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DETERMINATION OF THE SACRIFICE RATIO – THE COMPARISONS OF TURKEY, POLAND AND ITALY

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"Most of the people in the world are poor, so if we knew the economics of being poor we would know much of the economics that really matters. Most of the world's poor people earn their living from agriculture, so if we knew the economics of agriculture we would know much of the economics of being poor"

(Shultz, 1979)

Abstract. Although there is a common belief that the stabilization policy leads to output losses, alternative research puts forward no output losses at the end of the stabilization periods. This study aims to test whether for the 1990–2008 period anti-inflationary monetary policies which reduced the ongoing inflation to one digit rates, also led to agricultural output losses in Turkey for the same time period. Periodic sectoral sacrifice ratios will be calculated as a proxy for output losses. Model relies on the Phillips Curve model showing an alternative sacrifice between unemployment and inflation. Employed variables in the model are inflation and output losses in the agricultural sector. Output loss can be defined as the difference between potential and realized output differences in the sector examined. The sacrifice ratio will also be calculated by balancing the output loss in agriculture at the cost of lowering high inflation rates. Small sacrifice ratios for the post 2001 period for Turkey will show the success of monetary policy implementation of Turkish Central Bank. Alternatively, increases in the sacrifice ratio, at a stage where agricultural output and its potential disparity increases, will reflect the negligence of agricultural sector at the cost of stabilizing the economy. All these findings will be compared to Poland and Italy experiences.

Key words: agricultural sector, disinflation, sacrifice ratio.

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INTRODUCTION

Looking at the world economy at a global scale, one can easily see negative impacts of high inflation rates, and stabilization programs to eliminate the negative impact of steady increase in overall prices. Although some economists argue on the positive role of stable prices for the long term in terms of income increases, an alternative group of economists have controversial view of long run stability of stable prices. Taylor [1983] argues that slow pace of disinflation reduces the burden of inflation, while Sargent [1983] argues that fast pace of stabilization reducing the output gap is in fact less costly with respect to more slow pace stabilization policies. This study focuses on the impact of stabilization policy periods on the agricultural output gap. Another way of coating the problem could be the output sacrifice in the agricultural sector at the cost of lowering high inflation rates. Sacrifice ratio can be defined as the output foregone at the cost of stabilizing the national economy [Çetinkaya and Yavuz 2002]. This study is especially focused on the agricultural sector, which functions far more with traditional technology and behavior.

This paper aims to measure realized output lost for the period of 1990–2008 as a result of disinflation policies implemented in Turkey. As a result of the agricultural output gap measurement, analysis will be extended to Poland and Italy for comparison. Through this approach, we will be able to check whether there are country specific differences among Turkey, Poland and Italy in terms of agricultural output lost. Turkey being a pre-accession country will be compared to two full members of EU. All three selected countries have been witnessing stabilization difficulties.

LITERATURE REVIEW

As in the case of most countries, Turkey also would like to adapt an agricultural policy which fulfills the requirements of World Trade Organization and that is sustainable, efficient and triggers the change process required for the 21st century. Independent of the development levels of prospective countries, agricultural sector is still dominated by risk factors that cannot be ignored. Public interference, regulations, subsidies and transfers still dominate most agricultural sectors around the globe. Transformation and improvements take considerable time and even predetermined agendas are realized with considerable lags. One unique factor that dominates the future of agriculture is shifting the short-run paradigm towards the long-run. As in most economic policy setting, improvement of national and global economic and social wellbeing makes the priorities of the agenda [Çakmak et al. 2004]. Although one third of Turkish population lives in rural areas, their share in the GDP never exceeds 8–10 percent. Looking at the major characteristics of Turkish agricultural sector one sees that small scale production, scattered distribution of agricultural land and low agricultural productivity dominates the sector. Relatively speaking, population growth is relatively higher in the agricultural sector. This reality reflects as the division of ownership from heritage into smaller land ownerships which also triggers the rural migration towards urban areas. Whereas diffused ownership of agricultural lend leads to lower productivity, and increase in the cost of production. All these events take place in an era where agriculture and husbandry are under continuous

transformation. In today's world, agriculture is under the strong influence of technology and new economic norms. To achieve the required transformation, land consolidation and technology adaptation became a must [Ari 2006]. The emphasis of strategy (long range planning) and sustainability makes most of the recent literature on agricultural research. But one should not omit the fact that one other major agenda of all countries is the fight against inflation.

For a long time period Turkish economy had the principal agenda of never dropping inflation rate, high inflation rate, policies that should or have been adopted to lower the inflation rate and the impact of these adopted policies on the economy in itself. By using dis-inflationist policies for reducing inflation can result creation of internal output gap increase. In other terms, while reducing inflation; the national output is reduced and due to this reason the output is sacrificed. The sacrifice ratio in laments term is the amount of total output that is lost to reduce the inflation rate [Çetinkaya and Yavuz 2002].

There are various studies on the impact of inflation on agriculture each covering a different aspect of the existing problem. Ulrich [2010] looks at the impact of agricultural inflation contribution to overall inflation rate. Another study focused on the causes of agricultural inflation [Henderson 2008]. Schertz and Harrington [1980] focused on 1960–1980 periods inflation impact on the agricultural sector. Whatever the direction of its impact, impact of agricultural sector on inflation and impact of inflation on the agricultural sector is backed by the relevant literature.

There are very controversial findings as witnessing output losses under stabilization policies, while high inflation rates not corresponding to symmetric narrowing of potential and actual output [Jordan 1997]. This is another way of stating that disinflation and sacrifice ratios are not recursive reflecting no narrowing of potential and actual output levels. This also shows why the task of lowering high inflation rates is more costly than increasing actual to potential with low inflation rates.

When looked at the world economy from a summarizing point of view, it can be stated that inflation has a negative effect on nations and due to this effect attempts to reduce inflation through disinflation programs are frequently adopted. Many economists in that sense state that low inflation will increase earnings in the long term. If inflation stability is a positive outcome, that should as well hold for the agricultural sector. If the action of lowering inflation hurts GDP, this again should hold for the agricultural sector. Taylor [1983] and Sargent [1983] state the importance of disinflation periods in a supporting manner while also discussing the recovery speed of disinflation period from different perspectives. Taylor in this sense states the position of "slow disinflation pace will reduce costs", while Sargent states the position of "fast disinflation being less costly" meaning that it will cost less output gap. Jordan [1997] within the same topic discusses that "on disinflation periods with increasing output gap periods being high, the contrary situations convey no situations with symmetric gap reduction. This in meaning conveys a finding that states; opposite of sacrifice ratios do not generate utility rate environment. As a conclusion from these standpoints one can infer that it is a difficult task to reduce inflation and its effects on the economy.

Ball [1994] has examined the sacrifice ratio factors which were a result of disinflation. In the study sacrifice ratio was defined as ratio of loss output over reducing trend of inflation rate. Ball defined sacrifice ratio by developing a method for calculating single

disinflation period and has implemented this for 65 periods of midlevel inflation holding OECD counties. The results reflect that the sacrifice ratio was reduced as in the pace of disinflation pace. In this study slowly reducing the inflation has risen the sacrifice ratio but sudden policies of inflation reduced sacrifice ratios. Ratio also at the same time reduced with the wage setting institutions flexibility. Wage rigidity is found to be also increasing the sacrifice ratio. Openness of economy has not affected the ratio. Ball's results also show that disinflation policy at the beginning and income policies have no certain relation with the ratio.

Zhang in his study looked at the sacrifice ratio in terms of its long term and empirical effects. Study reflects the term also called as hysteresis effect which is a strong persistence. The empirical study focused on 1960–1990 unemployment data quarterly and was focused on G-7 countries. As a result of Zhang's study; calculated long term sacrifice ratio is higher than non-calculated long term sacrifice ratio. Sacrifice ratio and beginning inflation rate has been found to be in a negative relationship. Long term sacrifice ratio and wage profitability have no relation between each other [Zhang 2001].

Jordan's research looked at situations of disinflation and rapid inflation increase and investigated them both. Looking at the central bank's independence rate in terms of explaining sacrifice and benefice ratio fluctuations in terms of how they would be explaining [Jordan 1997]. Ball [1994] in his study also used the output gain approach for 19 industrialized countries time periods between 1960–1992. Research was purposed to look at central bank independence ratio would define sacrifice and benefice ratio fluctuations. Possible flow pace, inflation rate change, nominal wage profitability and early period inflation rates were considered within the study. As a result, central banks with the higher independence rate had higher sacrifice ratios but inflations increase rate periods benefice rate were not higher could be observed. Daniels on his research with a similar research to Jordan's 1997 study, looked at openness of an economy and relationship of sacrifice ratio based on central bank independence [Daniels et al. 2005]. In this study Daniels has found a positive relation between sacrifice ratio and openness of economy. As openness increases the central bank's positive affect on sacrifice ratio reduces.

Yay's [2001] study is one of the first studies based on Turkey. Study first looks at the dis-inflationist policy costs theoretically and then investigates different counties heterodox disinflation policies. Argentina (1979–1981; 1985–1986), Brazil (1985–1986; 1994), Chile (1978–1982), Mexico (1987–1994), Uruguay (1978–1982; 1990), Israel (1982––1983; 1985) were enriching countries in terms of results for study. Lastly the study looks at 1999 and onward period with its IMF originating stability program.

METHODOLOGY

For the study at hand, the relation intended to be obtained with the current framework literature is the relationship between dropping disinflation period between reducing outputs and reducing inflation rate. The relation between potential income used and actual income difference between year's inflation rate series is relation coefficient; which is actually the sacrifice ratio. This coefficients calculation will be composed of two different methods. The first method will include a regression equation which will provide a ratio.

This method does not include between period changes and includes a single constant change coefficient; therefore the method is heavily criticized. Other approach includes a approach where a different ratio can be calculated for each year individually as a series. For this study both methods will be adopted and individually be calculated. After evaluating sacrifice ratio, within the disinflation periods disinflation periods monetary policy affects sustainability will be measured with "hysteresis coefficient". Relevant literature reflects that, sacrifice ratio measurements has been linked with expectations backed Phillips Curve approach. In the corresponding equation, output has been associated with GDP or between GNP and inflation [Okun 1978, Gordon and King 1982].

$$y_t - y_t^* = (\pi_t - \pi_{t-1})\alpha + u_t \qquad \alpha > 0 \tag{1}$$

On the first equation y = actual output level, y_t^* = Potential output level, π_t = t periods actual inflation rate and $(\pi_t - \pi_{t-1})$ = t periods actual disinflation rate and ut represents the error term. Within the equation the sacrifice ratio is defined by α, the conducted regression analysis result can be accepted as a stable value. The sacrifice ratio is expected to be positive. Meaning of this expectation is that, dis-inflationist periods in-between inflation rate increase $(\pi_t - \pi_{t-1})$, is increasing the difference between actual and potential difference $(y_t - y_t^*)$. To elaborate more, if the in between two period inflation rate was dropping caused by disinflation policies, due to the actual shrinkage experienced within the economy actual output dropping, the gap between potential and actual inflation will raise which is defined as the output gap. As a result, the defined rate of sacrifice is the output reduction to reduce the inflation rate one score. The higher the in-between periods inflation rate is the higher will be the output gap.

Within this framework, [Ball 1994], assumes a variable sacrifice ratio while the basic model assumes the ratio to be constant, Ball argues that, as the inflation rate increases or drastic fluctuations in demand occurs, keeping the sacrifice ratio constant will not be very reliable. In equality 2, nominator is the quarterly output gap and the denominator is the quarterly differences in the inflation rate:

$$SR = \Sigma\,(y_t - y_t^*)/(\pi_t - \pi_{t-1}) \tag{2}$$

Here the model associates the output gap in the dis-inflationist times, with the inflation rate decline in the corresponding time period $(\pi_t - \pi_{t-1})$. In this method, sacrifice ratio will be turned into a series where the trend can be observed [Jordan 1997, Bernanke et al. 1999, Boschen and Weise 2001], Ball specially preferred this model with respect to previous ones.

Although Ball solves this problem by selecting annually changing sacrifice ratios and adapting these ratios for every corresponding years, and thus solving the problem of keeping sacrifice ratios constant [Ball 1994], Zhang arguing that sacrifice ratio changing annually and keeping a structure will make the Ball's approach inadequate [Zhang 2001]. For him not only the sacrifice ratio but impact intensity as a result of change process is as well important. To remove such bottlenecks below mentioned equation (3) has been used at the implementation stage:

$$(y_t - y_t^*) = \alpha\,(\pi_t - \pi_{t-1}) + \beta\,(y_{t-1} - y_{t-1}^*) + u_t \qquad \alpha > 0,\ 0 < \beta < 1 \tag{3}$$

Here β coefficient shows the power of persistence effect. As β, goes to 1'e the degree of persistence effect will also increase. On the contrary Zhang, assumes the value of β is between $0 < \beta < 1$.

As in the case of Zhang [2001], similar findings by Çetinkaya and Yavuz [2002] show that, disinflation phase as a result of monetary shocks, will correspond to a long lasting impacts. And these findings are backed up by long term impacts.

In both studies, Ball [1994] and Zhang [2001] observed very strong persistence effect, which they named it as hysteresis impact. If the hysterical attitudes influence the output via monetary policy, disinflation permanent impact will be realized [Zhang 2001].

All data set related to the model have been received from OECD 2009 Quarterly National Accounts Report. For the three countries under study, to find the difference between domestic agricultural GDP and its potential, series had been filtered by Hodrick Prescott Filter in order to calculate the potential output and the difference between trend and natural log values has been calculated. To find the inflation rate from the consumer price index, natural logarithm of the CPI has been calculated, while the first difference series has been derived reflecting the inflation rate.

Turkey

To calculate the initial sacrifice ratio [Ball 1994] approach has been adapted. This method aims to reach to general sacrifice ratios by calculating sacrifice ratios:

$$SR = \Sigma (y_t - y_t^*)/(\pi_t - \pi_{t-1}) \quad (2)$$

Figure 1 shows the sacrifice ratio trend for the agricultural sector derived from the equation 2, for the given years:

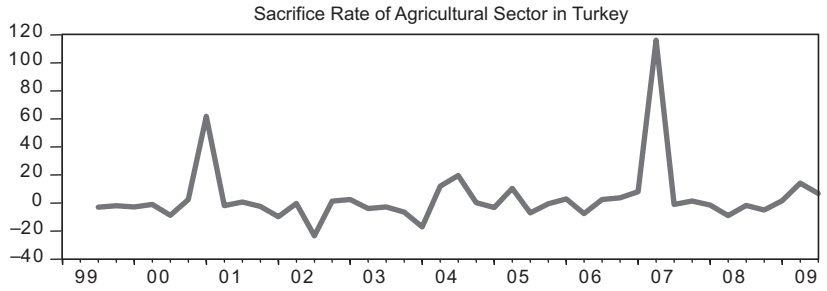

Fig. 1. Sacrifice Ratio of Turkey
Rys. 1. Wartość współczynnika poświęcenia w Turcji

Source: OECD Quarterly National Accounts, 2009, 4, p. 407.
Źródło: OECD Quarterly National Accounts, 2009, 4, str. 407.

As can be seen from the graphs (Figure 1 and 2) over the years sacrifice ratio generally seems stable while on some periods certain peaks can be observed. In the year 1993 and 1999 the sacrifice ratio seems to drop while on 1995, 1997 and 2007 there are high peaks experienced.

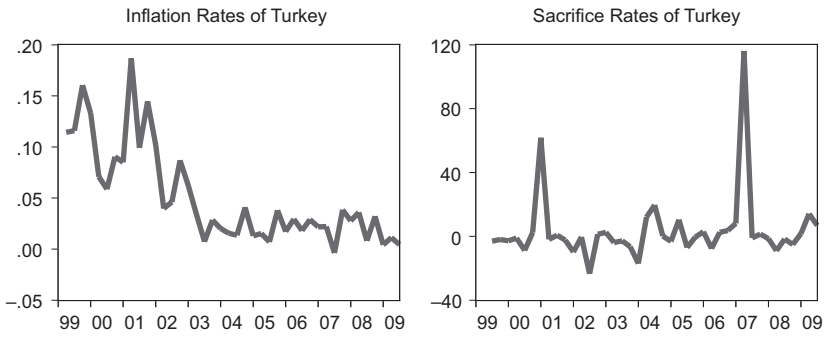

Fig. 2. Inflation and Sacrifice Ratios of Turkey
Rys. 2. Inflacja i współczynnik poświęcenia w Turcji

Source: OECD Quarterly National Accounts, 2009, 4, p. 407 and OECD web page.
Źródło: OECD Quarterly National Accounts, 2009, 4, str. 407 oraz strona internetowa OECD.

Italy

Sacrifice ratio calculated with the [Ball 1994] approach is given by Figure 3 and 4. Sacrifice ratio calculated by $SR = \Sigma (y_t - y_t^*)/(\pi_t - \pi_{t-1})$, compared to Turkey, inflation cost is far more stable up to 2007.

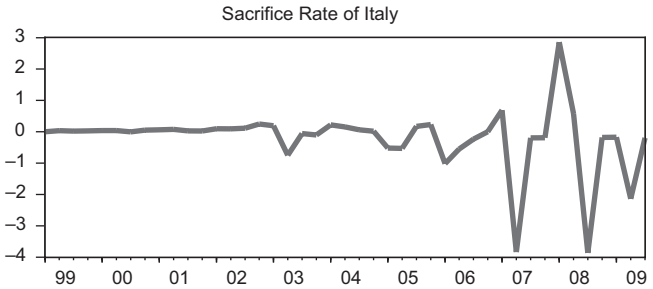

Fig. 3. Sacrifice Ratio of Italy
Rys. 3. Wartość współczynnika poświęcenia we Włoszech

Source: OECD Quarterly National Accounts, 2009, 4, p. 226.
Źródło: OECD Quarterly National Accounts, 2009, 4, str. 226.

But with the 2009 Economic Crises, which negatively influenced the developing world, Italian sacrifice ratio significantly increases and shows an unstable trend. Instability in the inflation rate increased the sacrifice rate for the agricultural sector.

Italian agricultural sector is not strongly influenced by the disinflationary policies. Core reason for such an outcome can be explained by the experienced cooperatives existing in the market for decades [Köroglu 2003]. Among the founders of EU, Italy's 20% of the population is active from a total of 60 million inhabitants. The share of agricultural population within the active population is only 10% which continuous to decline. Roots of agricultural cooperatives go back to 19 th century, which continued to strengthen for then on. Input supplier milk cooperatives had been the pioneers in the cooperative movement.

Consumption, production and credit cooperatives were established an upper structure in 1856. 1866 being the early years for the implementation of modern agricultural techniques in Italy, national agricultural federation for agriculture "FEDERCONSORZI" was established in 1982. This upper body took the responsibility of supplying all agricultural inputs. Funding of agricultural cooperatives take three alternative routes; internal finance, owners' equity and external sources. Infernal finance covers, allowances from members, from partnerships, and from social credit programs; owners' equity cover, partnership contributions and subsidies received; external sources funds received from banks and from other financial intermediaries. Cooperation's have significant tax reductions. If cooperatives distribute more than 60 percent of income-cost differences to their partners, there will be full tax exemption. Apart from FEDERCONSORZI there are two more cooperatives CONFCOOPERATIVE and LEGA (national cooperative solidarity). Being member of COGECA, three national unions' work very parallel to the international norms. Italian Constitution gives a social role to cooperatives and is generous in the funding of such institutions. In 1992, which required efforts towards conformity within EU, Italian legislature had been revised an capital requirements and partnerships shares have been reshaped.

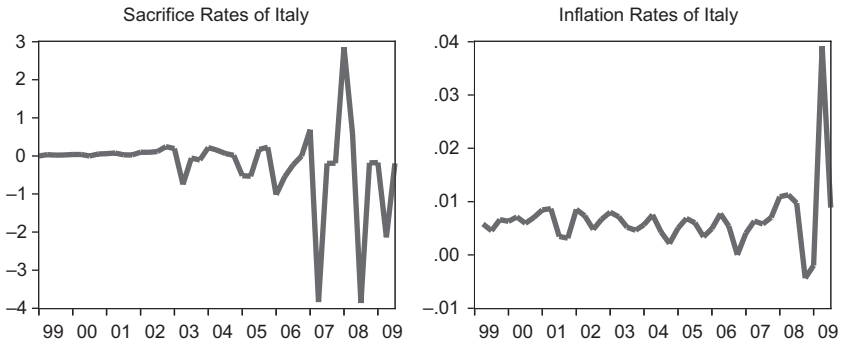

Fig. 4. Inflation and Sacrifice Ratios of Italy
Rys. 4. Inflacja i współczynnik poświęcenia we Włoszech

Souce: OECD Quarterly National Accounts, 2009, 4, p. 325.
Źródło: OECD Quarterly National Accounts, 2009, 4, str. 325.

Poland

Sacrifice ratio for Poland calculated with [Ball 1994] approach is given in Figure 5 and 6.

Ratio calculated via the following equality $SR = \Sigma (y_t - y_t^*)/(\pi_t - \pi_{t-1})$, when compared to Turkish performance, inflation cost in Poland, at post 2002 period and during the full membership stage to EU increased considerably.

In the second phase of our research, for the three countries involved OLS regression has been structured for agricultural output gap (AGGAP) as the dependent variable and inflation difference (DINF) as the independent variable. In Model II independent factors inflation difference (DINF) and output gap (AGGAP) has been inserted to the model with a difference variable. Both functions have been estimated by OLS regression. In the first model, α variable gives us the sacrifice ratio, while in the second model β reflects the

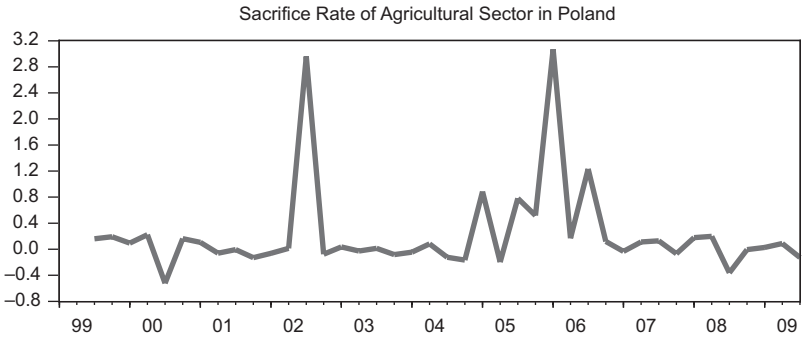

Fig. 5. Sacrifice Ratio of Poland
Rys. 5. Wartość współczynnika poświęcenia w Polsce

Source: OECD official web page.
Źródło: Oficjalna strona internetowa OECD.

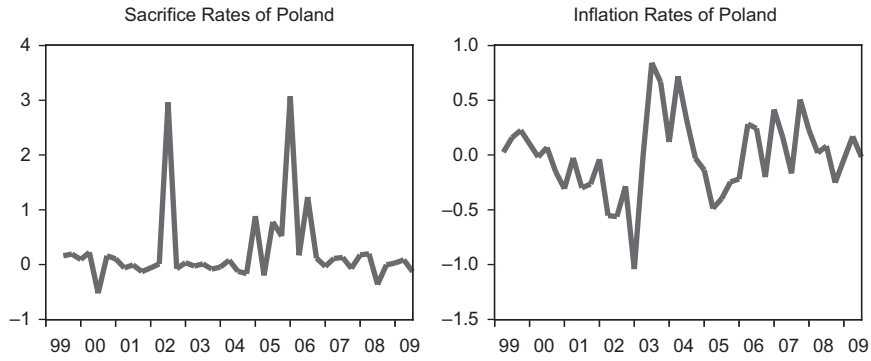

Fig. 6. Inflation and Sacrifice Ratios of Poland
Rys. 6. Inflacja i współczynnik poświęcenia w Polsce

Source: OECD official web page.
Źródło: Oficjalna strona internetowa OECD.

power of persistence effect [OECD 2010]. Poland's economic performance in 2009 was overwhelmingly well, given the global downturn. Although excess demand was substantially large prior to the crisis, the external imbalance was modest relative to some neighbors' Macro-policy responses to the slowdown were largely appropriate, and the sharp depreciation of the zloty cushioned the impact of the foreign shock, but contributed to the postponement of Euro adoption. The slowdown had some inflationary pressures, while the swift turnaround in wages helped to limit job losses. A number of issues should be addressed, to strengthen Poland's position in the globalizing world; given the prospects of future Euro adoption, persistently large EU transfers and desirable inflows of foreign direct investment helped Poland to face a very fast recovery.

Although Poland is witnessing a structural institutional change, still there is financial aid from EU. Accepted as a transitional country, Poland's rise is faster than expected. [Acar 2005].

Table 1. Regression Results
Tabela 1. Wyniki analizy regresji

Turkey		α Coefficient (Sacrifice Ratio)	β Coefficient (Persistence Ratio)		
Dependent Variable	TRAGGAP				
		TRDINF	TRYGAP1	LM TEST	BPG
	MODEL I	**–1.20**		0.48	1.34
		(0.02)		(0.78)	(0.51)
	MODEL II	**–1.214**	0.00067	2.9	0.1079
		(0.023)	(0.73)	(0.23)	(0.74)
Poland					
Dependent Variable	POLAGGAP	PDINF	PYGAP	LM TEST	BPG
	MODEL I	0.0081		0.48	0.035
		(0.63)		(0.78)	(0.84)
	MODEL II	0.0053	**0.478**	0.48	1.34
		(0.73)	**(0.0016)**	(0.78)	(0.51)
Italy					
Dependent Variable	ITAGGAP	ITDINF	ITYGAP	LM TEST	BPG
	MODEL I	1.024		0.812	0.022
		(0.87)		(0.66)	(0.879)
	MODEL II	1.032	0.00076	0.857	0.72
		(0.87)	(0.90)	(0.65)	(0.69)

(Numbers in parenthesis are p values)
(Wartości podane w nawiasach to wartości p)

Source: Own elaboration.
Źródło: Badania własne.

Sacrifice ratio for Turkey is negative, and statistically significant. This simply means that as the inflation rate falls, agricultural sector output gap (TRAGGAP) also decreases. In other words decrease in inflation does not necessarily lead to a deviation from its potential. Sacrifice ratio for Poland is not statistically significant, but unlike Turkey, its sign is positive. In the case of Italy we see that, inflation is not influencing the agricultural output gap (ITAGGAP) shown by the parameter being statistically insignificant ($p = 0.87$). But, in the case of Italy, as in the case of Poland have a positive sign. This means that, decrease in inflation rates (PDINF), increases the output gap in the agricultural sector (PYGAP). While the power of persistence effect is statistically insignificant, permanent inflation effect in Poland exists. β parameter is positive and statistically significant. It can be concluded of a 0.48 permanent effect of inflation. Italy's persistence effect coefficient (β), is statistically insignificant ($p = 0.90$).

Looking at these overall findings, sacrifice ratio for the Turkish agricultural sector is negative, meaning that as the inflation rate declines, actual and potential agricultural outputs shows a narrowing. But in the case of Poland and Italy, sacrifice ratio is positive but statistically insignificant. Inflation impact on agricultural output cannot be supported. Persistence effect coefficient for Poland is statistically significant.

Core reason for adding Italy to the analysis is to capture EU response via Italy performance [Köroğlu 2003]. Agricultural institution setting of EU seems to have strong historical background. In these countries, independent and adaptive farmer unions have been structured, and they have completed their maturity periods. These unity's, have been successful to reflect their problems towards their role towards a competitive market system transferring governmental funds for restructuring. Main policy within EU, have been the establishment of farmer unions, integrating the farmer structures bottom-up and down to bottom. [Köroğlu 2003], In the Turkish case, SME nature of the agricultural sector, hindered efficient funding and adaptation of relevant technology. Existence of numerous intermediaries between producers and consumers reduced the bargaining power of producers in the market. Non-complaint to global competition, sector frequently witnesses shortages and surpluses. Farmer unions to avoid the lack of appropriate input supplies, dissemination of available technology options, instability increasing pricing mechanisms have been insufficient as well as badly coordinated. On top of all Turkish legal regulations seems to be disorganized in terms of encouraging cooperatives and unions. As seen in appendix 2 sectors are structured by three different laws. Today, 58,318 cooperatives exist in 26 different activity areas with 8,720,906 members, 503 unions and 11 central unions. All these cooperatives are organized under the shield of Turkish National Cooperatives Union. In terms of auditing they are responsible to Agriculture and Rural Affairs and to Industry and Commerce Ministry while financed by eight different government offices and by eight different banks. This format of structure leads to loss of efficiency and inefficient use of scarce financial resources. Cooperative policy as is not appropriate and does not fit to the sector needs.

Figure 7 summarizes the sacrifice rates of three countries under the same scale. Looking in depth shows that Turkeys agricultural sector is the most disadvantaged among three.

Italy being negatively influenced by pre 2009 period, Poland seems to bear witness to relatively more stable economic performance.

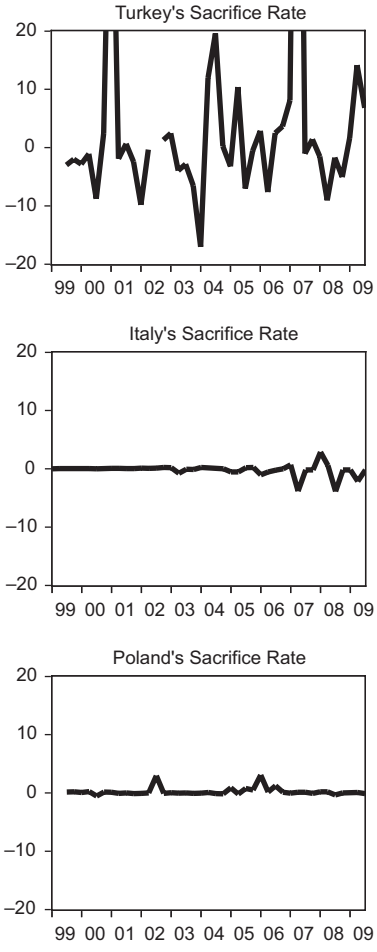

Fig. 7. Sacrifice Ratios of Agricultural Sector for Turkey, Italy and Poland

Rys. 7. Wartość współczynnika poświęcenia w sektorze rolnym Turcji, Włoch i Polski

Souce: OECD Quarterly National Accounts, 2009, 4.

Źródło: OECD Quarterly National Accounts, 2009, 4.

CONCLUSION

It is a common debate that reducing the inflation rate has foreseen benefits while also raises certain questions about the costs involved. These costs are usually measured by the output losses that come with the stabilization policies. In this study we concentrated on the disinflationary moves effect on agricultural output for Turkey, Italy and Poland for the 1999–2009 periods. Expected sign for the sacrifice ratio is positive. This approach, foresees that an increase in time specific gap of inflation rates, increases output loss gap.

Taking all three countries together, 1999–2009 period sacrifice ratio calculation for Turkey is statistically insignificant and has a negative sign. One other parameter calculation is related to (β), power of disinflation policies, in other words (β) is the power of persistence effect. As (β) approaches to one, power of persistence effect increases. It is assumed that the parameter value will lie between $0 < \beta < 1$. For the given period power of persistence effect coefficient is 0.00067 on the average but is statistically insignificant. This finding corresponds to the interpretation that disinflation policies are not long lasting for the agricultural sector. Examining Figure 4 shows that beyond 2001 implemented dis-inflationary policies is not long lasting for the agricultural sector, while the sacrifice ratio increases in times of economic crises.

Analysis for Italy has the expected sign for the sacrifice ratio, but is statistically insignificant. In other words the output gap between the potential and the actual in the agricultural sector narrows as the inflation rates declines. We would like to stress the importance of sign of the relationship.

The coefficient of persistence effect coefficient is 0.00076, but is statistically insignificant. This verifies that inflation witnessed in Italy does not have a long term impact on the agricultural sector. Graph on Figure 5, sacrifice ratio seems to be rather stable up to 2007, where volatility increases from then on. The impact of the crises can be easily observed in both diagrams.

Poland's sacrifice ratio is positive but not statistically significant. Power of persistence effect coefficient is 0.478 and is statistically significant. This finding compared with Turkey and Italy shows that, disinflation policies have a stronger and long lasting impact on the agricultural sector. Examining the graph, one sees that, during the post 2004 period of full membership to EU, there has been a significant increase in Poland's sacrifice ratio, and inflation rate started curbing down as a result of disinflationary policies.

Looking at the study as a whole, the country that is most influenced by the disinflation is the Turkish agricultural sector. While Italy endowed with the strong roots of institutionalized unity and EU privilege suppressed negative influences, Poland was backed up with EU and OECD centers strengthened not only economically but politically at the same time. Turkish agricultural sector, structurally made out of SME's was backed up by three overlapping and contradicting legal frameworks which further complicated the issue. As an outcome, Turkish agricultural sector reflects a fragile structure. Thus, disinflationary periods hit the agricultural sector more harshly than Italy or Poland.

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OKREŚLENIE WSPÓŁCZYNNIKA POŚWIĘCENIA (SACRIFICE RATIO) W TURCJI, POLSCE I WŁOSZECH: PORÓWNANIE

Streszczenie. Pomimo powszechnego przekonania, że polityka stabilizacyjna prowadzi do strat wydajności, alternatywne badania wskazują na brak strat w wydajności na końcu okresów stabilizacji. Celem niniejszego opracowania jest sprawdzenie, czy w latach 1990–2008

antyinflacyjna polityka monetarna, która zredukowała stopę inflację do rozmiarów jednocyfrowych doprowadziła w tym samym okresie również do obniżenia wydajności w rolnictwie w Turcji. Obliczone zostaną okresowe sektorowe współczynniki poświęcenia (sacrifice ratio). Model oparty na krzywej Philipsa pokazującej alternatywne zależności pomiędzy inflacją i bezrobociem. Zmienne włączone do modelu to inflacja i straty w wydajności w sektorze rolnictwa. Straty w wydajności można definiować jako różnice w potencjalnej i zrealizowanej wydajności w analizowanym sektorze. Współczynnik poświęcenia będzie również oszacowany poprzez wyrównywanie strat w wydajności w rolnictwie kosztem obniżenia wysokiej inflacji. Niska wartość współczynnika poświęcenia w Turcji po 2001 roku wskazywać będzie na sukces polityki monetarnej wdrożonej przez Turecki Bank Centralny. Alternatywnie, wzrost współczynnika poświęcenia w sytuacji, gdy wydajność w rolnictwie oraz jej potencjalne nierówności wzrastają, odzwierciedlać będzie na zaniedbanie sektora rolnego kosztem stabilizacji gospodarki. Wszystkie rezultaty będą porównane z doświadczeniami Polski oraz Włoch.

Słowa kluczowe: sektor rolny, dezinflacja, współczynnik poświęcenia

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THE TOURISM FUNCTION DETERMINANTS OF THE RURAL MUNICIPALITIES IN PODKARPACKIE PROVINCE, POLAND

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Abstract. The tourism potential is defined as the elements like the natural environment (natural) and cultural (anthropogenic) amenities, which form the basis for tourism development. Properly managed and exposed become prominent, often unique tourist values, that are already real tourist attractions encouraging visitors to arrive at that area. Tourism potential is perceived as a major aspect in the formation of a region's tourism function. This article aims at identifying the tourism potential element, of seven, which is the most essential for the shaping of the said function. The research for this paper was conducted in 2006–2007, covering all the rural and combined urban-rural municipalities in Podkarpackie province, Poland.

Key words: tourism potential, tourism attractiveness, socio-economic conditions, tourism function, Podkarpackie province

PROFILE OF PODKARPACKIE PROVINCE

Podkarpackie province is one of the sixteen provinces (*voivodships*) of Poland. It is situated in the south-eastern part of the country and borders with Slovakia in the south and Ukraine in the east. After Poland's accession to the European Union, the eastern border of this region became the longest section of the EU's external land border.

Podkarpackie province consists of 4 city counties and 21 land counties (collectively known as *powiats*), which are further subdivided into 159 communes (*gminas*): 16 municipal, 29 municipal–rural[1] and 114 rural ones (Figure 1).

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[1] A municipal–rural commune is centred around a small town.

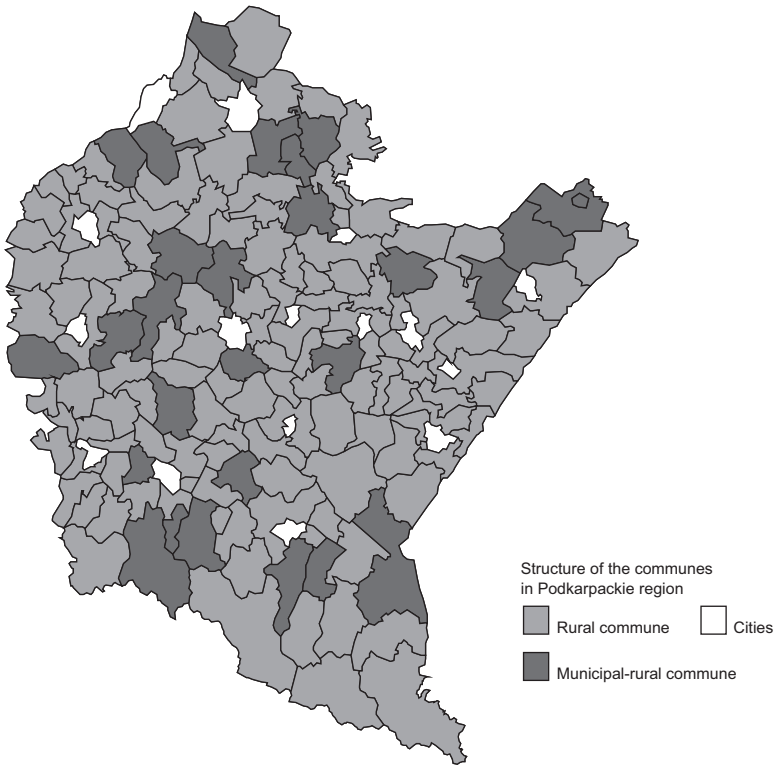


Fig. 1. Administrative division of Podkarpackie province
Rys. 1. Podział administracyjny województwa podkarpackiego

Source: Own compilation.
Źródło: Opracowanie własne.

RESEARCH METHODOLOGY

The measurement of synthetic indicators with the use of weighting has been applied in order to analyze and compare the tourist potential of Podkarpackie province municipalities. Two basic spheres of the tourism potential of areas concerned were assumed and identified, including: (1) tourism attractiveness – incl. natural values and qualities, anthropogenic values/qualities, and availability; and, (2) socio-economic conditions or determinants as being directly interrelated with tourism potential. The latter sphere encompasses factors such as services-related infrastructure, technical/technological infrastructure, demographic structure of the municipalities concerned, and the municipalities' finances. The analysis of tourism potential was carried out based on a total of forty (40) variables. Each of variables was assigned only to one of the above-defined groups. Each variable, group and sphere were attached respective weighting to reflect their influence with respect to tourism potential (Table 1). The system of matching the weightings with diagnostic variables is based on off-statistics information, and has been delivered based upon experts' opinions. It was assumed that all the variables ought to act as stimulants

Table 1. Factors influencing tourism potential
Tabela 1. Zmienne wpływające na wielkość potencjału turystycznego

Section I. Tourism amenities			
Natural amenities (z_1)		**Man-made amenities (z_2)**	
x1	Forest cover indicator	x8	Relics of the past, historical buildings
x2	Meadow and pasture indicator	x9	Museums and other permanent expositions
x3	Protected landscape area indicator		
x4	Bodies of waters suitable for water sports	x10	Trails (for hiking, cycling and horse riding) in kilometres per 1 km^2
x5	Landscapes suitable for cross-country skiing		
x6	Landscapes suitable for downhill skiing		
x7	Occurrence of spa waters		
Transport availability (z_3)			
x11	Roads in kilometres per 1 km^2		
x12	Number of trains stopping per year		
x13	Number of passenger transport companies per 1000 inhabitants		
x14	Number of car parks per 1 km^2		
x15	Average travel time from the capital of the province to the commune		
Section II. Socio-economics factors			
Service infrastructure (z_4)		**Technical infrastructure (z_5)**	
x16	Number of landline telephones per 1000 inhabitants	x24	Length of water mains in km per 1000 inhabitants
x17	Number of groceries per 1000 inhabitants	x25	Length water mains in km per 1 km^2
x18	Number of petrol stations and car repair shops per 1 km^2	x26	Length of sewer pipelines in km per 1000 inhabitants
x19	Number of banks per 1000 inhabitants	x27	Length of sewer pipelines in km per 1 km^2
x20	Number of post offices per 1000 inhabitants	x28	Length of natural gas pipelines in km per 1000 inhabitants
x21	Number of pharmacies per 1000 inhabitants	x29	Amount of untreated waste water (dm^3 per 1 km^2)
x22	Number of clinics and hospitals per 1 km^2	x30	Amount of accumulated waste (tons per 1 km^2)
x23	Distance form commune to main city in the county	x31	Percentage of population using the sewage treatment plant
		x32	Percentage of managed waste
Demographic structure (z_6)		**Finances of communes (z_7)**	
x33	Population age profile	x38	Total revenues of self-government entities
x34	Percentage of population working in agriculture	x39	Share of investments in total expenses of a commune (%)
x35	Percentage of population working in services	x40	Percentage of grants and subsidies in total revenues
x36	Unemployment indicator		
x37	Population density factor		

Source: Own research.
Źródło: Badania własne.

Standardization of features came out as the subsequent stage; along with an opportunity to mutually compare the municipalities for the rate of a certain indicator, the indicators could also be compared one against the other. A synthetic measure for the groups and then for the spheres, being the next step in the tourism potential index analysis, was set once all the aforementioned calculations were completed.

Tourism function rates (amounts) have been reckoned for individual municipalities using the Baretje and Defert indicator [Lijewski at al. 2002]. The latter is based on the number of tourist accommodation places (beds) and the number of permanent residents; the index is formulated as follows:

$$y = \frac{100N}{L_0 + kN}$$

where: N – number of tourist accommodation places (beds)
L_0 – local population not involved in tourism
k – index of inhabitants employed with tourism services, conditional upon the number of tourism-related accommodation places/beds and hotel categories

The regression analysis carried out has allowed for making up a model describing the relations between the tourist function volume (a dependent variable) and elements of tourism potential (independent variables): natural values/qualities (z_1), anthropogenic values/qualities (z_2), availability (z_3), services-related infrastructure (z_4), technical/technological infrastructure (z_5), demographic structure (z_6), and the municipalities' finance (z_7). A regression with more than one explanatory variable is a multiple regression (Brandt: 1998). In such a case, the theoretical model of regression assumes the following form:

$$y = a + b_1*z_1 + b_2*z_2 + ... + b_p*z_p$$

RESEARCH OUTCOME

Tourist attractiveness index

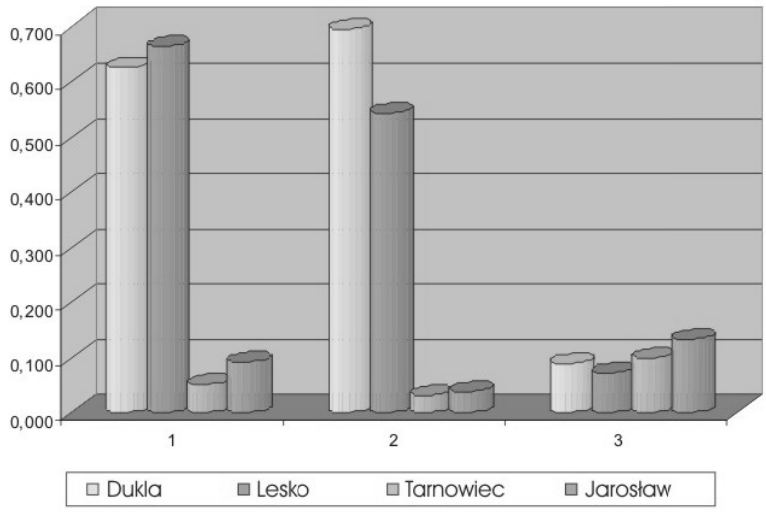
Setting together the tourist attractiveness aspects, i.e. natural and anthropogenic values and accessibility, it is determinable which of the municipalities are characterised by the highest attractiveness, along with their location (Table 2). The average index rate is $\overline{AT} = 0.21$ and 46% (i.e. 66) of the municipalities were found to perform equal to, or higher than, the average in this respect. The highest-rated municipalities included those of Dukla (0.54) and Lesko (0.51). Among the weakest-performing municipalities, with a ratio of $AT \leq 0.1$ maximum, eight were classed, incl.: Tarnowiec ($AT = 0.06$), Jarosław ($AT = 0.08$), Żyraków, Czermin, Przeworsk, Wadowice-Górne, Gorzyce and Borowa ($AT = 0.09$ each). The municipalities ranked at the two extremes differ markedly in their natural and anthropogenic value indicators, yet the difference for accessibility is only slight (Figure 2). It was thus found that a key role for determining the index in question is played by the first two mentioned elements.

Table 2. Municipalities rated by tourist attractiveness (synthetic indicator)
Tabela 2. Ranking gmin wg wskaźnika atrakcyjności turystycznej

	Municipalities	
1	**Dukla**	**0.54**
2	**Lesko**	**0.51**
3	**Lutowiska**	**0.47**
4	**Solina**	**0.46**
5	**Cisna**	**0.45**
6	**Komańcza**	**0.45**
7	**Horyniec-Zdrój**	**0.44**
8	**Baligród**	**0.43**
9	**Rymanów**	**0.41**
10	**Olszanica**	**0.41**
11	**Ustrzyki Dolne**	**0.41**
12	**Czarna***	**0.40**
13	Miejsce Piastowe	0.39
14	Iwonicz-Zdrój	0.37
15	Narol	0.37
16	Krempna	0.35
17	Bukowsko	0.31
18	Fredropol	0.31
19	Krasiczyn	0.30
20	Bircza	0.30
21	Wojaszówka	0.30
22	Tyrawa Wołoska	0.30
23	Dynów	0.30
24	Sanok	0.29
25	Cieszanów	0.29
26	Nowy Żmigród	0.28
27	Dębica	0.28
28	Osiek Jasielski	0.28
29	Dębowiec	0.28
30	Dydnia	0.28
31	Dubiecko	0.27
32	Strzyżów	0.27
33	Krzywcza	0.27
34	Pilzno	0.26
35	Kuryłówka	0.26
36	Zagórz	0.26
37	Zaklików	0.26
38	Zarszyn	0.26
39	Sieniawa	0.26
40	Besko	0.26
41	Żurawica	0.25
42	Adamówka	0.25
43	Pruchnik	0.25
44	Wielopole Skrzyńskie	0.25
45	Czudec	0.24
46	Błażowa	0.24
47	Hyżne	0.24
48	Niwiska	0.24
49	Iwierzyce	0.24
50	Tyczyn	0.24
51	Przemyśl	0.23
52	Chorkówka	0.23
53	Ropczyce	0.23
54	Korczyna	0.23
55	Głogów Małopolski	0.23
56	Łańcut	0.23
57	Wiązownica	0.23
58	Cmolas	0.23
59	Lubaczów	0.23
60	Sędziszów Małop.	0.23
61	Brzostek	0.22
62	Markowa	0.21
63	Rakszawa	0.21
64	Ostrów	0.21
65	Niebylec	0.21
66	Frysztak	0.21
67	Brzozów	0.20
68	Wiśniowa	0.20
69	Jawornik Polski	0.20
70	Rokietnica	0.20
71	Dzikowiec	0.20
72	Lubenia	0.19
73	Nozdrzec	0.19
74	Baranów Sandomierski	0.19
75	Jedlicze	0.19
76	Kolbuszowa	0.18
77	Jasienica Rosielna	0.18
78	Wielkie Oczy	0.18
79	Ulanów	0.18
80	Nisko	0.18
81	Przecław	0.18
82	Bojanów	0.18
83	Radymno	0.18
84	Oleszyce	0.17
85	Pysznica	0.17
86	Rudnik nad Sanem	0.17
87	Grodzisko Dolne	0.17
88	Czarna**	0.17
89	Kołaczyce	0.17
90	Stary Dzików	0.17
91	Boguchwała	0.16
92	Mielec	0.16
93	Harasiuki	0.16
94	Tuszów Narodowy	0.16
95	Roźwienica	0.16
96	Jodłowa	0.16
97	Leżajsk	0.16
98	Świlcza	0.15
99	Sokołów Małop.	0.15
100	Trzebownisko	0.15
101	Orły	0.15
102	Grębów	0.15
103	Chmielnik	0.15
104	Radomyśl n/Sanem	0.15
105	Kańczuga	0.14
106	Haczów	0.14
107	Raniżów	0.14
108	Domaradz	0.14
109	Nowa Sarzyna	0.14
110	Majdan Królewski	0.14
111	Żołynia	0.14
112	Skołyszyn	0.13
113	Gać	0.13
114	Medyka	0.13
115	Czarna***	0.13
116	Kamień	0.13
117	Nowa Dęba	0.13
118	Białobrzegi	0.13
119	Jasło	0.13
120	Radomyśl Wielki	0.12
121	Zarzecze	0.12
122	Zaleszany	0.12
123	Stubno	0.12
124	Brzyska	0.12
125	Krościenko Wyżne	0.12
126	Jarocin	0.12
127	Laszki	0.12
128	Tryńcza	0.12
129	Jeżowe	0.11
130	Pawłosiów	0.11
131	Krasne	0.10
132	Chłopice	0.10
133	Padew Narodowa	0.10
134	Krzeszów	0.10
135	Gawłuszowice	0.10
136	**Borowa**	**0.09**
137	**Wadowice Górne**	**0.09**
138	**Gorzyce**	**0.09**
139	**Przeworsk**	**0.09**
140	**Czermin**	**0.09**
141	**Żyraków**	**0.09**
142	**Jarosław**	**0.08**
143	**Tarnowiec**	**0.06**

* bieszczadzki province; ** łańcucki province; *** dębicki province

Source: Own research.
Źródło: Badania własne.



1) Natural values/qualities; 2) Anthropogenic values/qualities; 3) Accessibility.

Fig. 2. Distribution of tourist attractiveness indicators for the two top-rated and two lowest-rated municipalities

Rys. 2. Rozkład wielkości wskaźników atrakcyjności turystycznej dla dwóch gmin sklasyfikowanych najwyżej i dwóch sklasyfikowanych najniżej w rankingu

Source: Own research.
Źródło: Badania własne.

Socio-economic determinants ratio

Socio-economic determinants or conditions determine the quality of life and standard of living of the inhabitants of specified areas and the areas' investment-related attractiveness. They set the municipalities' competitiveness viewed against other territorial (local) units. The drivers selected and presented above directly shape and contribute to the municipality's tourism potential.

In Podkarpackie province municipalities under research, the average rate for the index in question is $\overline{U_{sg}}$ = 0.28. Again, southern municipalities were rated highest (Table 3), while a total of 61 units were found to be of a value equal to, or in excess of, the average (i.e. 43% of municipalities in the Podkarpacie area).

The clearest difference between the indicators for the best and worst performing municipalities is for the demographic structure and finance of the municipalities. The services-oriented and technical/technological infrastructure, better developed in the dominating municipalities, prevail over the weakest units by a mere 0.2 on average. This breakdown may suggest that the socio-economic conditions are mainly shaped by factors 3 and 4 (Figure 3).

Table 3. Municipalities rated by the socio-economic determinant indicator
Tabela 3. Ranking gmin wg wielkości wskaźnika uwarunkowań społeczno-gospodarczych

	Municipality	
1	**Lutowiska**	**0.49**
2	**Solina**	**0.47**
3	**Lesko**	**0.45**
4	**Cisna**	**0.43**
5	**Dukla**	**0.43**
6	**Baligród**	**0.40**
7	Horyniec-Zdrój	0.39
8	Miejsce Piastowe	0.38
9	Ustrzyki Dolne	0.38
10	Komańcza	0.37
11	Krempna	0.37
12	Rymanów	0.36
13	Czarna*	0.36
14	Iwonicz-Zdrój	0.35
15	Cieszanów	0.33
16	Olszanica	0.33
17	Narol	0.33
18	Krasiczyn	0.32
19	Ropczyce	0.32
20	Besko	0.32
21	Fredropol	0.32
22	Żurawica	0.31
23	Strzyżów	0.31
24	Ostrów	0.31
25	Rokietnica	0.31
26	Sieniawa	0.31
27	Łańcut	0.30
28	Kuryłówka	0.30
29	Wojaszówka	0.30
30	Bukowsko	0.30
31	Tyczyn	0.30
32	Niwiska	0.30
33	Głogów Małop.	0.30
34	Zaklików	0.30
35	Dębowiec	0.30
36	Tyrawa Wołoska	0.30
37	Chorkówka	0.29
38	Cmolas	0.29
39	Stary Dzików	0.29
40	Dydnia	0.29
41	Dębica	0.29
42	Sanok	0.29
43	Czudec	0.29
44	Harasiuki	0.29
45	Adamówka	0.29
46	Oleszyce	0.29
47	Zarszyn	0.29
48	Hyżne	0.29
49	Wiązownica	0.29
50	Bircza	0.29
51	Lubaczów	0.29
52	Krzywcza	0.29
53	Dubiecko	0.28
54	Nowy Żmigród	0.28
55	Trzebownisko	0.28
56	Kolbuszowa	0.28
57	Sędziszów Małop.	0.28
58	Markowa	0.28
59	Błażowa	0.28
60	Iwierzyce	0.28
61	Pruchnik	0.28
62	Frysztak	0.27
63	Nisko	0.27
64	Dynów	0.27
65	Medyka	0.27
66	Dzikowiec	0.27
67	Ulanów	0.27
68	Wiśniowa	0.27
69	Zagórz	0.27
70	Osiek Jasielski	0.27
71	Boguchwała	0.27
72	Niebylec	0.27
73	Brzostek	0.27
74	Gać	0.26
75	Pilzno	0.26
76	Rakszawa	0.26
77	Kańczuga	0.26
78	Bojanów	0.26
79	Roźwienica	0.26
80	Jawornik Polski	0.26
81	Pawłosiów	0.26
82	Przecław	0.26
83	Majdan Król.	0.26
84	Krasne	0.26
85	Wielkie Oczy	0.26
86	Korczyna	0.26
87	Żołynia	0.26
88	Jarocin	0.26
89	Chmielnik	0.26
90	Orły	0.26
91	Kołaczyce	0.25
92	Wielopole Skrzyńskie	0.25
93	Grodzisko Dolne	0.25
94	Brzozów	0.25
95	Rudnik n/Sanem	0.25
96	Nozdrzec	0.25
97	Jasienica Rosielna	0.25
98	Czarna**	0.25
99	Przemyśl	0.25
100	Jeżowe	0.25
101	Świlcza	0.25
102	Haczów	0.25
103	Lubenia	0.25
104	Jedlicze	0.25
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106	Nowa Sarzyna	0.25
107	Domaradz	0.24
108	Zarzecze	0.24
109	Chłopice	0.24
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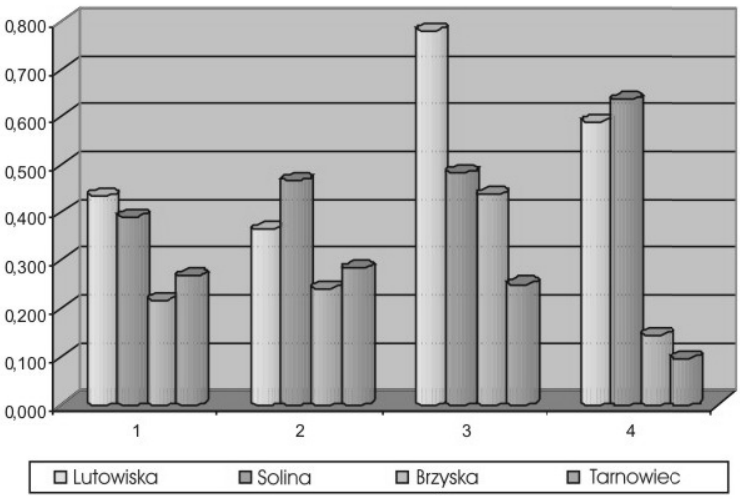
113	Krościenko Wyżne	0.24
114	Czarna***	0.24
115	Tryńcza	0.24
116	Białobrzegi	0.24
117	Padew Narodowa	0.24
118	Radymno	0.24
119	Gorzyce	0.24
120	Leżajsk	0.24
121	Stubno	0.24
122	Raniżów	0.24
123	Kamień	0.24
124	Tuszów Narodowy	0.23
125	Laszki	0.23
126	Radomyśl Wielki	0.23
127	Jodłowa	0.23
128	Jarosław	0.23
129	Radomyśl n/Sanem	0.23
130	Mielec	0.23
131	Zaleszany	0.22
132	Krzeszów	0.22
133	Gawłuszowice	0.22
134	Żyraków	0.22
135	Skołyszyn	0.22
136	Nowa Dęba	0.22
137	Wadowice Górne	0.21
138	Czermin	0.20
139	Przeworsk	0.20
140	Borowa	0.20
141	**Jasło**	**0.19**
142	**Brzyska**	**0.19**
143	**Tarnowiec**	**0.15**

* bieszczadzki province; ** łańcucki province; *** dębicki province

Source: Own research.
Źródło: Badania własne.



1) Services infrastructure; 2) Technical/technological infrastructure; 3) Demographic structure; 4) Municipality finance.

Fig. 3. Distribution of socio-economic determinant indicators for the two top-rated and two lowest-rated municipalities

Rys. 3. Rozkład wielkości wskaźników uwarunkowań społeczno-gospodarczych dla dwóch gmin sklasyfikowanych najwyżej i dwóch sklasyfikowanych najniżej w rankingu

Source: Own research.
Źródło: Badania własne.

Tourism potential index

The indicators shown above form the basis for calculating a complete tourism-related potential for each of the investigated municipalities. The mean value of the potential in question equals $\overline{P} = 0.329$, all the administrative units being contained within the brackets of $P \in (0.14–0.50)$. A higher-than-average ratio was only achieved by sixteen administrative units that may be deemed to be municipalities of particularly high tourism potential. These include (cf. Table 4): Lutowiska, Solina, Lesko, Cisna, Dukla, Baligród, Horyniec-Zdrój, Miejsce-Piastowe, Ustrzycki-Dolne, Komańcza, Krempna, Rymanów, Czarna (County of Bieszczady), Iwonicz-Zdrój, Olszanica, and Cieszanów. All these municipalities are situated in the south of Podkarpackie Province (Figure 4).

Those municipalities which were rated last, with their synthetic indicator at $P \leq 0.2$, include: Tarnowiec, Brzyska, Jasło (surrounding the town of Jasło), Przeworsk (directly neighbouring the town of Przeworsk), and Borowa – the only municipal unit not adjacent to an urban area.

The rating of municipalities in terms of the synthetic indicator of their tourism potential and the elements based whereupon this rate has been reckoned clearly indicate that the rural municipalities of Podkarpackie province are diversified.

Table 4. Municipalities rated by tourism potential index
Tabela 4. Ranking gmin wg wskaźnika potencjału turystycznego

	Municipality	
1	**Lutowiska**	**0.49**
2	**Solina**	**0.47**
3	**Lesko**	**0.45**
4	**Cisna**	**0.43**
5	**Dukla**	**0.43**
6	**Baligród**	**0.40**
7	Horyniec-Zdrój	0.39
8	Miejsce Piastowe	0.38
9	Ustrzyki Dolne	0.38
10	Komańcza	0.37
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65	Medyka	0.27
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72	Niebylec	0.27
73	Brzostek	0.27
74	Gać	0.26
75	Pilzno	0.26
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134	Żyraków	0.22
135	Skołyszyn	0.22
136	Nowa Dęba	0.22
137	Wadowice Górne	0.21
138	Czermin	0.20
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* bieszczadzki province; ** łańcucki province; *** dębicki province

Source: Own research.
Źródło: Badania własne.

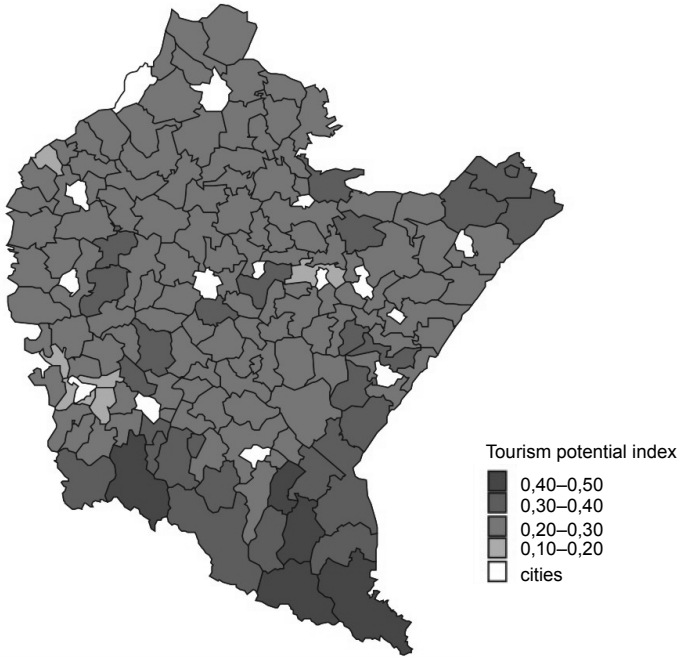

Fig. 4. Spatial distribution of municipalities by tourism potential index
Rys. 4. Rozmieszczenie przestrzenne gmin według wskaźnika potencjału turystycznego

Source: Own compilation.
Źródło: Opracowanie własne.

This non-homogeneity among the municipalities determines the developmental potential of these areas' various functions. The present rating may suggest which areas provide larger or smaller development opportunities for tourism as a domain of the local economy. It has to be borne in mind that tourism cannot develop in any single place, or that in certain circumstances it may not necessarily form the demanded developmental direction. Municipalities displaying a weak tourism potential cannot limit their development grounds to tourism only, apparently being a relatively non-expensive means – especially if they do not carry out research into the potential in question.

TOURISM FUNCTION – SIZE AND STRUCTURE

With statistical analysis of the above-specified elements completed, the following tourist function rates have been arrived at for individual municipalities in the Province. The tourist function rate assumed $y > 0$ for a total of 116 municipalities, i.e. 81% of administrative units. It was thus found that it was only in those municipalities that a tourism function actually appeared. The highest rate was disclosed for the Municipality of Krempna, situated on the south-western edge of the Province. It is a border

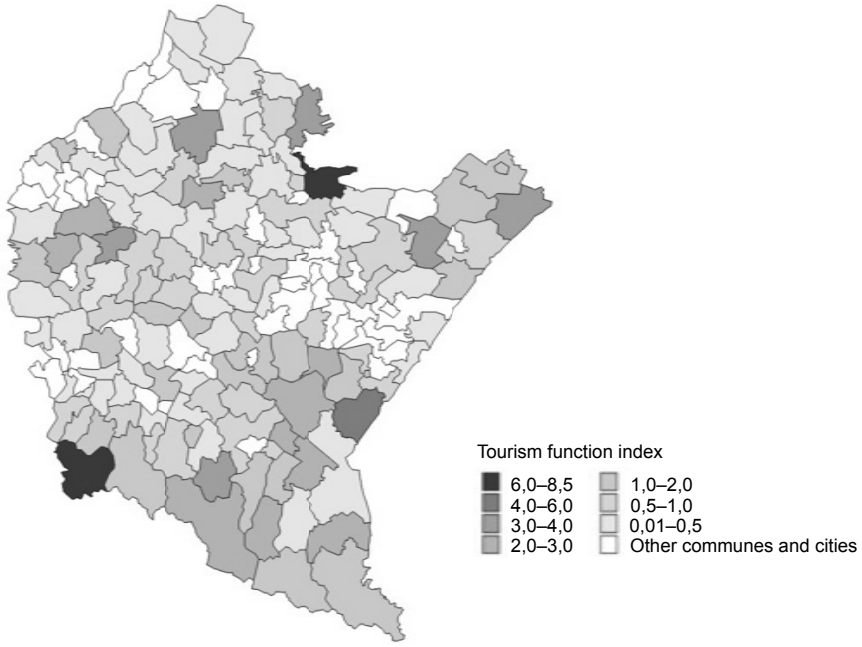

Fig. 5. Spatial distribution of municipalities by tourism function indicator
Rys. 5. Rozmieszczenie przestrzenne gmin wg wskaźnika funkcji turystycznej

Source: Own compilation.
Źródło: Opracowanie własne.

municipality that shares a frontier with Slovakia and with a Małopolskie Province municipality. Its tourism function was rated at y = 8.1728. Krempna is followed by the Municipality of Kuryłówka, with its tourist function indicator of y = 7.3870.

In a spatial localization (Figure 5), those municipalities where a tourism function appears are classifiable into three groups, i.e. municipalities situated in the southern, north-eastern and central part of the Province. The first two are located in areas proving attractive in terms of their natural values (i.e. Roztocze, Beskidy and Bieszczady, respectively) and tourism seems to be a natural development there, whereas the third identified group is a special case in point. Employment in the tourism industry and development of accommodation/overnight-stay facilities are no doubt associated with the use of a transportation route. It can be confirmed that the authorities of municipalities forming this cluster, as well as local inhabitants, could successfully perceive and take advantage of the benefit of their area's situation. This forms a primary determinant of the fact that a tourist function does not necessarily have to be conditional upon an area's location in respect of natural attractions. Only those units with which the tourist function assumed the value of y > 0, i.e. the 116 municipalities, incl. twenty-seven urban-and-rural municipalities and eighty-nine rural municipalities were subject to further analysis.

DETERMINANTS OF DEVELOPMENT OF THE TOURIST FUNCTION

Identification of the factors determining the development of the region's tourism function is based on a general linear model (GLM). The results of the analysis of multiple regression made in the *Statistica 8.0* module discerned one variable, i.e. z_1, informing the region's tourism function (y). Based on the actual natural values' parameters, the regression model representing the tourism function (y) can be shown with the use of the following formula:

$$y = 1.742*z_1 + 0.96$$

The above model is evidence that the volume or size of the tourist function for a given municipality is mostly dependent upon natural values. The other variables have not been made part of the GLM due to their high significance tests (Table 5).

Table 5. One-dimensional significance tests for the tourism function *y*, in a general regression model

Tabela 5. Jednowymiarowe testy istotności dla funkcji turystycznej *y* dla ogólnego modelu regresji

Effect	One-dimensional significance tests for *y* Parameterisation with sigma-restrictions Decomposition of effective hypotheses
	p
Absolute term	0.361031
Natural values (z_1)	0.040468
Anthropogenic values (z_2)	0.323550
Accessibility (z_3)	0.408873
Services infrastructure (z_4)	0.707235
Technical/technological infrastructure (z_5)	0.160934
Demographic structure (z_6)	0.376520
Communal finance (z_7)	0.119492

Source: Own research.
Źródło: Badanie własne.

To reconfirm the above-specified model, the author additionally employed a model of forward/backward regression, which ascertained natural values as the variable that most significantly influences the shaping of the tourism function in the region.

SUMMARY

The diversity of urban-rural and rural municipalities in Podkarpackie province with regards to both natural and anthropogenic values or qualities, accessibility, and all the aspects pertinent to socio-economic conditions/determinants, implies that various

economic functions may take shape in the areas under research – the tourism function being one of them. Based on the statistical analyses presented, it has been found that the main determinant of the latter function's development is the size (volume) and structure of natural values specific to individual municipalities. The remaining variables in question have not been made part of the linear model under discussion. Presumably, an additional non-linear analysis of the phenomenon being considered would be indispensable. Still, taking the present outcome into account, one comes to the conclusion that the areas (municipalities, counties, regions) characterised by considerable natural values face more remarkable opportunities to develop their economies on the basis of tourism.

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WPŁYW POTENCJAŁU TURYSTYCZNEGO NA KOSZTAŁTOWANIE FUNKCJI TURYSTYCZNEJ REGIONU NA PRZYKŁADZIE OBSZARÓW WIEJSKICH WOJEWÓDZTWA PODKARPACKIEGO

Streszczenie. Potencjał turystyczny to elementy środowiska przyrodniczego (naturalne) oraz kulturowego (antropogeniczne), które stanowią podstawę do rozwoju ruchu turystycznego. Odpowiednio zagospodarowane i wyeksponowane stają się walorami turystycznymi, często unikatowymi, które są już realnymi elementami przyciągania ruchu turystycznego na dany teren. Potencjał turystyczny postrzegany jest jako jeden z podstawowych elementów kształtowania się funkcji turystycznej regionu, a jego podział zależny jest od autorów opisujących i charakteryzujących to zjawisko. Różne są też metody jego pomiaru. Celem artykułu jest wykazanie, który spośród wybranych siedmiu elementów potencjału turystycznego jest najważniejszy w kształtowaniu się tej funkcji. Badania do niniejszej pracy wykonane zostały w latach 2006–2007 i objęły obszar wszystkich gmin wiejskich oraz miejsko-wiejskich województwa podkarpackiego.

Słowa kluczowe: potencjał turystyczny, atrakcyjność turystyczna, uwarunkowania społeczno-demograficzne, funkcja turystyczna, województwo podkarpackie

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PERCEPTION OF BEEF ATTRIBUTES BY POLISH CONSUMERS AS A FACTOR DETERMINING DEMAND FOR THIS FOOD CATEGORY

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Abstract. To get insight into Polish consumers' perception and prioritization of beef attributes there was a research conducted using qualitative approach. The results show that Polish consumers perceive beef as healthy, lean, with a high content of iron, tasty and festive meat. Nevertheless, consumers also pay attention to the negative aspects of beef and they claim that beef is difficult to prepare, expensive and tough. Female consumers also indicated that it is not easy to buy quality beef, and that children do not like that type of meat. The projective image of beef is positive and the most commonly mentioned association represented dimensions such as strength, activity, lightness, creativity, wealth, peace, elegance, happiness and health. These results maybe of relevance for creating communication strategies on the beef market.

Key words: beef, consumer, perception, qualitative research

INTRODUCTION

In recent years consumers have been paying more attention to healthy life-style. As a result consumers expect that food should be of high quality, safe and should have proper nutritional and health value, high sensory attractiveness, but should also be easy to prepare [Gutkowska and Ozimek 2005]. Some of these expectations with regard to food are also important factors of food product choices. The expectations are a reflection of perceived and preferred values by consumers of food product, values which make some products more advantageous than others in terms of their competitiveness. The literature on the subject also shows that the most important factors affecting food choices of Polish consumers are as follows: price, quality, convenience, nutritive value and in further

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sequence: brand, country of origin and advertisement [Gutkowska and Ozimek 2005; Kowrygo 2000]. Of a relatively minor importance for choosing the food products are the following factors: lack or low sugar content, organic method of production, size of packing or low processing level. The research shows that the importance of quality increases with the age of consumers [Gutkowska and Ozimek 2005]. Younger consumers indicate the brand of product more often. Country of origin of food products is of relatively minor importance [Sajdakowska and Gutkowska 2002], although it is expected that it can become more important due to growing confidence in food produced in Poland, implied from worldwide food product scandals.

Based on own research it can be assumed that the most important factor affecting consumers' choices with regard to food products are their own preferences as well as preferences of their family members [Gutkowska and Ozimek 2008].

EUROPEAN CONSUMERS' OPINIONS ON BEEF – ITS POSITIVE AND NEGATIVE ATTRIBUTES

Contemporary consumers are becoming more and more demanding in relation to meat they buy and preferred attributes of red meat they buy and consume. Their behavior towards majority of food products confirm explicitly a simple truth that if food, including beef, is to be sold successfully it must meet consumers' expectations. A required product quality plays an important role among these expectations.

Quality is a concept that has been defined in a number of ways, although nowadays consumers' approach to defining food quality is dominating. It is reflected in the opinion that product quality involves a specific number of benefits expected from a product by consumers. Consumers are often willing to pay more for quality beef which has been proved by the authors of MSA system (Meat Standard Australia) [Polkinghorn 2008]. However, there are diverse possible ways to perceive beef and veal quality [Grunert 1997], which depend on various attributes of this type of meat, such as physical properties, level of safety, type of packing, production system, origin etc. Quality is also interpreted differently by particular operators in the area, such as producers, processing companies, traders and logistic operators. Food and agriculture production tend to be highly technologized, so the distance from consumers to producers increases which creates suspicions and misunderstandings related to production standards. In the same time a market niche has developed for quality guaranteed products (Quality Meat Products – QMPs), due to growing concern of consumers towards aspects relating to ethics, health, animal welfare, environmentally friendly production methods, local origin of products [Sylvander and Melet 1992; Grunert et al 1996; Nienhaus 1996]. It is noted that irrespective of cultural conditions in different countries similar quality factors affect meat consumption patterns, and the most frequent are taste, nutritive value, habits and origin (especially in Scotland and Spain). Low prices for beef are an important factor for Italians and the English, whereas Scots, Spaniards and the French are of the opinion that price is not of major importance because they prefer "to buy less meat but of high quality". A relatively important attribute of beef is also low fat content which – as the research shows – is especially important for Italians and young British consumers [Bernues et al 2003].

Consumer behavior research conducted in 2003 on a sample of 779 Polish consumers relating to evaluation of factors affecting choice of meat and meat products made it possible to establish their hierarchy. There were 16 different factors selected for research including brand, product, packaging and to end with availability and price [Walkowiak 2007]. According to consumers, the most important factors which in their opinion determine choice of meat and smoked meat brands include mainly appropriate taste of products, so it can be said that taste is a primary attribute of meat determining its purchase. The importance of taste as the factor determining meat and smoked meat choice is even more prevailing if the detailed percentage of particular indications is taken into account. The percentage of responses indicating that taste is essential (22.7%) or very important (63.8%) is by far higher than other figures. Price is the second factor whose importance is high and it is especially true for consumers having lower incomes. Moreover, respondents buying meat and smoked meat products take into account liking and preferences of other family members. Buyers of meat and smoked meat pay a lot of attention to their experience with a given brand, i.e. if the brand has been verified and products with the brand suit respondents and other family members, then the brand of the products is often chosen from among other products available on the market. As regards other factors affecting choice of the brand products which respondents believe to be essential origin of products should be mentioned, i.e. it is important if the meat or smoked meat products have been produced in Poland and if their brand is known. Thus one can find a relatively high level of ethnocentric approach in consumers' attitude towards meat and meat products, especially smoked meat. Buyers of meat and smoked meat products become attached to one or a few shops where they buy favorite and verified products and due to this very important factor their purchasing decisions include availability of the given brand in the shop where they usually do shopping.

The scope of knowledge on Polish consumers' behavior on the meat market is still low and to get insights into factors affecting their choices of meat and particularly beef there was a qualitative consumer research carried out within the project co-financed by the European Fund of Regional Development in the framework of Operation Program for Innovative Economy entitled Optimum beef production in accordance with the strategy "from fork to farm", using the method of focus group interviews (FGI). Basic objective of the research was to find out what are the attributes associated with beef in comparison with other types of meat, namely pork and poultry.

MATERIAL AND METHODS

Focus group study is a carefully planned series of discussion designed to obtain perception on a defined area of interest in a permissive, nonthreatening environment [Krueger and Casey 2009]. Each group is conducted with 5 to 10 people led by a skilled moderator. To obtain information on Polish consumers perception of beef there were in total 20 FGI carried out each with approximately 8–12 participants selected on the basis of detailed recruitment questionnaire. The research sample included women aged 35–65 years, running households and evaluating positively material situation of their households. The recruitment criteria for participants of the group discussions included also their income

situation because beef consumption in the Polish households is essentially statistically different due to the level of income.

The composition of focus groups is listed below:

- 4 FGI – aged 55–65, retired women or professionally active women, secondary education minimum'
- 6 FGI – aged 35–45, professionally active women, managers or specialists, higher education, having a child up to15 years old,
- 4 FGI – women, regular beef consumers'
- 4 FGI – women, potential beef consumers'
- 2 FGI – women declaring not buying beef at all or occasionally.

The sessions were run according the guidelines including the core issues to be explored. During the session the projective techniques were used that are based on the underlying principle that unconscious desires and feelings can be inferred by presenting a subject with an ambiguous situation in which he or she has to use the ego defense mechanism of projection [Donoghue 2000]. Instead of questioning participants directly, the subjects may be asked to respond indirectly, either talking about other people, these other people's feelings, attitudes and opinions, or about objects or situations. Participants were asked to imagine yourselves that they live on a planet where people consume beef and describe it using various aspects. It was an attempt to elicit unconscious association with beef and to prove how much the objectively stated higher nutritive value of beef [Kunachowicz et al 2005] and higher content of vitamins and other nutritive elements in beef in comparison with other types of meat is confirmed by consumers and constitutes specific attributes of this meat category.

The entire interviews were transcribed and the data was analyzed using qualitative analytic approaches as described by Stewart et al [2007].

ATTRIBUTES ASSOCIATED WITH BEEF: POLISH CONSUMERS ON BEEF VALUES IN THE LIGHT OF QUALITATIVE RESEARCH RESULTS

It can generally be stated that based on analysis of focus group discussion participants' opinions the most important attribute of meat is its "freshness". Apart from that the respondents emphasized that meat and actually meat dishes, have to be "tasty", "well made and seasoned" and also "quick and easy to prepare", "economic and efficient". The respondents also stated that meat dishes should be "healthy", "low in fat", "rich in vitamins" and "liked by children".

Participants of the group interviews also pointed out that meat should come from a secure source and should be useful for preparing a variety of dishes what is reflected in the statements cited below:

– *"Healthy and tasty – this is equally important";*
– *"Not overpriced, economic";*
– *"For example, I am guided by what is liked by family members even if they have different tastes, I cook what everyone likes";*
– *"Time to prepare is also important, it is important that it doesn't take much time;*
– *"Saving time is important, because we live so fast";*

– *"I pay attention to healthiness and variety, so that everyone eats, time plays a role, and I try to diversify…".*

The consumers taking part in the group discussions noted that meat is the basis of nutrition and hence – in the opinion of respondents – it must be included in the menu every day. The basic attribute of meat is that it "gives strength and satisfies hunger for longer". Because children often do not like meat it is essential to prepare it in such a way it is liked. This is not especially difficult according participants of focus group discussions since "meat gives great opportunities to diversify the ways of preparing". Meat is also seen "as the most cost-effective component of a dinner given wholesomeness". The participants also pointed out that meat can affect health, but only if it is fatty and prepared in an unhealthy manner such as fried meat. Basic values of meat include – according to participants of focus group discussions – the following positive attributes:

– *"It gives strength and energy";*
– *"It is satiating, nutritious, substantial and appeases hunger for a long time";*
– *"It is tasty";*
– *"It gives calm";*
– *"Contains elements necessary for proper development";*
– *"It is easy to prepare";*
– *"There are many ways to prepare it";*
– *"It is economic, efficient".*

Respondents also noted the negative features of meat related mainly to its health impact, convenience and prices what is reflected in the statements included below:

– *"It is the source of cholesterol";*
– *"Unhealthy if fat";*
– *"Unhealthy if fried";*
– *"Full of calories, fatty";*
– *"Some types of meat (e.g. beef) take a lot of time to prepare, so it is labour-consuming";*
– *"It spoils quickly and is not fresh";*
– *"It is not always known where it comes from and how it was stored";*
– *"Some types of meat are expensive";*
– *"It is not possible to check everything e.g. if it was stimulated by hormones".*

However, in the course of discussion the respondents underlined that meat, irrespective of its type, is the basis of nutrition.

– *"We all like meat, it is tasty";*
– *"Meat is very important/indispensable for health";*
– *"Meat is rich of calories, especially some kinds of meat Some kinds of meat, for example pork, is reach of cholesterol and unhealthy fat".*

To get insight how consumers conceptualize other types of meat they were asked to describe positive and negative aspects of pork and chicken meat. As regards pork, its positive values have been most often stressed, such as cheap, easy and quick to prepare, can be prepared in many ways. The respondents have also emphasized the fact of its undisputable presence in the national menu because pork is used to prepare the most typical Polish dish which is pork-joint cutlet. Regarding negative features of pork, the following have been mentioned most often: fat, unhealthy, source of cholesterol, sometimes smells when fried.

In case of poultry meat the following basic positive attributes were mentioned: "lean, easy for digestion, cheap, easily available, quick to prepare, can be prepared in many ways". The respondents also stressed that children like poultry because "it is tasty and easy to chew".

As regards basic negative features of poultry, the following were mentioned: artificial farming, high content of chemicals and hormones, not recommended by doctors, tasteless, spoils quickly. In the context of group discussion opinions on attributes of particular types of meat it can be said that beef has a rather favourable position as compared to other types of meat and its positive attributes relate particularly to health values which confirms that the consumers are aware of the abundance of nutritive elements which can be found in beef. It is reflected in the opinions expressed by participants included below:

– *"Rich in iron, healthy";*
– *"Healthiest, lean. Veal and beef, when it comes to taste for me, these are the best";*
– *"Most lean meat";*
– *"Well, it is tasty in general";*
– *"Beef is the basis of protein in general…";*
– *"It has so much proteins and is one of the healthiest meats".*

In the light of opinions expressed by participants of focus group discussions there is no doubt that consumers are well aware of healthy values of beef and perceive it as a special type of meat both due to its high nutritive value as well as specific taste. However, these positive connotations are confronted with negative opinions on beef, the most important of which are: there is no beef on the market of expected quality and the good quality beef which Is available is too expensive. According the participants of focus group interviews the main indicators of high quality beef are connected with appearance and particularly low fat content:

– *"Must be vivid color, bright red, juicy, but not too dark";*
– *"Not dried";*
– *"Low in fat, if the fat is visible it cannot be yellow";*
– *"Young, not very large or large piece";*
– *"Without veins, hypertrophy".*

It is also worth noting that although it results from other research [Sajdakowska, Gutkowska 2002] that Poles have an ethnocentric approach to food, the "Polish origin of beef" has not been spontaneously mentioned. However, the respondents who were plied

with this question confirmed their preference for food of the Polish origin. Majority of consumers believe that the meat they buy is produced in Poland although they have never met such information, maybe because they most frequently buy unpacked meat.

CONSUMERS' NOTIONS ON BEEF IN THE CONTEXT OF RESULTS OF THE PROJECTION TECHNIQUE USED

In qualitative consumer research, projective techniques explore associations with brands, symbols, products, advertising, and images. It explores people's subconscious feelings, beliefs, and desires. Respondents project their feelings and beliefs about other people or objects. In doing so, they reveal feelings and beliefs about themselves. Projection techniques make it possible to obtain opinions which are not distorted by the burden of declarative aspect of personal observations due to concern about their evaluation by others. In the course of group discussion the respondents were asked to imagine a "planet of beef eating people" and present an opinion on the planet and its inhabitants. Generally speaking, the respondents' opinions both on the planet and its inhabitants are univocally positive. Beef consumers' planet is characterized as a clean, green an quiet place. The inhabitants – beef consumers are also perceived in a univocally positive way. Their characteristics can be divided into three main categories: physical, psychological and socio-demographic. Not all of the categories have been completed in the same extent with specific characteristics of the planet inhabitants – beef consumers. The fact that physical and psychological characteristics have been mentioned most often is connected with the earlier documented health and taste values of beef which are responsible for psychological characteristics of consumers, having the defined hedonistic feelings. Physical characteristics of the inhabitants of the planet identified with beef consumers mentioned most often were: "no overweight, strong and muscular". It was also stressed that they are thin, good-looking and healthy. The respondents also said consumers of beef and inhabitants of the planet had an easy life. The only socio-demographic characteristic that the participants of the group discussions mentioned as regards the inhabitants of the planet identified with beef consumers was "being well-off". This is worth noting due to the fact that in previous opinions the respondents mentioned that one of important features of beef was its high price. The results are of importance for creating communication strategies on the beef market since they underline various dimensions of this food category.

CONCLUSIONS

The results of qualitative research on Polish meat consumers are relatively consistent with previous findings of e.g. Bredhal et al [1998] who indicate that consumer identify tenderness, taste, juiciness, and freshness as main quality attributes, Although as Grunert et al [1996] suggested these quality attributes have been supplemented by health, nutrition and wholesomeness what is also a growing concern of Polish consumers. In the context of presented considerations supported by results of literature analyses and carried out research the following conclusions can be formulated. The image of beef is positive and

significantly more attractive than of pork or poultry, although it can be noted that in the group of women not buying beef, poultry had the most positive image. Basic elements of positive characteristics of beef are: being healthy and tasty. Negatively perceived features of beef, balancing its positive image are unpredictable quality and a relatively high price. As a result of the clash between values of beef that Polish consumers are clearly aware of and its high price and difficulty in preparing for consumption in a way expected by family members, especially the youngest ones, beef is not often consumed in Polish homes.

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POSTRZEGANIE WALORÓW WOŁOWINY PRZEZ POLSKICH KONSUMENTÓW JAKO CZYNNIK WPŁYWAJĄCY NA WZROST POPYTU NA TĘ KATEGORIĘ ŻYWNOŚCI

Streszczenie. W celu określenia atrybutów przypisywanych wołowinie i ich hierarchizacji zrealizowano badania z wykorzystaniem podejścia jakościowego. Uzyskane wyniki wskazują, że wołowina była postrzegana jako zdrowa, chuda, z dużą zawartością żelaza, smaczna i odświętna. Warto też zwrócić uwagę na negatywne aspekty. Wołowina w oczach respondentów jest trudna w przygotowaniu, droga i twarda. Konsumentki wskazywały, że nie jest łatwo kupić dobrą wołowinę i, że dzieci nie lubią tego mięsa. Podczas badań jakościowych zastosowano techniki projekcyjne, co pozwoliło na określenie, że wołowina kojarzona jest z siłą, aktywnością, lekkością, kreatywnością, zamożnością, spokojem, elegancją, szczęściem i zdrowiem. Przedstawione wyniki mogą być wykorzystane w strategii komunikowania atrybutów mięsa wołowego polskim konsumentom.

Słowa kluczowe: wołowina, konsument, postrzeganie, badania jakościowe

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FOOD QUALITY AND ITS CONDITIONINGS

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Abstract. Food quality is the main issue of the article. Food quality concept is widely presented in the article. The most important in food quality management is to ensure food safety. That is why the author pays particular attention to food safety. The reader can find in the paper up-to-date examples of food safety management from real life. The author presents the outcome of the analysis of crucial food quality conditionings, like legal rules, agribusiness resources and methods of production. The author emphasizes the role of organic agriculture method in improving food quality and safety.

Key words: food quality and safety, food quality determinants, food law, production capability of agribusiness, organic farming

INTRODUCTION

In the time of constant changes and uncertainty, coming into being and functioning of various enterprises on the food and agricultural market depend a lot on quality management. Nowadays, fine quality of food products and the process of production are the main requirements of the customers. They are aware of the crisis in the food chain on the global market, and more and more often aspire to eat safe food that is not dangerous for their health and life. The customers want to be satisfied with everyday food shopping and they have a right to this. More and more consumers expect high and stable quality of food products, often confirmed with a certificate and they are willing to pay for fine quality [Kurek 2007]. On the other hand, they want to have an easy access to the groceries that they choose and to be able to afford them. The organic food market in Poland is not developed enough to meet the consumers' requirements related to physical and economic accessibility of organic products, although it should satisfy them with food quality. The food and agricultural world market (especially the organic market) is developing rapidly, so that the outcome of the research within the scope of food quality is up-to-date for a very short time. However, it is worth popularizing this outcome because it stimulates

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the producers to improve food quality continuously. Food quality determinants vary a lot and the consumers' assessment of food quality is very subjective. The author of the article tries to identify and analyze the key food quality conditionings, such as: legal rules, agribusiness resources and methods of production [Kowalska 2010].

FOOD QUALITY CONCEPT

The most crucial dimension of food quality management is food safety assurance. According to the Polish food safety legislation of August 25, 2006, food safety is defined as generality of requirements which have to be met, regarding[1]: food additives and artificial flavors, contaminants, pesticides residues, food irradiation and organoleptic features, and activities that have to be taken at all the stages of food production and distribution processes in order to assure human health and life. Food safety risks may come from physical, chemical or microbiological contaminants. For the first time, the consumers' right to safe food was put into words in the resolution of the United Nations of 1985.

The key issue of food quality and safety assurance is to understand and admit that the problem refers to all participants of the food and agricultural chain, from the fodder producers and farmers, to consumers and this is confirmed in 'the constitution of the EU food law' – the Regulation (EC) No. 178/2002[2]. The authorities require establishing traceability at all the stages of production, processing and distribution of food, in order to enable food and feed business operators to recognize the source of food hazards. It is important to understand 'where and how' in the food chain particular quality features are exposed to changes. The most critical points in animal production are: the choice of the type of raising and feeding, the protection of animal health and welfare, and the way of transport and slaughter. Both the method of plant cultivation and harvesting are crucial for plant products quality. Physical properties of food are also determined by the ways of storage, transport, sale and supply to a final consumer. The choice of food processing technology and packaging method also influence food quality [Luning, Marcelis, Jongen 2005]. When a final consumer has done his grocery shopping, he or she becomes responsible for quality and safety of his or her food. One should care about the conditions of transport and storage, and the proper preparation process.

It is worth mentioning Taguchi's quality philosophy. One of the key elements of his philosophy is the loss function, used to measure financial loss of society, resulting from poor quality. Minimizing loss means maximizing quality. When it comes to food quality, the consumers (health), the producers (complaints, remaking, utilization) and the whole economy (soil and groundwater contamination, market slump) might suffer a loss [Wiśniewska 2005].

[1] The Act on the safety of food and nutrition as of August 25, 2006 (Journal of Laws of the Republic of Poland, 2006, No. 171, item 1225).

[2] The Regulation (EC) No. 178/2002 of the European Parliament and of the Council of the European Union of January 28, 2002, laying down the general principles and requirements of food law, establishing the European Food Safety Authority and laying down procedures in matters of food safety (*Official Journal L 031 , 01/02/2002 P. 0001 – 0024*).

The consumer's attitude towards food products is full of criticism and emotions. Food quality significantly influences quality of human life. Therefore, quality perceived by the consumers really matters. It gets a consumer to make a decision about purchasing food products. Finally, the decision is also conditioned on other determinants: economic, educational, environmental, cultural, social, esthetic and nutritional. Food quality definitions suggested by C. Szczucki and S. Zalewski contain main determinants of a consumer's perception of food quality. Among them we can find [Szczucki 1970; S. Zalewski 1992]: sanitary conditions, which decide about safety of food; sensory attractiveness, which decides about organoleptic quality; availability and convenience. Quality improvement is limited by availability of resources and raw materials, technologies and costs of production. M. Wiśniewska has defined food quality as 'a collection of a food product features and their determinants that apply to all stages of primary production, processing and distribution of food and a consumer's table, and that fulfill various guidelines and directives in order to meet broadly defined requirements of the consumers' [Wiśniewska 2005]. One of the food quality concepts sets up the claim that we cannot talk about food products quality, but only about physical features of food products that are perceived as qualitative. Among these features it is possible to distinguish internal features (sanitary conditions and safety, sensory attributes, expiry date, reliability and functionality) and external features (methods of production, environmental and ecological aspects, innovativeness, exclusivity, brand as quality assurance, way of display, costs of purchasing, availability and supplements) [Wiśniewska 2005; Luning, Marcelis, Jongen 2005].

The consumers' preferences change rapidly, thus food quality may be treated as 'a moving target' which has to be found. The consumers change their mind about food quality very often, and their preferences constantly evolve. Nowadays, the consumers more and more often question conventional, intensive methods of production and the use of GMO, and look for the food coming from extensive systems of production, such as organic food. They are aware of the fact that when they eat organic food, they contribute to environmental protection, farm animals health and welfare, and that they care about their families' and their own health. This trend is evident in continuous growth of global organic market [Smoluk-Sikorska 2010].

REAL-LIFE EXAMPLES OF FOOD QUALITY AND SAFETY MANAGEMENT

It is important to detect any food adulteration effectively to ensure consumers' safety. Even though authenticity of food products is regulated by legal regulations (consumer cannot be misled), adulterated food products exist in all the branches of food industry. Producers add special ingredients to food products in order to lower nutrition value, manipulate with technology to make food products look decently, conceal the method of production (especially in case of GMO use) or label the food products incorrectly, and so on. Even though the detection of food adulteration is often complicated, labor-consuming and expensive, fast growth and development of analytical methods let the scientists to detect them [Przetaczek-Rożnowska, Rosiak 2011]. In 19th century, adulteration of food products was very common, because of the lack of food. Today, the main reason is to earn easy money [Jałowiec, Płaczek 2011].

There is another mechanism in the agri-food chain introduced to ensure food quality and safety: novel food and their ingredients have to get a permission of the European Commission in order to be placed on the market[3]. Currently, the procedures of getting such permission are becoming shorter and easier. Before making the decision, the European Commission has to make sure that novel food is safe for human beings, animals and the whole environment [Bogusz-Kaliś 2011].

There are some restrictions relating to nutrition and health claims made on foods, introduced by the Regulation (EC) No. 1924/2006[4]. The list of permitted health claims is still open because of quite a big number of applications. The European Commission is still working on it. The list is going to be closed and published by the beginning of 2012, and since then any claim that is not on the list will be outlawed. The requirements of the EU concerning nutrition and health claims will have to be met while packaging, advertising and displaying any food product [Wrześniewska-Wal 2011].

For the past twenty years, health quality of food made in Poland has improved visibly. It is proved by inspections on commercial food quality carried out by the Polish Government bodies every year. In 1990, 20–25% of all the food products made in Poland was withdrawn from the market, comparing to 2009 when a share of defective food came only to 1–3%. The most dynamic positive quality changes took place in Polish meet production and processing, thanks to big investments made in order to come up to the new European standards. In 2010, strictures related, above all, to beer, fish products, cold meats, juices, nectars and butter. The problem with commercial food quality is usually found in supermarkets, where deliverers are forced to lower prices so much, that they have to lower the quality of food [Jałowiec, Płaczek 2011].

Nowadays, a consumer might be confused on the food market. Quite often, one is not aware of safety of the food offered and does not know many regulations of the food law [Brewer, Rojas 2008]. It is necessary to know the consumers' expectations to educate them effectively. Eurobarometr research conducted among the European consumers in 2010 indicated the main determinants of food safety. About 70% of the consumers are afraid of pesticides residues in plant products (especially in Greece, Lithuania, Italy, Luxemburg, and in Poland), antibiotics and hormones residues in meet products (especially in Cyprus and in the Netherlands), and contaminants coming from mercury and dioxins (especially in France). The Polish consumers are pretty afraid of food irradiation, GMO use, bone meals and antibiotics in animal feed, and of food additives. Organic food is most safe for numerous consumers. A Polish consumer turns out to be more careful about food safety issues than an average European consumer [Wierzejska 2011]. The outcome of Eurobarometr can be useful while modifying the European food law, setting financial support for participants of the food chain, as well as producing and selling foods.

[3] The Regulation (EC) No. 258/97 of the European Parliament and of the Council of the European Union of January 27, 1997, concerning novel foods and novel food ingredients (Official Journal of the European Union L 43, 14/02/1997, p. 1).

[4] The Regulation (EC) No. 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods (Official Journal of the European Union L12, 18/01/2001 P.0003-0018).

FOOD LAW FOR FOOD QUALITY AND SAFETY

In the very beginning, the European Union food law has been concentrated on making the EU internal food trade easier and neglected the consumers' protection. Such an approach has evolved, and now, food products are treated as means of providing for the human needs of healthcare and good life. According to the fundamental for the EU food law document – the Regulation (EC) No. 178/2002, the primary objective of this law is to protect life and health of the consumers. Other objectives of the Regulation are: the protection of the consumers' economic interests, fair trade of safe and high-quality products within the internal market and with third countries, environmental protection and animal welfare. The Regulation has been designed in the way that gives an opportunity to develop the food law constantly [Korzycka-Iwanow 2007].

It turned out that the interpretation of the food law for the European Union is not easy and the Commission contributed to publish a practical guide to the food law. In the guidebook one can find a record about the integrated approach of food safety policy: 'From the Farm to the Fork'. Primary production and the production of animal feed have to come up to special sanitary and phytosanitary standards[5]. Food processors should attain a higher hygiene standard and standard of food safety than farmers. The obligatory HACCP system is an instrument to get it. The food and animal feed business operators have a civil and criminal liability for acting outside the food law. Official control bodies should co-operate with food business operators[6]. The lawful means of controlling food safety are set up on the basis of risk assessment. While food products are labeled, displayed or advertised, a relevant information necessary to protect the consumers' life and health has to be given. The consumers cannot be misled. The precautionary principle is invoked in some specific circumstances in order to ensure the high level of life and health protection [Korzycka-Iwanow 2007].

A Polish consumer's right to protect his or her life and health is invoked in the Constitution of the Republic of Poland of 1997[7]. Public authorities are obligated to work against epidemics and prevent from the negative effects of environmental deterioration. They are

[5] The Regulation (EC) No. 852/2004 of the European Parliament and of the Council of the European Union of April 29, 2004, on the hygiene of foodstuffs (Official Journal L 139 , 30/04/2004 P. 0001 – 0054); the Regulation (EC) No. 853/2004 of the European Parliament and of the Council of the European Union of April 29, 2004, laying down specific hygiene rules for food of animal origin (Official Journal L 139 , 30/04/2004 P. 0055 – 0205).

[6] The Regulation (EC) No. 882/2004 of the European Parliament and of the Council of the European Union of April 29, 2004, on official controls performed to ensure the verification of compliance with feed and food law, animal health and animal welfare rules (Official Journal L 165, 30/04/2004 P. 0001-0141); the Regulation (EC) No. 854/2004 of the European Parliament and of the Council of the European Union of April 29, 2004, laying down specific rules for the organization of official controls on products of animal origin intended for human consumption (Official Journal of the European Union L 155, 30/04/2004 P. 0206-0321).

[7] The Constitution of the Republic of Poland of April 2, 1997 (Journal of Laws of the Republic of Poland as of July 16, 1997, No. 78, item 483; correction: Journal of Laws of the Republic of Poland 2002, No. 28, item 319; change: Journal of Laws of the Republic of Poland 2006, No. 200, item 1471).

responsible for protecting the consumers, users and rentiers health, privacy and safety, and have to ensure fair terms of trade. The Polish law on food safety and nutrition of August 25, 2006 is coherent with the Regulation (EC) No. 178/2002. The Polish act sets the rules for health requirements and labeling of food, hygienic requirements and official controls in cases that are not regulated by the EU law.

PRODUCTION CAPABILITY OF POLISH AGRIBUSINESS

Natural resources and conditionings, the condition of natural environment, the labor market, the demographic characteristics of the population, a level of education, an attitude of rural inhabitants, the condition of social and technical infrastructure – at some point all of them determine food quality and safety. In 2009 rural areas constituted 93.2% of the total area of Poland and were inhabited by 39% of the total population [Dmochowska 2011]. Thus, they are of huge importance from the economic, social and environmental points of view. There are primary commodities produced in rural areas, and their quality and safety determine quality and safety of finished food products.

Natural conditions and soil conditions in Poland are worse than the average EU soil conditions, and together with adverse climatic conditions (lower temperatures, shorter vegetation periods and lower rainfall) they cause problems with cultivation of a set of plants similar to the one cultivated by the EU farmers, as well as with getting comparable yields, especially from demanding species, such as wheat or vegetables. Mountain areas and less-favored areas take up almost half of the farmland. So unfavorable natural conditions require greater engagement, knowledge and capital from Polish farmers in order to equal a EU's average farmer. The conditions slow down Polish agriculture and rural areas development. On the other hand, a really high biodiversity of rural areas provides a basis for improving quality and safety of agri-food. Natural resources of Polish agriculture have never been exploited as intensively as they were exploited in most of the EU member countries. The use of artificial fertilizers and plant protection products is moderate, comparing to the EU standards. It ensures high quality of production capability [Program… 2007].

In comparison to other European countries, the rural population of Poland is still young. Young people are open-minded, innovative, more willing to study and take a risk. However, demographic predictions show that Polish rural population is getting older and smaller, especially in peripheries. Since 2000, people have rather been migrating from cities and towns to countryside, but close to the cities and towns or main routes. The suburbanization process usually concerns educated and well-off persons, who often move their business headquarters to such areas. It means the development of housing, the changes in the traditional landscape and architecture, a fast development of trade, services and the local nonagricultural labor market, the improvement of the conditions of technical and social facilities, and an increase of own revenues of gminas. After the accession of Poland to the European Union, the Polish people more often emigrate in order to earn money for living. It is caused, inter alia, by persistent low income of farmers and growing occupation mobility of rural inhabitants. One never knows if they emigrate temporarily or permanently. However, people who come back to rural areas bring new knowledge,

experience and money for investments. On the other hand, young, well-qualified and smart people usually emigrate, which lowers human capital of rural areas [Program… 2007, Dmochowska 2011].

The situation on the labor market in Polish rural areas has been tough for many years. Registered unemployment rate reached 8% in 2009 [Dmochowska 2011]. Poland has also quite a big number of the unemployed who are not registered. The labor market in rural areas varies among regions; the biggest share of the employed in agricultural sector characterizes South-Eastern regions. There is a trend to reduce the number of the employed in Polish agricultural sector, however, the percentage of them is still twice bigger than the average in the European Union. It is estimated that even if 14% of the employed in Polish agricultural sector would change the occupation, the agricultural sector would still supply with enough food [Zalewa 2008].

In recent years, there has been an increase in the general level of education of the persons managing agricultural holdings in Poland. However, the education level of the rural population is still lower than the education level of the urban population. But this situation is systematically improving. Young rural residents choose vocational schools far more often than their urban counterparts, which is motivated mainly by economic reasons. Moreover, the learning conditions in rural areas are definitely worse than in cities. Low level of education is often an obstacle to initiating activity outside agriculture, including self-employment.

In 2009 there were about 2.5 mln agricultural holdings in Poland (but there is a tendency to reduce this number). The smallest farms (1–5 ha) constituted about 40% of all the farms in Poland. The average size of an agricultural holding in 2009 amounted to 10.15 ha and was twice smaller than the average agricultural holding in the European Union[8]. A consequence of great fragmentation of agriculture is usually a small economic capability of agricultural holdings (on average, three times smaller than in the EU) [Orłowska 2010]. Such small farms restrain agricultural and rural development in Poland. Another problem is the fact that a typical Polish agricultural holding is divided in many lots, sometimes located far away from the head place of production. Such a land structure and an unstable economic situation in agricultural sector hamper specialization of farms (45% of the total number of farms in Poland have no specialization) [Program… 2007, Dmochowska 2011]. Specialization of production should contribute to lowering cost of production, establishing connections with trade partners and improving quality of food.

The agricultural holdings in Poland show considerable needs for investments, which are mainly connected with quantity and quality of technical production infrastructure. The indices of equipment in Poland differ considerably from those in the EU-15, if referred to the unit area of farmland or crop (e.g. number of tractors or combine-harvesters per unit area). Moreover, machines operating in agricultural sector are largely worn and old. Poorly developed technical infrastructure is one of the most serious barriers to rural development, influencing both the standard of living and investment capacity. The main problems include the absence of a sufficient communal sewage system, wastewater treatment plants, telephone networks and the Internet, and poor condition of energy infrastructure. Social infrastructure, which aims to satisfy social, educational, cultural and safety

[8] www.epp.eurostat.ec.europa.eu, as of September 15, 2011.

needs in rural areas, is underinvested and not adjusted to the existing needs (health care, cultural and tourist facilities, schools) [Program… 2007].

We can assume that the Polish agricultural sector has a great potential to develop systems of production giving high quality food, especially organic food. Agri-environmental, social and economic conditionings of the Polish agricultural sector are really favorable for the development of organic agriculture [Zalewa 2008]. These conditionings vary among the regions. The South-Eastern part of Poland is the least transformed by human beings and best-preserved biodiversity is present there. The employment in agricultural sector and the unemployment rate are really high in this region so the labor costs should be lower. It might be important for the work-intensive organic agriculture.

ORGANIC PRODUCTION PRINCIPLES AND THE QUALITY OF ORGANIC FOOD

There are ample examples that the methods used for food production do make a difference for food composition or other quality aspects, and that these differences are large enough to make a difference to the consumers' health [Brandt, Molgaard 2006]. Organic food production is relatively well defined and it makes a main difference between organic and conventional production systems, that may affect food quality. Organic food quality is a result of principles set by the International Federation of Organic Agriculture Movements (IFOAM), regulations of the EU law and requirements of national and international organizations and institutions, e.g. certifiers. The principles of organic agriculture formulated in 2005 focus on quality. According to the principle of health, organic agriculture is intended to produce high quality, nutritious food that contributes to preventive health care and well-being. Thus, organic agriculture should avoid the use of fertilizers, pesticides, animal drugs and food additives that may have adverse health effects. According to the principle of ecology, organic farming should maintain and improve environmental quality and conserve resources. According to the principle of fairness, organic agriculture should provide everyone involved with a good quality of life, and contribute to food sovereignty and reduction of poverty. It aims to produce a sufficient supply of good quality food and other products[9]. In the strict sense, the quality of organic food is a process quality rather than a product quality.

According to the Council Regulation (EC) No. 834/2007, organic production is an overall system of farm management and food production that combines best environmental practices, a high level of biodiversity, the preservation of natural resources, the application of high animal welfare standards, and a production method, in line with preferences of certain consumers, for products produced with the use of natural substances and processes[10]. According to the Regulation, the general objectives of organic production are: to establish a sustainable management system for agriculture, to aim at producing

[9] www.ifoam.org, as of October 6, 2011.

[10] The Regulation (EC) No. 834/2007 of 28 June 2007 on organic production and labeling of organic products and repealing the Regulation (EEC) No. 2092/91 (Official Journal of the European Union L 189, 20/07/2007 P. 0001-0023).

products of high quality, to aim at producing a wide variety of food and other agricultural products that respond to the consumers' demand for the goods produced by the use of processes that do not harm the environment, human health, plant health, or animal health and welfare.

The farmers should definitely minimize external inputs. Where external inputs are necessary, these shall be limited to: inputs from organic production, natural or naturally-derived substances and low solubility mineral fertilizers. The use of chemically synthesized inputs is limited to the cases when: the appropriate management practices do not exist, the natural and mineral external inputs are not available on the market or the use of them contributes to unacceptable environmental impacts. Polish organic farmers are allowed to use only those fertilizers and plant protection products which are placed on special lists publicized by the Institute of Soil Science and Plant Cultivation (IUNG) in Puławy, and the Institute of Plant Protection in Poznań. The use of GMOs is prohibited in this system.

Organic food quality is also influenced by abiotic factors (the quality of the environment, air, water, soil and climate) and biotic factors (races, species, plant varieties, diseases, vermin). The soil and water cannot be contaminated because the certifier can question organic management in such a holding. Plant varieties chosen in organic farms should be disease- and vermin-resistant, and competitive towards weeds. All the organic fruits of earth should be shock- and decay-proof.

The general Community framework on organic production rules (the Regulation No. 834/2007) is established with regard to wild plants collection and the production of processed food. Organic processed products should be produced by the use of processing methods, which guarantee that the organic integrity and vital qualities of the product are maintained through all stages of the production chain. Processed food should be labeled as organic only when all, or almost all, the ingredients of agricultural origin are organic. The substances and processing methods that might be misleading, regarding the true nature of the products, are excluded. Organic food should be processed with care, preferably with the use of biological, mechanical and physical methods. Synthetic colorants, artificial flavoring agents and antimicrobial additives are banned.

Any farmer or food processor can sell his or her products as organic after he has got a certificate. The certificate guarantees that organic food has been produced in a compliance with the principles, and that the production process was under control. The certificate is valid one year and is usually extended for a next year, after a positive outcome of an audit[11]. The efficiency of certification and control systems influences the quality of organic food. In 2004 in Poland, this system was really efficient and 'leak proof' (no pesticides residues in checked samples). Unfortunately, during the next three years the system lost its efficiency. It might have been caused by the increasing volumes of chemical means of production used in conventional agriculture (in the neighborhood), and by dishonesty of organic farmers. However, the average level of pesticides residues in Polish organic farming is much lower than in other countries, e.g. the USA or Belgium [Rembiałkowska 2008]. That is Poland's competitive advantage on the international agri-food market.

[11] The Act on the organic agriculture as of June 25, 2009 (Journal of Law of the Republic of Poland, 2009, No. 116, item 975).

The reviews of earlier studies on organic food and health concluded that there is no evidence for any direct health benefits, nor for risks definitely associated with consumption of organic food. However, regarding food composition, some significant differences exist in the average levels of several nutrients, contaminants or pathogens. Most of these differences appear to be beneficial on the part of organic food, and organic food tends to contain substantially lower levels of pesticide residues and a slightly higher vitamin C content. While organic production methods may superficially appear to comprise more risks for pathogen transmission from farm animals to humans than conventional methods, the evidence indicates the opposite trends. A more extensive use of grass and other roughage in organic animal production improves the ability of animals to eliminate zoonotic pathogens. Moreover, pathogens from organic animals are more susceptible to antibiotics and are thus easier to eliminate from patients. Some surveys concluded also that the microbiological risk coming from organic food is smaller or similar to the corresponding one, coming from conventional food, even though pathogens are able to survive for extended periods in stored manure [Brandt, Molgaard 2006]. Above all, most consumers choose organic products because they are convinced that organic food has beneficial effects on their health, and that it tastes better [Koreleska 2009, Ahmad, Juhdi 2010].

CONCLUSIONS

Food quality and safety assurance is a weighty problem from the economic, social and ethic points of view. Unsafe food causes many acute and life-long diseases, ranging from diarrheal diseases to various forms of cancer. WHO estimates that food borne and waterborne diarrheal kill about 2.2 million people annually, 1.9 million of them being children[12]. The European system responsible for food quality and safety should be improved constantly, by working on the food law, supporting the development of agribusiness, promoting extensive methods of production and improving quality management systems. It will certainly bring many benefits, such as: an improvement of public health, an increase of the consumers' satisfaction, more efficient use of resources and lower operational costs.

Food quality improvement should be based on the production capability of Polish agribusiness, especially on rural potential. Since 2004, the number of organic farms has been growing dynamically, thanks to favorable agri-environmental, social and economic conditionings. Organic production is a specific method of production, regulated by a large and detailed set of rules and principles. Its primary aim is to produce high quality products regarding natural environment protection and animal welfare. The consumers decisions about buying organic food are determined by high quality. Governments and official agencies support organic farming because of the environmental, human and animal benefits. The quality should always get along with the price of a product. To achieve it, the agri-food chain should be as short as possible. Lengthening the chain means, most likely, lower quality and higher supply costs [Jałowiec, Płaczek 2011].

[12] www.who.int, as of September 20, 2011.

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JAKOŚĆ ŻYWNOŚCI I JEJ UWARUNKOWANIA

Streszczenie. W artykule omówiono pojęcie jakości żywności, uwypuklając znaczenie jakości zdrowotnej. Przedstawiono też najnowsze fakty z zakresu zarządzania bezpieczeństwem żywności w Polsce i innych krajach Unii Europejskiej. Podjęto próbę analizy głównych uwarunkowań jakości żywności, w tym uwarunkowań formalno-prawnych, potencjału produkcyjnego polskiego agrobiznesu oraz stosowanej metody produkcji. Stosunkowo dużo miejsca poświęcono w pracy rolnictwu ekologicznemu, gdyż ze wszystkich współczesnych systemów produkcji rolnej, zagadnienia jakości i bezpieczeństwa żywności najsilniej dotyczą produkcji ekologicznej.

Słowa kluczowe: jakość i bezpieczeństwo żywności, czynniki kształtujące jakość żywności, prawo żywnościowe, potencjał produkcyjny agrobiznesu, rolnictwo ekologiczne

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THE FUNCTIONING OF THE PENSION SYSTEM IN THE OPINION OF ITS BENEFICIARIES

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Abstract. The participants of the pension system should have some basic knowledge on its functioning. In Poland, when the new pension system was introduced, no public education was conducted in this area and the participants of the system gained the information on this issue on their own. Greater knowledge in this field would have led to proper functioning of the system. The results of the survey concerning opinion of the beneficiaries on functioning of the general pension system were discussed in the paper. The research proves that more than a half of the surveyed assessed the financial situation as insufficient. The most often indicated reason for this situation was financial management, number of beneficiaries and the level of benefits. The research proves that the beneficiaries have currently some knowledge on functioning of the pension system. However, "younger pensioners" have higher awareness in this area.

Key words: pension system, level of benefits, beneficiaries, pension level, retirement age

INTRODUCTION

The transformation caused significant changes in the Polish pension system. Two fundamental stages of change are distinguished in the pension policy. The first one is a period of system reformation in the early 90's, when it was aimed at liquidation of social problems[1]. In turn, the second one is related to attempts to cut off the system expenditures and to introduction of the system changes leading to reduce the social function of the state as well as implementation of the capital financing. This phase was ended with the pension reform. In 1999, the reform of the general social security system was carried out [Czepulis-Rutkowska, 2000]. The introduced changes were mainly related to the increasing expenditures of the pension system and simultaneously growing budgetary burdens.

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[1] The change of the pension formula and the method of calculation of the minimal benefit as well as introduction of retirement benefits indexation method and automatic indexing.

The reformation of the pension system meets a number of difficulties and obstacles, which result from huge strength of tradition and the impact of history [Żukowski, 2006]. Therefore, social acceptance has a huge meaning for reformation of the pension systems. So that the society would accept the introduced changes, they have to receive all the necessary information. However, as N. Barr [2005] stresses, the problem of the pension economics is poor knowledge of the system participants. M. Góra [2009] shares the same opinion and claims that the basis for the pension system safety is public education, which would help the system participants gain the fundamental information on its functioning. In Poland, since the introduction of the new system, there has not been conducted any public education in this area so far. Therefore there is a need for conducting research on social awareness relating to pension system functioning.

The aim of the paper is to discuss the results of the opinion survey concerning the general social security system.

THE MATERIAL AND RESEARCH METHODS

The aim of the new pension system is to reduce the public expenditures on pensions and following this, financial burdens related to the ageing of the society. It makes the level of pension dependent on the amount of money accumulated on an individual account. In turn, this amount is related to the level of the paid premiums and number of years, in which the premiums were paid. The new system also liquidates many privileges and reduces the possibility of early retirement. Therefore, it should influence the increase of professional activity.

The assumptions of the reform were as follows: "*the old system should be reformed, so that it is possible to fulfil the obligations incurred by the system in the past, cost of he system reformation cannot surpass the possibilities of the economy and financing of the cost of transition must be distributed over time*" [Bezpieczeństwo dzięki różnorodności..., 1997, p. VII]. One should remember that the introduction of the new pension system is an element of the reform of public finances and contributes to the reduction of the cost of public debt servicing, which burdens the economy due to the ageing of society. The introduction of the new pension system, which automatically adjusts the incomes and expenditures, enables inhibition of the increasing outstanding debt, and after some adequate period, it allows the debt to return to the level near to the *steady state* (level of the premium rate equal 19.52%).

The growth of the outstanding part of the debt of the old system was stopped on January 31, 1998, and the debt of the new system growing since January 1, 1999 is safe for the economy. The premiums are booked on two types of individual pension account, and by that means commitments to participants of the pension system are created on them. The debt is a sum of commitments booked on all accounts. Therefore, the debt of the new system is also the initial capital of the people covered by both the new and the old system [Góra, 2003].

Between 2009 and 2010, a survey research was conducted in Wielkopolskie Voivodship among 350 beneficiaries of the pension system. The aim of the research was to recognise the opinion of the beneficiaries on the functioning of the pension system and

define if the pensioners' opinion depends on selected demographic variables, i.e. gender and age.

By selecting the beneficiaries, the method of purposive sampling was used. The research covered only the pensioners receiving benefits from the general pension system. The responders were divided into two groups: persons receiving benefits before the legally defined retirement age ("young pensioners") and persons receiving benefits after the legally defined retirement age. The first category comprises women not older 60 years and the men not older than 65 years, whereas the second one covers the women after 60 and men after 65.

The χ^2 independence test was used as a research instrument in the analysis of the empirical data. In each considered case, which was subjected to statistical verification, the level of significance $\alpha = 0.05$ was accepted. All calculations were made in statistical package R with the use of the statistical function chisq.test(). The decision concerning rejection of the hypothesis about independence of the investigated attributes in favour of the alternative hypothesis saying that the dependence exists was made basing on comparison of the accepted significance level $\alpha = 0.05$ with so-called p-value returned by the programme[2]. Therefore, the description of the verified issues does not comprise the statistical value χ^2, number of degrees of freedom and critical value. The description contains only the p-value, which clearly enables making the decision on rejection of the hypothesis about independence or on lack of basis to its rejection.

THE RESEARCH RESULTS

Women dominated among the surveyed (they constituted 60% of the investigated group). The preponderance of women results from the demographic structure of the society, in particular from the feminisation in the older age groups. The person receiving benefits before the legally defined retirement age constituted 47% of the responders and the persons receiving benefits after the legally defined retirement age – 53%.

The conducted research proved that the present pension system satisfied small share of the responders, i.e. 7% of the surveyed, among which women constituted 60% and men 40%. Almost l' of the responders were not satisfied with the system. The men expressed reluctance more often than the women did. Over 71% of the men were not satisfied and 20% had no opinion on this issue (Figure 1). 67% of the surveyed women were not satisfied with the system, whereas 25% had no opinion on this issue.

About 72% of the persons who had not reach the retirement age were not satisfied with the system and 67% of the group of persons who had reached the retirement age were not satisfied with the system (Figure 2).

Every eleventh responder in the retirement age was satisfied with the system and every sixteenth before the retirement age. 24% of the surveyed in the first age group and 22% in the second age group did not have any opinion on the issue. Based on the χ^2 independence test any significant in a statistical sense, dependence between

[2] P-value is the least level of significance, by which the tested hypothesis should be rejected.

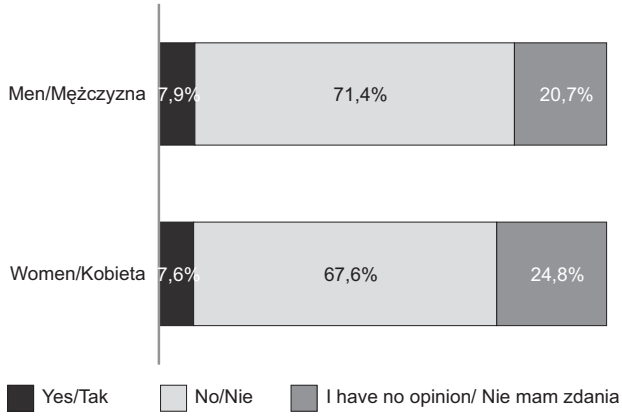


Fig. 1. Satisfaction with the pension system and the responders' gender
Rys. 1. Zadowolenie z systemu emerytalnego a płeć respondentów

Source: Authors' own research.
Źródło: Badanie własne.

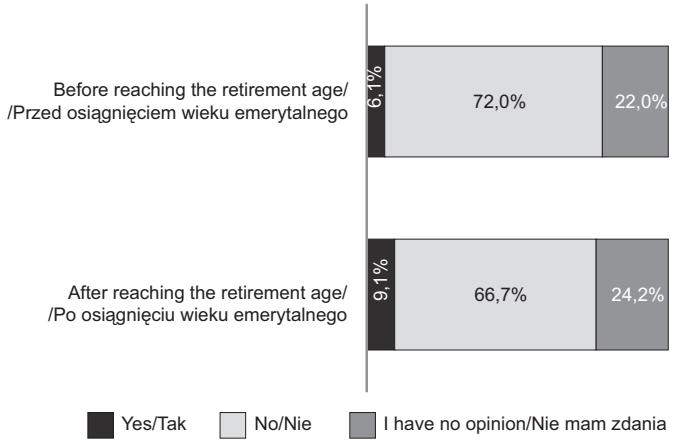


Fig. 2. Satisfaction with the pension system and the responders' age
Rys. 2. Zadowolenie z systemu emerytalnego a wiek badanych

Source: Authors' own research.
Źródło: Badanie własne.

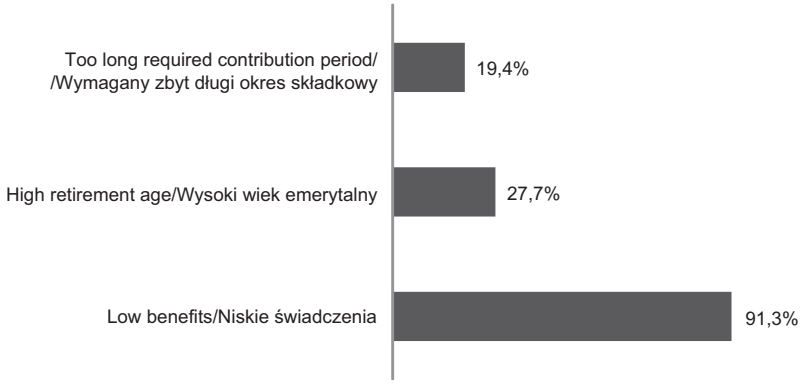
pensioners' opinion on functioning of the pension system and gender and age of the surveyed was found (Table 1). It was a result of similar distribution of the responders' answers.

Too low benefit was the main reason for dissatisfaction with the pension system. This reason was indicated by 91% of the responders (Figure 3).

Table 1. P-values in the χ^2 independence test – satisfaction with the present pension system
Tabela 1. p-wartości w teście χ^2 niezależności – zadowolenie z obecnego systemu emerytalnego

Specification:	**Gender**	**Age**
Satisfaction with the present pension system	0.678	0.452

Source: Authors' own research.
Źródło: Badanie własne.



*responders could indicate more than one option
*respondenci mieli możliwość wyboru więcej niż jednej odpowiedzi

Fig. 3. Main reasons for dissatisfaction with the pension system
Rys. 3. Główne przyczyny niezadowolenia z systemu emerytalnego

Source: Authors' own research.
Źródło: Badanie własne.

Since the reform of the pension system was introduced, the average share of the average pension benefit in average wage has amounted to over 50% and the minimal wage to nearly 150%. The lowest pension was by about 50% lower than the average benefit. In turn, the relation between the lowest benefit and the lowest wage was more favourable. The lowest pension was more than 60% of the lowest wage. The share of the particular kinds of benefits and wages is related to their level and the dynamics of the economic growth. "*The rate of decline of social benefits level in relation to average wages depends on economic growth. By high rate of economic growth and wages, the scale of relative decline in level of benefits compared to wages is very large. (...). In case of slower rate of economic development, the rate of decline of this relation is far slower*" [Wydatki socjalne w latach..., 2003, s. 71]. It should be stressed that large part of the surveyed received benefits higher than the minimal wage and minimal benefit as well. The pension received by over 41% of the responders did not surpass 1000 PLN, and in case of the majority, i.e. 51% it amounted to 1001–2000 PLN. Almost 8% of the surveyed received the pension at the level of over 2000 PLN. The women received lower benefits than the men did. Benefit received by nearly 42% of the women did not surpass 1000 PLN, in 53% cases it amounted to 1001–2000 PLN and in 5% – over 2000 PLN. In turn, in case of the men, over 41% of them received the pension not surpassing 1000 PLN, 48% at the level of

1001–2000 PLN and 11% over 2000 PLN. Nevertheless, one should remember that the level of benefit is determined by a number of factors, i.e. the level of wage, length of contribution and non-contribution periods. The women gained lower pensions, because they had shorter contribution periods and longer non-contribution periods and they receiver lower wages in the period of professional activity.

Every fourth surveyed indicated the high retirement age as the reason of dissatisfaction with the pension system. The responders relatively earlier used the right to a pension. The average retirement age in the investigated group was 58.6 years. According to the ZUS data in the last 12 years the average retirement age of a person, whom the pension was granted, has been increasing from 57.6 years in 1999 to 59.7 in 2010. The average age of a man, who retired from the labour market was by about 3 years higher the average age of a women, who gained the right to a pension. Despite that fact, the average age of both men and women, whom a pension was granted, was much lower respectively by 6 and 4 years. Longer professional activity of men results from traditional role of a man in family, who financially secures the family members. It is also a result of higher legal retirement age. Earlier deactivation of women is caused by playing defined social functions, which lead to worse situation on labour market caused not only by breaks in employment resulting from parenting, but also by limitations in the area of performing heavy works, which in turn excludes employment in certain positions. Simultaneously women relatively more often than men seek for a less absorbing job, nearer their home. They are also less mobile and disposable [Klimkiewicz, 2009].

Over 19% of the responders indicated "too long required contribution period" as a reason for dissatisfaction with pension system. It indicates a low awareness concerning the influence of this period on benefit level in the new pension system. The present system motivates to higher benefits and longer professional activity, which increases the length of contribution period. In case of 63% of the surveyed, the contribution period amounted to over 25 years. Every ninth responder had from 21 to 25 contribution years and very eleventh to 20 years. In case of 63% of the responders, by establishing the right to benefits, the non-contribution periods were taken into account and 49% of them had from 2 to 5 non-contribution years and 39% less than 1 year. The women indicated shorter contribution periods than the men did, which is related to less professional activity, and following that shorter length of service. Professional activity of men and women occurs in different intensity. In case of women, longer education and faster retirement from labour market have the important influence on this activity. Mainly women in working age due to family duties limit their professional activity.

The conducted research indicates a disquieting unfavourable assessment of the pension system financial situation. The majority of the investigated, i.e. 63% assessed it as insufficient and only 11% as good and 1% as very good. The assessments made by the men and women were very similar. 64% of men and 63% of women indicated the insufficient note and the good respectively: 10% and 12% (Figure 4).

Concerning age, better assessment of the financial situation of the pension system was expressed by the surveyed in retirement age. Almost 57% of the responders from this group assessed the financial situation as insufficient and 12% as good (Figure 5).

The negative assessment dominated in case of people who had not reached the retirement age and their share amounted to 70%. The domination of negative assessments

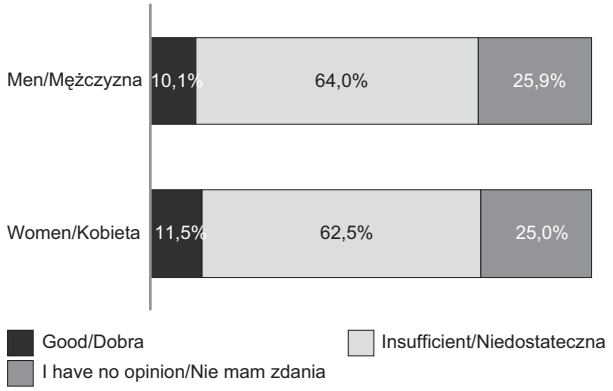


Fig. 4. The assessment of the financial situation of the pension system and the responders' gender
Rys. 4. Ocena sytuacji finansowej systemu emerytalnego a płeć respondentów

Source: Authors' own research.
Źródło: Opracowanie własne.

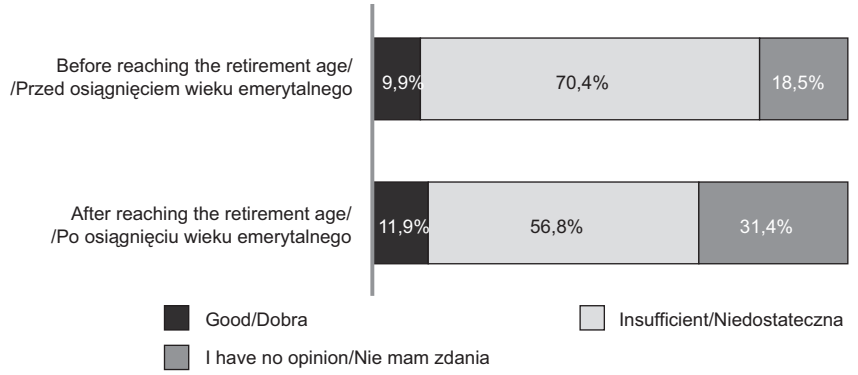


Fig. 5. The assessment of the financial situation of the pension system and the responders' age
Rys. 5. Ocena sytuacji finansowej systemu emerytalnego a wiek badanych

Source: Authors' own research.
Źródło: Opracowanie własne.

among the people, who had not reached the retirement age results from higher awareness of the investigated. Higher awareness of the investigated is related to their low age. It is highly probable that regarding to age (so-called "younger pensioners"), this group is more interested in financial situation of the pension system and may have larger knowledge on this issue than the group of the responders in the retirement age. It may indicate the existence of a greater concern about the future pension relating to the present system of their financing. The χ^2 independence test indicates that a significant in statistical sense dependence exists between the pensioners' opinion on this issue and their age (Table 2).

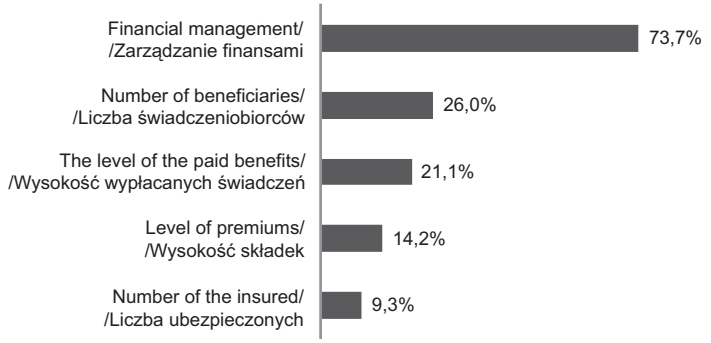
Financial management was the most often indicated reason for the unfavourable financial situation of the pension system (74%) (Figure 6). The surveyed took into account

Table 2. P-values in χ^2 independence test – financial situation of the pension system
Tabela 2. p-wartości w teście χ^2 niezależności – sytuacja finansowa systemu emerytalnego

Specification:	Gender	Age
Financial situation of the present financial system	0.669	**0.013**

Source: Authors' own research.
Źródło: Opracowanie własne.

the fact that the pension system is financed by the state budget in large degree. One should also remember that FUS pays out many non-insurance benefits, i.e. pensions of the war veterans, the military men and combatants, energy allowances, additions for veterans. The benefits are granted for persons, who were not covered by the pension system and did not pay the premiums to FUS. The fund is not burdened by the cost of these benefits, because they are not financed from the current premiums but by purposeful dotation. Nevertheless, payment of the non-insurance benefits unfavourably influences the FUS. It causes the growth of the dotation from the state budget, which produces a wrong belief in worsening financial situation of the general social security system [Projekt budżetu oraz planów..., 2006]. The unfavourable financial situation, in the opinion f the investigated, is conditioned by systemic solutions, in particular the object and subject range. Since the new system was introduced, the regulations in this area have been changed a number of times.



*responders could indicate more then one option
*respondenci mieli możliwość wyboru więcej niż jednej odpowiedzi

Fig. 6. Main reasons for unfavourable financial situation of the pension system
Rys. 6. Główne przyczyny niekorzystnej sytuacji finansowej systemu emerytalnego

Source: Authors' own research.
Źródło: Opracowanie własne.

Every third responder indicated the number of beneficiaries as a reason for unfavourable financial situation of the system and every fourth the level of the paid benefits. Over 14% of the surveyed believed that the reason for unfavourable financial situation is the level of premiums, and 9% that the number of the insured. However, it should be stressed that from the beginning of the functioning of the reformed social insurance system, the pension premium has not been changed and amounts to 19.52% of the base. In turn, the

disability premium was gradually decreased and amounted to 13% between 01.01.1999 and 30.06.2007, 10% between 01.07.2007 and 31.12.2007 and 6% since 01.01.2008. The number of the people paying the premiums grew by 10.4%. The number of beneficiaries increased by about 3%, and the average benefit grew by 103%. The average ratio of expenditures coverage for transfers for people by incomes from premiums was at the level of about 70%. In the last 12 years, almost 2 insured has been per 1 beneficiary, while in the 90's – over 2.5 insured. The reason for such large pension expenditures is the fact that the benefits are received by a number of people in working age. The ratio of systemic dependence is higher than the ratio of demographic dependence by about 30 percentage points. Therefore, the number of beneficiaries is much higher than it should be. Relatively early retirement is mainly related to the regulations, which invite to earlier retirement from the professional activity.

SUMMARY

The majority of the investigated was dissatisfied with the present pension system. Dissatisfaction was expressed by about 70% of the women and men and the people before the retirement age as well. Because of the similar distribution of the responders' answers, the significant in statistical sense dependence between pensioners' opinion on this issue and the gender and age of the investigated was not found. Although most insured received the pension higher than the minimal wage, the main reason for dissatisfaction was too low level of the pennon benefit. This reason was indicated by almost 90% of the responders. The investigated are aware that increase in benefits level would cause the worsening of the financial situation of the system, but still they would like to receive a higher pension. Over 60% of the researched assessed the financial situation as insufficient. With the use of the χ^2 independence test, it was found that there exists a significant in statistical sense dependence between opinion of the pensioners on this issue and the age of the investigated. More people before reaching the retirement age assessed the financial situation of the pension system as unfavourable than the ones after that age did. The most often indicated reason was financial management, number of pensioners and the level of benefits. The conducted research proves that the beneficiaries have some knowledge on functioning of the pension system. In the group of the "young pensioners", this awareness is higher than among people, which reached the retirement age, which results from greater interest in this problem.

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FUNKCJONOWANIE SYSTEMU EMERYTALNEGO W OPINII ŚWIADCZENIOBIORCÓW

Streszczenie. Uczestnicy systemu emerytalnego powinni posiadać podstawową wiedzę na temat jego funkcjonowania. W Polsce gdy wprowadzono nowy system emerytalny nie prowadzono akcji edukacji publicznej w tym zakresie, a uczestnicy systemu we własnym zakresie zdobywali informacje na ten temat. Posiadanie większej wiedzy w tym zakresie przyczyniłoby się do prawidłowego funkcjonowania systemu. W publikacji omówiono wyniki badań ankietowych dotyczących opinii świadczeniobiorców na temat funkcjonowania powszechnego systemu emerytalnego. Z badań wynika, że ponad połowa ankietowanych sytuację finansową systemu oceniła jako niedostateczną. Najczęściej wskazywanym powodem tej sytuacji było zarządzanie finansami, liczba świadczeniobiorców i wysokość świadczeń. Badania wskazują, że świadczeniobiorcy mają obecnie pewną wiedzę na temat funkcjonowania systemu emerytalnego. Jednak większą świadomość w tym zakresie posiadają „młodsi emeryci".

Słowa kluczowe: system emerytalny, wysokość składek, świadczeniobiorcy, poziom emerytur, wiek przejścia na emeryturę

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CONDITIONS AND ASSESSMENT OF ADEQUACY OF SUPPORTING AGRICULTURE IN POLISH CARPATHIAN MOUNTAINS[1]

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Abstract. Agricultural activities are an indispensable element of landscape development. They play a particularly important role in areas valuable in terms of nature, including mountainous areas. The Carpathian village and agricultural holdings demonstrate a high level of economic viability and a high economic activity, however, support is required for agricultural activities performed in difficult natural conditions. Due to the fact that inhabitants of the Polish Carpathian Mountains are very attached to their land, place of living as well as tradition and culture of the region, recessive processes pertaining to the durability of village and agriculture are slower than in other parts of Poland. However, the absence of firm aid activities protecting these areas may soon lead to the rapid acceleration of recessive phenomena. EU's economic policy applied to rural areas and agriculture will materially impact the speed and directions of the processes, including addressing problem areas and additional solutions applied domestically. The purpose of the study was to assess and propose modifications of the system of support to agriculture in mountainous areas, including, in particular in the area of the Polish Carpathian Mountains. Solutions proposed in the summary should be broadly discussed which would allow their implementation as part of the new period of programming the CAP.

Key words: agriculture, rural areas, mountains, the Polish Carpathian Mountains, agricultural policy

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INTRODUCTION AND METHODIC REMARKS

Poland is a country where structural changes in agriculture are considerably delayed compared to the majority of the Western European countries where agriculture usually functions in more favorable economic conditions and frequently also in more favorable natural conditions. Transformations in the Western European agriculture of mountain areas are also better known in the European literature which results from, among other things, greater interest in such agriculture among competitive entities of agriculture, science or agricultural policy than in Poland. Hence, it is worthwhile to pay attention to a specific nature of current structural transformations within the area of the Polish Carpathian Mountains, region whose development was materially affected by natural disadvantages and economic conditions. The specific nature and autonomy of the Carpathian Mountains (*vis-à-vis* other regions of the country) mostly stems from the land form that exacerbates living and working conditions (especially in agriculture) and increasing the costs of development and maintenance of economic infrastructure to a material degree. The above are also affected by the significant distinction of historic transformations occurring over centuries as well as cultural autonomy being the product of ethnic composition of the mountainous population, its translocations and mutual permeation which caused a different development of social behaviors and tangible culture [Musiał 2008].

The study attempts at filling in a gap in the description of the transformations occurring in rural areas of the Carpathian Mountains. It also strives to assess a current system of state intervention (also, at present, the Community intervention) in this area. Drawbacks of the current support system as part of the Rural Development Program 2007–2013 were pointed out. Comments were also made on accumulating problems with land management in the mountains and the need of structural transformations which are an opportunity for preserving the agricultural use of land, keeping up animal production.

CONDITIONS OF THE DEVELOPMENT OF AGRICULTURE AND CARPATHIAN VILLAGES

Territorial and population transformations which occurred in agricultural economy after World War II limited mountain area in Poland to a considerable degree, divided the Polish Carpathian Mountains into two distinct parts: one mainly populated by Ruthenians (in particular, that populated by Lemkos) and the other, highlanders', part mostly populated by Poles. Tragic consequences of the war (and the so-called Cold War felt here for a few years) along with the policy of the so-called collective responsibility for extensive military operations resulted in displacing Ruthenians to western and northern parts of Poland which caused the population to thin down drastically in the sub-region [Dolata, Jurga 1997]. In these areas depopulated peasants' farms were replaced with state ownership of land and collectivized large-area agricultural production. The part of the Carpathian Mountains which did not suffer from ethnic problems, retained its previous fragmented agrarian structure, including, in particular, the structure of land occupation. Overcoming postwar difficulties with supplies of agricultural production resources (as well as consumer goods), in the 1960s Carpathian village slowly but methodically reconstructed itself

and peasants built their economic position and gained their previously disparaged civic dignity. New opportunities unknown before emerged in the area of employment outside agriculture, education of children, opening to broad social contacts. Immigration of local population abroad, especially to the USA, played a great, perhaps even, critical role affecting the standard of living, economic transformations and even cultural changes. Even though immigration from poor Galician villages had a long history here, the next wave of labor-related migration (back then illegal) which occurred between 1960s and 1900s, helped many local families, entire villages and sub-regions, gain considerable wealth. The US to zloty exchange rate which was very beneficial back then, significantly contributed to such state of affairs. It was possible, for example, to build a large house for many generations on an own piece of land in the country at the expense of an annual income earned by a craftsman working in the USA [Guzik, Leśnicki 1995]. Even though the fertility rate for families of highlanders was above-average compared to the all-Polish fertility rate, many families continued the tradition of immigration and left their homes, or their younger generations built new homes after returning to Poland with funds earned overseas. Tourist, including agritourist services, flourished here thanks to excellent lodging facilities in an area, which is attractive in terms of landscape, combined with the tradition of renting accommodation dating back to the second half of the 19th century. The past period of socialism or *communism* was the source of many disappointments or bad experiences for this region just like for all the other regions of Poland. Especially in the sub-regions where the share of state-owned and co-operative holdings was high, doctrinal *inclinations* towards the collectivization of agriculture were visible which returned and were expressed in different ways. The system durability of a prevailing local peasant economy which was particularly important to the local population, was challenged while state-owned farms and its agricultural produce were preferred in legal and market (pricing) terms. After the 1970s which marked a good period for rural areas and agriculture during which the Carpathian village replenished its holdings with production resources and buildings thanks to excellent price relations, the 1980s followed proving to be a very difficult period. After the martial law and the decomposition of the impaired market of production, a huge decline was observed in plant and animal production rates along with the deterioration of price relations and general atmosphere of economic life in the country [Otoliński 2007].

Socially and culturally conservative and more hermetic population of the mesoregion of the Polish Carpathian Mountains which was *infatuated with the overseas*, supported political transformations in the 1990s with great commitment and hope. The introduction of the market economy in the early years of the transformation which was much more liberal than in rich EU member states, caused high expectations and hopes for a better future for the country, local population, rural areas, agriculture and holdings. Fast-paced market reforms and the privatization of agricultural and food companies were a cause of great disappointment to farmers because fragmented, multi-directional, technologically backward holdings were unable to measure up to competition, especially in terms of costs and prices of agricultural products. Deregulation of the economy and reforms undertaken by different links of agribusiness resulted in the quick deconstruction of old economic structures, including processing, companies rendering services to agriculture and trade. Previous food purchasing and distribution channels were broken up. Such transformations could have been beneficial to farmers running small farms who were poorly organized,

usually uneducated and lost in new economic and political realities, but ultimately it was not the case. Hence, local farmers who had rather negative experiences with market transformations accompanied by local work establishments going bankrupt and mass unemployment, were pessimistic in their evaluation of the effects of economic reforms. They embraced further transformations resulting from Poland's integration with the European Union with great reserve and distance. Announcements regarding the support of agriculture, including the introduction of special compensation payments for mountainous areas, putting agricultural markets in order, higher prices of agricultural products and food, inspired hope for the improvement of living conditions and economic situation of farmers. The need to restore special mountainous legislation was stressed which was in force for five yeas during the period immediately preceding Poland's accession to the EU.

INSTITUTIONAL SUPPORT OF AGRICULTURAL ACTIVITIES IN MOUNTAIN AREAS

The support of mountain areas is justified with environmental factors, including features of the landscape which cause technological problems, and a harsh climate. They directly translate into lower productivity of local agrosystems, lower crops, limited choice of plants that can be cultivated in terms of their kinds and varieties. They can also be justified with a political doctrine adopted by states (and economic blocks) according to which there is a need or even a duty to equalize opportunities in the area of the creation of incomes from agriculture and to prevent economic degradation of mountain areas and areas with other natural and economic handicaps. As a result of the negotiations of Poland's membership in the European Union, a division of problem areas in Poland into three major and two minor categories was adopted. Legal regulations and categorization applied only to rural areas which, given the situation of mountain areas, produces considerable negative results for agricultural holdings located in gminas forming small towns. According to a definition provided for in the 2004–2006 RADP, a mountain area is such agricultural production space where agricultural production is handicapped mostly owing to disadvantageous climate conditions and land form (due to the location above the sea level and mountain slope). Mountain areas include gminas rather than villages or individual holdings where more than 50% of arable land is situated above 500 m above the sea level. As a result of such regulations, in total approximately 190,000 ha of arable land were classified as mountain areas accounting for 2.12% of a total area of disadvantaged areas (DA) and approximately 1.1% of arable land in Poland. A bit different delimitation criteria were applied to areas characterized by specific, natural handicaps of agricultural production, that is, actual upland areas. The classification unit adopted was gminas and geodesic precincts (villages) of upland regions which did not satisfy the criterion of the location above 500 m above sea level. Such delimitation resulted in the classification of gminas and villages located at 350–500 m above seal level of a total area of 790.000 ha, that is, 4.4% of Poland's arable land.

Considering the criteria of delimitation and valorization of mountain areas in Poland against the backdrop of corresponding mountain areas in other European Union member states, it should be noted that they are definitely advantageous when it comes to the adopted limits and the qualified territory being eligible for support. The evaluation of the

level of the support of Polish mountain holdings even though critically rated especially by farmers, is quite difficult to verify. This is due to the fact that the support granted to agriculture in EU's mountain areas is, despite many regulations aimed at its standardization, highly differentiated. It is usually based on historical systems of domestic support which are frequently regionally differentiated, multi-variant or (i) individualized for individual holdings [Klepacka 2006]. Such differences in the amounts of compensation payments paid to farmers in individual states, are based on many criteria formed in the past which are currently difficult to justify. Another issue is rigid amounts of the compensation payments and their non-revalorization which, given changes in the general level and relations of prices in agriculture, reduces their incentive effect. The above serves as grounds for and even necessitates reforms in the area of the system of support to agriculture and villages in mountain areas of Europe [Musiał 2004].

Assessing the Polish system of support to agriculture in mountain areas which has been valid since Poland's accession to the European Union, it should be noted that with regard to direct area payments, a solution consisting in connecting the amount of payments to keeping grass-eating animals and their minimum stocking density is a legitimate and pro-environmental instrument introduced as part of the 2007–2013 RADP. Apart from a uniform area payment for arable land eligible for support, since 2006 also supplementary payments for an area of basic crops or, alternatively, a supplementary payment for an area of plants for forage cultivated on permanent grassland, has also been granted. That system is more adequate in case of mountain areas as the payments contribute to supporting ecological functions of these areas and may contribute to decreasing the setting aside of grasslands, letting the grasslands fallow and grassland reforestation. As part of applicable requirements for the support with direct payments, no upper limits for stock density were set which, in mountain areas, seems unjustified as it allows to introduce undesired breeding of animals in large herds and a high rate of stock density per forage area. Apart from posing a threat to natural environment, excessive concentration of animals is also dangerous to the subregion's economy. The breeding of large herds of animals on areas characterized by dense rural development, especially in tourist and recreational locations with high concentration of agritourist farms, may effectively change their *image* and lead to the regression of important non-agricultural functions of the countryside (e.g. the recreational and leisure function). Hence, the goal of ensuring better protection of mountain areas with regard to the part being used for agricultural purposes; the problem of determining admissible intensity of animal production on mountain disadvantaged areas should be re-addressed. Limits to the animal stock density should be included among the so-called basic requirements to be met by farmers eligible for the support of mountain holdings (as well as other holdings in other disadvantaged areas). It is also purposeful to include the condition of a ban on letting the farmland fallow for the whole or part of the land as part of the so-called basic requirements. Holdings which set aside or let at least a part of land fallow should not receive area compensation payments and mountain compensation payments as well as other forms of support owing to their ecological and production inadequacy. Such solution will contribute to the improvement of the effectiveness of pro-environmental measures and will also help preserve animal production in such area.

In the most part of the Carpathian Mountains there is a problem of small fields abandoned by farmers the use of which is unprofitable or needless owing to limiting the number

of stock. In the first place plots located on the peripheries *vis-à-vis* holdings and less productive plots are eliminated from agricultural activities. Very often arable plots of land are eliminated from agricultural production due to their extreme fragmentation (many divisions among family members) which frequently prevents access thereto, the use of technological resources and area compensation payments. Land which is no longer used for arable purposes is subject to natural succession which results in its automatic transformation into wasteland that in turn is a major problem for landscape protection, including, the protection of an agricultural and forest border. Holding land registered as arable land in mountain areas frequently entails no costs on the part of its owner. To a prevailing part of arable land tax exemptions are applicable for the poorest arable land. Hence, current solutions do not motivate landowners to sell or lease such land to entities that need it (they need more forage for enlarged herds of animals or are engaged in common sheep or cattle grazing).

A separate issue that requires changing is the support to mountain and other holdings located in disadvantaged areas, but outside administrative rural areas. Due to omitting agricultural parts of small towns being sizeable rural areas, however, formally situated within the administrative borders of towns, they are not eligible for the mountain support system which in turn causes the regression of agriculture. Similarly as in the case of the delimitation of non-mountain disadvantaged areas, the territorial criterion should not be based on the whole area of gmina but rather on a geodesic precinct, i.e. a much smaller formal territorial and geodesic unit which covers a part of the town or actually a village that was annexed to the territory of the town in the course of its establishment or growth. Agricultural holdings located within the area of towns have currently lost eligibility for EU aid, including in the area of investment and development of infrastructure. These problems occurred at the stage of implementing the 2004–2006 RADP, however, they were not taken into consideration and solved in the projection of the support to holdings in 2007–2013.

Looking for solutions aimed at improving the system of support to holdings and agriculture in the mountains, it is worthwhile to consider, as part of the CAP, resignation from mountain payments criticized in the EU for years which, due to the absence of the revalorization of their amounts, have lost their significant, and replace such payments with agri-environmental payments adjusted to mountains. These payments could, to a much greater degree, fulfill ecological goals which are very important here and, at the same time, in a strictly addressed manner support economically these holdings and producers who are actually involved in environment protection programs, including the protection of biodiversity and mountain landscape. The list of special measures aimed at supporting mountains can be very extensive. For example, within the area of the Bieszczady Mountains and Beskid Niski range, damage caused by wolves has become a production-related problems. It frequently happens that seeking an easy prey numerous population of wolves attacks grazing flocks of sheep both in daytime and during night when they are in enclosure (in a sheep pen). Thus, the desired support should, according to farmers, consist in reimbursing them for the construction of a portable and wolf-proof fence of the sheep pen and serve as an additional financial compensation for watching the flocks at night as well as co-financing the construction of shelters for the supervision of the flocks and installations scaring predators away.

Following solutions applied in Austria, Switzerland or Germany, it seems purposeful to introduce agricultural and economic zoning of the mountains. Applying uniform rates of

support to holdings engaged in the production, for example, on the Gubałówka Mountain (approximately 900 m above the sea level) and in the Czarny Dunajec gmina (the upland area with insignificant topographic impediments) does not seem to be sufficiently justified in conceptual terms. It would be best to refer zoning to a specific holding just like in Austria and Germany, however, owing to paramount costs of the valorization of a few dozen thousand mountain holdings, it seems purposeful to base zoning on geodesic precincts or a village. Agricultural production space valorization rates (WWRPP) developed many years ago would be helpful in the process and could be at present supplemented to include Chief Sanitary Inspectorate [GIS] data pertaining to the land form. The development of a 3–4 degree mountain zoning scale would improve the objectivism of the assessment of management conditions and the appropriate compensation for the related losses as well as preventing land abandonment in areas which are least favorable in terms of agriculture.

Owing to the fact that the problem of the reduction in the raising of grass-eating stock in the mountains intensified, including nearly a collapse of sheep breeding, it is purposeful to consider the legitimacy of supporting preservative (extensive) stock breeding, in combination with seasonal grazing and cultural common grazing. Two entities should be the beneficiary of such support, that is, a farmer *(a hill farmer* or *gazda)* who owns animals entrusted for grazing for which he prepared forage (mostly hay) for winter on his farm as well as a head shepherd (*baca*) who grazes animals on a seasonal basis. The aid should be directed at sustaining the use of permanent green land involving mowing (or grazing). The head shepherd organizing common grazing (mostly in wintertime) and the shepherd grazing animals, obtaining and processing milk would be granted aid for the area of green land covered by grazing or, alternatively, per single animal being grazed. At present such support is received by holdings engaged in breeding small herds of cattle and flocks of sheep. Milk processing and production of regional products is a separate problem of the institutionalization of the support and the system currently in use seems to be bureaucratized.

Excessively fragmented holdings of the prevailing part of the sub-region results in the fact that land concentration – not necessarily with regard to the ownership but rather with regard to its use – now seems to be a major obstacle preventing economic plausibility and rationality of technological agricultural production. Owing to particularly strong attachment of highlanders to land passed from generation to generation, especially with respect to its ownership, at present there are hardly any opportunities for its concentration through sale. The only sensible way for the improvement of the agrarian structure (when it comes to the use of land) is the popularization of lease and lending arable land. Given the conditions specified above, one may conclude that two management zones should be distinguished in rural areas of the Carpathian Mountains, namely, the zone of dense rural development and accompanying residential plots of land, homestead adjacent plots of land and plots of land for social purposes as well as an agricultural zone located remotely from the village. In the first zone, land should be sold to family members and neighbors without any legal obstacles or it should be divided or used for residential building, business and developing small agricultural homestead adjacent plots of land. In the other zone, the agricultural one, limited division of land is justified, e.g. for one successor only, and any and all undertakings aimed at formal and actual land fragmentation should be limited. In the separate zone of agricultural production in the mountains environment protection regimes should be reinforced, that is, a ban on setting land aside, as well as on

letting the land fallow and abandoning it (reforestation). Such land should be concentrated mostly by a lessee, e.g. by several farmers within one village (or neighboring villages) who will guarantee its rational and adequate agricultural use in terms the environment and good agricultural practices suitable for mountain conditions [Musiał 2010].

After Poland's accession to the EU, farmers from mountain areas became considerably interested in regulating land ownership. They started to appreciate the need of a clear ownership (or occupation) status which is related to the necessity of performing various formal and legal activities by farmers related to following EU support-related procedures, including obtaining mountain area compensation payments, investment assistance etc. Research confirms that in the mountain areas the regulation of ownership is the most important for land management [Wojewodzic 2010]. The above especially applies to mountain and upland sub-regions where the processes of land divisions and agrarian fragmentation were particularly intensive. After the EU integration the interest in managing fallow land and land set aside rose which, owing to area compensation payments, became new and quite an easy form of obtaining additional financial resources. The interest in leasing arable land also rose; however, this phenomenon may be explained not directly with the increase of that form of obtaining land by purchasers but with enforcing formal lease contracts by a payment agency – holder of aid funds. At present even cursory knowledge of the essence of the Common Agricultural Policy makes farmers aware of the importance of the size of the holding and its significant impact on its management, level of production and economic performance.

The consequences of agriculture's economic integration with the European Union with regard to the impact of the Common Agricultural Policy and structural policy on mountain areas are diverse and refer both to agriculture itself and the development of rural areas. Even in agricultural holdings which limit their agricultural activities there is still considerable potential which can be used, among other things, in non-agricultural business activities. Very often the limitation or discontinuation of agricultural activities results in wasting a substantial portion of the assets. Only a part of the resources is used in alternative manners [Wojewodzic 2011].

Research conducted to-date fails to confirm that the scope and strength of impact of the agricultural policy in place are important enough to visibly and clearly affect structural transformations in the Carpathian agriculture. The integration was followed by relative stabilization and predictability of the agricultural policy which previously wobbled. The system of supporting holdings with area compensation payments and structural support seems to create new perspectives for holdings with growth potential and considerable confusion among small farms which are going bankrupt or cease their production. The reason for such phenomenon is land owners' willingness to receive area and mountain subsidies even if the land was abandoned (set aside) or leased without a contractual basis. Such payments are still very important to usually poor households and are at the same time quite easy to obtain in procedural terms.

Institutional measures taken as part of the Common Agricultural Policy should be mostly addressed to supplementary households[2] and agricultural holdings with growth

[2] A supplementary holding is a holding whose income from agricultural activities serves to supplement income of a family that earns its living otherwise.

potential. It should be expected that the economic fall of the majority of agricultural holdings in fragmented areas is an irreversible phenomenon. Processes in progress should not be delayed but care should be taken to ensure an efficient transfer of resources released to entities where they will find a better use [Wojewodzic 2010].

Research shows that over the next twenty years new tendencies will emerge in the mountains with regard to land use. The share of meadows and pastures will be increased which would be justified in all terms. One could also expect that the land area of forests (and its share in landscape) will increase. One of key priorities behind the transformations expected in the coming years in the structure of land use, is a decrease in the number (and share) of land set aside and let fallow even though the process may be difficult and less effective in sub-regions which are fragmented when it comes to population.

SUMMARY AND RECOMMENDATIONS

Agricultural production in mountain areas is a necessary condition that must be met in order to improve the economy of rural areas and preserve valuable landscape and cultural values of these areas. The Carpathian countryside is characterized by great demographic vitality and a high level of business activities involving various forms of non-agricultural entrepreneurship and activities related to holdings as well as alternating labor migration. Great attachment of the inhabitants of the Polish Carpathian Mountains to land, place of living, culture and tradition of the region helps slow down recessive processes pertaining to the durability of the countryside and agriculture in a relative manner compared to other parts of Poland. However, the absence of firm measures protecting these areas may in the nearest future lead to the rapid acceleration of recessive phenomena. EU's new economic policy to be implemented as of 2014 in respect of rural areas and agriculture in nature-related problem areas is bound to materially impact the speed and direction of the current processes. Also a domestic policy, especially decisions in the area of fiscal and social insurance policy, will be crucial here. The most important measures which should be taken to preserve agricultural activities in the mountain areas are:

- making the amount of the support to land owners conditional upon the location of the holding (precinct stratification),
- determining limits for animal stock density for holdings applying for support with supplementary area compensation payments,
- transforming compensation payments for disadvantaged areas into agri-environment payments,
- making tax preferences applicable to arable land in the mountains conditional upon their good agricultural culture,
- introducing support to entities engaged in seasonal animal grazing,
- putting spatial management in order by, among other things, establishing two management zones, that is, the zone of dense village development and accompanying residential plots of land, homestead adjacent plots of land and plots of land for social purposes and the typical agricultural zone being remote from the village where only agricultural or forest (proprietary) activities could be undertaken.

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UWARUNKOWANIA I OCENA ADEKWATNOŚCI WSPIERANIA ROLNICTWA W KARPATACH POLSKICH

Streszczenie. Działalność rolnicza stanowi niezbędny element kształtowania krajobrazu. Szczególnie istotną rolę należy jej przypisać na obszarach cennych przyrodniczo, w tym na obszarach górskich. Wieś karpacka i gospodarstwa rolne wykazują tu dużą żywotność ekonomiczną oraz wysoką aktywność gospodarczą, potrzebują jednak wsparcia dla prowadzonej, w trudnych warunkach przyrodniczych, działalności rolniczej. Duże przywiązanie mieszkańców Karpat Polskich do ziemi, miejsca zamieszkania, a także tradycji i kultury regionu sprawia, że procesy recesywne odnoszące się do trwałości wsi i rolnictwa przebiegają tu wolniej, aniżeli w innych częściach kraju. Jednakże brak zdecydowanych działań o charakterze pomocowym chroniących te obszary może w najbliższym czasie doprowadzić do gwałtownego przyśpieszenia zjawisk recesywnych. Istotny wpływ na tempo i kierunek zachodzących procesów będzie miała polityka gospodarcza UE, stosowana wobec obszarów wiejskich i rolnictwa, w tym adresowania do obszarów problemowych oraz dodatkowe rozwiązania polityki krajowej. Celem opracowania było dokonanie oceny oraz zaproponowanie modyfikacji w systemie wsparcia rolnictwa na obszarach górskich, w tym szczególnie na obszarze Karpat Polskich. Proponowane w podsumowaniu rozwiązania powinny zostać podane szerokiej dyskusji, która umożliwiłaby ich wdrożenie w ramach nowego okresu programowania WPR.

Słowa kluczowe: rolnictwo, obszary wiejskie, góry, Karpaty Polskie, polityka rolna

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FARM INCOME SITUATION ACCORDING TO THE ECONOMIC SIZE

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Abstract. The economic situation of farms has been analyzed according to the economic size. On the basis of data from FADN Farm Accountancy Data Network there has been made an analysis of the income situation of an average Polish and European Union farm. For the need of the analysis, the farms have been divided into 6 classes of economic size (ES6): to 4, 4–8, 8–16, 16–40, 40–100, 100 – and more ESU (European Size Unit). Due to the fact that FADN Standard Results include mean values for identified groups with definite minimal number of agricultural farms, simple methods of analysis of statistical series as well as vertical and horizontal analysis method have been applied. In the work, information from all the farms which used FADN accountancy in the years 2004–2008 has been provided, and for the Polish farms, additionally from the years 2005–2007. The quantity of the earned income was closely correlated with the farm economic size. Along with its rise, the level of earned income increased, as well. However, Farm Net Income exceeding the average net wage[1] in the national economy, in 2004, was reached by Polish farms only of medium small (8–16 ESU) economic size, whereas, in 2008 by a medium large one (16–40 ESU). In large farms (40–100 ESU) and very large (100 ESU and more) in 2008, and additionally, medium large (16–40 ESU), in 2004, the earned income of unpaid labor per head was many times higher than the average net wage. The contribution of subsidies to the size of earned income is constantly growing.

Key words: Economic size, income situation, Farm Net Value Added, Farm Net Income

INTRODUCTION

The years 2004–2009 were characterized by a significant rise of expenses for agricultural policy both from the EU sources and domestic ones, considerable growth of

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[1] Annual average net wage in the national economy was 23,300 PLN – 6634 EUR in 2008, with an average currency exchange rate for euro (SYS004) in 2008 – 3.5121, whereas in 2004 18,348 PLN (4053 EUR) with an average exchange rate 4.5268.

rural population's income and improvement in the income parity [Wilkin 2010]. Still, the income of Polish farms has been lower than the income of the European Union farms for many years [Zegar 2003, Czyżewski, Henisz, Matuszczak 2004].

Income disparity is a constant characteristic of agriculture. The reasons of this situation can be found in the specificity of agricultural activities. Circulation of capital is slower in agriculture as it is limited by the biological factor, the growth cycle of plants and animals, lower labor efficiency resulting from the dependence of production on changing seasons. The more the consumers' needs are satisfied the bigger barrier is to be faced by the agricultural products. With the increase in the society wealth, the percentage of income spent on food is lower. It involves occurrence of unfavorable price conditions for agriculture. Farmers' labor efficiency depends not only on the number of commodities they have produced but also how many of them have been sold [Moskal 2003]. Factors which largely affect the earned income quantity include: management skills and the ability of adaptation to specific conditions [Poppe and van Mejil 2006].

The economic situation of farms has been studied by many economists who have focused their interest on such issues as the influence of production scale on the earned income [Sznajder 2000; Józwiak, Mirkowska 2006; Cieślik, Żmija 2007]. An improvement in the agrarian structure, increase in the production scale, modernization of technology do not guarantee an improvement of the farm income situation. Agriculture as a sector connected with natural resources is depreciated by the market mechanism which results in an outflow of the Farm Net Value Added to other sectors. This leads straight to income gaps [Woś 1999]. Without intervention, the surplus does not come back to the producer in a natural way. The surplus is retransferred in the form of current subsidies not connected with the production and through payments for agricultural-environmental activities connected with the development of rural areas [Czyżewski 2010].

Agriculture in Poland and in the other countries of the European Union depends more and more on current subsidies and other subventions [Goraj 2009; Sobczyński 2009]. For the first time, the Polish farmers took advantage of current subsidies in 2004. In Poland, in 2004, the farmers' incomes rose by about 2/3, as compared to 2003. It was, approximately in 70%, the result of a beneficial for agriculture relation of the products prices to production means and good weather conditions for plant cultivation. The remaining part of the income increase was due to current subsidies [Józwiak 2005]. The current subsidies for agriculture generate a noticeable income effect. However, there still occurs disparity of incomes to the disadvantage of farmers in the field of payment for labor and the individual income. An advantageous income situation after the accession to the European Union is supposed to get worse due to a decrease in the rise of subsidies. The stream of public financial means directed to agriculture and rural areas after the accession should not be considered as a factor generating income. The earned income should depend on the volume of production, production costs and relations of agricultural products prices. Also transfers to and from farmers are connected with it. However, it is the production potential of a farm and its management efficiency that determine the income level over a longer period of time. These are factors of crucial importance for the whole agriculture [Zegar 2011].

For the needs of this research, there has been accepted a hypothesis assuming that the outflow of the surplus from agriculture grows faster than it is compensated by the subsi-

dies, whereas, the rise of the production scale and management efficiency improvement is too slow which causes that the income parity is not being improved. Therefore, the aim of this study is to make an assessment of earning capability of an average Polish farm, running the Union accountancy, according to the economic size classes, in the first years after the accession. Changes of the potential, the farm efficiency management and importance of subsidies have been analyzed in terms of the obtained income. The economic situation of an average Polish farm according to particular classes of economic size has been presented in comparison with the analogical one in the European Union.

RESEARCH MATERIAL AND METHOD

The main source of information used for the research was FADN[2] data published in the form of Standard Results on the EU website[3]. The data makes it possible to analyze the economic situation of farms within a region or a country and compare farms from different countries regardless of their production and regional diversification [Goraj, Mańko 2009]. In the field of FADN observations there are market farms whose contribution to generation of Farm Value Added in agriculture is of key importance. Variables characterizing farmers in the FADN base are precisely described and defined by appropriate symbols. Also their calculation algorithms are specified. FADN is a system of representative tests based on a precisely elaborated method of selection of a group of farms which have implemented the defined notions, and transparent, multi-step control procedures. These procedures provide the possibility of obtainment of data representative for the defined groups of farms functioning on the territory of the European Union. The data is highly reliable thanks to using the procedures of control and verification. "Standard results FADN = level 1" contain mean values for the identified groups of farms with defined minimal numbers [Goraj, Mańko 2009]. Because of this, it was enough to apply simple methods of statistical series analysis and vertical and horizontal analysis.

For the needs of the analysis, the farms have been grouped into 6 classes of economic size: to 4, 4–8, 8–16, 16–40, 40–100, 100 and more ESU. Economic size is defined as a sum of Standard Gross Margin (SGM[4]) of all farm activities. It is expressed in European Size Units (ESU[5]). After its establishment, the farm is classified into one of the classes of economic size. Classification ES6 (Table 1) has been used in this research.

In this work information from all the farms running FADN accountancy in the years 2004 and 2008, and in case of Polish farms, additionally, from the years 2005–2007 has been used. Total Utilized Agricultural Area, economic size, total number of full time employed persons, and full time employed persons from family have been used for presenta-

[2] Farm Accountancy Data Network – a system of agricultural accountancy introduced after the integration with the European Union.

[3] http://www.ec.europa.eu/agriculture/rica

[4] SGM (Standard Gross Margin) – standard value obtained from one ha of cultivated land or one animal reduced by standard direct costs necessary to create this production in production conditions typical for a given region. The mean values from the last three years are accepted for calculations.

[5] ESU –. European Size Unit.

Table 1. Grouping of farms by economic size (ESU), the ES6 classification
Tabela 1. Grupowanie gospodarstw rolnych według wielkości ekonomicznej (ESU), klasyfikacja ES6

ES6	size in ESU
very small (XS)	< 4
small (S)	4 < 8
medium small (MS)	8 < 16
medium large (ML)	16 < 40
large (L)	40 < 100
very large (XL)	100 i więcej

Source: Goraj et al 2008, p. 13.
Źródło: Goraj i in. 2008, s. 13.

tion of the analyzed farms potential. The income situation of the studied farms has been measured by Farm Net Income calculated per one full time employed person. The assessment of farm management efficiency has been made by means of the Farm Net Value Added per one full time employed person. Also the relation of subsidies with the average Polish farm running FADN accountancy, as compared to the EU one, has been presented. The economic situation of farms has been analyzed in terms of their economic size.

DISCUSSION AND RESULTS

During the studied years the area size of an average Polish farm, being under FADN observations, was systematically increasing. The area of cultivated land, in the years 2004–2008 was, respectively: 15.14 ha, 16.33 ha, 17.01 ha, 17.28 ha and 18.29 ha. It was smaller than the area of analogical EU farms (in 2004 by almost 55%, whereas in 2008 by slightly more than 47%). The area sizes of the studied farms, both the Polish and the EU ones, were diversified, depending on their economic size, in 2004 and 2008. It increased along with the rise of the farm economic size and for the analyzed Polish farms[6]: very small, small, medium small, large, medium large, and very large in 2004, respectively: 6.7 ha, 10.37 ha, 17.18 ha, 32.27 ha, 74.16 ha, 384.84 ha, whereas, in 2008: 7.99 ha, 11.97 ha, 19.65 ha, 36.5 ha, 75.83 ha, 543.89 ha (Table 2).

In 2008, as compared to the accession year, the Total Utilized Agricultural Area increased for all classes of economic size. A farm very large, in terms of economic size, extended most the area of cultivation (by 41.33%) as well as a very small one (by 19.25%). In result of this an average farm in both classes of economic size was larger than analogical ones from the European Union (respectively: very large by 189.36% and very small by 15.46%). In the remaining farms, being under observation of FADN, an increase in the farm area size was reported as well. However, it was inversely proportional to the farm economic size and was, for: small, medium small, medium large and large, respectively: 15.43%, 14.38%, 13.11% and 2.25% (Table 2).

[6] According to ES6 classification.

Table 2. Total Agricultural Area utilized (SE025) (presented in acres) of average farm in Poland and in the EU in the classes of economic size and its changes between 2004 and 2008
Tabela 2. Powierzchnia użytków rolnych (SE025) w ha przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej i jej zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	15.14	6.7	10.37	17.18	32.27	74.16	384.84
	European Union	33.38	7.98	8.75	16.37	35.08	68.93	162.59
2008	Poland	18.29	7.99	11.97	19.65	36.5	75.83	543.89
	European Union	34.61	6.92	12.18	19.88	42.4	78.52	187.96
2008/2004 [2004 r. = 100%]	Poland	120.81	119.25	115.43	114.38	113.11	102.25	141.33
2004 European Union = 100%	Poland/ European Union	45.36	83.96	118.51	104.95	91.99	107.59	236.69
2008 European Union = 100%		52.85	115.46	98.28	98.84	86.08	96.57	289.36

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

Along with the rise of the farm area size, in the years 2004–2008, the economic size of an average Polish farm running FADN accountancy, increased (and for the studied years amounted, respectively: 9.5 ESU, 9.7 ESU, 10 ESU, 9.9 ESU and 10.2 ESU). However, it was significantly lower than for analogical EU farms, in 2004 as well as in 2008 (for which, in the analyzed years, it was respectively: 33.2 and 29.4 ESU). In 2004 also the EU farms were stronger in all classes of economic size, except for very small ones (Table 3).

In 2008, as compared to the accession year, the economic size of a very large Polish farm increased considerably (33.2%). In the remaining farms it either decreased or maintained at the level of 2004. Four years after the accession, only farms very small and very large in terms of economic size, were larger than analogical ones in the European Union (respectively by 24 and almost 28%) (Table 3).

Diversity of the production capacity is caused by the employment rate [Goraj, Mańko 2009]. In an average Polish farm, being under FADN observation, the employment rate was 1.76 AWU[7] and it was slightly higher than in an analogical farm of the European Union (1.64 AWU in 2004 and 1.66 AWU in 2008). In the studied farms, both Polish and those from the EU, in the years 2004 and 2008, the employment rate increased along with a rise in the farm economic size, while in Polish farms, being

[7] AWU – calculation unit for total work (Annual Work Unit).

Table 3. The economic size (SE005) at ESU of average farm in Poland and the EU in the classes of economic size and the changes between 2004 and 2008
Tabela 3. Wielkość ekonomiczna (SE005) w ESU przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej i jej zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	9.5	3.2	5.8	11.3	24.6	57.5	220.8
	European Union	33.2	3.1	6.2	11.8	26.8	64.3	227.6
2008	Poland	10.2	3.1	5.7	11.3	24.8	57.0	294.2
	European Union	29.4	2.5	5.9	11.8	27.2	65.3	230.1
2008/2004 [2004 r. = 100%]	Poland	107.4	96.9	98.3	100.0	100.8	99.1	133.2
2004 European Union = 100%	Poland/ European Union	28.6	103.2	93.5	95.8	91.8	89.4	97.0
2008 European Union = 100%		34.7	124.0	96.6	95.8	91.2	87.3	127.9

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

under FADN observation, it was definitely higher for all economic size classes than those from the European Union (Table 4).

In 2008, as compared to the accession year, the reduction of employment was observed in the Polish very small, small, medium, medium large, and large farm (in terms of economic size), by, respectively: 1.43%, 5.26%, 2.06%, 0.87%, 5.83%. Its considerable rise was noticed only for a very large farm (by almost 77%) (Table 4).

In the years 2004–2008, employment of unpaid labor force in a Polish average farm (family members) was respectively: 1.53 FWU[8], 1.53 FWU, 1.50 FWU, 1.50 FWU and 1.51 FWU. According to Mańko this is a level similar to an average employment rate for family farms which provide job places for about 1.5 person [Goraj, Mańko 2009]. In an average farm of the European Union, employment of the farmer running the farm and their family members was lower and amounted: 1.25 FWU in 2004 and 1.23 FWU in 2008 (Table 5).

Among the Polish farms, analyzed in terms of economic size, it was a very large farm which was characterized by the lowest unpaid labor input (1.31 FWU). Four years after the accession also very large farms were reported to have the lowest unpaid labor input (1.09 FWU). It results from the fact that a significant number of farms in this class is based on hired labor. An average Polish farm, based on FADN accountancy, used hired labor and provided full time employment, in the years 2004–2008, respectively: 0.23, 0.23,

[8] FWU – Family Work Unit.

Table 4. Total labor input (SE010) in the AWU of average farm in Poland and the EU in the classes of economic size and its changes in the years 2004 and 2008

Tabela 4. Nakłady pracy ogółem (SE010) w AWU w przeciętnym gospodarstwie w Polsce i w UE w klasach wielkości ekonomicznej i ich zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	1.76	1.40	1.71	1.94	2.29	3.60	9.35
	European Union	1.64	1.23	1.20	1.32	1.55	1.99	4.86
2008	Poland	1.76	1.38	1.62	1.90	2.27	3.39	16.54
	European Union	1.66	1.27	1.38	1.38	1.57	1.99	4.91
2008/2004 [2004 = = 100%]	Poland	100.00	98.57	94.74	97.94	99.13	94.17	176.90
2004 European Union = 100%	Poland/ European Union	107.32	113.82	142.50	146.97	147.74	180.90	192.39
2008 European Union = 100%		106.02	108.66	117.39	137.68	144.59	170.35	336.86

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

025, 0.24, 0.25. It was lower than in an analogical EU farm which in 2004 employed 0.4 AWU and 0.42 AWU in 2008). A very large, in terms of economic size, Polish farm was characterized by a very high employment of hired labor (7.84 AWU in 2004 and 15.45 AWU in 2008).

In both studied years the highest Unpaid Labor Input was reported for the Polish farm of medium large and large economic size, whereas, in the EU for a large and very large one. In 2008, as compared to the accession year, unpaid labor employment[9] increased for an average Polish farm of each economic size class. However, a medium large farm was an exception. There the situation was just the reverse (rose insignificantly-by 1.08%). In both analyzed years, the number of full time employed persons FWU in an average Polish farm of each economic size class, being under observation of FADN, was higher than for analogical EU farms (except for very large farms in 2008) (Table 5).

In this work, Farm Net Value Added calculated per one full time employed person has been used to make an assessment of the farm management efficiency. Farm Net Value Added represents the effect of people's work. It shows an effected payment of all production factors: land, capital, full labor and management input. It is a measurement of the income earned by all the owners of production factors involved in the activity of an agricultural farm. This measurement, as one of very rare, can be used for an analysis of effects

[9] Unpaid person – concept accepted in FADN, used by IERiGŻ to describe the work of farmer and family members.

Table 5. Unpaid labor input (SE015) in the FWU of an average farm in Poland and the EU in economic size classes and its changes in the years 2004 and 2008
Tabela 5. Nakłady pracy własnej (SE015) w FWU w przeciętnym gospodarstwie w Polsce i w UE w klasach wielkości ekonomicznej i ich zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	1.53	1.31	1.55	1.73	1.86	1.98	1.50
	European Union	1.25	1.16	1.09	1.18	1.29	1.47	1.68
2008	Poland	1.51	1.30	1.50	1.72	1.88	1.97	1.09
	European Union	1.23	1.12	1.23	1.19	1.28	1.41	1.62
2008/2004 [2004 = = 100%]	Poland	98.69	99.24	96.77	99.42	101.08	99.49	72.67
2004 European Union = 100%	Poland/ European Union	122.40	112.93	142.20	146.61	144.19	134.69	89.29
2008 European Union = 100%		122.76	116.07	121.95	144.54	146.88	139.72	67.28

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

of agricultural activity of farms with different structures of production factors ownership [Goraj, Mańko 2009; Goraj et al. 2001]. In the years 2004–2007, in an average Polish farm, being under observation of FADN, a systematic rise in Farm Net Value Added per a full time employed person was reported. In 2008 this value dropped a little, but it was higher than in 2006 (Figure 1).

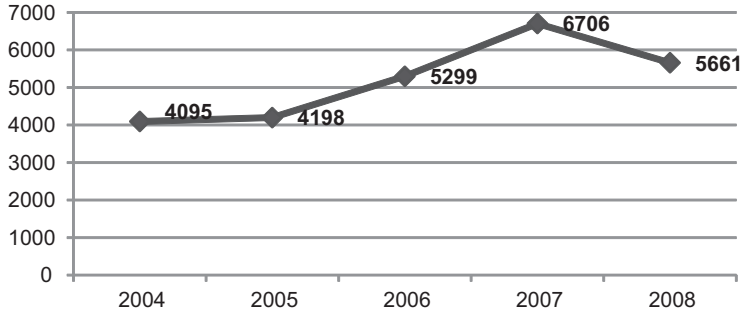

Fig. 1. Farm Net Value Added per fully employed person (SE425) in EUR · AWU^{-1} from an average farm in Poland in 2004–2008
Rys. 1. Wartość dodana netto na osobę pełnozatrudnioną (SE425) w EUR · AWU^{-1} z przeciętnego gospodarstwa w Polsce w latach 2004–2008

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

Farm Net Value Added per full time employed person obtained for an average analyzed farm was significantly lower than for an analogical EU farm (by 75.4% in 2004 and 65% in 2005) (Figure 2, Table 6). It increased along with an increase in the farm economic size. A large Polish farm was an exception in 2008 as it generated higher Farm Net Value Added per one full time employed person than a very large one.

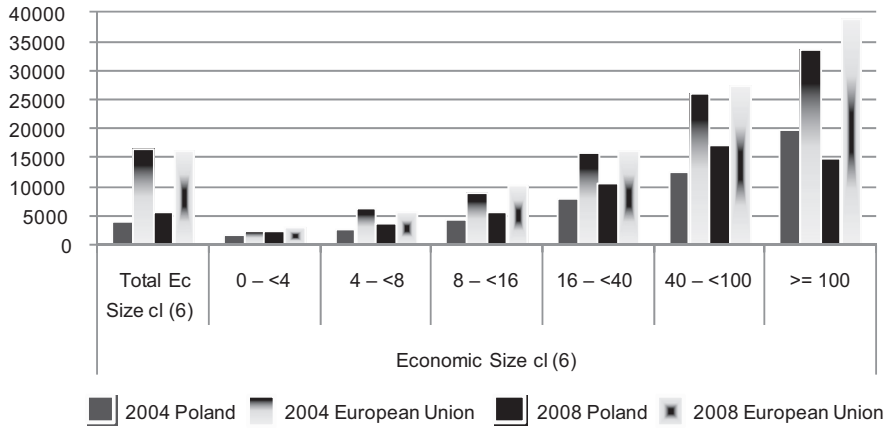

Fig. 2. Farm Net Value Added per fully employed person (SE425) in EUR·AWU^{-1} from an average farm in Poland and the EU for economic size classes between 2004 and 2008

Rys. 2. Wartość dodana netto na osobę pełnozatrudnioną (SE425) w EUR·AWU^{-1} z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej w latach 2004 i 2008

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

In 2008, as compared to 2004, the farm management efficiency improved in farms with economic size to 100 ESU. Farm Net Value Added per a full time employed person was higher in those farms than in the accession year (in a very small, small, medium small, medium large, large and very large by respectively: 40.7%, 43.6%, 36.1%, 31.3%, 36%). A reverse situation occurred for a very large farm in which a significant deterioration of the farm management efficiency was reported where Farm Net Value Added per a full time employed person decreased by almost 25% (Table 6). It indicates lower labor efficiency in these farms. Low labor efficiency is the biggest problem of the Polish farming as compared to the European Union [Poczta 2010].

In both analyzed years, an average EU farm of each class of economic size operated more efficiently. Farm Net Value Added per full time employed person generated by an average Polish farm, being under observation of FADN, was significantly lower than for an analogical EU farm, in each class of economic size (Table 6).

According to FADN, the farm financial result is Farm Net Income which is the economic surplus for paying the farmer's labor and their own investment in production factors (own capital) (Goraj, Mańko 2009; Goraj et al 2001). Thus, Farm Net Income is supposed to pay for the farmer's labor, provide means for installments, and provide surpluses from own capital invested in the farm and risk connected with its running [Goraj, Mańko 2009].

Table 6. Farm Net Value Added per fully employed person (SE425) in EUR·AWU^{-1} with an average farm in Poland and the EU in the classes of economic size and its changes between 2004 and 2008

Tabela 6. Wartość dodana netto na osobę pełnozatrudnioną (SE425) w EUR·AWU^{-1} z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej i jej zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	4095	1687	2567	4192	8109	12561	19646
	European Union	16647	2344	6291	8900	15914	26178	33842
2008	Poland	5661	2374	3686	5704	10647	17079	14767
	European Union	16167	3158	5607	10201	16314	27539	38831
2008/2004 [2004 = = 100%]	Poland	138.2	140.7	143.6	136.1	131.3	136.0	75.2
2004 European Union = 100%	Poland/ European Union	24.6	72.0	40.8	47.1	51.0	48.0	58.1
2008 European Union = 100%		35.0	75.2	65.7	55.9	65.3	62.0	38.0

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

In an average Polish farm, being under FADN observation, Farm Net Income per full time employed person in 2004–2008 increased (with a slight decrease in 2005) (Figure 3). It was, however, significantly lower than in an analogical EU farm (by 72.1% in 2004 and 57.6% in 2008) (Figure 4, Table 7).

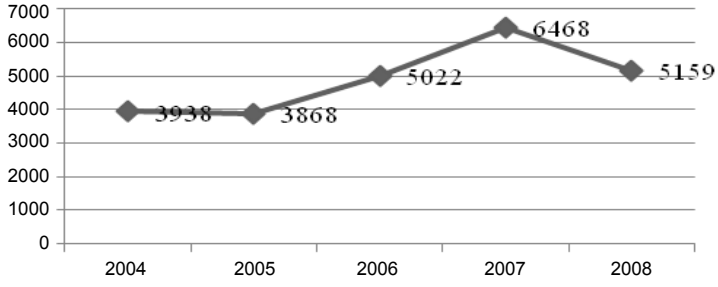

Fig. 3. Farm Net Income per fully employed person (SE430) in EUR·FWU^{-1} with the average farm in Poland in 2004–2008

Rys. 3. Dochód z rodzinnego gospodarstwa rolnego na osobę pełnozatrudnioną rodziny (SE430) w EUR·FWU^{-1} z przeciętnego gospodarstwa w Polsce w latach 2004–2008

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

The amount of Farm Net Income per full time employed person increased along with an increase in the farm economic size. The highest income per full time employed person was obtained by farms whose economic size was very large, whereas the lowest, by very small ones. The relation applies both to Polish and EU farms (Figure 4).

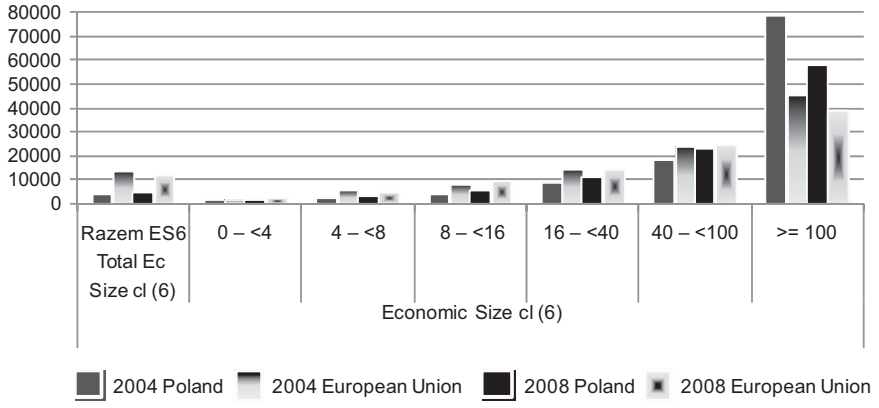

Fig. 4. Farm Net Income per fully employed person (SE430) in EUR·FWU^{-1} with the average farm in Poland and the EU's economic size classes between 2004 and 2008

Rys. 4. Dochód z rodzinnego gospodarstwa rolnego na osobę pełnozatrudnioną rodziny (SE430) w EUR·FWU^{-1} z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej w latach 2004 i 2008

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

Farm Net Income per full time employed person in 2008, as compared to 2004, increased for analyzed Polish farms of most of the economic size classes (very small, small, medium small, medium large, and large, respectively by: 39.3%, 41.8%, 32.5%, 27.6%, 24.4%). One of the factors which contributed to the situation was extension of the area size of farms of each economic class size (very small, small, medium small medium large and large by, respectively: 19.25%, 15.43%, 14.38%, 13.11%, 2.25%). These farms also limited labor input. In spite of an increase in the area size of farms: very small, small and large, their economic size decreased respectively by: 3.1%, 1.7% and 8.9%, while it increased insignificantly by 0.8% for a medium one, and did not change for a medium small. Farm Net Income per full time employed person was reduced only in very large farms (by 26%), although their area size increased by 41.3% and economic size by 33.2%.

However, Farm Net Income exceeding the average net wage in the national economy in the year 2008[10] was reached by a Polish farm only of medium economic size (16–40 ESU) (when in 2004 it was a medium small farm (8–16 ESU). In large and very large farms in 2008, and medium large and very large in 2004, it was many times higher than

[10] Annual average net wage in the national economy was 23,300 pln – 6,634 EUR in 2008, with an average currency exchange rate for Euro (SYS004) in 2008 –3.5121, whereas in 2004 18,348 pln (4,053 eur) with an average exchange rate 4.5268.

the average net wage. In both analyzed years the income which was reached by an average Polish farm for all classes of economic size, with the exception of very large farms, was much lower than for analogical EU farms. A very large Polish farm generated Farm Net Income per a full time employed person in the accession year higher by 71.2%, and in 2008 by 47.5% than that reached by an average EU farm of the same economic size class (Table 7).

Table 7. Farm Net Income per fully employed person (SE430) in EUR·FWU^{-1} with an average farm in Poland and the EU in the classes of economic size and its changes between 2004 and 2008

Tabela 7. Dochód z rodzinnego gospodarstwa rolnego na osobę pełnozatrudnioną rodziny (SE430) w EUR·FWU^{-1} z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej i jego zmiany w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	> = 100
2004	Poland	3938	1528	2422	4149	8717	18833	78530
	European Union	14139	2168	5948	8395	14896	24128	45887
2008	Poland	5159	2128	3434	5499	11123	23420	58091
	European Union	12169	3052	5373	9853	14995	24955	39395
2008/2004 [2004 r. = = 100%]	Poland	131.0	139.3	141.8	132.5	127.6	124.4	74.0
2004 European Union = 100%	Poland/ European Union	27.9	70.5	40.7	49.4	58.5	78.1	171.1
2008 European Union = 100%		42.4	69.7	63.9	55.8	74.2	93.8	147.5

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

The relation of balance of subsidies and taxes to Farm Net Income, was significantly higher for an average EU household (where it was 56% in 2004 and in 2008 68%). In an analogical Polish farm it was respectively: 30% and 60.45% (Table 8). In 2004 the relation was higher for an average EU farm of all economic size classes. Four years after the accession the situation changed. In the year 2008, the relation was higher for an average Polish farm: very small, small and very large in terms of economic size than for analogical EU ones (it was, respectively: 89.2%, 63.3% and 188.8%) (Table 8). However, the highest relation of balance of subsidies and taxes to Farm Net Income, in 2004, was characteristic for Polish farms: very small (37.9%) and very large (33.7%) in terms of economic size. The similar situation was reported in 2008, though the order of farms was different: very large (188.8%) and very small (89.2%). If there had been no current subsidies, Farm Net Income of a very large farm would have been negative (Table 8).

Table 8. Balance of current subsidies and taxes (SE600) in Farm Net Income (SE420), of the average farm in Poland and the EU in economic size classes between 2004 and 2008
Tabela 8. Udział salda dopłat i podatków (SE600) w dochodzie z gospodarstwa rolnego (SE420) z przeciętnego gospodarstwa w Polsce i w UE w klasach wielkości ekonomicznej w latach 2004 i 2008

Year	Country	Economic Size cl (6)						
		Total Ec Size cl (6)	0 – <4	4 – <8	8 – <16	16 – <40	40 – <100	>= 100
2004	Poland	30.0	37.9	33.4	29.7	24.9	24.4	33.7
	European Union	56.0	57.4	34.4	47.4	56.1	62.6	60.5
2008	Poland	60.4	89.2	63.3	52.0	44.0	43.2	188.8
	European Union	67.9	46.8	59.4	56.5	74.0	75.6	69.2

Source: Self-study based on FADN http:/www.ec.europa.eu/agriculture/rica
Źródło: Opracowanie własne na podstawie FADN http:/www.ec.europa.eu/agriculture/rica

It shows that the binding system of area payments favors very large farms. In the future, a systemic mechanism for current subsidies reduction is to be introduced. This will cause a shift of a part of the means from the economically strongest farms to the small family ones [Czyżewski 2010].

SUMMARY AND CONCLUSION

The above presented correlations apply to commercial farms which are under FADN observation, however, no generalization in reference to the whole population of farms in Poland is recommended. The presented results indicate that subsidies do not compensate the surplus outflow from agriculture. An increase in the production scale of the Polish farms is too slow. Also farm management efficiency in Poland (measured by Farm Net Value Added per full time employed person), significantly departs from that of the European Union. Because of this the income parity has not been improved. A good income situation of very large farms results from the fact that they have developed a specific system of gaining subsidies. Economically smaller households are in a more difficult situation (to 16 ESU). Despite having improved their management efficiency, limiting the number of full time employed persons, extending the farm area size and rising the share of subsidies in the income, they did not reached income allowing to exceed the level of parity of unpaid labor payment.

On the basis of the carried out research, the following conclusions have been formulated:

1. In the analyzed years, the area size of an average farm running the EU accountancy rose for each class of economic size. However, the area size of a very large farm increased most significantly. Although the economic size of a very large farm was reported to have largely increased as well, it did not change for a medium small one,

whereas, it significantly decreased for a very small, small and large farm. Households of all economic size classes reduced the total number of full time employed persons, except for very large farms where its significant increase was reported.

2. Management efficiency measured by Farm Net Value Added per full time employed person increased in 2008, as compared to 2004, it also rose for each economic class size, except for very large farms. However, in both analyzed years it was considerably lower for Polish farms than for analogical EU ones of each economic size class, being under observation of FADN.
3. Farm Net Income per full time employed person, in both studied years, was significantly lower for an average Polish farm than for the analogical one in the EU, regardless of its economic size, except for very large ones.
4. The quantity of Farm Net Income per full time employed person was closely related to the farm economic size. Along with its rise, the level of earned income increased. However, the income exceeding the average net wage in the national economy in the year 2008 was reached by the Polish farms of medium large economic size (16–40 ESU) whereas in 2004 it was a medium small farm (8–16 ESU). In large and very large farms, in 2008, and medium large, large and very large, the income earned in 2004 was significantly (many times) higher than the net average wage.
5. Subsidies are playing a more and more important role in the farm earning capacity. The share of subsidies in Farm Net Income, in 2008, increased significantly for farms of each economic size class. A prosperous situation of a Polish very large farm, in 2008, was connected with high subsidies. If it had not been for the subsidies the farm earned income would have been negative.

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SYTUACJA DOCHODOWA GOSPODARSTW O RÓŻNEJ WIELKOŚCI EKONOMICZNEJ

Streszczenie. Przedmiotem analizy była sytuacja ekonomiczna gospodarstw w różnych klasach wielkości ekonomicznej. Na podstawie danych europejskiego systemu rachunkowości FADN dokonano oceny sytuacji dochodowej przeciętnego gospodarstwa Polski i Unii Europejskiej. Dla potrzeb analizy pogrupowano gospodarstwa według 6 klas wielkości ekonomicznej (ES6): do 4, 4–8, 8–16, 16–40, 40–100, 100 i więcej ESU. Z uwagi na to, że Wyniki Standardowe FADN zawierają wartości średnie dla wyłanianych, o określonej minimalnej liczebności grup gospodarstw rolnych, w badaniach zastosowano najprostsze metody analizy szeregów statystycznych, metody analizy pionowej i poziomej. W pracy wykorzystano informacje ze wszystkich gospodarstw prowadzących rachunkowość FADN w latach 2004 i 2008, a dla gospodarstw polskich dodatkowo z lat 2005–2007. Wysokość wypracowanego dochodu była ściśle skorelowana z wielkością ekonomiczną gospodarstwa. Wraz z jej wzrostem zwiększał się poziom uzyskiwanego dochodu. Jednak dochód na osobę pełnozatrudnioną rodziny przekraczający przeciętne wynagrodzenie netto[11] w gospodarce narodowej w 2004 r. osiągnęło dopiero badane polskie gospodarstwo średnio małe (8–16 ESU)) pod względem wielkości ekonomicznej, natomiast w 2008 r. średnio duże (16–40 ESU). W gospodarstwach dużych (40–100

[11] Roczna płaca netto w gospodarce narodowej wyniosła w 2008 roku 23 300 zł – 6634 EUR przy średnim kursie wymiany jednostki monetarnej kraju członkowskiego na euro (SYS04) w 2008 r. – 3,5121, natomiast w roku 2004 18 348 zł (4053 EUR) przy średnim kursie wymiany 4,5268.

ESU) i bardzo dużych (100 ESU i więcej) w 2008 r. i dodatkowo średnio dużych (16–40 ESU) w 2004 r. uzyskany dochód na osobę pracy nieopłaconej był wielokrotnie wyższy od przeciętnego wynagrodzenia netto. Dla wysokości uzyskiwanego dochodu coraz większego znaczenia nabierają dopłaty.

Słowa kluczowe: wielkość ekonomiczna, sytuacja dochodowa, wartość dodana netto, dochód z rodzinnego gospodarstwa rolnego

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THE IMPORTANCE AND ROLE OF THE FINANCIAL INSURANCE SECTOR IN POLAND

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Abstract. Financial insurance plays an important role in market economy. It allows businesses and peoples to go through the period of economic slowdown with the fewest possible losses. Financial insurance sector developed in Poland in the 1990s however it has expanded dynamically over the past years.
This article presents the development and importance of the financial insurance sector in Poland between 2004–2009. It evaluates the scope and the structure of financial insurance with regard to its registered forms, participants, gross written premiums, gross claims paid, balance on technical financial insurance account and selected ratios. At the same time the theoretical and legal aspects of the financial insurance sector in Poland were presented. Data on the development of the financial insurance sector in Poland was taken from the Central Statistical Office and the Polish Financial Supervision Authority.

Key words: financial insurance, shuretyship, acquisition costs ratio, balance on technical financial insurance account, gross claims paid, gross written premiums, net – operating expenses, profitability ratio of technical activity

INTRODUCTION

The financial insurance sector in Poland has developed dynamically over the past years in order to adjust to the reality of the modern market economy. Financial insurance, which began to develop in Poland in the 1990s, is a relatively new product on the domestic market. Its development, both in terms of quality and quantity, has been constant. What is notable is the distinctiveness of financial insurance from the classic types of insurance. On the one hand, there is a strong link between financial insurance and economic mechanisms. On the other hand, there is a need to deal with particular contracts on an individual basis. This is reflected in the fact that financial insurance was the fastest-growing insurance in the Polish insurance sector in 2009.

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The aim of this work is to evaluate the role of financial insurance in the Polish insurance market. The following issues were addressed: (1) the role of financial insurance in supporting market stability; (2) the level of development in the financial insurance sector; (3) the structure of the Polish financial insurance sector.

DATA SOURCES AND METHODOLOGY

The analysis carried out in this paper covers the years of 2004–2009. All types of financial insurance in Poland were analysed: credit insurance, shuretyship and insurance of various types of risk. Data on the development of the financial insurance sector in Poland was taken from the Central Statistical Office and the Polish Financial Supervision Authority. Both descriptive and comparative methods of analysis were used, as was the simple statistical method.

The paper first presents the legal and theoretical aspects of the financial insurance sector in Poland, then discusses its general role in the Polish market. Finally, it evaluates the scope and structure of financial insurance in Poland offers conclusions based on the data presented.

THE LEGAL ASPECTS OF FINANCIAL INSURANCE IN POLAND

According to the Act of law of 22 May 2003 on insurance activity, financial insurance belongs to Branch II of property insurance and other personal types of insurance. It refers to the sphere of finance management and is therefore strictly connected with a company's finances. Financial insurance provides protection when a counterparty is unable to meet its financial commitments. The Appendix to the Act of law of 22 May 2003 on insurance activity defined financial insurance as consisting of three classes:

- Class 14 – Credit Insurance, including: general insolvency, export credit, repayment of installments, mortgage credit, agricultural credit.
- Class 15 – Suretyship: direct[1] and indirect[2].
- Class 16 – Insurance of various financial risks[3], including: employment risk, insufficiency of income, bad weather, loss of benefits, continuing general expenses, unforeseen trading expenses, loss of market value, loss of regular source of income, indirect trading losses other than those mentioned above, other forms of financial loss.

In practice we come across two depictions of financial insurance: one is narrow and includes: insurance of credit (class 14) and shuretyships (class 15). This division stems

[1] Unnamed liability ratio according to which the guarantor is obliged to fulfill the specific cash benefit, if the beneficiary submits a payment request when the principal doesn't fulfill a commitment been guaranteed for.

[2] Unnamed liability ratio, according to which the (re) guarantor is obliged to fulfill a specific value cash benefit, if the beneficiary (other guarantor) submits a payment request to the guarantee in its favour.

[3] Aims at insuring against the risk of a sudden unplanned withdrawal of big sums of money or an unexpected decrease in income. It is also defined as an instrument of protection against an unfavourable course of economic processes.

from the belief that financial insurance limits risk from the exchange of credit between business entities. Credit insurance and shuretyships both protect businesses from losses resulting from improper behaviour of counterparties; with credit insurance, insurance companies assume the risk of losses from financially unreliable debtors, whereas within the guarantee activity, insurance companies guarantee the performance of specific commitments of one business entity toward another. The second description is wider than the first one and consists of: credit insurance (class 14), shuretyships (class 15) and insurance of various financial risks (class 16) [Wierzbicka 2007].

Within financial insurance we can distinguish two basic forms of insurance protection: insurance contract and contract of shuretyship. With credit transactions two forms of insurance contract are possible [articles 805–834 of the Civil Code]. One is based on the contract being awarded by the creditor and the insurance company. In this case the creditor[4] owns an insurance business and insures the risk of non-performance or improper performance of benefits by the debtor. However, when applying the second, less common form, the insurance contract is awarded by the debtor in favour of the creditor; that is, by the entity that does not bear risk in favour of the entity that owns an insurance business [Bera 2005; article 808 of Act of law of the Civil Code].

The guarantee agreement in Polish law, has not been regulated in detail yet. It is an unnamed contract. Therefore the possibility of awarding it stems from the rule of freedom of contract – included in article 353 of the Act of law of the Civil Code (CC), and general provisions on civil law can be applied to it.

Polish law allows insurance companies to award non-life suretyships if the insurance companies have permission within class 15, Branch II[5]. The provisions of the Civil Code do not apply to shuretyship. However, the provisions of the Act on insurance activities apply when stating the governing law for a given contract. The rights and duties of the parties to the contract on shuretyship result from the general provisions of the Civil Code on contractual obligations. It should be stressed that this insurance activity is developed mainly by practice, with a legal basis on the rule of freedom of contractual relationships settlement [article 353 (1) of Act of law of the Civil Code].

The guarantee activity carried out by insurance companies does not include signing insurance contracts. It is merely a financial service performed by insurers on the basis of regulations and, as regards its legal construction, is completely different from the activity of concluding insurance contracts. Legislators explain the term of insurance activity as performing insurance activities connected with offering and giving protection when there is risk of aftermath from life events.

THE ROLE OF THE FINANCIAL INSURANCE SECTOR

Everyone can be affected by periods of economic slowdown. Financial insurance plays one of the most important elements enhancing market stability. It allows businesses to go through the period of economic slowdown with the fewest possible losses. In Po-

[4] Can be: goods supplier with an adjourned maturity date, lessor, bank granting credit.

[5] Or permission in the relevant scope issued by the relevant body of the EEA Member State.

land the phrase "financial insurance" has been used since the beginning of the 1990s. It is difficult, however, to find an unambiguous definition of this particular insurance, also because the name "financial insurance" cannot be found in any legal regulations. Such insurance differs from others in that there is a different source of risk stemming from economic processes and from market conditions, with which every business entity deals. The insurance coverage encompasses the processes connected with the finances of market entities, which are the main cause of risk [Kukiełka, Poniewierka 2003].

An aspect which causes some concern is the issuing of credit. Mainly, it is the uncertainty whether debtors will meet their commitments and whether they are regulated at all. In these situations, shuretyships cover property losses of debtors, as specified in the insurance contract for the credit granted.

Another crucial aspect of financial insurance is the attitude to risk. Insurance contracts are usually individual in nature because they concern a particular business entity and particular financial transactions. Therefore, the financial insurance contract is not only adapted to the needs of individual clients, but it is the result of a compromise between the insurer and the client. The compromise follows from a thorough evaluation of the risk. Diagnosing, identifying and evaluating risk are the basis of the actions taken to manage and limit risk. In economic practice there is a mechanism of financing risk. Such financing can be internal (covering losses from one's own sources) or external (transfer of risk to the insurer by signing an insurance contract).

The fact that risk analysis is done not only prior to the signing of the contract, but also following it, is an important element in financial insurance. The insurer manages risk by monitoring it and reacting to any changes, and by analyzing the contracts signed by the insured with the recipients throughout the period of insurance.

With financial insurance the insurance company is entitled to recourse, and they frequently, claim those rights. In this field, there are many more cases of recourse than with other types of property insurance.

In financial insurance there are normally no tariff premiums. The price for insurance – the premium – is calculated individually depending on the evaluation of risk that the insurer makes, the length of insurance coverage and its scope. In financial insurance the influence of other types of property insurance on making decisions to offer insurance is avoided. There is a certain limit of risk capacity, above which there is no admission to insurance coverage. There is no possibility to apply the rule "higher risk, higher rate" here. Financial insurance providers have autonomy in decision-making.

Financial insurance is offered by specialized insurance companies. This is connected with the strict requirements that need to be fulfilled in order to effectively and safely operate such a business[6]. Companies dealing with financial insurance have access to large data bases concerning economic entities, the possibility to use internal databases (for example,

[6] The requirements are mostly:
- An effective system of collecting, working out and storing of economic information (about particular countries, economic branches, companies),
- The ability to assess economic risk, which, consequently, makes the role of an insurer closer to the role of a bank assessing the risk of granting credit; working out a method of reacting to the threats of economic entities' insolvency,
- An effective system of debt collection.

economic information agencies), and systems of information exchange with other entities (banks, other credit insurance companies). They also have procedures for reacting to dangers and an effective system of debt collection.

Financial insurance (especially credit insurance) plays a fundamental role in the market economy. It has a preventative function – help given by the insurer to the creditor, mutual risk evaluation, and professional counseling. Thanks to the compensative function of financial insurance, the insolvency of one debtor does not cause loss of liquidity for the creditor. Next, a stimulative function is manifested by increasing the credibility and attractiveness of the insured creditors. The last function – service function – is executed by taking over debt collection by the insurer [Bera 2005; Gręboweic, Kruk 2010].

STRUCTURE OF FINANCIAL INSURANCE SECTOR

In 2009, the value of the gross written premium[7] in the section of non-life insurance reached the level of 20 617 million PLN. Dynamics of total gross written premium amounted to 141.54% as compared to 2004 (assuming the year 2004 to be 100%). Financial insurance underwent rapid development. The share of financial insurance increased from 4.43% in 2004 to 7.78% in 2009 – Graph 1. In 2009, the dynamics of the gross written premium of this tape of insurance reached 248.77% as compared to 2004 (assuming the year 2004 to be 100%). The highest share in the section of non-life insurance was shown by gross written premium linked to transport (motor) insurance. It reached the level of around 60% with decreasing tendency during analysed years (class 3 and class 10) [Kozak 2011].

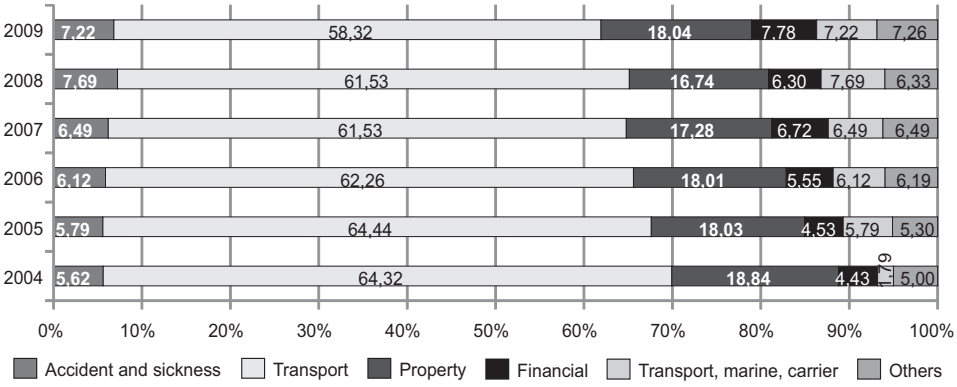

Fig. 1. Structure of Branch II of Polish insurance market – gross written premium (%)
Rys. 1. Struktura Działu II Polskiego rynku ubezpieczeniowego – składka przypisana brutto (%)

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

[7] Gross written premium – amounts of gross premiums due to account of insurance contracts concluded within the reporting period, regardless of whether the amounts have been paid.

In 2009, 32 companies offered financial insurance. Most of them were joint-stock companies and offered all kinds of financial insurance (class 14 – credit insurance, class 15 – shuretyship and class 16 – insurance of various financial risks). The most popular type of financial insurance offered was class 16 (See Table 1).

Table 1. Number of Financial Insurance Companies According to Insurance Business Conducted in 2004–2009

Tabela 1. Liczba zakładów ubezpieczeń finansowych według prowadzonej działalności w latach 2004–2009

Specification	2004	2005	2006	2007	2008	2009
Class 14. Credit insurance	18	20	20	21	17	18
Class 15. Shuretyship	21	24	22	24	22	23
Class 16. Insurance of various financial risks	24	27	25	29	30	30

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

Table 2 presents the number of policies[8] awarded to particular entities by insurance category. In 2004, most policies awarded were class 16, bought by enterprises. They constituted 67.8 % of all financial insurance policies. The same applied to purchases of class 14 and class 15 policies. In 2004, more than 398 437 class 16 policies were awarded, out of which 99.2 % were policies purchased by enterprises. Natural persons, as well as other entities constituted a only insignificant percentage among insurance buyers.

Table 2. Financial insurance – Number of policies – kinds of insurance by policyholders in Poland in years 2004–2009

Tabela 2. Ubezpieczenia finansowe – Liczba polis wg rodzaju posiadacza polisy w Polsce latach 2004–2009

Specification	2004	2005	2006	2007	2008	2009
Class 14. Credit insurance	**161 452**	**11 693**	**72 211**	**120 700**	**82 148**	**73 368**
Natural persons	1 469	911	231	73	58	51
Enterprises	159 807	10 774	71 972	120 619	82 066	73 309
Other entities	176	8	8	8	24	8
Class 15. Shuretyship	**64 651**	**70 247**	**70 422**	**79 816**	**127 721**	**424 799**
Natural persons	4 038	1 985	1 213	5 309	39 237	183 535
Enterprises	56 819	63 326	61 652	65 634	78 602	230 449
Other entities	3 794	4 936	7 557	8 873	9 882	10 815
Class 16. Insurance of various financial risks	**398 437**	**23 015**	**38 664**	**61 813**	**195 245**	**360 888**
Natural persons	1 910	12 482	14 834	22 057	34 795	45 660
Enterprises	395 258	10 270	23 492	39 325	160 036	314 805
Other entities	1 269	263	338	431	414	423
Total Financial Insurance	**624 540**	**104 955**	**181 297**	**262 329**	**405 114**	**859 055**

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

[8] Number of policies – number of all active policies at the end of the reporting period.

In 2009, the number of financial insurance policies was over 859 000. In comparison with 2004, a 37,55% increase can be observed (assuming the year 2004 to be 100%). In years 2004–2009 the biggest increase, six-fold, occurred in class 15. In the same time the number of contracts of class 14 insurance was reduced by 54.56 %. This was a result of the financial crisis taking place in 2008, which severely affected the insurance sector, as it did many others. In that year, the number of investments slumped and, consequently, the amount of credit borrowed did too, which is reflected in the decrease of class 14 insurance policies. The financial crisis also explains the big increase in the number of class 16 policies. The economy was seen as unstable, and unpredictable, hence business entities as well as natural persons secured themselves against losses. The tendency continued in 2009 – though there was a decrease in the overall number of policies awarded, there was a significant increase in contracts insuring various types of risk.

The gross written premium in total financial insurance (for classes 14, 15 and 16) in 2004 was 644,86 million PLN. The biggest part of the premium was various financial risks insurance, whereas the smallest – shuretyships. In the following years, a different situation could be observed – the smallest income was noted from premiums for shuretyships and the biggest – credit insurance. In 2008 the proportions again changed in favour of class 16, which formed the highest income of the gross written premium (544,21 million PLN). Income from credit insurance premiums took second place. The following year brought a 60% increase in the gross written premium coming from insuring different types of financial risk, but also a 7% decrease in the value of credit insurance premium compared to the previous year. However, generally throughout the analysed years, a evident growth can be observed. In 2009 the value of the gross written premium for classes 14, 15 and 16 was 148.77% bigger compared to 2004 (See Table 3).

Table 3. Financial Insurance – gross written premium by classes of insurance in Poland in years 2004–2009 (million PLN)

Tabela 3. Ubezpieczenia finansowe – składka przypisana brutto w podziale na grupy ubezpieczeń w Polsce w latach 2004–2009 (mln PLN)

Specification	2004	2005	2006	2007	2008	2009
Class 14. Credit insurance	260,84	315,42	445,46	567,23	491,99	460,10
Calss 15. Shuretyship	120,60	136,12	150,24	187,02	214,97	277,30
Class 16. Insurance of various financial risks	263,42	242,88	295,17	440,39	544,21	866,82
Total Financial Insurance	**644,86**	**694,42**	**890,88**	**1 194,64**	**1 251,18**	**1 604,22**

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

The structure of gross claims paid[9] in Branch II of non-life insurance in the years 2004–2009 is presented in Graph 2. Gross claims paid in financial insurance constitutes a slight share in the total non-life gross claims paid. The share of gross claim paid of financial insurance rose from 1.31% in 2004 to 2.68% in 2009.

[9] Gross claims paid – claims before taking into account the share of reinsurers.

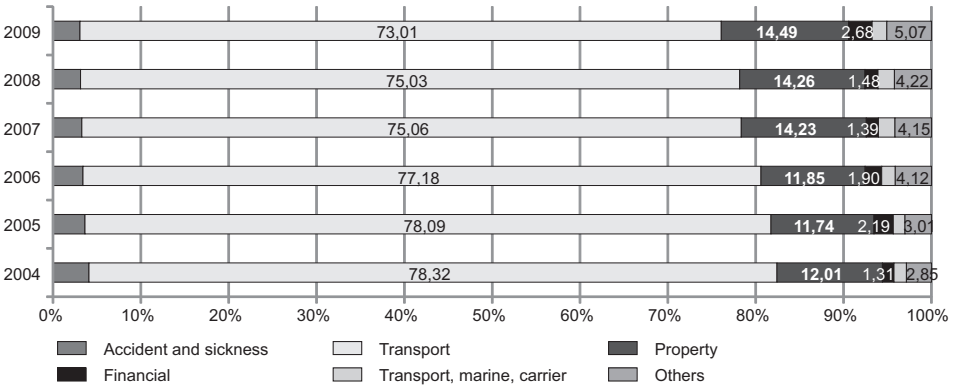

Fig. 2. Structure of Branch II of Polish insurance market – gross claims paid (%)
Rys. 2. Struktura Działu II Polskiego rynku ubezpieczeniowego – wypłacone odszkodowania brutto (%)

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

Throughout the analysed years the number of paid claims[10] and the value of gross claims paid for financial insurance systematically increased (See Table 4 and Table 5). The number and gross claims paid in the years 2004–2008 were on a relatively low level compared with the income from premiums. The situation changed in 2009, when the value of gross claims paid from credit insurance increased by 139% ; from shuretyships it nearly doubled (+182%), and the value of gross claims paid from class 16 insurance increased by 47% compared to 2008. This is an evident effect of losses incurred as a result of the financial crisis of 2008. In that year, there was a significant increase in the loss ratio, which is the proportion of claims with the change in provision for claims outstanding to the earned premiums.

Throughout the analysed years the net operating expenses[11] reach highest levels in the case of class 16 – the insurance of different types of risk. The costs of insurance related to class 16 activity systematically increased from 52,78 million PLN in 2004 to 425,88 million PLN in 2009. The lowest level of the net operating expenses was noted in class 15 – shuretyships. General the costs of financial insurance constitute about 1.2 % – classes 14 and 15 and about 5% – class 16 – of the total costs of activity in Branch II insurance. Analogous to the changes noted in the net – operating expenses, acquisition costs increased in class 16 and remained relatively stable for classes 14 and 15. This was caused by an increase in the importance of class 16 insurance and by a great increase in the number of insurance policies for different risk types. In 2009, the acquisition costs ratio shaped at the level of 43.19% in respect of insurance of various financial risks, the level of 19.4% and 17.92% in respect of credit insurance and shuretyship (See Table 6 and Table 7).

[10] Number of paid claims – number of amounts paid by the insurers in connection with the ensuing event covered with a bought insurance. This including the number of payments in a calendar year.
[11] Net operating expenses – sum of acquisition costs and administrative expenses reduced by reinsurance commission and profit participation.

Table 4. Financial insurance – gross claims paid in Poland in years 2004–2009 (million PLN)
Tabela 4. Ubezpieczenia finansowe – odszkodowania i świadczenia wypłacone brutto w Polsce w latach 2004–2009 (mln PLN)

Specification	2004	2005	2006	2007	2008	2009
Class 14. Credit insurance	40,12	74,60	65,34	55,11	86,81	207,95
Class 15. Shuretyship	30,16	48,86	56,78	18,39	21,05	59,35
Class 16. Insurance of various financial risks	35,03	53,37	33,94	51,32	40,22	59,12
Financial Insurance	**105,30**	**176,83**	**156,06**	**124,81**	**148,09**	**326,42**

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

Table 5. Financial insurance – number of paid claims – kinds of insurance by policyholders in Poland in years 2004–2009
Tabela 5. Ubezpieczenia finansowe – liczba wypłat wg rodzaju posiadacza polisy w Polsce latach 2004–2009

Specification	2004	2005	2006	2007	2008	2009
Class 14. Credit insurance	**4 042**	**2 191**	**2 641**	**2 395**	**2 540**	**6 150**
Natural persons	2	2	1	5	1	6
Enterprises	4 030	2 183	2 627	2 389	2 531	5 891
Other entities	10	6	13	1	8	253
Class 15. Shuretyship	**658**	**779**	**448**	**297**	**299**	**6 540**
Natural persons	29	18	27	41	42	3 310
Enterprises	525	654	366	191	219	3 119
Other entities	104	107	55	65	38	111
Class 16. Insurance of various financial risks	**3 218**	**1 435**	**1 862**	**2 346**	**4 014**	**16 285**
Natural persons	1 131	657	1 089	1 074	1 186	2 957
Enterprises	2 086	775	770	1 270	2 813	13 328
Other entities	1	3	3	2	15	0
Total Financial Insurance	**7 918**	**4 405**	**4 951**	**5 038**	**6 853**	**28 975**

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

Table 6. Net – operating expenses of financial insurance in Poland in years 2004–2009 (million PLN)
Tabela 6. Koszty działalności ubezpieczeniowej ubezpieczeń finansowych w Polsce w latach 2004–2009 (mln PLN)

Specification	2004	2005	2006	2007	2008	2009
Class 14. Credit insurance	24,70	14,58	39,71	78,78	67,34	68,41
Class 15. Shuretyship	25,72	27,65	25,25	23,89	34,77	36,26
Class 16. Insurance of various financial risks	52,78	67,09	110,26	180,53	252,21	425,88
Total Financial Insurance	**103,2**	**109,32**	**175,22**	**283,2**	**354,32**	**530,55**

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

Table 7. Acquisition costs ratio* of financial insurance in Poland in years 2004–2009
Tabela 7. Wskaźnik kosztów akwizycji ubezpieczeń finansowych w Polsce w latach 2004–2009

Specification	2004	2005	2006	2007	2008	2009
Class 14. Credit insurance	13,88	9,60	8,76	12,60	17,24	19,40
Class 15. Shuretyship	18,21	16,53	16,69	13,41	16,62	17,92
Class 16. Insurance of Various Financial Risks	16,61	23,33	30,71	32,63	39,32	43,19

* Acquisition costs ratio – acquisition costs divided by the gross written premium.

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

Table 8. Balance on technical financial insurance account* in Poland in years 2004–2009 (millions PLN)
Tabela 8. Wynik techniczny rachunków ubezpieczeń finansowych w Polsce w latach 2004–2009 (mln PLN)

Specification	2004	2005	2006	2007	2008	2009
Class 14. Credit Insurance	51,07	59,86	65,31	98,21	140,78	78,81
Class 15. Shuretyship	27,32	19,49	11,71	42,52	48,38	36,04
Class 16. Insurance of Various Financial Risks	–0,19	0,58	37,14	18,04	27,41	–40,54
Total Financial Insurance	**78,20**	**79,93**	**114,16**	**158,77**	**216,57**	**74,31**

* Balance on technical financial insurance account – is the result form insurance activity before investment income.

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

Table 9. Profitability ratio of technical activity* of financial insurance in Poland in years 2004––2009
Tabela 9. Wskaźnik rentowności działalności technicznej ubezpieczeń finansowych w Polsce w latach 2004–2009

Specification	2004	2005	2006	2007	2008	2009
Class 14. Credit insurance	19,58	18,98	14,66	17,31	28,61	17,13
Class 15. Shuretyship	22,65	14,32	7,79	22,74	22,50	12,96
Class 16. Insurance of Various Financial Risks	–0,07	0,24	12,58	4,10	5,04	–4,68

* Profitability ratio of technical activity – technical results divided by earned premiums minus net of reinsurance.

Source: Polish Insurance Market 2004–2010, Central Statistical Office, Warsaw 2010.
Źródło: Polski rynek ubezpieczeniowy 2004–2010, Główny Urząd Statystyczny, Warszawa 2010.

In years 2004–2009 the classes 14 and 15 had a positive technical result. Technical result of credit insurance showed a higher dynamics. Until 2008 increase can be observed in all classes of financial insurance. In 2009 in classes 14 and 15 the value of the technical result was significantly reduced, whereas class 16 brought a technical loss. This was a response to the financial crisis of 2008. It was also reflected in the index of

profitability, of gross technical activity, whose value for class16 in 2009 was –4.68% (See Table 8 and Table 9).

CONCLUSION

From 2004–2009 there occurred several significant changes within the financial insurance sector. They can be summarized as follows:

- Throughout the six analysed years, the number of policies and gross premiums regarding financial insurance significantly increased. class 16 had the biggest share in the gross written premium (insurance of various financial risks).
- The number and gross claims paid in the years 2004–2008 were on a relatively low level compared to the income from premiums. As a result of the losses born after the financial crisis of 2008, this ratio changed in 2009 in favour of insurance from classes 15 and 16.
- Generally the costs of activity and acquisition costs increased in class 16 and remained relatively stable for classes 14 and 15.
- The financial crises had also influence on the financial insurance sector. This was reflected in significant reduction in the value of the technical result in classes 14 and 15, whereas class 16 brought a technical loss.

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ZNACZENIE I ROLA SEKTORA UBEZPIECZEŃ MAJĄTKOWYCH W POLSCE

Streszczenie. Ubezpieczenia finansowe odgrywają ważną rolę w gospodarce rynkowej. Pozwalają one firmom i osobom fizycznym przejść przez okres ekonomicznego spowolnienia z możliwie najmniejszymi stratami. Sektor ubezpieczeń finansowy, którego rozwój w Polsce przypada na lata 90, rozrósł się dynamicznie przez ostatnie lata.

Artykuł prezentuje rozwój i znacznie rynku ubezpieczeń finansowych w Polsce w latach 2004–2009. Przeanalizowano wartość i strukturę ubezpieczeń finansowych według form ubezpieczeń i rodzaju posiadacza polisy. Przedstawiono zmiany wartości składki przypisanej brutto, wypłaconych odszkodowań brutto, wyniku technicznego i wybranych wskaźników ubezpieczeń finansowych. Równocześnie zaprezentowano prawne i teoretyczne aspekty funkcjonowania polskiego rynku ubezpieczeń finansowych. Dane na temat rozwoju sektora ubezpieczeń finansowych w Polsce zostały zaczerpnięte z materiałów Głównego Urzędu Statystycznego oraz Komisji Nadzoru Finansowego.

Słowa kluczowe: Ubezpieczenia finansowe, gwarancja, składka przypisana brutto, odszkodowania i świadczenia wypłacone brutto, wynik techniczny, wskaźnik rentowności działalności technicznej, wskaźnik kosztów akwizycji, koszty działalności ubezpieczeniowej

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MEASURING THE LOCAL LINKAGES OF FARM HOUSEHOLDS (SPATIAL TRACKING APPROACH) IN NORTH EAST SCOTLAND (UK) AND PODLASKIE (POLAND)

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Abstract. In the paper findings from an analysis of the direct transactions associated with a sample of farm households drawn from two European case study areas – Podlaskie, Poland and North East Scotland, UK were presented. The results indicated that the concept of "local" in relation to farm household transactions depends on the economic background of the area under analysis. While farms in the Polish CSA region carried out almost all of their farm-related transactions very close to the location of the farm, farms in the North East Scotland had more complex and generally less local transactions reflecting spatial concentration in the upstream and downstream businesses in the respective areas.

Key words: farm households, local concentration, local economy

INTRODUCTION

Farm households have several economic and social relations with a range of different actors in the economy. From the economic point of view the local economy can be compared to a bucket the local community would like keep full, but every time when someone buys something sourced from outside the local economy, the money leaks out [Pretty 1999]. Each time when raw materials are exported outside the local economy, then value is added somewhere else. Considering that one of the main players in the local economy in rural areas is agriculture there is a research question to what extent farm households are

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integrated in their local economies, and what is the role of the CAP in maintaining and/or influencing these linkages. European agricultural policy has always been in part justified on the grounds that, by supporting agriculture, the CAP is also supporting the local economies in which farms are situated, thus contributing to the rural development in general. The most well recognized (traditional) linkages associated with agricultural production relate to buying inputs, using local labour and the supply of output downstream. Others are associated with non-agricultural production activities (such as farm tourism), as well as with farm household expenditure and off-farm work. While rural sociology has a substantial literature on farm households and local economic development, much of it stemming from Goldschmidt's hypothesis on the socially detrimental effects of large scale farms and industrial agriculture [Goldschmidt 1978; Hoggart 1987; Lobao and Stofferahn 2008], there is very limited economic analysis of the extent to which farm households contribute to local economic development or the factors which influence the strength of local economic integration. Theory suggests that farm purchasing and output sales patterns are influenced by farm and farmer characteristics. It suggests, amongst other things, that larger farms will be more likely to bypass local input suppliers to take advantages of economies of scale. They are also more likely to bypass local marketing outlets and supply large-scale buyers. Farmer characteristics thought to influence purchasing and sales patterns are age, education and experience. Similarly, a number of different internal influences on farm households' regarding diversification and off-farm work, including size of holding, farm type, land quality, the age and number of family members, the stage in the family life cycle and educational background However all of these, and the effects influencing input purchasing and output sales, will be mediated by the economic structure and geographical characteristics of the local economy. Therefore how that local economy is defined is of vital importance to the spatial tracking analysis.

The nature of the relationship between farm households and their localities varies significantly across Europe in the result of historic economic, societal and policy developments. Economic development in agricultural sector and thus farms evolution is dependent on two groups of factors [Tomczak 2005]:

– external – such as general level of country's development, share of agriculture in GDP's creation, possibilities of non agricultural employment, demand for agricultural products and trade development;
– internal factors – such as work efficiency in agriculture, total employment in agriculture, scale of production, level of farm income per hectare, number and structure of farms, equipment and balanced relations between factors of production. Those determinants by affecting on-farms developments have an influence on linkages in local economy as well.

In order to analyze differences in contributions of farm households to local economies two European case study areas were examined as a part of the CAP-IRE project[1]: North East Scotland (UK) and Podlaskie (Poland). The case study areas contrast strongly in terms of the characteristics and importance of the farm sectors in each area.

[1] The analysis presented in the paper is based on the study that has been conducted in the framework of the 7th EU Framework Programme project CAP-IRE ('Assessing the multiple Impacts of the Common Agricultural Policies (CAP) on Rural Economies').

A survey of around 240 farm households in each study area was conducted providing detailed information on the first round economic transactions of farm households, including spatial aspects, so that the degree of locality of transactions could be assessed.

METHODOLOGY

Building on the findings from Survey A of the CAP-IRE project [Raggi et al. 2010] and an additional spatial tracking survey the spatial pattern of direct links between farm households and other economic agents (input suppliers, purchasers of farm output, off farm work) was analyzed (spatial tracking analysis) to assess the nature and strength of local linkages. This explores, amongst other things whether there are systematic differences in the degree of local integration by regions. The purpose of the spatial tracking analysis is to provide some understanding of the extent to which farm households are integrated into their immediate surrounding economy. The aim is to ascertain whether there are systematic differences in the patterns of direct linkages by farm, farmer and farm household characteristics, how these vary according to local context. Although the focus in this case is on first stage linkages only, the literature confirms that direct linkages are by far the most important in terms of economic integration of a business or sector [Miller and Blair 2009]. Further, the analysis will indicate the extent to which income and employment effects associated with farm households are retained within a particular locality.

Several different approaches have been taken to define "local" in the context of first stage economic linkages. For example, Chism and Levins [1994] define local on the basis of a set distance from a particular town while other authors have used administrative boundaries to define what are recorded as local or non-local transactions [Lambert et al. 2009]. It is worth to note, that administrative boundaries and functional boundaries (such as travel to work areas or retail market areas) usually have little or no correspondence with one another, while simple distance based measures of locality ignore the structural characteristics of the region. For example, a farmer may buy fertilizer from the local supplier but that supplier may be based in a different administrative area and/or may be quite some distance from the farm simply due to market concentration or geographic barriers.

The paper follows the USDA convention used in their analysis of ARMS data and adopts a context-specific as opposed to absolute definition of "local" [USDA 2008]. In particular, rather than defining local in terms of either a fixed distance or according to an administrative boundary, transactions are considered relative to the distance between each individual farm and its nearest conurbation. If the transaction takes place within the reach of the nearest settlement it is classified as local, if it takes place at a distance further than the nearest settlement, it is classified as non local.

The Spatial Tracking Survey was conducted in two case study areas with the use of questionnaire in which nine sections covered the following areas preliminary information: individual/household characteristics; holding details; output; on-farm diversification; labour; inputs; off farm work; open questions. The questions were primarily closed questions with an exception of the final section.

DESCRIPTION OF CASE STUDY AREAS

The Podlaskie region is located in the North-Eastern part of the country. It comprises 6.5% of Poland's area. Sixty percent of the population live in urban areas in the region, the remaining 40% in rural areas. Agriculture accounts for 10.7% of GRDP and is one of the region's main industries. GDP per capita for the year 2002 is only 77% of the national average. The 'drivers' of the region's development are urban centres (Bialystok, Lomza, Suwałki) surrounded by much less advanced areas. Bialystok, the only city with a population of more than 291 thousand accounts for nearly 37% of the region's economic potential and 45.8% of the employment in Podlaskie [Zioło and Ślęzak 2003, p. 188].

More than half the land area is utilised for agriculture. Natural conditions for farming are diversified across the region mainly in terms of soil quality ranging from poor, sandy soils, frequently threatened by droughts, to very good, heavy soils suitable for all types of agricultural production.

Family farms dominate in the region. Average farm size (11.5 ha) is relatively high for Poland, and has been increasing noticeably recently. Farmers in the region are quite dynamic and milk production has developed very strongly. There are 3 main dairies in the region which belong to the group of the most important milk processors in Poland.

The North East of Scotland Case Study Area (NUTS 3 area UKM50) comprises the two unitary authorities of Aberdeen City and Aberdeenshire. Nearly half the region's 450,000 population lives in the region's one city, Aberdeen (GROS, revised 2007). The region is economically buoyant, driven by activity within the Oil & Gas sector, with annual rates of growth of around 2.4% per annum and the third highest Gross Value Added in the UK.

Historically the CSA is an important agricultural region, that has had an international impact (for example, it is the home of the Aberdeen Angus cattle breed and seed potatoes are exported globally). The majority of farms are owner occupied and family run. In line with national and international trends, the number of farms and employment within agriculture has declined significantly. Part-time employment and part-time farms however have increased in significance. Farms are larger than in Podlaskie (99.7 ha on average) and belong predominantly to the mixed type. Beef production remains important, with 1217 farms raising and breeding 58,529 beef cows. In sharp contrast to Podlaskie (PL), only 100 farms are involved in dairy production and there is only one major dairy in the region. Cereal production in the area has supported an important pig and poultry industry and helps supply Scotland's very significant whisky industry with malting barley. Although food and drink production remains an important sector in some rural areas, concentration and consolidation of activity in the industries up-stream and down-stream of agriculture the input supply and product-processing industries – has reduced the local economic importance of agriculture.

FARM CHARACTERISTICS

The distribution of farms across farm types in both of the CSAs is consistent with background information on agriculture in each region. In particular, dairy farms pre-

dominate in the Podlaskie sample, cattle farms in North East Scotland (Table 1). There are very few pig and poultry farms in the UK reflecting the degree of specialism in this sector. Similarly there were only three dairy farms included in the North East Scotland sample. As a consequence, results for these categories of farm types are suppressed in subsequent tables as they may not be representative. Table 1 above shows the mean farm sizes by farm type for both CSA. The data reported is farmed area and thus includes land rented in as well as owned land, after having allowed for any area rented out to other users.

It is clear that the Polaskie CSA has much smaller farm sizes than any of the three other CSAs involved in the analysis, particularly the UK CSA indicating that the structure of the farming industry in Podlaskie is very different. Differences in farm size are reflected strongly in the average level of SFP support received in both of the CSAs, as shown in Table 1 below.

Off-farm work is potentially an important element of local economic linkage for farm households. Table 1 shows the percentage of farm households with one or more members of the households working off-farm and the proportion of total household income from such work. Farm households in the Podlaskie sample have a lower rate of off-farm work than those in North East Scotland but even in this case more than a quarter of households had someone employed in another occupation. The survey responses also suggested less variety in types of job for household members working off the farm in Podlaskie than in the UK CSA. The overall mean percentage of farm household income from off-farm work in Podlaskie is also lower (14% compared to 17.5% on average). In the UK region, there is a small percentage of off-farm work that

Table 1. Structure of farm samples in terms of production types
Tabela 1. Struktura próby badawczej z uwzględnieniem typów produkcyjnych

Specification	Podlaskie (PL)		North East Scotland (UK)	
Farm type	%	mean (ha)	%	mean (ha)
Cattle	15.2	24	60.3	193
Crops	22.1	9	21.4	179
Dairy	40.2	39	1.3	n/a
Mixed	9.8	17	15.2	183
Granivores	12.7	13	1.8	n/a
Total	100%		100%	
Mean sfp per farm (euros)	2,651		41,383	
% of farms households with off farm work	27.5		45.5	
Mean % of total household income from off farm work	14		17.5	
% of farms households with on farm diversification	8.2		20.2	
Mean % of total household income from diversification	37.2		4.0	

Source: Own research.
Źródło: Badania własne.

is earning significant amounts for the farm household, reflecting the local economic context, where there is a very low unemployment rate, and many opportunities for high quality work with associated remuneration. In contrast most of the jobs undertaken by off-farm workers in the Podlaskie CSA are less skilled, such as shop assistants, blue collar workers, drivers or office clerks, although some teachers and bank staff were included in the sample.

RESULTS

The results suggest very different economic geographies in each regions (Table 2). For all two CSAs, the distances to elementary/primary school, or hospital are relatively similar or, at least within the same order of magnitude. However the average distance to where the household does its grocery shopping is far lower in Podlaskie and importantly, much closer than the nearest town with a minimum of 3,000 inhabitants. In contrast the average distance to a city with more than 50,000 population is lowest in Podlaskie. With the exception of distance to local secondary school and nearest hospital the average distances in Podlaskie are lower than in North East Scotland. In both cases, distances travelled for major household items are further than for groceries, and the distances to the services included in the table (primary schools, secondary schools and hospital) all follow the pattern expected consistent with central place theory and the existence of an urban hierarchy.

Table 2. Average distance from household to principal locations for household inputs (km)
Tabela 2. Przeciętna odległość gospodarstw do ważniejszych miejsc (km)

Specification	Average distance [km]	
	Podlaskie (PL)	North East Scotland (UK)
Groceries	4.1	11.0
Major household items	16.8	27.7
Local primary school	4.4	4.6
Local secondary school	17.6	11.3
Nearest hospital	20.4	19.4
Nearest town > 3,000	10.8	13.2
Nearest city > 50,000	24.5	44.9

Source: Own research.
Źródło: Badania własne.

Table 3 below shows that the mean distance to suppliers for all farm inputs in the Podlaskie (PL) CSA is much lower than for the other CSAs and, importantly less than the mean distance to the nearest town with 3,000 or more population. In contrast all inputs are sourced at average distances further than that to the nearest town in North East Scotland. This suggests that the spatial structure of agri-businesses is quite different between the with Podlaskie farm households having a much more localised agricultural economy in distance terms than the UK CSA. For North East Scotland, fertilizer in particular is sourced at a considerably greater distance.

Table 3. Average distance to input suppliers (km)
Tabela 3. Przeciętna odległość do dostawcy środków produkcji

Specification	Average distance [km]	
	Podlaskie (PL)	North East Scotland (UK)
Distance to nearest town (> 3000 population)	10.8	13.2
Fertilizer	7.2	49.2
Machinery	6.9	17.9
Seed	7.4	40.0
Chemicals	6.9	33.6
Feed	6.8	39.5
Fuel	6.7	23.5
Services	5.8	21.8

Source: Own research.
Źródło: Badania własne.

On the basis that previous research has indicated that community attachment influences input purchasing behaviour [Foltz and Zeuli 2005], respondents were asked to indicate the strength of their attachment to the local area on a Likert scale ranging from 0 ("Not at all") to 5 ("Highly attached"). The results are presented in Table 4 below. The strength of attachment expressed by Polish farmers was extremely high with 58% categorising themselves as highly attached compared to 26% in North East Scotland where farmers are more likely to categorise themselves attached at levels 3 and 2. Interestingly, some respondents in the UK CSA went so far as to categorise themselves as not at all attached to the local community. In Podlaskie no-one selected the categories 2–0.

Table 4. Sense of attachment
Tabela 4. Poczucie przynależności do lokalnej społeczności

Strength of attachment (1–5 scale)	Podlaskie (PL)	North East Scotland
	% of farmers	
0 (Not at all)	0	3.1
1	0	3.6
2	0	14.2
3	5.7	17.3
4	34.8	34.7
5 (Highly attached)	57.8	25.8
Missing	1.6	1.3
Total	100	100

Source: Own research.
Źródło: Badania własne.

The strength of attachment expressed by farmers seems to be reflected in their commercial relations with others members of local economy. Defining within the locality as being within the distance of the nearest town, Table 5 below shows the percentage of farm input purchases that are within this distance for both of the CSAs and for each input type. This suggests that the spatial structure of agri-businesses is quite different between the

with Podlaskie farm households having a much more localised agricultural economy in distance terms than the the UK CSA. For North East Scotland, fertilizer in particular is sourced at a considerably greater distance. The percentages of inputs sourced within the distance to the nearest town are higher for Podlaskie than for North East Scotland (UK). The proportion of farms sourcing fertilizer and agrichemicals locally in the UK CSA is particularly low. The results for services are also very low when compared with the Podlaskie CSA and with prior expectations.

Table 5. Percentage of local farm input purchases (defined as within distance to nearest town) for Polish and UK CSAs
Tabela 5. Udział rolników zakupujących środki do produkcji „lokalnie" (w odległości nie większej niż odległość do najbliższego miasta

Inputs	Local farms [%]	
	Podlaskie (PL)	North East Scotland (UK)
Fertilizer	83.2	15.6
Chemicals	85.2	19.6
Seed	78.2	24.4
Feed	66.4	20.4
Machinery	84.4	34.7
Fuel	85.7	34.2
Services	77.9	21.3

Source: Own research.
Źródło: Badania własne.

As apparent from above tables, the economic geography of the two CSAs is very different with farm households in the Podlaskie CSAs having interactions within a smaller spatial scale than the North East Farm households. Based on this, further analysis was conducted, changing the definition of local between the two CSAs (Table 5). For Podlaskie, local was redefined to mean within market reach of where farm households do their grocery shopping which was nearer than the distance to the nearest town with a population over 3,000. In other words, the spatial scale of the area defined as local was reduced. As anticipated, the proportion of local transactions falls but still remains high at over 60% for all but feed. Even at this spatial level, the Podlaskie farm households have strong local integration. If one change the definition of local for UK CSA to be within market reach of the nearest city, in order to adapt to the regional economic context, this brings the UK CSA more into line with the Podlaskie CSA. However, even with the definition of local expanded to cover a longer distance from the farm, some inputs, still have a significant percentage of suppliers beyond the local city.

From a rural development perspective, a key question related to the above analysis is the extent to which farm household transactions contribute to the local economy in monetary terms. Purchases of inputs from agents within the region will generate income in the local economy whereas purchases from non local agents will represent a "leakage" from the farm household to the "rest of the world". The analysis of sales patterns also has rural development implications. Most agricultural outputs need to undergo further processing before being sold for final consumption. Thus, sales to agents outside the region there-

Table 6. Percentage of farms sourcing inputs within the distance to place where groceries are purchased for Podlaskie (PL) and within the distance to the nearest city
Tabela 6. Udział gospodarstw kupujących środki do produkcji nie dalej niż miejscowość ze sklepem, w którym kupowane są artykuły spożywcze

Inputs	Local farms [%]	
	(within grocery reach)	(within city reach)
Fertilizer	61.9	71.8
Agro-chemicals	64.3	80.1
Feed	51.2	73.5
Seed	n/a	78.7
Machinery	63.9	90.0
Fuel	64.7	91.0
Other Services	61.5	95.5

Source: Own research.
Źródło: Badania własne.

fore represents an opportunity forgone (in terms of generating additional value added) although, of course, they do result in income flowing into the region.

Table 7 considers the average value of input expenditure that is leaked from the locality. The results are presented by farm size where in this case, instead of land area, turnover is used as a proxy of economic size. In particular, for the Podlaskie sample, farms with an annual turnover of less than 30,000 PLN are categorised as small, those with a turnover between 30,000 and 100,000 PLN are categorised as medium sized, and finally those with a turnover of more than 100,000 PLN are categorised as large farms. The equivalent boundaries for the North East Scotland sample are chosen except turnover in this case is defined in £ sterling. The definition of locality in this case is within city reach for the UK CSA, but within reach of where households do their grocery shopping for the Polish CSA.

Table 7. Average annual value of leakage (PLN) by farm size
Tabela 7. Przeciętna wartość wydatków do podmiotów spoza lokalnej gospodarki według wielkości gospodarstw

Input	Podlaskie (PL)			Nort East Scotland UK		
	Farm size			Farm size		
	Small (n = 96)	Medium (n = 115)	Large (n = 33)	Small (n = 60)	Medium (n = 63)	Large (n = 81)
Fertilizer	1,382	2,204	5,748	7,209	16,369	44,952
Seed	406	981	3,023	1,45	2,54	8,104
Agrichemicals	488	834	1,7	12,5	5,19	17,664
Fuel	4,051	7,147	21,58	2,75	5,16	13,375
Feed	5,569	9,795	28,5	2,683	7,688	27,929
Machinery	1,547	2,442	8,2	700	5,75	17,5
Services	1,894	3,388	7,28	0	1,95	2,1

Source: Own research.
Źródło: Badania własne.

One of the factors creating any kind of linkages could be human perception of existing relationships. Table 8 shows the results for farmers' perceptions of the importance of agriculture to the local economy. Nearly all Podlaskie farms rated agriculture as Important (63.5%) or Vital (28.3%). This contrasts with North East Scotland where the slightly more than half perceived agriculture to be vital (51.1%) to the local economy, and a third (34.8%) felt it to be important. A similar percentage as in the Polish CSA felt that it was of less importance than other sectors. The perceptions of North East Scotland farmers are interesting, as they do not 'match' the findings on localness in inputs and farm households purchasing habits, yet Podlaskie farm households have very 'local' lives in comparison, yet are less likely to regard agriculture as vital to their local economy. Table 9 shows the explanations given by those who regarded agriculture as vital to the local economy. There were only slight differences between North East Scotland and Podlaskie. The main reason in both, the Polish and the UK CSAs was because they considered agriculture to be the

Table 8. Importance of agriculture to local economy
Tabela 8. Znaczenie rolnictwa dla lokalnej gospodarki

Specification of answers	Poland n = 244	UK n = 224
	% of farmers	
Absolutely vital	28.3	51.1
Important	63.5	34.8
Less important than other sectors	7.4	6.7
Totally irrelevant	0	1.7
Don't know/blank	0.8	5.7
Total	100	100

Source: Own research.
Źródło: Badania własne.

Table 9. Reasons given for importance of agriculture to the local economy
Tabela 9. Argumenty wskazujące na ważność rolnictwa w lokalnej gospodarce według rolników

Reason	Poland	UK
	% of answers	
agriculture is a main source of income or employment for local people	41	47
agriculture supports the wider upstream and downstream agri-business sector	26	34
supporting tax revenue	12	–
source of seasonal work	7	–
source of agricultural products/food	5	24
contributes to the development of transport infrastructure	5	–
stimulates technological development	3	–
Environmental and landscape preservation	–	10
Preserving the rural way of life	–	3

Source: Own research.
Źródło: Badania własne.

main source of income or employment for local people. The second most cited reason was again the same in both Podlaskie and North East Scotland, that agriculture was a support for the wider agri-business sector through buying inputs (as well as supplying outputs).

From the evolution point of view farmers' perceptions of change in importance of agriculture to the local economy seems to be an important issue (Table 10). The majority of farmers in Podlaskie felt that agriculture had either remained the same or increased in importance. Certainly the localness of purchasing and selling in relation to farm households would suggest that agriculture is an important element of the local economy. In the UK CSA however, comparatively few felt it had increased in importance, and a much a higher percentage (36%) felt that it had decreased in importance. This perception would be in line with the increasing influence of the oil and gas sector on the local economy of North East Scotland.

Table 10. Change in importance of agriculture to local economy (%)
Tabela 10. Zmiany w znaczeniu rolnictwa dla lokalnej gospodarki

Specification of answers	Podlaskie	North East Scotland
	% of farmers	
Increased	44.67	15.11
Stayed the same	47.95	39.56
Decreased	4.51	36.00
Missing or don't know	2.87	8.00
Total	100	100

Source: Own research.
Źródło: Badania własne.

In the last part of questionnaire farmers were asked about their perception of CAP significance for local economy. Table 11 above shows the responses to the question "Do you think CAP has affected the extent of linkages between your farm and farm household and the local economy". It is possible that not all respondents interpreted the meaning of this question in the same way. However, the responses suggest that about half of Podlaskie farmers do not consider that CAP has affected their linkages with the local economy. Coupled with the relatively low value of the average CAP per holding, and given the very high percentages of Podlaskie farm households and businesses that are still circulating

Table 11. Perception of CAP influence on local economic linkages
Tabela 11. Postrzeganie wpływu WPR na powiązania lokalne

Specification of answers	Podlaskie	North East Scotland
	% of farmers	
Yes	33.61	37.95
No	51.23	26.34
Don't know	13.93	27.23
Missing	1.23	0
Total	100	100

Source: Own research.
Źródło: Badania własne.

their output on farm, sourcing their inputs locally, and which are also selling locally in what should be considered a traditional manner, this response from individual farmers is not surprising. However, the North East Scotland results reveal many more respondents to be uncertain about the effect CAP has had on their linkages with the local economy. However a slightly higher percentage were positive that it had had an impact on local economic linkages than in the Polish CSA.

CONCLUSIONS

A traditional argument connected to the CAP is that, by supporting agriculture, the CAP is helping to maintain the economic vitality rural communities, particularly in disadvantaged regions where alternative income opportunities are limited. Through buying inputs, using local labour and through the supply of output to downstream customers and processors, farm households support employment and generate income in the local rural economy. However the type of linkages between farm households and the broader economy are not completely captured by analysis of agri-food systems alone. Instead, through farm diversification, farm household consumption and off farm work, other linkages exit. For example, pluri-activity is clearly an important strategy for many farm households. Moreover, rural economies themselves are changing with more dependence on non-traditional sources of income. All this leads to conclusion that farm households have multiple links with the wider rural economy.

The papers provides some new insights into the spatial patterns in two different EU regions. Farm households in the UK and Polish case study areas had particularly strong differences in respect to their purchasing patterns. While households in the Podlaskie have many transactions within a short distance from the farm, farm households in North East Scotland were likely to trade with far more distant suppliers and purchases. As one of the reasons of strong local linkages in Podlaskie region over-employment in the Polish farm sector is indicated [Henningson 2009; Chaplin et al. 2007]. It leads to continuing high share of small farms and associated lack of economies of scale. An associated argument is that the preponderance of small farms, while providing 'at home' livelihoods for a great many people, is constraining the development of the rural economy in the Podlaskie region [Kondratiuk-Nierodzińska et al. 2007]. A quite different situation can be observed in North East Scotland. What is local in north east Scotland covers a larger area – nearly all farm inputs for example are obtained within market reach of the nearest city of > 50,000. Culturally, this is sensible as the north east of Scotland is a relatively small area, focused on one medium sized city, albeit containing two local authority administrations. It is pragmatic, because global changes to the structure of agri-business have seen consolidation of companies through acquisitions and mergers, with an associated spatial consolidation within the CSA which has reduced the opportunity for farm businesses to buy inputs closer to home.

Taking into account general patterns of evolution (developments in less developed countries that follow the west European path) it can be expected that linkages of farm households in Podlaskie region with its local economy will evaluate proportionately to the speed of general development of rural areas.

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POWIĄZANIA GOSPODARSTW DOMOWYCH ROLNIKÓW Z LOKALNĄ GOSPODARKĄ W PÓŁNOCNO WSCHODNIEJ SZKOCJI I W WOJEWÓDZTWIE PODLASKIM

Streszczenie. W artykule podjęto próbę określenia związków gospodarstw domowych rolników z lokalna gospodarką. Analizy przeprowadzono na zbiorowości gospodarstw z północno-wschodniej Szkocji i z województwa podlaskiego. Uzyskane rezultaty sugerują, iż siła związków gospodarstw z innymi podmiotami lokalnej gospodarki warunkowana jest ogólnym rozwojem regionu i uwarunkowaniami ekonomicznymi. Z przeprowadzonych badań wynika, iż w przypadku województwa podlaskiego większość transakcji miała charakter lokalny, podczas gdy w Szkocji relacje gospodarstw z otoczeniem były znacznie bardziej złożone i miały charakter mniej lokalny.

Słowa kluczowe: gospodarstwa domowe rolników, lokalna koncentracja, lokalna gospodarka

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THE ECONOMIC SIGNIFICANCE OF THE BREWING SECTOR IN THE EUROPEAN UNION

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Abstract. The paper presents the role of the brewing sector in the economy of the European Union countries and four other countries, which are: Croatia, Norway, Switzerland and Turkey. The value added, state budget revenues generated by the production and distribution of beer as well as employment in the brewing sector were discussed in the paper. The authors also concentrated on exports and imports of beer. It was found that the brewing industry has particularly great significance in generating state budget revenues in countries with high level of fiscalism, and where the production and consumption of beer is quite high. The analysed sector assures many workplaces, especially in the distribution sphere (mainly in hospitality sector).

Key words: brewing sector, production, consumption, value added, taxes, employment

INTRODUCTION

The European Union plays a key role in global production of beer. Brewing industry is currently one of the most significant branches of the European economy. In spite of changing economic conditions, the demand for beer and its consumption are systematically growing. This process is favoured by a change in alcohol consumption, particularly in Central and Eastern Europe and Asia. It is worth to stress that the development of the sector is related to some certain benefits not only for the producers of beer, but also for the whole economy. The production of beer is accompanied by the defined fiscal burdens, such as excise duty and value added tax, which increase the state budget revenues.

The aim of the paper is to identify and evaluate the role of the brewing industry in the economy of the European Union and four other countries, which are: Croatia, Norway, Switzerland and Turkey. These four countries were chosen due to their strong economic and political relation with the European Union, their large share in trade and their meaning for the development of the EU economy as a whole.

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In order to achieve the goal, the volume of beer production and consumption, value added generated by production and sale of beer as well as exports and imports in particular countries were discussed in the paper.

PRODUCTION AND CONSUMPTION OF BEER

Beer is produced and consumed around the world; however the most significant in this area are the European Union countries. In 2009 the production and consumption of beer in the 31 discussed countries amounted respectively to 382650.8 and 374532.8 thousand hl (including 363675.8 and 354805 thousand hl in the EU), which is nearly 31% of the global production and consumption of beer. The first place in Europe in this area took Germany (production of over 98 million hl and consumption of almost 90 million hl) (Figure 1). The second place went to the United Kingdom (with production of 45 million hl and consumption over 46 million hl) and the third – to Poland (35 and

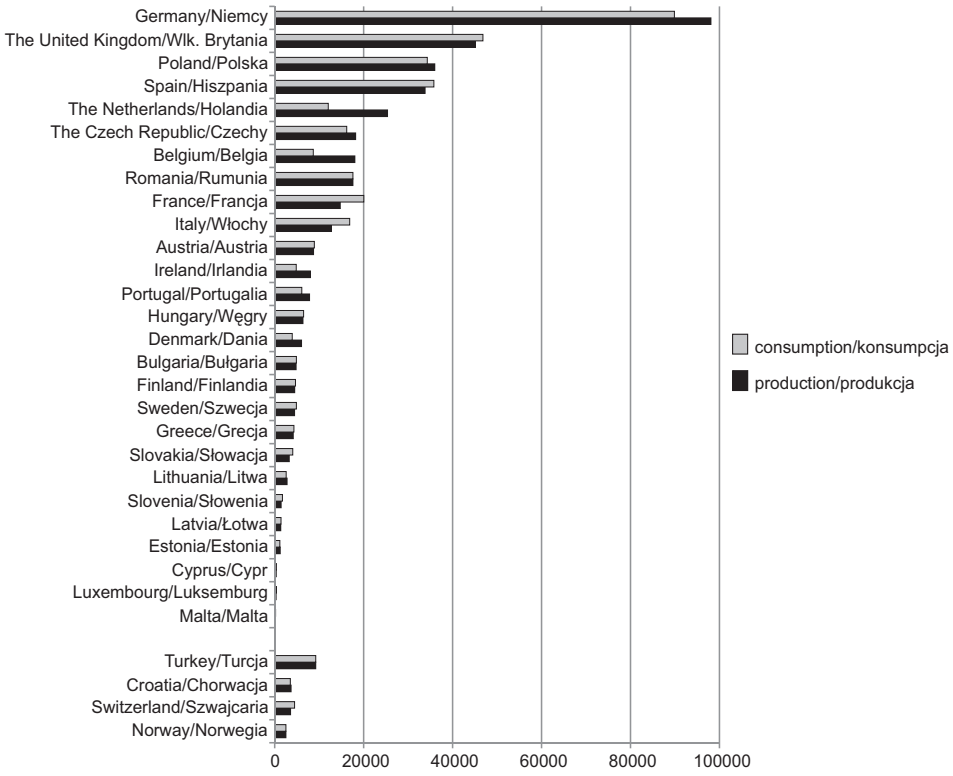

Fig. 1. Production and consumption of beer in the UE+4 countries (thousand hl)
Rys. 1. Produkcja i konsumpcja piwa w krajach UE+4 (tys. hl)

Source: Authors' own elaboration based on The Beer Statistics 2010 Edition. The Brewers of Europe. www.brewersofeurope.com.
Źródło: Opracowanie własne na podstawie The Beer Statistics 2010 Edition. The Brewers of Europe. www.brewersofeurope.com.

34 million hl). The least significant were smaller countries, such as Malta, Luxembourg or Cyprus.

In most countries there are merely slight disproportions between production and consumption of beer, only in case of Germany, Belgium, the Netherlands or Ireland the production significantly exceeds the consumption, which is related to the huge share of exports. In turn, in France, Italy and Spain the consumption is higher and the consequence of that is an increase in imports. It may be a result of the fact that those countries have a developed tourism industry, including hospitality sector, which may contribute to the increased consumption of beer.

It is worth to mention that the largest consumption of beer per capita in the world is also specific for the European countries. The first place in this field took the Czech Republic with the average annual consumption of 160 l of beer per person, the second place went to Germany (110 l per person) and the third place – to Austria (107 l per person). Additionally, the high average consumption of beer is also typical for such countries as Ireland, Finland, Slovenia and Poland.

BREWING INDUSTRY IN THE ECONOMY OF THE EUROP EAN UNION COUNTRIES

High value added in a given sector may prove the significance of the sector in the economy, as it is a measure of the sector contribution to the GDP. The production of beer generates quite small value added, however distribution of beer, either through retail chains or hospitality sector, generates much higher value added [Huculak 2006]. In 2009 the value added in production and sale of beer[1] amounted to approximately 59 billion euro in the analysed countries (Figure 2). The hospitality sector and production of beer had the highest share in this area (respectively 32.9 and 12.3 billion euro).

The highest value added in the whole sector was noted in Germany (over 13 billion euro), the United Kingdom (over 10 billion euro) and Spain (almost 6 billion euro) (Figure 3). In turn, the value added in production of beer only was the highest also in Germany (nearly 2.8 billion euro), Spain (almost 1.3 billion euro), Belgium (over 0.9 billion euro) and the Netherlands (over 0.8 million euro), which confirms great significance of those countries in production of beer in Europe and in the world. The small value added was noted in the Baltic countries, Malta and Cyprus.

It is worth to mention that the share of beer production in the total value added generated in production and sale of beer amounted to nearly 21%. The highest share was

[1] The direct value-added in the brewing sector was obtained by Ernst & Young [2010] through brewing associations and through Eurostat data. The value added in other sectors resulting from the production and sale of beer was estimated on the basis of the employment effects. The value-added in a particular sector was calculated by multiplying the employment effect by the apparent labour productivity (Gross value added per person employed) in the sector. If no data on labour productivity for a particular country was available, estimates were made based on statistics of national statistics agencies or the OECD. Nevertheless, Eurostat statistics had provided useful data covering all or most of the considered countries.

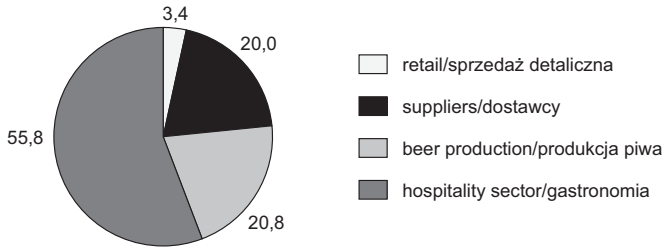

Fig. 2. The structure of value added generated by production and sale of beer in the EU+4 countries in 2009 [%]

Rys. 2. Struktura wartości dodanej wytworzonej w produkcji i sprzedaży piwa w krajach UE+4 w 2009 r. [%]

Source: Authors' own elaboration based on The Contribution made by Beer to the European Economy. Ernst &Young. Amsterdam, 2010.

Źródło: Opracowanie własne na podstawie The Contribution made by Beer to the European Economy. Ernst &Young. Amsterdam, 2010.

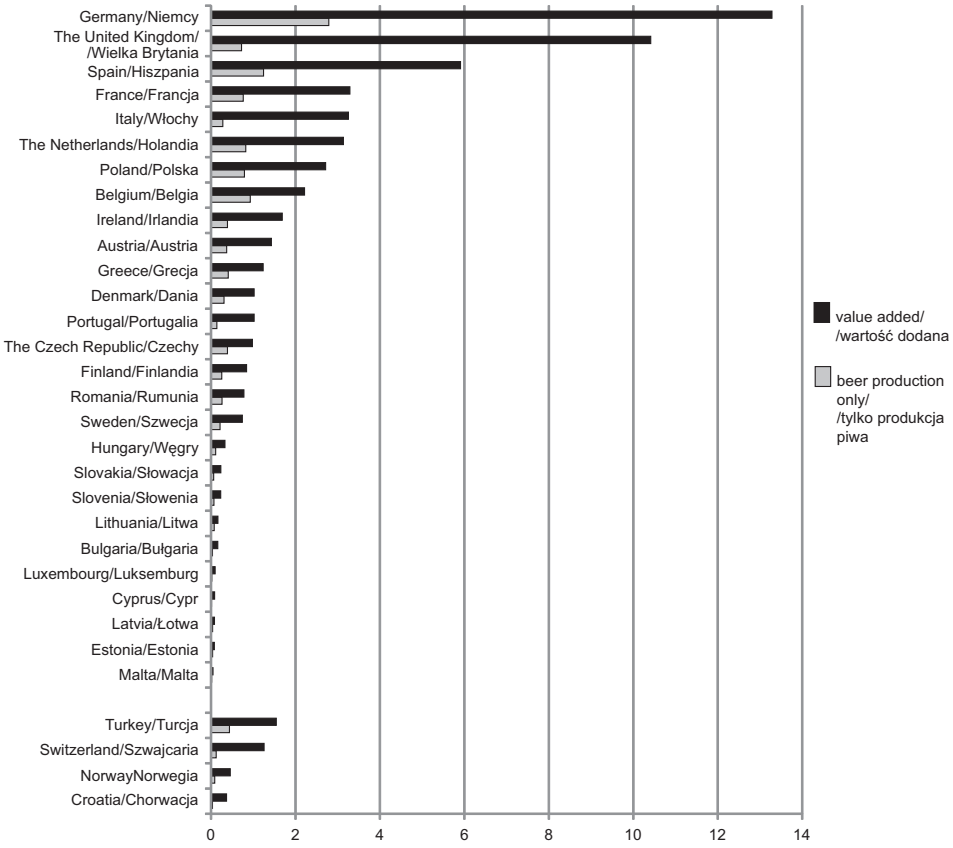

Fig. 3. The value added generated by brewing sector and sale of beer in the UE+4 countries in 2009 (billion euro)

Rys. 3. Wartość dodana wytworzona w sektorze browarniczym i sprzedaży piwa w krajach UE+4 w 2009 r. (mld euro)

Source: Authors' own elaboration based on The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.

Źródło: Opracowanie własne na podstawie The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.

noted in Latvia (48.2%), Estonia (47.5%) and Lithuania (46.3%), which is a result of short distribution chains and large share of retail in total sale (Figure 4). The smallest share is typical for such countries as Italy and the United Kingdom (respectively 8.6% and 6.9%). It may come from the fact that those countries are characterized by highly developed distribution sphere, particularly hospitality, which favours generating the value added in that sector.

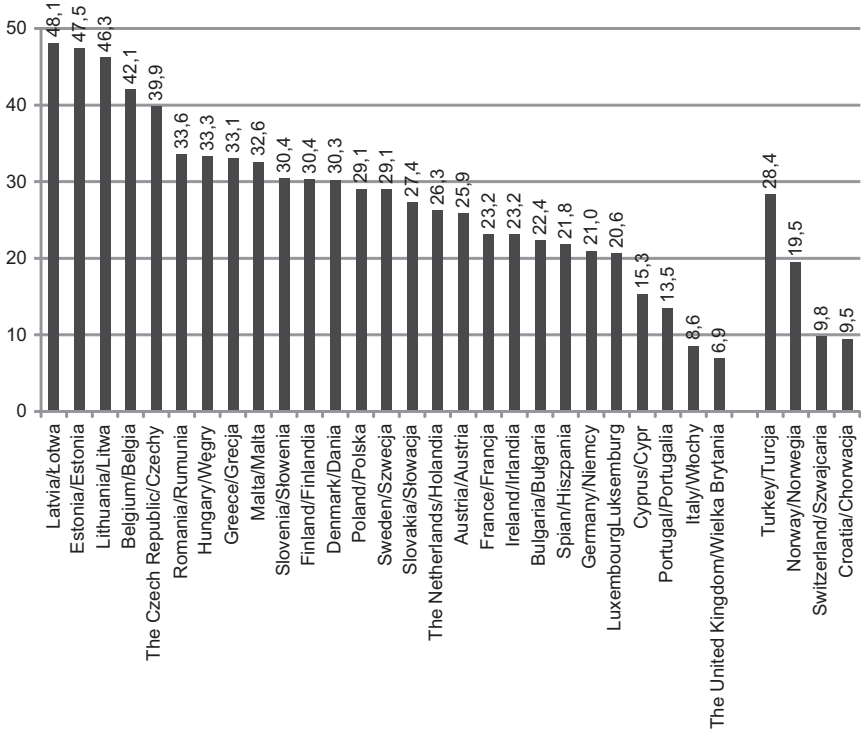

Fig. 4. The share of the brewing sector in total value added in production and sale of beer in the EU+4 countries in 2009 [%]

Rys. 4. Udział browarnictwa w wartości dodanej wytworzonej w produkcji i sprzedaży piwa w krajach UE+4 w 2009 r. [%]

Source: Authors' own elaboration based on The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.

Źródło: Opracowanie własne na podstawie The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.

It should be mentioned that the highest share of production and sale of beer in total value added generated in the economy was noted in Ireland (1.16%), Poland (0.99%), Malta (0.92%) and in the Czech Republic (0.79%). In turn, a smaller share was observed in Italy (0.24%), Norway and France (both 0.19%) (Figure 5). Surprisingly, quite small share of the brewing sector was noted in Germany, the Netherlands and the United Kingdom, which are characterized both by large production and consumption of beer. Nevertheless, economies of those countries are very strong and brewing sector is one of many branches, which results in smaller share of the sector in total value added.

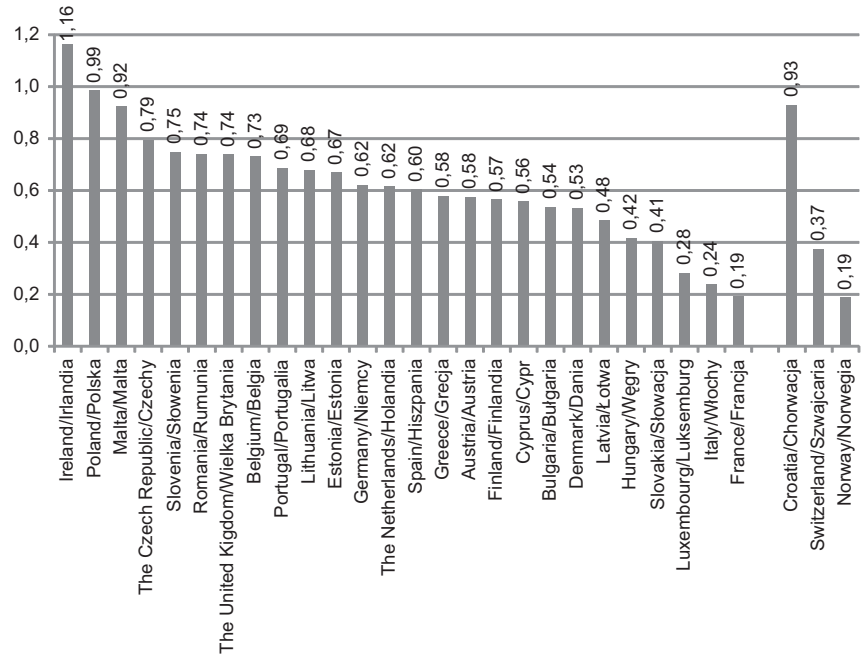

Fig. 5. The share of the value added generated by brewing sector and sale of beer in total value added generated in the economy in the UE+3 countries in 2009 [%]

Rys. 5. Udział wartości dodanej wytworzonej w sektorze browarniczym i sprzedaży piwa w całkowitej wartości dodanej wytworzonej w gospodarce w krajach UE+3 w 2009 r. [%]

Source: Authors' own elaboration based on EUROSTAT data and The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.

Źródło: Opracowanie własne na podstawie danych EUROSTAT oraz The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.

The brewing industry also plays a significant role on labour market. According to Ernst&Young [2010] estimates, in 2009 the employment in the sector in the discussed countries amounted to almost 2.5 million people, which was 1% of the all employed. The production of beer assured about 160.5 thousand workplaces, furthermore, the suppliers employed 363 thousand people (37% of them worked in agriculture) and over 150 thousand people worked in retail. Nonetheless, the hospitality sector assured the most workplaces – nearly 1.8 million, which was almost ľ of the all workplaces in the whole brewing sector. Concerning particular countries, the most people were employed by the brewing sector in Germany (over 1/5 of the all employed in whole sector in the analysed countries), the United Kingdom (16%), Spain (9%) and Poland (8%). It is worth to mention that in 2009 the average value added per one employed in brewing sector amounted to about 23.7 thousand euro.

The production and sale of beer generates a quite large share of the budgetary revenues, most as the excise duty, value added tax, income tax and social contributions. In 2009 total government revenues were estimated for 57 billion euro, equivalent to nearly 50% of total beer sale value in 2009.

Generally, the level of the budgetary revenues is related to the level of fiscalism in a given country, which usually means that the higher fiscal burdens are, the higher the revenues are, unless the burdens are too high, then the level of budgetary revenues falls. Still, the budgetary revenues in high degree also depend on production and consumption volume, particularly in case of alcoholic beverages. Therefore, the highest budgetary revenues resulting from production and sale of beer were achieved in the United Kingdom (over 13 billion euro), Germany (above 12 billion euro), Spain and Italy (both over 4 billion euro) and Poland (3 billion euro) (Figure 6). In other countries those revenues were lower. They had marginal meaning in the Baltic countries and in Luxembourg, Malta or Cyprus.

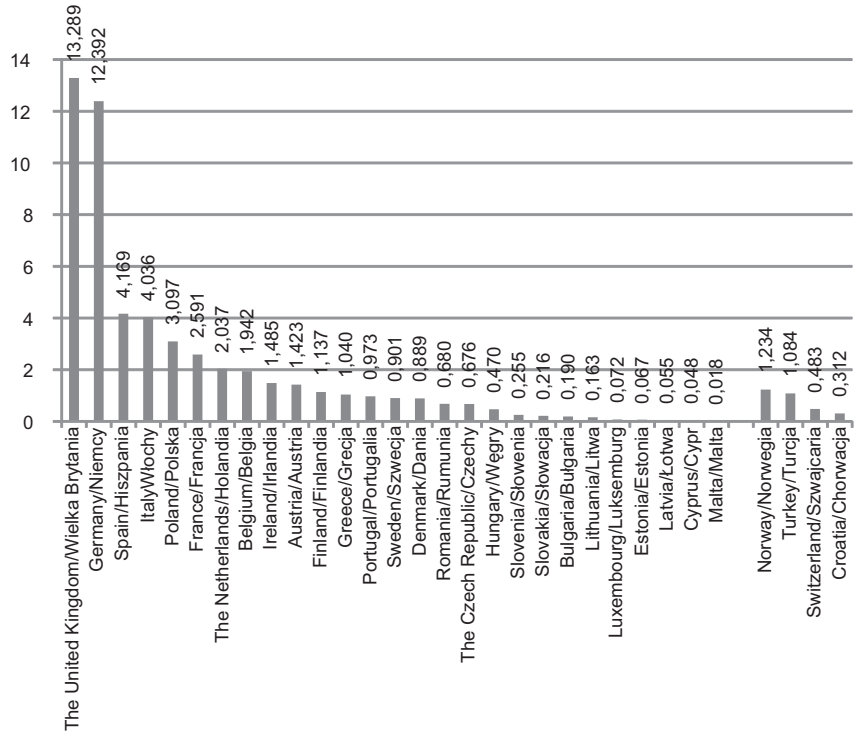

Fig. 6. The budgetary revenues for production and sale of beer in the EU+4 countries in 2009 (billion euro)

Rys. 6. Przychody budżetowe wynikające z produkcji i sprzedaży piwa w krajach UE+4 w 2009 r. (mld euro)

Source: Authors' own elaboration based on The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.

Źródło: opracowanie własne na podstawie The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.

The countries with the highest share of the budgetary revenues for production and sale of beer in 2009 were Ireland and Poland (both with nearly 2.7%). The next places went to the United Kingdom (2.1%) and Romania (1.8%) (Figure 7). That proves the significance of brewing industry for the state finances in those countries.

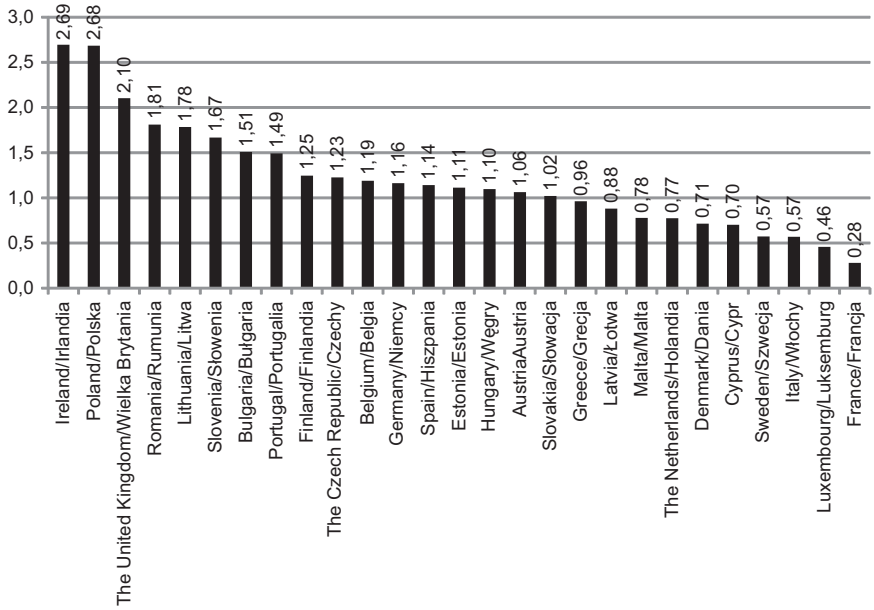

Fig. 7. The share of budgetary revenues for production and sale of beer in total budgetary revenues in the EU countries in 2009 [%]

Rys. 7. Udział przychodów budżetowych z tytułu produkcji i sprzedaży piwa w całkowitych przychodach budżetu państwa w krajach UE w 2009 r. [%]

Source: Authors' own elaboration based on the EUROSTAT data.

Źródło: Opracowanie własne na podstawie danych EUROSTAT.

In Poland the fiscal burdens constitute about 40% of the beer price. In spite of the fact that the budgetary revenues are lower than in case of spirits, fuel or tobacco products, for the last 10 years they have grown almost twice, while the revenues for the excise duty on spirits have remained quite stable [Gołaś, Ścibek 2010; ZPPP 2010].

The excise duties and value added tax for sale in hospitality sector generally have the highest share in budgetary revenues for beer. In 2009 the highest revenues due to excise duty were noted in the United Kingdom (4 592 million euro), Poland (787 million euro), Turkey (620 euro), Norway (514 million euro), Italy (466 million euro), Denmark (463 million euro), Ireland (427 million euro) and Finland (405 mln euro) (Table 1). It is worth to mention that the countries with the highest excise duty rates are Norway (240 euro/hl/12ş Plato), Finland (124.8 euro), The United Kingdom (102.7 euro), Sweden (78.2 euro) and Ireland (75.4 euro), and the countries with the lowest rates are Romania (9 euro), Bulgaria (9.2 euro), Germany (9.4 euro) Luxembourg (9.5 euro) and Spain (10 euro). Due to the economic crisis there is a tendency to increase those rates (e.g. in 2011 the rates have been increased in Malta, Norway, the United Kingdom and Portugal) [Excise... 2011]. One can observe that the excise duty rates for beer correspond to the level of revenues for excise duty, but not necessary to the total budgetary revenues for production and sale of beer. The good examples are Germany and Spain, which are the countries with very high budgetary revenues and relatively low excise duty rates.

Table 1. The value of taxes and social contributions due to production and sale of beer in the UE+4 countries in 2009 (million euro)

Tabela 1. Wartość przychodów budżetowych z tytułu podatków i składek na ubezpieczenia społeczne wynikających z produkcji i sprzedaży piwa w krajach UE+4 w 2009 r. (mln euro)

Kraj	The value of the excise duty Wartość podatku akcyzowego	The value of the VAT in retail Wartość podatku VAT w detalu	The value of the VAT in hospitality sector Wartość podatku VAT w gastronomii	The value of income tax and social contributions in beer production Wartość podatku dochodowego i składek na ubezpieczenie społeczne z tytułu produkcji piwa
Austria/Austria	190,0	150,0	314,0	65,0
Belgium/Belgia	191,0	111,0	545,0	140,0
Bułgaria/Bulgaria	43,0	48,0	48,	5,0
Cypr/Cyprus	10,0	6,0	15,0	4,0
The Czech Republic/Czechy	133,0	83,0	152,0	47,0
Denmark/Dania	463,0	113,0	254,0	50,0
Estonia/Estonia	27,4	24,1	4,1	0,4
Finland/Finlandia	405,0	243,0	154,0	52,0
France/Francja	312,0	344,0	727,0	116,0
Germany/Niemcy	313,0	1032,0	2949,0	656,0
Greece/Grecja	60,0	58,0	385,0	14,0
Hungary/Węgry	137,0	69,0	80,0	17,0
Ireland/Irlandia	427,0	99,0	543,0	94,0
Italy/Włochy	466,0	292,0	1330,0	62,0
Latvia/Łotwa	15,0	16,0	6,0	3,0
Lithuania/Litwa	37,0	46,0	11,0	25,0
Luxembourg/Luksemburg	4,0	4,0	22,0	3,0
Malta/Malta	1,2	1,4	6,5	2,0
The Netherlands/Holandia	318,0	193,0	514,0	105,0
Poland/Polska	787,0	686,0	475,0	344,0
Portugal/Portugalia	91,0	60,0	388,0	21,0
Romania/Rumunia	163,0	174,0	160,0	18,0
Slovakia/Słowacja	58,0	45,0	49,0	7,0
Slovenia/Słowenia	59,0	19,0	68,0	9,0
Spain/Hiszpania	313,0	285,0	1410,0	165,0
Sweden/Szwecja	307,0	186,0	157,0	48,0
The United Kingdom/Wlk. Brytania	4592,0	947,0	2791,0	269,0
Croatia/Chorwacja	110,0	52,0	126,0	2,0
Norway/Norwegia	514,0	188,0	150,0	113,0
Switzerland/Szwajcaria	67,0	28,0	124,0	20,0
Turkey/Turcja	620,0	183,0	145,0	3,0

Source: Authors' own elaboration based on The Contribution made by Beer to the European Economy. Ernst &Young. Amsterdam, 2010.

Źródło: Opracowanie własne na podstawie The Contribution made by Beer to the European Economy. Ernst &Young. Amsterdam, 2010.

The highest budgetary revenues for value added tax for sale of beer in retail were achieved in Germany (over 1 billion euro), the United Kingdom (almost 950 million euro) and Poland (nearly 690 million euro). Those countries are the ones of the largest beer consumers in the world, which results in large sale and high budgetary revenues for value added tax in retail. In turn, the VAT in hospitality sector was the highest in such countries as Germany (nearly 3 billion euro), the United Kingdom (almost 2.8 billion euro), Spain (1.4 billion euro) and Italy (1.3 billion euro), where certain beer consumption patterns occur, e.g. consumption of that beverage in pubs or restaurants.

The income tax and employers' social security premiums have less meaning, besides Germany, Poland and the United Kingdom, where those premiums constitute quite significant amount (round 650, 344 and 270 million euro) due to high employment in brewing sector.

The previous considerations indicate that brewing sector have quite large share in budgetary revenues in the European countries. On the other hand, there occur some feedbacks: the budgetary revenues strongly influence the brewing industry as well. Improperly adjusted level and kind of taxation may have a negative impact on economic activity and willingness to invest [Guziejewska 2010]. The Oxford Economics [Impact... 2008] estimates indicate that the growth of the excise duty in the United Kingdom by 9.1% and planned increase in alcohol duty rates by 2 per cent above the rate of inflation by 2013 would lead to a serious decrease in sale, employment (nearly 43 thousand people would lose their jobs, mainly in hospitality) and drop in budgetary incomes (by about 120 million Ł). In turn, the calculations of PriceWaterhauseCoopers [Taxing... 2010] prove that increase of excise duty by 20% in all European countries would cause the loss of 70 thousand workplaces in the brewing sector. Additionally, the growth of fiscal burdens influences the decrease of beer affordability, which is followed by the fall in touristic attractiveness of some countries, especially known for a long brewing tradition, e.g. Ireland [The Irish... 2011].

In addition to value-added, employment and tax revenues, the brewing sector also generates social benefits to the European countries. Brewing companies are very active in sponsoring a variety of cultural and sports events. In many countries in Europe, salaries in the brewing sector are relatively high when compared to most other sectors. One cannot also underestimate the social benefits of groups of friends coming together to socialise over a beer and converse.

EXPORTS AND IMPORTS

The level and forms of linkages in international exchange is related to operators' economic activity, economic openness of a given country and fundaments for free flow of goods and services [Mucha-Leszko 2003]. The significance of beer trade is increasing in the world, mainly due to the growth of interest in commonly known beer brands (often owed by the European producers) in Asia and Central and Eastern Europe [Sankrusme 2008; Huculak 2006]. Therefore. the growth of exchange is not related to the lack of resources necessary to produce beer, but mainly to the diversification of purchasers' preferences resulting from the transfer of certain patterns of alcoholic beverages consumption.

Approximately 17% of European beer production is exported. It is estimated that about 42% of total exports comprises exports within Europe and the rest is destined for countries outside Europe. Exports is especially important for such countries as the Netherlands, Belgium, Ireland and Denmark, where the share of exports compared to the total domestic beer production varies between 45 and 62%. In 2009 the most important exporters of beer were the Netherlands (over 16 million hl), Germany (15 million hl) and Belgium (10.5 million hl), which were also the ones of the largest beer exporters in the world (Figure 8). It is worth to mention, that eight European countries are among 10 major world beer exporters. Moreover, besides the United States and Mexico, Germany has the largest share in the global sale of beer [Gołaś, Ścibek 2009].

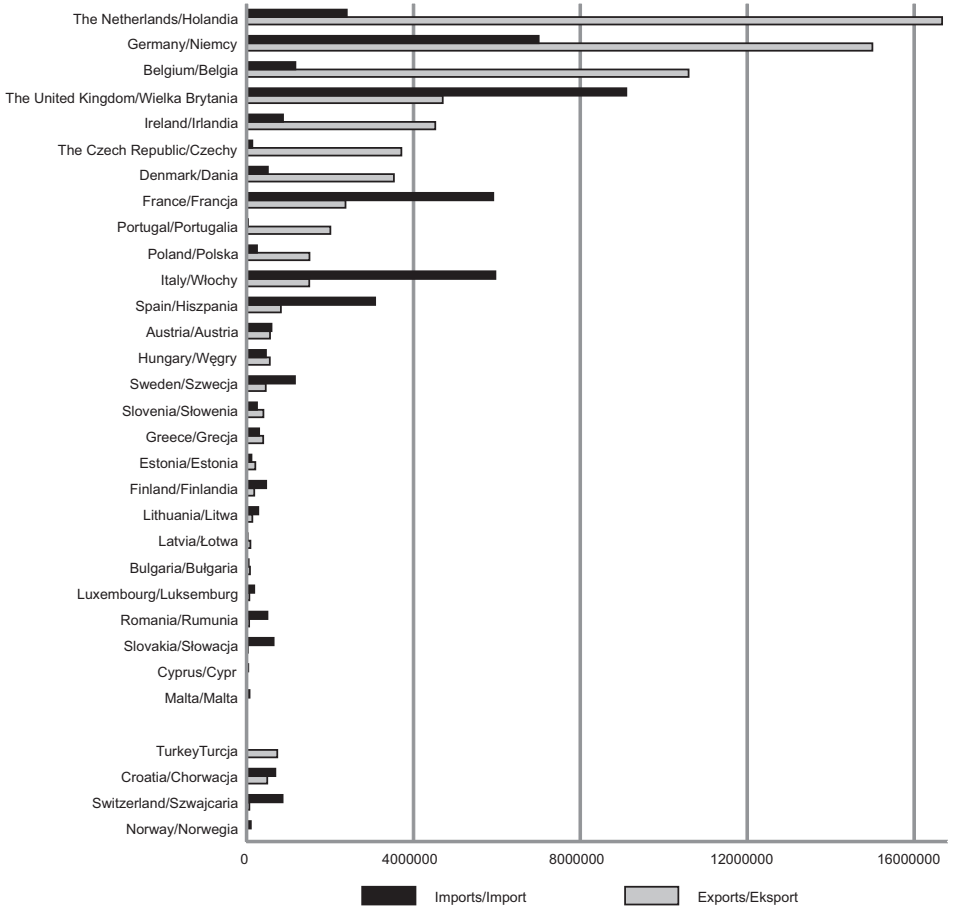

Fig. 8. The volume of exports and imports of beer in the UE+4 countries in 2009 (hl)
Rys. 8. Wielkość eksportu i importu piwa w krajach UE+4 w 2009 r. (hl)

Source: Authors' own elaboration based on The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.
Źródło: Opracowanie własne na podstawie The Contribution made by Beer to the European Economy. Ernst&Young. Amsterdam, 2010.

Concerning imports, in 2009 the first place went to the United Kingdom (over 9 million hl), the second to Germany (7 million hl) and the next ones to France and Italy (both nearly 6 million hl). It should be mentioned that the United Kingdom and Germany play a significant role in the international beer trade, both on the exports and imports side. It results from diverse consumers' preferences and long tradition of production of popular beer brands.

CONCLUSIONS

The European countries have a significant meaning in global beer production, which results in great economic importance of the brewing sector. The production of beer in the analysed countries amounts to almost 31% of the global beer production. The highest share in this area have Germany, the United Kingdom and Poland.

The European beer brands are very popular around the world, therefore almost 17% of the European beer production is exported. Exports is especially important for such countries as the Netherlands, Belgium, Ireland and Denmark, where the share of exports varies between 45 and 62% in the total production of beer.

Brewing sector generates high value added and assures a number of workplaces. In 2009, the value added generated in the brewing sector in the analysed countries amounted to 59 billion euro, in which the hospitality sector had the highest share (almost 56%). The highest value added for the whole sector was noted in Germany, the United Kingdom and Spain, but on the other hand, relatively the highest share of the brewing sector in the total value added was observed in Ireland and Poland, which proves the economic significance of the brewing industry in those countries.

The employment in the brewing industry amounted to almost 2.5 million people (1% of the all employed in the analysed countries). The highest employment in the sector was noted in Germany, the United Kingdom, Spain and Poland (jointly over 53% of the all employed in the sector in the discussed countries).

It is worth to mention that the production and sale of beer generates a quite big share of budgetary revenues (mostly in form of excise duty and value added tax), which in 2009 in the analysed countries were estimated for 57 billion euro (50% of total beer sale value). The highest revenues were noted in the United Kingdom, Germany and Spain, but relatively the highest share of the budgetary revenues was observed in Ireland and Poland. In conditions of crisis, there is a tendency to raise the tax rates. Nevertheless, very high fiscal burdens may constitute a certain threat for the brewing industry, because they do not favour the growth of economic activity, on the contrary, they can influence the drop in production volume, employment and paradoxically the budgetary revenues.

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ZNACZENIE GOSPODARCZE SEKTORA BROWARNICZEGO W UNII EUROPEJSKIEJ

Streszczenie. W artykule przedstawiono rolę sektora browarniczego w gospodarce krajów Unii Europejskiej oraz czterech krajów pozaunijnych: Chorwacji, Norwegii, Szwajcarii i Turcji. Skoncentrowano się głównie na wartości dodanej, przychodach budżetowych związanych z produkcją i dystrybucją piwa oraz zatrudnieniu. Omówiono również wielkość importu i eksportu piwa. Stwierdzono, że browarnictwo ma szczególnie duże znaczenie w generowaniu przychodów budżetowych w krajach o wysokim stopniu fiskalizmu oraz gdzie jednocześnie występuje duża produkcja i konsumpcja piwa. Analizowany sektor zapewnia również wiele miejsc pracy, zwłaszcza w sferze dystrybucji (głównie w branży gastronomicznej).

Słowa kluczowe: sektor browarniczy, produkcja, konsumpcja, wartość dodana, podatki, zatrudnienie

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MODELS OF REGIONAL DEVELOPMENT IN THE FORMATION OF LOCAL SELF-GOVERNMENT STRATEGIES

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Abstract. This article contains a model presentation of regional development processes in the context of self-government strategic programmes. The theoretical bases of regional development are described in this article: starting from the basic notions and determinants of these social and economic phenomena. A review of the theories of development was presented, and the most synthetic phenomena in two extreme models were indicated. Further, the mechanisms of strategic programming were presented within the framework of regional policy. The sequences of activities in the construction of the strategy and its individual elements were presented. Apart from system analyses, example provisions of a selected regional strategy were also discussed. The article completes with conclusions and recommendations for local governments in Poland, which create and implement strategies in micro-economic and macro-economic environments. It was found that strategic management is an optimal method to raise the effectiveness concerning exercising of power on the mezzo-economic level.

Key words: model, development, region, strategy

INTRODUCTION

The purpose of the functioning social and economic system is to achieve a high pace of development which is understood as an increase of the volumes of production and structural changes which have an influence on an improvement of the quality of life and the effectiveness of activity. Within the framework of the national economy or international organizations, development integrates the processes of economic growth and qualitative transformations, which serve the purpose of an improvement of production reserves and an increase of the prosperity of households.

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First of all, developmental processes take place in economic entities through their investment activeness, which is financed from the savings of households. Although the investment decisions are taken by the individual owners of enterprises, the tendency to modernize reserves results from the environment of enterprises, which is formed by the instruments of economic policy. Their structures and use occurs on the level of the state in the macro-economic scale, on the level of regional or local authorities.

In the present-day democratic systems, an increasingly growing part of the instruments of economic policy is at the disposal of the local self-government authority. In connection with this, its activeness and competences determine developmental processes to a significant extent. In this context, regional development, i.e. one concerning the specific social and economic space, depends from the efficiency of management on the part of a self-government authority and from the model of development policy accepted by it. In every case, programming the desired phenomena and their implementation must constitute the basis to form development based on planning documents. In this manner, a strategy of regional development is formed. It constitutes the basis of all operational programmes in the activity of a self-government community.

The purpose of this study is to present a scientific reflection on the formation of strategic documents and the mechanisms of their implementation in the context of the described developmental models and determinants concerning the changes of the social and economic structure of regions. It is of an author's nature and is the result of research conducted by the Author and analyses of the present-day output. The theses which are put forward herein may serve the purpose of further scientific discussion. The assumption of these deliberations is the statement that regional development is an effect of the individual activeness of enterprises and households that create the value of consumption and investment, yet also it depends from the shape of the instruments of the economic policy which is implemented by central and regional authorities.

THEOREM OF REGIONAL DEVELOPMENT

The classic science of economics described the reality of economic and social systems in the aspects of single-point models. This means that space was not a variable with an influence on the solutions of these models. It is only the influence of geographical sciences and research on regional diversification that led to the formation of those theories which take into consideration the location and space in the process of management [Domański 2008]. In this approach, regional development becomes a subject of the analyses of regional science as a branch of spatial economics. The region is a fragment of the surface of earth (of national economy) which possesses more or less clear boundaries and a certain kind of internal homogeneity, which resembles a cybernetic structure [Whittlesey 1995]. A region is usually allocated in an administrative form and it possesses a coherent organization which is created and controlled by local authorities. A complex of institutions, which are understood as a community of residents, companies, non-government organizations and relations established in the course of economic and social processes, becomes the essence of the region. Veblen, as the creator of institutional economics, proves that the social and structural context

of such a community exerts a fundamental influence on the functioning of entities and shapes their effectiveness [Veblen 1954].

Therefore, regional development means the positive processes of the transformations of the social and economic structure concerning a specific space, which serve the purpose of a complete use of the potential of a region and which increase the living standards of the residents. In the concept of sustainable development, changes usually concern three aspects. In the economic aspect, they mean the growth of the value of material production measured by the growth dynamics of the regional Gross Domestic Product with an increase of the number of jobs.

In the social aspect, development means raising the quality of social relations, an increase of the social capital value and an improvement of the subjective assessment of living conditions.

In the ecological aspect, progress is equated with the protection of natural resources, rehabilitation of degraded areas and a reduction the negative influence of the human activity on eco-systems.

The determinants of development cover a number of evolutionary (historical) factors and depend above all from the current state of manufacturing forces (technical progress) and from the accepted solutions of the economic doctrine. The quality and number of the elements of both technical and social infrastructure as well as the legal and institutional model worked out also exert an influence on the possibility of regional development. First of all the modern determinants are conditioned by globalization processes because the world market forms the behaviours of entities on the regional level, and the economic effectiveness depends from the quantity and structure of the global demand.

The creation of information society and post-industrial economy based on knowledge is the second important factor of development. Information is more important than material resources and its fast use permits an achievement of a competitive advantage. The improvement of human and social capital facilitates the development of these elements of regional space.

The third modern determinant is a change of the role of the state in the formation of the incomes of households. The systems of social care are more and more frequently replaced with the mechanisms of capital insurances, and the social policy accepts a regional and local dimension. The rich self-governments fulfil the functions of a tutelary state and realize the tasks which were previously reserved for state institutions.

The decentralization tendency the of public authority, which delegates a number of entitlements with funds to local self-governments is observed [Chądzyński, Nowakowska 2007].

Finally, the last factor observed in the Polish regional policy is connected with the cohesion policy of the European Union, and it means a strong support of regional developmental projects from the European budget. In the years 2007–2013, almost 70 billions euro will fund the programmes of infrastructure aid and the human capital of Polish provinces. It will become the source of multiplier growth processes in a number of self-government communities. Owing to this, the management of regions is much easier, and the living standards of residents undergoes a visible improvement in a short period of time.

According to the Polish Agency of Regional Development, the region should possess four features [PARR 2010]:

- a community of economic interests and a centripetal economic integration,
- an elected political representation,
- a social bond based on the sense of one's identity,
- a direct subordination to the central level.

The characteristics described in this manner become the basis to conduct the policy of regional development which can be defined as a conscious and intentional activity of the bodies of public authority serving for the developmental processes of a specific social and economic space. It may accept the form of the activeness of the government or of trans-national organizations (the European Union institutions) which form the behaviours of entities in a region. Most often, this is an influence through a set of the mechanisms of economic, social or ecological policies, and it is not dedicated to the definite conditions of a specific region. Such a manner of the activity of the authority is known as an interregional policy and it supports or programmes the transformations of self-government communities.

The intraregional policy, whose creator and executor is decentralized self-government authority that uses the instruments of local law is its supplementation. The dependences between the abovementioned forms of the influence of authorities on the administrative area accept a nature which is in compliance with the subsidiarity principle. This means that those problems which can be solved on the local level are decided here, and those issues which require the competence of a higher level are transferred on the appropriate level of authority in accordance with the responsibility. An integration and coordination of activities may occur through strategic provisions and it may accept the form of a regional contract [KSRR 2010–2020].

The use of the instruments of the regional development policy is to lead to an optimal use of the area and an achievement of a high level of competitiveness. At the same time, it is essential that all the elements (components) of the potential of a region are rationally used while a specific hierarchy is maintained (Figure 1).

Self-government entities create the conditions of development and support natural market processes on the basis of the possessed and developed material, human and intellectual resources, with the use of the elements of the technical and social infrastructure through the system of strategic management. In the theory of regional development, there are a number of models which describe the reality and indicate the directions of the activities to be pursued by authorities.

1. **The theory of centre**: peripheries, known as the theory of dependent development; it mainly refers to countries and their groups. It assumes a transfer of production factors to the centres of development and an occurrence of the areas of under-development far away from the centres of growth.
2. **The neo-classical regional theory of growth**. In accordance with its assumptions, differences in the reserves of production factors are eliminated by their interregional transfers owing to their perfect mobility. In the conditions of the under-development of the market, the compensation of developmental disproportion requires an impulse to stimulate the formation of enterprises.
3. **The post-Keynesian theory** considers the global (regional) demand to be the main determinant of the level of production and incomes. Here, investments are the most important factor of growth due to multiplier effects. Their location has an influence on the spatial diversification of development.

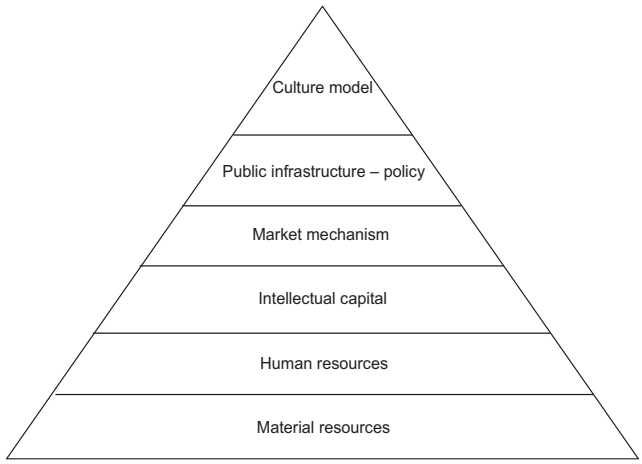

Fig. 1. Pyramid of the region's competitiveness
Rys. 1. Piramida konkurencyjności regionu

Source: Author's own study.
Źródło: Opracowanie własne.

4. **The theory of the economic base** accepts that the economic growth depends from the production base possessed, which mainly produces for exports. It has an original nature with trans-regional functions and a manufacturing nature producing for intraregional needs. However, the development of the base (original) sector stimulates the secondary sector and determines the development of the region.
5. **The conceptions of the endogenous growth state** that the mobilization of local resources and in particular of the "strengths" of a region constitutes the source of progress. The development policy should initiate intraregional cycles that integrate resourceful and innovative activities.
6. **The conceptions of the product cycle** describe the regional development as the consequences of the transformation of those enterprises which are dependent from the phases concerning the cycle of products' life, and hence the consequences of diversified production and investment activities. The innovative potential occurs in the period of the implementation of new products and services.
7. **The conceptions of the poles of growth** grant the main role in growth processes to innovative groups of companies or sectors with a high dynamics of development. Such sector poles attract resources from other branches, and with time the growth effects are also disseminated.
8. **The theory of cumulative indirect causality** states that rich regions develop faster and easier than poor regions, which function increasingly more difficultly on the developmental path without any support. The scale of diversification is extending.
9. **The conceptions of sustainable development** refer to maintaining proportions between an economic growth, an improvement of natural environment and social development. They recognize that an assimilation of environmentally friendly technologies and an economic growth which improves the living standards of residents constitute the purpose of regional development.

10. **Development based on innovative processes**. According to this theory, generation of new technologies and organizational solutions is the source of progress, while the structure of the economy should serve local innovative networks.
11. **The conception of territorial production systems**. It is a theoretical model of the development of small and medium sized enterprises which become an axis of an increase of the added value and stimulate entrepreneurship by flexibly reacting to the changes of the market economic situation. In this manner, a local network of connections comes into existence in favour of the transfer of information and the exchange of experiences and knowledge. It reduces transaction costs [Bąk, Grabowski, Kulawczuk, Nowicki, Wargacki, Wojnicka 2001].

A list of the theories of regional development, which is formulated in this manner, does not explicitly indicate application recommendations for the regional policy. To clarify such recommendations, the models of development can be grouped into two types:

1. The polarized (polarizing) model which sees the sources of progress in market process based on dynamically developing areas with a group of active enterprises. In this model, highly competitive regions should be supported and the enclaves of high effectiveness need to be created.
2. The compensation (diffusion) model which emphasizes the role the poor marginalized areas in the total economic growth and recommends the policy of cohesion which limits an interregional diversification.

The consequences of both developmental models can be different (see Figure 2).

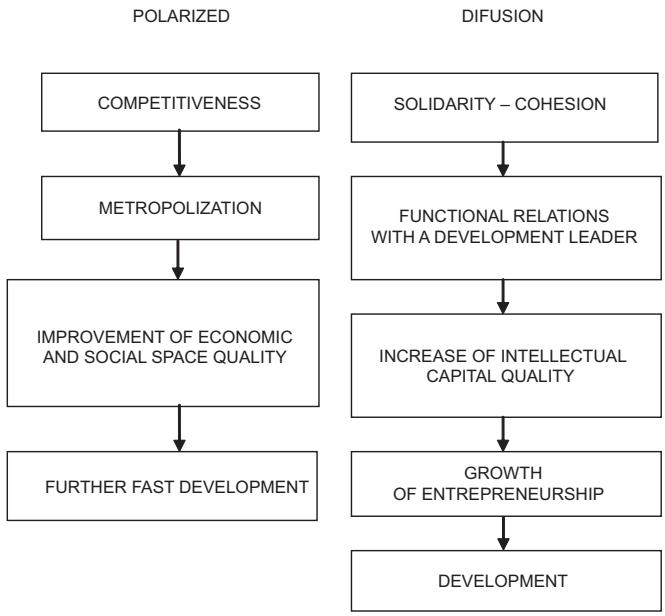

Fig. 2. Effects of development models
Rys. 2. Skutki modeli rozwoju

Source: Author's own study.
Źródło: Opracowanie własne.

As it can be seen from the diagram presented, the effects of an adaptation of both models can be similar, although the time required for their achievement and the means applied by authorities can be very diversified. The model accepted becomes a source of essential determinants in the preparation of a regional development strategy, which constitutes the key element in programming and the management of the self-government resources.

MECHANISMS OF STRATEGIC PROGRAMMING

The strategy of regional (local) development constitutes the basic document values possessed, the authorities of a commune, a district or a province prepare an arranged plan of the development of their self-government by indicating in it the most important problem areas and the directions of the transformations of the self-government community. The strategy is a planning document that is accepted in the self-government law by legislative bodies (regional government assemblies and councils). It constitutes an established requirement in the system of programming of the social and economic development.

Any local and regional projects which are related to applications for subsidies from public funds must be connected with strategic provisions. Proposals concerning such subsidies are usually submitted with strategic documents and in the course of an assessment of the application, its conformity with the development plan s verified. The determination of the directions of economic, social and environmental development is the chief task of the strategy, and its records constitute a reference to all operational programmes.

Development programming usually takes place in compliance with the procedure which covers the stages of individual activities and actions.

The first phase of these proceedings covers a profound analysis of the developmental potential and an identification of the development catalysts and of any barriers to the progress.

The second phase consists in a deductive solution of problems and a formulation of the mission and vision of the selected territory based on the most desirable target states in the economic and social system. The respect for natural environment resources and a reconstruction of its degraded elements constitutes an additional determinant of this process.

The third phase includes the creation of strategic goals and the most important developmental axes, which should constitute the place of the concentration of investment and organizational efforts. Their identification must take place on the basis of the methodological analyses of the needs of residents and entrepreneurs yet also by the selection of frequently numerous programme items.

The last phase of the procedures is connected with the preparation of operational programmes for individual priority axes taking into consideration the conditions of individual sectors and recipients of the local activeness. At this stage, a specification of the selected projects and an indication of the sources of financing in an alternative approach is justifiable.

Such a sequence of activities in the creation of a programme strategy guarantees a complete utilization of the intellectual potential of its authors, and it also allows one to

predict the conformity of the provisions of a plan with the real needs of a self-government community.

The creation of a strategy is determined by a number of determinants of an external nature, such as the social and economic system of a state or the level of the civilization development, yet also by internal factors for a self-government such as natural and human resources or an organizational potential. The resourcefulness as a state of the mind, a creation process and a development of economic activeness is to be an integrator of these determinants. Its purpose is always to take a risk, being creative, innovative as well as implementing creative management in a new or existing organization.

The local self-government is such an organization where the provisions of an example strategy of development are formed and which constitute the base for the management with the future of society. Each strategy starts from the formulation of a vision which describes the desirable state of an entity in the foreseen future in as a concrete manner as possible. The achievement of the level of the development of the European Union measured with the volume of Gross Capital Product per capita for the old fifteen West European Member States can be an example of a vision. It can be added that this is so that the social and economic structure could become modern and competitive towards the other areas of the state.

The mission understood as the key activeness of an organization can be described as a provision of essential public services in compliance with the needs of residents and the provisions of legal acts concerning local government entities.

After the identification of the mission and the vision, the strategic purposes to be achieved in the intended temporal horizon need to be defined. Their quantity should be limited. For example:

1. An improvement of the production and service as well as investment competitiveness.
2. An improvement of the quality of the intellectual capital of a local community.
3. Levelling of intraregional differences and a restoration of the social and economic cohesion of a territory.

The designing of development priorities becomes the bases to define the mechanisms of the realization of strategies. They accept the form of operational programmes or more extensive sector activities concerning for example agriculture and tourism. To illustrate this phenomenon, the programme can be singled out of an improvement of the road infrastructure connected with the construction of motorways and dual carriageways on the national scale, which will improve the communication accessibility of the region and will have an influence on an increase of business trading.

Supporting of small-sized enterprise through a system solutions of a legal and financial nature, which facilitates to entrepreneurs starting and development of individual economic activeness. Tax allowances, technological subventions, special economic zones, co-financing of employment: these are some means of the economic policy that is applied in this operational programme.

The third priority area is an educational system that constitutes the background for an increase of the quality of social and intellectual capitals which are decisive for the bases of developmental processes. The use of funds from the European Social Fund in the targeted projects of training, reskilling, improvement of professional qualifications con-

stitutes a method of an efficient management of human resources. Self-government authorities, when supporting education, should competently combine financial funds from the central programmes with local projects of the development of human capital. Contrary to appearances, those investments which improve the development of this capital exert a greater influence on the social and economic progress than some expenses on the technical infrastructure. Within the framework of this priority, an indirect goal is to build a learning society and also to strengthen the regional and local identity as well as to create the structures of local democracy which guarantee a larger participation of individual social groups in the community management.

Detailed schedules should be prepared and a mechanism to monitor their implementation should be created in relation to areas that are defined in this manner. In this scope, a balanced scoreboard allows a systematic assessment of the goals accepted in comparison with the indexes achieved [Kudłacz 1999]. The starting point for the construction of a scoreboard is usually to assign selected qualitative measures to the individual planes (areas) of strategies and to compare the parameters assumed with the parameters observed (cf. Table 1).

Table 1. Areas of strategy monitoring
Tabela 1. Płaszczyzny monitorowania strategii

Area	Measures	Plan	Execution
Roads	Kilometers of roads built	240	120
	Expenditures	300 m.	280 m.
	Number of projects	10	8
Small enterprise support	Number of projects	30	15
	Expenditures per 1 company	50 thousand	10 thousand
	Number of companies created	120	90
Education	Number of projects	25	20
	Scholarization index	40%	20%
	Number of persons trained	1 200	800

Source: Author's own research.
Źródło: Opracowanie własne.

A diagram to illustrate a graphical deviation from the schedules accepted can be made on the basis of such measures concerning an assessment of the realization of strategies (Figure 3).

The goals accepted were not achieved in all the measures of individual strategic areas. This proves an insufficient level of the activities that are responsible for all the perspectives. This is a basis for a verification of the strategic assumptions and a possible verification of the implementing mechanisms. The responsibility of those persons who are assigned to the areas should be controlled, and the means should be verified that are presented at the disposal of the tasks. Such an analysis will result in an identification of the sources of mistakes and it will indicate methods of their elimination. In this way, the balanced scoreboard becomes an effective tool of the implementation of strategies and it limits one of the main problems concerning strategic programming, which results from the divergence of the provisions contained in the strategies and the practices of self-government management.

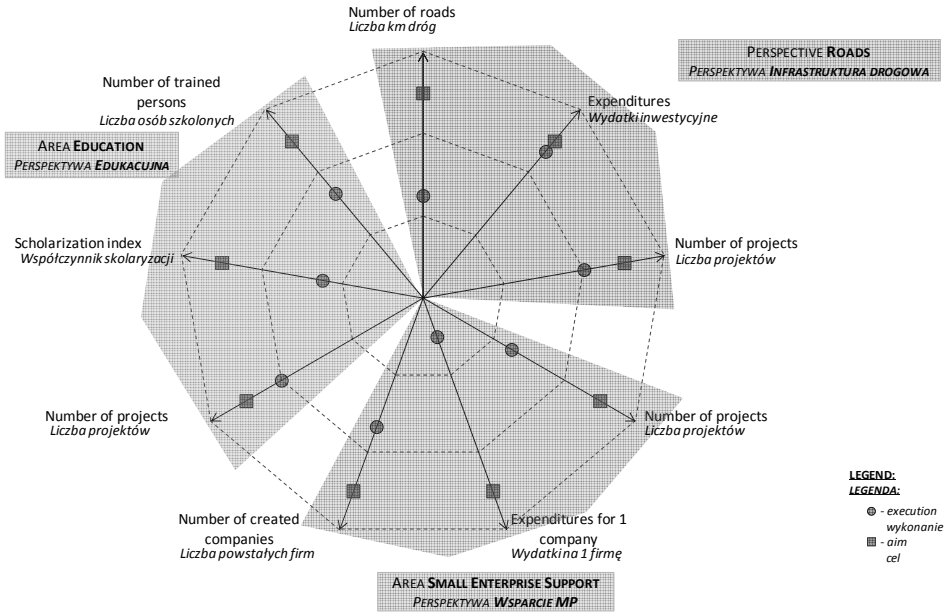

Fig. 3. Strategy score board
Rys. 3. Strategiczna karta wyników

Source: Author's own study.
Źródło: Opracowanie własne.

CONCLUSIONS

The formation of regional development is a complex process which consists in the creation of conditions for an economic growth, an improvement living standards of the local residents and the maintenance of the quality of natural environment. It is the result of the activeness of the members of a self-government community, i.e. first of all entrepreneurs and consumers within the framework of market transactions. However, it also depends from the decisions taken by the economic authorities of the state, which form an interregional support policy. Furthermore, it depends from the decisions taken local authorities which create the tools of an intraregional policy chiefly through strategic programming.

In the Polish self-government reality, strategic management is slowly becoming an acceptable formula to exercise authority, while the formation of development takes place on the basis of the professional rules of the management science. Nevertheless, several areas can be indicated which require some improvement and modification among those entities which implement regional policies.

Firstly, Polish regional programmes are too little based on the awareness of their own needs and long-term objectives, while they rely too much in ready models. Due to

this, regional policy does not remove developmental barriers and does not eliminate the real weaknesses of individual communities.

Secondly, regional authorities believe that expenses on the technical infrastructure and all hard investments ought be a priority concerning development. In fact it is investments in the human capital that exert a more lasting impact on regional development. The rationality and effectiveness in an improvement of the quality of intellectual capital must be the prerequisite of their success.

Thirdly, the programming of development should be based on the selection of priorities which cannot be too numerous, and they should objectively satisfy the important or urgent needs of communities. Clear and measurable criteria of the identification of these priorities need to be accepted, and the validity of their selection is to be confirmed through social and expert consultancy.

Fourthly, the implementation of development strategies requires consistency, responsibility and a precise monitoring mechanism. Even the best strategies are not easy to implement and must be controlled based on precise schedules.

These recommendations are of a pragmatic nature and they constitute the effect of numerous analyses and scientific reflections concerning the formation of regional development. The model or system of values and beliefs on the part of both national and self-government authorities constitutes a broader context of these processes. It determines the philosophy of regional policy and conditions the long-term forms of support offered to regions and local communities. The polarizing and diffuse theorem of regional development is currently dominating in Poland. This means that we are implementing a policy of social and economic cohesion in the scale of country and we are making attempts to strengthen self-governments in the creation of their individual strategic programmes. At the same time, progress centres (the growth poles) are not neglected, which by the concentration of capital including intellectual capital draw weaker districts and make modern technologies and system solutions available to them. A combination of these two paths of regional science is an optimal model of a sustainable growth of regions.

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MODELE ROZWOJU REGIONALNEGO W KSZTAŁTOWANIU STRATEGII SAMORZĄDU TERYTORIALNEGO

Streszczenie. Artykuł przedstawia modelowe ujęcie procesów rozwoju regionalnego w kontekście samorządowych programów strategicznych. Opisano w nim teoretyczne podstawy rozwoju regionalnego wychodząc od podstawowych pojęć i uwarunkowań tych zjawisk społeczno-ekonomicznych. Zaprezentowano przegląd teorii rozwoju i wskazano na najbardziej syntetyczne zjawiska w dwóch skrajnych modelach. Następnie przedstawiono mechanizmy programowania strategicznego w ramach polityki regionalnej. Pokazano sekwencje działań w budowie strategii i poszczególne jej elementy. Obok analiz systemowych omówiono także przykładowe zapisy wybranej strategii regionalnej. Artykuł zakończono wnioskami i rekomendacjami dla samorządów terytorialnych w Polsce, które tworzą i wdrażają strategie w otoczeniu mikro i makroekonomicznym.
Stwierdzono, że zarządzanie strategiczne jest optymalnym sposobem podniesienia efektywności sprawowania władzy na szczeblu mezoekonomicznym.

Słowa kluczowe: model, rozwój, region, strategia

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COMPETITION POLICY IN THE POLISH AGRI-FOOD MARKETS

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Abstract. The paper presents the theoretical basis and practice of competition policy implemented in the field of organization and functioning of the Polish agri-food markets. The national governments create competition policy based on the assumptions of economic theory for the effective economy and consumer welfare. As it can be observed in many agri-food markets in Poland, the role of competition policy is limited. Firstly, it is so because of the low level of market concentration, which limits the potential for intervention. In the years 2004–2010 the President of UOKiK (Polish Competition Authority) conducted 11 proceedings regarding infringement of competition law in this sector. Besides only a few of the 137 merger control decisions resulted in merger prohibition or a conditional consent. Secondly, under the rules of the Common Agricultural Policy, markets of farm products are not regulated by competition law in the same way as other sectors of the economy. A likely increase the importance of competition policy in this sector can result from its progressive consolidation and a reform of the Common Agricultural Policy.

Key words: competition, CAP, food markets, concentration, antitrust, state policy, mergers and acquisitions

INTRODUCTION

Competition policy is an element of economic policy. Competition policy in Poland is defined in a government document whose purpose is to indicate the most important issues concerning the development of competition in the national economy in the coming years [Competition Policy for 2011–2013]. Competition on national markets should be seen as one of the achievements of the political and economic transformation in Poland and an immanent aspect of the national economy. In case of the application of competition policy in relation to agri-food markets, the impact of this policy at the both national and

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European level is quite limited due to the rules of the Common Agricultural Policy (CAP) – especially in case of farm product markets.

Competition protection in the Polish food economy is also not often addressed in the Polish economic literature. Only two books – monographs on this subject were created so far in Poland, both in the 90s XXth century, before the Polish accession to the European Union [Czechowicz, Ziętara 1995; Adamowicz, Król 1998].

Those days particular interest in this subject resulted from the fact of initiation and development of legal and institutional basis for implementation of competition policy in Poland in the early 90. Besides it was a period of adjusting the Polish legal system to the requirements of membership in the European Union and therefore both the rules relating to agricultural policy and competition policy were analysed, including the relationships between them. No doubt the question becomes important again in the context of CAP reform and the discussion e.g. within the High Level Forum for a better functioning of the food supply chain.

The analysis covers the period 2004–2010, although it also refers to earlier publications as well as regulatory changes announced in the sector. The aim of the paper is to identify an actual and potential impact of competition policy on the Polish agri-food markets.

LEGAL AND INSTITUTIONAL FORMS OF COMPETITION PROTECTION IN POLAND AND THEIR JUSTIFICATION

Competition policy largely refers to the goals set for the President of the Office of Competition and Consumer Protection (Polish Competition Authority – PCA, President of UOKiK). The mission of the Office of Competition and Consumer Protection (UOKiK) is to improve consumer welfare by protecting and creating conditions for functioning of competition. The President of UOKiK is the central organ of government administration. Under the powers conferred on it by the Act on competition and consumer protection, the President is responsible for market surveillance and competition as well as protects the collective consumer interests.

According to the Polish Act of 16 February 2007 on competition and consumer protection (Journal of Laws No. 50, pos. 331 with amendments), competition protection can be divided into three main areas of activity of the PCA: countering the competition-restricting agreements (such as price collusion), countering the abuse of dominant position and merger control. The activity of the authority may lead to an order to cease the violations and impose fines up to 10 percent of revenue earned in the year preceding the decision. President of UOKiK (initially as President of the Antimonopoly Office) also played an important role in the process of modernization and marketization of the Polish economy even through the work of the government team preparing sectors' restructuring and privatization programs for instance in the sugar industry [Banasiński 2005].

An article 6 of the Act on competition and consumers protection ban agreements whose objective or effect is the elimination, restriction or some other distortion of market competition, including in particular: direct or indirect fixing of prices (price collu-

sion) and other conditions of purchase or sale of goods, limiting or controlling production or sales and technical progress or investment, dividing sale or purchase markets, applying onerous or dissimilar terms and conditions in equivalent contracts with third parties, differentiating competition conditions for these parties, restricting the access to the market or eliminating enterprises which are not party to the agreement from the market, fixing terms and conditions of bids between tender participants or between the participants and the organizer of the tender, particularly in respect to the range of work to be done or prices (bid rigging), etc.

In turn, in accordance with Article 9 of this Act, it is prohibited to abuse dominant position in the relevant market by an enterprise, or a group of undertakings, which effectively restricts its contractors' and competitors' independence, and forces them to accept less favourable cooperation terms than those applied when competition had not been distorted. The Act assumes that an enterprise has a dominant position if its market share exceeds 40%. The Act on competition and consumer protection contains a list of practices consisting in abuses of a dominant position i.e.: direct or indirect imposing of unfair prices, including excessively high or grossly low, distant payment, deadlines or other terms of purchase or sale of goods, limiting production, sales or technical progress with prejudice to contractors and competitors, applying onerous or dissimilar conditions to equivalent transactions with third parties, differentiating competition conditions for these parties, making the conclusion of contracts conditional upon acceptance or providing by the other party other benefit (which has no factual or contractual relation with the subject matter of the contract), preventing the shaping of conditions necessary for the establishment or development of competition, providing the undertaking with unjustifiable profits, dividing the market by territory, products or entities, etc.

Article 13 of the Act on competition and consumer protection, determines turnover thresholds above which participants of a planned merger are under the obligation to obtain prior consent from the President of UOKiK. More specifically, this is the case of enterprises whose aggregate turnover in the year preceding the application exceeded EUR 1 billion in the world and EUR 50 million in Poland. Merger control aims to counter the business consolidation, as a result of which competition would be significantly restricted, in particular by creating or strengthening a dominant position in the market In the result the merger control proceedings of the President of UOKiK may end with the following type of decisions: consent, conditional consent, special consent, prohibition.

Some element of competition policy is also state aid rules. The tasks in this field have also been described in the Competition Policy for 2011–2013. However it is a problem in some respects distinct, with a European dimension, therefore it will not be discussed in detail [Milewska 2009].

Extremely important in the process of regulatory and structural approach to competition is the economization of these processes by the competition authorities [Banasiński 2005]. Competition can be defined as a process during which two or more parties (pursuing its own interests) acting independently to secure the business of a third party (e.g. consumer) by offering the most favourable terms, reporting differing price, quality and other conditions affecting the conclusion of the transaction. At present, in Poland, the main objective of the competition protection is the benefits to consumers [Competition

policy for 2010–2013]. Companies, in general but especially in consolidated industries, are the stronger parties, whereas consumers are the scattered and weaker party in the market, hence the need of their protection.

One can take into consideration two aspects of competition: static and dynamic one [Gorynia 2004]. The static aspect of competition manifests itself in the structure of market in the industry (size and share of markets parties), while the dynamic one refers to behaviours of individual firms, then the sequence of these behaviours, which make up the process of competition. The differences between the market structures of the different levels of concentration were theoretically described by the characteristics of four market models: perfect competition, oligopoly, monopoly and monopolistic competition [Milewski 2003]. The high concentration level (oligopoly, monopoly) results with a threat of restriction of competition in the market, e.g. through abusing of a monopolistic position, which may lead to a reduction in consumer welfare [Sufrin, Jones 2004]. The particular importance of the market structure for competition is emphasized by the representatives of the Harvard School [Jurczyk 2007]. Economists of this school conducted a study on the relationship between structure, behaviour and market outcomes.

ACTIVITY OF THE PRESIDENT OF THE OFFICE OF COMPETITION AND CONSUMER PROTECTION IN THE AGRI-FOOD SECTOR

The above tasks of the President of UOKiK (PCA), in accordance to the Act, largely determine the scope of intervention of the PCA in markets related to the production and sale of food, especially the relationship between producers and sellers of food. In practice, the PCA rarely reveals and prohibits unlawful acts like collusion or abuse of dominant position in the Polish food sector. Taking into account a period of 2004–2010, the PCA conducted a total of 11 proceedings, which can be classified as relating to the sector. In most cases they relate to abuse of dominant position, less likely to vertical agreements (between the trading partners at various food chain levels). In particular, those cases concerned the following relevant markets: buying sugar beet and sugar production, the production of yeast, the buying rapeseed and oil production, provision of commercial area on the wholesale marketplaces, etc.

Sometimes the market participants concerned about the possibility of occurrence of the business conduct incompatible with competition law alerted the PCA. However, the authority often excludes the possibility of his intervention due to certain conditions. An example of this is the decision of the PCA No. 24/2007, dated 20th April 2007, by which he refused to institute antimonopoly proceedings at the request of the *Wielkopolska Agricultural Chamber* in Poznan against entities designated by the chamber dealing with buying pork. In support of the decision, the PCA stated that the circumstances do not permit the conclusion that pork prices are the result of collusions and are merely a reaction to specific competitive environment and the situation in the relevant market, taking into account the fact that the market is characterized by relatively high fragmentation subjective.

Relatively small (compared to the general office activities in other sectors of the economy) the number of decisions may result from the relatively low level of concentration

in most agri-food markets [Ważniewski 2010]. However, it should be mentioned that in the recent years the growth of concentration took place in many industries such as food processing due to mergers and acquisitions with participation of foreign investors. During this period, the authority issued a total of 137 decisions on merger in this sector. On the one hand this is a fairly large number, indicating a further concentration in the industry. On the other it is only a part of all decisions (for example, in 2010, there were was 188 merger decisions and those relating to the food sector – only 11). The following diagram gives information about the number of merger decisions in each year.

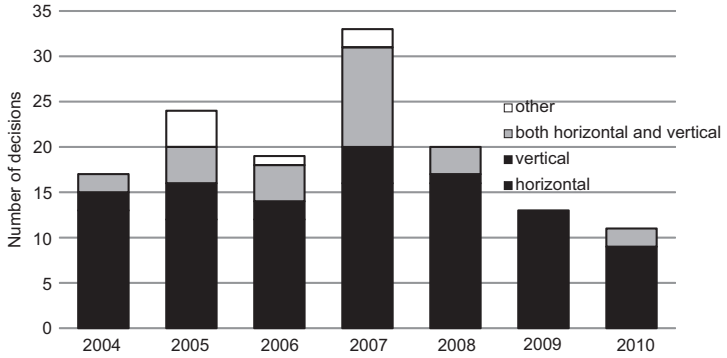

Fig. 1. Merger decisions of the Polish Competition Authority in the food sector in particular years 2004–2010 by type of merger

Rys. 1. Decyzje dotyczące koncentracji wydane przez Prezesa UOKiK w sektorze spożywczym w poszczególnych latach 2004–2010 według rodzaju połączenia

Source: Own calculations based on the Polish Competition Authority Decision Data Base, www.uokik.gov.pl

Źródło: Opracowanie własne na podstawie bazy decyzji Prezesa UOKiK, www.uokik.gov.pl

As it can been seen from the diagram in the years 2004–2010 the merger process was intensified in 2007. It was a year of high economic growth in both Poland and abroad, before the economic crisis. The acceleration of the consolidation processes can be observed also in 2005, probably due to Polish accession into the European Union. In the years after 2007, we can observe a decline in the number of mergers decisions which resulted from the new Act on the competition and consumer protection (in place of the Act of 2000). The previous threshold of combined worldwide turnover of merger participants in the financial year proceeding the year of notification, i.e. the equivalent of 50 million euro, was replaced by the two new thresholds, as described above. Raising the thresholds resulted in a decrease in the number of merger cases examined by the competition authority. This way, notifications concerning small mergers of no significant impact on the market were eliminated, which allowed the authority to focus on the assessment of transactions relevant to the economy [Szymczak 2010].

It should be noted that the vast majority of these mergers were horizontal (between market participants at the same level of food chain). This indicates that probably one of the main objectives of the merger is to increase the share in the relevant market. There was relatively small number of decisions on merger in a vertical arrangement. This may indicate that the more important for entrepreneurs in this sector is enlarge his importance

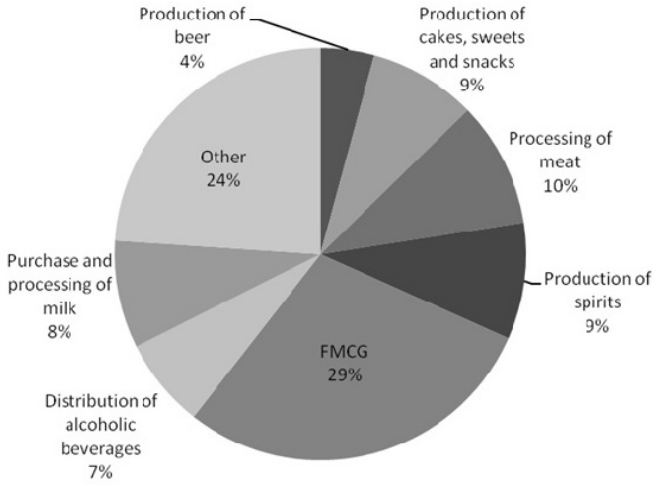

Fig. 2. Merger decisions of the Polish Competition Authority in the food industry in the in the years 2004–2010 according to the markets concerned
Rys. 2. Decyzje dotyczące koncentracji wydane przez Prezesa UOKiK w sektorze spożywczym w latach 2004–2010 według rynków

Source: Own calculations based on the Polish Competition Authority Decision Data Base, www.uokik.gov.pl
Źródło: Opracowanie własne na podstawie bazy decyzji Prezesa UOKiK, www.uokik.gov.pl

in the market to competitors at a certain level of food chain than building links in the supply chain.

It is also interesting which markets were affected by the decisions of the PCA. After all, within the food economy there is a broad spectrum of them. The shares of the most frequently consolidating agri-food markets are showed on the pie chart below.

From the diagram 2 it can be deduced that mergers were often related to trading of fast moving consumer goods (FMCG, which are mainly food products), including the merger and acquisition of chains of wholesale or retail trade, as well as production and marketing of alcoholic beverages. In these industries merger prohibition also occurred in this period (e.g. a ban on the acquisition in the spirits industry) and retail (conditional consent for merger of the retail chains by the order to dispose of the stores in selected local markets). These almost all 137 cases, however, actually were connected with the food processing and or trading markets, (so at a higher level of the food chain). Only in one merger case, the both parties were agricultural producers.

COMPETITION POLICY IN THE CONTEXT OF THE COMMON AGRICULTURAL POLICY REFORM

The basis conducted by the European Union (EU) competition policy are the provisions of Articles 101 (for anti-competitive agreements), 102 (abuse of dominant position) and 103 (state aid) of the Treaty on the Functioning of the European Union and relevant legislation, including directives and regulations.

Agricultural policy is the only EU policy in relation to the competition rules apply in very limited range [Brodecki 2004]. This is connected with the particular nature of agricultural activity, resulting from the social structure of agriculture and from structural and natural disparities between the various agricultural regions. According to Article 42 of the Treaty on the Functioning of the European Union (ex Article 36 TEC) the provisions of the Chapter relating to rules on competition shall apply to production of and trade in agricultural products only to the extent determined by the European Parliament and the Council within the framework of Article 43(2) and in accordance with the procedure laid down therein, account being taken of the objectives set out in Article 39.

Special provisions and procedures of application competition rules in agriculture are contained, inter alia, in Council Regulation (EC) No 1184/2006 of 24 July 2006 applying certain rules of competition to the production of, and trade in, agricultural products and Council Regulation (EC) No 1234/2007 of 22 October 2007 establishing a common organisation of agricultural markets and on specific provisions for certain agricultural products (Single CMO Regulation).

According to Council Regulation (EC) No 1234/2007, the rules on competition relating to the agreements, decisions and practices referred to in Article 101 (ex Article 81 of the TCE) and to the abuse of dominant positions should be applied to the production of, and trade in, agricultural products, in so far as their application does not impede the functioning of national organisations of agricultural markets or jeopardise the attainment of the objectives of the CAP. A special approach is warranted in the case of farmers' organisations the particular objective of which is the joint production or marketing of agricultural products or the use of joint facilities, unless such joint action excludes competition or jeopardises the attainment of the objectives of Article 39 (ex Article 33 of the TCE). In order both to avoid compromising the development of a CAP and to ensure legal certainty and non-discriminatory treatment of the undertakings concerned, the Commission should have the sole power, subject to review by the Court of Justice, to determine whether agreements, decisions and practices referred to in Article 101 (ex Article 81 of the TCE) of the Treaty are compatible with the objectives of the CAP.

The issue of reform of the Common Agricultural Policy, is at the time often elaborated in the economic papers. From the perspective of this study the competition aspects of the reforms should be analysed. The proposed changes support market mechanisms in agricultural markets and reducing regulation and intervention [Czyżewski, Stępień 2011]. The EU's agricultural policy initially focused on increasing productivity and structural problems in agricultural production. According to the past and planned reform, it is important to reconcile the welfare of consumers, agricultural income and the appropriate use of rural space as a public good [Forum Inicjatyw Rozwojowych 2010]. Economic efficiency is not the sole criterion for evaluation of the EU budget expenditure on agricultural policy due to the peculiarities of the land agent and the role that rural areas in serving the public [Czyżewski, Stępień 2011].

Another view on this issue is represented by the competition policy. The main objectives are to maximize economic efficiency and consumer welfare. The concept of competition policy is not to be preferable for certain professional groups as it is in the case of agricultural policy. Introduction of market mechanisms in agriculture on a larger scale is consistent with the objectives of competition policy. The adjacency of market interven-

tion is likely to lead to lower food prices in the internal market for consumers. This will reduce the farmers' income. However, more broadly, it will reduce the amount of taxes paid by taxpayers. This will also enable an increase of international competition and thus improve the efficiency and lower prices for consumers [Czyżewski, Stępień 2011].

On the other hand, taking into account the nature of the food sector, certain exemptions from the principles of competition law are proposed. Therefore, EU is to promote cooperation between market participants by collective negotiations and arrangements of the so-called producer organizations ("POs") and inter-branch organisations ("IPOs" – between farmers and processors) to strengthen the bargaining power of the smaller entities [European Commission Proposal for Single CMO Regulation]. Meanwhile, the European Commission as a European competition authority (through one of its Directorate – DG Competition) also participates in the formation of the new provisions on the Common Agricultural Policy. Furthermore, it is very likely that in the result both European and national competition authorities will have new powers and regulatory obligations to general food economy.

The above proposals are to be introduced e.g. in the milk industry [The Commission Proposal on Contractual Relations in the milk sector 2010]. These solutions are designed to increase the bargaining power of farmers by enabling pricing agreements (according to certain rules harmonised with competition law) e.g. within producer organisations. Unlike producer organisations which only include farmers, inter-branch organisations cover part or all of the supply chain: farmers, processors, distributors and retailers. They can potentially play useful roles in research, improvement of quality, promotion and spreading of the best practice in production and processing methods. They exist in a few Member States (e.g. milk cooperatives in Poland are some kind of IPOs) today and carry out these roles whilst respecting EU law. Furthermore, in sectors such as fruit and vegetables, specific EU rules provide for such actions, subject to limits, and often Commission scrutiny. It is proposed to apply the rules on the objectives of IPOs in the fruit and vegetables sector to the dairy sector, with appropriate adaptations, so that hardcore restraints of competition (including price fixing and market partitioning) remain excluded and the agreements concerned are submitted to Commission approval.

SUMMARY

Summarizing the outcome of this analysis, competition policy's role in the functioning of the Polish agri-food market is currently quite limited. This may result from the nature of competition policy, which is applied in particular to the highly concentrated markets. The other reason is CAP legal provisions, according to article 42 of the Treaty on the Functioning of the European Union, which exhibits detail rules of competition law in agriculture, so they are obligatory according to *"lex specialis derogat legi generali"* rule.

Competition policy largely refers to the goals set for the President of the Office of Competition and Consumer Protection whose mission is to improve consumer welfare by protecting and creating conditions for functioning of competition. According to the Act on competition and consumer protection, competition protection can be divided into three main areas of activity of the PCA: countering the competition-restricting agreements

(such as price collusion), countering the abuse of dominant position and merger control. These tasks of the President of UOKiK largely determine the scope of intervention of the PCA in markets related to the production and sale of food, especially the relationship between producers and sellers of food.

The intervention of the President of UOKiK is limited by the certain rules. For example the Act assumes that an enterprise has a dominant position if its market share exceeds 40%. There are only a few food industries which are supposed to have such market structure as e.g. an oil industry. Most industries do not reach a high concentration ratio (which can indicate that a high concentration of market share is held by the largest). Consolidation processes, however, can lead to an increase in the importance of legal protection of competition. This is indicated e.g. by the recent conditional consents for merger in retail chain.

Furthermore, perhaps after 2013, due to changes in the Common Agricultural Policy, European and national competition authorities, including Polish, gain new powers and responsibilities for the supervision of the functioning of the agri-food markets. Nevertheless, specific activities of these bodies can take place only in cases provided by competition law. So it devotes to satisfy certain conditions learned from economic analysis of impact of the form of e.g. food producer organization and of their specific behaviours. The final aim of competition authority is to increase consumer welfare (not the certain professional group e.g. farmers) and this should result with the national welfare growth.

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POLITYKA KONKURENCJI NA RYNKACH ROLNO-ŻYWNOŚCIOWYCH W POLSCE

Streszczenie. W artykule zaprezentowano podstawy teoretyczne i praktyczny wyraz polityki konkurencji realizowanej w warunkach organizacji i funkcjonowania polskich rynków rolno-spożywczych. Podstawą prowadzenia przez rządy krajowe polityki konkurencji są założenia teorii ekonomii dotyczące ekonomicznej efektywności i dobrobytu konsumentów. Jak zostało wykazane, na wielu rynkach rolno-spożywczych w Polsce rola polityki konkurencji jest ograniczona. Po pierwsze jest tak ze względu niski poziom koncentracji rynków. W latach 2004–2010 Prezes Urzędu Ochrony Konkurencji i Konsumentów (polski organ ochrony konkurencji) prowadził 11 postępowań z zakresu naruszenia prawa konkurencji w tym sektorze. Ponadto tylko nieliczne spośród 137 decyzji dotyczących koncentracji zakończyły zakazem koncentracji lub zgodą warunkową. Po drugie wynika to z zasad Wspólnej Polityki Rolnej. Prawdopodobny wzrost znaczenia polityki konkurencji w tym sektorze może przynieść postępująca jego konsolidacja, a także reforma Wspólnej Polityki Rolnej.

Słowa kluczowe: konkurencja, Wspólna Polityka Rolna, rynki rolno-spożywcze, koncentracja, ochrona konkurencji, polityka państwa, fuzje i przejęcia

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