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JIŘÍ MAZUREK[*]

A Comparison Of GDP Growth Of European Countries During 2008-2012 From The Regional And Other Perspectives

Abstract

The aim of the article is to compare the total real GDP growth of European countries from the 3rd quarter of 2008 with the 3rd quarter of 2012, the period characterized by a predominant economic stagnation or economic recession in the majority of examined European countries. The countries are divided into groups based on the following grounds: whether they are geographically close to the economic center (Germany) or peripheral, whether they are in the eurozone or not, whether they are (new) EU members or 'old' ones, etc. The main findings from the comparisons are as follows: 1. European countries close to the economic center (Germany and its neighbours) experienced, on average, positive economic growth during examined period, while countries from European periphery on average experienced negative economic growth during the same period. This difference was found statistically significant at the α = 0.01 level. 2. Differences between eurozone and non-eurozone, old and new EU members, and between more and less populated countries were found statistically insignificant. 3. European regions with the most negative real total GDP growth included the Baltics, the Balkans, Southern Europe (Italy, Portugal) and Iceland. The most successful countries with the most positive real total GDP growth were central European countries (Poland, Slovakia, Germany, Switzerland, Austria) and those in northern Europe (Sweden and Norway).

Keywords: economic growth, European Union, international economics, European regions

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1. Introduction

The beginning of the current global financial crisis can be dated to the fall of two major US investment banks - Lehman Brothers and Merrill Lynch - on the 14th and the 17th of September 2008 respectively, following the bursting of US housing bubble in the summer of 2007. Investors liquidated their assets, stock markets dropped dramatically, and a downturn spiral began. During just a few months many banks, especially in the USA, followed the fate of Lehman Brothers.[1] This development led to a fall of large financial institutions around the globe or their bailout by national governments; some countries found themselves on the brink of financial breakdown as well.

According to Eurostat, in the European Union's decline in real gross domestic product (GDP) began in the 1st quarter of 2008 in Estonia, Ireland, Latvia and Sweden. The European Union as a whole fell into a recession in the 3rd quarter of 2008 and returned back to the growth one year later, in the 3rd quarter of 2009. However, during 2010 and 2011 many European countries again slipped into recession, and at the end of 2012 twelve European countries were still declining, see Eurostat (2014).

Nevertheless, some countries experienced significant economic growth despite the crisis. The most successful country among 31 European countries monitored by Eurostat was Poland, followed by Sweden, Slovakia and eight other countries with positive economic growth since the 3rd quarter of 2008, including Germany. The countries in recession are located predominantly in Southern Europe, the Balkans and the Baltics, so according to experts the current economic crisis is mainly a problem of the European periphery; see e.g. Aiginger (2013), Garcia-Ariaz et al. (2013) or Sobják (2013). Also, the question of whether and to what extent the common currency (euro) and the existence of European Central Bank is contributing to the crisis has been the subject of intensive discussion, including by notable economists such as Barry Eichengreen or Paul Krugman, since the beginning of the Great Recession (see e.g. Matei (2010) or Eichengreen (2009)), and the prevailing opinion is that the common currency deepened the crisis.

In addition the national economic performance in times of crisis might differ between the 'old' European Union members (developed economies) and new EU member states (mainly the transition or post-transition economies of the former Soviet bloc). But this problem has not been closely examined yet, together with the question whether the size of an economy matters, as small and open economies are often considered more vulnerable.

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[1] According to the Federal Deposit Insurance Corporation (FDIC), more than 300 banks were closed in the USA during 2009 and 2010 (http://www.fdic.gov/bank /individual/failed/banklist. htm).

Hence the aim of the article is to examine above mentioned questions by a comparison of the total real GDP growth of European countries from the 3rd quarter of 2008 (the start of the EU recession) to the 3rd quarter of 2012 (when the recession was approaching its end), based on Eurostat's data. Countries are divided into several groups based on the following grounds:

- whether they are geographically close to the European economic centre (Germany) or not (i.e. in the European periphery),
- whether they are in the eurozone or not,
- whether they are new EU members (members after 2004) or not,
- geographic location,
- population size.

The paper is organized as follows: in Section 2 the data are presented; in Section 3 the method and results are provided; Section 4 is devoted to discussion of the results; and Conclusions close the article.

2. The data and the method

The real quarterly GDP growth rates (in %), adjusted for seasonality and working days, in a quarter-to-quarter comparison by Eurostat [1] were used. From these data total GDP growth during 2008Q3 - 2012Q3 was evaluated for each country. Altogether, GDP data for 31 European countries were utilized; the data for Greece was available only until 2011, so Greece was eliminated from the study, and the data for Macedonia were missing completely.

In Table 1 total GDP growth during the examined period is provided for all 31 countries, in alphabetical order. During this period 11 countries experienced positive economic growth, while the remaining 20 countries experienced negative economic growth, as did the European Union as a whole (27). Figure 3 provides a graphical comparison of the economic growth of all countries, based on the data from Table 1.

In Figure 1 the development of GDP growth rates of the European Union, Germany and France is shown. A sharp decline in GDP from the third quarter of 2008 (2008Q3) to the third quarter of 2009 (2009Q3) is visible for all three economies, but beginning with 2009Q4 economies returned to growth, which was followed by stagnation in 2012. In Figure 2 the economic development of the Baltic countries is provided.

In the following sections groups of countries are compared - with respect to their total average real GDP growth - during 2008Q3-2012Q3 period.

For testing of the null hypothesis that there is no difference between groups, the two-sample t-test with non-equal sizes and non-equal variances was used with the following statistics:

$$t = \frac{\overline{X}_1 - \overline{X}_2}{s_{\overline{x}_1 - \overline{x}_2}} \ , \ s_{\overline{x}_1 - \overline{x}_2} = \sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}} \tag{1}$$

In relation (1) n_1 and n_2 denote simple sizes, $\overline{X}_1$ and $\overline{X}_2$ means, and $\overline{s}_1$ and $\overline{s}_2$ standard deviations. The testing was performed with the use of the statistical software Gretl. Each null hypothesis was accepted or rejected and corresponding *p*-values are provided as well.

Figure 1. Quarterly GDP growth rates (in %) of the EU, Germany and France from 2008Q3 to the 2012Q3
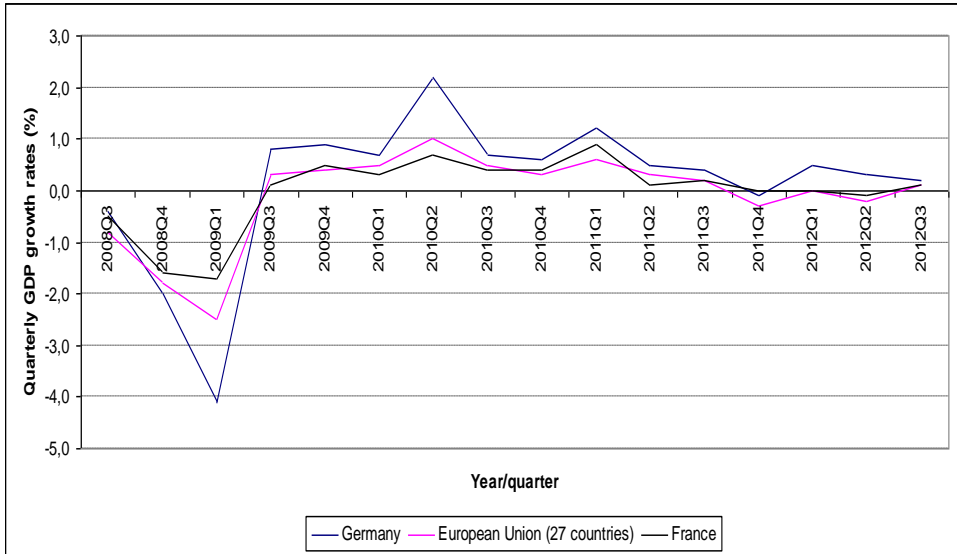
Source: Eurostat (2014).

Figure 2. Quarterly GDP growth rates (in %) of the Baltic countries from 2008Q3 to 2012Q3
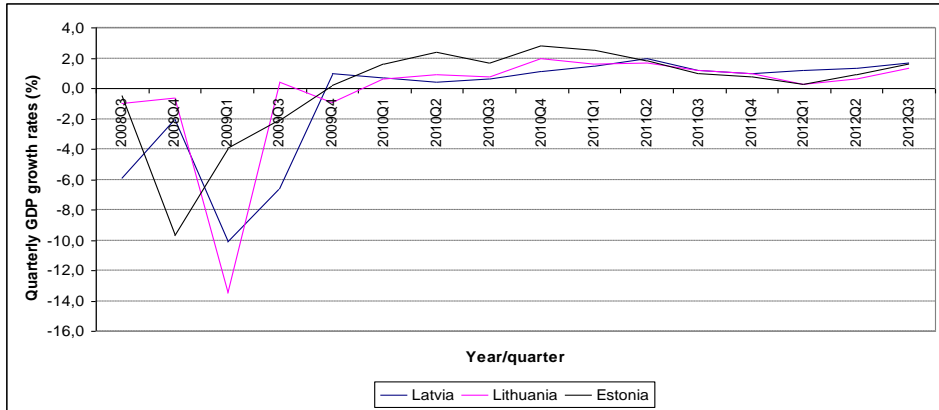
Source: Eurostat (2014).

Table 1. Total GDP growth during 2008Q3-2012Q3 period in selected countries

Country	Total real GDP growth from 2008Q3 to 2012Q3 (in %)	Country	Total real GDP growth from 2008Q3 to 2012Q3 (in %)
Austria	1.24	Lithuania	−4.58
Belgium	0.04	Luxembourg	−0.78
Bulgaria	−2.96	Macedonia	−4.13
Croatia	−10.14	Malta	3.23
Cyprus	−1.42	Netherlands	−0.95
Czech Republic	−1.58	Norway	3.46
Denmark	−3.64	Poland	12.23
Estonia	0.63	Portugal	−6.55
EU (27)	−1.45	Romania	−4.39
Finland	−3.12	Slovakia	4.55
France	−0.24	Slovenia	−8.62
Germany	2.27	Spain	−4.71
Hungary	−5.57	Sweden	5.22
Iceland	−8.80	Switzerland	3.71
Ireland	−3.37	UK	−2.05
Italy	−6.02	United States	2.77
Latvia	−11.28	Japan	−2.71

Source: own calculations from Eurostat (2014) data.

Figure 3. A graphical comparison of the economic growth of all countries from 2008Q3 to 2012Q3
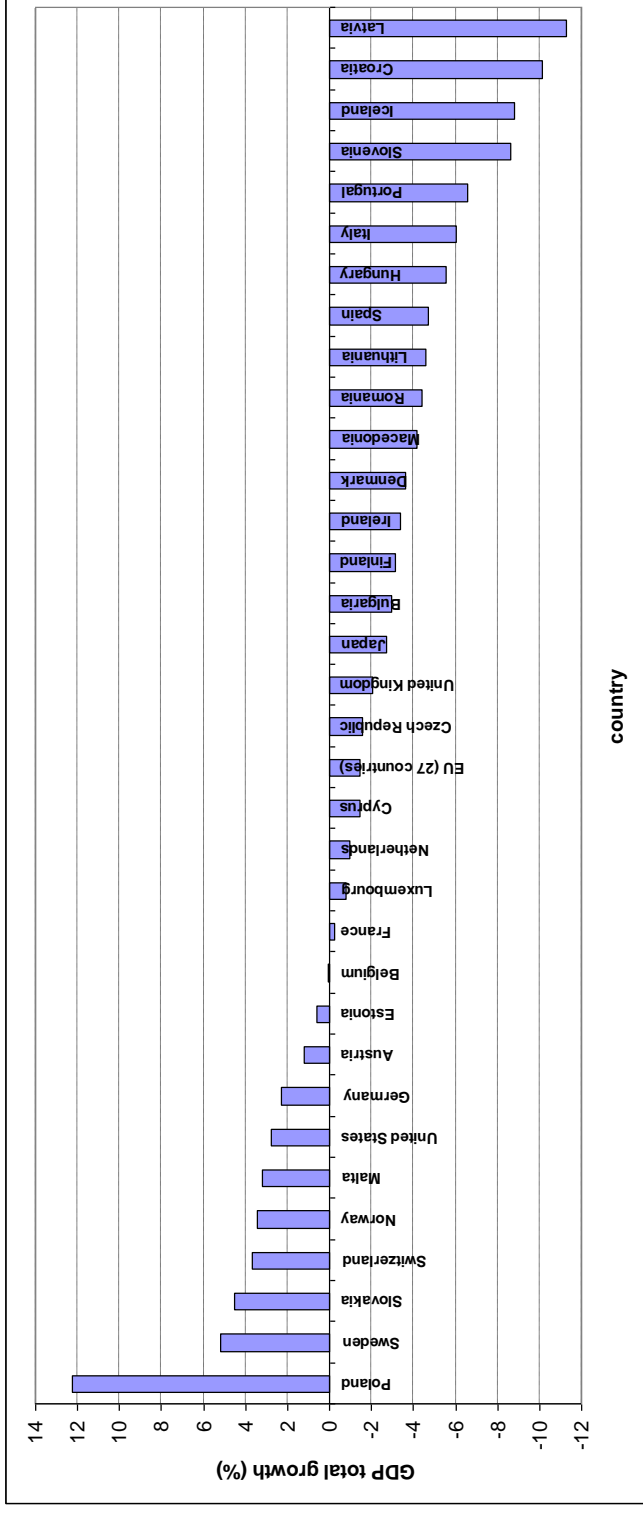
Source: own calculations.

3. Results

European countries were ranked from the most economically successful to the least successful in the given period (see Figure 3).

The USA and Japan were also included into the figure for the comparison. As can be seen, the USA was among the best, while Japan's performance was average. In the following sub-sections other comparisons are provided, while a possible explanation of these results is included in Section 4.

3.1. Centre versus Periphery

In this section countries were compared on the basis of their geographic location. The centre is Germany –the strongest economy on the continent–together with its neighbours, while other countries constitute the European periphery. Results of the comparison are shown in Table 2.

The following null hypothesis was tested:

H_0 : *Average total GDP growth in Centre and Periphery is equal.*

The difference in the average total real GDP growth between Centre and Periphery was found statistically significant at a 0.05 level ($p = 0.006$), and the null hypothesis was rejected.

During the crisis, countries from the central part of Europe experienced positive total growth, while the periphery experienced an overall decline of GDP by 3.4% on average. Hence, the problems in the European periphery were confirmed.

Table 2. Centre versus periphery, average growth.

Groups	Countries	Total real GDP growth from 2008Q3 to 2012Q3 (in %)
Centre (10)	Germany, Czech Republic, Denmark, Belgium, France, Netherlands, Luxembourg, Switzerland, Austria, Poland	1.23% (σ = 4.15)
Periphery (21)	Bulgaria, Croatia, Cyprus, Estonia, Finland, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Macedonia, Malta, Norway, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, UK	−3.36% (σ = 4.58)

Source: own calculations from Eurostat (2014) data.

3.2. 'Old' EU countries versus 'new' EU countries

In this section a comparison of the 'old' EU member countries (with the EU membership dating before 2000) versus new the EU member countries (excluding Croatia) is shown in Table 3.

The following null hypothesis was tested:

H_0 : *Average total GDP growth in the old and new EU countries is equal*

The difference in the average total real GDP growth between old and new EU members was not found to be statistically significant at a 0.05 level ($p = 0.82$), so the null hypothesis couldn't be rejected.

Because new EU members are (with the exception of Cyprus) economies of the former Soviet communist bloc, this result can be interpreted to mean that the transition economies of the former Eastern bloc performed as well as their western counterparts during the crisis.

Table 3. Old EU countries versus new EU countries, average growth

Groups	Countries	Total real GDP growth from 2008Q3 to 2012Q3 (in %)
Old EU members (14)	Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, UK	−1.62% ($\sigma = 3.15$)
New EU members (11)	Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia	−2.09% ($\sigma = 6.10$)

Source: own calculations from Eurostat (2014) data.

3.3. Eurozone versus non-eurozone

Another factor which might influence the impact of the crisis is the common currency – i.e. the euro. In this section a comparison of eurozone countries versus non-eurozone countries is provided in Table 4.

The following null hypothesis was tested:

H_0 : *Average total GDP growth in eurozone and non-eurozone countries is equal*

The difference in the average total real GDP growth between the eurozone countries and the rest of EU countries was not found statistically significant at the 0.05 level ($p = 0.66$), so the null hypothesis cannot be rejected. Hence, the euro did not provide an advantage during the crisis.

Table 4. Eurozone versus non-eurozone, average growth

Groups	Countries	Total real GDP growth from 2008Q3 to 2012Q3 (in %)
Eurozone (16)	Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain	−1.49% (σ = 3.56)
non-eurozone (15)	Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Iceland, Latvia, Lithuania, Macedonia, Norway, Poland, Romania, Sweden, Switzerland, UK.	−2.30% (σ = 6.04)

Source: own calculations from Eurostat (2014) data.

3.4. European regions

In this section regional differences are examined (see Table 5). Countries were divided geographically (mainly in accordance with the UN regional division) into seven regions.

The best region was Scandinavia, with the total average GDP growth of 1.87%, while the regions most affected by the crisis were the Baltics and the Balkans, with the overall average GDP decline of −5.08% and −5.40% respectively.

Because of the small number of countries in some groups, statistical analysis was not performed in this case. It should be noted that some countries (e.g. Sweden or Norway) were included in more than one region.

Table 5. European regions' average growth

Region	Countries	Total real GDP growth from 2008Q3 to 2012Q3 (in %)
Scandinavia	Finland, Norway, Sweden	1.87
Central Europe	Austria, Czech Rep., Germany, Hungary, Slovakia, Slovenia, Switzerland	1.03
Western Europe	Belgium, France, Ireland, Luxembourg, Netherlands, UK	−1.22
Northern Europe	Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, Sweden,	−2.76
Southern Europe	Cyprus, Italy, Malta, Portugal, Spain	−3.09
Baltic	Estonia, Latvia, Lithuania	−5.08
Balkans	Bulgaria, Croatia, Macedonia, Romania	−5.40

Source: own calculations from Eurostat (2014) data.

3.5. More populated countries versus less populated countries

In this section the possible differences in the economic development between more populated (large economies) and less populated countries (small economies) is examined for the selected period. Small and open economies are generally more vulnerable to external shocks, as they are more dependent on foreign investments and export/import from their larger counterparts. Countries were divided into two groups (the 15 most populated countries versus the 16 least populated countries) based on their population from 2012 according to the World Bank (2013) (see Table 6). The following null hypothesis was tested:

H_0: *Average total GDP growth in more and less populated EU countries is equal*

The difference in the average total real GDP growth between more populated and less populated EU countries was large, but was not found statistically significant at the 0.05 or (tightly) at the 0.10 level ($p = 0.12$), so the null hypothesis couldn't be rejected.

Table 6. More populated countries versus less populated countries, average growth

Groups	Countries	Total real GDP growth from 2008Q3 to 2012Q3 (in %)
More populated countries (15)	Austria, Belgium, Czech Rep., France, Germany, Hungary, Italy, Netherlands, Poland, Portugal, Romania, Spain, Sweden, Switzerland, UK	−0.49% (σ = 4.85)
Less populated countries (16)	Bulgaria, Croatia, Cyprus, Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Norway, Slovakia, Slovenia.	−3.18% (σ = 4.58)

Source: own calculations from Eurostat (2014) data.

4. Discussion of regional differences

Poland demonstrated the best economic performance during the examined period. The main reasons for its exceptionally good results were strong domestic demand despite the crisis abroad, an out-of-date financial system which kept foreign investments low before the crisis, thus preventing the outflow of foreign capital, see Knibbe (2011), devaluation of the Polish zloty, which enabled lower interest rates, and also the impact of neighbouring Germany, the strongest economy on the continent and Poland's most important export country, was not neglible. The massive government spending (mainly into infrastructure) before EURO 2012 might also have contributed to the GDP growth.

On the other hand, the most negatively affected regions were Southern Europe, the Baltics, and the Balkans.

The well-known problems of Portugal, Spain, Italy and Greece in particular were caused by governmental debt and lower productivity, without the possibility of devaluation of their currencies, which led to austere measures by their national governments. Despite these measures, all the afore-mentioned countries remained in a recession in the first half of 2013.

For an explanation of the situation in the Baltics, see e.g. Knibbe (2011), Kajaks (2013) or Kattel and Raudla (2013). Before the crisis the Baltic countries were among the fastest-growing economies in Europe (Latvia grew by 12% annually in 2006, Lithuania 8% and Estonia by 10%), but when the crisis began they fell into one of strongest recessions on the continent. Mazurek and Mielcová (2013) and Kajaks (2013, summary) provide a concise explanation of causes of such a development: "The basic reason for this is that the country's development was based not on industrial production but on an influx of cheap and readily available foreign capital, which was invested in consumption in the form of loans granted by commercial banks, thus creating an illusion of growing and sustainable prosperity... until the capital stopped flowing."

Lithuania tried to soften the crisis by internal devaluation, but to no avail. During 2011-2013 Latvia and Lithuania returned to the modest growth, while Estonia fell into another recession in the first half of 2013.

The problems of the Balkan countries were examined in, e.g., Minchev (2010), Karasavvoglu and Polychronidou (2014) and Pere and Hashorva (2012). Apart from its dramatic history - even in the recent decades - the Balkans is sometimes considered to be a 'periphery of the periphery' in Europe, due to its remote geographic location from European centres, i.e. Germany and France. In general, the Balkan countries are low opened economies vulnerable to external shocks, with relatively stable banking systems but without the automatic stabilizers of their social welfare systems as their Western counterparts. Before the crisis the Balkan countries experienced an economic boom (Montenegro 11% of real GDP in 2007; Romania 8%; Serbia 7%; Macedonia 6% etc.). The Balkan countries were still growing in 2008, as they usually followed the trends from the Western Europe with a time lag of approximately one year. Because the Balkan economies were closely tied to the European Union countries (namely to Italy, Greece and Germany), the decline in demand from EU also brought about a decline of their economies. However, Romania, the major economy of the Balkans (with exception of Greece), returned to growth at the end of 2012, while Bulgaria and Croatia were still in stagnation in the first half of 2013.

It should also be noted that both the Baltics' and the Balkans' GDP growth rates are computed based on a much lower base than in the West, so the growth or decline in real GDP (in %) is more visible.

Finally it should be noted that the role of pre-crisis conditions on performance during the crisis in general is discussed in, e.g., Aiginger (2011), while the crisis in the euro area was examined by, e.g., Beblavý et al. (2011).

5. Conclusions

In this paper a selected set of 31 European countries (using the data available from Eurostat) were selected for a comparison of their economic growth during 2008-2012; a period of predominant economic recession or stagnation.

The countries were divided into two or more groups with regard to different criteria, e.g. whether they belong to European periphery or the Centre, whether they are part of the eurozone or not, etc.

It was determined that only geographic location matters: the economic crisis in the European periphery was indeed significantly worse than in the European Centre.

On the other hand, neither membership in the eurozone, the difference between the old and new EU members, nor the difference between small and large economies was found to be statistically significant.

The comparison also enabled the identification of those regions most affected by the financial crisis, as well as those least affected. In the examined period the best-performing country was Poland, while the worst was Latvia. As for regions, the most successful was Scandinavia, while the least successful were the Balkans and the Baltics.

The result of the study can be used for a more detailed analysis of the causes for such developments, as well as their policy implications, as the most affected regions can be supported by the European Commission via European Cohesion or Structural Funds.

Finally it must be kept in mind that the Great Recession is still an ongoing event, so definitive answers still have to wait until it ends.

References

Aiginger K. (2013), *A new strategy for the European periphery*, *WIFO Policy Paper*, no. 1.

Aiginger K. (2011), *Why Performance Differed Across Countries in the Recent Crisis How Country Performance in the Recent Crisis Depended on Pre-crisis Conditions. WIFO Working Papers*, No. 387.

Beblavý, M., Cobham, D., Ódor, L. (Eds.) (2011), *EURO area and the financial crisis*, 2011. Cambridge University Press.

Garcia-Arias G., Fernandez-Huerga E., Salvador A. (2013), *European Periphery Crises, International Financial Markets, and Democracy,* 'American Journal of Economics and Sociology', Vol. 72, Issue 4.

Eichengreen B. (2009), *The Crisis and the Euro*, 'International Economy and Trade Working Paper 23'.

Eurostat (2014). Available from: http://www.eurostat.eu.

Kajaks J. (2013), *The economic and social situation in the Baltic countries: Latvia – Study*. European Economic and Social Committee.

Karasavvoglou A., Polychronidou P. (Eds.). (2014), *Economic Crisis in Europe and the Balkans: Problems and Prospects*, Springer.

Kattel R., Raudla, R. (2013), *The Baltic Republics and the Crisis of 2008 - 2011*, 'Europe-Asia Studies', 65(3).

Knibbe M. (2011). *Why Poland and Sweden escaped the crisis, to an extent, and some other Baltic states didn't.* Available from: http://rwer .wordpress.com/2011/10/25/why-poland-and-sweden-escape d-the-crisis-to-an-extent-and-some-other-baltic-states-didnt/

Matei D. (2010), *The Role of the Euro During and After Economical Crisis*, *The Annals of "Dunarea de Jos" University of Galati*, Fascicle I – 2010. Years XVI – no 1.

Mazurek J., Mielcová E. (2013), *The Evaluation of Economic Recession Magnitude: Introduction and Application*. 'Prague Economic Papers', vol. 2013(2).

Minchev O. (Ed.). (2010), *The western Balkans: between the economics crisis and the European perspective*. Institute for regional and international studies, Sofia.

Pere E., Hashorva A. (2012), *Western Balkan′s countries in focus of global economic crisis*. 'The USV Annals of Economics and Public Administration', Vol. 12, Issue 1(15).

Sobják, A. (2013), *From the Periphery to the Core? Central Europe and the Economic Crisis*, 'PISM Policy Paper', no. 7 (55).

World Bank. (2013). Available from: http://www.worldbank.org

Streszczenie

PORÓWNANIE WZROSTU PKB W OKRESIE 2008-2012 W KRAJACH EUROPEJSKICH Z REGIONALNEJ I INNEJ PERSPEKTYWY

Celem artykułu jest porównanie całkowitego wzrostu realnego PKB w krajach europejskich od III kwartału 2008 roku do III kwartału 2012 roku, w okresie charakteryzującym się przewagą stagnacji i recesji gospodarczej, która miała miejsce w większości badanych krajów europejskich. Kraje zostały podzielone na grupy na podstawie następujących kryteriów: geograficzna bliskość lub peryferyjność w stosunku do centrum gospodarczego (Niemcy), członkostwo w strefie euro lub jego brak, członkostwo w UE (z podziałem na kraje starej i nowej Unii) lub jego brak. Główne wnioski z porównania są następujące: 1. Kraje europejskie blisko centrum gospodarczego (Niemcy i sąsiedzi) zanotowały dodatni wzrost gospodarczy w badanym, okresie podczas gdy w tym samym okresie kraje europejskiej peryferii wzrostu gospodarczego osiągnęły wzrost ujemny (średnio). Różnica ta była statystycznie znacząca na poziomie $\alpha = 0,01$. 2. Różnice pomiędzy krajami w i poza strefą euro, różnice między starymi i nowymi członkami UE oraz różnice między bardziej i mniej zaludnionymi krajami UE nie były statystycznie znaczące. 3. Europejskie regiony z najwyższym ujemnym wzrostem realnego wzrostu PKB obejmują kraje bałtyckie, Bałkany, Europę Południową (Włochy, Portugalię) i Islandię. Najwyższy dodatni wzrost PKB osiągnęły kraje Europy Środkowej (Polska, Słowacja, Niemcy, Austria), Zachodniej (Szwajcaria) i Północnej (Szwecja, Norwegia).

Słowa kluczowe: *międzynarodowa ekonomia, regiony europejskie, Unia Europejska, wzrost gospodarczy*

JANINA WITKOWSKA[*]

Intra-EU Capital Movements: Ten Years Of Poland's Experiences As An EU Member In The Global Context

Abstract

The aim of this paper is to analyse and evaluate the consequences of the establishment of free movement of capital between Poland and the other EU Member States, from the perspective of ten years of Poland's EU membership. Special attention is paid to the role of intra-EU foreign direct investment (FDI) flows into the Polish economy. The widening of the European Union (EU) in 2004 spurred massive and serious legal and economic adjustment processes in the new EU Member States. The free movement of capital is one part of the so-called 'four freedoms' within the single European market, and needed to be established in the relations between the EU-15 and new EU Member States. The new EU Member States were granted a relatively short period of time to make those adjustments. However, the establishment of the free movement of capital between Poland and the rest of the EU did not cause disturbances in its economy. In fact it stabilized some spheres of its economic and social life. The intra-EU FDI inflows may be seen as having facilitated the restructuring processes in the Polish economy. The role of foreign investors in employment and foreign trade is decisive for the stabilization of Poland's economic situation. The involvement of foreign investors in innovation processes, although growing, has not radically changed Poland's position in this field. According to the EU innovativeness rankings, Poland belongs to the rank of modest innovators.

Keywords: *capital movements, intra EU-foreign direct investment, integration processes, European Union, Poland*

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1. Introduction

The establishment of the free movement of capital between Poland and the other EU Member States, as well as its consequences, should be studied in the context of Poland's overall experiences after ten years of EU membership. In this case, the issue of the free movement of capital can be perceived both as the deepening of the intra-EU integration and as immanent feature of the globalization processes in which Poland participates.

Historically, the 'old' EU Member States (EU-15) required quite a long period for the establishment of the free movement of capital. This was determined by the situation in the global economy in the 1970s and 1980s of the 20th century. The new EU Member States received a much shorter period in which to make their adjustments.

The aim of this paper is to analyse and evaluate the consequences of the establishment of the free movement of capital between Poland and the other EU Member States from the perspective of Poland's ten years of EU membership. Special attention is paid to the role of intra-EU foreign direct investment (FDI) flows into the Polish economy.

The more detailed research tasks are the following:

- to present the evolution of regulations related to the free movement of capital within the European integration grouping;
- to evaluate the results to date of the establishment of the free movement of capital within the Single European Market;
- to analyze provisions of the Poland's Accession Treaty related to capital movement;
- to present a scale and structure of FDI as one of the forms of capital movement between Poland and the other EU member countries;
- to evaluate the role of intra-EU foreign direct investment in the Polish economy within the period of its EU membership.

2. Theoretical background

The integration processes between the 'Old' and New EU Member States in the field of capital markets should be discussed in the light of main findings of integration theory, related to a common market. The achievement of a common market stage of the integration requires the removal not only of legal and administrative barriers to free movements of factors, but also the adoption of

positive harmonization measures related to the regulations of the markets of labour, capital and enterprises (Robson 1987). A logical scheme of integration processes should be implemented and respected, i.e. trade liberalization should precede capital movement liberalization (Molle 1990). The main expected effects of the integration of capital markets are defined as follows (Robson 1987, Molle 1990, Pelkmans 2001):

- equalisation of interest rates, i.e. of the price of capital
- increase in the overall welfare of the integrating countries
- changes in the distribution of income between the main functional categories (wage versus capital income)
- a tendency toward a reduction of disparities in factor earnings among the different member countries
- temporarily worsening of balance of payments as a result of the liberalization of the movement of capital.

Other effects of the integration of capital markets are perceived to be:

- facilitation of restructuring processes that follow the liberalization of trade within a customs union
- Vinerian effects in the form of the creation and diversion of capital movements
- dynamic effects by enhancing competition between financial organizations
- spatial concentration of economic and financial activities in some regions of the integration group at the cost of less developed regions, i.e. self-reinforcing dynamic effects of polarization.

Foreign direct investment, as one of the types of capital movements within the integrating area, should be examined by using theoretical approaches which try to explain foreign direct investors' behaviour in the context of deepening integration processes (Cantwell 1987, Yannopoulos 1990, Molle 1990, Mayes 1990). These processes generate and enhance localization advantages of member countries, understood as in Dunning's eclectic paradigm of international production, as well as ownership-specific advantages of foreign investors (Dunnig 1977, 1979, 1988). Within a customs union, tariff jumping and optimum investment seeking should occur within the integrating area. As a strategic response of foreign investors to the static and dynamic effects of the creation of the customs union, defensive or offensive import substituting investment, as well as re-organisation and rationalized investment can be carried out. The establishment of a common market causes further enhancement of the above-mentioned advantages. Foreign investors adjust to new business conditions within the common market, although differences in the strategies of firms already established within the integration group and newcomers can occur.

The creation of an economic and monetary union influences investors' decisions through a reduction of transaction costs and a lowering of the costs of capital as a consequence of the introduction of a common currency.

3. Evolution of regulations and the results of the establishment of the free movement of capital within the Single European Market – the current situation

The Treaty of Rome (1957) introduced limited freedom of movement of capital (Arts. 67 to 72), and some restrictions were permitted in this field. The provisions related to capital movements were not directly applicable. Directives issued between 1960-62 on capital movement distinguished three groups of capital transactions, i.e. fully free, partly free, and with no obligation to liberalise. FDI belonged to the first group of transactions and was fully free. Further Directives of 1986-88 introduced the subsequent liberalisation of all capital transactions.

The Treaty of Maastricht (1992) stipulates that the movement of capital should be fully liberalized. Art. 56 states that: *'.... all restrictions on the movement of capital between Member States and between Member states and third countries shall be prohibited'* as well as*: '....all restrictions on payments between Member States and between Member States and third countries shall be prohibited'.* The Treaty of Lisbon (2012) confirms provisions of The Treaty of Maastricht related to the liberalisation of the movement of capital and payments (Art. 63), although some restrictions in relations with third countries are accepted (Art.64).

At the very beginning of the liberalisation processes, the integration of the capital market in the EEC was limited and practically restricted to FDI (Molle 1990). The development of the Single European Market in the 1990s brought about an intensification of intra-EU portfolio capital movements and FDI flows. The EU occupied the position of main exporter and importer of FDI in the global economy at that time (Witkowska 2001). A tendency towards some convergence of interest rates among the member countries appeared. The capital markets of the Member States remained, however, differentiated (Pelkmans 2001, Gros, Lannoo 2000). The introduction of monetary union brought about changes in all segments of capital markets as a result of the elimination of foreign exchange risks. Nevertheless, the unification of capital markets was not achieved.

The crisis of 2008 and following caused serious turbulences on the global and European capital markets: The European Commission issued the following evaluation: '*International flows of capital were one of the factors underpinning*

the current global financial crisis, as they exacerbated global external imbalances. These imbalances occurred in the EU, too' (EC 2014, p. 1*). S*everal member States experienced sudden cessation of both capital inflows and capital flight. Investors' behaviour aggravated the banking and sovereign debt crises. As a result of the global financial crisis, the EU share in total gross capital inflows fell drastically from about 65% in 2005 to 22% in 2012 (EC 2014 and author's own calculations).

The crisis affected not only inward and outward FDI flows, but also intra-EU flows. All types of FDI flows decreased radically in comparison to the pre-crisis period. The EU as a whole lost its leading position in worldwide FDI inflow. Its share in the global FDI inflow amounted to 19.1% in 2012. At the same time, the major emerging economies attracted a larger share of worldwide FDI than the EU, i.e. 24% in 2012, (EC, Part I, 2013, p.12). The share of the EU in global FDI outflow dropped to 23.2% in 2012, i.e. the lowest level since such FDI data have been compiled (EC 2013, Part I, p.12). Portfolio investment was the only category of the financial account of the EU that grew in the period 2011-2012, although the share of the intra-EU portfolio investment increased by less than 1%. Other investment, including cross- border bank lending, decreased significantly in 2011-2012. The Member States that were negatively affected by the crisis experienced large-scale disinvestment.

4. The liberalisation of the movement of capital between Poland and the EU   Member States

The new EU Member States were obliged to liberalise capital movements with the other Member States. The establishment of the free movement of capital proceeded almost simultaneously with the establishment of the other freedoms. The liberalisation of capital movements between the old and new Member States took place much quicker than that described above among the old Member States. However, some temporary derogation from the obligations was possible.

In the case of Poland, the partial liberalisation of FDI flows was undertaken under the European Agreement that entered into force in 1994. A gradual implementation of the national treatment principle and liberalisation of the movement of capital, which were implemented under the agreement between Poland and OECD in the years 1996-2002, helped to fulfil the provisions of the Treaty of Accession related to these issues. These included the following:

- removal of hitherto existing barriers to the movement of capital related to some legal requirements,
- some exceptions to the general rule of the free movement of capital connected with privatisation processes, institutional investors and position of Treasury, i.e. the acceptance of a so-called 'golden share,
- five and twelve-year-transitional periods for the purchase of so-called second houses and land, respectively, by EU citizens in Poland.

5. FDI as a form of the movement of capital between Poland and the EU Member States - scale of the phenomenon

FDI inward stock located in Poland amounted to USD 252 billion in 2013 and was 7.4 times higher than in 2000, when it reached the level of USD 34 billion (UNCTAD 2014, p.205 and author's own calculations). FDI inward stock as a percentage of GDP was calculated at 34.3% and 48.8% in 2004 and 2012 respectively.

At the same time, FDI outward stock of Polish investors abroad amounted to almost USD 55 billion in 2013, compared to only USD 1 billion in 2000 (UNCTAD 2014, p. 209). FDI outward stock as a percentage of GDP amounted to 1.3% and 10.7% in 2004 and 2012 respectively. All told, **91.1% of capital invested in Poland came from the EU as well as the other EU Member States, which were also main destination for Polish capital.** Hence, the further analysis will be based on a simplifying assumption that total FDI statistics allow for drawing conclusions on the phenomenon of intra- EU FDI for the Polish economy.

Graph No 1 presents trends in FDI inflows (into) and outflows (from) the Polish economy in the years 2003-2013**.** FDI flows, both into and from Poland, have been influenced by both the integration and globalisation processes. FDI inflows in the years 2004-2007 were stimulated by Poland's good economic situation after joining the EU. The global financial crisis caused a decrease in annual FDI inflows in the years 2008-2010. A brief recovery in 2011 changed into a serious decrease in FDI inflows in 2012. Disinvestments occurred in 2013.

Graph No 2 shows the FDI intensity in the Polish economy, defined as the average of combined inward and outward FDI flows, divided by GDP. The index measures the intensity of investment integration within the international economy (Eurostat, 2014). Changes in the FDI intensity index in the years 2003-2012 demonstrate that FDI flows have a pro-cyclical character, and confirm the dependence of the Polish economy on both integration processes within the EU and on the situation in the global economy.

6. The role of FDI in Polish economy in the last decade

Foreign investors influence different areas of the Polish economy and the social life which is stabilized by them. In this paper, the analysis will be limited to three issues:

- employment,
- foreign trade,
- innovation activity.

6.1. Foreign investors' activity in Poland and employment effects

The relationship between TNCs activities and the labour market in host countries is discussed in the context of direct and indirect effects on employment and building skills in host countries (UNCTAD 1994, UNCTAD 1999). These effects depend on TNCs' modes of entry into host countries (greenfield investment or M&A), on the scale and branch structure of FDI, on TNCs' strategies and related organizational structures, as well as on the policies of host countries towards foreign investors.

At the very beginning of Poland's EU membership, firms with foreign participation employed 1.1 million people in Poland (GUS 2005). This number grew in the following years (except for 2009), and amounted to 1.57 million in 2012 (GUS 2013) (see Graph No 3). This constituted 18.9% of the total employment in Poland in 2012 and was 3.7 pp higher than in 2004 (GUS data base and author's own calculations). This means that almost 1/5 of the total employment in the Polish economy has been created by or maintained by foreign investors. The sectoral structure of this employment shows that the number of jobs created in the service sector (794,900 in 2012, i.e. 50.6% of the total) dominate slightly over those created in the industry sector (770,300, i.e. 49% respectively). Only 0.4% of jobs were created in the agricultural, forestry, hunting and fishery sectors (GUS date base and author's own calculations). Graphs No 4 and 5 present the structure of the employment, using the NACE classifications, created by firms with foreign participation within the manufacturing and services sectors in Poland. This data confirms the high importance of foreign investors' activities for the creation of jobs in Poland in the manufacture of motor vehicles, trailers and semi-trailers, food products, rubber, plastic and metal products, as well as in the service divisions like trade and repair of motor vehicles, information and communications, transport and storage, administrative and support service activities, as well as construction.

The direct quantitative employment effects of foreign investors' activities in Polish economy are enhanced by backward and forward linkages within cooperation with local firms. These indirect employment effects could be estimated cautiously on about 25% of additional jobs created or maintained as a result of a foreign investors' cooperation with local firms in Poland. Qualitative employment effects, both positive and negative, have occurred as well in Poland. The productivity of the labour force in firms with foreign participation, as well as monthly gross wages and salaries, are higher than in domestic ones. These should be treated as positive qualitative effects. Productivity, measured as the average revenues from total activity per 1 employee, amounted to 794,100 PLN in firms with foreign participation in 2012, while only 211,100 PLN in the total sector of enterprises in Poland (GUS data base and author's own calculations). Average monthly gross wages and salaries were 67% higher in 2012 than those of private domestic enterprises. This difference in the average monthly gross wages and salaries between the two categories of enterprises has been slightly, diminishing, as it amounted to 76% in 2005 (GUS data and author's own calculations, see also Graph 6). Wages and salaries within firms are strongly differentiated. The differences between wages and salaries at particular posts within firms with foreign participation are higher than in domestic firms. The earnings of a director of a firm with foreign participation was nine times higher than the earnings of an experienced physical worker in these types of firms in 2012, while it was only 6.8 times higher in domestic firms (Kucharska-Kawalec 2012 and author's own calculations). The comparison of earnings at the same level of an intra-firm employment structure in both groups of firms shows the biggest differences between business management in the analyzed firms, e.g. CEOs in firms with foreign participation earned 53% more than in domestic firms in 2012, specialists 33%, and physical workers from 14 to 21% more, respectively (Kucharska-Kawalec 2012).

The spill-over of 'best practices' in terms of work organization to domestic firms should be treated as a positive qualitative effect of the presence of foreign direct investors in the Polish economy. At the same time some undesirable practices on the labour market can be observed, i.e. impediments in the establishment of trade union organizations or the prolongation of working hours without decent compensation.

6.2. Foreign investors' activity in Poland and effects in foreign trade

The relationship between FDI and foreign trade can be perceived as follows:

- FDI is a substitute or an alternative to foreign trade, which is consistent with the traditional view of this relationship
- FDI can lead to the expansion of foreign trade (N. Acocella 1998; UNCTAD 1999a).

The impact of FDI on foreign trade depends on the type of FDI. Natural-resource-seeking FDI is perceived as spurring trade-creation. On the one hand, it generates a stream of exports of natural resources from a recipient country that would not have occurred otherwise. On the other hand, a flow of imports of capital goods, specialized intermediate inputs, and consumer goods into a host country can follow such an investment. Efficiency-seeking FDI, motivated by the intention to spread the value added activities in such a way that the investing company can gain from the common governance of geographically-dispersed activities by concentrating production in a limited number of locations and supply multiple markets there from, spurs trade-creation (Nachum 1997, UNCTAD 1999a).

Market-seeking investments in services has no adverse trade effects on production and may have positive trade effects on consumption by inducing new exports of machinery and other services from a home country; it may also have indirect longer-term positive effects on the exports of goods from host economies. Strategic-asset-seeking FDI undertaken in order to acquire research-and-development capabilities is trade-creating in terms of both production and consumption. It usually gives rise to exports of services and equipment from home countries and to exports of high-skill labour services from developing countries. Market-seeking FDI in manufacturing is usually a gross substitute for exports from the home country. However, if foreign investment raises the rate of growth of recipient countries, it generates a new stream of exports from host countries and a stream of imports of components, inputs, capital equipment, and services from home countries. Apart from the effects mentioned above, some indirect effects of FDI on trade can occur through the exchange rate mechanism and the availability of foreign exchange (UNCTAD 1999a).

In Poland, the sector and branch structure of FDI, as well as the motives of foreign investors for investing in the country, show that dominating types of FDI are market-seeking investments in both manufacturing and services, and efficiency-seeking investment motivated by Poland's relatively cheap and skilled labour force. These types of investment are generally trade-creating.

The volume of exports by foreign investors from Poland more than doubled in the years 2004-2012 (2.12 times), while the growth of imports was

slightly less (1.87 times) (GUS 2005, 2013 and author's own calculations). However, in absolute terms import was constantly higher than export in the analyzed period, which resulted in a negative trade balance of PLN 18.5 Billion in 2012. Trends in export and import volumes are presented in Graph No 7.

The export propensity[1] of firms with foreign participation in Poland amounted to 24.5% in 2012, which was only slightly higher than in 2004 when it reached the level of 21.9% (GUS 2005, 2013 and author's own calculations). These measures confirm that foreign investors are rather domestic-market-oriented in Poland, but their export propensity is higher than that of Polish enterprises as a whole (15.4% in 2012).

The shares of foreign trade of firms with foreign participation in the total export from and import into Poland show their important role in the internationalisation of Polish economy. These shares amounted to 64% and 60.5% of the Polish total export and import, respectively, in 2012. In comparison to 2005, the share in Poland's total export increased by 2 pp and the share in Poland's total import decreased by 1.5 pp (GUS data base and author's own calculations).

6.3. The role of foreign investors in innovativeness of the Polish economy

According to the Innovation Union Scoreboard, Poland's innovation performance is below the EU average (EC 2014a). Poland belongs to the group of so-called moderate innovators, but it occupies last position among them. Although Poland was in the group of the modest innovators in 2013, the current progress of innovativeness in the Polish economy is rather miniscule.

In such a situation, the innovation activities of foreign investors could be beneficial for the Polish economy. In general, foreign investors locate some R&D functions in their affiliates in the new EU Member States, which is an element of the internationalization processes of R&D activities of parent companies. The lack of data allows for analysis of this issue in Poland only in the years 2004-2007. This data confirms the growing role of foreign investors as the enablers of innovation processes in the Polish economy in its first years of the EU membership. The R&D expenditures of firms with foreign participation rose six fold in Poland in the analyzed period (OECD database and author's own calculations). The R&D expenditures were the highest in manufacturing. About 19% of the total R&D expenditures by foreign-owned enterprises were located

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[1] Export propensity is defined as the share of revenues from export in the total revenues of enterprises.

in the motor industry, 13% in the food industry, 10.8% in chemicals, rubber and plastic products, and 8.4% in electrical and optical equipment. Foreign investors' activities in the R&D sphere were quite significant for the Polish economy. This is confirmed by their shares in the national total of R&D expenditures and number of researchers, i.e. 30.7% and 44.9 % in 2007 (OECD database).

7. Conclusions

1. The 'old 'Member States followed the sequence of the liberalisation recommended by the integration theory, while the new Member States established the free movement of capital almost simultaneously with the other 'freedoms'.

2. The establishment of the Single European Market and the introduction of the Euro brought about an intensification of intra-EU capital movements, but did not eliminate the earlier segmentation of the common capital market.

3. Poland as a new EU Member State participates in all the types of capital movements within the EU. Its relatively quick liberalisation of the movement of capital did not destabilize Poland's economic situation.

4. The intra-EU FDI, **which constitutes about 91% of the total FDI invested in Poland,** appears to have facilitated the restructuring processes in the Polish economy. The role of foreign investors in employment and foreign trade is decisive for the stabilization of Poland's economic situation. The involvement of foreign investors in innovation processes, although growing, has not significantly changed Poland's position in this field.

5. The balance of the costs and benefits of the liberalisation of the movement of capital in the field of foreign direct investment seems to be positive, but some other aspects should be further examined and discussed.
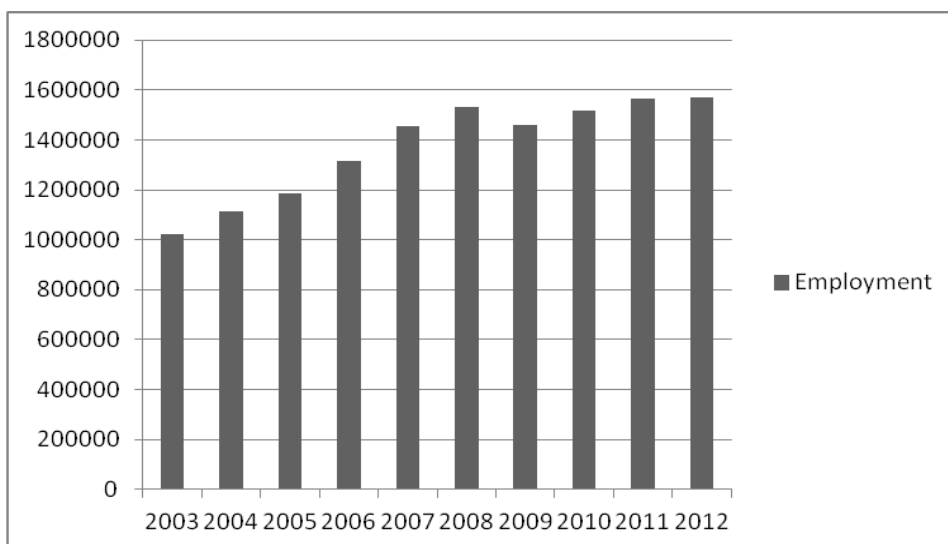
Graph 1. FDI inflows (into) and FDI outflows (from) Poland, 2003 -2013, USD million
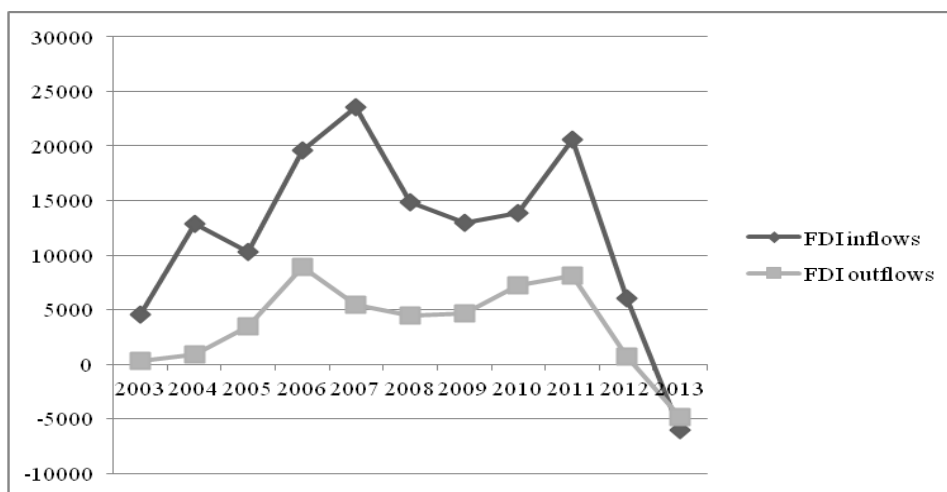
Source: UNCTAD FDI data base and author's own elaboration.

Graph 2. Foreign Direct Investment intensity, 2003-2012, % of GDP
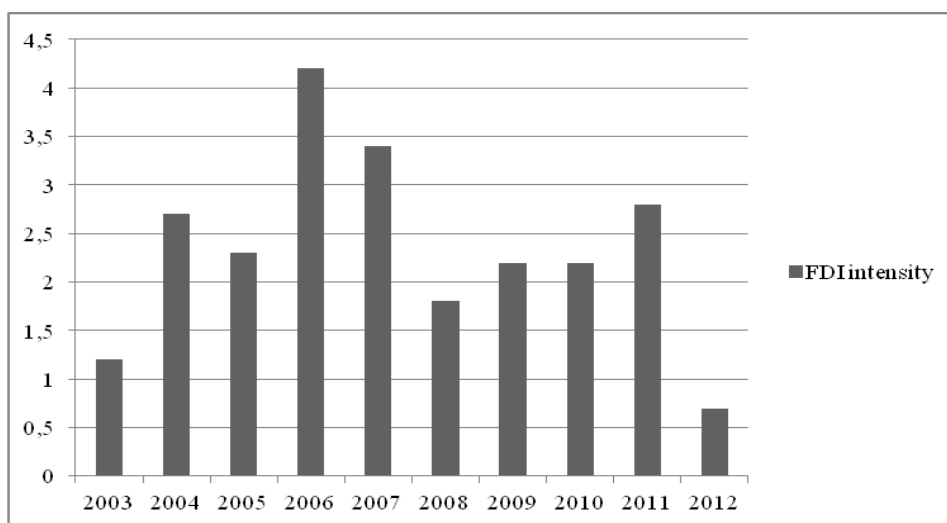
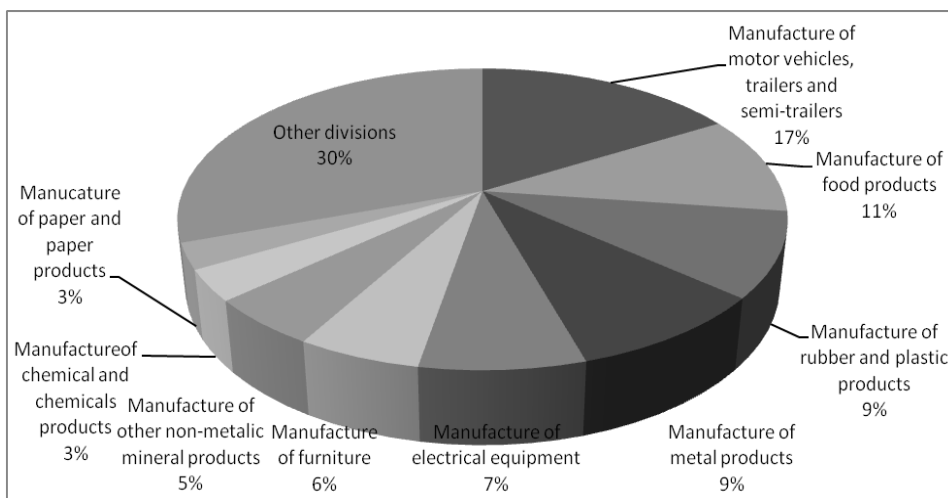Source: Eurostat data base and author's own elaboration.

Graph 3. Number of persons employed in firms with foreign participation in Poland, 2003-2012

Source: GUS data base and author's own elaboration.

Graph 4. The structure of the employment in firms with foreign participation within the manufacturing sector in Poland, NACE classifications, 2012, in %

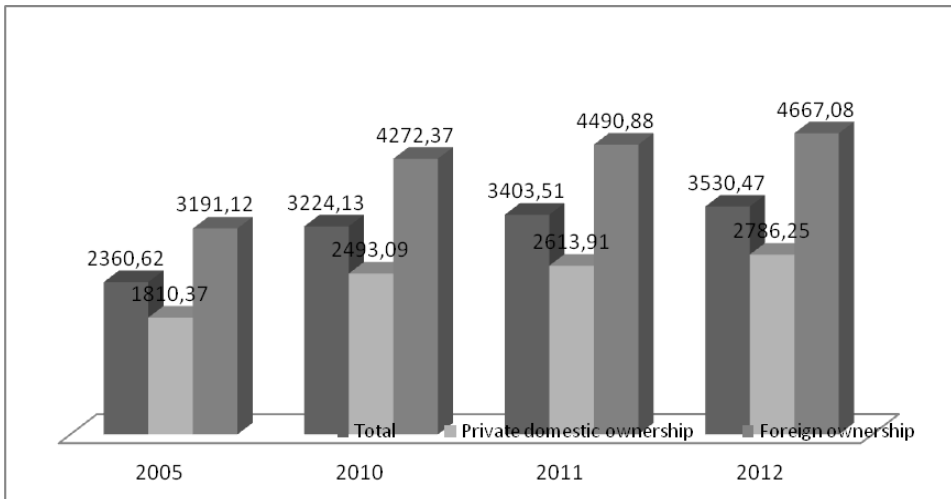Source: GUS data base and author's own calculations.

Graph 5. **The structure of employment by firms with foreign participation within the service**
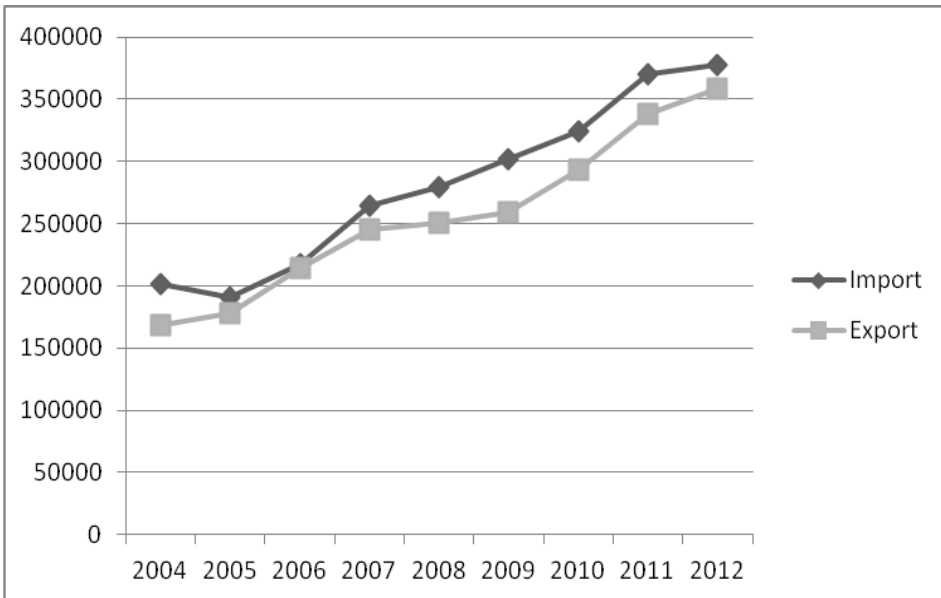**sector in Poland, NACE classifications, 2012, in %**
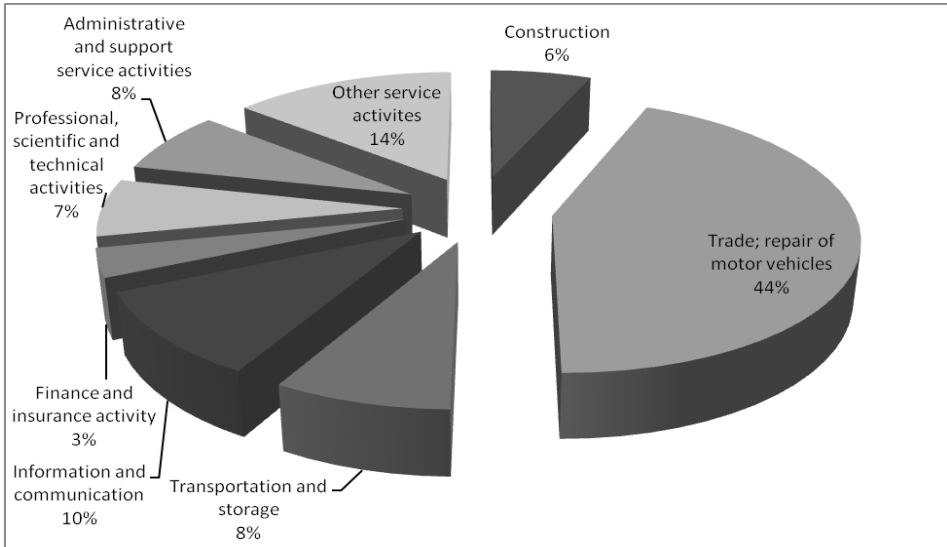
Source: GUS data base and author's own calculations.

Graph 6. Avarage monthly gross wages and salaries according to ownership, in PLN

Source: GUS data base and author's own elaboration.

Graph 7. Import (into) and export (from) Poland by firms with foreign participation, 2004-2012

Source: GUS data base and author's own elaboration.

References

Acocella N. (1998), *Theoretical Aspects of Mutual Relations Between Foreign Direct Investment and Foreign Trade with Special Reference to Integration Theory*, [in:] J.Witkowska, Z.Wysokińska (eds.) *Dynamic Interdependence between Foreign Direct Investment and Foreign Trade in the Context of the European Integration Process with Special Reference to Central and East European Countries. Comparative Aspects*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź.

Cantwell J. (1987), *The Reorganisation of European Industries after Integration: Selected Evidence on the Role of Multinational Enterprise Activities*, 'Journal of Common Market Studies', John Wiley & Sons Ltd, vol. XXVI, No 2.

Dunning J. H. (1977), *Trade Location of Economic Activities and the MNE: A Search for an Eclectic Approac*h, [in:] B. Ohlin, P.O. Hesselborn, P.M. Wijkman (eds.)*The International Allocation of Economic Activities. Proceedings of a Nobel Symposium held in Stockholm*, Macmillan Press Ltd., London-Basingstoke.

Dunning J.H. (1979), *Explaining Changing Patterns of International Production: in Defence of Eclectic Theory*, 'Oxford Bulletin of Economics and Statistics', Department of Economics of the University of Oxford, Oxford, nr 4.

Dunning J.H. (1988), *The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions,* 'Journal of International Business Studies', Palgrave Macmillan, nr 1.

EC Part I: (2013), Analysis of developments in the fields of direct investment and M&A, 2013 development in world-wide and EU capital flows, London Economics.

EC (2014), Commission Staff Working Document on the Free Movement of Capital in the EU, Brussels, SWD(2014) 115 final.

EC (2014a), Innovation Union Scoreboard 2014, http://ec.europa.eu/enterprise/policies/innovation/files/ius/ius-2014_en.pdf

Eurostat (2014), Market Integration–Foreign Direct Investment Intensity, http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&plugin=1&language=en&pcode=lec00124

Gros D., Lannoo K. (2000), *The Euro Capital Market*, John Wiley & Sohns, Chichester- New York-Weinheim-Brisbane-Singapore-Toronto.

GUS (2005), Działalność gospodarcza spółek z udziałem kapitału zagranicznego w 2004 roku, Informacje i opracowania statystyczne, Warszawa.

GUS (2013), Działalność gospodarcza podmiotów z udziałem kapitału zagranicznego w 2012 roku, http://gus.gov.pl/obszary-tematyczne

Kucharska-Kawalec R. (2012), *Wynagrodzenia w poszczególnych województwach są bardzo zróżnicowane*, http://www.gf24.pl/10141/wynagrodzenia-w-poszczegolnych-wojewodztwach-sa-

Mayes D.G. (1990), *External Implications of Closer European Integration*, 'National Institute Economic Review', National Institute of Economic and Social Research, No 134.

Molle W. (1990), *The Economics of European Integration (Theory, Practice, Policy*), Ashgate, Aldershot.

Nachum L.(1997), *Motivation for Foreign Direct Investment: Implications for FDI in Eastern Europe. A Summary of the Literature*, [in:] J. Witkowska, Z. Wysokińska (eds.) *Motivation of Foreign Direct Investors and their Propensity to Exports in the Context European Integration Process. Empirical Studies with Special Reference to Eastern and Central European Countries*, University of Lodz, Łódź.

OECD data base, http://stats.oecd.org

Pelkmans J. (2001), *Second Edition. European Integration, Methods and Economic Analysis*, Longman, Harlow- New York.

Robson P. (1987), The Economics of International Integration, Third revised edition, ALLEN&UNWIN, London.

The Treaty of Maastricht (1992), Consolidated Treaty Establishing the European Community, www.europa.eu.int/eur-lex/en/treaties/dot/EC-consol.html

The Treaty of Lisbon (2012), Consolidated Version of the Treaty on the Functioning of the EU, 'Official Journal of the European Union', C326/47, 26.10.2012.

UNCTAD (1994), World Investment Report. Transnational Corporations, Employment and the Workplace, New York and Geneva.

UNCTAD (1999), World Investment Report 1999. Foreign Direct Investment and the Challenge of Development, UN, New York and Geneva.

UNCTAD(1999a), Foreign Direct Investment and Development, UN, New York and Geneva.

Witkowska J. (2001), *Rynek czynników produkcji w procesie integracji europejskiej. Trendy, współzależności, perspektywy*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź.

Yannopoulos G.N. (1990,) *Foreign Direct Investment and European Integration. The Evidence from Formative Years of the European Community*, 'Journal of Common Market Studies', John Wiley&Sohns Ltd, vol. XXVIII, nr 3.

Streszczenie

WEWNĄTRZ-UNIJNE PRZEPŁYWY KAPITAŁOWE: DOŚWIADCZENIA 10 LAT CZŁONKOSTWA POLSKI W UNII EUROPEJSKIEJ

Celem artykułu jest analiza i ocena konsekwencji ustanowienia swobodnego przepływu kapitału między Polską i innymi krajami członkowskimi Unii Europejskiej (EU) z perspektywy dziesięciu lat jej członkostwa w UE. Szczególną uwagę zwrócono na rolę wewnątrz-unijnych bezpośrednich inwestycji zagranicznych (BIZ) napływających do polskiej gospodarki. Rozszerzenie UE w 2004r. spowodowało poważne prawne i ekonomiczne procesy dostosowawcze w nowych krajach członkowskich. Ustanowienie swobodnego przepływu kapitału, jako jednej z czterech tzw. swobód w ramach jednolitego rynku europejskiego, było koniecznością między UE15 i nowymi krajami członkowskimi. Nowe kraje członkowskie UE musiały tego dokonać w stosunkowo krótkim okresie. Ustanowienie swobody przepływu kapitału między Polską a resztą UE nie tylko nie spowodowało zakłóceń w jej gospodarce, ale przyczyniło się do stabilizacji sfery ekonomicznej i społecznej. Wewnątrz-unijne BIZ ułatwiają procesy restrukturyzacji polskiej gospodarki. Rola inwestorów zagranicznych w sferze zatrudnienia i handlu zagranicznego jest znacząca dla stabilizacji sytuacji ekonomicznej Polski. Zaangażowanie inwestorów zagranicznych w procesy innowacyjne, chociaż rosnące, nie zmienia radykalnie pozycji Polski w tym obszarze. Według unijnych rankingów innowacyjności, Polska należy do grupy raczej słabych innowatorów.

Słowa kluczowe: przepływy kapitałowe, wewnątrz-unijne bezpośrednie inwestycje zagraniczne, procesy integracyjne, Unia Europejska, Polska

MONIKA WOJDYŁO-PREISNER*, KAMIL ZAWADZKI**

Specificity Of Long-term Unemployment Risk Among Creative Economy Workers

Abstract

This paper investigates the determinants of long-term unemployment in Poland for workers in the creative economy. Over 2,100 unemployed artists, journalists, architects, designers, craftspeople and creative industry technicians registered in public employment agencies are examined to discover the relationship between the probability of long-term unemployment and basic socio-demographic variables, human capital characteristics, as well as type of the local labour market. The outcomes based on the sample of creative workers are compared to a study of almost 44,000 registered unemployed representing all professions. Results indicate that such characteristics as: male gender, age under 30, married, first unemployed registration within the last three years, extensive work experience, high qualifications and multi-skilling each considerably decrease the likelihood of being unemployed for more than 365 days, both among creative workers and among all unemployed. The strength of this influence, however, differs within these two groups, with some co-variates significantly affecting the likelihood of long-term unemployment in the general sample. For example health, having children, or a willingness to take any job all appear to be non-significant for creative workers.

Keywords: Creative economy workers, Long-term unemployment determinants, Labour market policy

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1. Introduction

Over the past decade, in economic and regional policy a growing interest can be observed in the development of the creative sectors as drivers for economic growth and new jobs. Though numerous studies about creative labour markets have appeared, there are not many analyses regarding the specificity of unemployment in the creative sectors and, in particular, on the determinants of long-term unemployment risk and their implications for active labour market policy towards that part of the labour force.

A universally accepted definition of the 'creative economy'does not exist. On the contrary, one can observe a phenomenon of gradual evolution and extension of the areas of creative labour analysis (Dubina, Carrayannis & Campbell 2012). Furthermore, with reference to creative employees for whom creative work is only an additional job, provided occasionally as a freelancer, sometimes it is even difficult to determine what 'unemployment' means (Primorac 2006, p. 51). Artists who await the next order for their work often have jobs in non-artistic occupations and are therefore not classified as unemployed (Menger 2004, p. 247).

Determinants of the professional de-activation risk for the creative labour force are still unrecognised. There are many sources of that risk for cultural and creative workers (CCW), both on the supply and the demand sides of the labour market. Supply unemployment determinants refer to the human capital features of this professional group. Demand determinants, in turn, arise from the outer elasticity of the demand for their services. As a consequence, employers in the creative and cultural industries (CCI) offer civil law agreements (instead of labour law), unstable contracts (projects, fixed time contracts) and flexible forms of working time (Lingo & Tepper 2013, p. 338; United Nations Conference on Trade and Development 2010, p. 142).

Investigation of the first group of factors (supply side) with reference to artists, journalists, architects, designers, craftspeople and creative industries' technicians who are registered with public employment agencies is the main goal of this article. All these people are, certainly, only a part of the CCI; firstly, because of the selection of professions and occupations for analysis, and secondly due to the fact that the unemployed in our study are interested mainly in a standard subordinate employment, not in self-employment or freelance work. Our examination is based on individual data acquired directly from databases of employment offices. We focus on the determinants of being long-term unemployed (in the employment office's register for over 365 days). With reference to these individuals, the mechanism of substituting higher employability with lower job security does not work (Benhamou 2000, p. 310), consequently the following research questions emerge: What are the features of

this group of unemployed that demonstrate that this protection mechanism does not work? Why are they not able to reduce the uncertainty of employment (that results from the very specificity of the work) thanks to their greater employability? What are the determinants of the long-term unemployment risk among unemployed CCI workers in comparison with the general population of unemployed? Are the hard-to-place groups (ergo requiring active labour market policy measures) similar among the creative economy workers when compared to the general population of unemployed?

We have formulated the following hypothesis: Multiple jobholding, a high level of education, extensive professional experience and high flexibility all significantly reduce the long-term unemployment risk among both CCI workers and the general population of the unemployed. This implies, therefore, that active labour market policies may be efficient in preventing social exclusion caused by human capital depreciation also with respect to the creative economy workers.

For now it is rather difficult to assess our results in the international context because of the pioneering character of delivered outcomes. There is very little research on creative workers' unemployment and we refer to the relevant American and Australian examples in the following section.

2. Specific features of unemployment among the creative workforce

The question of unemployment appears in research on the creative economy in different contexts. Firstly we analyse the impact of investment in the cultural and creative industries (CCI) on reducing the volume of unemployment and creating new jobs (WIPO 2008). Secondly, the field of economic research in these two spheres often considers participation of the unemployed in the consumption of cultural goods and services (Eurostat 2007, p. 137). Thirdly, the scope of analysis refers to the ways in which measures with respect to culture and the arts can directly support escape from unemployment (Palmer/Rae Associates International Cultural Advisors 2004). Finally, work has been done on the social policy concerning unemployed artists, access to unemployment benefits, and social exclusion. An extensive comparative study on that issue has been carried out by, among others, an institution that represents the International Arts and Entertainment Alliance in Europe (EAEA 2002).

Despite the growing interest in research on CCI labour markets, there are few analyses of artists' and other creative workers' unemployment in the economic literature. There are however some exceptions, most notably the American research on this topic, which has a long tradition. The National

Endowment for the Arts (NEA) has been preparing such analyses for 40 years (Alper et al. 1996, Iyengar 2013, NEA 2009). Cultural economists referring to issues of the unemployment or employment of artists often quote results from the NEA (Heilbrun & Gray 2001, p. 314).

Recent analyses by the NEA concern, among other things, the impact of the global economic crisis on unemployment and the employment of artists. According to these American studies, a considerable rise in artists' unemployment appeared in 2008 (by 63%, i.e., 2.4 percentage points in the fourth quarter of 2008 compared to the last quarter of 2007). As a consequence, the levels of unemployment in the artists' labour market reached the general unemployment rate at the same period (6.1%). The unemployment rate of 'artists' was twice that of 'specialists' (in NEA's classification 'artists' are a part of the category of 'specialists') (NEA 2009, p. 1). Not only has unemployment among artists grown faster than total unemployment, the real impact of the global crisis has probably been greater on the artists' labour market. A number of artists quit the labour market at that time, discouraged by the bad job prospects for artists. American research shows that there is a mechanism for transmitting the demand fluctuations in the whole economy into the creative sector. One such example is the slowdown suffered in the construction sector, which resulted in growth in architects' and designers' unemployment (NEA 2009, p. 2). Facing such strong interrelations between the creative sector and the whole economy, little if any improvement in the artists' labour market situation can be expected before the economy recovers.

In our analysis of unemployment in the creative and cultural sector we assumed that the heterogeneity of this sub-population may cause differences in the probability of remaining unemployed for longer than one year. This approach seems to be justified taking into account the results of the NEA's research. In 2008 in the USA the highest unemployment rate was reported among actors (32.2%). Among dancers and choreographers it was considerably lower, but still above the average (10.9%). The lowest unemployment rate was recorded among producers and directors (3.3%), architects (3.6%) and designers (4.2%) (NEA 2009, p. 10).

We also focus our attention to the phenomenon of multiple job-holding, which is an important characteristic of the creative and cultural workforce (Throsby & Zednik 2011). Multiple job-holding should not only reduce the risk of creative workers' unemployment, but should also lower the risk of long-term unemployment among this group. We try to verify this hypothesis as well.

3. A few remarks on long-term unemployment

Long-term unemployment is a substantial though locally concentrated problem, even in economies with a satisfactory labour market situation. This is particularly important with reference to the issue of social exclusion, and the economic consequences of long-lasting unemployment cannot be disregarded. Long-term unemployment greatly influences the professional career and earnings prospects' of an individual, and generates opportunity costs for society, as well as the costs of running welfare policies (Di Domenico & Gasparini 2008).The causes of long-term unemployment must be considered at various levels and from many viewpoints. Di Domenico and Gasparini (2008) enumerate the following causes: intergenerational unemployment, multiple disadvantage, financial considerations, welfare benefits, family commitments, time management difficulties, employer requirements, poor employer knowledge of return-to-work measures, lack of qualifications, and discouragement.

The costs of long-term unemployment – visible both in the social as well as in the economic sphere – concern not only those directly affected, but also their families, community and the entire country (Clarence & Heikkilä 2013). Economic consequences of long-term unemployment embrace above all a worsening of the financial circumstances of the unemployed, and lowering the prospects of re-entering employment. Social costs, in turn, include: a higher risk of poverty, health problems, and the school failures of children of the long-term unemployed (ILO, OECD, IMF & The World Bank 2012). The unemployed may lose their skills and work ethic as the period of unemployment extends. As a consequence, they often become discouraged from engaging in any labour market activity. This effect is especially strong among the youth and the less qualified. Lee, Sissons, Balaram, Jones and Cominetti (2012) found that unemployment affecting a young person can lead to diminished earnings in the long run, an increased risk of further episodes of unemployment, and a worsening of their health. The authors stress, moreover, that many young people in the labour market are trapped in a 'Catch-22' situation: they do not have the experience to demonstrate their skills to an employer, but simultaneously they do not have access to a job to acquire this experience. A report by the Australian Council of Social Services (2005) points out that, in contrast to the employed or short-term unemployed, the long-term unemployed are more likely to have lower levels of education and skills, or to be chronically ill or disabled. They are also more likely to live in regions of the country with high unemployment rates, with the course of their employment being very volatile.

In a report on long-term unemployment issued by the European Commission (2012) such factors as being female, being older, and having lower levels of education appeared to be strongly correlated with the risk of long-term unemployment. Moreover, it has been stressed that significant relationships were found between long-term unemployment risk and disability, professional experience, or type of benefits in some European countries. The results of Wolbers' (2000) work on the relationship between education and unemployment in the Netherlands shows that the qualified unemployed are more likely to re-enter the workforce than the unqualified. The strength of this effect varies according to the current aggregated unemployment rate, sex, and duration of unemployment.

Alavinia and Burdorf (2008) identified the following factors supporting withdrawal from the labour market: low education, being single, avoidance of physical activity, and having a high body mass index. Those without paid work were more likely to suffer from chronic illnesses such as depression, cerebral stroke or diabetes. Finally, Garrouste, Kozovska and Perez (2010) point out that the type of employment contract can also be a potentially significant factor influencing the probability of long-term unemployment. That impact, however, depends on the specificity of a particular country's labour regulations.

4. Empirical analysis

4.1 Data

The Public Employment Services (PES) in Poland carry out their statutory tasks associated with employment support and mitigating the negative consequences of unemployment. PES is comprised of the Ministry of Labour, with 16 regional and 343 local employment offices.This system is decentralised and based on a local self-government structure. Local and regional offices realize the central government's targets, but at the same time they have broad autonomy in adjusting their policies to the needs of their region.

A person looking for a job can register in a local employment office in accordance with his or her place of residence. The law describes the set of criteria that must be fulfilled in order to register as unemployed. First of all, to register as an unemployed one needs to be of full legal age (18 years old), and retirement age is the maximum age at which a person can register as unemployed[1] Moreover, to

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[1] The retirement age in Poland in 2012 for men was 765, for women 60.

be registered as unemployed a candidate needs to be ready and able to commence full-time work. Generally a candidate should not be a student of high school or another full-time study programme. A registered candidate is obliged to actively look for a job. The relevant act enumerates some additional restrictions regarding permitted sources and levels of income.

An application called Sirius (Syriusz[Std]) is a basic IT tool for local employment offices. When the present research was carried out, Sirius was the only available source of individual data on the unemployed because there was no central database of all registered unemployed in Poland. Our research is based on data drawn directly from six representative local employment offices. Each of these offices serviced the unemployed from different local counties (which reflect the NUTS-4 level according to Nomenclature of Territorial Units for Statistics) in six regions (NUTS-2) of the country. Three of them are urban districts (Bialystok, Przemysl, Wloclawek) and the other three are rural districts (Dzialdowo, Sierpc, Krasnystaw). Each of the districts represents a different type of economy: from modern through to those with different degrees of industrialization, up to one based on traditional small-scale farming operations.[2]

The data was abstracted from the Sirius database in November and December 2012, and included information on the unemployed registered in the PES IT system on 31 December 2010. This dataset embraced almost 44,000 unemployed, including over 2100 unemployed artists, creators and other creative workers. The latter group's selection was based on the career path of the unemployed - it consists of those who had at least one creative occupation episode (at the 3-digit level of

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[2] The k-means method was used for the clustering of all counties in Poland. Data for the year 2010 for nine potentially significant variables available in the public statistics were taken into account to describe the specificity of local economies. The variables were standardized and those which appeared to be strongly correlated were omitted. Finally, four indicators of the local economy: unemployment rate at the end of the year; entrepreneurship; share of employment in the agricultural sector; and share of employment in financial activities, insurance and real estate within the total employment, were used for the clustering. Six groups of counties were then selected and labelled and a representative county for each group was chosen based on the following criteria: high long-term unemployment rate; high number of unemployed; and high share of long-term unemployed within the unemployed. Additionally, it was assumed that each of the counties should represent a different region of Poland. These are the types of clusters and their representatives:
– modern, post-industrial counties: Bialystok,
– industrial counties and suburbs: Wloclawek,
– industrial area with an old structure of the economy: Przemysl,
– well-balanced, industrial and agricultural developed areas: Dzialdowo,
– agricultural and industrial area with an old structure of the economy: Sierpc,
– traditional agricultural area with well-developed service sector: Krasnystaw (Dolny & Wojdylo -Preisner 2014, pp. 84–91).

International Standard Classification of Occupation 2008) and/or who were formally educated in any creative occupation. Variants of characteristics of the unemployed were established according to the condition on 31 December 2010 recorded in Sirius, whereas the unemployment duration was based on the date of the last registration of an individual in PES's system as of the end of 2010.

4.2. Description of the samples

For the empirical analysis we used two sets of data on unemployed persons registered in the PES on 31.12.2010: (1) the General Sample (GS) consisting of 43,971 individuals, and (2) the Creative Sample (CS, N=2127) embracing the unemployed who had ever worked in and/or were formally educated in a creative occupation. The GS mainly consists of long-term unemployed – over 72% of individuals at the checking time had been registered for more than 365 days. In the CS this ratio is below 38% (see Appendix, Table A).

The structure of the GS and the CS by sex is similar: in both groups women slightly outnumbered men. Family status also is alike in both groups: circa 2/3 of the individuals have no dependent children. However, the creative unemployed were more often married. The CS is older than the GS. Every fifth individual in the creative sample is younger than 30, and every fourth is older than 50. By contrast, 38.5% of individuals of the GS are 18–29 years old, with 20% over 50. The human capital level in the CS is higher than in the GS. The creative unemployed more often have tertiary level education, longer professional experience, and more occupations and professions. On the other hand, relatively more CS individuals are disabled and have no knowledge of any foreign language. It is also worth mentioning that the structures of the samples by type of living place are different. The creative unemployed more often live in urban areas, while a considerably higher percentage of the CS (compared to the GS) comes from the largest modern city in the research (47.4% and 32.7% respectively). On the other hand, a smaller proportion of CS individuals lives in old industrial areas.

In both models we include dummies referring to occupation categories. In the GS individuals without formal education (27.3%) and those without any work experience (40.6%) dominate. One in five in the GS is a professional tradesperson or works in services, and 18.0% are craftspeople and 12.9% are workers in elementary occupations. In the GS many individuals have jobs that require higher qualifications than their formal profession (14.2% from the second and 15.4% from the third major ISCO-08 group).

Due to the fact that the CS unemployed belong mainly to the seventh major group in the ISCO-08 classification, and there was none in the first, fourth, fifth and sixth, we stratified the CS in a different way. Handicraft workers make up over a half of the CS, printing trade workers comprise one seventh and represent the third major group (18%), and creative specialists – 13.4%.

Table 1. GS structure by occupations (%) (Profession = a profession studied, confirmed with diplomas. Job = an occupation at some time practised)

Category	Profession	Job
No profession or job	27.3	40.6
1.Managers	0.5	0.0
2.Professionals	3.7	14.2
3.Technicians and associate professionals	5.2	15.4
4.Clerical support workers	5.5	1.0
5.Service and sales workers	20.0	6.8
6.Skilled agricultural, forestry and fishery workers	0.7	1.9
7.Craft and related trades workers	18.1	18.0
8.Plant and machine operators, and assemblers	6.1	1.8
9.Elementary occupations	12.9	0.3

Source: Major groups in ISCO-08.

Table 2. CS structure by occupation (%)

Category	Frequency	Percent
PROFESS_01 Creative and performing artists (code 265)	67	3.1
PROFESS_02 Authors and related writers& Journalists (codes 2641 & 2642)	70	3.3
PROFESS_03Architects & designers (codes: 2161-2163 & 2166)	149	7.0
PROFESS_04Artistic and cultural professionals (code 343 without 3434)	288	13.5
PROFESS_05 Telecommunications and broadcasting technicians (code 352)	96	4.5
PROFESS_06 Handicraft workers (code 731)	1167	55.9
PROFESS_07 Printing trades workers (code 732)	290	13.6

Source: Occupation groups by ISCO-08.

4.3. Econometric models

We attempted to find significant determinants for the probability of being in PES registers for longer than 365 days separately for both the GS and the CS, using econometric models with binary logit regression. In the logit model, the probability of occurrence of the event – in this case long-term unemployment – is determined by the function:

$$p_i = \frac{1}{1 + e^{-z_i}}$$

where z_i is a linear function of the explanatory variable (Dougherty 2007, p. 294).

As logits cannot be estimated using OLS, we used a maximum likelihood technique, choosing coefficient estimates that maximize the likelihood of the sample data set being observed (Studenmund 2011, p. 442). In all estimated models the probability of being unemployed for over one year (365 days) since the date of the last registration in PES was the dependent variable that equals:

y=1, when unemployment period is longer than one year,
y=0 otherwise.

Explanatory variables

A list of potentially useful independent variables was developed consisting of 15 categories for the GS and 14 for the CS. All of these qualitative variables have been recoded into dummies. Thirteen of these categories appeared in both samples, including: socio-demographic characteristics of the unemployed (sex, age and marital status); family situation (dependent child); and quality of human capital (education, knowledge of foreign languages, work experience, numbers of professions and practised occupations, health). Information on an individual's willingness to take any job, i.e. not necessarily in accordance with one's formal profession, was also included in the model. Based on the unemployed worker's history, a variable showing the moment of the first registration in PES has been constructed. Finally, two variables in both models explain type of living place of the unemployed.

Different classifications were used to construct the vector variable of an individual's occupational status in the GS and in the CS. In the GS the data on the highest classified profession and the longest time spent in a job have been used to create nine subclasses, according to the major groups in the International Standard

Classification of Occupations (2008). In the CS, on the other hand, we used seven narrower subclasses of creative occupations, mainly based on the 3-digit level of ISCO-08. A detailed set of all variables is presented in Table B (Appendix).

4.4. Results

Estimation of the logit model explaining the determinants of long-term unemployment in the GS shows that the education level (EDU) is the only category that is non-significant. Living in two of the six types of districts in question (REGION) appeared insignificant too. Similarly, five variants of a sometime practice of an occupation (JOB), as well as all variants of studied professions (AC_PROFESS) turned out to be non-significant.

The non-significance of the education level as a factor potentially impacting long-term unemployment appeared also in the estimation of the CS model. However, in this model there are many other non-significant explanatory variables: dependent child (NO_CHILD); knowledge of foreign languages (NO_LANGUAGE); health (HEALTH); willingness to take any job (FLEXIB); as well as character of the place in which an individual lives (LIVING_PLACE). Moreover, living in four out of six districts (REGION) and having an episode of work in any creative occupation (PROFESS) appeared to be non-significant.

The gender of the unemployed (GENDER) proved to be an important factor, both in the GS and CS.Women are significantly more likely to be long-term unemployed than men; by 65% in the GS and by 53% in the CS.

The age of the individual (AGE) appeared to be the next factor that affects the risk of long-term unemployment in both samples: the risk is the highest among the most elderly unemployed (50+). The youngest (up to 29) are in the best situation: in the GS and in the CS the youngest are less likely long-term unemployed than the oldest, *ceteris paribus*.

According to both estimations, the marital status of the unemployed (MARIT) significantly influences the risk of long-term unemployment – in GS the married unemployed were 11% less likely to experience long-term unemployment; in the CS 20% less likely, *ceteris paribus*.

The time of the first registration in PES as unemployed (FIRST_REG) has the strongest impact on the probability of long-term unemployment, both in the CS and the GS. Individuals who registered in an employment office three years or earlier before the checking time of data collection were many times more likely to become long-term unemployed than the others.

The number of professions or jobs (PROF_NUMB) appeared to be a significant factor influencing the long-term unemployment risk in both investigated groups. In the CS as well as the GS, individuals with five or more professions were the least likely to become long-term unemployed.

The influence of work experience (YEARS_EXP) on the probability of long-term unemployment proved to be significant in both samples. In the GS, individuals who worked for not longer than one year before the relevant unemployment episode were most at risk of long-term unemployment. In the CS, in turn, the registered unemployed without any work experience was at the greatest risk. Both models show that individuals with the longest work experience (20 years and more) were the least likely to experience long-term unemployment.

In each of the samples there was a value describing the character of the region (REGION) among the explanatory variables. As has been shown, living in an old industrialized region as well as in the suburbs significantly increases the risk of long-term unemployment. Only in the GS, however, was the risk lower for the individuals living in mixed rural-urban areas.

Also only in the GS was not having a dependent child (NO_CHILD) in a household a factor that reduces the risk of long-term unemployment. These unemployed were 14% less likely at risk of long-term unemployment than individuals with children. Besides, in that sample the knowledge of at least one foreign language (NO_LANGUAGE) significantly lowered the risk of long-term unemployment, while being disabled (HEALTH) showed an increase in risk. Willingness to take any job (FLEXIB) was the next determinant of long-term unemployment that proved to be significant, but only in the GS. There the more flexible were the unemployed, the less likely were they to become long-term unemployed than those who refuse jobs deemed incompatible with their profession. The results of logit models estimation show that the unemployed living in purely rural or urban districts (LIVING_PLACE) were less likely to be at risk of long-term unemployment than those who lived in mixed districts.

In the GS, in the five major groups of jobs the kind of occupational experience (JOB) appears not to be an important factor influencing the risk of long-term unemployment. But we observed that the unemployed who worked as professionals, service and sales workers, or craft and related trades workers before the time of data collection were less likely to become long-term unemployed. In turn, agricultural, forestry and fishery workers, as well as individuals without any qualified work experience, are at a higher risk of long-term unemployment.

In the GS, by contrast, the studied professions (AC_PROFESS) are non-significant. Individuals not qualified in any profession are 16% more likely to become long-term unemployed than those who are qualified.

Only one category of creative profession – architects and designers – appeared to significantly influence the long-term unemployment risk. These creative specialists are 43% less likely to be long-term unemployed than the others.

5. Conclusions

The subject of creative and cultural workers' unemployment is a particularly important topic in the era of domination of the knowledge and creativity paradigm. The extensive and original empirical data allowed us to thoroughly analyse the specificity of long-term unemployment risk among representatives of creative occupations. Our first observation concerns the fact that in spite of the relatively broad categories of creative and cultural workers adopted in our study, the creative unemployed are only a small part (4.5%) of the general population of unemployed. That may be good news for workers in the creative sector. Secondly, the results show that the exposure of creative and cultural industry workers and the rest of the unemployed to the risk of long-term unemployment is highly convergent. In both subpopulations – the creative sample (CS) and the general sample (GS) – women are more likely to be at risk of long-term unemployment. Even a high level of education or a creative profession is not a factor in lowering this risk among women. On the plus side, it appeared that having children does not influence the risk of long-term unemployment among creative workers, whereas it does in the GS. The long-term unemployment risk of older unemployed workers in comparison to the youngest (18–29) is significantly greater among the creative workers than in the general population of unemployed. Interestingly, education level is a non-significant factor in the risk of long-term unemployment in both analysed populations. That finding could be explained by the structural mismatch of labour supply and demand in local labour markets, both in the GS as well as the CS (especially in relation to highly educated creative workers). It is possible, too, that the soft qualifications such as interpersonal skills and internal motivation or talent matter more in a time of economic slowdown than does formal education, at least with respect to the long-term unemployment risk. Finally, the non-significance of formal education in the case of some CS workers may also be caused by the fact that the individual's highest education level may not necessarily be gained in a creative profession, which implies that the long-term unemployment risk of these individuals is rather a derivative of the structural unemployment and general primacy of experience over formal qualifications on other `non-creative' labour markets.

Our results show that the hard-to-place groups of unemployed being at the highest risk of long-term unemployment are similar among the creative economy workers and in the population of 'non-creative' unemployed. This implies that `classical' active labour market policies may also be efficient in preventing social exclusion caused by human capital depreciation with respect to creative economy workers.

Certainly the outcome presented in this study shows only a fragment of the complex reality of the creative labour market. Other occupational groups of `creative workers' and other `unemployment' definitions might be used for further analyses in order to find the best policy solutions for preventing long-term unemployment, social exclusion, and human capital depreciation affecting this potentially most innovative group of the labour force. What's more, an effective policy in this area would bring about multiplier effects outside the creative economy. As Stolarick and Currid-Halkett (2013) show, a high participation of the creative class in the regional labour market is significantly and positively associated with lower unemployment rates and can mitigate the negative consequences of an economic crisis.

Appendix

Table A.Structure of General Sample and Creative Sample (%)

Variant of the variable	General sample	Creative sample
	Share of the positive variant ("1") of the variable	
Unemployment duration of 365 days or more	72.5	37.8
Women	51.8	55.1
18 to 29 years old	38.5	20.2
30 to 49 years old	41.4	53.5
50 or more years old	20.1	26.3
Married	47.4	51.8
Have no children	66.8	66.1
Tertiary education	14.7	16.9
Upper secondary education	33.5	30.0
Lower secondary, primary & no education	51.8	53.0
Disabled	8.1	11.2
Lack of knowledge of a foreign language	70.7	72.3
Not willing to take any job	12.8	16.0
No profession	12.5	-

1 or 2 professions or occupations	56.3	42.7
3 or 4 professions or occupations	25.1	41.7
5 or more professions or occupations	6.1	15.6
No work experience	28.8	11.8
Shorter than one year of work experience	12.2	8.4
1 to 5 years of work experience	25.5	26.4
6 to 20 years of work experience	24.2	36.0
Longer than 20 years of work experience	10.2	17.4
Living in an urban district	77.0	87.3
Living in a rural district	19.5	10.6
Living in a mixed (urban-rural) district	3.5	2.1
Living in a (region 1) agricultural and industrial area with an old structure (Sierpc)	9.5	4.4
Living in a (region 2) industrial area with an old structure (Przemysl)	11.7	8.3
Living in a (region 3) industrial area and suburbs (Wloclawek)	22.5	20.3
Living in a (region 4) modern, post-industrial area (Bialystok)	32.7	47.4
Living in a (region 5) well balanced, industrial and agricultural developed area (Dzialdowo)	13.3	10.6
Living in a (region 6) traditional, agricultural area without a well-developed service sector (Krasnystaw)	10.4	9.0

Table B. List of the independent variables for General Sample (N=43916) and Creative Sample (N=2127) models

Variable	Definition
GENDER	Dummy variable (female=1, male=0)
AGE_1	Dummy variable (=1 for person 18 to 29 years old)
AGE_2	Dummy variable (=1 for person 30 to 49 years old)
AGE_3	Dummy variable (=1 for person 50 years old or older)
EDU_LOW	Dummy variable (=1 no education, primarily and lower secondary education level, otherwise=0)
EDU_MID	Dummy variable (=1 upper secondary education level, otherwise=0)
EDU_HIGH	Dummy variable (=1 tertiary education level, otherwise=0)
MARIT	Dummy variable (=1 for married, otherwise=0)
NO_CHILD	Dummy variable (=1 for having no children, otherwise=0)
NO_LANGUAGE	Dummy variable (=1 for unemployed who do not know any foreign language, otherwise=0)

HEALTH	Dummy variable (=1 for the unemployed who are not disabled, otherwise=0)
FIRST_REG	Dummy variable (=1 if the first registration in employment office had been 3 or more years before the checking moment - numbers of registrations independently, otherwise=0)
FLEXIB	Dummy variable (=1 willingness to take any job, otherwise=0)
PROF_NUMB_0	Dummy variable (=1 the unemployed has no profession or occupation, otherwise=0)
PROF_NUMB_12	Dummy variable (=1 the unemployed has one or two professions or occupations, otherwise=0)
PROF_NUMB_34	Dummy variable (=1 the unemployed has three or four professions or occupations, otherwise=0)
PROF_NUMB_5	Dummy variable (=1 the unemployed has at least 5 professions or occupations, otherwise=0)
YEARS_EXP_1	Dummy variable (=1 working experience shorter than one year, otherwise=0)
YEARS_EXP_2	Dummy variable (=1 no working experience, otherwise=0)
YEARS_EXP_3	Dummy variable (=1 working experience longer than 1 year but shorter than 6 years, otherwise=0)
YEARS_EXP_4	Dummy variable (=1 working experience longer than 5 years but shorter than 21 years, otherwise=0)
YEARS_EXP_5	Dummy variable (=1 working experience longer than 20 years, otherwise=0)
LIVING_PLACE_1	Dummy variable (=1 living in urban area, otherwise=0)
LIVING_PLACE_2	Dummy variable (=1 living in rural area, otherwise=0)
LIVING_PLACE_3	Dummy variable (=1 living in mixed rural-urban area, otherwise=0)
REGION_1	Dummy variable (=1 for unemployed living in an agricultural and industrial area with an old structure (Sierpc), otherwise=0)
REGION_2	Dummy variable (=1 for unemployed living in an industrial area with an old structure (Przemysl), otherwise=0)
REGION_3	Dummy variable (=1 for unemployed living in an industrial area and suburbs (Wloclawek), otherwise=0)
REGION_4	Dummy variable (=1 for unemployed living in a modern, post-industrial area (Bialystok), otherwise=0)
REGION_5	Dummy variable (=1 for unemployed living in a well balanced, industrial and agricultural developed area (Dzialdowo), otherwise=0)
REGION_6	Dummy variable (=1 for unemployed living in a traditional, agricultural area without a well-developed service sector (Krasnystaw), otherwise=0)

Explanatory variables used only in the GS model

JOB_0	Dummy variable (=1 for the unemployed with no occupation ever practiced, otherwise=0)
JOB_1	Dummy variable (=1 for the unemployed with the longest experience in occupation practiced as Managers, otherwise=0)
JOB_2	Dummy variable (=1 for the unemployed with the longest experience in occupation practiced as Professionals, otherwise=0)

JOB_3	Dummy variable (=1 for the unemployed with the longest experience in occupation practiced as Technicians and associate professionals, otherwise=0)
JOB_4	Dummy variable (=1 for the unemployed with the longest experience in occupation practiced as Clerical support workers, otherwise=0)
JOB_5	Dummy variable (=1 for the unemployed with the longest experience in occupation practiced as Service and sales workers, otherwise=0)
JOB_6	Dummy variable (=1 for the unemployed with the longest experience in occupation practiced as Skilled agricultural, forestry and fishery workers, otherwise=0)
JOB_7	Dummy variable (=1 for the unemployed with the longest experience in occupation practiced as Craft and related trades workers, otherwise=0)
JOB_8	Dummy variable (=1 for the unemployed with the longest experience in occupation practiced as Plant and machine operators, and assemblers, otherwise=0)
JOB_9	Dummy variable (=1 for the unemployed with the longest experience in occupation practiced as Elementary occupations, otherwise=0)
AC_PROFESS_0	Dummy variable (=1 for the unemployed without any studied profession, otherwise=0)
AC_PROFESS _1	Dummy variable (=1 for the unemployed with the highest studied profession in a major group: Managers, otherwise=0)
AC_PROFESS _2	Dummy variable (=1 for the unemployed with the highest studied profession in a major group: Professionals, otherwise=0)
AC_PROFESS _3	Dummy variable (=1 for the unemployed with the highest studied profession in a major group: Technicians and associate professionals, otherwise=0)
AC_PROFESS _4	Dummy variable (=1 for the unemployed with the highest studied profession in a major group: Clerical support workers, otherwise=0)
AC_PROFESS _5	Dummy variable (=1 for the unemployed with the highest studied profession in a major group: Service and sales workers, otherwise=0)
AC_PROFESS _6	Dummy variable (=1 for the unemployed with the highest studied profession in a major group: Skilled agricultural, forestry and fishery workers, otherwise=0)
AC_PROFESS _7	Dummy variable (=1 for the unemployed with the highest studied profession in a major group: Craft and related trades workers, otherwise=0)
AC_PROFESS _8	Dummy variable (=1 for the unemployed with the highest studied profession in a major group: Plant and machine operators, and assemblers, otherwise=0)
AC_PROFESS _9	Dummy variable (=1 for the unemployed with the highest studied profession in a major group: Elementary occupations, otherwise=0)

Explanatory variables used only in the CS model

PROFESS_1	Dummy variable (=1 for creative and performing artists (code 265), otherwise=0)
PROFESS_2	Dummy variable (=1 for authors and related writers & Journalists (codes 2641 & 2642), otherwise=0)

PROFESS_3	Dummy variable (=1 for architects & designers (codes: 2161-2163 & 2166), otherwise=0)
PROFESS_4	Dummy variable (=1 for artistic and cultural professionals (code 343 without 3434), otherwise=0)
PROFESS_5	Dummy variable (=1 for telecommunications and broadcasting technicians (code 352), otherwise=0)
PROFESS_6	Dummy variable (=1 for handicraft workers (code 731), otherwise=0)
PROFESS_7	Dummy variable (=1 for printing trades workers (code 732), otherwise=0)

Table C. Estimation results for logit model for the General Sample

	UNEMPL_DUR_OVER365	B	Std. Error	Wald	Df	Sig.	Exp(B)
1	Intercept	-3.669	.124	877.497	1	.000	
	AGE_1	-1.648	.042	1532.088	1	.000	.192
	AGE_2	-.939	.034	752.326	1	.000	.391
	AGE_3	0[b]	.	.	0	.	.
	NO_CHILD	-.151	.026	34.664	1	.000	.860
	NO_LANGUAGE	.322	.028	128.214	1	.000	1.380
	PROF_NUMB_0	.684	.074	85.409	1	.000	1.983
	PROF_NUMB_12	.819	.051	257.182	1	.000	2.268
	PROF_NUMB_34	.405	.051	62.684	1	.000	1.499
	PROF_NUMB_5	0[b]	.	.	0	.	.
	LIVING_PLACE_1	-.342	.072	22.505	1	.000	.711
	LIVING_PLACE_2	-.237	.070	11.448	1	.001	.789
	LIVING_PLACE_3	0[b]	.	.	0	.	.
	GENDER	.504	.025	393.269	1	.000	1.656
	MARIT	-.110	.024	20.337	1	.000	.896
	HEALTH	-.263	.040	43.501	1	.000	.769
	FLEXIB	-.062	.034	3.369	1	.066	.939
	REGION_1	-.181	.044	16.897	1	.000	.834
	REGION_2	.497	.036	185.593	1	.000	1.644
	REGION_3	.115	.031	13.605	1	.000	1.122
	REGION_5	-.203	.044	21.194	1	.000	.816
	YEARS_EXP_1	1.451	.056	672.030	1	.000	4.266
	YEARS_EXP_2	1.662	.058	811.908	1	.000	5.269
	YEARS_EXP_3	.855	.049	309.333	1	.000	2.352
	YEARS_EXP_4	.736	.044	275.267	1	.000	2.088
	YEARS_EXP_5	0[b]	.	.	0	.	.
	JOB_0	.376	.046	67.328	1	.000	1.456
	JOB_2	-.279	.065	18.520	1	.000	.756
	JOB_5	-.198	.032	37.855	1	.000	.820
	JOB_6	.366	.132	7.651	1	.006	1.441
	JOB_7	-.114	.033	11.897	1	.001	.892
	AC_PROFESS_0	-.167	.027	38.936	1	.000	.847
	FIRST_REG	3.142	.062	2538.590	1	.000	23.154

Cox and Snell   .220Nagelkerke.297McFadden.184

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	37433.536			
Final	26539.917	10893.619	28	.000

Table D. Estimation results for logit model for the Creative Sample

	UNEMPL_DUR	B	Std. Error	Wald	Df	Sig.	Exp(B)
1	Intercept	-3.549	.339	109.871	1	.000	
	AGE_1	-2.381	.211	126.840	1	.000	.092
	AGE_2	-1.035	.134	59.404	1	.000	.355
	AGE_3	0[b]	.	.	0	.	.
	PROF_NUMB_12	1.045	.161	41.891	1	.000	2.842
	PROF_NUMB_34	.463	.153	9.120	1	.003	1.588
	PROF_NUMB_5	0[b]	.	.	0	.	.
	GENDER	.426	.106	16.032	1	.000	1.531
	MARIT	-.218	.108	4.128	1	.042	.804
	YEARS_EXP_1	1.643	.248	43.818	1	.000	5.171
	YEARS_EXP_2	1.314	.240	30.071	1	.000	3.719
	YEARS_EXP_3	.726	.188	14.924	1	.000	2.068
	YEARS_EXP_4	.837	.160	27.354	1	.000	2.310
	YEARS_EXP_5	0[b]	.	.	0	.	.
	FIRST_REG	2.567	.289	78.682	1	.000	13.020
	REGION_2	.686	.183	13.999	1	.000	1.987
	REGION_3	.335	.124	7.286	1	.007	1.398
	PROFESS_3	-.547	.243	5.087	1	.024	.579

Cox and Snell   .208Nagelkerke.284McFadden.176

Model	Model Fitting Criteria	Likelihood Ratio Tests		
	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	1353.874			
Final	856.577	497.297	14	.000

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References

Alper N. O., et. al. (1996), *Artists in the Work Force: Employment and Earnings*, 1970 to 1990, *ENA Research Division Report #37*.

Alavinia S. M., Burdorf,A. (2008), *Unemployment and retirement and ill-health: across-sectional analysis across European countrie*s, 'International Archives of Occupational and Environmental Health', 82 DOI 10.1007/s00420-008-0304-6.

Australian Council of Social Services (2005), Measuring Long Term Unemployment in Australia. Strawberry Hills, NSW, Australian Council of Social Services.

Benhamou F. (2000), *The Opposition between Two Models of Labour Market Adjustment: The Case of Audiovisual and Performing Arts Activities in France and Great Britain over a Ten Year Period*, 'Journal of Cultural Economics', 24.

Bridgstock, R. (2011), Skills for creative industries graduate success, *Education + Training*, Vol. 53, No. 1.

Clarence E., Heikkilä S. (2013), *Successful Methods for Getting the Long-term Unemployed into Work: A Short Overview*, OECD LEED Trento Centre for Local Development.

Comunian R., Faggian A., Jewell, S. (2011), *Winning and losing in the creative industries: an analysis of creative graduates' career opportunities across creative disciplines*, 'Cultural Trends'*, 20:3-4, DOI: 10.1080/09548963.2011.589710.

Di Domenico G., Gasparini C. (2008), *National Approaches to the Long-Term Unemployment as a Target Addressed by Public Employment Services: General Framework, Case Studies and Significant European Experiences* [in:] Di Domenico, G, Spattini, S. (eds.), *New European Approaches to Long-Term Unemployment. What Role for Public Employment Services and What market for Private Stakeholders?*, Kluwer Law International, Alphen aan den Rijn.

Dolny E., Wojdyło-Preisner M. (2014), *Zarys koncepcji badań terenowych (Outline of the field research)*, [in:] Bronk, A., Wisniewski, Z., Wojdylo-Preisner, M. (eds*.), Ryzyko długotrwałego bezrobocia w Polsce. Diagnoza i metody zapobiegania (Long-term unemployment risk: diagnosis and methods of prevention)*, Ministerstwo Pracy I Polityki Społecznej i Centrum Rozwoju Zasobów Ludzkich, Warszawa 2014.

Dougherty, Ch. (2007), *Introduction to econometrics*, Oxford University Press.

Dubina I.N., Carrayannis E.G., Campbell, D.F.J. (2012), *Creativity Economy and a Crisis of the Economy? Coevolution of Knowledge, Innovation, and Creativity, and of the Knowledge Economy and Knowledge Society*, 'Journal of Knowledge and Economy', 3 DOI 10.1007/s13132-011-0042-y.

EAEA (2001), Study relating to the various regimes of employment and social protection of cultural workers in the EU.

European Commission (2012), EEO Review. Long-term unemployment 2012, DG for Employment, Social Affairs and Inclusion, September.

Eurostat (2007), Cultural Statistics, European Communities, Luxemburg.

Garrouste, C., Kozovska, K., Perez, E. A. (2010), *Education and Long-Term Unemployment, European Commission*, Joint Research Centre, Institute for the Protection and Security of the Citizen.

Heilbrun J., Gray Ch. M. (2001), *The Economics of Art and Culture*, Cambridge University Press.

ILO, OECD, IMF, the World Bank (2012), Boosting Jobs and Living Standards in G20 Countries, OECD Economics Department, ILO (Geneva), OECD (Paris), IMF (Washington, DC), the World Bank (Washington, DC).

Iyengar S. (2013), *Artists by Numbers: Moving From Descriptive Statistics to Impact Analyses*, 'Work and Occupations', 40: 496, DOI: 10.1177/0730888413505097.

Lee N., Sissons P., Balaram B., Jones K., Cominetti N. (2012), *Short-term crisis – long-term problem? Addressing the youth employment challenge*, The Work Foundation.

Lingo E., Tepper S. (2013), *Looking Back, Looking Forward: Arts-Based Careers and Creative Work,* 'Work and Occupations', 40: 337, DOI: 10.1177/0730888413505229.

Menger P. (2001), *Artists as workers: Theoretical and methodological challenges*, 'Poetics', 28.

NEA (2009), Artists in a Year of Recession: Impact on Jobs in 2008, *NEA Research Note #97*, http://arts.gov/sites/default/files/97.pdf.

OECD (2012), OECD Employment Outlook 2012, OECD Publishing, Paris.

Palmer/Rae Associates International Cultural Advisors (2004), European Cities and Capitals of Culture.

Primorac J. (2006), *The position of cultural workers in the south-eastern European perspective*, Amsterdam: European Cultural Foundation.

Stolarick K., Currid-Halkett E. (2013), *Creativity and the crisis: The impact of creative workers on regional unemployment,* 'Cities', 33.

Studenmund A.H. (2011), *Using econometrics. A practical guide*, Pearson.

Throsby D., Zednik A. (2011), *Multiple job-holding and artistic careers: some empirical evidence*, 'Cultural Trends', 20(1).

United Nations Conference on Trade and Development (2010), Creative Economy Report 2010, United Nations, Geneva.

WIPO (2008), National Studies on Assessing the Scientific Contribution of the Copyright-Based Industries, Creative Industries Series No. 3.

Wolbers M. (2000), *The effects of level of education on mobility between employment and unemployment in the Netherlands*, 'European Sociological Review', Vol. 16 No. 2.

Streszczenie

SPECYFIKA RYZYKA DŁUGOOKRESOWEGO BEZROBOCIA WŚRÓD PRACOWNIKÓW EKONOMII KREATYWNEJ

W artykule przedstawiono wyniki badań nad determinantami długookresowego bezrobocia pracowników ekonomii kreatywnej w Polsce. Analizie poddano ponad 2100 bezrobotnych artystów, dziennikarzy, architektów, projektantów, rzemieślników oraz techników przemysłów kreatywnych, zarejestrowanych w powiatowych urzędach pracy. Modelowano relacje między ilorazem szans długookresowego bezrobocia a podstawowymi zmiennymi społeczno-demograficznymi, charakterystykami kapitału ludzkiego, a także typem lokalnego rynku pracy. Rezultaty badań wśród pracowników kreatywnych zestawiono z wynikami na grupie niemal 44.000 zarejestrowanych bezrobotnych reprezentujących wszystkie zawody. Wykazano, że takie cechy jak: płeć męska, wiek poniżej 30 lat, pozostawanie w związku małżeńskim, odległy czas pierwszej rejestracji, wieloletnie doświadczenie zawodowe, wysokie kwalifikacje oraz wielozawodowość obniżają istotnie ryzyko długotrwałego bezrobocia, zarówno w próbie kreatywnej, jak i generalnej. Siła tego wpływu różni się jednak w obu badanych populacjach. Natomiast niektóre ze zmiennych–przykładowo stan zdrowia, posiadanie dzieci lub gotowość podjęcia jakiejkolwiek pracy–determinują ryzyko długiego pozostawania bez pracy wyłącznie wśród ogółu zarejestrowanych bezrobotnych.

Słowa kluczowe: *pracownicy ekonomii kreatywnej, polityka rynku prac,determinanty bezrobocia długookresowego,*

MACIEJ KOZŁOWSKI[*]

Financial Participation In Poland In Comparison To Other EU Countries

Abstract

The success of the profound restructuring changes in the Polish economy depended mainly on the effectiveness of the reforms concerning the restructured properties in all sectors. This required a new approach to private property, determining the new role and place of employees in the process of changes and forming employee companies. Employee companies were formed as a result of direct privatization, so-called liquidation, when the equity of the enterprise is handed over for use with the right to the repurchase by the majority of employees of the established company (leasing). Prior to this privatization it was necessary to convince employees to purchase shares. One should keep in mind that this method turned out to be effective with respect to small and medium-sized enterprises, which didn't require the great financial outlays which were necessary for the privatization of larger companies. Initially it may be said that the conditions for implementing new solutions increasing the participation of employees in ownership, or their participation in other financial programs, are not very favourable. It is even possible to formulate the thesis that in Polish enterprises and amongst employees, peculiarly at the workshop level, there was an awareness barrier, which has made the process of further democratic changes rather difficult. Breaking this barrier can only take place after a certain time, when the employee as an owner begins to understand the economic significance of a dividend, picks up the habit of thinking in categories of an increase in goodwill, and realizes that this is transferred directly into an increase in the value of his or her assets.

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1. Introduction

The major purpose of this article is to analyze the employee-owned companies in Poland in comparison to other EU countries. It may be surprising that listed companies have been chosen as the object for an analysis, i.e. large companies, only some of which are privatized, and the rest of them are represented by domestic or foreign private firms. Therefore, they are the companies in which one could expect some significant remains of employee ownership after the privatization process. The intention of the author was to deal with currently existing large companies, regardless of their origin, and to check if they have any financial participation programs. The choice was also made on the basis of much better availability of information about listed companies.

In the first place the aim of a detailed analysis was to provide answers to, inter alia, questions such as:

- does the personnel structure decide about the type of employee participation program;
- does the date when participation was introduced have influence on employees' financial participation.

Nowadays the most prominent form of employee financial participation in Poland is share ownership. The restructuring program in Poland was characterized by crucial incentives for employee participation, especially in firms privatized by the leasing and those transformed into the so-called employee-owned companies. The ownership structure in these companies, in general, is relatively stable, and employees who do not hold any executives posts maintain a small number of shares. This was caused by i.e. lack of interest from politician and trade unions. The buyout was also hindered due to a clause included in the Transformation Law as of 1996, which stated that at least 20% of share of a leased company must be purchased by people who are not employed in this company. Over the last few years the matter of employee-owned companies and financial participation schemes has been dealt with again because of the extend of research and the increased interest by EU organs.

It can be said that the structure of the law in Poland gives an opportunity to implement different forms financial schemes, including share ownership, profit sharing and setting up employee-owned companies through transformation processes. However, politicians have not provided any incentives for the development of such schemes and have not given proper support. The most widespread financial participation schemes embrace share ownership and profit sharing programs, although the latter is considered to be a broad-based type of scheme related to the company's results and is described in Poland as "bonus", yet it does not have any legal basis.

In comparison to EU states the situation in Poland does not really look optimistic. Compared to other European countries, the level of employee ownership in Poland, in large enterprises is substantially low, just as the dynamics of development.

2. Results of the privatization process in Poland

The success of the deep restructuring changes in the Polish economy mostly depended on the effectiveness of the reforms concerning the restructuring of ownership in all sectors. This required a new approach to the concept of private property and defining the new role and place of employees in the process of the ongoing changes. While the success or failure of the overall transition is determined by changes in the economic system, still one should keep in mind the necessity for changes in the social structure, which not only ought to reinforce the new structures but also accelerate the processes occurring in the transformed economy. In order to call them permanent, these changes have to be attractive for participants in economic life, which partially depends on the popularity of new systems of values among the majority of population. These new values can be developed in the process of privatization and restructuring changes.

The most important effect of privatization is the achievement of its fundamental goal – national companies are replaced by private ones, which are more effective and better adapted, as experience shows, to the conditions of the contemporary market (Bałtowski 2000, p. 77). According to J. Tittenbrun, privatization, while removing the burden of political intervention and non-market priorities in various proceedings, also limits politicians' ability to influence the functioning of the company in the direction that serves their own purposes or expresses particular political pressure at the cost of market effectiveness, thus organizing companies' goals and improves their efficiency (Tittenbrun 1995, p. 84). Nevertheless, privatization actions have encountered some specific obstacles, *inter alia* in form of unwillingness on the side of employees of national enterprises to sell the assets of a firm in which they work to private persons or individual national or foreign entities which have no connections with the company. The fear of outside acquisition of a company's assets and worries about its survival, as well as the desire to protect jobs, have given workers strong motivation to take the lead and become shareholders. At that time a widespread belief suggested that there was an urgent need to deal with everything firmly if the company was to survive on the rapidly-changing market. Therefore the originators of these changes were not only managers, but

also workers' councils and even more frequently trade unions.[1] These were the institutions which exerted influence on the attitudes of employees, who did not get anything for free in this mode of privatization, even though they decided to make some efforts to create partnerships with the management of the company.[2]

Employee-owned companies came into being in the process of direct privatization, known also as liquidation privatization, when the company's assets are vested to be used for a fee, with the right to buy out granted to the partnership, made up of the majority of employees of a given company (leasing). Of course, specific legal requirements needed to be fulfilled, e.g. partners could only be natural persons (unless the Minister of Privatization – from 1990 to 1996 – allowed a legal entity to become a member of the partnership), and that the amount of share and initial capital could not be lower than 20% of the general value of founding capital and company capital as of the day when the liquidation process began. In order to conduct this type of privatization and collect the necessary capital, those who initiated the process had to convince employees to buy shares. It often happened that money accumulated by employees was too little to carry out the transaction, and consequently special funds were used (e.g. from divided profits of the company, a social or housing fund, or a bank loan) to finance shares for employees. It must be noted that this method proved to be effective with regard to small and medium-sized companies (up to 250 people) which did not require the allocation of the large financial outlays which was the case with large enterprises.

In the first stages of liquidation privatization, most workers joined new employee-owned companies, and the bigger it was, the more employees needed to be involved in the purchase of shares. It is worth mentioning that in most cases the originators of privatization were not members of the staff, but the representatives of senior management. Unfortunately, the current trend shows a constant decrease in the number of employees in the ownership structure of employee-owned companies – both in absolute as well as relative terms.[3]

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[1] This process was more widespread in the period of dynamic privatization changes, and nowadays such actions are less frequent.

[2] Interestingly, these companies turned out to be relatively stable and managed quite well on the market, even though they encountered many barriers in the course of their development, for example because of the payment of leasing installments.

[3] The severe decrease in the participation of employees takes place as a result of the reselling the shares (mainly to the managers), and also because of relative extension of a company's capital through issuing additional shares. Additionally, the process of accumulating shares by regular workers leads – usually – to a de facto decrease in employee participation in the ownership structure, since the higher is a given employee's participation in a company's assets, the more of an owner he becomes (at a general meeting), and not a representative of the crew.

These changes reflect a tendency to sell back shares to the management and managers, which consequently deprives the company of its "employee" nature. In such a situation it is difficult to speak about employee-owned companies, as in this case a more suitable designation would be a "manager-owned company". This happens because, for example, in the process of creating employee-owned companies there is not enough knowledge and information stressing the new type of ownership responsibility, i.e. a lack of employee awareness about the introduction of participation solutions in the administration system. Unfortunately, this absence of proper education and lack of trust toward all collective actions resulted, in many instances, in the employees almost immediate sale of their shares.[4]

This selling process was observed both when the situation of the company was bad as well as when it was successful on the market, in the latter instance because it was possible to gain a large income. A great number of employees (about 30%) still possessed their shares until the end of the 1990s, and even later. Of course there were also examples of the accumulation of shares/stocks by particular regular employees, although this was a sporadic situation. As a rule, it has been the managers in employee-owned companies who have demonstrated a constant trend to concentrate shares/stocks in their hands in order to strengthen their position in the company (as well as profit from dividends) – and this concentration is accelerated when a company has financial problems and its employees display a great willingness to get rid of their shares/stocks. An increase in the number of shares is also a process which could usually be witnessed until the company was taken over. Furthermore, the managers, holding top executive posts (in management and supervisory boards), had an easy opportunity to buy out shares in smaller, less valuable firms, in which it was possible to gain a substantial share in the ownership structure with the investment of relatively little resources.[5]

Here the question arises: Why - in a situation when minor shareholders do not see any benefits from having shares and are willing to dispose of them (i.e. a situation when the economic condition of a company has worsen) - are the managers still interested in concentration? Above all, the concentration of ownership in hands of executives allows the management boards of employee-owned companies to become completely independent of minor shareholders

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[4] The immediate reselling of shares by employees frequently took place in companies privatized through the "capital" method (since 1996 called indirect), where employees received their packages of shares for free or initially for half of the nominal value, which was usually a very low price.

[5] On top of this, the phenomenon of reselling shares to external investors was quite popular, and then they, not the managers of the company, optimized their capital share. This procedure became even more common after the passage of a new Act on privatization in 1996, when it was necessary to find an external investor to establish such a company.

(regular workers), which results in an increased power and position of particular managers in a company. The manager is not afraid of losing his (or her) post if it is him who makes decisions about filling it, and the larger is the share of managers in ownership, the more influence they have on filling the crucial positions in the company. According to the researchers investigating employee-owned companies, the degree of influence on the choice of persons to fill the key positions (e.g. in the management board) is proportional to the number of shares owned. This is why the managers aim at providing themselves (or their group) with ownership control regardless of the economic results of the company (unless the situation is so tragic that there is an urgent need to attract outside investors to the company). At the same time, the employees are mostly interested in having shares in a company when it achieves financial results which allow for paying them dividends. And in a situation when the company's condition is getting worse and the employees no longer see their shares as a source of potential profits (from dividends) and express a great willingness, even desire, to dispose of them, the managers are still interested in possession and concentration of the shares in order to increase their power in the company and their influence on filling posts (regardless of whether dividends are paid or not). In other words, motivation of the managers to possess and concentrate shares is therefore doubled and includes the potential profits from dividends and power in the company, as well as other benefits, including financial ones. On the other hand, employees' motivation – in practice, not in declarations – is rather uniform (profits from dividends).

However, while this seems to be the only way to explain the process of mass concentration of shares by managers even when the condition of companies is deteriorating, it should be stated that this clear distinction of motives is not explicitly reflected in the results of research conducted among the workers of employee-owned companies, as presented by Jawłowski. According to his research it can be observed that among employees purchasing shares in companies, the same number of workers claim that they are motivated by profits (dividends) as by the need to have a secure job (46.5% each; employees could choose from several answers) (Jawłowski 2001, pp. 118-119). However, the motives for buying shares can be different from the motives determining their willingness to hold on to them in the future. Therefore it can initially be stated that the conditions for introducing new solutions aimed at increasing the share of employees in ownership or participation in other financial schemes are not very favorable. One can even formulate a thesis that among workers in Polish companies, especially those holding lower posts, there is a subliminal barrier hindering the process of further ownership changes or even the introduction of new forms of economic democracy aimed at the development of a new type of responsibility for the company. Overcoming this barrier may be possible only after some time,

when the employee, already being an owner, begins to understand the economic gist of dividends and develops a habit of contemplating on how to increase the value of a company, realizing that this in turn is directly reflected in the value of his or her shares of stock.

3. Employee ownership schemes in Poland in comparison to other EU countries

Nowadays the most prominent form of employee financial participation in Poland is share ownership. The restructuring program in Poland was characterized by key incentives for employee participation, especially in firms privatized by the aforementioned 'leasing' and those transformed into so-called employee-owned companies. The ownership structure in these companies, in general, is relatively stable, and employees who do not hold any executives posts still maintain a substantial number of shares. The research conducted in the late 1990s on a group of 110 employee-owned 'leasing' companies, privatized between 1990 and 1996, show that the average participation in ownership of employees who do not hold any executive posts decreased from 58.7% right after the privatization to 31.5% in 1999 (Lowitzsch, Hashi and Woodward 2009, p. 138). Over time, more and more shares belonged to persons outside the company, although it was easy to notice that there were no external strategic investors (Lowitzsch 2006, p. 237). The following years did not bring any improvements with respect to the setting up of employee-owned companies; in fact the situation became worse. This was caused by, *inter alia*, a lack of interest on the part of politicians and trade unions.[6] The buyout was also hindered due to a clause included in the Transformation Law of 1996, which stated that at least 20% of the shares of a leased company must be purchased by people who are not employed in the company. Over the last few years the matter of employee-owned companies and financial participation schemes has been revisited as a result of the extended research and the increased interest by EU organs.

It can be said that the structure of the law in Poland (contained in The Commercial Companies Code) offers the opportunity to implement different forms of PEPPER (Promotion of Employee Participation in Profits and Enterprise Results) schemes, including share ownership, profit sharing and setting up employee-owned companies through transformation processes.

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[6] According to the data from EWCS 2005, about 1.13% of employees took part in share ownership participation schemes and about 6.6% in profit-sharing schemes. The percentage of companies offering broad-based share ownership schemes was 39.6%, and the percentage of employees eligible for participation in these programs amounted to 52.6%. In case of profit-sharing schemes the percentages were 25.74% and 10.6%, respectively. The data comprises companies employing at least 200 people; compare Lowitzsch, Hashi and Woodward 2009, p. 138.

However, politicians have not provided any incentives for the development of PEPPER schemes and have not given proper support. The most widespread financial participation schemes embrace share ownership and profit sharing programs,[7] although the latter is considered to be a broad-based type of scheme related to a company's results and is described in Poland as a "bonus", and it does not yet have any legal basis. Other common practices in accordance with the law include forms of compensation linked with the individual results of an employee (gain sharing), however they are still not directly related to the company's results, and therefore they cannot be thought of as PEPPER schemes.[8]

Consequently, it seems that employee-owned companies are those companies which should be characterized by the most active participation of employees, both in decision-making and in the allocation of the company's profits and assets. In comparison to EU states the situation in Poland does not appear very optimistic. Compared to other European countries, the level of employee ownership in Poland is, in large enterprises, substantially low, as is also the case with the dynamics of development. Bearing in mind the percentage of the capital held by employees, Poland appears to be satisfied with the rate of 3.02% in comparison to 2.68% in Europe (in 2008 – 3.00% and 2.63% respectively) (see Chart 1a and Chart 1b below).

Chart 1a. Percentage of the capital held by employees in 2008 in Poland compared to selected EU states (%)
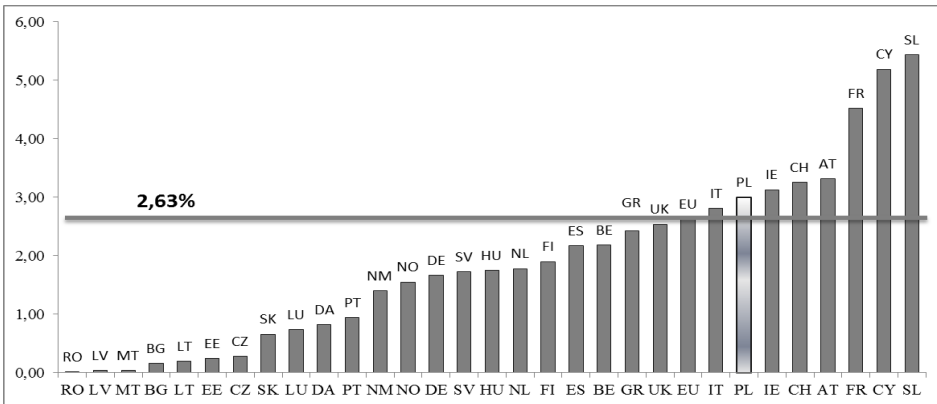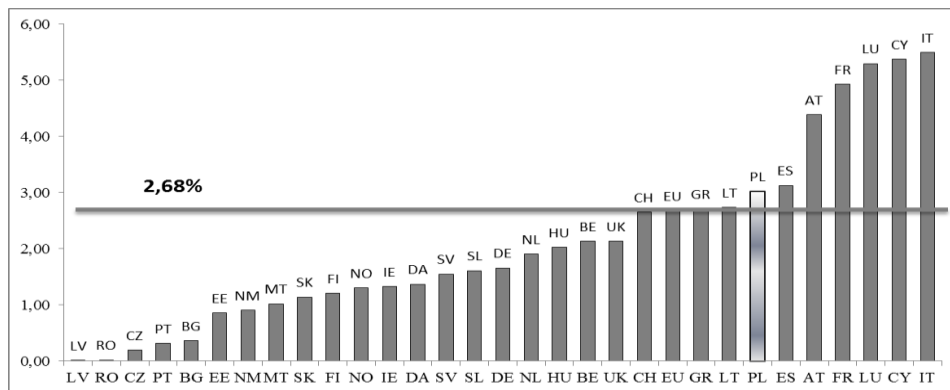

Sources: Mathieu 2009, p. 59.

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[7] Employees can become shareholders in the process of a so-called Leverage-Lease-Buyout (LLBO); compare the Act of September 15th, 2000 Commercial Companies Code.

[8] Including, *inter alia*, such forms of remuneration as: gratification, awards, service anniversary awards, a 13th month salary, (sales) commissions, as well as different types of bonus schemes; compare Ciupa 2005.
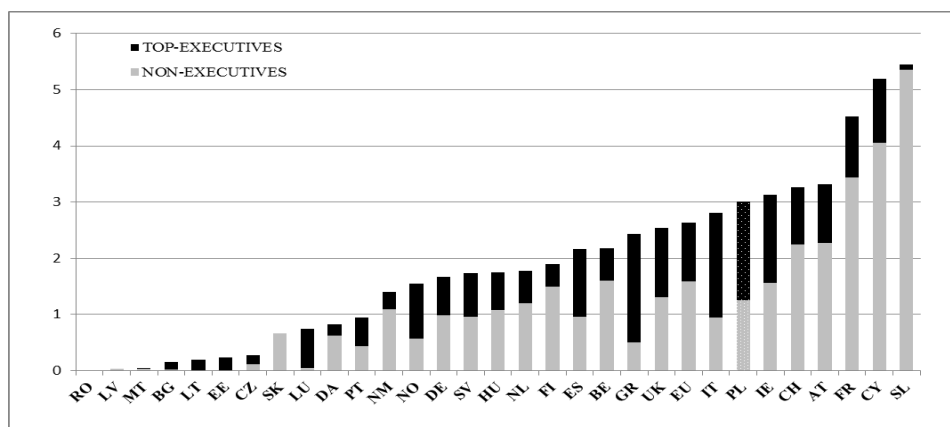
Chart 1b. Percentage of the capital held by employees in 2012 in Poland compared to selected EU states (%)
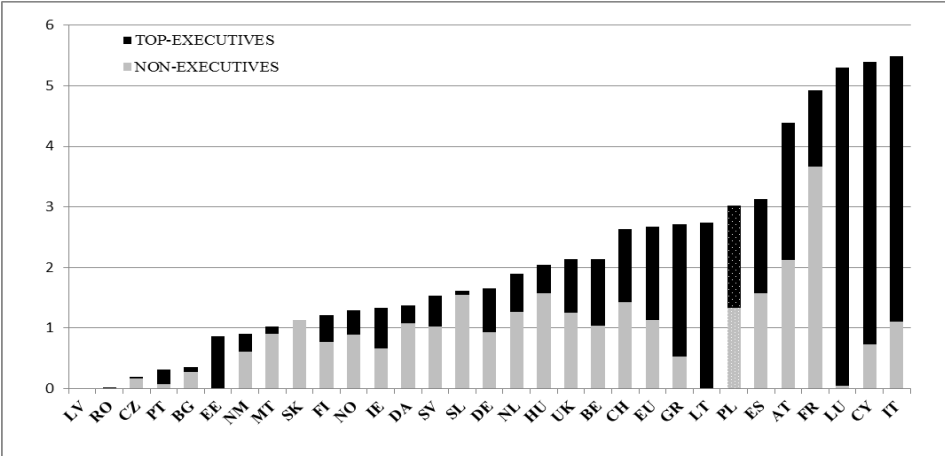

Sources: Mathieu 2013, p. 34.

The relatively high level of this indicator results mainly from the transformation processes in Poland, and not the implementation of participation solutions. Over the years one can observe some improvements, but without a substantial change of the position. When one excludes from further deliberations the influence of privatization on the level of employees' share in ownership and profits, the indicator decreases to 1.94%. The capital is mostly possessed by top executive workers (58% in 2008 and 56% in 2012). Comparing these two periods, we can observe in Poland a slight change in the number of blue collar workers owning capital, but this growth is rather symbolic (see Chart 2a and Chart 2b below).

Chart 2a. Percentage of the capital held by employees – top executives and non-executives in 2007/08 (29 European countries–2,493 largest European groups–34.2 million employees)

Sources: Mathieu 2009, p. 59

Chart 2b. Percentage of the capital held by employees – top executives and non-executives in 2011/12 (29 European countries–2,493 largest European groups–34.2 million employees)
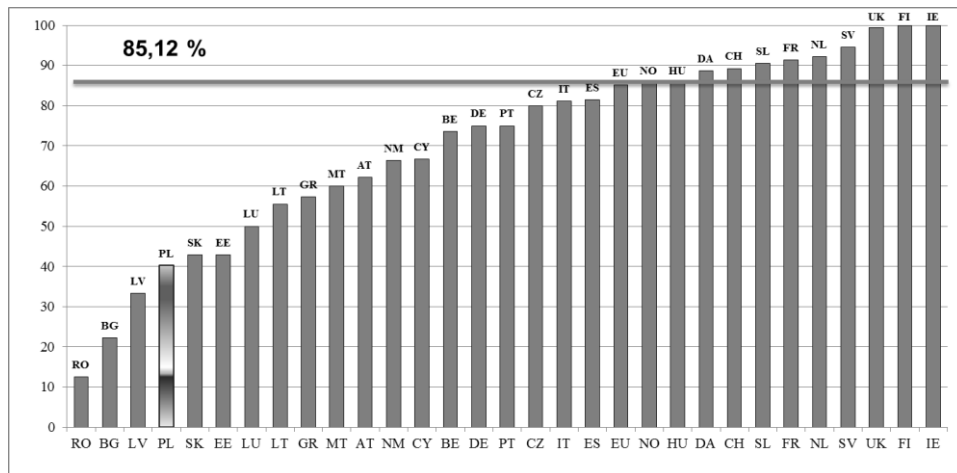

Sources: Mathieu 2013, p. 35.

The above data may be slightly lowered because it includes all companies, not only employee-owned companies which have been discussed previously. Therefore, it does not include the crucial difference between those companies created in the process of privatization, and those which were set up in our economy *de novo*. In the two cases the existence of participation in ownership and profits results from completely different reasons. These are not the only methodological mistakes made by the researchers. The ownership structure of Polish companies and the dominance of SMEs against the background of all companies does not really allow for making comparisons with other, more developed economies, where the number of groups comprised by the research is larger. On the other hand, the criteria of selection were the same everywhere. Comparing 2008 and 2012, there are some substantial changes in other countries, and they are even worse. Italy, Cyprus, Luxemburg, Lithuania and others increased their top-executives' share in capital held by all the employees, which can be explained by some "reforms" in ownership after the crisis and which does not foster optimism for the future of broad-based participation programs in companies.

The reports state that in 2007/08 40% of large Polish companies had some form of employee participation in ownership. In 2012 the number of companies having financial programs increased to 78.7%. It seems to be a great number, but the percentage is only higher from the value of such firms in Romania, Bulgaria and Lithuania, which places Poland on the 20th position in Europe, with the European average of 92% (85.12% in 2008) (see Chart 3a and Chart 3b below).

Chart 3a. Percentage of companies which have employee ownership schemes in Poland and other EU states in 2007/08
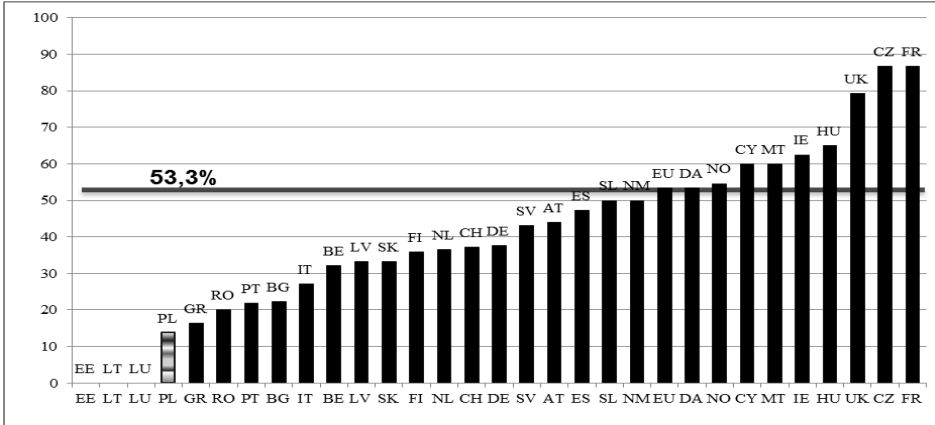

Sources: Mathieu 2009, p. 57.

Chart 3b. Percentage of companies which have employee ownership schemes in Poland and other EU states in 2011/12
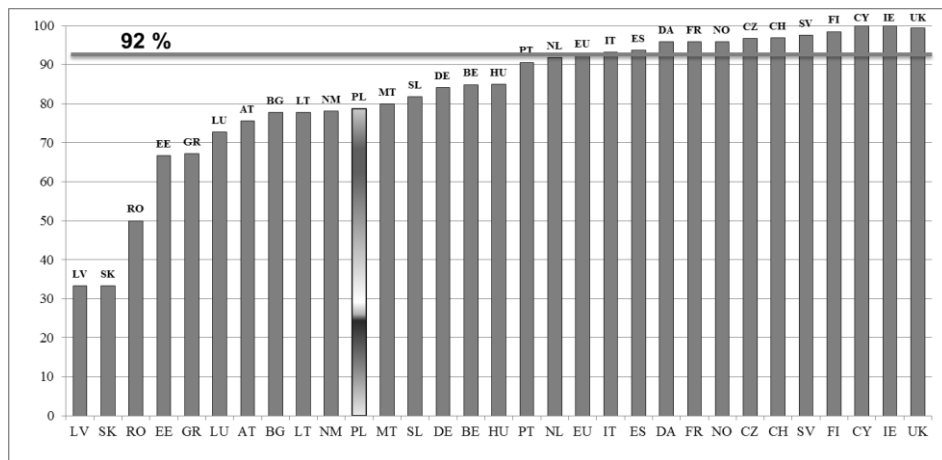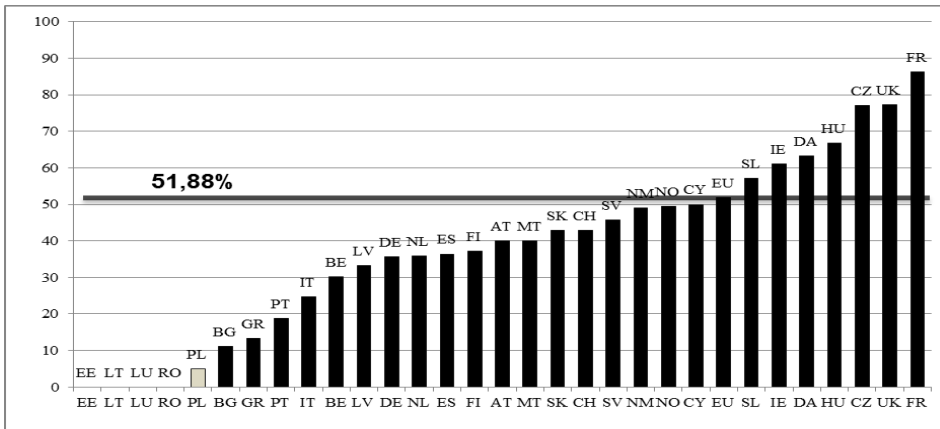

Sources: Mathieu 2013, p. 40.

In 2008, only 4.88% of Polish large companies had broad-based plans. By 2012 the number of these plans increased by 9 p.p. (to 13.8%), which means a significant growth, but despite that Poland occupies a worse position than in 2008, because of the improvement in Romania (see Chart 4a and Chart 4b below).

Chart 4a. Percentage of companies which have broad-based employee ownership schemes in Poland and other EU states in 2007/08

Sources: Mathieu 2009, p. 56.

Chart 4b. Percentage of companies which have broad-based employee ownership schemes in Poland and other EU states in 2011/2012
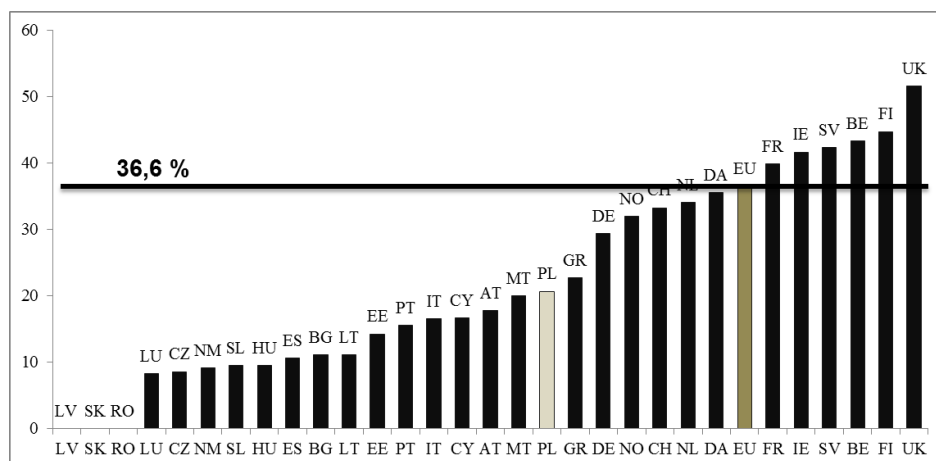

Sources: Mathieu 2013, p. 41.

As can be seen, the average for EU countries is 53.3% (51.88% in 2008). In France this percentage amounts to 86.7%. Poland is ahead of only three countries out of 29 included in the survey. One can ponder the usefulness of this

research and the resulting analysis of the scope of financial participation schemes because, as is well known, according to the rules accepted by the EU only public shares are qualified for financial participation. Therefore, the question arises: Why analyze broadly those companies which do not comply to this requirement? These are only shares for executive staff that are some kind of compensation for serving in their office and taking a risk, as well as a form of motivation to work hard, but in fact they do not have much in common with employee financial participation in its true and core meaning.[9]

The dynamics of development of financial participation schemes is not very high in Poland, but still in comparison to other new member states the situation looks very good (see Chart 5a and Chart 5b below).

Chart 5a. Percentage of companies which implemented new employee ownership schemes in Poland and other EU states in 2007/08

Sources: Mathieu 2009, p. 56.

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[9] Neither therefore does the further information about employee-owners participation in the total number of employed (10%), and the percentage of companies where employee-owners have over 1% of stocks is similarly erroneous – it refers only to the senior managers (Charts 8 and 9).
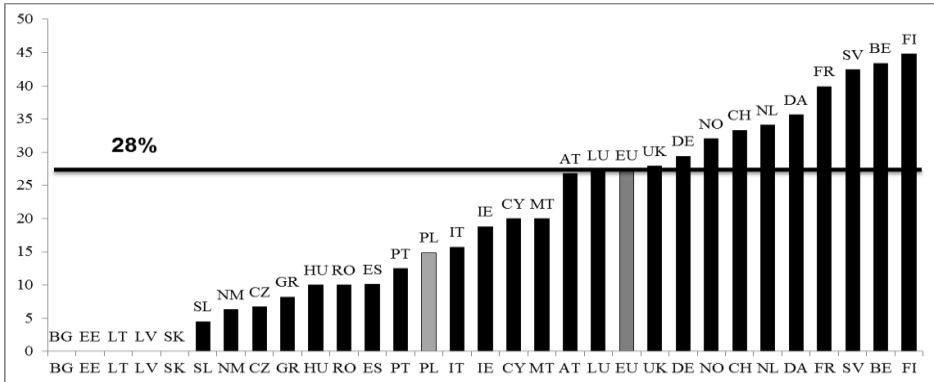
Chart 5b. Percentage of companies which implemented new employee ownership schemes in Poland and other EU states in 2011/12

Sources: Mathieu 2013, p. 42.

In Poland 20.7% of large Polish companies introduced new share ownership schemes for employees in 2007/08, and 14.9% in 2011/12 – in comparison to 36.6% (2008) and 27.6% (2012) in Europe, including 51.6% in the UK (2008), 43.4% in Belgium, and 44.8% in Finland (2012). Comparing these two periods, a decline in the introduction of new ownership schemes can be observed, so it is difficult to speak about any large-scale and dynamic dissemination of these solutions in EU companies. Both the numbers and the dynamics of development of financial participation schemes in Poland is not impressive, which can be the result of, i.e., limited experience in their introduction and the lack of widespread popularization (see Chart 6 below).

Chart 6. Implementation of the first share ownership scheme in EU states (listed groups)
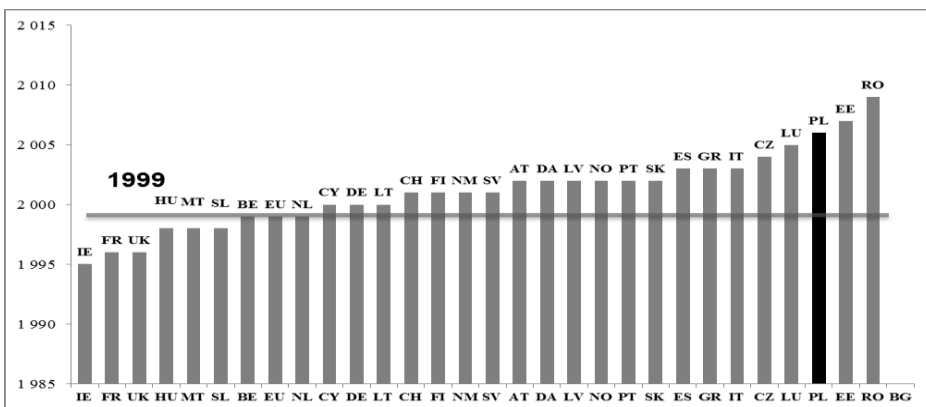
Sources: Mathieu 2013, p. 44.

As can be seen in Chart 6, the first ownership schemes were implemented in Poland in 2006,[10] which places the country near the very bottom in Europe. Statistically, large Irish companies introduced their first employee ownership schemes in 1995.

Poland is also far behind other countries with regard to stock options (see Chart 7a and Chart 7b below).

Chart 7a. Percentage of companies which have employee stock options in Poland and other EU states in 2007/08
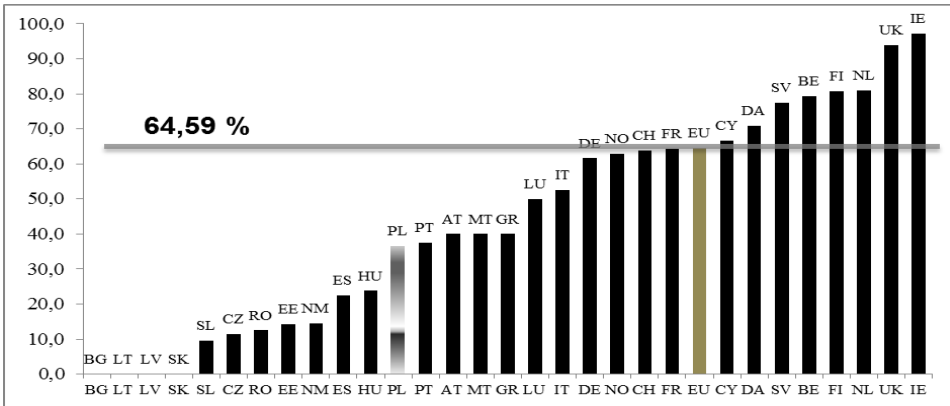
Sources: Mathieu 2009, p. 56.

Chart 7b. Percentage of companies which have employee stock options in Poland and other EU states in 2011/12
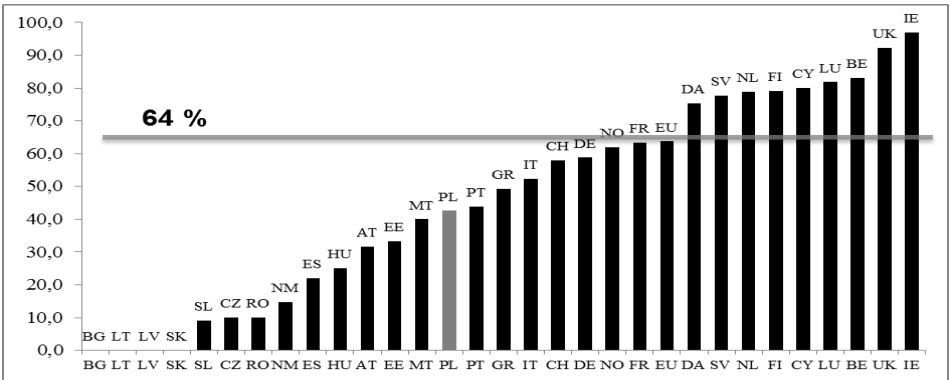
Sources: Mathieu 2013, p. 43.

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[10] Employee share plans appear to be very recent compared to most other European countries, and in fact it was only in 2004 in Poland, but due to disappearing of some oldest companies, the first year is 2006.

It is easy to observe that option schemes are not very popular in Poland, because only 42.6% of large Polish companies have such programs (36.59% in 2008), while in Europe the average percentage is 63.7% (64.59% in 2008). The highest rate can be found in Ireland, where 96.9% of firms make use of employee option schemes. In these parallel periods there are no great changes in the number of companies implementing stock option schemes and the positions held by individual countries are almost the same.

Analyzing the percentage of employee-owners in the total number of workers in Poland, it turns out that this percentage is rather low and amounts to 18.7% (10% in 2008), whereas the average for EU countries is 28.2%. Even though a large improvement can be observed, 18.7% is still not enough to say that employee ownership in Poland can compete with different legal company structures. The highest rate of employee-owners is typical for the French (45.7% in 2008 and 49.1% in 2012). Because of different conditions and the impact of the crisis, the countries' positions have also changed (see Chart 8a and Chart 8b below).

Chart 8a. Percentage of employee-owners in the total number of workers in Poland and other EU states in 2007/08 (%)
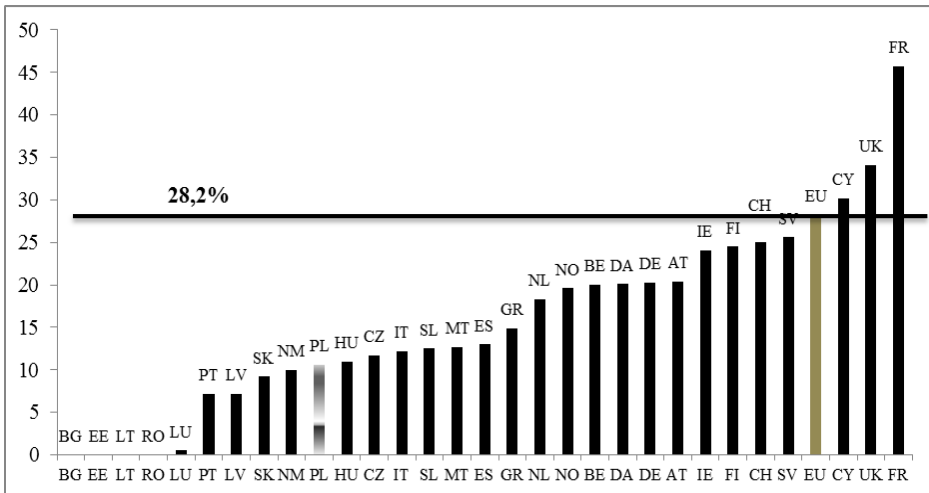
Sources: Mathieu 2009, p. 58.

Chart 8b. Percentage of employee-owners in the total number of workers in Poland and other EU states in 2011/12 (%)
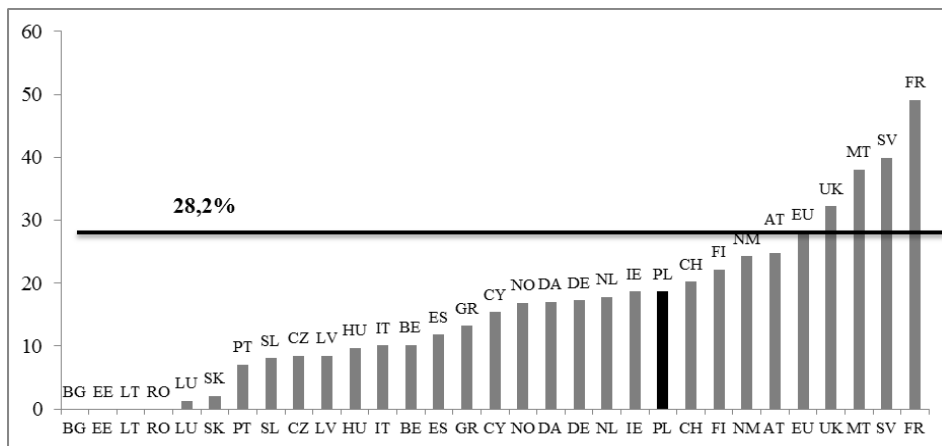
Sources: Mathieu 2013, p. 45.

Similarly low percentages can be observed in companies which have "substantial" ownership schemes, that are programs in which the percentage of employee capital share is over 1% (see Chart 9a and Chart 9b below).

Chart 9a. Percentage of companies which have ownership schemes with "substantial" (over 1%) employee shares in share capital in Poland and other EU states in 2007/08
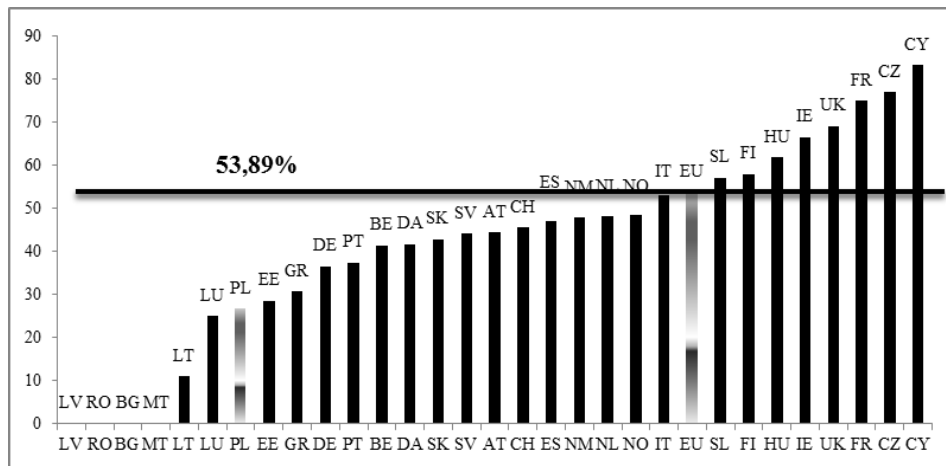
Sources: Mathieu 2009, p. 57.

Chart 9b. Percentage of companies which have ownership schemes with "substantial" (over 1%) employee shares in share capital in Poland and other EU states in 2011/12
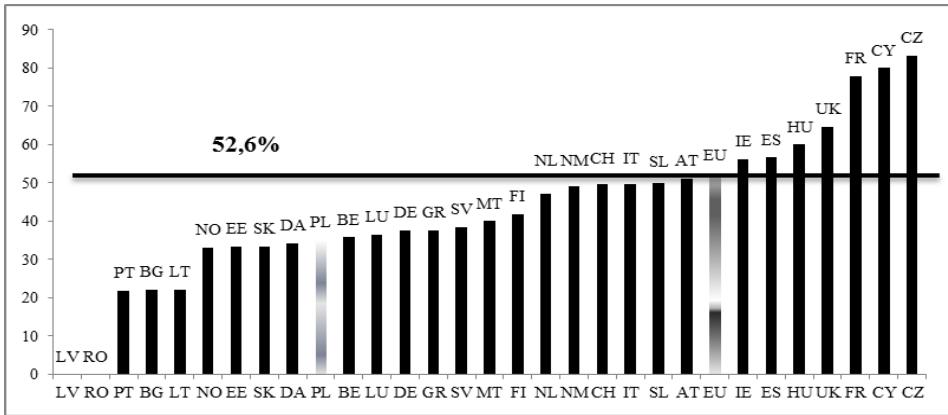
Sources: Mathieu 2013, p. 46.

In Poland there are about 35.1% of such firms in the investigated sample (26.83% in 2008). One can say that a slight improvement is observable, as Poland moved from the 24th position to the 21st. In Europe, it number of such firms averages 52.6% (53.89% in 2008), and the highest rate is in France (77.8%), Cyprus (80.0%) and the Czech Republic (83.3%).[11]

4. Summary

At the end of these deliberations, it would also be reasonable to show the structure of shareholders in Polish companies. Unfortunately, it turns out that in most cases the ownership schemes are offered to senior executives (around 56% of companies), which means that they are not broad-based. This also suggests that ownership is concentrated in hands of a small group of employees (the management) and it is they who make decisions in the companies. It appears that this "ownership gap" was born as a result of the previously accepted legal and organizational solutions. The legal and formal issue of setting up and the functioning of the "employee-owned company" has not yet been fully dealt with, and the technical requirements of employee leasing brought with them a high level of difficulty and risk in fulfilling this task in order to allow the employees to possess

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[11] The figures for the Czech Republic and Cyprus should, due to the specificity of ownership and low share of large companies, be taken into consideration with great care.

their share in the operational capital of their own companies. In addition, almost at the beginning of the ownership changes was the adopted attitude was to support management buyouts, which did not favor the widespread access of regular workers to a company's shares. The long-term experience of foreign countries and the USA has not been even taken into consideration, where employee ownership schemes have been quite successful, thanks to which in many cases the companies achieved results above the average.

Unfortunately, Poland has not solved many of the problems concerning aspects such as (Gilejko 1997, pp. 8-11): the size of the package of employee shares; establishing employee ownership funds (trust funds); lowering the financial thresholds for setting up employee-owned companies (on condition of payment); and devising better conditions for employees to purchase their own companies, defining the criteria for companies which would allow them to preserve their employee nature etc. This has had a great impact on the current shareholding structure in companies and on the low percentage of firms which have any type of financial participation schemes. The present situation has also been influenced by the lack of stimulation actions from the legislative authorities and other social partners who could have contributed to the implementation of solutions based on foreign model at that time. This can also be explained by the previous stage of development based on the need to rapidly restore macroeconomic balance, together with the re-creation of a market economy and the necessity for deep transformation of the former state companies, which often required radical and painful measures.

In general, there was almost never any real hope that employee-owned companies would turn out to be a proper vehicle for such deep changes, which is why this method of privatization was only applied with regard to smaller companies with good financial conditions. The absence of significant progress in financial participation in the following years has its origins in the lack of knowledge about this matter by the elite, the relatively low organizational culture of Polish companies, the lack of sufficient flow of information about this matter from the advanced countries, and in psychological barriers among employees resulting from the experiences of the previous era.

References

Act of September 15th, 2000 Commercial Companies Code (Dz.U. no 94 item 1037 as amended).

Annual Economic Survey of Employee Ownership in European Countries in 2008. Introduction to country files (2009a), European Federation of Employee Share Ownership, 13.02.

Annual Economic Survey of Employee Ownership in European Countries in 2008. Introduction to country files (2009b), European Federation of Employee Share Ownership, 16.02.

Bałtowski M. (2000), *The restructuring effects of privatization of companies in Poland*, [in]: *The economic growth, restructuring and unemployment in Poland, theoretical and practical approach. Conference materials*, The Department of Economics at the University of Łódź, Łódź.

Ciupa S.W. (2005), *Bonuses and Awards for Employees*, 'Rzeczpospolita', October 3rd

Gilejko L. (1997), *Shareholder structure. Its development and structure*, SGH (Warsaw School of Economics), Warsaw.

Jawłowski A. (2001), *Employee privatization*, ISP PAN (the Institute of Political Studies at the Polish Academy of Sciences), Warsaw.

Lowitzsch J. (2006), *The PEPPER III Report: Promotion of Employee Participation in Profits and Enterprise Results in the New Member and Candidate Countries of the European Union*, Inter-University Centre Split/Berlin, Institute for Eastern European Studies, Free University of Berlin, Rome/Berlin June, table 3.

Lowitzsch J., Hashi I. and Woodward R. (2009), *The Pepper IV Report: Benchmarking of Employee Participation in Profits and Enterprise Results in the Member and Candidate Countries of the European Union*, Inter-University Centre Berlin/Split, Institute for Eastern European Studies, Free University of Berlin, Berlin October.

Mathieu M. (2009), *Annual Economic Survey of Employee Ownership in European Countries 2008*, European Federation of Employee Share Ownership, Brussels.

Mathieu M. (2013), *Annual Economic Survey of Employee Ownership in European Countries 2012*, European Federation of Employee Share Ownership, Brussels.

Tittenbrun J. (1995), *The economic reason for privatization*, Humaniora Fundation Publishing, Poznań.

Streszczenie

PARTYCYPACJA FINANSOWA W POLSCE NA TLE PAŃSTW UE

Powodzenie głębokich zmian restrukturyzacyjnych w polskiej gospodarce zależało głównie od skuteczności reformy dotyczącej restrukturyzacji własności we wszystkich sektorach. Wymagało to nowego podejścia do własności prywatnej, określenia nowej roli i miejsca pracowników w procesie zmian oraz tworzenia spółek pracowniczych. Spółki pracownicze powstawały w wyniku prywatyzacji bezpośredniej, tzw. likwidacyjnej, kiedy to majątek przedsiębiorstwa zostaje przekazany do odpłatnego korzystania z prawem wykupu spółce założonej przez większość pracowników danego przedsiębiorstwa (leasing). W celu przeprowadzenia tego typu prywatyzacji i zgromadzenia niezbędnego kapitału, ci, którzy inicjują proces, muszą przekonać pracowników do kupna udziałów.

Należy pamiętać, że metoda ta okazała się skuteczna w stosunku do przedsiębiorstw małych i średnich, które nie wymagały uruchomienia tak znacznych środków finansowych, jak to miało miejsce przy prywatyzacji dużych przedsiębiorstw. Wstępnie można stwierdzić, że warunki do wprowadzania nowych rozwiązań w zakresie wzrostu udziału pracowników we własności czy partycypacji w innych programach finansowych są mało sprzyjające. Można nawet postawić tezę, że w polskich przedsiębiorstwach i wśród pracowników, szczególnie niższego szczebla istnieje świadomościowa bariera, utrudniająca proces dalszych zmian własnościowych czy wdrażania nowych form demokracji ekonomicznej w kierunku powstania nowego typu odpowiedzialności za firmę. Przełamanie tej bariery może nastąpić po pewnym czasie, kiedy to pracownik już jako właściciel zaczyna rozumieć ekonomiczny sens dywidendy, nabiera nawyku myślenia w kategoriach wzrostu wartości firmy, bo to przekłada się wprost na wzrost wartości jego akcji.

Słowa klucze: własność pracownicza, partycypacja finansowa, udział w zyskach, opcje na akcje

JAKUB MARSZAŁEK[*]

The Essence Of The Emerging Markets' Investment Risk. Comparative Analysis Of American And Central European Convertible Bond Issuers

Abstract

This paper attempts to identify the determinants of credit ratings for debt instrument issuers in the so-called emerging markets. The study was conducted on the sample of convertible bonds issuers in 2001-2012, half of which originated from Central and Eastern Europe, while the rest were U.S. operators. The analysis is focused exclusively on pairs of bonds with the same rating given by the British Fitch agency, which specialises in analysing Central and East European markets. The conducted studies show that solvency risk, interpreted as indebtedness, financial leverage and current solvency, is a major difference between the two groups of bonds. Changes in indebtedness, i.e. in assets held by foreign investors, are apparently the reasons of higher requirements for issuers from the emerging markets.

Keywords: emerging market, convertible bond, rating, financing

1. Introduction

An issuer's credit risk analysis is an inherent element of the profitability assessment for an investment in debt instruments. An instrument that facilitates such an analysis is the rating by a rating agency. However this rating has got both

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its advantages and disadvantages. Thanks to its relatively simple interpretation, it enables a quick assessment of the creditworthiness of a given issuer. The use of ratings for the analysis of the profitability of an investment in traditional debt instruments seems fairly easy. Comparing the current market price of a bond to the flow of interest or its redemption value helps estimate the internal rate of return, which reflects the bond's profitability, which is the primary parameter used to compare bonds. Bond rating determines profitability because it depends on the issuer's solvency risk. Rating agencies autonomously identify the risk and present the methodology used to calculate the rating. However they do not specify how a given rating was specifically calculated in a given case. Such information is confidential and forms a part of agency's know-how. Thus investors might speculate on how a change in selected economic parameters may determine the rating, even though such a change does not necessarily have to take place. The only certain aspect is that a change in rating will impact the identified risk level and may determine a bond's profitability. A rating agency's prestige thus becomes the fundamental factor in determining the reliability of the assessment and evaluating the investors' decisions connected with it.

This paper attempts to identify the determinants of credit rating for debt instrument issuers in the so-called emerging markets. By using financial data from selected items in the balance sheets and profit and loss accounts, in combination with the characteristics of issued bonds, we compared these issues with the ratings. The study covers only instruments with the same rating issued by similar companies. To eliminate the risk of an issuer's insolvency, the analysis focuses only on convertible bonds. By comparing the above mentioned groups of financial parameters, based on differences among them we will be able to identify additional risk factors. The analysis centres around bonds issued in the United States and in the countries of Central and Eastern Europe. The selection of different countries in the same group is in accordance with the previous research. It was proved that credit ratings for the emerging market should be based rather on global or regional economic factors than on local factors (Diaz Weigel, Gemmill 2006). The differences identified should highlight the substance of credit risk connected with debt instruments issued by operators from emerging markets.[1]

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[1] This is consistent with previous research. E. I. Altman (2005) compared emerging market corporate bonds with high yield American corporate bonds.

2. Convertible bonds ratings

2.1. Issuance of convertible bonds - specific features

Hybrid instruments which give the holder an option to convert them into the common stock of the issuing company on the date of redemption are assessed differently from traditional bonds. The difference in approach results from the way creditor's claims can be satisfied. The availability of the conversion option is fundamental in this case. The issuer may preset the conversion price and the time when conversion becomes exercisable, and may avail itself of the early conversion option, of the call option when it calls the bonds, or of the put option when bonds are put back to the issuer. It may also use the reset option, which consists of a change of the conversion price or of the conversion ratio. The above listed possibilities make convertible bonds extremely flexible instruments for financing, but at the same time they complicate comparisons of the risk involved. The issuer may reduce the risk of the debt not being redeemed with attractive conversion terms. Thus, it is worth considering the basic concepts that justify the issuance of convertible bonds, inasmuch as they seem relevant for the assessment of investment risk in different markets. Most of them are based on the asymmetric information theory. The term "agency costs", introduced by Jensen and Meckling (1976), gave rise to analyses addressing the conflicts of interest among managers, shareholders and bondholders, which directly impact company operations. Lack of symmetry in access to information increases managers' propensity to take higher investment risk after debt has been issued, to replace safer assets with securities bearing much greater risk, and to increase the market value of a company's own equity at the expense of a lower value of external capital. This might lead to an overinvestment, i.e. a reduction of the value of company's equity caused by too much capital allocated to unprofitable investment projects. On the other hand, the investors' lack of trust in managers may also lead to underinvestment, i.e. to giving up profitable investments for fear of alleged difficulties hidden by the Board. In such circumstances, financing with the use of convertible bonds is considered to be a solution bearing additional risk. Why would not a company issue ordinary bonds or shares, opting instead for an instrument implying difficulties in valuation? This problem seems relevant for an issuer's rating, in particular in the context of this paper. Ratings are given by rating agencies from highly developed countries, for which the reality faced by economic operators in the emerging markets is heavily burdened with the risk of unclear legal regulations, too close ties with political circles, and an underdeveloped corporate governance culture. All of these factors relate to the problem of information asymmetry and may play a significant role in determining the rating of the issuer of convertible bonds.

In his studies, Green (1984) suggested that convertible bonds may alleviate adverse effects of conflicts of interest between bondholders and shareholders. He provided evidence that shareholders get involved in risky investment projects, as in case of failure the value of their assets may drop, while bondholders face the risk of their bonds not being called. Thus, when the investment is successful the shareholders will take over a portion of the assets owned by bondholders as their rate of return will increase, while creditors will receive a constant rate of return. The conversion option built into convertible bonds enables holders to participate in the possible profits resulting from the engagement of a company in an investment representing above-average risk. In the context of our considerations, it is important to identify the possibility of exposing creditors to excess risk in emerging markets. The issuance of convertible bonds might then involve a potentially higher investment risk and reduce the rating in comparison to mature markets. The financial leverage of a given company may be a measure of the lack of trust in a Board's decisions (Boutron, Hubler 2010, p. 20).

Brennan and Kraus (1987) demonstrated that convertible bonds may become a good source of attracting capital for companies when there are difficulties in objectively estimating the financial risk of the issuer. This is especially pertinent when we consider the fact that the hybrid nature of convertible bonds makes their value insensitive to changes in an issuer's risk (Brennan, Schwartz 1987). This results from the mechanism of reduction in the bond's value and an increase in the value of stock option(s) attached to the bond. Both are caused by increased volatility of an issuer's performance. Compared to mature markets, emerging markets represent a higher volatility of the stock market which, in accordance with Black-Scholes model (Black, Scholes 1973), increases the value of convertible bonds without decreasing their risk. Following the line of thinking of Brennan and Schwartz we should not observe any differences between the issues in the U.S. and in Central and Eastern Europe, and the volatility in stock prices should offset the risk of insolvency. However, from the point of view of a rating agency that might be irrelevant, as its assessment focuses on the probability of paying back one's liabilities rather than on the rate of return. The rating of convertible bonds from emerging markets may be more strict as there are no relevant links between the above-outlined concept and the aim of rating analysis. Companies may offset higher debt risk with conversion parameters: the time of conversion and conversion ratio. A lower conversion ratio means a higher probability of the debt being repurchased, which is usually due to optimistic issuer perspectives (Kim 1990). A longer conversion deadline increases the likelihood of conversion when repurchase prospects are unfavorable (Marszalek 2014). Companies from emerging markets may apply both solutions to offset the higher risk of issued debt, in particular to foreign investors.

The reasons behind the issuance of convertible bonds are considered in a similar way in the *backdoor equity hypothesis* (Stein 1992). According to Stein, companies aim at issuing stock rather than at repurchasing their debt. At the time of issuance, however, stock valuation is not profitable, which is why operators try to defer it. Funds raised from bonds are supposed to trigger additional profits which increase the company's value and facilitate the conversion. The issuance of convertible bonds means a company expects increased revenues in the future. Managers must be sure that future price of shares will be high enough for bondholders to convert their bonds into the issuer's stock. Stein's theory seems to discredit the issuers from emerging markets in the eyes of Western rating agencies. The assumption underlying conversion implies serious difficulties when it is not exercised. Such liabilities are burdened with higher risk, which is additionally increased by higher market risk. Issuers from emerging markets should thus offer more attractive terms of conversion to foreign investors. This is particularly important when we take into account the strong dependence between the valuation of emerging markets and the involvement of Western investors.[2] Nor are domestic investors indifferent to this risk.

The specificity of rating convertible bonds in emerging markets is approached differently in the *sequential financing hypothesis* (Mayers 1998). This hypothesis assumes that well-designed convertible bonds allow for avoiding the negative effects of both underinvestment and overinvestment. When a company considers new investment their effects will determine the conversion. If the profitability of investment is too low and managers decide not to carry it out, convertible bonds will be redeemed by the issuer and the company will have no problem with the excess capital raised earlier. This will avoid overinvestment. If managers decide that the investment is profitable, conversion will give them capital which will then be used to carry out the project, thus avoiding underinvestment. Similar arguments for the rationale of issuing convertible bonds can be found in Isagawa (2000), who demonstrated that they can be used to control managers who show tendencies toward excessive expansion of the companies they manage. Both concepts assume the existence of a self-regulatory mechanism which prevents the Board from taking excessive risk. In the context of this paper this means that the investment risk for issues in both developed countries and in emerging markets is the same for bonds representing the same risk level. Potential differences in ratings may be due to the risk involved by the emerging market, not the issuer, which coincides with adopted hypothesis.

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[2] Such a determinant has been showed by Campbell and Taksler (2003).

It is also worth devoting attention to additional aspects of the issuance of convertible bonds (Jalan, Barone-Adesi 1995). These premises may be decisive for the involvement of issuers in selected countries, since tax benefits depend on local regulations. The rating assessment of companies from emerging markets may be increased even above that in developed countries. The relevance of the premise is hard to validate, however, as we are dealing with highly individualised tax circumstances of the issuers.

2.2. Convertible bond rating specificity

Although hybrid debt forces the issuer to service the debt, it does not have to be treated as a typical liability. This depends to a large extent on the structure of the instrument at hand, but often the long-term of the potential bond payoff, combined with the option to convert, makes investors treat it as equity rather than debt. A lower interest rate is often a contributing factor. Rating agencies interpret hybrid debt as a typical liability, but its modifications (such as mandatory convertible bonds) are considered taking account their equity characteristics.

This approach can be exemplified by the standard assessment procedure for hybrid instruments applied by Standard & Poor's and Fitch. Such securities are divided into three categories: 100% equity; 50% equity and 50% debt; 100% debt, depending on the structure of the instrument in question.[3] Hybrid debt, as it may be converted into shares, is treated as a contribution to a company's growth and prevention against the risk of bankruptcy. However, the fact that the liability occurs already at an initial stage of financing makes the agency treat it mainly as debt instrument. Moreover, the notching of hybrid debt from the point of view of the impact of the equity component does not affect the issuer's rating.

Moody's agency stresses that hybrid debt instruments may play an important role in the case of an issuer's insolvency. However, they claim that the current contemporary structure of these instruments is extremely complex due to additional clauses and options in the bond indenture/agreement, which allow the company to use the conversion option as a tool to avoid or delay debt-related payments.

The possibility to replace a financial benefit, especially with a clause of mandatory conversion, makes hybrid instruments a higher risk debt. This is also

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[3] See: Treatment and Notching of Hybrids in Nonfinancial Corporate and REIT Credit Analysis. Sector-Specific Criteria, Fitch Rating, 13 December 2012, www.fitchratings.com; Equity Credit For Corporate Hybrid Securities, www.standardandpoors.com.; Moody's Hybrid Tool Kit: Limiting Equity Credit in the Capital Structure(2008), Moody's New Instruments Committee and Fundamental Credit Committee, March 2008, www.moodys.com

due to the circumstances surrounding the issuance. Fitch notes that due to the frequent subordination of hybrid debt, the risk of its not being paid back increases. Such instruments are considered as very much loaded with financial risk, which reduces their rating by at least two grades compared to the risk of an issuer's insolvency.[4] A similar approach applies to the assessment of the risk of insolvency of a company representing a sector of high growth potential. The rating is then reduced by one grade. Thus, the total rating of hybrid financial instruments may be lower by three grades compared to traditional debt instruments of the same issuer.[5] They may differ only with respect to the characteristics of the option to convert. Nevertheless, that may be decisive for the category of the securities in question, which may be considered highly risky.

This means that the hybrid nature of these instruments determines their perception. This is particularly important for the assessment of hybrid instruments in investment and non-investment risk categories. Although we may apply the same assessment procedure to both groups of instruments, for bonds of issuers with a speculative rating Fitch suggests an individual risk assessment.[6]

In assessing debt financial instruments, analysts apply the term equity credit, i.e. debt which is intended to become equity. The key to understanding this dual notion lies in the analysis of the debt and equity characteristics of a given instrument in the context of an issuer's capital structure, the financial leverage that it applies, and the risk of its insolvency. Rating agencies, taking into consideration the risk connected with excess expectations of setting off the insolvency with conversion, have drafted guidelines for the safe share of hybrid liabilities in an issuer's capital structure in order to be able to shape it freely. The guidelines do not intend to limit the use of conversion debt, but to restrict the potential role of conversion capital in equity. The threshold of allowable hybrid debt is determined against the average amount recommended to potential issuers. It is not based on any scientific premises but on economic practice. A higher issuance of equity hybrid capital may jeopardize an issuer's rating if potential financial difficulties connected with the instrument in question are taken into consideration. Hence, if the rule is not observed hybrid debt, irrespective of its category, will be treated fully as debt.

The rating of hybrid debt may also be determined by the option of a call for debt redemption before its maturity. This option is not decisive here, but it

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[4] The reference point is the category of *Issuer Default Rating (IDR)*, i.e. a rating describing the risk of an issuer's default in relation to earlier assumed obligations. See: *Definitions of Ratings and Other Forms of Opinion*, Fitch Ratings, Feb 2013, www.fitchratings.com, p. 9.

[5] The approach of Standard & Poor's to the problem is similar.

[6] Moody's does not apply such an approach.

may change the value of the coupon, which is considered a material change in the effective maturity deadline. In turn, the possibility to delay the payment of interest for at least five years allows for treating such a hybrid instrument as shareholders' equity credit.

In contrast to Moody's and Standard & Poor's, Fitch pays a lot of attention to the problem of mandatory conversion. Analysis of such hybrid instruments focuses on terms of the debt conversion. The rating by a rating agency should be more precautionary if the conversion might contribute to reduced credit worthiness of an issuer resulting from operations designed to stop excess capital dilution. The above-presented restrictions in payments may also diminish the value of the equity characteristics of an instrument.

The overview of the methodology employed to assess the credit worthiness of hybrid debt instruments allows, despite a few differences among rating agencies, for formulating some general conclusions. The main problem seems to be the identification of the role played by the option to convert debt into equity. All agencies agree that the conversion is an added value of an instrument and may not become a tool to circumvent a debtor's liability. The mere classification of assets, irrespective of how detailed it is, seems to be set aside from the principal rating. The allocation to a particular basket is mainly designed to assist the investor in the assessment of risk which will materialize when the issuer fails to pay due amounts and tries to replace them with conversion.

3. Credit risk analysis for selected emerging markets

3.1. Sample description

The study was conducted on the sample of 212 issuers of convertible bonds, half of them originating from Central and Eastern Europe and the rest from U.S. operators. Issuers were grouped in pairs based on the following criteria: rating, sector, time, and size. Analysis was focused exclusively on pairs of bonds with the same rating. Due to economic and geographical diversity and the potential for subjective assessment, we used ratings of the British Fitch agency, which specialises in analysing Central and East European markets. To eliminate a potential preference given in rating assessments to larger companies, which might be caused by the fact that they have more assets to secure their liabilities, we formed pairs whereby, at the same rating, the difference in the balance total was the smallest and revenues from sales were similar. Different

industry profiles represent different operating risks and economic cycles, which is why we analysed only pairs of companies from the same sector. For reasons pertaining to the specificity of financial analysis for operators from the finance industry, the study excluded banks, investment funds, brokers and insurance companies. And finally, the moment when rating is assessed may determine the way a rating agency perceives the current economic situation and its future prospects. Thus we selected pairs of issues which took place at the same time, which helped us eliminate comparing bonds offered in the times of economic slump in one market and boom in the other. Of course, there is the risk of there being little convergence between the U.S. and Central and East European markets, observed in recent years as a result of FED's Quantitative Easing. However the sample dates back to 2001-2012, when markets covered by the survey were closely correlated.

The specificity of convertible bonds called for further standardisation. Early exercise CALL/PUT options or mandatory conversion materially impact the nature of an issuer's liability and its rating. This is why we considered only pairs of bonds with the same options. No mandatory convertible bonds were analysed. Convertible bonds without CALL/PUT options represented 84% of the examined group. In the remaining cases both options were present.

We were able to match issues under such restrictive conditions only thanks to having access to the very well developed market of such instruments in the U.S. Almost each East European issue was matched with a similar one from the States. These instruments are not so widely used in Central and East European market, which can be explained by little developed capital market, as is confirmed by the data in Table 1. Issues from Poland and Russia, i.e. from the most developed countries, dominate. For example, the share of issues from Latvia and Estonia is symbolic, similar to their role in the economic map of Central and Eastern Europe. It is worth stressing that the selection of Russian issues was limited to those placed in the local market, which excluded the issues by international economic tycoons whose links with a typical emerging market are practically only historic. These firms raise funds in the international market and are independent of the risks associated with emerging markets.

The higher risk associated with emerging markets significantly restricted the scope of possible ratings, excluding the level above A1. In our study, to the extent possible we used the ratings on the day of the issue. When the rating was allocated later, we took account of the first evaluation allocated before the end of the first fiscal year following the issue. By doing so, we excluded from the study changes in the rating resulting from an issuer's operations after the day of the issue.

Table 1. Characteristics of the examined sample of convertible bonds issued in Central and Eastern Europe in 2001-2012

Rating	Country											Total
	Croatia	Czech Rep.	Estonia	Hungary	Latvia	Lithuania	Poland	Slovakia	Slovenia	Romania	Russia	
BBB-	0	1	0	0	0	1	2	0	0	0	0	**4**
BB+	0	1	1	0	1	1	2	0	1	0	0	**7**
BB	0	0	0	1	0	0	1	0	0	0	1	**3**
BB-	1	1	1	1	1	1	2	1	1	1	2	**13**
B+	1	0	0	1	0	0	2	1	1	1	1	**8**
B	3	2	2	4	1	2	7	1	2	2	4	**30**
B-	2	1	1	2	1	1	3	1	1	1	5	**19**
CCC+	0	0	0	0	0	0	1	0	0	0	1	**2**
CCC	0	0	0	0	0	0	1	0	0	0	0	**1**
CC	0	0	0	1	0	0	1	0	0	0	1	**3**
C+	1	0	0	1	0	1	2	0	1	1	3	**10**
C	1	0	0	1	0	0	2	0	0	0	1	**5**
C-	0	0	0	0	0	0	1	0	0	0	0	**1**
Total	**9**	**6**	**5**	**12**	**4**	**7**	**27**	**4**	**7**	**6**	**19**	**106**
CALL-PUT	3	2	2	4	1	2	9	1	2	2	7	**35**

Source: own studies based on Bloomberg.

3.2. Methodology

The study was designed to identify differences between analysed groups of issuers, which may be decisive for the higher risk rating of convertible debt in Central and East European countries. The data used in financial analyses and ratings came from the Bloomberg database. Financial data was taken from the latest annual financial statements of the issuers available at the date of the issue. The parameters of the issued convertibles were those published in the prospectuses. The market valuation of the issuer is reflected in the closing price

of company's shares as of the day prior to the issue.The following financial ratios were selected to provide the financial characteristics of both groups of companies included in the study:

- Price/book value (P/B) – as a relative measure of the market value of a company;
- EBITDA/interest – as a measure of the ability to service the debt;
- Fixed assets/Total assets (FA/TA) – as a measure of the structure of assets and the ability to secure the debt;
- Total debt/Total assets (TD/TA) – as a relative measure of indebtedness;
- Equity/Fixed assets (E/FA) – as a measure of security of the business conducted;
- Financial leverage (FL) – as a relative measure of the risk of insolvency;
- ROE, ROA – as relative measures of profitability;
- (Long-term debt + Equity)/Fixed assets (CC/FA) – as a measure of the growth potential of a company,
- Current ratio (CL/CA) – as a measure of the current liquidity of the company;
- Amount issued/Total debt (AI/TD) – as a measure of the debt growth,
- Amount issued/Fixed assets (AI/FA) – as a measure of the security of issued bonds;
- Conversion ratio (CR) – as a measure of the equity dilution;
- Payback period (PP), Conversion period (CP)– as measures of conversion probability.

Statistical analysis was conducted using tests to assess the significance of the difference (t-tests). The selection of tests was not unequivocal, as the main assumption for the test was to analyse the results for pairs of companies (or rather bond issues – American and Eastern and Central European) with the same ratings. Hence, despite the fact that these are different subjects in physical terms, we used paired difference tests. Student's t-test is the basic test for comparing the two paired populations. In order to perform it, we needed differences between paired measurements, which represent normal distribution. The assumption was not always met in the case of examined companies, and in such cases we tried to "stabilise" the distribution through logarithmic transformations or, when there were numerous negative ranks for variables, we used the non-parametric equivalent of t-Student's test for paired samples, i.e. the Wilcoxon signed rank test. For both tests the null hypothesis assumes a lack of differences between both types of bonds (measured with the expected value of random variable for the t-Student test or the distribution function for the Wilcoxon test), and thus the alternative hypothesis is: there are differences. It was decided that the variable in comparable populations of bonds is statistically significant if the probability in the test, *p,* was below the assumed level of significance ($\alpha=0.05$). Calculations were made in IBM SPSS Statistics 22.0.

3.3. Results

By analysing the statistical differences between parameters characteristic for both groups of issuers, we may identify some common features. European issuers have statistically significant higher EBITDA/interests, E/FA, ROE, and S/FA ratios, (Table 2) while their American counterparts report higher (LD+SD)/TA ratio and FL.

Table 2. Differences in the financial standing of convertible bond issuers carrying the same rating and issued in the U.S. (US) and in CEECs (C&EE) in 2001-2012

		Average	Median	Standard deviation	p	t-test for the significance of the difference
P/B	C&EE	3.766	2.073	8.596	0.440	test t
	US	3.382	2.086	4.021		
EBITDA/interests	**C&EE**	50.870	**6.355**	477.943	0.030**	test t (logarithmic data)
	US	57.808	5.165	690.561		
FA/TA	C&EE	0.790	0.846	0.204	0.632	test t
	US	0.787	0.850	0.203		
(LD+SD)/TA	C&EE	0.288	0.276	0.177	<0.001**	test t
	US	**0.339**	0.322	0.154		
E/FA	**C&EE**	**0.648**	0.552	0.517	0.008**	test t
	US	0.581	0.505	0.425		
FL	C&EE	3.271	2.255	8.416	0.063*	test t (logarithmic data)
	US	3.730	**2.388**	5.836		
ROE	**C&EE**	-0.144	**0.056**	1.224	0.029**	Mann-Whitney test
	US	-0.195	0.035	0.966		
ROA	C&EE	-0.014	0.024	0.172	0.118	Mann-Whitney test
	US	-0.029	0.013	0.172		
(LD+E)/FA	C&EE	1.011	0.856	0.617	0.290	test t (logarithmic data)
	US	1.019	0.855	0.557		
CA/SD	**C&EE**	**1.138**	0.948	0.834	0.013**	test t
	US	1.083	0.887	0.855		

* statistically significant differences when α=0.10; ** statistically significant differences when α=0.05; groups for which results were significantly higher are marked in bold (given mean is significantly higher).

Source: own calculations based on Bloomberg.

The obtained results demonstrate the better financial standing of issuers from the European emerging markets. The higher EBITDA/interest coverage ratio means a lower debt burden upon operating performance. However, one must note the deep differentiation of the sample covered by the study, which is reflected in the significant difference between the average and the median and a very high standard deviation. Despite that, the debt burden upon operating performance in the analysed companies was relatively low. European issuers also report a higher equity to fixed assets ratio (E/FA), which confirms a more conservative, i.e. safer, financing policy. The ratio is at a moderate level for both groups and is not very much differentiated within each of them. Companies from the emerging markets are also more profitable, although the ratio can hardly be considered satisfactory. Average ROE is negative and the median slightly exceeds 0. Results within the European group are more differentiated than within the American one. This may mean an overall low profitability of issuers, including those from the U.S., a thesis backed up by the average ROA levels. Neither are the companies grossly overvalued in the market, as evidenced by low P/BV ratio. This may explain one of the reasons for issuing convertible bonds: difficulties in issuing shares of stock. Companies from Central and Eastern Europe have higher liquidity than American ones. The current liquidity ratio in both groups is moderately low, but it is also quite differentiated.

American companies have a higher liabilities to total assets ratio ((LD+SD)/TA), which is indicative of a more aggressive financing policy compared to the group from the emerging markets. This is also confirmed by the higher financial leverage (FL). Hence, American operators are more sensitive to changes in operating performance. We may observe higher financial risk for American issuers, who are more indebted at the time of the issue than businesses from Europe. On top of that, these are low profitability companies with moderately low liquidity.

The analysis of parameters for both groups of bonds partly makes reference to what we have learned from the financial analysis of the issuers (Table 3). We may identify statistically significant differences in the value of issued assets in proportion to the total debt of a company (AI//TD) and to its fixed assets (AI/FA). Higher values can be observed for American issuers, which once again confirms their higher exposure to solvency risks. American bonds also have statistically significant higher conversion ratios, which undoubtedly makes them more attractive in the eyes of investors. Nevertheless, we must highlight the high volatility of the parameter and its strong link with the value of shares. A higher conversion ratio may indicate more watered-down stock after the conversion, but it may also result from a low valuation of a company. For that reason we may assume, although with some limitations, that the U.S. companies are statistically less favourably perceived by the market thanthose originating from the emerging markets. In the case of

conversion period and buyback period no statistically significant differences were observed, although the mean values in both groups indicate shorter periods for European bonds.

Table 3. Differences in parameters of convertible bonds carrying the same rating issued in the U.S. and in CEECs in 2001-2012

		Average	Median	Standard deviation	p	t-test for the significance of the difference
AI/TD	C&EE	0.777	0.425	0.940	0.006**	test t (logarithmic data)
	US	**0.912**	**0.438**	**1.199**		
AI/FA	C&EE	0.531	0.218	0.792	0.09*	test t (logarithmic data)
	US	**0.641**	**0.231**	**1.055**		
CR	C&EE	52.342	37.034	41.161	0.017**	Mann-Whitney test
	US	**164.458**	**95.887**	**352.289**		
BP	C&EE	3356.162	1555.0	2269.039	0.218	Mann-Whitney test
	US	4382.452	2895.000	3004.284		
CP	C&EE	1265.144	1353.5	856.836	0.225	test t (logarithmic data)
	US	3789.224	2795.244	2146.2438		

* statistically significant differences when α=0.10; ** statistically significant differences when α=0.05; groups for which the results were significantly higher are marked in bold (given mean is significantly higher).

Source: own calculations based on Bloomberg.

4. Conclusions

The analysis of relationships between selected issuers of hybrid debt, representing the same rating, allows us to draw some general conclusions. Firstly, entities from emerging markets are less exposed to solvency risks, and their reported operating results are less burdened with interest. Companies more often use their own capital/ equity to finance fixed assets. Their liquidity is also higher. American companies, in turn, are more indebted and use higher financial leverage. The rating of both groups of analysed companies was similar, which may be indicative of a more strict assessment of the emerging markets. The bonds from the U.S. issues seem more risky. They put more burden on issuers' liabilities. The equal rating is partly justified by their similar profitability, which is far from satisfactory. It seems, however, that the equal treatment of issues with diverse statistical profiles lies in their origin. We can clearly see that bonds offered by entities from the emerging markets must meet higher standards in

order to be rated equally to those issued by the U.S. companies. The currency of the issued bonds is the main reason behind such a differentiation. In emerging markets we are dealing with exotic currencies featuring with significantly low liquidity. This may provoke rapid changes in debt valuation caused by speculation. U.S. dollar-denominated convertible bonds are free from such problems. Another factor undermining the credibility of debt in emerging markets is less efficient corporate governance. Despite more than two decades of transformations, the existing legislation is not stable enough, which complicates any unambiguous assessment of issuer's economic intentions.

The conducted studies helped us realise that solvency risk, interpreted as indebtedness, financial leverage and current solvency, is a major source of difference between the two groups of bonds. Changes in indebtedness, i.e., in assets held by foreign investors are apparently the reasons for the higher requirements for issuers from the emerging markets. The second potential determinant of the difference in assessment is the lack of trust in efficient legal solutions allowing for debt recovery when liquidity is lost in emerging market countries. And finally, the higher volatility of the stock markets in Central and Eastern Europe, which increases the value of the conversion option, may encourage issuers to offer induced conversion convertible bonds. Then turbulences in the stock market may make the conversion not possible, putting the issuer in a difficult situation in which it must redeem the debt.

References

Altman E.I. (2005), *An emerging market credit scoring system for corporate bonds*, 'Emerging Markets Review**'**, no. 6(4).

Black F., Scholes M. (1973), *The Pricing of Options and Corporate Liabilities*, 'Journal of Political Economy', no. 81(3).

Boutron E., Hubler J. (2010), *Issuers' Features and Stock Market Reaction to Convertible Bonds Issuance: Evidence from the French Market*, Europlace Institute of Finance, IAE Congrès.

Brennan M., Kraus A. (1987), *Efficient Financing under Asymmetric Information*, **'**Journal of Finance', no. 42(5).

Brennan M., Schwartz E. (1988), *The Case for Convertibles*, 'Journal of Applied Corporate Finance', no. 1(2).

Campbell J., Taksler G. (2003), *Equity volatility and corporate bond yields*, 'The Journal of Finance', no. 58.

Diaz Weigel D., Gemmill G. (2006), What Drives Credit Risk in Emerging Markets? The Roles of Country Fundamentals and Market Co-Movements. 'Journal of International Money and Finance', no. 25.

Fitch Rating (2012), *Treatment and Notching of Hybrids in Nonfinancial Corporate and REIT Credit Analysis. Sector-Specific Criteria*, December 2012, www.fitchratings.co

Fitch Ratings (2013), *Definitions of Ratings and Other Forms of Opinion*, Feb 2013, www.fitchratings.com.

Green R. (1984), *Investment Incentives, Debt, and Warrants*, 'Journal of Financial Economics', no. 13(1).

Isagawa N. (2000), *Convertible Debt: an Effective Financial Instrument to Control Managerial Opportunism,* 'Review of Financial Economics', no. 9(1).

Jalan P., Barone-Adesi G. (1995), *Equity Financing and Corporate Convertible Bond Policy*, 'Journal of Banking and Finance', no. 19(2).

Jensen M., Meckling W. (1976), *Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure*, 'Journal of Financial Economics', no. 3(4).

Kim Y. (1990), *Informative Conversion Ratios: A Signalling Approach*, Journal of Financial and Quantitative Analysis, no. 25(2).

Marszalek J. (2014), *Optimal Decision for Convertible Debt Financing - Some Observations from the American Market*, 'European Financial Systems 2014 - Proceedings of the 11th International Scientific Conference', Masaryk University, Brno, Czech Republic.

Mayers D. (2000), Convertible Bonds: Matching Financial and Real Options, 'Journal of Applied Corporate Finance', no. 13(1).

Moody's New Instruments Committee and Fundamental Credit Committee (2008), *Moody's Hybrid Tool Kit: Limiting Equity Credit in the Capital Structure,* March 2008, www.moodys.com

Standard & Poor's (2012), *Equity Credit For Corporate Hybrid Securities*, www.standardandpoors. com.

Stein J. (1992), *Convertible bonds as backdoor equity financing*, 'Journal of Financial Economics', no. 32(1).

Streszczenie

ISTOTA RYZYKA INWESTYCYJNEGO RYNKÓW WSCHODZĄCYCH. ANALIZA PORÓWNAWCZA AMERYKAŃSKICH I ŚRODKOWOEUROPEJSKICH EMITENTÓW OBLIGACJI ZAMIENNYCH

W niniejszym artykule podjęto próbę identyfikacji czynników determinujących rating kredytowy emitentów instrumentów dłużnych na rynkach wschodzących. Padaniu poddano grupę emitentów obligacji zamiennych z lat 2001-2012, z czego połowa pochodziła z Europy

Środkowej i Wschodniej, natomiast druga część to podmioty amerykańskie. Analiza dotyczyła wyłącznie par obligacji o tym samym ratingu, nadanym przez brytyjską agencje Fitch, która specjalizuje się w analizie rynków wschodniej i centralnej Europy. Przeprowadzona analiza pozwala zauważyć, że istotnym czynnikiem różnicującym obie grupy obligacji jest ryzyko wypłacalności rozumiane przez poziom zadłużenia, stopień dźwigni finansowej oraz płynność bieżącą. Zmiany wartości zadłużenia, a więc posiadanych przez inwestorów zagranicznych aktywów wydają się główną przyczyną wyższych wymagań wobec emitentów z rynków wchodzących.

Słowa kluczowe: *rynek wschodzący, obligacja zamienna, rating, finansowanie*

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Weather Risk Management In The Agricultural Sector Of Poland And In The World

Abstract

Farming is an activity which is heavily exposed to risk. Farmers have to deal daily with the change of weather, crops, and prices, resulting not only in fluctuations in income, but also in the need to incur emergency expenses.

The purpose of this paper is to analyse the available catastrophic insurance dedicated to the agriculture sector, with particular emphasis on compulsory insurance and with a comparison of the insurance systems of other countries and the Polish system. I also examine the level of awareness of Polish entrepreneurs in the agricultural industry of the impact of weather conditions on the business. The methodology used to answer the research question was the CAWI survey and market research.

Despite the mandatory insurance of the selected risks, farmers still do not see the necessity to purchase insurance. The very design of the instrument raises questions, especially about the enforcement system for compliance with the insurance obligation and the type of risk being insured. The low awareness of the impact of weather on agricultural business and the possibility to protect the farm and benefits via the undertaken insurance activities is an undoubted problem in the development of insurance instruments on the market to protect the agricultural sector against adverse weather conditions.

While one can see some similarities when comparing agricultural insurance schemes in different countries, nonetheless it is clear that these systems are significantly different from each other. This difference is justified, as is not

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possible to create a single coherent system which would take into account the economic, social, and cultural differences. Viewed against the background of insurance schemes operating in other countries, the Polish system looks disadvantageous. Given the rapid increase in the number of extreme weather phenomena and their increasing scale there is an urgent need for reforms.

Keywords: *agricultural insurance, compulsory insurance, weather derivatives, catastrophic weather risk management*

1. Introduction

Agricultural insurance is a specific area of insurers' activity. Farming is an activity heavily exposed to risk. Every day farmers have to deal with changes of weather, crops, and prices, resulting not only in fluctuations in income, but also in the need to incur emergency expenses (Ługiewicz, Szymański 2010, p. 179). Agriculture is dominated by damages caused by random events, which frequently take on the character of natural disasters. The relatively high probability of occurrence of adverse weather events and the large amount of potential losses is reflected in the high prices of this type of insurance, which leads to the fact that there is little interest in this instrument.

The purpose of this article is to analyse the catastrophic insurance dedicated to agricultural industry available in Poland, with particular emphasis on compulsory insurance and with a comparison of the insurance systems of other countries and the Polish system. I also examine the level of awareness of Polish entrepreneurs in agricultural industry of the impact of weather conditions on their business.

2. Agricultural insurance in Poland

In Poland, the issue of crop insurance, and its high price, is regulated by law. In addition, insurance companies offer insurance designed specifically for farmers, which allow for additional and voluntary protection of their business.

Problems with the profitability of agricultural insurance are emphasized by the insurance community. In late 2008, the PZU Group announced that it paid more than PLN 150 million due to compensation for drought damage. The amount indicated by the insurer accounted for half of the amount of all premiums collected by the agricultural crops and livestock insurance market (including subsidies from the state budget) (Kaniewski 2010, p.130).

The 5% threshold means that farmers whose operations are exposed to the greatest risk may purchase appropriate insurance solely on market conditions, without using the subsidies provided by the budget. The risk for some types of crops (e.g., tobacco, fruits) is, however, so large that actually the insurer may offer insurance at twice the level.

It is also problematic to determine the amount of damage done by meteorological phenomena. The insurance community indicates that it is difficult to assess the relationship between the potential and actual crop yield. This is due to the fact that the farmers do not keep records of previous years. Those responsible for the valuation of damages are only able to visually assess the amount of losses in relation to the entire acreage (Kaniewski 2010, p.130).

Due to climate change and economic fluctuations the developmental opportunities of farms have become smaller, hence it is important to provide full insurance coverage. Insurance companies, in addition to compulsory insurance, also offer voluntary insurance. These types of coverage include, among others, the insurance of property, livestock, agriculture machinery and equipment, crops, stocks, means of production in agriculture, and crop production in progress (Ługiewicz, Szymański 2010, p. 179).

Insurance of property in farms is complementary to the compulsory insurance of farm buildings. It includes the effects of random events, such as fire, hurricane, hail, avalanche, flood, torrential rains, collapse of the land surface and landslides, lightning, explosion, aircraft fall and the rescue operation carried out in connection with the event, as well as damage caused as a result of theft or burglary or the escape of water from plumbing devices.

Another insurance designed specifically for the agricultural sector is the insurance of crops, fruit trees, fruit bushes and berry plantations, and perennial crops, but only during the years of their planning, and the fruit trees and fruit shrubs in nurseries in the year following their shield budding. The insurance covers damage resulting from hail and flooding in all crops and yields, spring frosts in annual crops sown or planted in the spring before 30 June, and a hurricane in the straw, flax, and hemp during the period of decortication, hop crops, a fire in the tobacco and herbs crops in the technological process of drying, as well as in the cereal crops, oilseed rape and turnip rape (Obstawski 2004, p. 238).

The sum insured is declared by the policyholder and should correspond to the unit price of the crop not higher than the purchase price and the estimated size of the crop in the particular area. The basis for calculating the amount of damages is: surface area of the field on which crops have been damaged or destroyed, and the amount of yield which has been achieved (Obstawski 2004, p. 238).

Due to the polymorphism of farming, insurance companies suggest that people working in agriculture should use insurance and insurance packages to secure pro-agriculture activities, such as agro-tourism. Insurance companies offer comprehensive property insurance for farmers or so-called packages covering fixed and movable assets of the farm, livestock and production in progress (Obstawski 2004, pp. 239-240).

Polish farmers are only mildly interested in insuring crops (so far insurance policies covered mainly such disasters as fire, hurricane, hail, spring frost, flood, and rodent plagues; but not drought). According to industry estimates less than one-tenth of the crop in Poland is insured (one million hectares insured vs. 13 million hectares of crops). For example, only 30,000 to 40,000 farmers, or about 2 percent of the total number of Polish farms, insure their crops with PZU SA, which collects about 80 percent of the premiums for this type of policies. The interest in insurance against disasters increases immediately after the occurrence of weather anomalies, but this increase is short-lived (Obstawski 2004, pp. 239-240).

3. Compulsory insurance

The legislator, taking into account the social and economic considerations and the reality of the danger of large-scale damages, has imposed an obligation on the owners of farms to conclude insurance contracts (Rapkiewicz 2010, p.4). Article 3 of the Act of 22 May 2003 on Compulsory Insurance, on the Insurance Guarantee Fund, and on the Polish Motor Insurers' Bureau provides that liability insurance or property insurance of an entity is compulsory, if an Act or an international agreement ratified by the Republic of Poland imposes an obligation to conclude an insurance contract (Obstawski 2004, p.199).

In Poland, there are two types of compulsory insurance of agricultural activities. All farmers are required to take out the following compulsory insurance policies (Ługiewicz, Szymański 2010, p.183):
1. liability insurance for farmers who own the farm, called farmers' liability insurance,
2. insurance of farm buildings against fire and other hazards, called the insurance of farm buildings.

Compulsory Third Party Liability insurance also applies to agricultural activities and to all motor vehicles travelling on public roads (Obstawski 2004, p.238).

Agricultural insurance is regulated by the Act of 7 July 2005 on agricultural crop and livestock insurance. The crops and farm animals, the risk of damage caused by natural disasters, including floods, are the subjects of insurance listed in the Act. In

the case of crop insurance, the obligation to conclude agreements was imposed on farmers who benefit from the system of direct subsidies. At the same time the Act introduced a mechanism of subsidies from the budget for insurance premiums for both crops and livestock, as well as a target subsidy to cover part of the compensation for the damage caused by drought. The budget for 2010 allocated 300 million PLN for the insurance of agricultural crops and livestock (Rapkiewicz 2010, p.4).

Compulsory insurance contracts should be concluded with a selected insurance company carrying out insurance activities in the field of this insurance. The contract specifies the amount of the guaranteed sum insured or the sum insured which represents the upper limit of the insurance company's responsibility. The contract is concluded for a period of twelve months, and the tariffs and the amount of insurance premiums for compulsory insurance are determined by the insurance company (Ługiewicz, Szymański 2010, pp.183-184).

Under the Act, the scope of the civil liability insurance applies to farmers and those staying in the same household or persons who work on the farm, for damages which result in death, injury, or health disorders; or loss, destruction or damage to property. Responsibility also includes damages incurred with caused by the slow-moving vehicles belonging to the farmer and used in connection with the farm activities (Ługiewicz, Szymański 2010, p.184).

The compulsory insurance system consists of groups of stakeholders encompassing insurers, reinsurers, brokers, insured, and government and supervisory authorities (Łasut 2008, p. 131).

A distinctive feature of the system of compulsory insurance in Poland is the fact that it compulsorily covers direct losses, i.e., the value of the assets of individuals and business entities; and municipal and Treasury property broken down into spheres of risk. The premium is mandatory in all spheres and is levied on the basis of public law liabilities. With the risk estimated at zero or as minimal, the premium rate is low, but it increases with increasing risk. The value of the premium is dependent on the probability of an event, rate of exposure to risk (e.g., the probability of a given depth of a flood or the duration of an event), susceptibility of the property to damage, and the value of the property (Łasut 2008, p. 131).

Mandatory insurance is offered under the policy along with other catastrophic risks, in section II of property insurance, by all legitimate insurers.

Other possible indirect losses resulting from floods (e.g., interrupted business) are insured optionally; in this case the value of the premium depends on the estimated risk of the occurrence of a given event in the area.

Moreover, if farmers receive direct subsidies for agricultural crops they are required to insure at least 50% of their acreage. Insurance is subsidized by the state budget; farmers receive a 50% subsidy for premiums (Kaniewski 2010, p.129). From

1 July 2008, all farmers receiving EU subsidies are required to insure at least half of their crops against damage caused by five risks: floods, drought, hail, adverse effects of winter, and spring frosts. On 16 February 2007 the Polish Sejm urgently adopted amendments to the Act, existing since 2006, on subsidies to crop and livestock insurance. However, the amendments did not satisfy insurance companies, particularly with respect to the participation of the state budget in the payment of compensation (reinsurance). The new government project included an article concerning reinsurance of drought, but it was not in line with the position of the Polish Chamber of Insurance. It defined the share of the state budget only when the amount of compensation payable would be higher than 90% of the premiums from the subsidized contracts than the insurance amount in the total portfolio as a whole, which in practice does not provide any protection for an insurance portfolio. The amendment to the Act assumes that the state's share will account for 60% of the difference between the total amount of compensation payable in a given calendar year with respect to damage caused by drought and the amount representing 90% of total premiums (Jankowski, Wojciechowska 2010, p. 141).

Compulsory insurance protects farmers, and above all their property, against the effects of events such as fire, flooding, torrential rain, hail, snow, lightning, explosion, landslides, subsidence, avalanches, falling aircraft, and a hurricane. A hurricane is defined as wind with a speed over 24 m/s (86 km/h), the effect of which causes massive damage (Article 67, Item No.1, of the Act of 22 May 2003 on Compulsory Insurance).

In Poland, 38% of the population, i.e., 14.6 million people, live in villages and rural areas. Seventy one percent, or 10.4 million people, are engaged in agriculture individually, and the average farm size is 8.3 hectares. It is estimated that 77% of farmers purchase the compulsory insurance, and only 3-4% purchase crop insurance (Jankowski, Wojciechowska 2010, p. 143).

The purpose of compulsory insurance is to raise public awareness about the probability of the occurrence of a hazard, discourage investment in flood plains, stimulate flood protection, assist victims of floods, and reduce the cost of flood damage recovery for taxpayers (Łasut,2008, p. 131). Determining the government premiums at a lower level than calculated by insurance companies may motivate insurance companies to engage in pro-environmental activities. Premium set at too low a level should lead to a lower risk (Jankowski, Wojciechowska 2010, p. 142).

The introduction of the obligation to conclude the insurance contract was designed to transfer the risk of damage caused by natural disasters on insurance companies, but according to data published by the Polish Financial Supervision Authority (KNF), the obligation is not fully implemented. In 2009, individuals who own farms concluded 1,627,819 compulsory insurance contracts for farm buildings, with respect to which a total premium of nearly PLN 375 million was allocated.

However, according to the Statistical Yearbook of the Republic of Poland for the year 2009, published by the Central Statistical Office, in Poland there are 1,807,000 individual farms with more than 1 hectare of agriculture land. This data shows that almost 200 thousand farmers have not concluded insurance contracts, despite the fact that it is compulsory. However, the problem of non-compliance with the obligation to conclude an insurance contract for agricultural buildings is even larger. The obligation to conclude insurance contracts concerns all farmers, not only those who possess a farm with an area exceeding 1 hectare. It is worth pointing out that the analysis of data from the Polish Financial Supervisory Authority (KNF) shows that even fewer farmers conclude the public-liability insurance contracts than contracts for the insurance of buildings. In 2009, according to information published by the KNF, 1,439,391 individuals concluded the public-liability insurance contracts (Rapkiewicz 2010, p.4).

In addition, not all who conclude obligatory insurance contracts for farm buildings will receive full compensation for the damage suffered. The reason for the lower compensation is so-called underinsurance, i.e., a contract for an insured amount which does not correspond to the full value of the building(s). The number of other agricultural insurance contracts, by which the grower can get insurance coverage in case of floods and other accidents, is considerably lower. In 2009, according to the KNF 41,826 crop insurance contracts and 22,998 livestock insurance contracts were concluded (Rapkiewicz,2010, p.4).

The number of compulsory insurance contracts is low (in relation to the number of potential insured), even though non-compliance with the obligation may result in statutory penalties. The competent local wójt (mayor, president) is the authority obligated to conduct an audit of the insurance contracts for farm buildings and agricultural crops, while the starosta (the governor) is the legitimate body. The assessment of a penalty for non-compliance with the insurance obligation falls to the municipality. It is therefore the municipality which is burdened with an inspection and enforcement obligation. A penalty for non-compliance with the requirement of having a farm building(s) insurance contract is the equivalent of EUR 100, and crop insurance - the equivalent of 2 euros per 1 hectare of crops which should be insured. This amount can be considered high for the insured, but one can argue that it is not a potentially significant revenue for the local government and, as indicated by the analysis of the implementation of the budgets of selected municipalities, these insurance obligations are either not enforced, or only to a negligible extent (Rapkiewicz 2010, p.5).

The negligence of municipalities in this area can be considered not only as an infringement, but it may have implications in terms of farmers' reluctance to fulfil their insurance obligations. Actions with respect to the execution of this obligation should be treated as preventive (both in terms of general prevention, that is to all

insurers, as well as specific prevention - to a particular farmer) in terms of fulfilment of the obligation to conclude insurance. Thus, the lack of supervision in this respect in previous years may have led to an increased number of farmers without the required insurance coverage (Rapkiewicz 2010, p.5).

Compulsory insurance is seen as a special form of additional taxation, and arouses widespread scepticism, therefore it is important to analyse the conditions of its (possible) introduction.

It is necessary to intensify education to increase insurance awareness, and not only among farmers. Such actions should be initiated by the public administration and local government units.The costs of such actions would certainly be significantly lower than the public funds spent on dealing with the consequences of natural disasters.

4. The level of awareness of Polish entrepreneurs in the agriculture sector in terms of the impact of weather conditions on economic activity: The CAWI study

Agricultural activity is particularly vulnerable to the adverse impact of both catastrophic and non-catastrophic weather risk. Catastrophic weather risk is the danger associated with the occurrence of extreme weather events such as hurricanes, floods, torrential rain, hail, snow storms or extremely high temperatures. The concept of risk of a non-catastrophic nature is used instead to describe the financial consequences for businesses caused by events such as heat, cold, rain, snow or wind.

In order to determine the level of awareness of entrepreneurs in the agricultural sector in the Lodz region of the impact of weather conditions on their business, a CAWI survey was used to examine the opportunities to insure business against weather risk, and its benefits.

A Computer-Assisted Web Interview (CAWI) is a computer-assisted interview (survey) conducted through a website. It is a method of gathering information in a quantitative survey of a market and public opinion, in which respondent are asked to complete a questionnaire in electronic form.

The survey was sent to 377 agricultural industry entities whose e-mail addresses can be found on the following sites: www.panormafirm.pl, www.pkt.pl, www.eksport-import.pl.

Out of 377 questionnaires sent to companies in the construction industry about 15 respondents filled out the questionnaire. Due to the low response rate, the study was treated as a pilot study. The majority of the respondents (9 responses), when

asked about the nature of their business, checked forestry. The next largest group checked agriculture (6). The least of these entities are engaged in the manufacturing (4). It should be noted that the respondents could choose more than one answer. Figure 1 shows the distribution of the agricultural sector entities participating in the survey by the nature of their business. As can be seen, 66.67% of the surveyed companies employ 11 to 50 employees, 20% - 51 to 200, and 13.33% up to 10.The vast majority of companies (66.67%) have been in business for over 20 years, 20% from 11 to 20 years, the remaining 13.33% checked the interval from 6 to 10 years (see Figure 2).
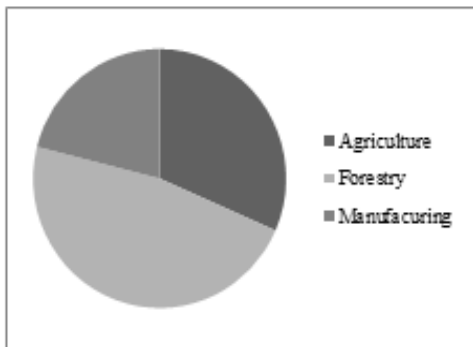
Figure 1. Type of business

Figure 2. Number of years in business
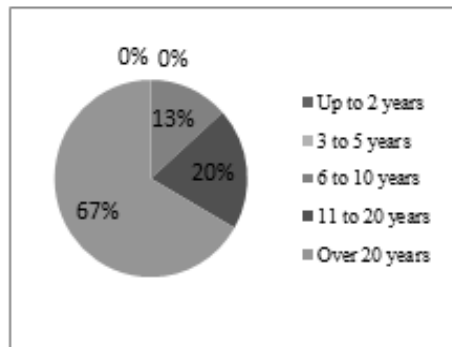
Source: Author's own compilation based on CAWI.

Asked about the form of business, 53.4% of the respondents checked state enterprise, 20% - limited liability company, 13.33% - self-employed, 6.67% - general partnership, and 6.67% - cooperative.

The respondents reported the highest revenues in November (14.5% of responses), October and December (12.9%), March (11.3 %%), April (9.6%), September (8%), February, May and August (6.4%), June (4.8%), July, and January (3.2%).

Figure 3. Months in which entities in agriculture sector achieve the greatest income
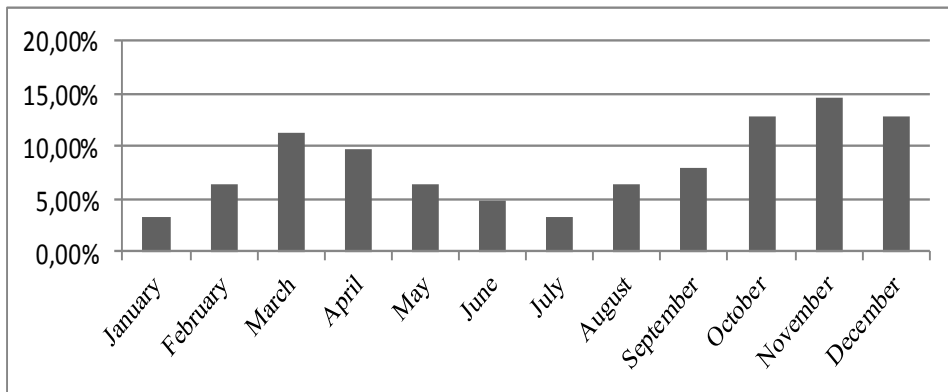
Source: Author's own compilation based on CAWI

During the survey, most of the respondents (53.33%) considered that weather conditions did not affect the company's business activities, while among the factors that may affect the achieved revenues five entities chose weather, (weather conditions were the third most frequently reported factor). The demand for services (10 responses) was the most frequently indicated factor, followed by price (7), promotion and intensity of competition (4 responses each), quality of service (3) and other (seasonality was indicated in 1 response).

Figure 4. The influence of various factors on the revenue in the agricultural industry
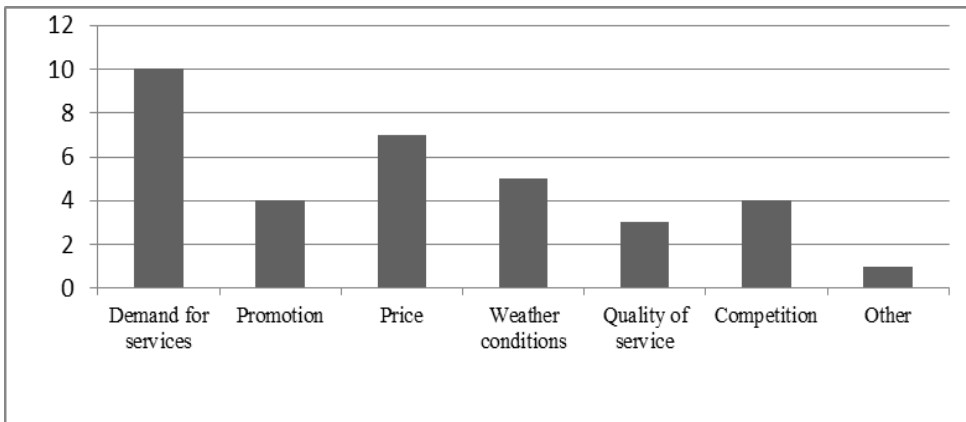
Source: Author's own compilation based on CAWI.

57.14% of respondents indicated that cloudy conditions and little sunlight did not affect the amount of revenue of the company. The next most often indicated factors without impact on the financial result of the company were: the average

monthly wind speed (42.86%), the average monthly rainfall and the intensity of snowfall (14.29%). Only one entity pointed out that the average monthly temperature had a strong impact on revenues.

More than half of the respondents (57.14%) declared that in the history of the company there were weather events of both a catastrophic and non-catastrophic nature.A hurricane was indicated as the main extreme weather event causing harm to entities in the agricultural sector. Other weather anomalies included: flood, storm, drought, snowstorm, torrential rain, and hail, and the losses were mainly at the level of PLN 5,000 to PLN 50,000. One respondent declared a loss of over one million Polish zlotys (PLN). Losses involved destruction or decrease in the value of fixed assets.

Because the losses were "potentially low" or "difficult to prove", 71.43% of entities surveyed did not consider using, nor used instruments to protect against the adverse impact of weather. Two companies insured their business against the "fire and wind" and "random events".

None of the entrepreneurs knew about the concept of weather derivatives and none took advantage of this tool.

Figure 5 shows the distribution of attributes which, according to the respondents from the agricultural sector, should be contained in insurance against the adverse effects of weather. According to the respondents the most important attributes include the ability to negotiate the terms of the contract (28.57%) and prompt compensation (28.57%). The other most frequently-mentioned characteristics were: easy design of the protecting instrument, price, easy access to the insurer, and the possibility to select the insurer (each 14.29%). None of the respondents saw the duration of the insurance contract as a significant attribute.

Figure 5. Attributes of insurance against weather risk
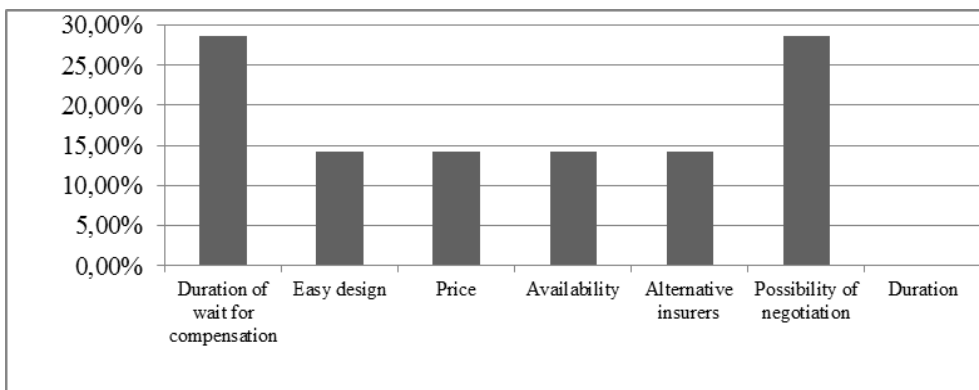
Source: Author's own compilation based on CAWI.

After a thorough analysis of the CAWI results it can be concluded that the operators in the Lodz region agricultural sector declared, on the one hand, that the weather did not affect their business, while on the other hand in the history of their business they experienced catastrophic and non-catastrophic weather events that caused large losses. This dichotomy may be due to inaccuracies in filling out a questionnaire or a lack of awareness of the entities in the agricultural industry of the impact of weather conditions, which is confirmed by the fact of not using insurance instruments.

5. Agricultural insurance systems in selected countries

Comparative analysis of the present agricultural insurance schemes shows large differences between countries. Governments in many countries support the emergence of crop and livestock insurance, treating this as a form of subsidy and support for the development of agriculture. Insurance of basic crops is often mandatory or, in connection with loans to farms, both conventional and partially reimbursed by individual governments. Moreover, every year, governments in many countries establish and manage so-called disaster funds.

In the U.S., there is no insurance for specific risks, but crop insurance covers most of the risks, from the basic coverage or Catastrophic crop insurance (CAT), which guarantees from 50% of the average yield of a farm to up to 80% or 100%. The USA and Canada have also developed crop-revenue insurance and crop-income insurance (Wojciechowska- Lipka, Rojewski 2002).

In the U.S., both crop-revenue insurance and crop-income insurance can be found. As many as 73% of premiums come from revenue insurance products, which include: revenue insurance indexed by surface area, livestock price insurance, livestock gross margin insurance, and insurance of entire household income. Three standard revenue insurance products are Crop Revenue Coverage (CRC), Revenue Assurance (RA) and Income Protection (IP).

About 17 private companies are engaged in crop insurance in the U.S. They work in agreement with the Risk Management Agency (RMA) USDA. About 45% of field production is insured (23% in the EU). The average premium rate is close to 9%, much higher than in Europe (4%), mainly because they offer a wider coverage: crop-revenue insurance or crop-yield insurance versus mainly single risk insurance. Premium subsidy is US$ 1.900 million, or 58% of the total premium. The U.S. government also provides funding for the administrative costs of insurance

companies and provides reinsurance. Total insurance support is 72% of the total premium (in the EU about €500 million = 32% support) (Wojciechowska- Lipka, Rojewski 2002).

In analysing existing insurance schemes in Europe, it's clear that in almost all European countries the most popular form is single risk (mainly hail) insurance. There is a noticeable direct relationship between the involvement of governments and the development of agricultural insurance. Frequently private companies are willing to insure only hail and fire, and with the increase of government involvement, they provide a more comprehensive insurance coverage.

Comparing insurance schemes, it should be noted that with European crop insurance it is necessary to ascertain which risk caused the loss, while the U.S. multi-peril crop insurance (MPCI) covers crop losses due to plagues and diseases, and damages are calculated simply as the difference between the guaranteed and the actual yield. The European system has higher loss-adjustment costs, but it helps to avoid moral hazard, which is one of the major problems of the US insurance system.

In Bulgaria, the Czech Republic, Hungary, Portugal, Slovenia, and Sweden, combined risk insurance is available (as in Poland). For Belgium, Germany, the Netherlands, and the UK hail insurance or single-products insurance are the main products available. Demand for other products is negligible. There is no public support for insurance. In some northern countries, there is either less demand for crop insurance or they are starting to develop their systems (Latvia and Lithuania). In Finland, private crop insurance is less developed, but there is a public "Crop Compensation Scheme" designed to compensate for yield losses after natural disasters (Łozowski, Obstawski 2009, p.190).

In France, the government finances 50% of the purchase of crop insurance. French insurers insure crops only against hail (corn and sunflower also against hurricane). In the case of a natural disaster, in order to receive assistance it is necessary to have a comprehensive property and crop insurance and the minimum loss of a particular crop must be 27%, and 14% for the whole farm (Baranowski 1997, pp.51-52). Also there is a program of assistance in Israel for farmers affected by natural disasters, but it concerns only those who have taken out insurance at least against hail. Insurance of vegetables, fruit, and citrus, bananas, and cotton crops against hail, frost, and flooding is mandatory. In Greece, crop insurance is also compulsory and costs 3% of the turnover of the farm. This insurance protects the crops from the effects of almost all natural risks and the upper limit of compensation amounts to 70% of the damage. In Great Britain and Italy, crops are insured only against hail (subsidized from the state budget in the amount of 50% of the premium); other risks with respect to crops are seen as uninsurable. In these countries assistance to victims of natural disasters is in the form of low-interest loans and subsidies, *ad*

hoc assistance and compensation for loss to crops, tax rebates, deferral of taxes, and taking over social insurance liabilities. This assistance concerns farms affected by natural disasters where the damage exceeds 35% of crops in particular area (Łozowski, Obstawski 2009, pp.192-193).

6. Conclusions

In Poland the conditions which constrain the use of weather-hedging instruments (i.e. catastrophic insurance and weather derivatives) by the agricultural sector involve a very low level of education of the agricultural community with respect to the functioning of financial markets, low awareness of the possibilities of using financial instruments to reduce the adverse effects of fluctuations of weather factors, and lack of large cooperatives (agriculture producer groups) that would make it possible to employ specialists in the fields of trade, marketing, and risks, including weather risk.

Despite the mandatory nature of the insurance of selected risks farmers still do not see the necessity to buy insurance policies. The design of the instrument itself raises serious doubts, especially with respect to the system of enforcement of compliance with the insurance obligation and the type of risk being protected. There is still a large gap in the market in terms of the weather risk insurance offered. On one hand there is no demand for this instrument, and on the other hand owing to the large risk for insurers this niche is not filled out. It should be noted, however, that the adverse impact of weather on the agricultural sector is not a problem of an individual farm. Losses incurred in agriculture affect the entire economy, and therefore it seems necessary to reform the compulsory insurance system. In addition, the government should not confine its actions to creating a system of incentives to protect businesses against adverse weather conditions. For Poland to follow the model of insurance schemes of other countries, it would be more appropriate to abandon certain actions on the part of state institutions, such as financial assistance for uninsured entities in the event of a natural disaster.

In comparing the agricultural insurance schemes in different countries one can see some similarities, however it is clear that these systems are also significantly different from each other. This fact is justified as it is not possible to create a single coherent system which would take into account the economic, social, and cultural differences. Viewed against the background of insurance schemes operating in other countries, the Polish system appears disadvantageous. Given the rapid increase in the number of extreme weather phenomena and their increasing scale there is an urgent need for reforms.

References

Art. 67 pkt. 1 Ustawy z dnia 22 maja 2003 r., o Ubezpieczeniach Obowiązkowych.

Baranowski J. (1997), *Surowy sprawdzian polskich ubezpieczeń rolnych*, 'Fair Magazine', October1997.

Jankowski P., Wojciechowska K. (2010), *Specyfika ryzyka katastroficznego w działalności rolniczej*, 'Ubezpieczenia w zarządzaniu ryzykiem', PTE, Toruń.

Kaniewski T. (2010), *Możliwość zabezpieczenia ryzyk pogodowych*, 'Ubezpieczenia w zarządzaniu ryzykiem', PTE, Toruń.

Łasut A. (2008), *Uwarunkowania możliwości wprowadzenia systemu ubezpieczeń obowiązkowych od skutków powodzi w Polsce, Ubezpieczenia ryzyka katastroficznego*, Akademia Ekonomiczna we Wrocławiu, Katowice.

Łozowski M., Obstawski Z. (2009), *Podstawy budowy Wspólnego Systemu Ubezpieczeń Rolnych w Unii Europejskiej*, [In:] Zeszyty Naukowe SGGW, Polityki Europejskie, Finanse i Marketing No. 2(51).

Ługiewicz I., Szymański M. (2010), *Minimalizacja ryzyka w gospodarstwach rolnych, Ubezpieczenia w zarządzaniu ryzykiem*, PTE, Toruń.

Obstawski Z. (2004*), Rynek usług ubezpieczeniowych*, Uniwersytet Szczeciński, Szczecin.

Rapkiewicz M. (2010), *Ubezpieczenia w rolnictwie a powódź*, 'Gazeta Ubezpieczeniowa', 29 June 2010.

Susza w Polsce ryzykiem nie podlegającym ubezpieczeniu, 'Gazeta ubezpieczeniowa', 31 July 2006.

Wojciechowska- Lipka E., Rojewski K., Rybak L.(2002), *Ubezpieczenie upraw w USA* [In:]Prawo, Reasekuracja, Ubezpieczenia, Warsaw.

www.panormafirm.pl

www.pkt.pl

www.eksport-import.pl

Streszczenie

ZARZĄDZANIU RYZYKIEM POGODOWYM WŚRÓD PODMIOTÓW BRANŻY ROLNEJ W POLSCE I NA ŚWIECIE

Prowadzenie gospodarstwa rolnego jest działalnością w dużym stopniu narażoną na ryzyko. Rolnicy codziennie mają do czynienia ze zmianą pogody, plonów czy cen, czego wynikiem są nie tylko wahania dochodów, ale także konieczność ponoszenia nagłych wydatków.

Celem artykułu jest analiza dostępnych ubezpieczeń katastroficznych dedykowanych branży rolnej, ze szczególnym uwzględnieniem ubezpieczenia obowiązkowego wraz z porównaniem tych ubezpieczeń z innymi krajami oraz zbadanie poziomu świadomości przedsiębiorców branży rolnej na temat wpływu warunków atmosferycznych na prowadzoną działalność.

Mimo obowiązkowego charakteru ubezpieczeń wybranych ryzyk rolnicy nadal nie dostrzegają konieczności wykupu polisy ubezpieczeniowej. Duże wątpliwości budzi sama konstrukcja narzędzia, przede wszystkim system egzekwowania niewywiązania się z obowiązku ubezpieczeniowego oraz rodzaj zabezpieczanego ryzyka. Niewątpliwym problemem w rozwoju rynku instrumentów zabezpieczających przed niekorzystnym wpływem warunków atmosferycznych dedykowanych branży rolnej jest niska świadomość na temat wpływu pogody na prowadzoną działalność oraz możliwości zabezpieczania gospodarstwa rolnego i korzyści płynące z podejmowanych działań zabezpieczających.

Porównując systemy ubezpieczeń rolnych w różnych krajach można dostrzec pewne podobieństwa jednak widać wyraźnie, że systemy te znacznie różnią się od siebie. Fakt ten jest uzasadniony, nie ma bowiem możliwości stworzenia jednego spójnego sytemu uwzględniającego różnice gospodarcze, społeczne i kulturowe. Na tle systemów ubezpieczeniowych funkcjonujących w innych krajach polski system wypada źle, widać wyraźnie, że niezbędne są szybkie zmiany.

Słowa kluczowe: ubezpieczenie rolne, ubezpieczenia obowiązkowe, derywaty pogodowe, zarządzanie katastroficznym ryzykiem pogodowym

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Relational Resources As A Source Of Regional Competitive Advantage. Illustrated By The Examples Of The Lodzkie Voivodship And The Novosibirsk Oblast[1]

Abstract

The paper aims to show relational resources as an increasingly significant factor in the competitiveness of territories. The authors argue that regions trying to increase their competitive position should undertake actions to facilitate the creation of a knowledge base and an institutional environment. This elaboration relies on the resource-based theory, used especially for analyzing relations between an organization and its environment. The paper presents theoretical considerations based on the desk research methodology and worldwide literature. Descriptive characterizations of two cases complete the presentations.

The paper presents examples of two regions from different socio - economic systems, illustrating the role of relational resources in their development policy. These regions are the Lodz Voivodeship in Poland and the Novosibirsk Oblast of the Russian Federation. In their home countries, both of them had a strong economic position before the 1980's, and in the time of today's recession are considered as regions with a slightly above-average potential for growth and good prospects for the development of their economy. Their current competitive positions in the investment market, in comparison with other regions in their countries, are also presented.

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The paper presents evidence that activities aimed at supporting relational resources (innovation policy, cluster development, cooperation between authorities and regional stakeholders) are conducted on a large scale. It also shows the importance given to relational resources in the developmental strategies of both regions. However, determinants resulting from the socio-economic system and regional qualifications in the area of development management provide different opportunities to use these resources in practice.

1. Introduction

The growing trend towards globalization and regionalization forces regions in different parts of the world to take on the increasingly difficult challenge of finding their optimal national or international position, enabling them to compete effectively for mobile growth factors. This position is influenced not only by tangible resources, but increasingly also by knowledge and expertise, as well as the existing relations, i.e. the ties and networks which allow for the transfer and diffusion of knowledge within the region. For the purposes of this paper, we assume that regions operate in the territorial market, where the market constitutes the resource allocation mechanism which allows to employ the concepts of competitiveness-building developed in the corporate sector. The paper concentrates on the so-called relational resources of regions, understood as lasting ties and contacts between entities in the region, as well as ties between regional actors and the external environment. The authors, based on the available literature, provide justification for the fact that in the new paradigm of territorial development, relational resources have become increasingly important, while the role of traditional resources, i.e. tangible ones such as natural resources, transport infrastructure, etc., ceases to be crucial for the success of a region. There are signs that this trend is permanent.

2. Competitiveness of regions from the perspective of the resource-based view

Regional competitiveness is defined as the ability of a region to adapt to changing environmental conditions. We define the region as a meaningful and relevant entity that affects the behavior and performance of local organizations (Boschma 2004, pp.1001-1014). Regions compete with other regions to maintain

or improve their market position. T. Markowski (1996, p. 10) distinguishes two categories of competition. The first, called direct competition, is competition for access to a variety of external benefits, including those offered by incoming investors. It occurs when regions specialize in the same or similar activities and have a strong market position (Boschma 2004, p. 1005). The other category, called indirect competition, includes the activities of regional authorities aimed at creating favorable conditions for the operation of enterprises, which is supposed to translate into better business performance, and consequently, into the entire region's economic results (Markowski 1997, p. 39). In the period of 2014-2020, sectoral regional specializations (the so-called 'smart specializations') have become one of the pillars of the new policy to support regions in the European Union.[2] The obligation to delineate the said smart specializations, imposed by the European Union on regional authorities, has become a pretext for active discussion at the regional level - including in Poland, which has resulted in more precise setting of development directions than in the previous programming period (2007-2013).

B. Winiarski rightly points out that the desire to increase regional competitiveness is an indirect goal of development policy (Winiarski 1999, p. 19). In his view, the realization of this objective to the extent required only opens the way to implementation of the final objectives of regional development policy, formulated taking into account social and environmental premises. It is important that these actions should be reflected in the quality of life of residents and be subordinated to the values recognized by these residents.

S. Korenik and A. Zakrzewska-Półtorak (2011, p. 86) point out that the theories of regional development belonging to so-called 'classical economics' were based on simplifying assumptions. These assumptions include: full access to market information, full knowledge of the situation related to location, lack of impact of institutional factors (e.g.: the regional policy run by the state or the region), excluding technical progress, rationality of decision-making, etc. from the analysis. Modern theories of regional development depart from many of the assumptions, thereby bringing these theories closer to reality. It is assumed that factors of production are non-homogeneous, quality-based competition plays an important role, the market is not perfect, and that deviations from equilibrium lead to a non-standard increase or decrease, causing spatial spread and backwash effects.

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[2] Smart Specialization or RIS3 (Research and Innovation Strategies for Smart Specialization) is a strategic approach to economic development through targeted support for research and innovation. It involves a process of developing a vision, identifying the place-based areas of greatest strategic potential, developing multi-stakeholder governance mechanisms, setting strategic priorities and using smart policies to maximize the knowledge-based development potential of a region, regardless of whether it is strong or weak, high-tech or low-tech, (http://www.nordregio. se/ Publications/Publications -2012/Smart-Specialisation-for-All-Regions/ (Accessed: 14 .07.2014).

In the area of regional development, with the advent of the analysis of transaction costs and externalities, the following areas have become an object of research: cooperation of entities, connection networks and collaboration, i.e. specific assets (Jewtuchowicz 2013, p. 111). Modern theories of regional development highlight the importance of such factors as knowledge and innovation. It is said that a region competes as a whole, in contrast to competing on the basis of individual resources. According to T. Markowski (1999, pp. 102 – 105), in order to be considered competitive in the long term a region as a whole should have the ability for so-called expanded reproduction of intellectual resources, namely the creation of added value, known as a club good. This added value grows, especially in an environment created by networks of operators. These are the so-called positive externalities, or intellectual resources in the form of knowledge, resulting from cooperation between the entities incorporated into the network (Markowski 1999, pp. 102 – 104). In our study we pay special attention to these resources, which we call relational resources.

The **resource-based theory** indicates the important role of resources in the development of an organization (Pfeffer, Salancik 1978). This theory is based on the assumption that organizations are governed by their environments. According to this theory, the analysis of relations between the organizations within a network can help managers to understand the power relations and interdependences occurring between their organization (i.e. a territorial organization) and its institutional stakeholders. Such knowledge allows the management of the organization to anticipate possible centers of influence in its environment and suggest ways to offset their impact. In our paper we use the term "territorial organization", understood as the regional administration along with its leadership (executive authorities of the region). Its primary objective is to ensure that collective needs of residents of the territory or the region are met. The scarcity of public resources, the complex system of competences, and the multitude of institutional stakeholders in the environment that have an impact on the satisfaction of the region's inhabitants require entering into relationships with them in order for a territorial organization to develop. According to this theory, the susceptibility of a territorial organization to the impact of its environment depends on its demand for resources (material, natural, physical, human, social, political, cultural, intellectual/knowledge) (Koliba, Meek, Zia 2011, pp. 87-88), which are needed to stimulate the region's development. In this paper we concentrate on social resources and intellectual resources.[3] We show that regions will not be able to effectively build a long-term sustainable competitive position

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[3] Social resources mean social trust, reciprocity, and durability built up between two or more actors that allow for the development of human knowledge (…). Intellectual/knowledge resources – knowledge, information, intellectual property (…). (Koliba, Meek, Zia 2011, p. 87-88).

without developing strong relationships with their stakeholders (municipalities in the region, NGOs, local business associations, universities, etc.), oriented towards common objectives.

The fact that the resource-based theory is formulated at the level of analysis appropriate to the level of the organization weighs in favor of this theory as the proper theoretical reference for research on the development of regional competitiveness (Hatch 2002, p. 97). It represents the point of view of local authorities and territorial administration management looking to the outside, in the direction of their institutional environment. J. Pfeffer and G. R. Salancik, considered to be the pioneers of the resource-based view, see organizations as coalitions of interests which change the goals and directions of their activity when changes occur in the coalition structure (Hatch 2002, pp. 22–23). Internal coalitions are groups operating within an organization (e.g.: organizational units in regional administration and units subordinated to regional authorities, combining certain functions). External coalitions, on the other hand, include the following stakeholders: residents and their non-profit associations, authorities of other territorial entities, universities, business environment institutions, and other interested parties. The above-mentioned authors attribute a crucial role to external coalitions in influencing the behavior of the organization. They believe that "in order to properly describe the behavior of organizations, the coalition nature of organizations and the way in which organizations respond to pressures from the environment need to be addressed" (Hatch 2002, p. 24).

The first step in taking into account resource dependence is an in-depth understanding of the network of relations in which a territorial organization participates, as well as what resources among those which it brings into these relations are highly valued by its partners, and what resources are scarce, i.e. are sourced from the partners. The second step will be to find ways to avoid dependence on or subordination to other participants in the environment of a given organization (Hatch 2002, pp. 94-95).

Therefore, organizations search for ways to control their dependence on resources. In the case of territorial organizations, headed by public authorities, political resources can be considered as assets, as they can be translated into a more favorable position from which to develop relations with stakeholders. In this theory, emphasis is placed on the environment due to the fact that the survival of a territorial organization ultimately depends on its ability to obtain resources and support from external coalitions. Thus, from the perspective of the resource-based theory, regional authorities offer various incentives to their institutional stakeholders through the development policy they implement, in exchange for the contribution of these organizations in the form of resources which are at their disposal, as well as support in various dimensions, including

the political one. Among the incentives, financial resources from institutions at the central level come to the fore, as their distribution is coordinated by the territorial organization. However, the contribution of various institutional stakeholders is not equally valued by a territorial organization. Hence, coalitions of stakeholders (associations of local governments, business associations or mixed groups integrated in the context of a joint project) have the opportunity to gain a greater influence and control over the territorial organization. In order to maintain the support of external coalitions, the territorial organization needs to negotiate the terms of exchange which will ensure a continuous supply of the desired resources (Hatch 2002, p. 27). At the same time, the organization has to remain flexible enough to be able to react to situations arising from changes in the environment, which is not easy in the existing institutional system of public organizations to which administrative regions belong. The model of resource dependence treats organizations as "structures of coordinated behavior", whose ultimate goal is to obtain from the environment the support necessary to survive (Pfeffer, Salancik 1978, p. 32).

Further reflections will focus on the analysis of selected factors of competitiveness. We have chosen those factors that contribute the most to the development of relations between entities in the region, as well as to building networks and establishing collaboration between these entities, etc. Further considerations are therefore concentrated on the importance of networks and outward cooperation for regional competitiveness.

3. Relational resources and their role in building a region's position in the territorial market

As shown above, regional competitiveness depends on many development resources and the institutional system which allows their use. T. Marszał and T. Markowski point out a general relationship between a region's material resources and its economic development. At the same time, they argue that above a certain level, further development takes place mainly on the basis of intangible resources, e.g. knowledge and expertise (Marszał, Markowski 1998, p. 134).

Intangible resources and the existing relations in a region thus need to be subject to a more thorough analysis in our further considerations. Hence the regional knowledge base will be analyzed first, then the institutional environment and the territorial organization's relations will be considered.

3.1 Knowledge resources in a region as a factor of investment attractiveness

Knowledge and expertise resources are related to the human factor, hence they have the ability to multiply – disseminating and spreading to other organizations. It is also assumed that externalities associated with knowledge are somewhat limited geographically. This means that companies operating in the vicinity of sources of knowledge achieve greater benefits from externalities of knowledge and are likely to exhibit better performance in terms of innovation and higher productivity than companies located elsewhere (Audretsch, Feldman 1996, pp. 630 – 640). Access to information plays an important role in this respect. Thanks to co-location in the region, successful innovations of local companies do not remain unnoticed. In addition they are willingly disseminated, virtually without the need to incur additional costs. This results in the formation of a network, and the more sources of knowledge located in a given area, the greater the benefits for local entities.

It should be noted that a larger number of sources of knowledge in a region usually means a greater amount of (potential) connections with the outside world. It also means more information for each of the local agents, available through additional regional ties. It follows that the benefits of access to the information stream are not limited to a particular region. This happens due to the fact that local partners can benefit from links with the outside world through other local actors.

It should be noted that the effective transfer of knowledge and interactive learning are not just a matter of the existing connections. The ability to absorb knowledge is also important. Local companies having similar expertise in specific areas of knowledge will be characterized by a greater ability to absorb it, as well as the ability to learn from it, than companies from outside the region. This is related to the specific nature of so-called tacit knowledge (Howells 2002, pp. 871 – 884). An effective transfer of tacit knowledge requires a common knowledge base, personal interactions, as well as mutual understanding and trust. This does not mean, however, that geographical proximity is a prerequisite for the transfer of tacit knowledge (Rallet, Torre 1999, pp. 373 – 380). Social networks can also be a media for this transfer. However, due to the fact that social networks are often localized geographically, the resulting effects of diffusion of knowledge tend to also be territorial in nature (Boschma 2004, p. 1006).

For the emergence of new impulses and innovative ideas, a region should provide economic entities with broad access to the so-called universal knowledge base. This means that organizations would have access to diverse but complementary sources of knowledge from the same region, or obtained through cross-regional ties. Therefore, we may define clusters as robust and highly competitive groups of enterprises with a specific business profile as their surrounding institutions (scientific, service oriented, administrative).

Regions may and should initiate and foster cooperative links in the region (clusters) using a number of instruments, such as: organizing training programs, workshops and conferences, undertaking promotional activities aimed at soliciting new enterprises to participate in the cluster, consulting on the preparation of plans for the cluster's development and expansion, and purchasing assets (and intangibles).

In light of the above-presented considerations, it can be concluded that regions can and should play an important role in the innovation process. They can gather knowledge and build a competence base. Not only do they provide access to local and non-local information, they also provide a base where the regional potential, characterized by a high degree of tacit knowledge, is collected, reproduced and transformed through actions and interactions of local actors. This results in a further increase in the level of diversity of the region. This diversity plays a fundamental role, both as a potential source of new products as well as a valuable asset providing complementary capabilities. Thus, the process of knowledge creation and learning has been extended from the level of an organization to the territorial level.

3.2 The region's institutional environment

The above-presented base of knowledge is not enough for the integration of businesses and creation of an interactive learning process. According to Carlsson et. al. (2002, pp. 233 – 245), various mechanisms (e.g.: markets, networks) are necessary to coordinate activities within and among organizations, making an important contribution. In addition to economic entities, there is a wide range of other actors and organizations such as research institutions, universities and other educational units, NGOs, etc., that provide a complementary contribution necessary for the implementation of the innovation process. Regional competitiveness depends not only on the presence of competent organizations within the region, but also on the ability to coordinate the activities of these organizations. It should be particularly emphasized that the more developed are the relations between different parts of the system, the more dynamic the system is.

Transfer of knowledge is undoubtedly the most important relationship in the innovation system. There are different channels through which knowledge can be shared, such as labor mobility and company mergers (Capello 1999, pp. 353 – 365). At the same time, many other mechanisms, such as markets or networks, may be indicated that can facilitate the formation of such ties, enabling knowledge transfer through the previously mentioned channels. Basically, innovative companies can buy the necessary knowledge and other forms of contribution on the market. It is more preferable, however, to acquire

such knowledge through networking relationships that are based on trust and that can bring beneficial results for all the network's participants. The way in which these relationships are managed can be strongly conditioned by the existing institutional environment specific to a region.

It should be emphasized that the intensity and nature of the process of knowledge creation and learning mechanisms, such as the nature of cooperation between companies, are affected by the institutional environment (Edquist 1997, p. 20). The environment usually consists of an independent set of institutions in a particular region. Their actions are often complementary in the sense that the effectiveness of one institution increases the profits of other complementary institutions (Williamson 1998, pp. 104 – 105). The institutional environment characteristic of a given region also influences the intensity of the relations, and hence the degree of interactive learning and economic performance of local companies. There is a quite common view that institutions existing in old, industrialized regions have contributed to the inability to transition from one developmental trajectory to another. This sort of situation is called an institutional closure. At the same time, a regional institutional environment characterized by mutual trust is treated as an added value of a region, which supports processes of learning and innovation.

According to P. Maskell and A. Malmberg (1999, pp. 9 – 25), in this latter type of environment information is transferred much easier if partners have common cultural elements, such as a common language or system of values. This is clearly contrasted with an institutional environment characterized by low levels of social capital, which does not stimulate networking or inter-organizational learning and does not provide a sound basis for carrying out effective market transactions. The level of trust is an important dimension of the efficient formation of partnership relations.

Regions gradually build different types of institutional environments, which act as incentives and selection mechanisms. Institutions affect not only the nature and intensity of the existing relations, but also the capacity of regions to upgrade, transform or restructure specific institutions (including legal and administrative solutions) required for the development of new economic activities (Boschma 2004, p. 1008). Therefore institutions should be flexible and open to change. The implementation of new solutions and their dissemination often requires deep modernization of old institutions, or the establishment of new ones. There is no doubt that the above-mentioned ability of institutions to change significantly affects the long-term competitiveness of regions.

The two previously-mentioned intangible regional resources, i.e. the knowledge and expertise base, as well as regional relational resources, have a positive impact on regional competitiveness in the long term. An institutional

system based on relations is particularly important due to its systemic nature, hence in this paper it has been equated with relational resources. Both of these categories of intangible resources are difficult to mimic or imitate in other regions. Informal institutions (e.g. a culture of mutual trust), resulting from years of tradition or specific determinants of a given region, can serve as one such example. Such institutions cannot be purchased on the market, they also cannot be quickly changed in the process of implementing a development policy. However, consistent efforts of a territorial organization's management towards engaging regional institutional stakeholders in the joint implementation of the development policy may result, in the long run, in the creation of a culture of mutual trust and greater stability in the adopted directions of territorial development.

4. Investment attractiveness of regions and development based on relational resources

Two examples of regions functioning in different socio-economic systems are presented. The liberal market economy system is represented here by a Polish region (the Lodzkie Voivodeship) and the market system with remaining elements of a centrally planned economy is represented by a Russian region (the Novosibirsk Oblast). The choice of the regions to illustrate the processes shown in the paper was purposeful. It was decided to choose regions which used to be leading industrial centers up until the 1980s, and then lost their economic position and fell into decline. After the period of transition they are characterized by an above-average investment attractiveness in their respective countries and by a potential that allows for international growth. The choice was also impacted by the academic entities localized there, represented by the respective authors, and their participation in the project FOLPSEC, fulfilled in 2012-2015 as part of the Seventh EU Program (PEOPLE).

The authors realize that there are substantial differences between typical European regions on the NUTS 2 level and regions in Russia, as in the latter case regions are relatively larger in terms of area and are characterized by a lower population density. Therefore it can be assumed that the direct benchmark for the Novosibirsk region is all of Siberia, as all of Poland is the same benchmark for the Lodzkie Voivodeship. In contrast, the Russian Federation and the entire European Union could also comprise similar benchmarks for the presented regions. Both regions also represent similar competitive advantages, such as their geographical location, education & research potential, and the diverse structure of the regional economy.

4.1 Lodzkie Voivodeship (Poland)

The Lodz region (Lodzkie Voivodeship) consists of an 18,218.95 sq km area and is located in the center of Poland. Its population is 2.5 million and its density is 138 persons/sq km (Local Data Bank 2014). The region emerged in its current shape in 1999, as one of sixteen voivodeships in Poland. Prior to that time there were 49 voivodeships and their considerable fragmentation did not allow for carrying out an effective regional policy. The establishment of so-called 'big regions' was aimed at simplifying economic integration processes with the European Union and at enabling the regions to more fully absorb funds from the EU cohesion policy. Poland became a recipient of such funds at the time it joined the European Union in 2004. In 2014 the Lodz region is one of 274 NUTS 2 regions in the European Union.

The key influence on the economic structure of the voivodeship is exerted by the strong cultural and manufacturing traditions shaped throughout the last century. Already in the 20th century the Lodzkie Voivodeship (especially the metropolitan area and its neighboring area) were considered one of the strongest industrial centers in the country. At that time there were many enterprises operating in the light industries (textiles, clothing), machines, power engineering, wood, metallurgy, graphic arts, chemistry, food and paper. Although over time these sectors have lost their developmental momentum, they are still significant for the regional economy. The industrialization of the voivodeship is not evenly distributed; industry is focused mainly in the big city areas, especially in the Lodz Metropolitan Area. In 2013, 925,303 people were employed in the Lodzkie Voivodeship. It is a traditional typical industrial region, although the recent changes have led to the development of both services and agriculture. In 2003 almost 40% of employees worked in industrial companies. The share of workers in market-based non-financial services, where the index has exceeded 50%, is increasing. Also agriculture has a significant share in gross value added generated in the voivodeship.

The investment attractiveness (Hildebrandt et al, 2014) of the voivodeship has been maintained on the medium level in the country, and this situation has not changed much over the past 10 years – the Lodzkie Voivodeship has remained in its number eight position in Poland (among 16 regions), although the financial crisis which began in 2008 caused a temporary lower position in the ranking for four years. The following regions have the highest positions in the ranking: Śląskie (1), Mazowieckie (2), Dolnośląskie (3), Małopolskie (4), Wielkopolskie (5), Pomorskie (6), Zachodniopomorskie (7). Below the Lodzkie Voivodeship are relatively smaller regions, such as Opolskie (9), Kujawsko-pomorskie (10), Lubuskie (11); and five voivodeships located in the eastern part of Poland:

Podkarpackie (12), Świętokrzyskie (13), Warmińsko-mazurskie (14), Lubelskie (15) and Podlaskie (16). The investment attractiveness analysis has been prepared by the Institute for Market Economics (Instytut Badań nad Gospodarką Rynkową) each year since 2005. The following characteristics of the region comprise the synthetic index that this rating is based on: transport availability, labor resources, market absorption, economic infrastructure, social infrastructure, level of economic development, condition of the environment, public safety level, voivodeship's activity towards investors.

The analysis of social and economic situation shows that the Lodzkie Voivodeship is not an internally integrated area. In many fields its intra-regional disproportions have continued unabated and in some cases even strengthened in the first decade of the 21th century. This has been caused mostly by the voivodeship's uneven economic development, inconsistent infrastructure, weak cooperative links in the economy (particularly at the local level), and a disintegrated system of public intervention. At the same time the region is one of the most promising territories in Poland and has potentially wide possibilities of development in view of the European integration process. The Lodz region's central location and new infrastructure connections create favorable conditions for it to expand its activity and progress into the territory of the whole country. Particularly significant is the fact that the region is situated at the intersection of the two most important international communication routes: east and west (the A2 corridor), as well as of north and south (the A1 corridor). By implementing a multidimensional process of social integration and consolidation of the activities of public and social entities, it is possible to shape Poland's role in Central Europe so that the national social and economic activity, within the scope of the European economic sector, could be concentrated in this region. The main center of this polarization can be the bipolar structure of Warsaw and Lodz (the so-called Central Macro region). This vision, taken as a destination aim for development of the Lodzkie Voivodeship in 2020, presents the region as: *open to the world, with its educated and active society, anarea of competitive economic sector, open to international cooperation, easily available, yet having its own cultural and economic identity* (Development Strategy 2006, p. 13).

The reform of the territorial division introduced in Poland in 1999 provided local self-governmental authorities with many competences in the area of conducting their development policy, and in the following years this competence has expanded. Today it provides regions with a wide array of possibilities for building regional partnerships for development in areas such as: mutual assistance in building and progressing cluster initiatives, engaging socio-economic partners in the process of creating and implementing the strategy for regional development, and progress in international cooperation in terms of generating socio-economic development. It is worth mentioning that the notion of relational resources appears

in the analytical part of the development strategy of the Lodzkie Voivodeship 2007-2020 (Development Strategy 2006, pp. 8-12). In the SWOT analysis, formulated as early as in 2006, most of the same notations can be found in the part which pertains to the region's weaknesses. Thus, it can be seen that this is an area which needs to be improved in the upcoming years. Two notations concern relational resources defined in terms of "opportunities" can be found, which indicates an awareness of their role in development processes among the authorities and administration.[4]

Below we present some examples of knowledge resources and elements of of the institutional environment established in the Lodzkie Voivodeship. This indicates the increasing role of relational resources in the region's development and in its current competitive position.

Selected knowledge resources in the Lodzkie Voivodeship

- Universities and research centers in the Lodz region (34 university-level education institutions). The University of Lodz, Lodz University of Technology and Medical University are among the best in Poland
- Research and development centers established by private investors from different industries (i.e.: B/S/H, Indesit, Fujitsu, Samsung Electronics)
- Effective and resourceful institutional stakeholders in the region (local self-governments, non-profit organizations, businesses) and their mutual links (for example, strong inter-organizational relations between the regional authorities along with their administration and Lodz Special Economic Zone (an independent entity functioning on grounds of separate provisions).
- The potential of the promising regional specializations in the following industries: modern textiles and fashion; advanced building materials; medicine and pharmacy; cosmetics; energy (including renewable energy sources); innovative agriculture and food processing; information technology and telecommunications.

Selected elements of the institutional environment of the Lodzkie Voivodeship

- The consultative organizational structures (bodies) established to facilitate the process of development policy at the regional level (the Scientific Council, the Monitoring Committee, the Regional Territorial Observatory). These involve institutional stakeholders from the public, social and private sector in planning the implementation of the development policy.

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[4] *Development Strategy for the Lodz Region for the years 2007-2013, (2006), file:///C:/Users/ Wawrzyniec/Downloads/dev_strategy_lodz_region_07_20%20(3).pdf , Łódź.* (Accessed: 11 .07.2014).

- Fostering the cluster structure in the region's territory and expanding the clusters to reach beyond the region's administrative borders. The basis of such operations is the Regional Innovation Strategy. It is worth noting that at present there are twelve cluster initiatives operating in the area of the Lodzkie Voivodeship in the following industries: textiles, clothing; food industry; eco-energy, IT and electronics; tourism; construction; and biotechnology. However, they are relatively new structures, which calls their future development into question.

- The infrastructure for enterprise development (the Industrial and Technological Park of Bełchatów and Kleszczów, the Kutno Agro-Industrial Park, the BioNanoPark, the Boruta Zgierz Industrial Park).

- The Lodzkie Voivodeship acquired the majority share of the most important organization in the region's business environment (the Lodz Agency of Regional Development), which is an expression of its intentions to lower its dependence on external entities functioning in the area. This enabled the region to conduct its development policy with the use of this entity, oriented especially towards building relations with the sector of small and medium-sized enterprises.

- The active participation of the Lodz regional authorities in the national structures of regional cooperation (the Convent of Marshals of Voivodeships, the Union of the Provinces of the Republic of Poland) has led to the development of a common position of the 16 regions towards the Polish government and the European institutions. The directors of individual departments in the regional administration participate in cyclical meetings which group together people fulfilling similar functions from all 16 regions in Poland.

- A strong international partnership network, developed over the 15 years of the functioning of the region in its current shape, in the form of partner regions from different geographical areas. The Lodzkie Voivodeship carries out formalized cooperation with 15 regions in the West (Austria, France, Spain, Germany, Switzerland, the United Kingdom, Italy), in the East (Belarus, Russia, the Ukraine) and in the South (the Czech Republic, Hungary).

- Creating the Regional Office of the Lodzkie Voivodeship in Brussels, providing a link with the European Union institutions and regions from other European countries. Representing the Marshal of Lodzkie Voivodeship in the Committee of the Regions in Brussels. Taking part in regional international cooperation organizations.

It is worth noting that many of the above-mentioned activities have been undertaken over the last few years and are directly related to Poland's accession to the European Union, where a participatory approach and relational potential building is a principle popularized as a value added of the EU cohesion policy. This shows how important the conduct of development policy is at both the

European and the national level. Nevertheless, the regional level has been also growing in importance and the creative regional initiatives may strengthen the relational potential of the region.

4.2 Novosibirsk Oblast (Russia)

The Novosibirsk region has a very strong background as it was one of the most dynamically developing territories of the Soviet Union and Russia since the middle of the 20th century. Under the current Russian administrative system, the Novosibirsk region is called the Novosibirsk Oblast and is recognized as a separate entity of the Russian Federation system. During the transition period, the economy of the region faced serious problems, with the output of such dominant industries as machine building and electronics greatly decreased. The region's specialization was changed, and it began to become a center for services, finance and transport activities.

At the beginning of the 21st century, a great deal of effort was put into achieving the region's previous leading positions. The regional economy was modernized towards technical renovation and production of competitive products. These efforts led to rather positive results. According to official statistical data, the GRP of the Novosibirsk Oblast in 2012 was 659.5 billion rubles, and it increased by 10.2% compared to the previous year, with a growth of about 80% in comparison to 2007.[5] More than 230 large and medium sized industrial companies operate in the Novosibirsk region, most of which concentrate their activities in high-tech areas. The region's economy is based on a combination of transport and communications, construction, agriculture, and trade, and its developed industrial sector which is oriented to both the B2B and consumer markets.

The regions GRP rates and its industries' growth in general exceeded the average national level by 30%; hence the position of the Novosibirsk Oblast in Siberia has improved significantly. The growth in construction could be compared with such leading Russian territories as Moscow, Saint Petersburg and Tatarstan (Kolomak, 2014, p.728-740). However, there still are many indicators according to which the region's position is not so attractive. The insufficient development of a business environment is a factor which limits its ability to attract new investors and does not facilitate the growth of local businesses. (Novoselov, Volyanskaya 2014, pp. 312 – 319).

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[5] Администрация Новосибирской области, http:// www.nso.ru (Accessed 20.09.2014).

According to the regional policy of the Russian Government, all territories have to develop strategies of social and economic development projected till 2020. The strategies were prepared by researchers, experts and businessmen and then approved by the regional authorities in 2004-2007. Some examples from the Novosibirsk region's strategy are presented below. They indicate an official understanding of regional positions and problems. We consider them to be a more or less adequate reflection of the existing reality.

At the moment of the strategy's development (2007), the region occupied *leading positions* (top 5 or top 10 among 89 regions) in terms of the following indicators:

- Number of organizations doing research and development,
- Number of small enterprises,
- Number of highly educated people per 1000 persons,
- Production of grain and meat,
- Volume of retail turnover and services,
- Volume of trucking and passenger shipping (by railroads and planes).

The region occupied middle positions (top 30 or top 40) in terms of the following indicators:

- Innovative activities,
- Foreign economic activities.

The region occupied low positions (top 50 or lower) in terms of the following indicators:

- Share of population with low revenues,
- Integrated level of region's relative creditability,
- Density of hard-surface roads.

It should be noted that all the positions listed above were determined according to official statistical data of 2006-2007.

While a great deal of effort has been made since that period and resulted in some improvements, nevertheless the regional economy still suffers serious problems. Some figures showing the regional situation at the end of 2012 are presented below in Table 1.

Table 1. Positions of Novosibirsk Oblast in 2012

Criterion	Place among regions (total number 85)
Space	19
Population	17
Level of unemployment	37
Average monthly income	29
Number of students per 10000 of population	11
GRP per capita	41
Level of investments per capita	44

Source: Федеральная служба государственной статистики (Росстат), http://www.gks.ru/.

It is interesting to note that within the analytical part of the Strategy of the Novosibirsk Oblast only one element was classified as an opportunity for development. This was: "inter-regional and international cooperation and integration". According to the regional authorities, the future development of the regional economy is supposed to be connected with relational resources, and their influence on the region's competitive position will increase. Some examples of knowledge resources and elements of the institutional environment which could be observed in the Novosibirsk Oblast are presented below.

Selected knowledge resources in the Novosibirsk region

- A high number of universities and higher education institutions; 16 state universities, 13 private institutes and 3 military institutes are currently operating in the Novosibirsk region. Novosibirsk State University is one of top four Russian universities, listed in well-recognized international ranking systems (Times Higher Education World University Rankings, QS World University Rankings, Webometrics, Worldwide Professional University Rankings Rank Pro).

- A high number of research units; Siberian divisions of the Russian Science Academy, as well as the Russian Medical and Agricultural Academies are based in Novosibirsk. All areas of research are developed in academic institutes. Some of them – the Institute of Nuclear Physics, the Institute of Catalysis and others – have leading positions in the world.

- Research and educational units and programs of companies operating in different industries; While previous elements of knowledge resources were mainly governed by the state, these units are established by private business.

- Various non-profit and self-government organizations; these units are of both international and local origin. Though they do not play a crucial role in the regional development at this time, they have a rather high potential.

It is possible to define three main competitive advantages of the Novosibirsk region. They are as follows:

- High research educational potential based on the concentration of academic activities. Convenient geographical location in the center of Russia at the intersection of important transportation routes.
- Diverse structure of its regional economy, which creates favorable conditions for the development of different industries from agriculture to construction and transport.

All the above-mentioned advantages are reinforced by the important role of small and medium-sized businesses and a well-developed banking system. It should also be noted that Novosibirsk is a well-known IT center, with many worldwide known companies. High tech companies located in the Novosibirsk Oblast provide 75% of all means of disease diagnostics produced in Russia, 60% of X ray equipment and about 90% of software for hosting virtualization.

Innovative development is one of the main regional activities. An effective regional innovative system is being constructed, which includes: technical and research education; a knowledge generation system; infrastructure for innovations; a system of state support for innovative business; and other elements (Kravchenko, Untura, 2011, pp. 253-255).

The oblast's regional development is associated with the creation of several clusters which should support significant growth. The region's strategy covers the creation of such clusters in the transport-logistics, construction, electro-technical and electro energy machine building and consumer sectors.

Based on the examples mentioned above, it is possible to conclude that knowledge resources could be considered one of the main drivers of the regional economy. A special institutional environment is required for this type of development, some elements of which are already being developed.

Selected elements of the Novosibirsk region's institutional environment

- A number of special bodies established by the regional authorities in order to support innovative development (councils, committees, etc);
- A set of official documents approved in order to facilitate the regional economy, including cluster development (strategies, programs, etc.);
- A diverse infrastructure for innovations in the form of several technoparks ("Academgorodok", "Novosibirsk", a biotechnopark) and special areas for innovations;
- A diverse infrastructure for the development of industrial production, represented by a logistic and industrial park and special logistic centers;

- A number of activities have been undertaken by the regional authorities in order to promote extended cooperation at the regional level and at the level of companies (exhibitions, conferences, workshops, etc);

It is difficult to find any other industrial center in the Eastern part of Russia where all the competitive advantages which are deemed important from the long term perspective are combined. However, it should be noted that they are not being used yet. Positive regional development is impossible without inter-regional cooperation and integration. It should be pointed out that effective regional development requires significant investments. Total investments in the economy and the social sphere of the Novosibirsk Oblast reached 174.6 billion rubles in 2013. The level of foreign investments was about $859.5 million, which is 111.4% of the 2012 amount.[6] The investment rating of the region, estimated by the well-known Russian agency Expert RA, is assessed as 2B, which means medium investment potential and moderate risk.[7] Many investment projects concerning the logistics, energy, high tech and retail sectors have been implemented in the region in recent years.

Relational resources, partnership cooperation, and formal and informal integration are very important for the competitive position of the Novosibirsk Oblast. Each large scale industrial enterprise can be characterized by a system of complicated partnership relations. A number of business associations (BA) are currently operating in the region. Our research results show that BA membership helps leading firms to use and to improve their market power (Yusupova 2012, p. 78). We have found that BAs also help to develop small innovative businesses, as they provide informational support and different opportunities.

5. Conclusions

The competition between regions for mobile growth factors is a challenge for their authorities and administration. Regions today operate in a dynamic market environment, which stimulates them to create and pursue their competitive position in both the national and international dimensions. A region's relational resources have become increasingly important in creating this position. Regions should gather knowledge and build their competence base. They should provide access to local and regional information and provide a base where the regional potential is collected, reproduced and transformed through the actions and interactions of local actors.

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[6] Администрация Новосибирской области, http:// www.nso.ru (Accessed 20.09.2014).
[7] Стратегия социально-экономического развития Новосибирской области до 2025 года, http:// www.nso.ru/page/2412 (Accessed 20.09.2014).

A region's competitiveness also depends on its ability to coordinate the activities of different organizations – its institutional stakeholders. The more developed the relations are between different parts of the system, the more dynamic the system is. Therefore, regions should build their institutional environment emphasizing both its incentives and mechanisms. These are institutions which affect the nature and intensity of the existing relationships and the ability of regions to modernize, transform and restructure certain legal institutions and administrative solutions.

The two selected cases of regions definitely have some common features. At the same time, these regions develop in a different environment. It has been mentioned that the Polish economy is strongly influenced by the EU regulation, and by rules and models which have proved effective in the countries of Western Europe. Siberian regions in general, and the Novosibirsk Oblast in particular, are developing more or less independently; they do not receive much support from the federal government and are rather flexible. It should be noted that most elements of knowledge resources and the institutional environment are, in the case of Russia, represented by public entities. The role of private business and capital at the moment is rather modest. The Polish situation is quite different, as it has significantly strengthened its knowledge base and the institutional environment thanks to support from the EU. The financial support, as well as the support in the form of diffusion of experiences between regional administrations from different states and regions and its institutional stakeholders, has resulted in improved competence in this field.

A certain role of relational resources in economic development can be perceived in the case of the Novosibirsk Oblast. In its long-term development strategy and the dimension of national and international cooperation was observed as one of three "possibilities" included in the SWOT analysis in the strategy prepared in 2007. The development of the second-after-Moscow academic center, and its attempt to combine its potential with business is impressive. However, there has not been enough space for governance processes in economic development in the investigated case. The Lodzkie Voivodeship in Poland has proved its commitment to creating many links with institutional stakeholders within the region, at both the national and international levels. It is worth noting that the international position of the region may be strengthened by its attempts to integrate with the neighboring region – Mazowieckie. The coordination of functional links between the two regions will result in a strong bipolar European macro region.

Both cases demonstrate the growing importance of relational resources. Nevertheless, the determinants derived from the socio-economic system of each country result in different possibilities in terms of their use of relational resources in practice.

References

Audretsch G. B., Feldman M. (1996), *Spillovers and the geography of innovation and production*, 'American Economic Review', vol. 86.

Boschma R. A. (2004), *Competitiveness of Regions from an Evolutionary Perspective*, 'Regional Studies', vol. 38, no 9.

Capello R. (1999), *Spatial transfer of knowledge in high technology milieu: learning versus collective learning process*, 'Regional Studies', vol. 33.

Carlsson B., Jalobsson S., Holmen M., Rickne A. (2002), *Innovation systems: analytical and methodological issues*, 'Research Policy', vol. 31.

Стратегия социально-экономического развития Новосибирской области до 2025 года, http://www.nso.ru/page/2412

Development Strategy for the Lodz Region for the years 2007-2013, (2006), file:///C:/Users/ Wawrzyniec/Downloads/dev_strategy_lodz_region_07_20%20(3).pdf , Łódź.

Edquist C. (1997), *Systems of innovation approaches. Their emergence and characteristics*, [in:] C. Edquist (ed.), *System of Innovation. Technologies, Institutions and Organizations*, Pinter, London.

Федеральная служба государственной статистики (Россстат) (2014), http://www.gks.ru/

Hatch M. J. (2002), *Teoria organizacji*, Wydawnictwo Naukowe PWN, Warszawa.

Hildebrandt A., Nowicki M., Susmarski P., Tarkowski M., Wandałowski M. (2014), *Investment attractiveness of regions and sub-regions in Poland*, M. Nowicki (ed.), Instytut Badań nad Gospodarką Rynkową, Warsaw.

Howells J. R. L. (2002), *Tacit knowledge, innovation and economic geography*, 'Urban Studies', vol. 39.

Jewtuchowicz A. (2013), *Terytorium i współczesne dylematy jego rozwoju*, Wydawnictwo Uniwersytetu Łódzkiego, Łódź.

Koliba C., Meek J. W., Zia A. (2011), *Governance Networks in Public Administration and Public Policy*, CRC Press-Taylor&Francis Group, Boca Raton, London, New York.

Kolomak E. (2014), *Эволюция пространственного распределения экономической активности в России,* GSOM Emerging Market conference: business and government perspectives : International conference, (October 16-17, 2014), St. Petersburg, Russia: Conference proceedings, St. Petersburg University, Graduate School of Management, St. Petersburg.

Korenik S., Zakrzewska-Półtorak A. (2011), *Teorie rozwoju regionalnego – ujęcie dynamiczne*, Wydawnictwo Uniwersytetu Ekonomicznego we Wrocławiu, Wrocław.

Kravchenko N. A., Untura G. A. (2011), *Possibilities and Prospects for Siberia's Innovative Development*, Regional Research of Russia, Vol. 1, No. 3.

Local Data Bank (2013, 2014), http://stat.gov.pl/bdlen/app/strona.html?p_name=indeks.

Markowski T. (1996), *Instytucje i instrumenty wzrostu konkurencyjności regionów*, Zespół Zadaniowy ds. Rozwoju Regionalnego w Polsce, Warszawa.

Markowski T. (1997), *Konkurencyjność i współpraca wewnątrzregionalna podstawą nowoczesnej polityki rozwoju regionalnego*, [in:] Mikołajewicz Z. (ed.), *Podstawowe problemy polityki rozwoju regionalnego i lokalnego*, Opole.

Markowski T. (1999), *Zarządzanie rozwojem miast*, Wydawnictwo Naukowe PWN, Warszawa.

Marszał T., Markowski T. (1998), *Konkurencyjność regionów jako element polityki przestrzennej*, [in:] T. Marszał (ed.), *Współczesne problemy rozwoju regionalnego*, KPZK PAN z. 180, Warszawa.

Maskell P., Malberg A. (1999), *The competitiveness of Firms and Region. 'Ubiquitification and the Importance of Localized Learning',* 'European Urban and Regional Studies', vol. 6, no 1.

Novoselov A., Volyanskaya T. (2014), *Problems of Market Infrastructure Development in the Regions of Siberia*, [in:] A. S. Novoselov, V. E. Seliverstov (eds.), *Local Production Systems and Regional Development*, Russian Academy of Sciences – Siberian Branch, Novosibirsk.

Pfeffer J., Salancik G. R. (1978), *The External Control of Organizations: A resource dependence perspective*, Harper & Row, New York.

Rallet A. Torre A. (1999), *Is geographical proximity necessary in the innovation networks in the era of the global economy?,* 'GeoJournal', vol. 49.

Williamson O. E. (1998), *Ekonomiczne instytucje kapitalizmu*, Wydawnictwo Naukowe PWN, Warszawa.

Winiarski B. (1999), *Konkurencyjność: Kryterium wyboru, czy kierunek strategii i cel pośredni polityki regionalnej?*, [in:] M. Klamut (ed.), *Konkurencyjność regionów*, Wydawnictwo Akademii Ekonomicznej im. O. Langego we Wrocławiu, Wrocław.

Yusupova A. (2012) *Cooperation between companies: types, forms and links with innovative behaviour*, [in:] D. Filipovic, A. G. Urnaut (eds.), *Economic and social development, book of abstracts 1st International scientific conference*, Frankfurt am Main, 12-13 April, 2012, Varazdin development and entrepreneurship agency, Faculty of Commercial and Business Sciences, Varazdin-Celje.

Streszczenie

ZASOBY RELACYJNE JAKO ŹRÓDŁO PRZEWAGI KONKURENCYJNEJ REGIONÓW NA PRZYKŁADZIE WOJEWÓDZTWA ŁÓDZKIEGO ORAZ OBWODU NOVOSYBIRSKIEGO

Artykuł ma na celu pokazanie zasobów relacyjnych, jako nabierającego na znaczeniu czynnika konkurencyjności terytoriów. Autorzy starają się wykazać, że regiony chcące zwiększyć swoją przewagę konkurencyjną powinny podejmować działania, aby ułatwiać tworzenie bazy wiedzy oraz otoczenia instytucjonalnego. W artykule oparto się na teorii

zależności od zasobów, wykorzystywanej zwłaszcza dla analizowania relacji pomiędzy organizacją a jej otoczeniem. Opracowanie ma charakter teoretyczny z wykorzystaniem metody desk research przy użyciu szerokiej, światowej literatury przedmiotu. Rozważania kończy prezentacja dwóch deskryptywnych studiów przypadku.

W opracowaniu przedstawiamy przykłady dwóch regionów z różnych systemów społeczno – gospodarczych, ilustrujące rolę zasobów relacyjnych w ich rozwoju. Są to: Województwo Łódzkie z Polski oraz Obwód Novosybirski z Federacji Rosyjskiej. Oba regiony posiadały silne pozycje gospodarcze do lat 90-tych XX w., a obecnie, po okresie recesji, uważane są za jednostki posiadające nieco ponadprzeciętny potencjał rozwojowy w swoich krajach oraz dobre rokowania co do rozwoju gospodarki. Pokazano ich aktualne pozycje konkurencyjne na rynku inwestycyjnym na tle innych regionów z ich macierzystych krajów. Zaprezentowano dowody na to, że działania zorientowane na wspieranie zasobów relacyjnych (polityka innowacyjności, rozwój klastrów, współpraca władz z interesariuszami) są prowadzone z dużym rozmachem.

Pokazano również, jakie znaczenie nadano zasobom relacyjnym w strategiach rozwoju obu regionów. Natomiast uwarunkowania wynikające z system społeczno -gospodarczego oraz kompetencje w zakresie zarządzania rozwojem dają różne możliwości wykorzystania tych zasobów w praktyce.

Słowa kluczowe*: konkurencyjność regionu, zasoby relacyjne, instytucje ekonomiczne, regionalni interesariusze*

PATRYK KOWALSKI[*]

Taxing Bitcoin Transactions Under Polish Tax Law

Abstract

Recent years have witnessed the emergence of digital currencies–digital representations of value which are transferred using IT technologies and used as a medium of exchange but are not recognised as official means of payment. Bitcoins are one of such currencies and their popularity in Europe and in Poland has been growing. Hence it is a good time to consider to what extent Polish law is prepared to face the phenomenon and what potential problems may arise from it for the judicial system. The main objective of the paper is to analyse Polish tax regulations in the context of bitcoin transactions, as broadly understood.

Keywords*: bitcoin; tax; transactions; polish tax law; virtual currency; digital currency; PIT; CIT; VAT; PCC*

1. Introduction

In the era of progressing digitalisation and globalisation a multitude of processes have changed traditional market mechanisms, including the 'money' used as a means of payment. Although cashless transactions have become common nowadays, digital currencies and Bitcoin (hereinafter BTC, or cryptocurrency), as their most famous representative, are considered a specific *novum*. That acompletely intangible currency, which exists only on the Internet and does not represent the currency of any particular country, would be accepted across the world as a means of payment would have been unthinkable until very recently.

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Bitcoin, Litecoin, Dogecoin are examples of digital currencies which, in accordance with the definition of the European Central Bank (hereinafter ECB) (European Central Bank 2012), operate in virtual space and are used to buy goods and services. BTC is becoming more and more popular as it can be exchanged into traditional currency without any supervision by public authorities and is independent of inflation.

As K. Zacharzewski rightly notes, the inclusion of digital currencies into the dictionary of typical law terms is of paramount importance. Considering the characteristics and practical relevance of bitcoin we can certainly declare that the phenomenon will soon pose huge problems for law enforcement institutions. This paper is an introduction to the considerations concerning the position of digital currencies–with BTC used as an example - in the reality of public law and, more precisely, tax law (Zacharzewski 2014, p. 1132)

Taxes and the laws that regulate them have important impacts on economic processes at both the macro- and micro-economic levels. Statutory laws and regulations may not act to destroy the sources of taxable income, in particular those relatively new ones such as revenue from transactions in digital currency, used in the broad sense. That precludes a state from effectively implementing its public tasks and leads to taxpayers' non-compliance with theirs tax obligations. In order to determine the practices applied by tax authorities vis-à-vis taxpayers receiving income from trading in digital currency, we need to analyse the present legal situation.

2. Taxing bitcoins

We may surely conclude that transactions in bitcoins are taxable in Poland. Although Polish tax laws lack explicit wording to that effect, the interpretations of tax law and the letter by the Minister of Finance of 4 April 2013[1] are indicative of it. The letter starts with an important thesis, which confirms what could be otherwise doubtful; that transactions in bitcoins are legal: *(...) the presence and transactions in virtual currencies in the territory of the Republic of Poland infringe neither Polish nor European law.* The legality of such transactions is important, as it means they are in principle taxable, as the provisions of selected tax laws, such as Art. 2 para. 1 p. 4 of the Personal Income Tax Act (hereinafter: PIT Act)[2], Art. 2 para. 1 p. 3 of the Corporate Income Tax Act

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[1] Statement by the Minister of Finance of 28 June 2013 FN/FN-7/602/WOS/4-3/2013/RD-64616/2013, http://senat/gov/pl

[2] Act of 26 July 1991 on Personal Income Tax (Dz.U.2012.361 consolidated tax with amendments).

(hereinafter: CIT Act)[3], and Art. 6 p. 2 of the Goods and Services Tax Act (hereinafter: GST Act)[4] stipulate only that actions which may not be subject to legally binding contracts are not taxable. Tax interpretations share the view of the Minister of Finance and clearly indicate that: *(…)Revenue from the sales of Bitcoin currency purchased by the Applicant shall constitute revenue from property rights (…)Acquired income shall be taxed on general terms (…)*[5] and *(…)the transfer of electronic Bitcoin money acquired through a website creates a tax obligation for such a transaction taxable in accordance with the goods and services tax.*[6]

As we can see, transactions in virtual currencies are interpreted broadly. However we may distinguish three facts connected with them which potentially lead to tax obligations: mining, exchange, and purchase of goods or services. Each of them requires a separate discussion with respect to their substance and the tax obligations that it may imply.

3. Mining bitcoins

Logically we should start the legal analysis of the above presented issues with mining, which is one of the ways of acquiring the currency. The word *mining* as used here is an analogy to gold mining. However, the term means making the computing power of the user's computer available to the network, i.e. *a sort of dispersed equivalent of the central bank* (Rosłan, Stolarski 2014, p.271) The amount of digital coins acquired by a single user depends on the computing power he/she contributes into the network in relation to the denominator (total computing power of the network). Having successfully completed this cryptographic part of the process, a receiving party obtains a certain digital value referred to as the BTC nonce. This fact raises questions concerning the emergence of tax obligations. In this case a tax obligation in this case does not emerge in the area of income taxes, and even less in the realm of the tax on goods and services or the tax on legal acts. Pursuant to Art. 11 para.

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[3] Act of 15 February 1992on Corporate Income Tax (Dz.U.2014.851 consolidated tax with amendments).

[4] Act of 11 March 2004 on the Goods and Services Tax (Dz.U.2011.177.1054 consolidated tax with amendments).

[5] Interpretation of the Director of Tax Chamber in Warsaw of 25 February 2014, No. IPPB2/415-842/13-2/MK.

[6] Interpretation of the Director of Tax Chamber in Poznan of 8 January 2014, No. ILPP1/443-912/13-2/AW.

1 of the PIT Act and Art. 12 para. 1 pts. 1-2 of the CIT Act revenue means, *inter alia*, money, financial resources and the value of benefits received or left at the disposal of a taxpayer. According to the Polish Language Dictionary[7], the word *receive* means we have been given something or that something is due to us. Mining digital currency consists in actions leading to the production of currency using the computing power of the computer. Thus, it may not be concluded that one receives BTC.[8] Moreover, the mechanism of mining bitcoins does not belong to any of the catalogues of taxable actions listed in Art. 5 of the GST Act or Art. 1 of the Tax on Legal Acts Act (hereinafter: TLA Act)[9].

4. Exchanging bitcoins

The second fact, more prominent than mining under the tax law, is the exchange of bitcoins. Exchange is the second way of acquiring the digital currency. One must bear in mind that BTC are not a currency, money or means of payment, not even goods in the meaning of foreign currency or banking law (Kowalski 2014, pp. 9-12). Thus the exchange may not be compared by analogy to, for example, the exchange of euro into Polish zloty or US dollars into pounds sterling. Under the civil law it is a sales transaction of bitcoins (an intangible good) paid with money in Polish or foreign currency. Such sales can be concluded mainly via Internet exchanges, e.g., *htpp://bitmarket.pl, htpp://bitbay.net*.

From the point of view of personal income tax law such an exchange of bitcoins generates revenue pursuant to Art. 9 of PIT Act. The party obliged to pay the tax is in this case the seller of the cryptocurrency, who receives money taxable as income. The practice of tax authorities clearly classifies the above action as a paid disposal of property rights in the meaning of Art. 10 para. 1 pt 7 of PIT Act and Art. 18 of PIT Act[10] linked with it. Under civil law, property rights are closely linked with the economic interests of the entitled individual. Art. 18 of the PIT Act lists revenues by types which are considered revenue from property rights. These include, *inter alia*, revenue from: copyright, related rights, trade marks and paid

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[7] The term: "receive" (in:) Polish Language Dictionary SJP, http://sjp.pl/otrzyma%E6.

[8] The same interpretation of the word in the context of the PIT Act can be found in: Bartosiewicz A., Kubacki R., *PIT. Komentarz*, LEX, Warsaw 2014.

[9] Act of 9 September 2000 on the Tax on Legal Acts (Dz.U.2015.143 consolidated tax with amendments).

[10] Interpretation of the Director of the Tax Chamber in Poznan of 2 October 2014, No. ILPB2/415-741/14-2/TR, Interpretation of the Director of the Tax Chamber in Warsaw of 26 June 2014, No. IPPB1/415-276/14-4/EC, Interpretation of the Director of the Tax Chamber in Warsaw of 25 February 2014, No. IPPB2/415-842/13-2/MK.

disposal of the above rights. Nevertheless we must remember that the wording used here unambiguously indicates that the above catalogue is not exhaustive. By the same token, the doctrine points to other sources of revenue not explicitly enumerated by the law, but which may generate revenue from property rights: paid disposal of an object or right, remuneration for services, remuneration for the sales of goods, or a dividend. Digital currencies meet the conditions of the above classification and revenue from their sales constitutes revenue from property rights (Bartosiewicz, Kubacki 2014).

Revenue from the exchange of bitcoins into other currencies, treated as revenue from the disposal of property rights, shall cumulate with the other revenue of a taxpayer received in a fiscal year. It is taxed at an 18 % tax rate calculated on an income of PLN 85,528, and at a 32% tax rate for incomes exceeding the above amount. The taxpayer's income is calculated on general principles, as the PIT Act does not include any specific provisions concerning the costs involved in receiving income from property rights. Art. 22 para. 1 of the PIT Act stipulates that the cost involved in receiving income includes costs incurred to receive revenue and to retain or secure revenue sources, with the exception of costs exempted by virtue of Art. 23 of the PIT Act. Hence, in order to calculate the income from the exchange of bitcoins, we must determine taxable base by deducting from the revenue the costs incurred to receive it, insofar as they are rational, economically justified and properly documented. The present position of tax authorities[11] when it comes to documenting costs involved in purchasing bitcoins in Internet exchanges from anonymous sellers is liberal, as a bank transfer confirmation suffices to document the transaction.

Exchanging bitcoins into a currency also generates revenue under the corporate income tax regime. The CIT Act does not distinguish between the sources of revenue, thus pursuant to Art. 7 of the CIT Act in principle any income received by a taxpayer is taxed. With respect to the tax rate, the general provisions of Art. 19 of the CIT Act apply, which have established the rate as 19% of the income.

To finalise the analysis of Polish regulations concerning income tax in the context of exchanging bitcoins into other currencies, we should also take into account the situation when one of the parties is based outside of Poland. Under such circumstances, the applicable legal act is a concrete double taxation treaty concluded between the two states in which the parties to the BTC transaction are either based or domiciled. The majority of treaties signed by Poland include a provision stating that income, independently of where it has been achieved,

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[11] Interpretation of the Director of Tax Chamber in Warsaw of 26 June 2014, No. IPPB1/415-276/14-4/EC.

shall be taxed only in the country where the taxpayer is either domiciled or based. For instance, dollars transferred by an entity based in the U.S.to a Polish resident for bitcoins shall be taxed only in Poland pursuant to the act on appropriate income tax. This regulation has its roots in Art. 21 of the OECD Model tax convention on income and on capital, which has become the paragon for agreements between countries. Art. 21, entitled "Other Income", applies to situations when two conditions are met concurrently: income has been recieved by a resident of one of the state parties to the treaty, and the income is not covered by the provisions of any other article of the Convention (Ciszewski, Napierała 2010, p.1098). The fact that income from the sales of bitcoins is covered by Art. 21 of the Convention and international treaties based on it is also confirmed in the position of tax authorities.[12]

Exchanging bitcoins into another currency also involves consequences in the area of the tax on goods and services, when at least one of the parties is an entrepreneur. Pursuant to Art. 5 of the GST Act the tax is payable on: supplying goods for remuneration, rendering services for remuneration, exports and imports of goods as well as intra-Community supply or acquisition of goods. According to the above classification a bitcoin shall be considered a service. Firstly, a cryptocurrency is not a merchandise within the meaning of the Goods and Services Tax Act, since it does not comply with the definition of a merchandise laid down in Art. 2 pt. 6 of the GST Act, which interprets goods as objects, parts of objects and energy. Bitcoins may not be assigned to any of the above categories as they are immaterial, which differs them from objects in the meaning of the civil law. Secondly, the definition of services outlined in Art. 8 of the GST Act states that rendering a service means any service for a private individual, legal entity or a unit without any legal form different than the supplies of goods, including, *inter alia*, the transfer of rights to intangibles. The above understanding of cryptocurrencies is recognised by tax authorities in several interpretations.[13] In the case of bitcoins sales the purchaser, he becomes a VAT taxpayer who pays a net price with an added tax of 23%.

The above legal concept raises no doubts since Internet transactions in immaterial goods (e.g. the purchase of subscriber rights to individual accounts at various Internet platforms) are effected in large numbers. What worries taxpayers is the absence of a total VAT exemption for BTS exchange transactions, an exemption which would be due to their specific affinity to currencies and means of payment which enjoy an entitlement to the exemption. Pursuant to Art. 43 para. 1 pt 7 of the

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[12] Interpretation of the Director of the Tax Chamber in Warsaw of 26 June 2014, No. IPPB1/415-276/14-4/EC.

[13] Interpretation of the Director of the Tax Chamber in Poznan of 21 October 2014, No. ILPP1/443-626/14-2/HW, Interpretation of the Director of the Tax Chamber in Lodz of 7 April 2014, No. IPTPP2/443-52/14-6/IR.

GST Act, transactions, including intermediary transactions, in currencies, banknotes, and coins used as a lawful means of payment are exempted from VAT. In addition, Art. 43 para. 1 pt 40 of the same Act exempts services consisting of depositing the means of payment keeping accounts, all forms of payment transactions, money transfers, debts, cheques, bonds and intermediary services in rendering the above.

Requests for an individual interpretation list various arguments in favour of VAT exemption for bitcoin transactions, due to the fact that digital currencies are very close in their status to fully-fledged means of payment. In the Interpretation of the Director of the Tax Chamber in Lodz of 7 April 2014, No. IPTPP2/443-52/14-6/IR the applicant argued that Bitcoins should be considered a means of payment. He invoked the position of the Minister of Finance, who concluded in his statement that digital currencies are legal in Poland and used as a contractual means of payment. It was argued that in consequence of the above reasoning, transactions in cryptocurrency are not subject to the VAT tax as Art. 43 para. 1 pt 7 of the GST Act does not exclude contractual means of payment. In the Interpretation of the Director of Tax Chamber in Katowice of 14 November 2013, No. IBPP2/443-762/13/Icz the applicant compared bitcoins to vouchers and money bills as they play an identical role and exempt digital currency from tax obligations the same as with vouchers pursuant to Art. 43 para. 1 pt 40 of the GST Act. The respective tax authorities unanimously rejected the arguments put forward by the taxpayers and held that bitcoins are not exempted from VAT, based on an exact interpretation of the two above-mentioned provisions. They justified their position mainly by the absence of any regulation of digital currencies in Polish regulations. They held that while BTC plays the role of a means of payment or a currency, it is neither of the two as there are no provisions to that effect in, *inter alia*, the Act on the National Bank of Poland[14], Act on payment services[15], and the Foreign Currency Law Act.[16]

Exchanging BTC into a currency implies obligations under the Act on tax on legal actions. Under civil law the above transaction is interpreted as a sales contract which, when concluded, implies tax obligations pursuant to Art. 1 para. 1 pt 1 of the TAL Act. The content of the quoted provision stipulates that a sales contract or a contract on exchanging goods and property rights are subject to the tax on legal acts. The tax is paid by the purchaser of bitcoins, who pays a contractual price to the seller and becomes the owner of the currency. Pursuant to Art. 6 para. 1 pt 1 of the TAL Act the taxable base shall be the market value of the property right (BTC Internet rate) and the tax rate is 1% by virtue of Art.

[14] Act of 29 August 1997 on the National Bank of Poland (Dz. U.2013.908. with further amendments).

[15] Act of 19 August 2011 on payment services (Dz.U.2011.199.1175 with further amendments).

[16] Act of 27 July 2002 Foreign Currency Law (Dz.U.2002.141.1176 with further amendments).

7 para. 1 pt 1 b) of the TAL Act. We should bear in mind, however, that in principle the purchaser of cryptocurrency will be tax exempted if he himself or the other party are VAT registered or exempted from it. The above principles of taxing bitcoins with the tax on legal acts have so far been confirmed by one interpretation.[17]

5. Purchasing goods and services for bitcoins

The third taxable event connected with bitcoins is the purchasing of goods and services. In practical terms, selected sellers offer the possibility to buy a concrete product or service and pay directly in BTC. This is a unique situation, not as widely available in Poland as abroad. But the Internet is a different case, where such trade is much more common. This digital currency may be used to buy plane tickets from *Air Lithuanica*, bid at *Ebay* auctions, spend a night at *Villa Sart* in Gdansk, have a hamburger at the *Bobby Burger* restaurant in Warsaw, or even go to the dentist at *Dentysta.e*u of Maciej Krufczyk in Gliwice. From the legal point of view, such a transaction between the parties will not be treated as a sale in the meaning of civil law, but as a barter or swap contract. The purchase of goods and services for BTC will not be classified as a sales contract as it does not involve the obligation to pay a price, which is its *essentialia negotii*. In accordance with a decision of the Supreme Court,[18] barter is a cashless transaction which leads to the exchange of goods of exactly the same value and is a compensation trade. What differs such a contract from a swap contract is the equivalence of the provisions. When the considerations of both parties differ in value, the purchase of goods and services for cryptocurrency will be considered a swap contract.

Pursuant to both income tax acts only the income calculated from the revenue obtained from consideration expressed in money terms taxable, and the same is true of the value of other considerations in kind (e.g. products or rights). In accordance with the position of the tax authority,[19] in barter contracts income received is taxable, i.e., the difference between the revenue and the revenue-related costs (costs of the purchase of goods reduced by sales-related costs). Calculated revenue is the value of mutual considerations specified in the contract. Revenue-related costs are costs incurred to purchase or manufacture goods or services which will be supplied to the other party. The above may lead us to conclude that when the parties exchange goods representing equivalent

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[17] Interpretation of the Director of the Tax Chamber in Warsaw of 28 March 2014, No. IPPB2/436-104/14-2/MZ.

[18] Decision of the Supreme Court – Civil Chamber of 26 August 2004, ref. No. I CK 210/04.

[19] Explanation by the Director of Tax Office in Sopot of 20 June 2006, No. PDOP/423-7/06.

market values, none of them should pay income tax on the values exchanged in kind because the difference between the revenue and outlays on the acquisition of goods will be zero.[20]

The purchase of goods or services for BTC will also be taxed by the tax on goods and services pursuant to Art. 5 para. 1 pt 1 of the GST Act, meaning it will be treated as rendering services or supplying goods in return for payment. Of course, it must be kept in mind that bitcoins are not goods, so the supply of goods that you pay for will take place only when the client will exchange digital currency for such goods. The term *payment*, which features in the quoted provision, does not have to be linked to the fact that one party to the contract is obliged to pay the other party, as it may render a service or supply goods. The Provincial Court of Appeal in Lodz, in its decision of 14 March 2007,[21] ruled that the term means the meeting of the obligations of mutual consideration, directly linked with the rendering of services and a legal relation resulting there from, whereby one of the parties renders a service and the other pays a specified amount.

The specific tax consequences of the above presented fact depend on the legal status of the parties. When both parties are VAT-registered taxpayers they issue invoices to each other and the taxable base, in accordance with Art. 29 para. 1 of the GST Act, includes all that has been received by the service provider or the supplier of goods. Although the consideration of one party is not expressed in money, the obligation to pay taxes to the Tax Office rests with both of them. In their tax returns, both will have to pay back the difference between output and input VAT. In this particular transaction, where the value of mutual considerations is equal, the amounts offset each other. Thus a barter contract consisting of an exchange of bitcoins for goods is profitable to both parties who are VAT-registered taxpayers.[22]

Pursuant to current tax regulations, the situation becomes complicated when one of the parties is a VAT-registered taxpayer and the other is a consumer. To begin with, such transactions are legal but produce very little profit for entrepreneurs, as they must pay the tax which, in accordance with the VAT idea, should burden the consumer. As an example we may refer to the situation where a business offers the possibility to buy goods for bitcoins. The consumer pays bitcoins and receives a certain number of goods offered by the selling party. The seller of digital currency is obliged to pay the tax due on the sales of goods, which

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[20] *Barter to bezgotówkowa wymiana towarów i usług*, BDO Podatki i Rachunkowość 6 (80) 2014, *http://www.biuletyn.bdo.pl/biuletyn/podatki-i-rachunkowosc/bdo-podatki-i-rachunkowosc/ Podatki-na-co-dzien/barter-to-bezgotowkowa-wymiana-towarow-lub-uslug7423.html*

[21] Decision of the Voivodeship Court of Appeal in Lodz of 14 March 2007, ref. No. I SA/Łd 721/06

[22] We need to stress that when we are dealing with a swap contract - where considerations are not equivalent - the parties will have to supplement tax obligations to the appropriate amount.

de facto he has not received because the payment was not effected in money but in certain number of goods. As a result of the above, a taxpayer should either suffer a loss and pay the sum due from his own resources, or exchange bitcoins which, in turn, would lead to another tax on goods and services and an appropriate income tax. In sum, due to the lack of liberal legal regulations such barter contracts concluded with consumers are highly unprofitable to businesses offering goods and services for BTC.

Purchasing goods and services under barter contracts whereby cryptocurrency is offered as one consideration is not subject to the tax on legal acts. Art. 1 para. 1 of the LAT Act includes a closed catalogue of all actions which lead to tax obligations. The above provision does not explicitly enumerate a barter contract. The doctrine (Ofiarski 2009) presents the opinion that acts which are not directly included in the provision are not subject to tax law.[23]

6. Legal definition of bitcoin in other EU Member States

The phenomenon of digital currencies has also had a great impact on other countries. Some European Union countries have been dealing with this new type of currency for much longer than Poland. Nevertheless, their tax law is also not precisely regulated.

This is confirmed by the EBC study conducted in order to identify the regulations in the area of digital currencies in 28 EU Member States. It showed that only four of them have attempted to define these currencies one way or another. The rest of countries (24) have not defined them yet. Moreover, 13 Member States[24] have not taken any positon on bitcoin, while the rest of them (11) have specified only what bitcoin is not. Belgium, Croatia, Finland, Italy, Luxembourg, Malta and Poland[25] claim that this type of currency is neither a legal tender nor electronic money. The Czech Republic claims that bitcoins are not banknotes, coins, scripted or electronic money. Denmark states that bitcoin does not have any real trading value compared to gold and silver, so it is more similar to glass beads. Spain claims that they cannot be considered as a legal

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[23] The facts pertaining to a swap contract will be treated in a completely different manner. The transaction will be subject to tax obligation because swap is included in the text of the provision in question.

[24] Bulgaria, Ireland, Greece, France, Cyprus, Latvia, Lithuania, Hungary, Netherlands, Austria, Portugal, Romania, Slovakia.

[25] Statement of the Minister of Finance of 28 June 2013 FN/FN-7/602/WOS/4-3/2013/RD-64616/2013, http://senat/gov/pl.

currency, since they are not issued by the government's monetary authority. Finally, Slovenia states that bitcoins are neither currency nor a payment instrument and even that they could fall within the scope of the Prevention of Money Laundering and Terrorist Financing Act.

The countries which have defined digital currencies in their legal order are: Germany, Estonia, Sweden, and the United Kingdom. In Germany, the Minister of Finance has recognised bitcoin as an accounting unit (not as legal tender) and financial instrument. It can be used for private transactions and only when a company possesses permission from the Federal Financial Supervision Authority. Estonia (Central Bank of Estonia and Ministry of Finance) is the most enigmatic as it claims digital currencies are an alternative payment method, not a currency. Selling or buying bitcoins is not illegal and doing it as a professional entrepreneur is considered to be the provision of services of alternative means of payment. In Sweden, the Tax Agency claims that bitcoins are not currencies because they are not tied to the central bank or a geographic area. On the other hand, bitcoin should be classified as a 'another asset', like art or antiques. Moreover in Sweden every owner of digital currency has to be registered with the Financial Supervisor (*Finansinspektionen*). The Bank of England is very theoretical on the issue of bitcoins. It claims that digital currency could act as money (special money for those who have an internet device).

To sum up, it becomes clear that at the European level in general, the issue of the legal definition of BTC has been solved in a way not very dissimilar from the Polish regulations. From the legal point of view, digital currencies are not a type of money or a currency in the legal perspective. Nevertheless, some governmental authorities allow for using bitcoin as substitutes of banknotes and coins, but the mere fact of their use is not broadly regulated. (European Central Bank 2014, pp.34-37).

7. Conclusions

The tax implications of trade in digital currencies, as broadly understood, are determined by their legal and economic nature. When thoroughly analysed, the provisions of individual acts lead us to conclude that in Poland, ownership of bitcoins, trading in them, and receiving revenue from them are not sufficiently regulated (Prokurat 2014, p. 32). The situation poses many interpretation problems resulting from, for instance, the lack of a basic definition in any legal act. One must be aware that to a large extent this is an effect of the early developmental stage of digital currencies in the Polish market, and even in foreign markets.

In conclusion, taxpayers who benefit from bitcoins may be exposed to an intensified tax risk. The absence of sufficient regulations and practice in the area leads one to undertake actions leading to tax obligations with special caution. To protect the capital interests of the taxpayers we need to aim at obtaining more individual tax interpretations.

References

Act of 11 March 2004 on the Goods and Services Tax (Dz.U.2011.177.1054 consolidated tax with amendments).

Act of 15 February 1992on Corporate Income Tax (Dz.U.2014.851 consolidated tax with amendments).

Act of 19 August 2011 on payment services (Dz.U.2011.199.1175 with further amendments).

Act of 23 April 1964 Civil Code (Dz.U.2014.121 j.t. ze zm.).

Act of 26 July 1991 on Personal Income Tax (Dz.U.2012.361 consolidated tax with amendments).

Act of 27 July 2002 Foreign Currency Law (Dz.U.2002.141.1176 with further amendments).

Act of 29 August 1997 on the National Bank of Poland (Dz. U.2013.908. with further amendments).

Act of 9 September 2000 on the Tax on Legal Actions (Dz.U.2015.143 consolidated tax with amendments).

Barter to bezgotówkowa wymiana towarów i usług, BDO Podatki i Rachunkowość 6 (80) 2014, http://www.biuletyn.bdo.pl/biuletyn/podatki-i-rachunkowosc/bdo-podatki-irachunkowosc/Podatki-na-co-dzien/barter-to-bezgotowkowa-wymiana-towarow-lub-uslug7423.html

Bartosiewicz A., Kubacki R. (2014), *PIT.Komentarz*, LEX, Warsaw.

Ciszewszki T., Napierała T. (2010) *Artykuł 21 Inne dochody* (in:) *Model Konwencji OECD. Komentarz*, red.) Brzeziński B., Oficyna prawa polskiego, Warsaw.

Decision of the Supreme Court – Civil Chamber of 26 August 2004, ref. No. I CK 210/04.

Decision of the Voivodeship Court of Appeal in Lodz of 14 March 2007, ref. No. I SA/Łd 721/06.

European Central Bank (2012), *Virtual Currency Schemes*, ECB, Frankfurt am Main.

European Central Bank (2014), Virtual Currency Schemes, ECB, Frankfurt am Main.

Explanations by the Director of the Tax Office in Sopot of 20 June 2006, No. PDOP/423-7/06.

Interpretation of the Director of the Tax Chamber in Lodz of 7 April 2014, No. IPTPP2/443-52/14-6/IR.

Interpretation of the Director of the Tax Chamber in Poznan of 8 January 2014, No. ILPP1/443-912/13-2/AW.

Interpretation of the Director of the Tax Chamber in Poznan of 2 October 2014, No. ILPB2/415-741/14-2/TR.

Interpretation of the Director of the Tax Chamber in Poznan of 21 October 2014, No. ILPP1/443 -626/14-2/HW.

Interpretation of the Director of the Tax Chamber in Warsaw of 25 February 2014, No. IPPB2/415 -842/13-2/MK.

Interpretation of the Director of the Tax Chamber in Warsaw of 25 February 2014, No. IPPB2/415 -842/13-2/MK.

Interpretation of the Director of the Tax Chamber in Warsaw of 26 June 2014, No. IPPB1/415-276/14 -4/EC.

Interpretation of the Director of the Tax Chamber in Warsaw of 28 March 2014, No. IPPB2/436 -104/14-2/MZ.

Kowalski P. (2014), *Bitcoin, waluta przyszłości – na gruncie polskiego ustawodawstwa* (in:) *Biuletyn Informacyjny FRP, 12(113) 2014*, Lodz.

OECD Model Tax Convention on tax on income and capital.

Ofiarski Z. (2009), *Ustawy o: opłacie skarbowej, o podatku od czynności cywilnoprawnych. Komentarz.*, ABC, Warsaw.

Polish Language Dictionary SJP, http://sjp.pl/otrzyma%E6.

Prokurat. J (2014)*, Podatkowe aspekty obrotu wirtualnymi walutami,* http://bitcoin.pl//o-bitcoinie/ bitcoin-apolskie-prawo

Rosłan G. i Stolarski M.P. (2014) *Pieniądz elektroniczny a bezpieczeństwo państwa na przykładzie cyfrowej waluty bitcoin część I* (in:) *Zeszyty Naukowe WSIZiA w Warszawie no. 1(26).*

Statement of the Minister of Finance of 28 June 2013 FN/FN-7/602/WOS/4-3/2013/RD -64616/2013, http://senat/gov/pl.

Zacharzewski K. (2014), *Bitcoin jako przedmiot stosunków prawa prywatneg*o (in:) Monitor Prawniczy 21.

Streszczenie

OPODATKOWANIE OBROTU BITCOINAMI NA GRUNCIE PRZEPISÓW POLSKIEGO PRAWA PODATKOWEGO

W ciągu ostatnich lat można zaobserwować zjawisko cyfrowych walut – cyfrowych reprezentacji jakiejś wartości, które przekazywane są za pośrednictwem technologii informatycznej i są stosowane jako środek wymiany, ale nie mają statusu oficjalnego środka płatniczego. Jednym z rodzajów takich walut są bitcoiny, które stają się coraz popularniejsze w Europie i także w Polsce. Dlatego warto zastanowić się czy polskie

prawo jest przygotowane na to zjawisko i zastanowić się jakie ewentualne problemy mogą nastąpić w praktyce wymiaru sprawiedliwości. Głównym celem niniejszej publikacji jest analiza przepisów polskich ustaw podatkowych w kontekście szeroko rozumianego obrotu bitcoinami.

Słowa kluczowe: *bitcoin; podatki; obrót; polskie prawo podatkowe; wirtualne waluty; cyfrowe waluty; PIT; CIT; VAT; PCC*

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