846.30. Since July 2016, the maximum amount of the benefit for a 31-day month increased by EUR 25.50 up to around EUR 900, for a 30-day month the maximum amount of unemployment benefit increased by EUR 24.70 up to EUR 871. These amounts apply to the first half of 2017. The benefit amount increased in Slovakia because the average wage in the last year increased by 2.9% compared to the previous year. The maximum daily assessment base, which is used to determine the maximum size of the support, has been EUR 58.0603 since 1 July 2016. According to the special formula, half of that amount multiplied by the number of days in the month determines the maximum size of the unemployment benefit in a given month (See *Sociálna poist'ovňa* 2016).

Due to the declining number of registered unemployed (followed by a reduction in the unemployment rate) between 2014–2015 the average unemployment benefit grew from EUR 332 per month to EUR 344 in 2015. The maximum unemployment benefit, effective from July 2016 to July 2017, is EUR 900 per month (LUBYOVÁ et al. 2016).

The summary of selected characteristics is included in Table 4.

As we can see, the longest statutory period of receiving benefit was in Poland, the shortest in Hungary. Due to a lack of comparable, data it is difficult to analyse relations between amounts of benefits. However the analysis of minimum wage in PPS shows that it was the highest in Poland and the lowest in the Czech Republic.

Table 4
Selected characteristics of unemployment benefit system and minimum wage in the 4V in 2016

Country	Period	Amount	Minimum wage in the first half of 2016
Czech Republic	5 or 8 or 11 months depending on the age of eligible unemployed	max CZK 15,024 per month (in the case of retraining max CZK 16,837). Amount of benefit depends on average monthly salary at last workplace	CZK 9,900 PPS 579.38 EUR 366.35
Hungary	from 36 days to 90 days for job seeker's allowance (1 day for every 10 days of eligibility)	60% of the base (calculated on the basis of the average monthly salary during last 4 quarters before losing job), monthly not higher than minimum wage	HUF 111,000 PPS 629.86 EUR 351.29
Poland	180 or 365 days depending on the local unemployment rate and individual conditions	Base: PLN 831.10 per month during the first 3 months, PLN 652.60 per month in remaining period (possible increase or decrees of the base amount). Max amount (120% of the base)	PLN 1,850 PPS 815.34 EUR 433.88
Slovakia	6 or 4 months depending on period of paying insurance	max EUR 900 (31-days month) EUR 871 (30-days month), amount calculated on the basis of daily assessment base	EUR 405 PPS 612.19 EUR 405

PPS – Purchasing Power Standard.
Source: author's own compilation.

Minimum wage and benefits

In the first half of 2016 the highest minimum wage expressed in Purchasing Power Standards (PPS) was in Poland (PPS 815.34, i.e. PLN 1,850), and in comparison to the Czech Republic (lowest value PPS 579.38 – i.e. CZK 9,900) it was by PPS 235.96 units higher. The development of the minimum wage in semi-annual periods in the years from 2004 to 2016 in PPS is illustrated in Figure 4. Notice that PPS is a measure eliminating differences in price levels across countries. The data presented in the figure below shows that over the period 2004–2016 full-time workers receiving wages in Poland and spending it in the country were paid as much as 17% more than in the Czech Republic and about 22% more than in Slovakia.

Comparing the minimum wage in 2016 and the maximum level of the unemployment benefit (in the second half of the year 2016), in national currencies, it is possible to indicate the relationship between these two values. For example, in Poland the maximum amount of unemployment benefit

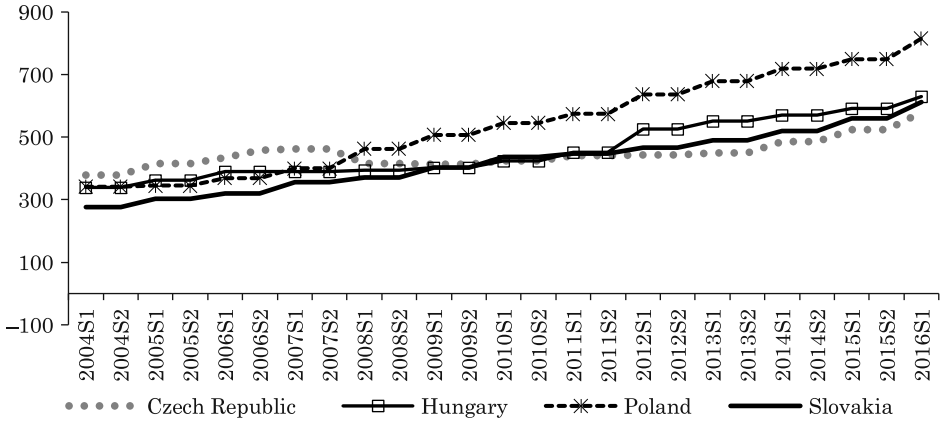

Fig. 4. Monthly minimum wage in Purchasing Power Standard in the 4V countries (semi-annual periods)

Source: author's own compilation based on the Eurostat database.

(120% of the base) accounts for about 54% of the minimum wage, in Slovakia – it is almost twice the minimum wage[3]. It should be noted that in Poland the ratio of the basic benefit amount (100%) to the minimum wage is about 45%. The data indicate that the Polish benefit system is not as generous as in the other 4V countries. In order to extend the analysis a net replacement rate is presented, i.e., the relationship between the amount of the benefit received in the initial period of unemployment in relation to the last salary received before unemployment. The analysis takes into account the 6 types of households, depending on the number of children, the number of working adults and their income (see Table 5 for details).

Generally, in Poland the net replacement rate was the lowest for most of the analysed types of households compared to other countries of the 4V, moreover, it was below those for the EU28 and the OECD. The net replacement rate for a single-person household in Poland in 2014 was 45% (for a 67% AW) and 30% (for a 100% AW). Households with children have higher net replacement rates, mainly due to the existing tax-benefit system.

The observed relationships are also confirmed in analysis of average benefits per unemployed. The Figure 5 shows the development of unemployment benefit payments per number of unemployed in the 4V countries.

[3] The minimum wage in 2016 in national currency was as follows: the Czech Republic CZK 9,900, Hungary HUF 111,000, Poland PLN 1,850, and Slovakia EUR 405.

Table 5

Net Replacement Rates* for family types: Initial phase of unemployment, 2014

Specification	67% of AW						100% of AW					
	no children			2 children			no children			2 children		
	single person	one-earner married couple	two-earner married couple	single person	one-earner married couple	two-earner married couple	single person	one-earner married couple	two-earner married couple	single person	one-earner married couple	two-earner married couple
Czech Republic	65	65	87	67	67	88	65	65	84	70	64	89
Hungary	67	67	84	77	78	86	45	45	67	58	58	72
Poland	45	46	72	73	52	74	30	32	59	49	38	60
Slovak Republic	62	58	85	72	57	86	65	60	82	92	59	84
OECD Median	65	65	84	73	73	85	56	59	74	67	64	77
EU Median	68	69	84	73	74	86	58	59	76	67	65	79

* After taxation and including unemployment benefits and family benefits. No social assistance "top-ups" or cash housing benefits are assumed to be available in either the in-work or out-of-work situation.

Source: Tax-Benefit Models, online (access: 12.06.2016).

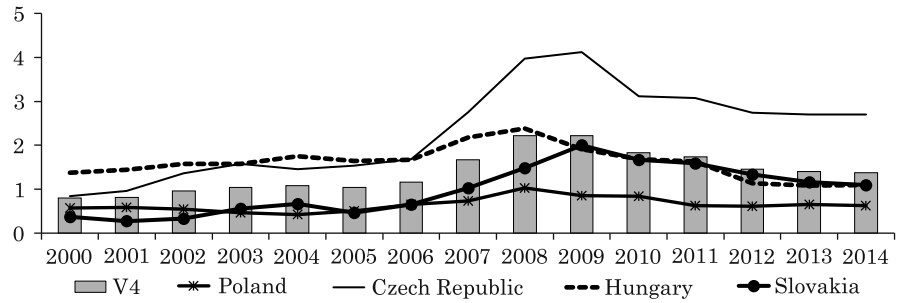

Fig. 5. Unemployment benefit payments per number of unemployed over 2000–2014 (in thousands EUR per year)
Source: author's own compilation based on the Eurostat database.

As presented, in general, the lowest payments were observed in the case of Poland, the highest in the Czech Republic. Between 2007 and 2009 we could observe an increase in the analysed indicator. In 2009, the year of severe recession in the EU, the average value in the 4V countries was 2.22 thousand EUR per unemployed, while in the Czech Republic it was 4.12 and 0.85 in Poland. However, in 2009 the average value for the EU was 9.26 and in the "old" EU15 – nearly 15.19 thousand EUR per unemployed (i.e., more than 17 times higher than in Poland, and almost 7 times higher than the average for the 4V countries). After 2009 we observe a decline, which was a result of reduction in payments and an increase in the number of unemployed lasting until 2012.

Conclusions

The aim of this paper is to compare selected aspects related to the labour market in the Visegrad Group countries. The paper especially focuses on comparison of selected characteristics of the unemployment benefit system in these countries.

According to the results derived from the analysis of statistical data, the longest average period of being unemployed and the highest unemployment rates were in Slovakia. The longest duration of unemployment in Slovakia was related to the highest share of the long-term unemployed in the total number of unemployed among the 4V countries. Moreover, the relation of the maximum benefit to the minimum wage, as well as the net replacement rate were also the highest in Slovakia.

In the case of Poland, the duration of unemployment and the share of the long-term unemployed as a total number of unemployed were the lowest

among the 4V countries. Moreover, low unemployment benefits were reflected in low net replacement rates. The benefit system in Poland seems not to be as generous as in the other 4V countries. It is interesting that in Poland the extended statutory period of receiving unemployment benefit (12 months) is similar to the duration of unemployment. It seems that seeking a job takes place after losing the entitlement to the benefit.

In 2016, the lowest statutory period of receiving job seeker's benefits was in Hungary (90 days), however the unemployment rate was not the lowest in that country but in the Czech Republic. The NEET rate and the youth unemployment rate were also the lowest in the Czech Republic. The NEET rate in the 4V was close to the EU average; however the youth unemployment rate was higher than in the EU28.

The results show that characteristics of the labour market in the 4V countries differ in many aspects, especially in the construction of the unemployment benefit system, as well as the average period of being unemployed, the share of the long-term unemployed or in the unemployment rates.

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THE FACTORING MARKET IN POLAND AND THE EUROPEAN UNION

Bogdan Włodarczyk, Aleksandra Ostrowska

Department of Macroeconomics
Faculty of Economics
University of Warmia and Mazury in Olsztyn
e-mail: bogdan.wlodarczyk@uwm.edu.pl; aleksandra.ostrowska@uwm.edu.pl

K e y w o r d s: factoring, factoring market, financial services.

A b s t r a c t

The service of factoring, thanks to the constant financing of receivables, prevents the creation of payment backlogs enabling the regulation of liabilities on time and, as a result, improves the financial liquidity of economic entities. It is thanks to the reasons mentioned above that the use of the service of factoring is bigger in Poland than in other countries of the EU.

The aim of this article is an analysis of the factoring services in Poland with regards to the EU. Taking into consideration the meaning of factoring for the enterprise sector and the banking sector which finances it, an analysis and evaluation of the Polish factoring services market was made on the bases of factoring service profiles provided by clients and entities.

Together with the dynamics of the development of companies and the range of the factoring services provided, the number of business entities choosing this service as an alternative to a revolving loan is growing. In the Polish market, the increase is not correlated with the size of a given region's economy, but the number of enterprise entities

RYNEK FAKTORINGU W POLSCE I W UNII EUROPEJSKIEJ

Bogdan Włodarczyk, Aleksandra Ostrowska

Katedra Makroekonomii
Wydział Nauk Ekonomicznych
Uniwersytet Warmińsko-Mazurski w Olsztynie

S ł o w a k l u c z o w e: faktoring, rynek faktoringowy, usługi finansowe.

A b s t r a k t

Usługa faktoringu dzięki stałemu finansowaniu wierzytelności zapobiega powstawaniu zatorów płatniczych, umożliwiając terminowe regulowanie zobowiązań, a w rezultacie poprawę płynności finansowej podmiotów gospodarczych. Właśnie z tych przyczyn w Polsce wykorzystanie usługi faktoringu jest większe niż w krajach UE.

Celem artykułu jest analiza rozwoju usług faktoringowych w Polsce na tle UE. Uwzględniając znaczenie faktoringu dla sektora przedsiębiorstw i sektora bankowego, który go finansuje, przeanalizowano i oceniono polski rynek usług faktoringowych na podstawie profilu klientów oraz podmiotów świadczących usługi faktoringowe. Wraz z dynamiką rozwoju firm i zakresu świadczonych usług faktoringowych rośnie liczba podmiotów gospodarczych wybierających tę usługę jako alternatywę kredytu obrotowego. Na rynku polskim wzrost ten nie jest skorelowany z wielkością gospodarki danego regionu, lecz z liczbą podmiotów.

Introduction

The banking sector is the most popular form of external financing of businesses in the European Union. Entrepreneurs are more eager to take a bank loan than to use any other external forms of financing. However, the exacerbating financing policy of banks increases the interest in other forms of financing the business, i.e. leasing and factoring.

The service of factoring, thanks to the constant financing of receivables, prevents the creation of payment backlogs enabling the regulation of liabilities on time and, as a result, improves the financial liquidity of economic entities. It is thanks to these above-mentioned reasons that the use of the service of factoring is larger in Poland than in the other countries of the EU (NBP – National Bank of Poland, 2015). Joining the group of Europe's most developed countries in the long run will lead to an approximation of the economic levels of the Member States (WŁODARCZYK 2016). Factoring belongs to external, short-term forms of financing the enterprises' commercial transactions, linking the features of assignment of receivables, discount and commission contract (PANFIL 2004, p. 49). Factoring should be understood as a financial service. This means that it is the purchase of unexpired receivables in relation to the sale of goods and services by a factoring company (factor) or an enterprise (factoree). The disposal of receivables, as in the case of assignment, constitutes the main idea of factoring. However, it is a service also offering a set of additional services, which distinguishes factoring from a traditional assignment. Polish conditions, similar to most countries, lack unequivocal legal regulations which would regulate the issue of factoring. The relations of the parties are regulated by the so-called innominate contract and the right to conclude it results from Art 353 of the Civil Code, which gives the freedom of concluding contracts (KRECZMANSKA-GIGOL 2015, p. 277, SZCZERBOWSKI 2013). Factoring does not belong to banking activities regulated by the Banking Law Act, that is why starting the factoring activity does not require the agreement of the President of the National Bank of Poland (WSZELAKI 2013, p. 250). The service of factoring is regulated on the grounds of international law by the so-called Ottawa Convention from 1988.

The growing popularity of this service causes a dynamic development of bank and non-bank factoring companies financed by the banking sector as "an alternative to a revolving loan". Financing the economic entities by the banking sector with a different service than a loan increases its engagement in the enterprise sector, not diminishing the risk. The change of the revolving loan into factoring is an easier way of obtaining external capital from the entrepreneur's perspective (often without the creditworthiness analysis).

The aim of the article is an analysis of the factoring services in Poland as compared to the EU. Taking into consideration the meaning of factoring for the enterprise sector and the banking sector, which finances it, an analysis and evaluation of the Polish factoring services market was made on the bases of factoring service profiles provided by clients and entities.

The factoring market in the European Union

The possibility of payable obtainment of resources by an enterprise reporting the demand constitutes a common feature of the financial receivables. Each one of these services is used in different economic circumstances.

Enterprises often encounter problems to obtain finances for development and innovations (HERNÁNDEZ-CÁNOVAS et al. 2014, p. 274). The character of the financing services available for enterprises in the European Union points at the banking sector as a target provider of these services. The structure of external financing of enterprises in 2016 showed that the sources used by almost 60% of enterprises in the European Union are comprised of debit or the resources from credit lines and bank loans. The factoring services are used by 10% of European enterprises (Fig. 1).

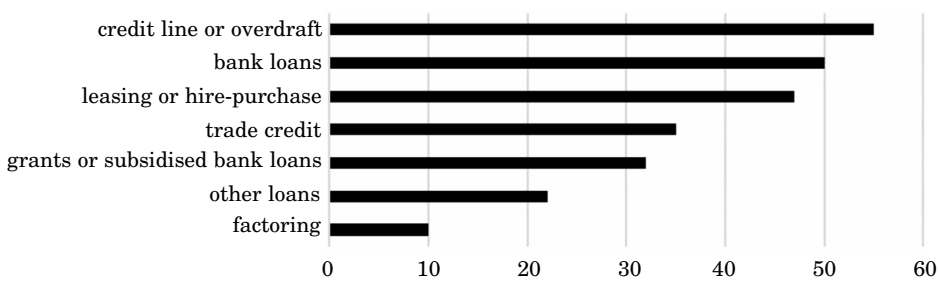

Fig. 1. External sources of financing for companies in the European Union
Source: own elaboration based on data from the Survey on the access to finance of enterprises (SAFE), Analytical Report 2016.

Table 1

Dynamics of the factoring turnover of the EU countries in 2006–2015 (in %)

Country	2009	2010	2011	2012	2013	2014	2015	GDP penetration	Market share
Austria	4.43	25.28	8.17	22.07	28.64	16.64	10.97	5.42	1.24
Belgium	6.32	34.61	14.51	14.87	12.59	16.13	10.47	14.93	4.16
Bulgaria	-24.44	39.71	-99.8	48.51	13.33	1.65	5.32	4.12	0.12
Croatia	–	–	–	–	–	-20.6	15.49	6.57	0.2
Cyprus	2.92	2.99	8.93	-13.5	-13.1	-5.38	-9.62	13.86	0.16
Czech Republic	-24.54	19.22	14.10	1.25	2.04	11.51	-14.3	0.00	0.34
Denmark	-5.84	15.82	11.97	-3.91	1.50	17.14	20.48	4.73	0.86
Estonia	-29.92	22.00	-4.59	61.25	1.17	5.85	0.00	9.82	0.14
Finland	-15.00	15.33	4.84	30.77	4.11	16.13	12.36	11.15	1.57
France	-5.05	19.56	13.92	6.82	7.49	13.04	9.53	11.37	16.87
Germany	-9.24	37.49	18.88	0.10	8.81	10.85	10.07	6.31	14.21
Greece	16.67	23.66	0.11	-13.4	-5.22	7.62	-1.14	7.31	0.87
Hungary	-18.75	25.15	-13.4	-5.01	-0.56	6.24	33.68	3.48	0.26
Ireland	-18.96	5.52	-9.24	8.87	6.26	20.14	1.97	1.10	1.77
Italy	-3.08	15.47	22.10	-1.89	3.56	2.81	4.09	11.64	12.95
Lithuania	-47.61	-12.25	38.57	16.59	11.05	100.9	-43.2	3.56	0.06
Latvia	-35.72	-66.43	13.11	46.09	9.23	14.86	27.50	8.47	0.21
Luxembourg	-41.83	-8.02	-43.9	66.11	36.12	-16.7	0.00	0.65	0.02
Malta	-3.85	172.00	47.06	20.00	-25.8	66.29	-7.09	3.13	0.02
Netherlands	0.00	18.33	29.58	11.28	3.35	8.46	14.50	9.68	4.47
Poland	**4.45**	**35.12**	**10.43**	**36.93**	**28.9**	**6.04**	**4.55**	**8.19**	**2.38**
Portugal	0.44	3.92	13.85	-17.7	-2.78	-4.03	7.09	12.78	1.56
Romania	-27.27	50.00	44.44	12.31	-7.09	-0.48	35.22	2.29	0.25
Slovakia	-30.00	-12.41	-99.9	-12.6	4.30	-3.00	0.00	1.33	0.07
Słowenia	-7.69	8.33	-15.4	18.18	-3.69	-14.4	-38.6	0.85	0.02
Spain	4.42	8.13	8.16	1.56	-6.04	-3.06	1.99	10.66	7.83
Sweden	17.25	62.67	-4.12	13.30	-7.83	-7.41	-7.82	5.87	1.77
United Kingdom	2.19	16.82	18.42	8.62	5.80	13.80	7.41	14.66	25.60

Source: author's own calculations on the basis of data from the EU Federation for the Factoring and Commercial Finance Industry.

The factoring services are used by the enterprises from the developed and developing countries (KLAPPER 2006, p. 2). According to the data of the EU Federation for the Factoring and Commercial Finance Industry, the majority of the EU countries noted an increase in the factoring turnover since 2009. The biggest part of the factoring turnover (25%), as well as the contribution to GDP (15%), is generated by Great Britain where alternative financing services are

developing in the quickest manner. Also other developed countries, such as Germany or France, have relatively high participation in both the factoring turnover and to the GDP. Factoring is developing in the slowest manner in Central and Eastern Europe. Summarizing their common participation in the factoring turnover of the EU, it constitutes 3.85%, while the contribution to GDP is at a level of 42%. In the countries affected by the crisis, the so-called PIIGS nations, their cumulated participation in turnover is 25%. The participation of Poland in the factoring turnover equals merely 2.38%, creating 8% participation to GDP (Tab. 1).

Taking this kind of factoring into consideration, both Poland and the entire EU are dominated by domestic factoring, which generates over 80% of turnover. It means that the factoring services are used mostly by enterprises that do not carry out foreign exchange. Considering the factoring contract party that takes over the risk, factoring without regress is more frequently taken, whereas in the European Union – with regress. A conclusion can be drawn that the enterprises in Poland are more afraid of risk, transferring it on to the factor, in a different way than the average enterprises in other parts of the EU who take the risk by themselves. It also points at moving the factoring activity outside the banking activity area at the expense of a higher risk (Tab. 2).

Table 2
The value of the factoring turnover due to the kind of factoring in Poland and in the European Union in 2014–2015

Specification	Poland (mln PLN)				Specification	European Union (mln euro)			
	2014		2015			2014		2015	
Total	153	share [%]	172	share [%]	Total	1,374	share [%]	1,471	share [%]
Domestic factoring	133	86.93	151	87.79	domestic factoring	1,121	81.59	1,189	80.83
Non-recourse	72	54.14	81	53.64	international factoring	253	18.41	282	19.17
Recourse	52	39.10	62	41.06	non-recourse	566	41.19	798	54.25
International factoring	20	13.07	22	12.79	recourse	808	58.81	673	45.75

Source: own elaboration based on data from the Central Statistical Office and the EU Federation for the Factoring and Commercial Finance Industry.

So far, the factors conditioning the development of the factoring market in Poland are: inconsiderate market saturation in comparison to the developed countries of the European Union, strong institutions in the banking sector which entered this market or a relatively good macroeconomic situation in Poland. Moreover, an undoubted role in the development of the factoring market was played by the restricted bank loan policy in the post-crisis conditions (SKUPIEWSKI 2012, p. 47).

The entities providing factoring services in Poland

In the majority of countries, factoring is a common financial service. In Poland it was spread by banks in the 90s of the 20th century. Next, the non-bank factoring partnerships started to be created and their factoring services developed dynamically.

The factors both on the demand and the supply sides condition the development of factoring services. On the side of the entities offering factoring services one may enumerate: the type of the entities offering factoring services, their number, size, the turnover they generate or the range of services they offer. Legal regulations promoting the development of alternative financing are also important (KRECZMAŃSKA-GIGOL 2015, p. 408).

According to the Polish Factors Association, institutions that gathered the most factors had a turnover value tenfold higher than that of non-bank factoring companies, reaching in 150 billion PLN in 2015. It is currently still showing a tendency of growth.

Non-bank factoring entities employing over 10 people and banks (including partnerships dependent on banks) undergo reporting to the Central Statistical Office. Their structure has experienced constant changes since the beginning of factoring in Poland.

Until 2008, the number of banks providing factoring services exceeded the number of independent partnerships whose number was gradually growing. In the time of the economic downturn in 2009 factoring companies started to gradually outrun the number of banks on the market. Perhaps those companies discovered their niche which banks would not like to engage in, to a greater extent focusing on the credit activity. In 2015, the number of non-bank partnerships was more than double the number of banks. In that year factoring services were provided in Poland by 40 non-bank partnerships and 15 banks (Fig. 2).

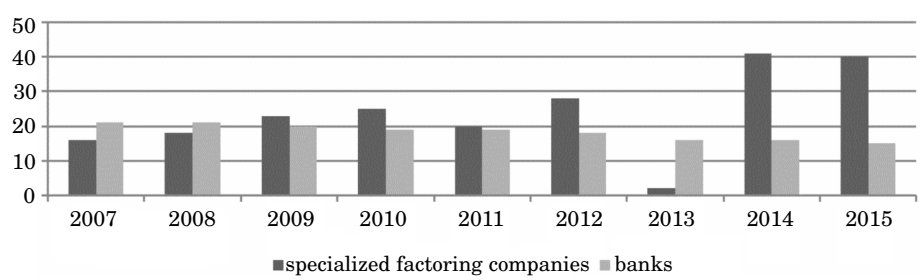

Fig. 2. Number of specialized companies and banks providing factoring services in Poland
Source: own elaboration based on data from the Central Statistical Office.

Despite the decreasing number of banks providing factoring services in Poland in comparison to independent entities, partnerships dependent on banks and banks themselves participated the most in factoring turnover according to the Polish Factors Association (Tab. 3).

Table 3

Companies providing factoring services in Poland in terms of generated turnover and linking with banks in 2015

Factor	Kind of factor	Total turnover	Number of clients	Number of financed invoices
ING CF	subsidiary of the bank	11,536.52	15,519	1,324,755
Raiffeisen Polbank	bank	8,772.96	21,494	593,903
BZ WBK Faktor	subsidiary of the bank	8,745.00	9,757	793,126
Bank Millennium	bank	7,182.84	19,120	556,439
Pekao Faktoring	subsidiary of the bank	6,861.00	4,791	541,708
Coface Poland	independent factoring company	6,000.64	8,511	437,759
BGŻ BNP Paribas Faktoring	subsidiary of the bank	5,612.51	7,427	275,351
mFaktoring	subsidiary of the bank	5,451.00	19,393	843,616
PKO Faktoring	subsidiary of the bank	4,478.90	4,570	301,974
HSBC	bank	1,369.20	1,215	48,158
IFIS Finance	independent factoring company	1,222.61	185	58,896
Bibby Financial Services	subsidiary of the bank	1,162.00	6,446	219,213
BOŚ Bank	bank	1,124.62	5,435	66,784
BPH	bank	1,099.58	5,461	169,602
UBI Factor	independent factoring company	806.32	65	47,324
KUKE Finance	independent factoring company	564.90	512	7,799
Eurofactor Polska	subsidiary of the bank	461.30	1,050	28,131
Arvato Bertelsmann	independent factoring company	391.35	1,421	56,826
BPS Faktor	subsidiary of the bank	381.86	625	44,975
Pragma Faktoring	independent factoring company	244.60	1,513	34,954
Faktorzy	independent factoring company	86.63	89	5,418

Source: own elaboration based on data from the Polish Factors Association.

The participation of the first seven factors accounts for 65% of the entire market. The first place in terms of the turnover made in 2015 and the previous year is taken by a partnership dependent on ING bank which gives it about a 14% partnership in the market. The next places are taken by Raiffeisen Polbank, BZ WBK Factor, Bank Millennium and Pekao Factoring. The partnership related to the biggest Polish bank – PKO factoring scarcely takes ninth place.

Clients of the factoring services in Poland and the European Union

The supply side of the market is shaped by the clients of factoring services. Enterprises are the factoring clients, and that is why the factors conditioning the development of factoring include: the number and the industry structure of enterprises, their payment habits (payment delays) or access to traditional sources of financing (KRECZMAŃSKA-GIGOL 2015, p. 417).

Forfeiting is frequently defined as a foreign source of long-term financing of short cycles of payment in an enterprise. The admissible invoice date of payment in commercial transactions was defined by the European Union legal regulations and operates in all member countries. In order not to create so-called "payment backlogs", the date was defined as 30 days and exceeding the limit means charging penalty interest. According to the European Payment Report from 2016, the most frequent European entrepreneurs' anxieties related to the delayed payments including reduced liquidity, and over a longer period of time its total loss, as a result of revenue loss.

The cycle of receivables and the average time of the invoice payment timeout in the economic turnover is one more factor making the enterprises more eager to use factoring. According to the European Payment Report 2014 – Intrum Justitia, in a majority of European countries the cycle of receivables does not exceed 30 days and is even placed much below that number and, in the case of Lithuania or Poland, it was 20 days. The longest cycle of receivables in days occurs in the countries experiencing the negative results of the financial crisis. These countries are: Italy – 65, Cyprus – 60, Spain – 60, and Portugal – 50. Furthermore, in these countries the longest average time of payment timeout occurs. Greece, with over 40 days is the leader, then Portugal – 30 days, Italy and Ireland 25 days. The situation in Poland, as well as other countries of Central and Eastern Europe, can be considered as satisfactory.

The situation translates into invoice payment delays in individual sectors of the industry. Certain regulations takes place here: the more a sector is exposed to payment delays, the more eager it is to use factoring services. The worst situation in the EU is in the transport and production sector, where more than a half of invoices are delayed.

The discrepancies in data aggregation among individual institutions do not allow unequivocal comparison of the factoring of clients' sectors, but only to notice general similarities and differences. Over half of clients using the factoring services in Poland constitute the enterprises of industrial processing, wholesale and retail trade and motor vehicle repair, which are the enterprises that make transactions most often and where the delays in recovering the receivables from contractors are the longest. A relatively high percentage is

also in the transport and building sector. The lowest percentage among the enumerated sectors is represented by the agricultural sector, considering it is the least aware of the benefits from these innovative financial services, but also to the smallest extent endangered with payment delays. The cumulated participation of the presented sectors is 94%. The rest, not enumerated in the statement, i.e. the activity in connection to education, culture, health and utility, constitute a marginal participation. A similarity in the factoring transactions between the Polish and European markets can be also noticed in the structure of the factoring clients and the turnover they generate. Half of the factoring clients and turnovers are made by manufacturing and service companies, which make transactions with contractors the most often. Due to long delays in invoice payments it would be advisable to use factoring in the transport sector to a greater extent (Tab. 4).

Table 4

Factoring clients by sector in 2015 in Poland and the European Union

Poland			European Union		
Sector	Number of clients	share [%]	sector	Number of clients	share [%]
Total	12,650	100	Total	171,000	100
Manufacturing	3,543	28.01	Manufacturing	55,575	32.5
Retail	3,547	28.04	Services	41,724	24.4
Transport	1,427	11.28	Distribution	31,122	18.2
Construction	1,117	8.83	Transport	7,866	4.6
Professional, scientific and technical activity	257	2.03	Retail	7,524	4.4
Accommodation and catering services	242	1.91	Construction	5,643	3.3
Other services	1,504	11.89	Other	21,033	12.3

Source: own elaboration based on data from the Central Statistical Office and the EU Federation for the Factoring and Commercial Finance Industry.

According to the CSO (Central Statistical Office), the transactions of the majority of factoring clients do not exceed 1 billion PLN, which may mean that the majority of companies using the service are small or middle sized enterprises constituting over 90% of all the enterprises in Poland. Dependence can be concluded from the analysis above. Clients use the factoring services of non-bank enterprises to the turnover of 10 billion PLN, whereas higher turnovers are made with the use of bank services (Tab. 5).

By analyzing the factoring market in Poland, an attempt was made to study the relations of this service development in relation to a number of enterprises,

Table 5

Number of clients by value of turnover factor in Poland

Specification	Total		Non-banking factoring companies		Factoring services provided in banks	
	2014	2015	2014	2015	2014	2015
Total	9,288	11,435	5,019	6,971	4,269	4,464
1 mln PLN and less	3,395	5,014	2,458	3,974	937	1,040
1–5 mln PLN	2,152	2,429	1,150	1,361	1,002	1,068
5–10 mln PLN	1,201	1,199	473	532	728	667
10–20 mln PLN	894	1,031	388	463	506	568
20–50 mln PLN	680	788	270	317	410	471
Above 50 mln PLN	966	974	280	324	686	650

Source: own elaboration based on data from *Działalność przedsiębiorstw faktoringowych w Polsce w 2015 r.* (2016).

factoring services provided by bank and non-bank enterprises or the GDP of a given region. Pearson correlation coefficient was used to reach that aim (Tab. 6).

The results of correlations received for Polish provinces are not unequivocal. There is a lack of general tendencies which would indicate a strong or weak relationship among the studied variables. However, it can be said that in the case of the studied variables a strong correlation was most frequent in case of the GDP connections of individual provinces with the factoring clients.

A positive correlation between the number of enterprises and the number of factoring clients occurred in most of the provinces, which indicates a natural tendency. Together with an increase in the number of enterprises, the number of clients using factoring is increasing. A negative correlation occurs only in the poorly developed province of Warmia and Mazury. It is an agricultural region, and as was shown previously, the number of clients from this sector constitutes a small percentage. A similar situation can be observed in the smallest Polish provinces, i.e. the Holy Cross province, the Opole province and West Pomeranian province. The strongest positive correlation occurs in the Masovian province, which is the most developed, where entrepreneurs are the most aware of the benefits of alternative financing. Simultaneously, the province stands out with the highest GDP indicator, which also shows a strong positive correlation to the number of factoring clients. Also in this comparison, the Warmia and Mazury province comes out poorly, showing a strong negative correlation. The increase in GDP does not transfer here to an increase in the number of factoring clients. A negative relationship occurs in the majority of provinces, so a conclusion can be drawn that economic growth does not influence the increase in the number of factoring clients.

Table 6

Correlation coefficients in provinces

Province	Between number of companies and number of number clients in total	Between number of companies and number of non-banking factoring companies	Between number of companies and number of factoring clients in banks	Between GDP and number of factoring clients in total	Between GDP and number of factoring clients non-banking factoring companies	Between GDP and number of factoring clients in banks
Dolnośląskie	0.76	0.27	0.75	0.54	0.39	0.85
Kujawsko-Pomorskie	0.43	0.70	0.56	-0.65	-0.64	-0.62
Lubelskie	0.68	0.58	0.54	0.08	0.17	0.00
Lubuskie	0.00	0.40	-0.10	-0.71	-0.46	-0.81
Łódzkie	0.00	0.20	0.00	-0.35	-0.29	-0.40
Małopolskie	0.39	0.03	0.28	0.58	0.62	0.44
Mazowieckie	0.80	0.74	0.47	0.70	0.43	0.83
Opolskie	-0.22	0.73	-0.58	-0.81	-0.73	-0.74
Podkarpackie	0.69	0.01	0.68	0.62	0.45	0.40
Podlaskie	0.25	0.07	0.13	-0.55	-0.31	-0.64
Pomorskie	0.03	0.41	-0.20	0.31	0.18	0.46
Śląskie	0.03	0.03	-0.01	-0.84	-0.88	-0.64
Świętokrzyskie	-0.12	-0.12	0.00	-0.85	-0.79	-0.73
Warmińsko-Mazurskie	-0.53	0.04	0.15	-0.71	-0.68	-0.16
Wielkopolskie	0.13	-0.39	-0.20	0.56	0.60	0.23
Zachodniopomorskie	-0.28	0.35	-0.48	-0.78	-0.70	-0.74

Source: author's own calculations on the basis of data from the Central Statistical Office.

Conclusions

Despite traditional instruments, the financial market also offers to enterprises alternative services, which factoring belongs to. It is a short-term instrument enabling the obtainment of financial resources in return for the invoices given back to the factor, which also makes it possible to use additional services not offered by a traditional revolving loan, thanks to which not only the indicators of enterprise liquidity, but also the relations with contractors can be improved.

In the factoring market we deal with three types of entities providing such a service, i.e. banks and companies related to them as well as independent factoring companies. Increasing capital requirements of banks cause factoring activity (among others) as well as the structure of a bank and its dynamic development in Poland and other EU countries. Moving the factoring activity to companies dependent on banks causes the market, despite the larger number of non-bank factoring firms, to be dominated by the banking sector.

Together with the dynamics of the development of companies and the range of the factoring services provided, the number of business entities choosing this service as an alternative to a revolving loan is growing. In the Polish market, the increase is not correlated with the size of a given region's economy, but the number of enterprise entities.

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MONETARY POLICY TRANSMISSION TO THE LABOUR MARKET – EVIDENCE FROM THE POLISH ECONOMY[1]

Przemysław Włodarczyk

Department of Macroeconomics
Faculty of Economics and Sociology
University of Lodz
e-mail: pwlodarczyk@uni.lodz.pl

K e y w o r d s: monetary policy transmission, labour market, output, inflation, Markov Switching Bayesian Structural Vector Autoregressive model.

A b s t r a c t

This article verifies the hypothesis of a short-run impact of undertaken monetary policy on the labour market stance, advocated by the Keynesian/monetarist strand of economic theory. The analyses are performed within a small open economy framework, using data with regards to Poland in the 2000:1–2016:5 period. The research takes into account the high volatility of economic processes in the developing economies as well as their natural business cycle fluctuations and uses Markov Switching Bayesian Structural Vector Autoregressive models.

The presented results confirm that there exists a nexus between monetary policy and the levels of output, inflation and the real effective exchange rate in the Polish economy. There is however no statistically significant relation between the employment level and changes in monetary policy. In this respect, the results are in line with the monetarist theory rather than with the traditional Keynesian\new Keynesian view.

TRANSMISJA POLITYKI PIENIĘŻNEJ NA RYNEK PRACY – WYNIKI DLA POLSKIEJ GOSPODARKI

Przemysław Włodarczyk

Katedra Makroekonomii
Wydział Ekonomiczno-Socjologiczny
Uniwersytet Łódzki

S ł o w a k l u c z o w e: transmisja polityki pieniężnej, rynek pracy, produkcja, inflacja, Bayesowski strukturalny model autoregresji wektorowej z mechanizmem Markov switching.

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Abstrakt

W artykule zweryfikowano hipotezę wskazującą na istnienie w krótkim okresie związku między charakterem prowadzonej polityki pieniężnej a sytuacją na rynku pracy, co jest postulowane przez przedstawicieli nurtu Keynesowskiego oraz monetarystycznego w teorii ekonomii. Analizy są prowadzone w ujęciu małej gospodarki otwartej, z wykorzystaniem danych dla gospodarki polskiej w okresie 2000:1–2016:5. W badaniu uwzględniono wysoką zmienność procesów ekonomicznych w gospodarkach rozwijających się oraz ich naturalne fluktuacje będące wynikiem cyklu koniunkturalnego, z zastosowaniem Bayesowskiego strukturalnego modelu autoregresji wektorowej z mechanizmem Markov switching.

Uzyskane wyniki potwierdzają istnienie zależności między prowadzoną polityką pieniężną a rozmiarami produkcji, inflacją oraz poziomem realnego efektywnego kursu walutowego. Nie ma jednak dowodów na występowanie statystycznie istotnej reakcji zatrudnienia na zmiany polityki pieniężnej. W tym zakresie wyniki są zatem zgodne z ujęciem postulowanym przez przedstawicieli nurtu monetarystycznego w teorii ekonomii, a nie tradycyjną Keynesowską (nowokeynesowską) wizją zagadnienia.

Introduction

Since the seminal publication of PHILLIPS (1958), one of the unresolved issues of economics is the problem of an impact of undertaken monetary policy on the levels of real economic variables, such as output, employment and the unemployment rate. This issue was for years one of the main sources of controversy between the representatives of various schools of economic thought, including the Keynesians, monetarists and new classical economists. Neither of these competing views could have come up with truly convincing and empirically valid arguments in this discussion, which makes it still an open case (for a wide review see e.g. FORDER 2014).

Another vital issue concerns the normative importance of the aforementioned relationships and the possibility of their use in the process of policymaking. The paper presented here has the aim of filling this gap in existing research through the presentation of new evidence of the money-labour nexus in Poland during the 2000:1–2016:5 period. A proposed framework of analysis takes into account the fact that the investigated economy is a small open one, which results in relative instability of economic processes as well as their higher vulnerability to business cycle fluctuations. In order to account for that, we use the Markov Switching Bayesian Structural Vector Autoregressive (MSBSVAR) model in the vein of SIMS et al. (2008) and HUBRICH and TETLOW (2015).

The paper is organised as follows. Section 2 presents an overview of theoretical views concerning the impact of monetary policy on the real economic variables including the labour market indicators. Section 3 describes the methodology of an econometric model used in order to verify the hypotheses put forward in the theoretical sections. Section 4 has detailed specifications of the data used in our analyses, as well as a discussion of the models'

identification issues and a description of the estimation techniques. In section 5 the results of preformed statistical and econometric analyses are presented, while section 6 gives a conclusion.

Literature review

When reviewing literature on the nexus between the character of undertaken monetary policy and the behaviour of real economic variables we may distinguish between three main theoretical views, which might be dubbed as: new classical, intermediate (or monetarist), and Keynesian. Each of them differs in its assessment of the positive and normative validity of the analysed relationship.

The **new classical view** implies the lack of a causal relationship between the character of monetary policy and the behaviour of real economic variables. It uses the Natural Rate Hypothesis in a version formulated by Lucas (McCallum, Nelson 2011) and is based on the belief that the phenomenon of money illusion is non-existent in an economy in which an agents' expectations are fully rational (Lucas 1972). In such a case money is superneutral to an economy. Only unexpected monetary policy shocks may have a short-run impact on the level of output and employment, however such a policy will result mainly in the propagation of economic fluctuations around the natural levels of output and employment (Lucas 1972, Sargent, Wallace 1975, Sargent, Wallace 1976). As such, the new classical stance may be summarised as denying the existence of a nexus between monetary policy and output, employment, and unemployment in positive terms, as well as the possibility of its utilisation in a normative aspect.

According to the **intermediate view,** the influence of monetary policy on real variables can be exerted only in the short-run. This stance is based either on the quantity theory of money and the idea of a dichotomy between the nominal and real economy (Fisher 1922, McCallum, Nelson 2011), or on the Natural Rate Hypothesis (in the so-called "accelerationist" formulation) which explains the long-run neutrality of money through the phenomenon of money illusion. The intermediate view, emphasized in the works of the classical, neoclassical and monetarist economists, accepts the hypothesis of existence of a nexus between the character of undertaken monetary policy and the level of economic activity, in its positive aspect. However, in the normative aspect, expansive monetary policy is perceived as an inefficient measure of supporting the growth of output and employment, due to the transiency of its effects and inflationary character (Arestis, Sawyer 1998).

Finally, at the other extreme, we find the **Keynesian view**, which explains the observed empirical tendency of an economy to operate below the level of full employment with the existence of wage and price rigidities. If wages and prices are rigid, then changes in the level of money supply not only affect the nominal side of an economy, but result also in quantitative adjustments of production, employment and unemployment. Money is non-neutral and there exists a stable relationship between the character of undertaken monetary policy and the level of real economic variables (KEYNES 1964, chap. 22). This idea was further refined in the concept of the Phillips curve (PHILLIPS 1958). From this point of view, the nexus between monetary policy and the level of real economic variables is valid both in the positive and normative aspect. In recent contributions by New Keynesian economists and the representatives of the New Neoclassical Synthesis it is emphasised, however, that an impact of monetary policy on real variables is restricted to the short-run. At the same time, they sustain that it is valid to use monetary policy with a view to increasing the level of economic activity (ARSENEAU, HUGH 2008, THOMAS 2008, BLANCHARD, GALI 2010, GALI 2011a, GALI 2011b). The recent economic crisis did however cast some doubts on the ways and mechanisms that might be used in order to achieve these aims (ARESTIS, SAWYER 2011, 2012, PALLEY 2011).

Due to the fact that the nexus between monetary policy character and the behaviour of real variables was for years one of the central topics of discussion in the field of economics, we find a truly impressive number of empirical studies in this area. As pointed out by TAYLOR (1996), a relatively strong consensus was reached concerning the lack of a long-run relationship. It was achieved through research performed, among others, by BOSCHEN and MILLS (1995), BULLARD and KEATING (1995), MCCANDLESS and WEBBER (1995) and KING and WATSON (1997). Much more disagreement is visible in the works on the character of the short-run relationship. Discussion in this area thrived after the introduction of multivariate structural vector autoregressive (SVAR) models. The search for robust specification of the SVAR system resulted in the adoption of an approach based on the monetary transmission mechanism as one of the basic settings in which analyses of the money-output relationship take place. Various schemes of identification of monetary policy shocks were proposed. Despite significant differences in the structure of the models presented above, the results of the undertaken research confirmed the existence of a money-output nexus in the majority of cases (see e.g. SIMS 1972, 1980, 1986, BERNANKE, BLINDER 1992, BERNANKE, MIHOV 1998, CHRISTIANO et al. 1999, 2005, 2011, SIMS, ZHA 2006, ALTIG et al. 2011). On the other hand, there were only a few studies which extended this research to the labour market (SIMS

1986, BERNANKE, BLINDER 1992, PEERSMAN, SMETS 2001, ALTIG et al. 2011, CHRISTIANO et al. 2011). Although the first results by SIMS (1986) confirmed the existence of a relatively strong influence of monetary policy on the level of unemployment, further studies (BERNANKE, BLINDER 1992, PEERSMAN, SMETS 2001) gave much weaker results. As such, the evidence concerning money and employment seems to be mixed, especially in its normative aspect.

Reviewing the results of SVAR analyses of the monetary transmission mechanism of Poland and the other Visegrad group countries we come to similar conclusions. There exists a widely documented consensus on the existence of the short-run money-output relationship (see, e.g., ANZUINI, LEVY 2007, ELBOURNE, DE HAAN 2009, JAROCIŃSKI 2010, DARVAS 2013), whereas in-depth analyses of the impact of monetary policies on other real economic variables such us employment and unemployment are very rare and erratic. Labour-market-augmented SVARs may be found e.g. in the papers by WRÓBEL and PAWŁOWSKA (2002) for Poland and VONNÁK (2006) for Hungary, however their results are far from being conclusive.

Econometric methodology

As pointed out in the previous section of this article, monetary transmission models formulated within the SVAR framework became the basic tool for monetary policy analysis and assessment. In spite of their good performance in the analyses of large, developed economies, the results obtained within the small open economy framework are unsatisfactory, as they are vulnerable to distortions resulting from a larger instability of economic processes. As a result, estimates suffer from numerous issues, such as: existence of explosive roots, lack of appropriate properties of the error terms or disruptive impulse responses. These deficiencies call, in turn, for use of *ad hoc* measures of improvement of obtained results, such as the introduction of dummy variables or a shortening of the samples (see e.g. KAPUŚCIŃSKI et al. 2014, 2016). As these methods are not satisfactory from the scientific point of view, due to the fact that they do not explain but rather evade the above-mentioned phenomena, in this article it is proposed to use the Markov Switching Bayesian Structural Vector Autoregressive model (MSBSVAR), which is capable of accounting for both the changes in the variances of the analysed processes as well as changes in the structural relationships underlying them.

Following SIMS et al. (2008) and HUBRICH and TETLOW (2015) in our analyses we consider an unrestricted VAR(l, m, n) model of the form:

$$\boldsymbol{y}_t'\boldsymbol{A}_0(s_t^C) = \Sigma_{i=1}^{l}\boldsymbol{y}_{t-i}'\boldsymbol{A}_i(s_t^C) + \Sigma_{j=0}^{m}\boldsymbol{z}_{t-j}'\boldsymbol{C}_j(s_t^C) + \boldsymbol{\varepsilon}_t'\boldsymbol{\Xi}^{-1}(s_t^V) \tag{1}$$

where:
$\boldsymbol{y}$ is a vector of endogenous variables,
$\boldsymbol{z}$ is a vector of exogenous variables, which are assumed to be at least predetermined and weakly exogenous,
$\boldsymbol{A_0}$, $\boldsymbol{A_i}$, $\boldsymbol{C_j}$ are the matrices of appropriate state-dependent parameters, s_t^n for $n = \{C, V\}$ is a latent variable describing the current state of an economy, separately with respect to each of the parameters, s_t^C, and variances, s_t^V.

We assume that the state of an economy depends on a set of political, economic, technological and institutional factors which are subject to the influence of independent shocks that may lead to abrupt changes in the character of observed economic processes. As a result, latent state variables meet the so-called Markov condition and can be modelled as if they were following an irreducible, aperiodic, time-homogeneous and ergodic Markov chain. Drawing from that fact, and following HUBRICH and TETLOW (2015), the variable s_t^n takes on the values from the set $\{1, 2, ..., h^n\}$ and is governed by the first-order Markov chain given by:

$$\Pr(s_t^n = 1 \,|s_{t-1}^n = k) = p_{ik}^n \; i,k = 1, 2, ..., h^n \tag{2}$$

where:
p_{ik}^n is the probability of an economy entering state i, conditional on being in state k in the preceding period and the Markov transition probabilities are given by matrix $\boldsymbol{P}$, which is constant over time.

For simplicity, assuming that $\boldsymbol{x}_t = [\boldsymbol{y}'_{t-1}, ..., \boldsymbol{y}'_{t-l}, \boldsymbol{z}'_t, ..., \boldsymbol{z}'_{t-m}]$ as well as $\boldsymbol{A}'_{-}(s_t^n) = [\boldsymbol{A}'_1(s_t^n), ..., \boldsymbol{A}'_l(s_t^n), \boldsymbol{C}'_0(s_t^n), ..., \boldsymbol{C}'_m(s_t^n)]$ we obtain an equation of the following form:

$$\boldsymbol{y}'_t\boldsymbol{A_0}(s_t^C) = \boldsymbol{x}'_t\boldsymbol{A}_{-}(s_t^C) + \boldsymbol{\varepsilon}'_t\boldsymbol{\Xi}^{-1}(s_t^V) \tag{3}$$

Further imposing normality restriction on state-dependent errors, with the use of the condition:

$$\Pr(\boldsymbol{\varepsilon_t} \,|\boldsymbol{Y}^{t-1}, \boldsymbol{Z}^t, \boldsymbol{S}^{n,t}, \boldsymbol{A}_0, \boldsymbol{A}_{-}, \Xi) \sim N(\boldsymbol{0}_\eta, \boldsymbol{I}_\eta) \tag{4}$$

where:
$\boldsymbol{Y}^{t-1}$, $\boldsymbol{Z}^t$, $\boldsymbol{S}^{n,t}$ are vectors of variables stacked in the time dimension, $N(\boldsymbol{0}_\eta, \boldsymbol{I}_\eta)$ is a multivariate normal distribution with zero mean and unit variance, we obtain an unrestricted Markov-Switching VAR model that can be estimated using the Bayesian procedure proposed by SIMS et al. (2008) and encoded in the dynare software.

The data, identification and estimation techniques

The empirical analyses presented in this paper are based on the monthly data from the 2000:1–2016:5 period. We use the time series of: the industrial production index (IP_t), which serves as a proxy for GDP, and the consumer price index (CPI_t), both obtained from the Stats. OECD database; short-term interest rates (IR_t), approximated by the 1-month WIBOR rate, the real effective exchange rate index ($REER_t$), based on the data on bilateral exchange rates among 42 leading trading partners, as well as the real effective exchange rate of the Eurozone ($REER_t^f$), which serves as a proxy of an exchange rate of the Polish main trading partner, all obtained from the Eurostat database; as well as the world oil price index (P_t^{oil}), given by the Brent crude oil 1-month Forward in EUR index from the ECB Statistical Data Warehouse. Additionally, in order to formulate the labour market block of the model, we use the LFS-based unemployment rate (UR_t) data, obtained from the Eurostat database. Monthly data on employment (E_t) levels were acquired from the transformation of the available LFS data on the unemployment rate and the number of unemployed.

Apart from the abovementioned characteristics of the Polish economy, we do also use the data concerning expectations and sentiments of economic entities in our model, as they might play an important role in amplifying the process of transmission of monetary impulses (see e.g.: NALBAN 2016, WŁODARCZYK 2017). In order to account for that an Economic Sentiment Indicator (ESI_t) is used. It is a measure compiled by the Eurostat as an index consisting of the weighted average of 5 sectoral confidence indicators covering: industry, services, construction, retail trade and private consumption. Enlisted subindexes are obtained on the basis of a survey sampling about 125,000 EU companies and 40,000 EU consumers every month.

All of the time series used in the following analyses were seasonally adjusted and expressed in annual growth rates (12-month log-differences) marked with lower case letters, which makes them easier to interpret.

In order to analyse impulse responses coming from the VAR models, we had to identify the way in which the shocks to different variables affected the system through imposing appropriate restrictions. There are numerous ways in which that may be done. The most popular identification scheme is the one based on the short-run exclusion restrictions, which originated from the works of SIMS (1972, 1980, 1986). BLANCHARD and QUAH (1989) pioneered the use of long-run identification restrictions, which were used mainly in a discussion of the impact of technology shocks on labour, whereas FAUST (1998) and UHLIG (2005) proposed a scheme based on sign restrictions. All of these identification schemes were however burdened by the fact that there does not exist a unique

and globally binding identification and some of the identifications might additionally be observationally equivalent; then the choice of a correct specification of the model depend primarily on the beliefs and convictions of the researcher. Due to that fact, the Cholesky decomposition, based on the causal ordering of the variables, became gradually one of the most popular identifications, as the amount of discretionary choices in that specification is relatively low and concerns mainly the succession of endogenous variables. It is also used in the research presented in this paper.

In the following section of the article, the results of the estimation of three possible identifications of the MSBSVAR model with the labour market component are presented. Each of them is based on the Cholesky identification scheme, which is specified so as to account for the fact that the Polish economy is a small open one and is characterised by higher sensitivity towards the changes of external economic conditions. We do that through the introduction of a vector of exogenous variables $\boldsymbol{z}_t = [\text{oil}_t\ \text{reer}^f_t]$ (see e.g.: KIM, ROUBINI 2000, GÓRAJSKI, ULRICHS 2016). Their use seems to find justification on theoretical grounds. Commodity prices affecting the real economy are taken into account by monetary authorities when setting the interest rate level and this influences the exchange rate level. Foreign exchange rate shocks have an impact on real economies through the changes of both the exchange rate levels and the terms of trade. As a result they should also be taken into account by the monetary authorities when deciding on the character of the undertaken policy. We treat these variables as strictly exogenous, but they affect all of the other variables of the model, i.e. we put them at the very top of the lower triangle matrix of parameters obtained from the Cholesky decomposition.

Whereas the endogenous part of the model is concerned, output influences both employment and/or unemployment, which in turn have a contemporaneous impact on inflation through the short-run Phillips-curve-type relationship and monetary policy. Monetary policy is formulated on the basis of data concerning the real economic variables and executed through the control of interest rates. It is subsequently reflected by the exchange rate levels and affects all of the other variables with some lag. Resulting identification is thus given by the vectors: $\boldsymbol{x}_t = [\text{oil}_t\ \text{reer}^f_t\ \text{ip}_t\ \text{e}_t\ \text{ur}_t\ \text{cpi}_t\ \text{i}_t\ \text{er}_t]$ in the model in which both the employment and the unemployment rate are taken into account. $\boldsymbol{x}_t = [\text{oil}_t\ \text{reer}^f_t\ \text{ip}_t\ \text{e}_t\ \text{cpi}_t\ \text{i}_t\ \text{er}_t]$ is used in the model for employment only while $\boldsymbol{x}_t = [\text{oil}_t\ \text{reer}^f_t\ \text{ip}_t\ \text{ur}_t\ \text{cpi}_t\ \text{i}_t\ \text{er}_t]$ is used in the model for the unemployment rate only.

As presented by WŁODARCZYK (2017), in small open economies in which the exchange rate pass-through plays a relatively important role, the probability of structural changes in the monetary transmission mechanism during the business cycle is much lower than in the countries in which this transmission

channel is shut down. As it was shown that in Poland the exchange rate plays such a stabilising role, we focus on estimations of the models with changes in volatility only and specifically on the models with three states in volatility, which were proven to best describe the monetary transmission mechanism of the Polish economy. They are estimated using the procedure suggested by SIMS et al. (2008). The priors are chosen following HUBRICH and TETLOW (2015). Specifically, we use standard Minnesota priors for the monthly data for the elements of the VAR model. Their hyperparameters are given by [0.57, 0.13, 0.1, 1.2, 10, 10]. For the state transition matrix we use the Dirichlet priors of 11.9, which is equivalent to assuming that the expected duration of stay in a given regime, is equal to 20.3 months. In order to obtain posterior modes we use 6 million replications as a burn-in, and leave every 5^{th} of the next 2.5 million replications, which results in 500,000 posterior draws obtained for further analyses.

Results of the econometric analyses

As it was mentioned in the previous section of the paper, we have estimated three versions of the proposed MSBSVAR model of monetary transmission in Poland in the 2000:1–2016:5 period. Each of them differed in the type of labour market variables used. The first of the models was based solely on the data concerning the level of employment, whereas the second used only the unemployment rate. The latter covered both of the abovementioned variables. Despite the fact that the correlation between the employment and unemployment rate was relatively high and reached the level of 0.78 we did not recognize any signs of the existence of multicollinearity issues. The estimates of impulse responses for the first two models were not significantly different from those obtained from the model which covered both of the labour market variables.

We start the presentation of the results of econometric analyses from the assessment of the smoothed estimated regime probabilities of each of these models, shown in Figure 1. Panel *a* presents the results of the model which are based solely on employment level data. We may infer that the estimates are relatively stable as they do not move intertwiningly between the regimes. Furthermore, they are in line with the results obtained by WŁODARCZYK (2017) in the models that were not accounting for the labour market component. It is also possible to identify the potential reasons of state changes. We may clearly separate the impact of the global economic crisis that was observed between Spring of 2008 and Fall of 2010. There were also two less pronounced spikes of volatility between January 2006 and August 2007 and since mid-2013 until the end of the sample. The first of them might easily be attributed to political

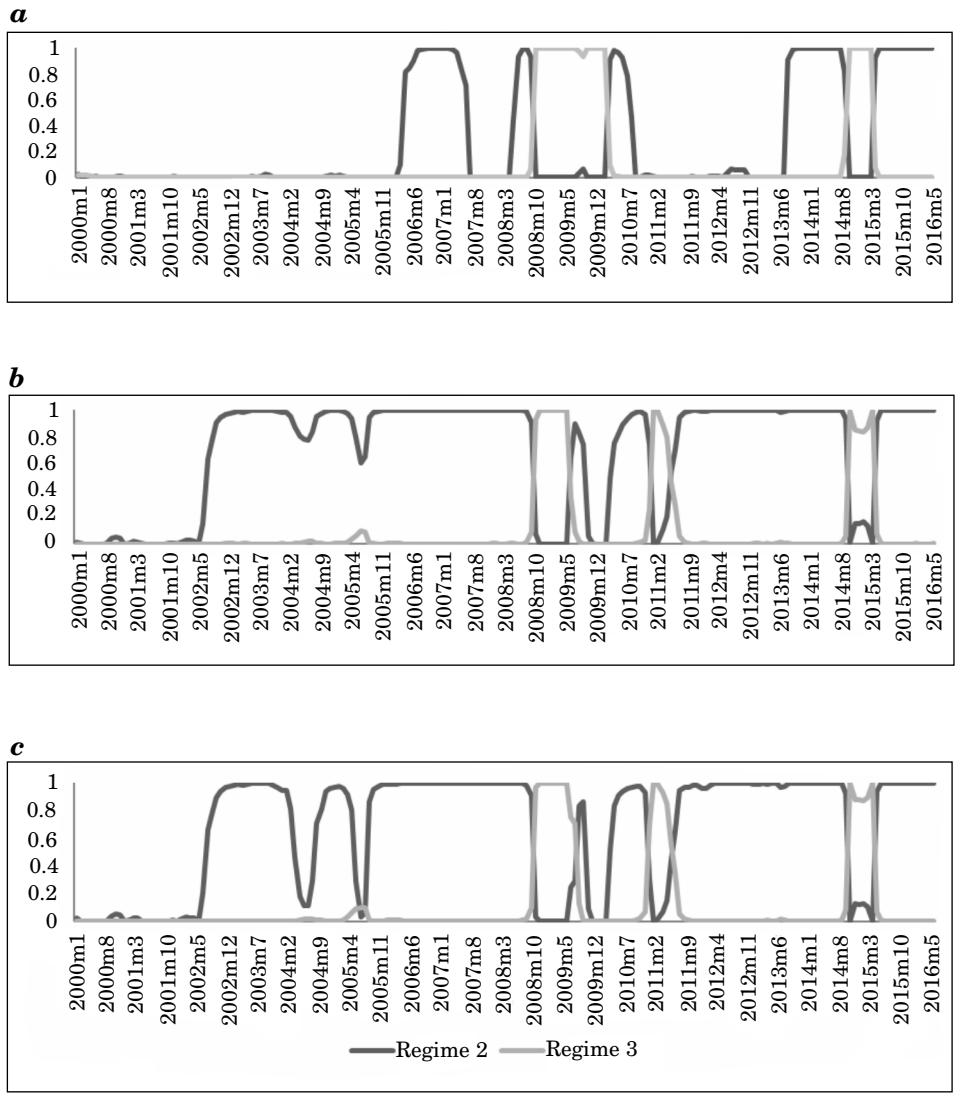

Fig. 1. Smoothed estimated probabilities of regimes from the specifications using: *a* – employment level data only, *b* – unemployment rate data only and *c* – both employment and unemployment rate data
Source: own calculations.

reasons, and specifically to the rules of the first cabinet of the Law and Justice Party. The second one is in turn a compound of geopolitical and political factors, namely the military unrest in Eastern Europe and the process of political elections which culminated in the presidential elections of July 2015; as well as the following parliamentary elections that led to the formation of the second cabinet of the Law and Justice Party.

When the unemployment data are considered (panels *b* and *c*), the model becomes much less stable. It starts to move recursively between the states and it is hard to subscribe these alterations to the fluctuations of economic activity or political changes. Drawing from that, in the following part of the paper we focus on the results coming from the first of the models, leaving the unemployment rate issues for further analyses in the forthcoming papers.

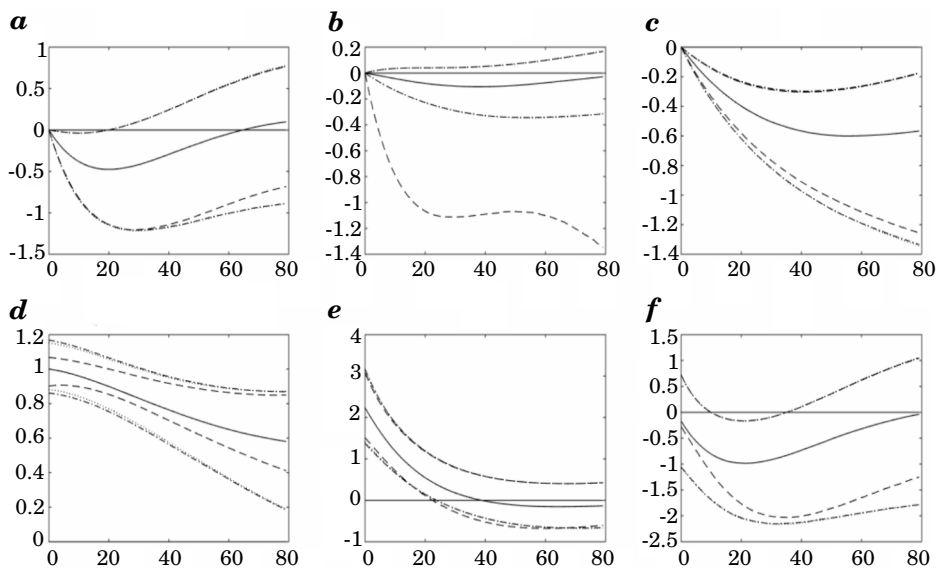

Fig. 2. Impulse responses to the 1 percentage point positive shock to short-term interest rates from the model based on employment level data: *a* – industrial production, *b* – employment, *c* – CPI, *d* – short-term interest rate, *e* - REER, *f* – ESI

Source: own calculations.

Figure 2 shows the impulse response functions obtained on the basis of the model using the data on employment levels. They are presented together with the 84% confidence intervals for appropriate regimes given by the dashed and dotted lines (Regime 1 – dashed line; Regime 2 – dotted line; Regime 3 – dashed and dotted line) and standardized so that they represent a response to a 1 p.p. positive shock to short-run interest rates approximated by a 1-month WIBOR rate. We report the results with regards to the 80 months following the shock.

Obtained responses are fully compatible with economic theory and do not suffer from any of the puzzles frequently reported in similar research papers (see e.g. KAPUŚCIŃSKI et al. 2014, 2016). An unexpected tightening of monetary policy results in the declines of output and inflation and a real effective exchange rate appreciation, as expected by standard economic theory. A fall of

output obtains its maximal value of -0.47% 22 months after an initial shock. The effect on inflation is even longer lasting as it reaches a maximum of -0.6% after 55 months. Exchange rate appreciation has a maximum of 2.23%. The effects of monetary policy tightening on output become insignificant after about 20 months, whereas the exchange rate ends appreciation after about 24 months. The influence of monetary policy tightening on inflation is visible in the economy even 80 months after the shock.

Despite the fact that the tightening of monetary policy affects the level of output, it does not produce a statistically significant reaction in employment, as the confidence intervals overlap zero. Still, if any reaction of employment to the positive 1 p.p. monetary policy shock should be expected then it would be slightly negative, with its magnitude not exceeding -0.15%.

According to the abovementioned results, the tightening of monetary policy results in the fall of confidence of economic entities, especially between the 12th and 35th month after a shock. Such a result might prove the hypothesis put forward by BOYARCHENKO et al. (2016), who stated that due to relatively fresh recollections of hyperinflations and a transformation period as well as numerous issues impeding the stabilisation of the economy, it is relatively difficult for the monetary authorities of the developing countries to earn a "credibility bonus" which would result in the positive reaction of society to the interventions of the monetary authorities.

Conclusion

The article presents the results of an empirical verification of the hypothesis of a short-run impact of undertaken monetary policy on the labour market stance, advocated by the Keynesian/monetarist strand of economic theory. The analyses were performed within a small open economy framework of an MSBSVAR model, using the data concerning Poland in the 2000:1–2016:5 period.

Presented results confirm that there exists a statistically significant nexus between monetary policy and the level of output, inflation and the real effective exchange rate in the Polish economy. In the case of an unexpected tightening of monetary policy, output and inflation would fall, whereas exchange rates would appreciate. There is however no statistically significant reaction with the employment level to the changes of monetary policy which questions the possibility of the normative use of this nexus with a view to improve the labour market stance. In this respect, the results are in line with the monetarist theory and do not follow traditional Keynesian\new Keynesian lines.

The obtained results are free of puzzles, which frequently interfere with the picture of the monetary transmission mechanism that results from traditional SVAR models. This proves that during empirical research we should explicitly take into account the natural instability of economic mechanisms during the business cycle.

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