Acta Scientiarum Polonorum – ogólnopolskie czasopismo naukowe polskich uczelni rolniczych, publikuje oryginalne prace w następujących seriach tematycznych:

Agricultura – Agronomia
Wydawnictwa Uczelniane Uniwersytetu Technologiczno-Przyrodniczego w Bydgoszczy
ul. Ks. A. Kordeckiego 20, 85-225 Bydgoszcz, tel. 52 374 94 36, fax 52 374 94 27

Biologia – Biologia
Wydawnictwo Uniwersytetu Przyrodniczo-Humanistycznego w Siedlcach
ul. Bema 1, 08-110 Siedlce, tel. 25 643 15 20, fax 25 644 20 45

Biotechnologia – Biotechnologia
Geodesia et Descriptio Terrarum – Geodezja i Kartografia
Medicina Veterinaria – Weterynaria
Wydawnictwo Uniwersytetu Przyrodniczego we Wrocławiu
ul. Sopocka 23, 50-344 Wrocław, tel./fax 71 328 12 77

Technica Agraria – Inżynieria Rolnicza
Hortorum Cultus – Ogrodnictwo
Wydawnictwo Uniwersytetu Przyrodniczego w Lublinie
ul. Akademicka 13, 20-033 Lublin, tel. 81 445 67 11, fax 81 533 37 52

Piscaria – Rybactwo
Zootechnica – Zootechnika
Wydawnictwo Uczelniane Zachodniopomorskiego Uniwersytetu Technologicznego w Szczecinie
al. Piastów 50, 70-311 Szczecin, tel. 91 449 40 90, 91 449 41 39

Silvarum Colendarum Ratio et Industria Lignaria – Leśnictwo i Drzewnictwo
Technologia Alimentaria – Technologia Żywności i Żywienia
Wydawnictwo Uniwersytetu Przyrodniczego w Poznaniu
ul. Witosa 45, 61-693 Poznań, tel. 61 848 78 07, fax 61 848 78 08

Administratio Locorum – Gospodarka Przestrzenna
Wydawnictwo Uniwersytetu Warmińsko-Mazurskiego w Olsztynie
ul. Heweliusza 14, 10-724 Olsztyn, tel. 89 523 36 61, fax 89 523 34 38

Architectura – Budownictwo
Oeconomia – Ekonomia
Wydawnictwo Szkoły Głównej Gospodarstwa Wiejskiego w Warszawie
ul. Nowoursynowska 166, 02-787 Warszawa, tel. 22 593 55 20, fax 22 593 55 21

Formatio Circumiectus – Kształtowanie Środowiska
Wydawnictwo Uniwersytetu Rolniczego w Krakowie
al. 29 Listopada 46, 31-425 Kraków, tel. 12 662 51 57, 12 662 51 59

1644 0757

ISSN 1644-0757

ACTA SCIENTIARUM POLONORUM

Oeconomia

12 (3) 2013

INSTRUCTIONS TO AUTHORS

The journal *Acta Scientiarum Polonorum – Architectura* features original scientific articles related to all aspects of environmental processes.

General and technical requirements for the elaboration of papers:

1. **Size of the research paper** including tables, figures and photographs should not exceed 12 pages of A-4 format.
2. **Materials to be published** in *Acta Scientiarum Polonorum* should be prepared in accordance with the rules of the publishing process binding at the publishing office of a given series of the Journal.
3. **Style of documents** – the text of the paper should be typed with Times New Roman font 12 points, 11 of space between the lines, setting parts of the text in special typeface is allowed, e.g. italic or bold, but without underlining letters, words and sentences.
4. **Size of tables and figures** cannot exceed B-5 format (12.5 cm × 19.5 cm); descriptions of tables should be typed with Times New Roman 9 points, content of tables 8 points, single space, if possible without vertical lines, table format – doc. or rtf.

The following paper setting is binding:

1. **Title of the article** in Polish (or in English if the whole paper is in English; the same refers to the summary and key words).
2. **First name and surname** of the author (-s).
3. **Paper abstract** (from 600 to 1000 characters).
4. **Key words** – 6 words useful when indexing and searching.
5. **The main text of the research paper** should include: introduction with the aim and research hypothesis, material and methods, results, discussion, conclusions (or summary) and references.
6. **Title, abstract** (600–1000 characters) as a translation of the summary and **key words** in English.
7. **Address** of the author's (authors') place of work – post and e-mail address.
8. **Titles of tables** and their content, and captions of figures and legends must be provided in Polish and in English, while the numbers of tables and figures – with Arabic numerals.

Units and spelling – the international SI system is binding, e.g. g×dm^{-3} (and not g/dm^3).

References – when referring to the publications of other authors in the text of the paper, a surname and a year should be provided in brackets [Kowalski and Lewandowski 2000, Lewandowski 2001, Zalewski et al. 2001] or … according to Kowalski [2000]...

The list of references should be presented in the alphabetical order in the following way: author's (authors') surname, initials of first names; year of publishing if there is more than one paper of the same author published in a given year, after the year it is necessary to mark particular items a, b, c, etc.; title of the paper, bibliographical abbreviation of the publishing house and place of publishing, No of volume, book and numbers of pages, e.g.:

Chełkowski Z., 1966. Introdukcja troci do rzeki Gowienicy. Gospod. Ryb. 1 (2), 18–19.

Greń J., Kowalski Z., 1972. Statystyka matematyczna. PWN, Warszawa.

Turski W., 1972. Projektowanie oprogramowania systemów liczących. Mat. Konf. Projektowanie maszyn i systemów cyfrowych. Warszawa 2–5 czerwca 1971. PWN, Warszawa, 132–139.

The author sends the text of the paper in 2 copies to the editorial office. After he/she receives a review, the Author sends an editorial copy to the editorial office including the reviewer's comments, a corrected copy of the paper including an electronic carrier (diskette, CD or e-mail) and a response to the reviewer's and editor's comments. The main part of the publication (abstract, the text of the article proper and references) should be saved in one file. The editorial office reserves a right to make cuts and corrections, and to suggest changes and substantive supplementations agreed with the author. The graphic material (figures, diagrams, charts) should be prepared and sent as a separate electronic file (source files) in programs working in Windows environment (e.g. in Excel, Corel Draw, Photoshop etc.).

The author of the paper published is obliged to transfer his/her copyright to the publisher and submit a declaration that the paper has not been published in another journal.

The authors of the papers participate in the costs of their publishing. Information about fees and additional information for authors are available at the website

www.acta.media.pl

ACTA SCIENTIARUM POLONORUM

Czasopismo naukowe założone w 200l roku przez polskie uczelnie rolnicze

Oeconomia

Economics

Ekonomia

12 (3) 2013

Bydgoszcz Kraków Lublin Olsztyn
Poznań Siedlce Szczecin Warszawa Wrocław

ISSN 1644-0757

Wydawnictwo SGGW, ul. Nowoursynowska 166, 02-787 Warszawa
tel. 22 593 55 20 (-22; -25 – sprzedaż), fax 22 593 55 21
e-mail: wydawnictwo@sggw.pl
www.wydawnictwosggw.pl

Print: Agencja Reklamowo-Wydawnicza A. Grzegorczyk, www.grzeg.com.pl

From the Scientific Board

There has been the twelfth year of the Acta Scientiarum Polonorum Oeconomia publishing. The Acta is the periodical including several thematic series with uniform graphics and similar format. The publication was set up by group of enthusiasts – employees of agricultural universities and has been published under the patronage of rectors of these universities. Current involvement of academic society in increasing substantive and editorial level of the series, with efforts of the authors, the Programming Board and the Scientific Boards, has contributed to placing the Acta Scientiarum Polonorum (and our Oeconomia series) on the noticeable position in academic research society. Articles can be prepared in Polish with English titles, abstract and keywords. Moreover, we publish also issues in English only. The Scientific Board of the Oeconomia series, concerning the publication range, focus their attention both on substantive content and precision of the form. The articles are revised in "double-blind review" process. All issues of the Acta Scientiarum Polonorum Oeconomia are available in electronic version on the following website http://acta_oeconomia.sggw.pl and abstracts on http://www.acta.media.pl. We are glad to inform that Acta Scientiarum Polonorum Oeconomia are indexed within the AGRIS-FAO, EBSCO, SIGŻ, Copernicus Index, AGRO. Since 2007 every article published in Acta Sci. Pol. Oeconomia is obtaining 9 points at the Ministry of Science and Higher Education ranking list.

Please send the articles on one of following e-mail addresses:
janina_sawicka@sggw.pl
acta_oeconomia@sggw.pl

While sending a printout, please attach also the electronic version on CD or DVD. Letters including note "the Acta Scientiarum Polonorum Oeconomia" should be sent on the following address:

Prof. dr hab. Janina Sawicka
Department of European Policy, Public Finances and Marketing
Faculty of Economic Sciences
Warsaw University of Life Sciences
Nowoursynowska 166, 02-787 Warsaw, Poland
tel.: (+4822) 593 40 70; fax: (+4822) 593 40 77

Yours sincerely
Janina Sawicka
Chairperson of the Scientific Board of the Acta Sci. Pol. Oeconomia series

ACTA SCIENTIARUM POLONORUM Oeconomia 12 (3) 2013, 5–15

COMPARISON OF HOUSEHOLDS' EXPENDITURES STRUCTURES IN SELECTED COUNTRIES OF EUROPEAN UNION

Hanna Dudek, Grzegorz Koszela
Warsaw University of Life Sciences – SGGW

Abstract. The article discusses the problem of similarities and differences of countries with respect to the structure of household expenditure in the European Union. This issue is important due to problem of economic and social and cohesion among member states. Comparative analysis of structures of consumption expenditures of households in EU member countries is performed using distance measure approach taking into account relative differences. For this purpose measure known in Polish language literature as Nowak's measure is applied. Background for analysis is data collected from national sources by the Statistical Office of the European Communities (Eurostat). Using quantitative analysis countries with similar to Poland structures of consumer expenditures are identified.

Key words: structure comparison, household expenditures, similarities between countries

INTRODUCTION

Household expenditures result from budget limitations on one hand and choices based on preferences on the other. They reflect economic and social inequalities as well as cultural differences and social distinctions. According to many economists, consumption expenditures better reflect expected lifetime resources then incomes [Slesnick 2000, Atkinson et al. 2005]. Studying their patterns, similarities and differentiation may provide insights into the standard of living.

Researches on household expenditures have long tradition in economics [Stigler 1954]. They were initiated over 100 years ago by Ernst Engel and others. In recent years these questions have attracted relatively little attention. Therefore this study tries to fill the gap in this field. The major objective of the analysis is to identify European Union countries most similar to Poland with respect to household expenditure structure. This

Corresponding authors: Department of Econometrics and Statistics, Warsaw University of Life Sciences – SGGW, ul. Nowoursynowska 159, 02-776 Warszawa, Poland, e-mail: hanna_dudek@sggw.pl, grzegorz_koszela@sggw.pl

issue is important due to promotion by EU economic and social and cohesion among member states. In this regard, the method of distances of structures is applied. This study is based on data from Eurostat.

DATA

Background for evaluations of households' expenditure structures is data collected from national sources by the Statistical Office of the European Communities (Eurostat). Household consumption expenditure can be classified by consumption purpose according to the COICOP classification (Classification Of Individual COnsumption by Purpose[1]). COICOP categories are the following consumption areas:

1) food and non-alcoholic beverages,
2) alcoholic beverages, tobacco and narcotics,
3) clothing and footwear,
4) housing, water, electricity, gas and other fuels,
5) furnishings, household equipment and routine household maintenance,
6) health,
7) transport[2],
8) communication[3],
9) recreation and culture,
10) education,
11) restaurants and hotels,
12) miscellaneous goods and services.

Annual information on average household expenditures structures[4] is drawn from Eurostat (the statistical office of the European Union). The analysis includes only those countries for which data are available. The most recent data from 2011 are used. For that year Eurostat did not publish data concerning such countries as Bulgaria, Lithuania, Romania, Spain, thus comparison of households' expenditures structures involved only 23 EU countries[5].

METHOD OF MEASUREMENT

For comparisons of two different structures many approaches can be applied. For this purpose, i.a. cluster analysis [Badach 2012, Stejskal and Stávková 2012], radar method

[1] The classification of individual consumption by purpose, abbreviated as COICOP, is a nomenclature developed by the United Nations Statistics.
[2] This item includes purchase of new and second hand motor cars, motor cycles, bicycles, animal drawn vehicles, operation of personal transport equipment, transport services, others.
[3] This indicator consists of postal services, telecommunications equipment, telecommunications services, Internet connection services, telephone installation, other services.
[4] The 12 categories of household consumption expenditure are measured by percentage of total household expenditure.
[5] We realize that the lack of these countries may affect the final results, but changes in the last years are so significant that we decided not to replace missing values by those from previous years.

and GCCA – grade correspondence cluster analysis [Binderman, Borkowski and Szczesny 2010] are used. Polish language literature is dominated by applications of simple measures[6] presented in monographs such as [Nowak 1990, Kukuła 1996, Panek 2009]. Some of these measures indicate the level of the absolute differences between the analyzed structures, while others are based on relative differences.

The following formula is example of the first group of measures:

$$d_{ij}^{A} = 1 - \sum_{k=1}^{m} \min\left\{p_{ik}, p_{jk}\right\} \tag{1}$$

The formula below is example of the second group of measures:

$$d_{ij}^{R} = 1 - \frac{1}{m}\sum_{k=1}^{m} \frac{\min\left\{p_{ik}, p_{jk}\right\}}{\max\left\{p_{ik}, p_{jk}\right\}}, \text{ wherein } p_{ik} \neq 0 \text{ or } p_{jk} \neq 0 \tag{2}$$

where: d_{ij} – distance between i-th and j-th objects;
m – the number of the structure component;
p_{ik}, p_{jk} – share of k-th component in the structure of i-th and j-th object, $\max\left\{p_{ik}, p_{jk}\right\} \in (0,\ 1)$.

Above examples are both measures of distances of structures. From the mathematical point of view, distance is defined as a quantitative degree of how far apart two objects are. Values of distances are included in the range of [0.1]. If both structures are completely different, then $d_{ij} = 1$, and if they are identical, then $d_{ij} = 0$.

Many distance measures have counterparts in similarity indices [Kompa and Witkowska 2009, Kukuła 2010]. Distances (1) and (2) can be converted into similarity indices respectively:

$$s_{ij}^{A} = \sum_{k=1}^{m} \min\left\{p_{ik}, p_{jk}\right\} \tag{3}$$

$$s_{ij}^{R} = \frac{1}{m}\sum_{k=1}^{m} \frac{\min\left\{p_{ik}, p_{jk}\right\}}{\max\left\{p_{ik}, x_{jk}\right\}}, \text{ wherein or } p_{ik} \neq 0 \text{ or } p_{jk} \neq 0 \tag{4}$$

Greater value of s_{ij} between pair of objects denotes greater degree of their similarity (proximity).

Among Polish scientists measure (1) is called Chomątowski's and Sokołowski's measure [Panek 2009][7] and measure (2) is named Nowak's measure [Błaczkowska and Grześkowiak 2009, Panek 2009][8]. It should be noted, however, that both indices are known for many decades in the English language literature. Measure (3) analyzed in many research, e.g. of Johnston [1976], Wolda [1981], Pontasch, Smith and Cairus [1989], was introduced by Renkonen [1938]. Similarity coefficient (4) considered among

[6] See for example Bożek [2010].
[7] The study [Panek 2009] refers to article of Chomątowski and Sokołowski [1978].
[8] These papers refer to Nowak [1990] and Nowak [1981] respectively.

others in studies of Johnson [1976] and Pontasch, Smith and Cairns [1989] was probably first proposed by Pinkham and Pearson [1976].

It seems that for the international comparison of household expenditure structures one can use measures that are based on the relative differences. In order to explain this, consider two groups or expenditures: one representing a large share of total households' expenditures (i.e. expenditure on food) and the second – small share (i.e. expenditure on communication). Indeed difference of one percentage point in the first case is not as significant as in the second one.

In this study two distances corresponding to each other – absolute and the relative one are used. In the context of analyzed data symbols in formulas (1) and (2) have following meanings: p_{ik} – share of k-th group of consumption expenditure in i-th country, $i = 1, 2, \ldots, n$, $k = 1, 2, \ldots, m$; p_{jk} – share of k-th group of consumption expenditure in j-th country, $j = 1, 2, \ldots, n$, $k = 1, 2, \ldots, m$; $n = 23$ – the number of investigated countries; $m = 12$ – the number of group of expenditures according to the COICOP classification.

In order to establish discrepancies between Poland and other EU countries measure (2) was applied. In addition distances were measured between structures of countries which joined the EU in 2004 and average structure of pre-2004 member states.

RESULTS AND DISCUSSION

Analysis of data for the EU-27 in 2011 shows that the most important item on the household budget was housing, water, electricity, gas and other fuels. The next largest items were everyday expenditures, namely food and non-alcoholic beverages and transport. This is illustrated in Figure 1.

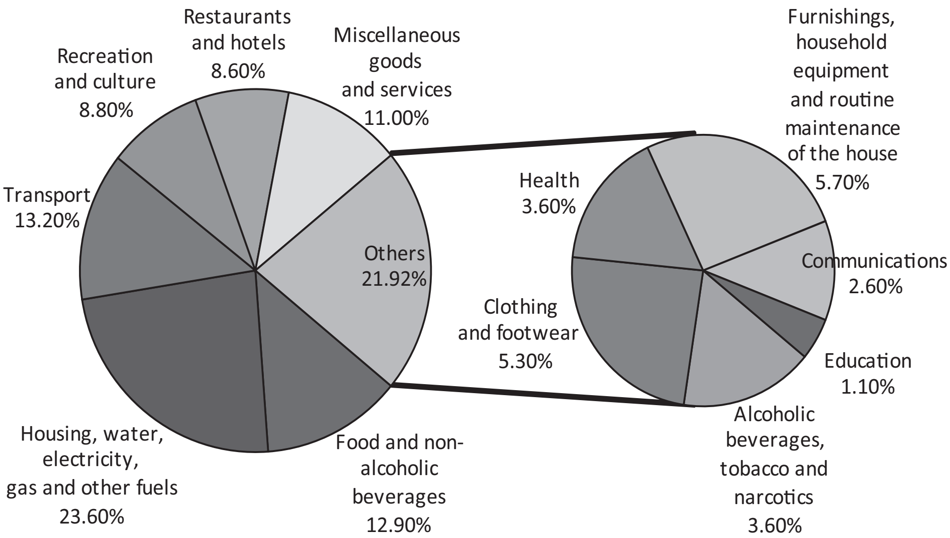


Fig. 1. Breakdown of household consumption expenditure of EU-27 (2011)
Source: Own elaboration based on Eurostat data.

The proportion of household expenditure devoted to each of the consumption categories varied greatly between member states. For example the highest proportion of total expenditure on housing, water, electricity, gas and other fuels in 2011 was recorded in Denmark (29.1%), which was 2.4 times as high as in Malta (12.2%). The shares of next important item, relating to food and non-alcoholic beverages, ranged from below 10% in Luxembourg, Austria and the United Kingdom to about 20% in the Baltic States. It should also be mentioned that in countries, such as Austria and the United Kingdom, proportions of expenditure on recreation and culture were higher than spending on food and non-alcoholic beverages. Significant differentiation concerns shares of household expenditure devoted to education, alcoholic beverages, tobacco and narcotics, restaurants and hotels. Values of coefficient of variation for above items exceed 40%. For instance, the highest proportion of expenditures on restaurants and hotels was recorded in Cyprus (15.3%) and the smallest – in Poland (2.8%).

In the study the average expenditure structure of households in pre-2004 member states was compared with structures in countries which joined the EU in 2004. Table 1 shows distances calculated using formula (2). The values in first column and first row are shown in ascending order. They indicate the distance from average structure of EU-15 countries.

Table 1. Values of distance measure (2) for new EU members and EU-15[a] average

d_{tj}^{R}	EU-15	SI	MT	CY	SK	HU	PL	CZ	LV	EE
EU-15	0	0.110	0.128	0.205	0.209	0.210	0.219	0.239	0.241	0.242
Sl	0.110	0	0.160	0.201	0.146	0.136	0.177	0.198	0.175	0.197
MT	0.128	0.160	0	0.184	0.186	0.191	0.211	0.252	0.257	0.279
CY	0.205	0.201	0.184	0	0.248	0.239	0.245	0.290	0.202	0.249
SK	0.209	0.146	0.186	0.248	0	0.139	0.165	0.220	0.193	0.279
HU	0.210	0.136	0.191	0.239	0.139	0	0.165	0.191	0.156	0.208
PL	0.219	0.177	0.211	0.245	0.165	0.165	0	0.245	0.188	0.263
CZ	0.239	0.198	0.252	0.290	0.220	0.191	0.245	0	0.268	0.156
LV	0.241	0.175	0.257	0.202	0.193	0.156	0.188	0.268	0	0.186
EE	0.242	0.197	0.279	0.249	0.279	0.208	0.263	0.156	0.186	0

[a]CY denotes Cyprus, CZ – Czech Republic, EE – Estonia, HU – Hungary, LV – Latvia, MT – Malta, PL – Poland, SK – Slovakia, SI – Slovenia.
Source: Authors' computation based on Eurostat data.

The results presented in Table 1 show that in 2011 Slovenia and Malta were the most similar, while Estonia with Latvia – the most distant to the EU-15 consumption expenditure structure. Situation of Polish and Czech households was also different than in the countries that formed EU before 2004. Estonia, Latvia and Poland differed in relation to the EU-15 mainly due to high shares of expenditures on food, non-alcoholic and alcoholic beverages, tobacco and narcotics and low share of furnishings, household equipment and routine maintenance of the house, recreation and culture. There were other causes of dissimilarity in Czech Republic, where the proportion of household expenditure devoted to food and non-alcoholic beverages only slightly exceeded average one in EU-15, but shares of recreation and culture, housing, water, electricity, gas and other fuels were higher than in the average one.

In the next step of the analysis, distances for all considered member states were calculated. Matrix of distances is presented graphically in Figure 2: white colour denotes values under 0.17, light gray – 0.17–0.24, dark grey – 0.24–0.31, black – above 0.31. The lighter colour in Figure 2 indicates greater similarity of structures in the analyzed countries.

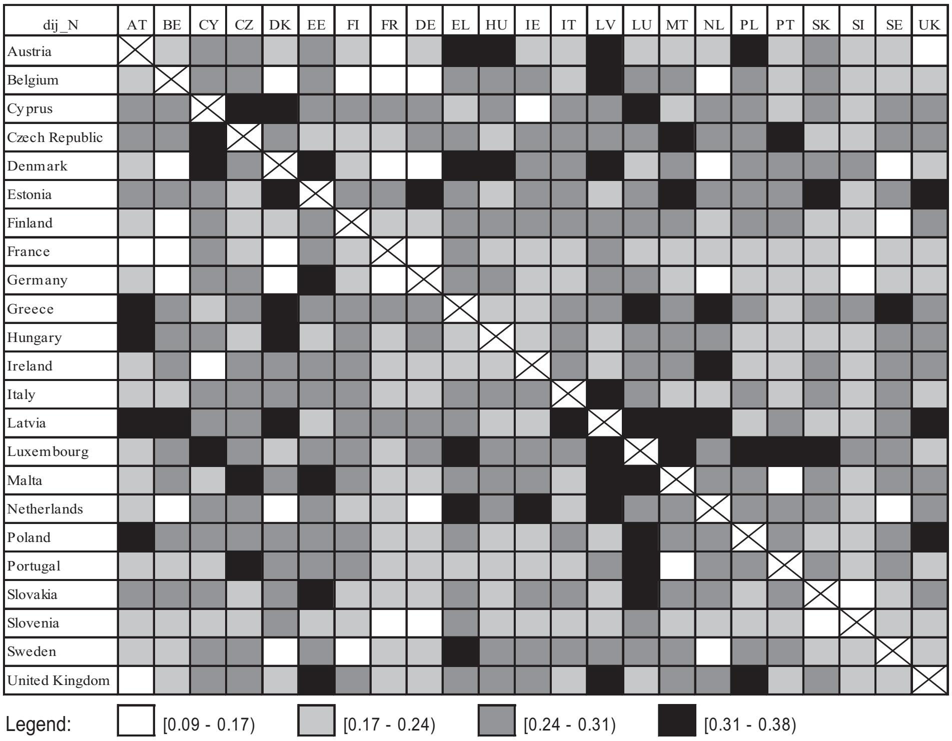


Fig. 2. Matrix of distances between EU member states
Source: Authors' elaboration based on Eurostat data.

There were found some "anomalies" which offer additional potential for analysis and research. For example Estonia for which the country with the most similar household expenditure structure proved to be the Czech Republic. Both countries displayed similar, highest in EU, proportion of total expenditure on alcoholic beverages, tobacco and narcotics (above 9%). Moreover shares of health, communications, education, restaurants and hotels were almost identical in Estonia and the Czech Republic. South European countries including Cyprus, Greece, Portugal and Malta which displayed similar share of transport and communication in consumer expenditures bear in this category surprisingly close comparison to Ireland.

The main objective of this study is to determine the countries that are most similar to Poland with respect to household expenditure structure. Therefore, based on the formula (2), calculated distances between Poland and other EU member states are shown on the map presented in Figure 3[9].

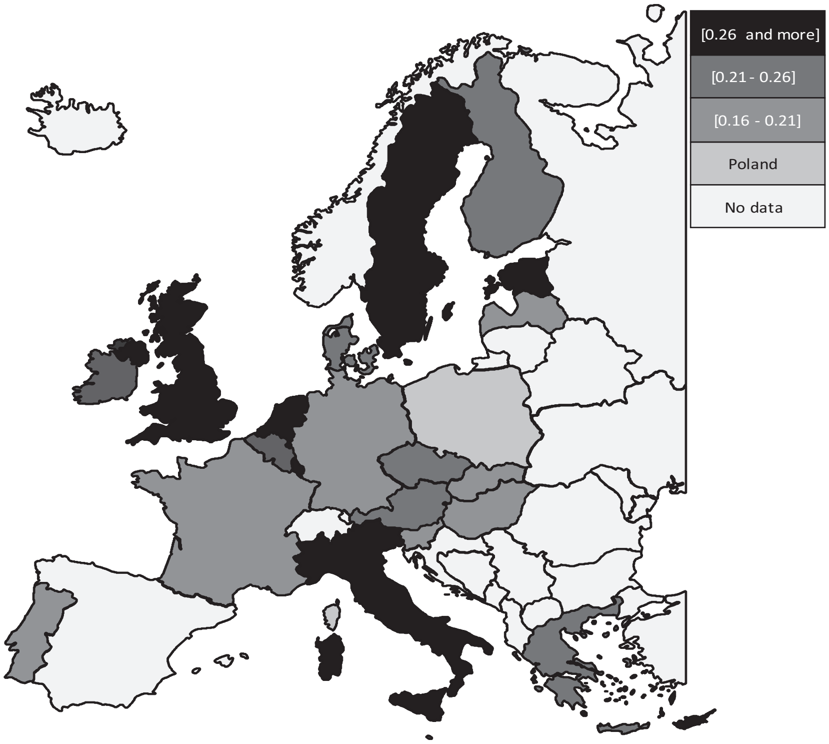


Fig. 3. Map of distances between Poland and other UE member states
Source: Authors' elaboration based on Eurostat data.

The information provided on the Figure 3 show that most similar to Poland were Hungary and Slovakia. In all these countries proportion of household expenditure for food, non-alcoholic and alcoholic beverages, tobacco and narcotics exceeded the average level in the European Union. The same applies to such COICOP classification items as communication, health and education. Relatively lower than in most member states were expenditures on clothing, footwear, restaurants and hotels. The remaining shares of expenditures in these three countries oscillated around the average one in EU.

---

[9] Light gray colour concerns countries not included in the research (i.e. Bulgaria, Lithuania, Romania, Spain) and non-EU countries.

The most distant countries in relation to Poland were found to be Austria followed by Luxembourg, United Kingdom, Italy and the Netherlands. The proportion of total expenditure on food and non-alcoholic beverages in Poland was about twice higher than in Austria, Luxembourg and United Kingdom. Moreover shares of expenditures on health, communications, miscellaneous goods and services in Poland exceeded those ones in Austria, Luxembourg and United Kingdom. Proportions of total expenditure on housing, water, electricity, gas and other fuels were very close in those four countries, but Polish households spent relatively less on clothing, footwear, transport, restaurants and hotels than Austrian, British and Luxembourgian. Graphical comparison of household's expenditure structures in Austrian and Polish households are presented in Figure 4.

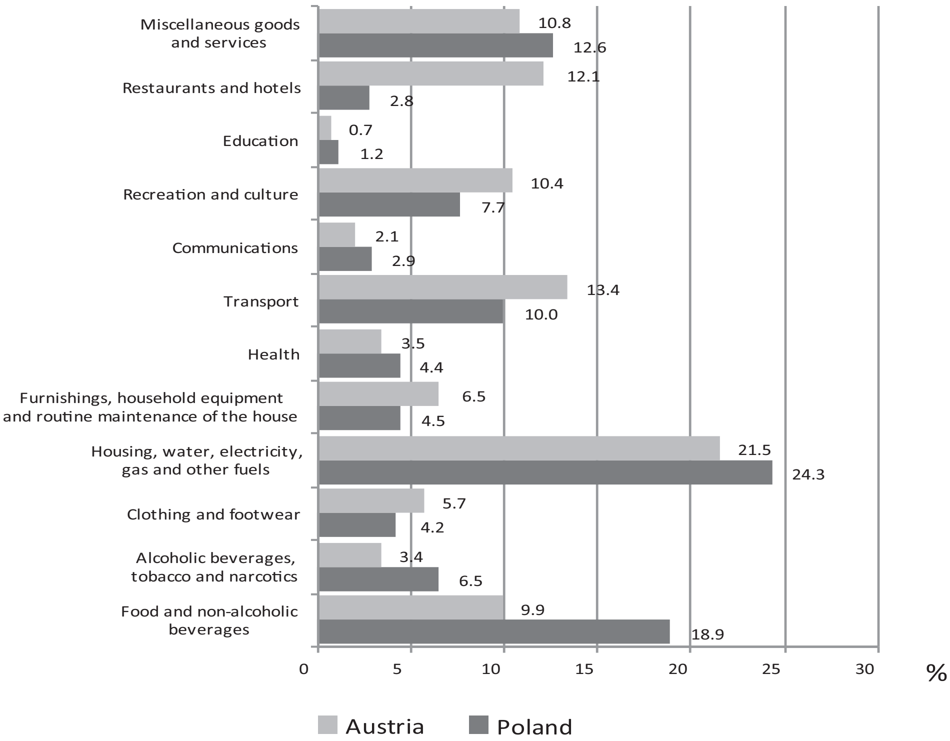


Fig. 4. Structures of expenditures in Austria and Poland
Source: Authors' elaboration based on Eurostat data.

It will be safe to state that certain values shown in Figure 4 can result from various level of income being at disposal of households in analyzed countries. Studies presented by Bartošová and Bína [2011], Utzig [2011], Dudek, Koszela and Landmesser [2012] indicate existing correlation between level of household income and the structure of expenditures. The results of studies conducted by Podolec, Woźniak and Zając [2003] also indicate that demographical composition of household affect the distribution of spendings. Finally, the prices of goods and services also play important role in shaping the structure of household spendings [Dudek 2011].

SUMMARY AND CONCLUSIONS

The largest part of household expenditures in most EU countries was distributed for housing, water, electricity, gas and other fuels. Budgets in new members states were also heavily burdened by expenditures on food and non-alcoholic beverages.

The proportion of household expenditure devoted to each of the consumption categories varied greatly between member states. To express the degree of dissimilarity of consumer baskets, the authors have used the distance indices, for which a value closer to zero indicates higher similarity of household expenditure structure.

It was found that among new UE members states Slovenia with Malta were the most similar and Estonia with Latvia were the most distant from the EU-15 consumption expenditure structure. Generally, shares of household expenditure devoted to alcoholic beverages, tobacco and narcotics in post-communist countries were higher than in most old UE members states, whereas Eastern and Central European households did not spend as much on restaurants and hotels as EU-15 average.

The most similar consumer basket structure to Poland was recorded in Hungary and Slovakia followed by the Slovenia and Latvia. A higher share of food, non-alcoholic and alcoholic beverages, tobacco, narcotics, communication, health and education in the consumer basket as compared to the European average is a common feature of these countries. The most differing consumer structures compared to that of Poland were Austria, Luxembourg and United Kingdom. Conducted studies did not allow authors of this article to arrive upon conclusion that structure of household expenditures reflects division for new and old member states of the European Union. Characteristic of households' spendings in Poland bear closer similarity to spendings in Germany, Ireland and France rather than those in Cyprus, Estonia and Czech Republic. It requires further analysis to establish the causes of diversification of households' expenditures structures. Also dynamic analysis of households' spendings makes another interesting issue for further studies.

REFERENCES

Atkinson T., Cantillon B., Marlier E., Nolan B., 2005. Social indicators. The EU and Social Inclusion, Oxford University Press, Oxford.

Badach E., 2012. Zastosowanie metod statystycznej analizy wielowymiarowej do badania struktury wydatków gospodarstw domowych *(Applying methods of multidimensional statistical analysis for studying the structure of household expenses).* Metody ilościowe w badaniach ekonomicznych *(Quantitative Methods in Economics)* 13 (1), 29–35 (in Polish).

Bartošová J., Bína V., 2011. Dependence of expenditures of the Czech households on financial power. Aplimat. Slovak University of Technology, Bratislava, 1441–1450.

Binderman Z., Borkowski B., Szczesny W., 2010. Metody wizualizacji danych w analizie zmian poziomu i profilu konsumpcji w krajach UE *(Visualization methods of data in analysis of consumption level and profile in EU countries).* RNR Seria G, Ekonomika Rolnictwa *(Annals of Agricultural Science Series G Agricultural Economics)* 97 (3), 30–42 (in Polish).

Błaczkowska A., Grześkowiak A., 2009. Analiza porównawcza struktury wieku mieszkańców Polski *(Comparative analysis of the population age structure in Poland).* Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu (Research Papers of Wrocław University of Economics) 37, 71–83 (in Polish).

Bożek J., 2010. Typologia krajów Unii Europejskiej pod względem podobieństwa struktury agrarnej *(Typology of European Union countries with respect to similarity of agrarian structure)*. Acta Sci. Pol., Oeconomia 9 (3), 17–25 (in Polish).

Chomątowski S., Sokołowski A., 1978. Taksonomia struktur *(Taxonomy of structures).* Przegląd Statystyczny *(Statistical Review)* 2, 217–222 (in Polish).

Dudek H., 2011. Skale ekwiwalentności – estymacja na podstawie kompletnych modeli popytu *(Equivalence scales – estimation on the base of complete demand systems).* Wydawnictwo SGGW, Warszawa (in Polish).

Dudek H., Koszela G., Landmesser J., 2012. Wpływ sytuacji dochodowej na strukturę wydatków gospodarstw domowych *(The influence of incomes on the structure of households' expenditures).* Zeszyty Naukowe SGGW w Warszawie, Ekonomika i Organizacja Gospodarki Żywnościowej *(Scientific Paper of WULS. Economics and Organization of Food Economy)* 97, 237–247 (in Polish).

Johnston J.W., 1976. Similarity indices I: What do they measure? Pacific Northwest Laboratories, Battelle, Washington.

Kompa K., Witkowska D., 2009. Comparison of the socio-economic development level of European Union States: the distance measures application. Polish Journal of Environmental Studies 18 (3B), 391–397.

Kukuła K., 1996. Statystyczne metody analizy struktur ekonomicznych *(Statistical methods of analysis of economic structures).* Wydawnictwo Edukacyjne, Kraków (in Polish).

Kukuła K., 2010. Miary badania struktur *(Measures of structures analysis)* (in:) K. Kukuła (Ed.) Statystyczne studium struktury agrarnej w Polsce *(Statistical study of the agrarian structure in Poland).* Wydawnictwo Naukowe PWN, Warszawa, 27–55 (in Polish).

Nowak E., 1981. Porównywanie obiektów społeczno-gospodarczych ze względu na ich strukturę *(Comparing the socio-economic objects due to their structure).* Wiadomości Statystyczne (Statistical News) 7, 21–25 (in Polish).

Nowak E., 1990. Metody taksonomiczne w klasyfikacji obiektów społeczno-gospodarczych *(Taxonomic methods in the classification of socio-economic objects*). PWE, Warszawa (in Polish).

Panek T., 2009. Statystyczne metody wielowymiarowej analizy porównawczej (*Statistical methods of multidimensional comparative analysis*). Oficyna Wydawnicza SGH, Warszawa (in Polish).

Pinkham C.F., Pearson J.G., 1976. Application of new coefficient of similarity to pollution surveys. Journal of the Water Pollution Control Federation 48, 717–723.

Podolec B., Woźniak M., Zając K., 2003. Analiza struktur dochodów i wydatków gospodarstw domowych w świetle cech społeczno-demograficznych (*Analysis of households income and spendings structure and their socio-economic attributes)*. Prace Naukowe Akademii Ekonomicznej we Wrocławiu (Research Papers of Wrocław University of Economics) 988, 124–133 (in Polish).

Pontasch K.W., Smith E.P., Cairns J. Jr., 1989. Diversity indices, community comparison indices and canonical discriminant analysis: interpreting the results of multispecies toxicity tests. Water Research 23, 1229–1238.

Renkonen O., 1938. Statistisch-ökologische Untersuchungen über die terrestrische Käferwelt der finnischen Bruchmoore. Ann. Zool. Soc. Zool.-Bot. Fennicae Vanamo 6, 1–231.

Slesnick D.T., 2000. Living Standards in the United States: a consumption-based approach. AEI Press, Washington.

Stejskal L., Stávková J., 2012. European households' consumption expenditures in the decade 2000–2009. Acta Universitatis Agriculturae et Silviculturae Mendeleinae Brunensis 60 (7), 299–305.

Stigler G., 1954. The early history of empirical studies of consumer behaviour. Journal of Political Economy 62, 95–113.

Utzig M., 2011. Zależność między przychodami a strukturą konsumpcji gospodarstw domowych w Polsce *(The dependence between revenues and structure of consumption expenditures in households in Poland)*. RN SERiA (Scientific Annals SERiA) 13 (2), 509–514 (in Polish).

Wolda H., 1981. Similarity indices, sample size and diversity. Oecologia 50, 296–302.

PORÓWNANIE STRUKTURY WYDATKÓW GOSPODARSTW DOMOWYCH W WYBRANYCH KRAJACH UNII EUROPEJSKIEJ

Streszczenie. W artykule podjęto problem podobieństw i różnic w zakresie struktur wydatków gospodarstw domowych w krajach Unii Europejskiej. Problem ten jest ważny w kontekście wyrównywania poziomu życia krajów członkowskich, co stanowi jeden z elementów realizacji polityki spójności społecznej i ekonomicznej UE. Stwierdzono, że do porównań międzynarodowych powinno wykorzystywać się miary wskazujące na poziom względnych różnic między strukturami. Z tego powodu analizę przeprowadzono na podstawie jednej z tego typu miar, znanej w polskojęzycznej literaturze przedmiotu jako miara Nowaka. Stwierdzono, że do krajów o podobnych do Polski strukturach wydatków konsumpcyjnych należy zaliczyć Węgry i Słowację. Najbardziej odmienne w stosunku do polskich gospodarstw domowych okazały się być zachowania konsumpcyjne w Austrii, Luksemburgu i Wielkiej Brytanii.

Słowa kluczowe: porównanie struktur, wydatki gospodarstw domowych, podobieństwa między krajami

Accepted for print – Zaakceptowano do druku: 28.06.2013

ACTA SCIENTIARUM POLONORUM Oeconomia 12 (3) 2013, 17–28

ORGANIZATION STRUCTURE IN RELATION TO THE SYSTEM OF INTEGRATED PRODUCTION IN FARMS

Maria Golinowska, Michał Kruszyński
University of Life Sciences in Wrocław

Abstract. The aim of the work is to present relation between the structure of farm organization, determined according to the economic system and the system of integrated production in a large-scale farm 2004–2011. The material for investigation originated from farm accounting data and from the charts of fields history. It was worked out with the use of vertical and horizontal analysis, as well as synthetic analysis 1st degree by B. Kopeć. Many-year-lasting analysis proved that the farm maintained animal breeding – plant production, namely rape – bee, highly intensive system, which is friendly to the environment. The rules of integrated production have been followed by that farm for more than 10 years and they involve: combination of pesticide treatments with mineral fertilization, appropriate crop rotation, which improves soil richness, application of liming and organic fertilization on the area of more than 25% of arable land. The economic system allows to apply integrated production.

Key words: organization structure, slant of the farm economy, directions of production, integrated production, intensity of organization

INTRODUCTION

Farm management system is most often defined as the management of agricultural production area regarding plant and animal production, as well as processing of their products, evaluated by ecological and economic criteria. Three systems of management can be distinguished in modern farming:
– conventional (intensive, industrial, classical, industrialized etc.),
– ecological (biological, organic, alternative, biological-organic, naturalized etc.),
– integrated (harmonized, sustainable, ecological-economic etc.).

The basis for distinguishing the systems mentioned above is the degree to which agriculture relies on industrial means of production, mainly mineral fertilizers and pesticides,

Corresponding authors: Institute of Economics and Social Sciences, University of Life Sciences in Wrocław, Pl. Grunwaldzki 24 A, 50-363 Wrocław, Poland, e-mail: maria.golinowska@up.wroc.pl, michal.kruszynski@up.wroc.pl

as well as its influence on the natural environment. Commonly accepted definitions of farming systems are as follows:

- conventional farming – management system timing at making maximum profit, obtained due to high efficiency of plant and animal production; that efficiency is achieved bin specialized farms, applying technologies of production based on considerable consumption of industrial means of production and very amount of labour;
- organic farming – management system which ensures permanent soil fertility, animals' health and high biological quality of farm products due to activation of natural mechanisms of production, which favour the use of natural, not technologically processed means;
- integrated farming – management system which enables achievement economic and ecological goals through purposeful application of modern technologies of production, systematic improvement in production techniques and implementation of different forms of the advancement in biological sciences to facilitate realization of its aims [Kuś 1995, Zimny 2007].

In economics of agriculture organization structure is defined with the use of management system which is a synthetic measure of farm organization. According to Kopeć [1968], organization structure involves sowing structure and livestock population, while organization structure involves the structure of sown area and land use, as well as the structure of the structure and population of livestock, while structure determinant is the management system, consisting of:

- slant, which means priority (dominance) of sectors, i.e. plant or animal production;
- direction of organization (production), which determines the dominance of production branch, within the frames of particular sector (cereals, root crop, forage crops and others – in plant production and cattle, swine, sheep and others – in animal production). To determine the position of a branch within the frames of a sector, B. Kopeć proposed the system of boundary indicators. Thus, cereals branch takes place when the share of cereals in sowing structure exceeds 66%, root crop – 25% and forage crop – 35% of arable land (sown areas and green areas). In animal production, the cattle branch requires exceeding 66% of livestock population in large units (SD), swine – 20% SD, sheep – 10% SD, and summary population should not be lower than 50 SD per 100 ha of arable land (AL);
- intensity of organization, while level is determined on the basis of appropriate coefficients, which cover amounts of labour and materials which are indispensible in the process of production.

B. Kopeć [1968] accepted, after Ernste Laure, as a basic unit the level of 1 ha cereals cultivation layout and determined its multiple for 1 ha of other crops, as well as for 1 SD of animals. Those coefficients were modified in the subsequent years, yet the rules have not been changed. Later, there was developed the formula for calculation of intensity of farm organization (I_g):

$$I_g = I_r + I_z \tag{1}$$

while:

$$I_r = \sum_{p=1}^{m} p \cdot s \quad \text{and} \quad I_z = \sum_{q=1}^{n} q \cdot t \tag{2}$$

where: I_r – intensity of plant production;
p – percentage of particular plants (groups of plants sown on cultivated areas – CA, or on arable land – AL);
s – cultivation intensity index;
I_z – intensity of animal production;
q – SD number of particular animal species per 100 ha AL (ground cultivation);
t – animal production intensity index.

Intensity level was determined in point ranges [Kopeć 1983]:
- extensive: 0–200,
- low intensive: 201–250,
- medium intensive: 251–300,
- medium high: 301–350,
- higher intensive 1: 351–400,
- higher intensive 2: 401–450,
- very high intensive 1: 451–500,
- very high intensive 2: 501–550,
- special high intensive: over 550.

Integrated production (IP) is the management system in which the producer carries out plant production with the use of sustainable technological and biological progress in cultivation, plant protection and fertilization, paying a special attention to protection of natural environment and people's health. Integrated production allows to obtain farm products of the highest biological and nutritive quality, safe to human health. In Poland, IP was introduced on the basis of law (principle) involving plant protection passed in 2003[1] and guidelines of detailed methodology of integrated production drew up for particular plants by Main Inspectorate of Plant Health and Seed Inspection[2].

Appropriately conducted plant cultivation, according to the principles of Good Practice in Plant Protection, constitutes the base for obtaining high yields of good quality, safe for the consumers. The basis to take the decision about plant protection in field cultivation should be the rules of integrated protection, i.e. the conception regarding plant protection which was developed at the end of 1950s [Stern, Smith and Van den Bosch 1959], and since 1976 this conception has been accepted as an official direction of research [Olszak et al. 2000].

Integrated plant protection (IPM) consists in purposeful application of combined biological, biotechnological, chemical, physical, cultivation and breeding methods in which the use of chemical plant protection is reduced to indispensable minimum and only applied to prevent excessive pest infestation, resulting in economic failure.

---

[1] Plant Protection Act from 18th December 2003 (Journal of Laws from 2008 No 133, Item 849).
[2] Web page of Państwowa Inspekcja Ochrony Roślin i Nasiennictwa – PIORiN http://piorin.gov.pl/index.php?pid=1477 (Last modification 25.04.2013).

The conception of integrated plant protection (IPM) has become the basis for elaboration of the assumptions and popularization of integrated production (IP) food crops and garden plants [Boller et al. 2004, Pruszyński, Zych and Nawrot 2004]. The principles of integrated plant protection are described in the Annex to III Directive 2009/128/WE[3]. There are 8 principles of plant protection [Golinowska 2012]. The basis for good elaboration of IPM program is gaining significant information, which are to be used in decisive process of production. The order of gaining information is as follows:
- identification of a plant pest,
- determination of its population,
- evaluation of damages and losses (economic approach),
- review of accessible methods of plant protection
- determination of the possibility of interaction: plant pests – other pests – useful organisms,
- analysis of local environmental and social-legal restrictions as well as assessment of interaction with other treatments,
- taking decision.

IPM conception has become the main direction of Food and Agriculture Organization (FAO) and World Health Organization (WHO) activity. Integration of methods is realized on different levels: pest – field – system of production. The most difficult to achieve is level three (system of production), since it deals with the relation between a pest and its control in different systems of cultivation.

The aim of the article was determination of the relation between farm organization structure and the system of integrated production.

MATERIAL AND METHODS

The material for examination was purposefully selected large-scale farm in Wielkopolskie Voivodeship. The farm has been run for about 15 years and it has introduced integrated production. The source material comes from farm accounting data and from the charts of fields history from 2004–2011. It has been elaborated with the use of the following methods:
- synthetic analysis 1st degree by Kopeć [1983],
- vertical and comparative analysis by Urban [1981] and descriptive method.

RESULTS

The examined farm is located in Wielkopolskie Voivodeship, in Gostyń County. The farm is Ltd company. In 2007 and 2011 the farm area was diminished to amount in the last year 1,518.6 ha (Table 1). Valuation ratio of agricultural production area (WWRPP)

[3] Directive of the European Parlament and of the Council of the 21st October 2009 establishing a framework for Community action to archieve the sustainable use of pesticides (Official Journal of the EU L 309/71).

for the region the farm is located in, according to Witek [1984], ranged 85.7 points, out of which 64.8 points refer to the soil quality and the remaining 20.9 points are connected with agro-climatic conditions. The farm employs from 1.8 to 2 persons per 100 ha AL. In 2006–2007 the grounds owned by the company accounted for 15.8% of total farm area, while in 2008–2009 the share of tenant farming decreased to 68.4% and in the subsequent years owned grounds ranged 56.8%. The organization structure of the company, determined according to Kopeć [1983], is shown in Table 3. In 2006 and 2007 the farm featured a plant slant and in the subsequent years the numbers of livestock increased to 52 SD per 100 ha AL and then the slant of the farm was changed to animal breeding – plant production. In plant production the main organization direction, in 2004–2012 was rape and white beets. In the structure of area under crop, cereals provided from 44.4 to 56.9% of arable land, rape share ranged from 25.3 to 38.2% and white beets occupied about 10% (Table 2).

Organization intensity, measured in points [Kopeć 1983], increased from 227.1 to 316.8 points. The examined farm changed its management system from crop rape – beet A, into breeding – crop rape – beet B1 (Table 3).

Table 1. Structure of land use in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Area GO [ha]	2381.4	2381,4	2381.4	1827.8	1827.8	1827.8	1827.8	1381.5
TUZ [ha]	105.5	105.5	105.5	105.5	100.7	100.7	100.7	100.6
including:								
– meadows	80.7	80.7	80.7	78.5	78.5	78.5	78.5	46.5
– pastures	24.8	24.8	24.8	22.2	22.2	22.2	22.1	18.0
Orchards [ha]	1.9	1.9	1.9	0.8	0.8	0.8	0.8	0.0
Total AL [ha]	2492.4	2492.4	2492.4	1929.3	1929.3	1929.3	1929.2	1446.0
Other land use [ha]	81.0	81.0	81.0	86.9	63.9	86.9	86.6	72.6
Total area [ha]	2573.4	2573.4	2573.4	2016.2	2016,2	2016.2	2015.8	1518.6
Share of tenant farming [%]	84.2	84.2	84.2	84.2	68.4	68.4	43.2	43.2

Source: Own research.

Table 2. Structure of area under crop in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Cereals [%]								
including:	50.7	51.1	52.7	56.9	56.9	51.7	50.6	44.7
– wheat	49.0	48.0	48.4	46.6	46.6	49.9	49.6	43.4
– maize	1.7	2.5	4.4	9.2	9.2	–	–	–
Rape [%]	27.1	20.6	25.3	28.6	28.6	26.9	32.0	38.2
White beet [%]	10.2	11.8	9.7	9.9	9.9	9.0	12.1	7.0
Fodder plants [ha]	10.0	8.2	11.1	4.6	4.6	12.4	5.3	6.9
Other [ha]	2.1	2.3	1.1	–	–	–	–	2.5
Total [ha]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Elaboration by the author.

Table 3. Organization structure in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Slant of the farm management	H-R	R-H	R	R	H-R	H-R	H-R	H-R
Direction of organization of plant production	rape-beet	rape-beet	rape-beet	rape-beet	rape-beet	rape -beet	rape-beet	rape
Livestock population [SD · 100 ha^{-1}]	52.5	45.8	34.0	34.3	57.0	52.0	52.0	52.0
Intensity of plant production [points]	168.0	167.4	15.9	164.7	165.7	161.0	177.0	178.8
Intensity of animal production [points]	120	88.4	89.2	62.4	151.0	138.0	138.0	138.0
Management system	H-R rape – beet B1	R-H rape – beet B1	R rape – beet A	R rape – beet A R	H-R rape – beet B1	H-R rape – beet B1	H-R rape – beet B1	H-R rape – beet B1

Source: Elaboration by the author.

The structure of area under crop in the analyzed farm has been maintained for many years as shown in Table 2. The trait of this structure is 50% share of cereals and high share of rape, ranging from 25.3 to 38.2% of arable land, as well as cultivation of fodder plants (mainly *Papilionaceae*). Such a structure of the area under crop ensures relatively proper crop rotation. Cultivation technology applied in the farm contains the elements of integrated production (Figs 1, 2 and 3), which consist in combination of pesticide treatments with fertilization and introduction of fertilization alone. A special attention should be paid to liming and organic fertilization with poultry dung. Nitrogen fertilizer and microelements fertilizer are applied as foliars with the use of Tecoma laser 5000 sprayer. In 2012 the cultivated plants in the farm were treated with the following amount of kg of NPK per ha and kg of SA (sactive substance) of pesticides: wheat: NPK – 95 – 76.5 – 65.7, SA – 2.28; rape: NPK – 257 – 76.5 – 135.7, SA – 2.46; white beet: NPK – 260 – 140 – 365, SA – 6.57.

Fifteen years ago the farm introduced the system of zero-tillage, using modern cultivation technology. The obtained financial result, measured by profit in 2004–2011, ranged from 694.1 to 4,122.2 zł per ha (Table 4). The profit made by the farm was the result of application of integrated production, high fields and efficiency of animal production. The share of production means directly connected with increased yielding in the years subjected to analysis was shown in Table 4. The basis of fertilization planning in the farm was the assessment of soil richness in nutrients, as well as soil reaction. Sustainable fertilization of plants, combining the use of mineral and organic fertilizers, ensures the best production output and it does not become the threat to the environment. The farm obtains much higher yields than average values for the country; in 2012 the yield of wheat amounted 53 dt per ha, maize for grain – 120, peas – 30, rape – 26 and white beet – 960. Milk efficiency per one cow in that year ranged 9,560 l.

The prices obtained from agricultural products in 2006–2012 were considerably higher than average prices for Poland, published by Central Statistical Office, which proves high quality of the products and large, as well as homogenous type of goods. The farm has free choice in the most advantageous transactions involving the sale of farm crops. Appropriate crop rotation, plant fertilization and plant protection ensures advantageous yield size and profit. The farm cares about soil richness applying organic fertilizers such as manure and poultry dung. Manure is used for cultivation of white beet in the dose of 30 t per ha and poultry dung, in the dose of 9 t per ha, is applied on the remaining area under cultivation of white beet and maize. Poultry dung is used in the farm for cultivation of rape, in the dose of 9 t per ha and winter wheat, in the same dose. In 2006, the area of about 1,400 ha was fertilized with poultry dung and the area of about 400 ha was fertilized with manure. Liming was applied on the area of 1,000 ha. This technology of organic fertilization has been applied up till now. As far as operating costs of the farm are concerned, it is possible to notice that in 2004–2008 the share of mineral fertilizers purchase from 23.5 to 8.8% (Table 4) and, therefore, the share of mineral fertilizers was diminishing in favour of organic fertilizers. After that period there was recorded disadvantageous, from the environmental, as well as the farm point of view, increase in the share of purchase costs involving mineral fertilizers, which in 2011 provided for 28.4% in the structure of operating costs. In relation to base year 2004 the share of purchase costs of mineral fertilizers in operating costs increased in the examined period of eight years by 2.6%. It should be stressed that annual liming of soil is applied on the area of about 1,000 ha, destined for winter wheat cultivation. Decrease in mineral fertilization in favour of organic fertilization is one of the elements of integrated production (IP). The analyzed farm maintains the rules of appropriate crop rotation in the process of plant production.

In the case of wheat, technological process of integrated production consists of 12 elements (Fig. 1). Integrated production processes were applied in plant protection (fertilization was combined with pest control treatment and in the case of weed control, herbicide was combined with preparation against lodging), as well as foliar fertilization was combined with microelements nutrition.

Table 4. Costs of operating activities and profit in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Costs of operating activities [PLN · ha^{-1}]	5,382.2	5,838.0	5,292.7	6,947.5	9,303.8	9,275.2	8,886.3	11,909.8
Purchase of plant protection chemicals [%]	17.6	15.3	15.9	26.8	23.3	15.9	17.1	15.8
Purchase of fertilizers [%]	25.8	24.1	23.5	13.2	8.8	21.9	21.3	28.4
Gross profit per 1 ha AL [PLN]	1,201.0	695.1	941.0	2,477.4	422.1	1,528.6	2,587.8	4,122.2

Source: Elaboration by the author.

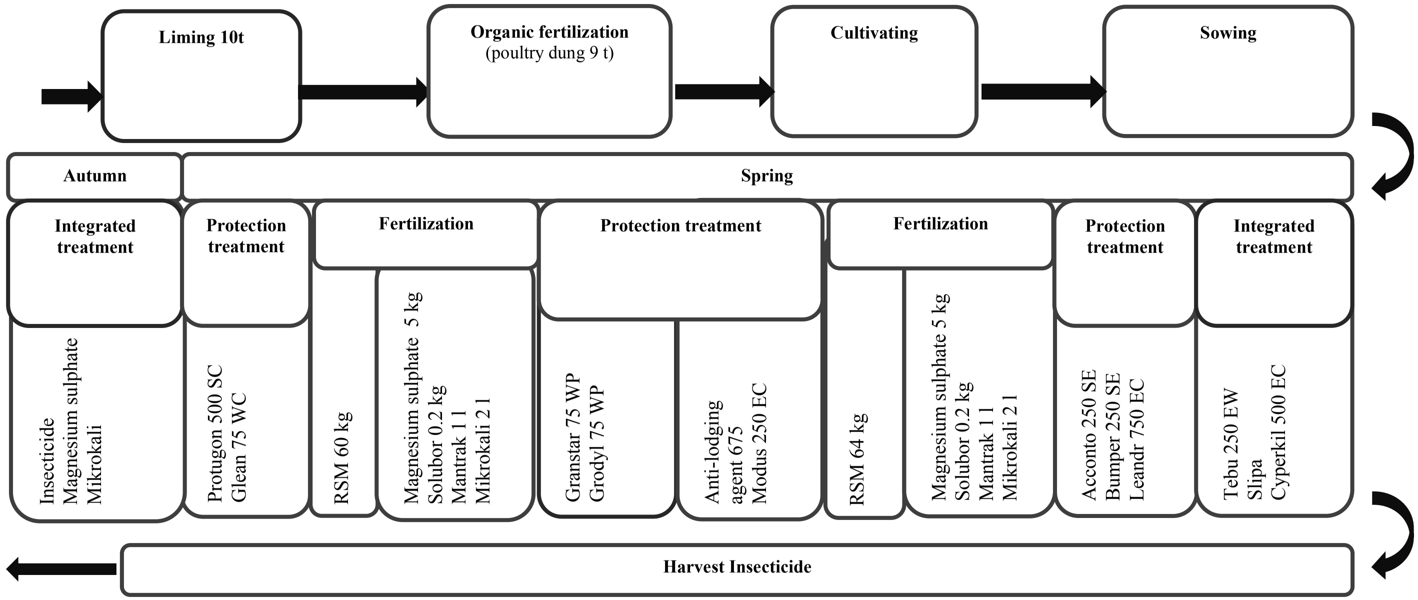


Fig. 1. Technology of wheat production and applied means of production

Source: Elaboration by the author.

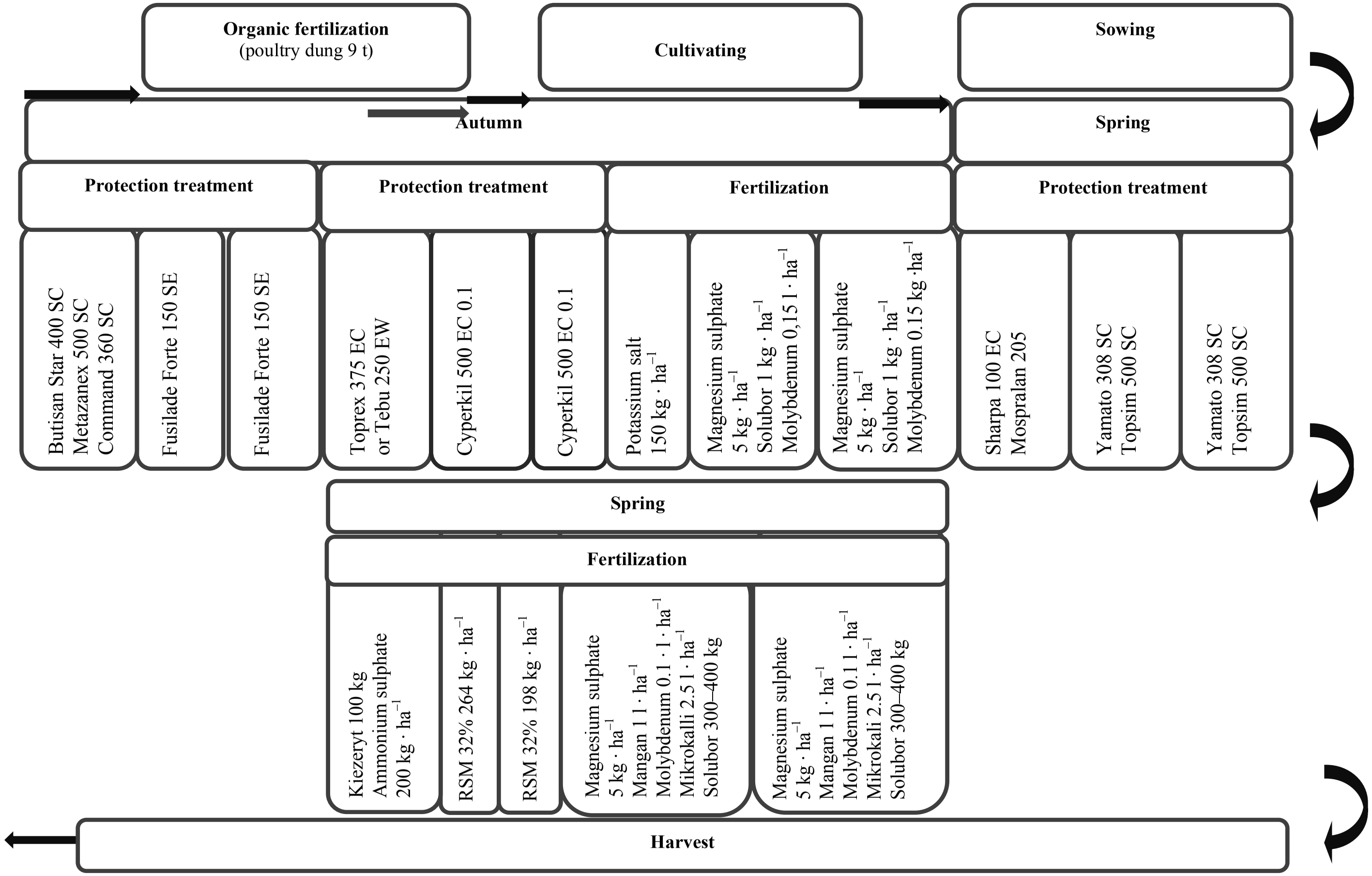


Fig. 2. Technology applied to oilseed rape and the means of production

Source: Elaboration by the author.

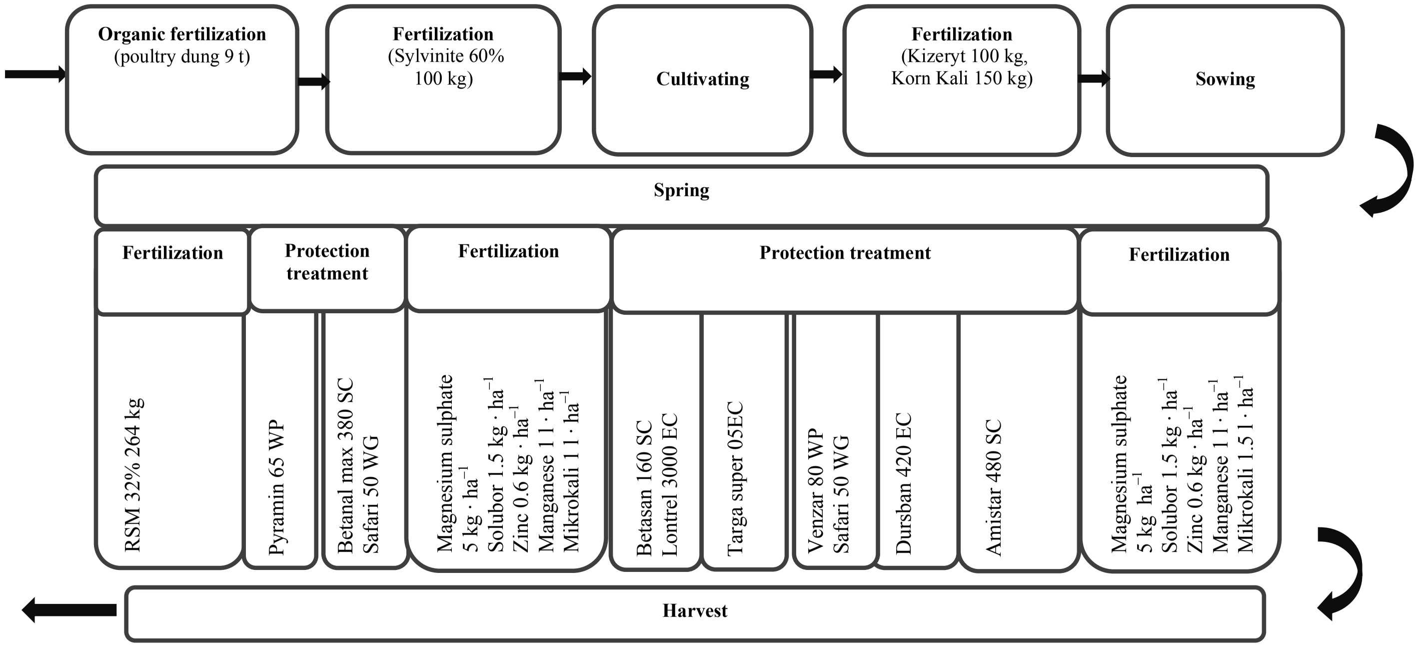


Fig. 3. Technology sugar beet and used the means of production

Source: Elaboration by the author.

CONCLUSIONS

1. The farm subjected to research follows the management system: breeding – plant production, rape – beet, high intensive B1.
2. The share of purchase costs of mineral fertilizers in operating costs of the farm increased merely by 2.6% in 2004–2011, which means that the farm introduces sustainable fertilization, consistent with the rules of integrated production, as well as meets cross-compliance.
3. The existing organization structure of the farm, whose management system, allows to apply the system of integrated production and imposes cross-compliance within the frames of direct payments, introduced in January 2011, as well as to obligatory guarantee, on existing legal provisions which will come into force in 2014, introduction of the rules of integrated plant protection.

REFERENCES

Boller E., Avilla J., Joerg E., Malavolta F., Esbjerg P., Wijnands F.G., 2004. Integrated Production. Principles and Technical Guidelines. 3rd ed. IOBC/WPRS Bulletin 27 (2).

Golinowska M., 2012. Koszty integrowanej ochrony roślin. Postępy w Ochronie Roślin (Progress in Plant Protection) 52 (3), 521–526.

Kopeć B., 1968. Systemy gospodarcze w rolnictwie polskim w latach 1955–1965. PWRiL, Warszawa, 539.

Kopeć B., 1983. Metodyka badań ekonomicznych w gospodarstwach rolnych (Wybrane zagadnienia). Skrypt AR we Wrocławiu 269.

Kuś J., 1995. Systemy gospodarowania w rolnictwie. Rolnictwo integrowane. Mat. Szkol. 42, IUNG Puławy, 38.

Olszak R., Pruszyński S., Lipa J.J., Dębowski Z.T., 2000. Rozwój koncepcji i strategii wykorzystania metod i środków ochrony roślin. Postępy w Ochronie Roślin (Progress in Plant Protection) 40 (1), 40–50.

Pruszyński S., Zych A., Nawrot J., 2004. Prawne i praktyczne aspekty integrowanych technologii produkcji upraw rolniczych w Polsce. Postępy w Ochronie Roślin (Progress in Plant Protection) 44, 300–305.

Stern V., Smith R., Van den Bosch R., 1959. The integrated control concept. Hilgardis 29 (2), 81–101.

Urban M., 1981. Ekonomika i organizacja gospodarstw rolnych. PWN, Warszawa, 71–77.

Witek T. red., 1993. Waloryzacja rolniczej przestrzeni produkcyjnej Polski według gmin. IUNG Puławy, Puławy.

Zimny L., 2007. Definicje i podziały systemów rolniczych. Acta Agrophys. 10, 507–518.

STRUKTURA ORGANIZACYJNA A INTEGROWANA PRODUKCJA

Streszczenie. Celem pracy jest zbadanie zależności między strukturą organizacji gospodarstwa, określoną za pomocą systemu gospodarczego, a systemem integrowanej produkcji w gospodarstwie wielkoobszarowym w latach 2004–2011. Materiał do badań pochodził z danych księgowych gospodarstwa oraz kart historii pól, a opracowano go, stosując metodę analizy pionowej i poziomej oraz analizy syntetycznej I stopnia B. Kopcia. Wieloletnia analiza wykazała, że gospodarstwo utrzymuje system gospodarczy hodowlano-roślinny, rzepakowo-buraczany, wysokointensywny, który jest przyjazny środowisku. Zasady integrowanej produkcji badane gospodarstwo stosuje od ponad 10 lat, a są to: łączenie zabiegów pestycydowych z nawożeniem mineralnym, odpowiednie zmianowanie poprawiające żyzność gleby, stosowanie wapnowania i nawożenia organicznego ponad 25% gruntów ornych. System gospodarczy pozwala na stosowanie integrowanej produkcji.

Słowa kluczowe: struktura organizacji, nastawienie gospodarcze, kierunki produkcji, integrowana produkcja, intensywność organizacji

Accepted for print – Zaakceptowano do druku: 10.09.2013

ACTA SCIENTIARUM POLONORUM Oeconomia 12 (3) 2013, 29–38

THE ATTITUDES OF RURAL POPULATION WITH UNCERTAIN INCOME ON THE LABOUR MARKET

Sławomir Kalinowski
The Poznan University of Life Sciences

Abstract. The article discusses the attitudes of rural population with uncertain income on the labour market. It pays attention to the main source of income in the group under investigation and the influence of education on the occupational activity. The respondents were observed to exhibit mostly passive and conservative attitudes, which were manifested with their poor engagement in searching for employment and with their lack of willingness, skills and ideas for their own business. The authors also observed the growth of unfavourable attitudes among the population without permanent employment, such as the demanding attitude and withdrawal. The article presents the reasons why the people do not look for a job and their attitudes on the labour market. An important element of the article is the perception of the respondents' existence in comparison with members of other households and the methods of coping with the unfavourable living situation.

Key words: economic activity, rural areas, uncertainty of income, quality of life

INTRODUCTION AND RESEARCH METHODOLOGY

The main determinant of the situation of rural households is the situation on the labour market. It may be both the cause and effect of social marginalisation of individuals and their households. The situation on the labour market determines the perception of reality and one's own social position and it also determines the actions taken by the respondents in order to improve their socioeconomic situation. The aim of the article is to indicate the economic activity in view of the population with uncertain income.

The empirical materials included in the article come from the studies conducted as part of the research project No. UMO-2011/01/B/HS5/01034, financed by the National Science Centre and they are only a fragment of them. The research was conducted from the beginning of June to mid-July 2012. The size of the research sample was 1,067 adult respondents, the inhabitants of rural areas in Poland. Information about the population

Corresponding author: Department of Economics, Poznań University of Life Sciences, ul. Wojska Polskiego 28, 60-637 Poznań, Poland, e-mail: kalinowski@up.poznan.pl

was obtained from a questionnaire, which was both a research tool and scenario of the direct interviewing method PAPI (paper and pencil interview). The problems in the questionnaire consisted of nine thematic blocks. The article chiefly uses the information from the third block – The respondents and household members' economic activity.

The research sample was a representative selection according to the formula for an unknown fraction, where the assumed significance level was 0.05 and the population size was retained. Due to the research on an "unknown" population (there is no research on the population with uncertain income, which could enable assessment of the demographic distribution) the only possibility was to apply a quota sample, which was equally divided according to voivodeships and demographic traits (sex, age). The sex was assumed according to the Local Data Bank of the Central Statistical Office. However, it was only an approximate value, because during preparations for the research it was impossible to specify the ratio between the men and women who met the input criteria. The size of the sample in individual voivodeships otherwise depended on the population of rural communes in the voivodeships under study and it ranged from 26 in Lubuskie Voivodeship to 133 in Mazovian Voivodeship. The statistical error for the entire country was assumed to be 3%. Thus, it is possible to assume that the sample is representative, which results from the fact that for the most significant major traits proportions were retained and thus the percentage in the sample was equal to the percentage in the population.

THE RESPONDENTS' SOURCES OF INCOME AS A FACTOR OF SOCIAL INCLUSION/EXCLUSION

One of the elements which enables assessment of the conditions of rural households is the standard and character of their economic activity. The position on the labour market, the type of job and its character considerably determine the households and individuals' chances for development and in consequence, they influence the population's behaviour and its lifestyles. When studying the economic activity of rural population with uncertain income it is possible to notice that the most frequent source of income is a contract of mandate or contract for specific work (15.6% of all respondents). However, it is worth noticing that flexible forms of employment are also very important, e.g. part-time employment (12.5%), temporary employment (12.0%), fixed term employment (4.8%). Slightly less common forms of employment include replacement employment (2.5%), home-based Internet employment and outwork (0.7%) and leasing employment (0.7%). It is possible to observe differences between men and women in their responses concerning the forms of employment and character of the source of income. Men tend to declare illegal employment and self-employment much more often than women (11.4 vs 1.8% and 9.8 vs 4.7%, respectively), but women receive aid from their families more often than men (20.0 vs 9.8%) – Figure 1.

The main source of income is also influenced by education (Table 1). Employment contracts and self-employment can usually be observed in respondents with higher education, whereas illegal employment and seasonal employment are dominant with less qualified people (vocational and lower education). However, it is difficult to determine a linear dependence between one's education and profession.

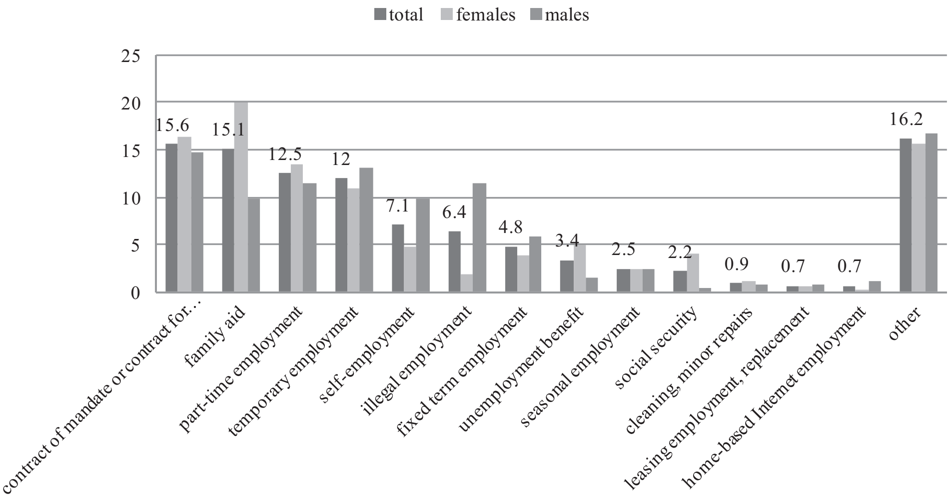


Fig. 1. The respondents' main source of income according to gender (%)
Source: Authors' own research.

Table 1. The respondents' main source of income according to education (%)

Specification	Total	Tertiary	Post-secondary	Vocational secondary	General secondary	Basic vocational	Lower secondary, primary and incomplete primary
Contract of mandate or contract for specific work	15.6	19.8	28.0	24.2	16.2	5.0	3.9
Family aid	15.1	13.5	14.6	14.1	21.1	12.7	14.6
Part-time employment	12.5	15.6	6.1	10.1	22.5	10.8	1.0
Temporary employment	12.0	14.6	13.4	11.5	8.8	14.7	6.8
Self-employment	7.1	12.5	4.9	7.5	5.4	6.2	3.9
Illegal employment	6.4	3.1	6.1	4.8	3.9	11.6	7.8
Fixed term employment	4.8	4.2	3.7	3.5	4.9	4.6	9.7
Unemployment benefit	3.4	2.6	3.7	4.0	2.9	5.0	0
Seasonal employment	2.5	3.6	1.2	1.8	2.5	2.7	2.9
Social security	2.2	0.5	6.1	1.3	2.9	1.5	4.9
Cleaning, minor repairs	0.9	0.5	1.2	0.9	0	1.9	1.0
Leasing employment, replacement	0.7	0.5	1.2	0.4	0	1.2	1.0
Home-based Internet employment	0.7	0.5	0	1.3	0.5	0	1.9
Other	16.2	8.3	9.8	14.5	8.3	22.0	40.8

Source: Authors' own research.

The respondents were considerably interested in changing their current jobs. Their dissatisfaction with the job can be proved by the fact that $^3/_4$ of the respondents were ready to start another job. Moreover, for half of them it would not matter much, if the new job was legal or not. As results from the research, although the respondents are not satisfied with their current jobs and forms of employment, they are not interested in starting their own business. Their unwillingness chiefly results from the lack of ideas (40.3%), the lack of sense of one's own initiative (23.1%) and lack of skills (14.3%). Only every eighth respondent would be ready to start their own business. The respondents who have an idea for their own business usually cannot make it profitable. In many cases they are unable to stay on the market for a longer period of time or their ideas are not innovative enough to easily compete on the market. Some respondents consider the lack of appropriate means to be the main cause of this situation. However, as results from the research by Martin and Grubb [2001], this instrument is effective only with a small number of the unemployed, usually those with higher education and better qualifications. Chronically unemployed people rarely have a chance to start their own business.

As results from the research, their unwillingness is caused by long and burdensome procedures that accompany starting a business. This discourages the respondents from business activity. Besides they do not show much initiative and the human capital is of relatively low value. The respondents are usually unable to specify the procedures which are necessary to start a business. They also lack knowledge concerning taxation and the most favourable form of activity. Thus, it seems necessary for local authorities to take action leading to formation of counselling institutions, which would support the future owners of enterprises at early stages of their business. In spite of the fact that the Employment Promotion Act[1] provides for training institutions or local partnership, these tools are still poorly used. Local authorities should use training institutions to offer a wider range of trainings in starting and running a business, but also local partnership should direct potential enterprise owners to the actions which could be effective and guarantee employment for a longer period of time. It is important that trainings and counselling services should be individualised and oriented to the needs of local markets. It is also important to regularly monitor excessive and deficit professions so that appropriate trainings can be effectively adjusted to the current offer on the labour market, both in terms of the demand and supply [cf. Kabaj 1997].

The willingness to start a business is correlated with sex, province of residence and education. Men and people with higher education (Table 2) are much more often ready to do so. However, they lack confidence that their own business may positively affect the situation of an individual and their family as well as the local economic development (higher income of local budgets, reduced number of people receiving benefits, improved skills of the local population, more intensive financial turnover). According to Lyon [2002], thanks to improvement in supply and access to goods, which can be noticed in business, social benefits increase. Flora [1998] and Amin, Cameron and Hudson [2002] think that in consequence this has a positive effect on rural households and motivates other inhabitants, indicates potential enterprises, creates positive social relations and as a result, favours the sense of self-control and self-determination. One person's increased

[1] The act on promotion of employment and labour market institutions (Journal of Laws from 2008 No 69 Item 415).

Table 2. The willingness to start a own business (%)

Specification	Yes	No			
		lack of ideas	lack of skills	lack of sense	have own business
TOTAL	15.7	40.3	14.3	23.1	6.6
Females	14.2	39.6	15.3	25.5	5.4
Males	17.2	41.1	13.3	20.5	7.8
Level of education					
Tertiary	30.7	40.1	7.3	15.1	6.8
Post-secondary	18.3	45.1	18.3	12.2	6.1
Vocational secondary	15.0	42.3	14.1	22.5	6.2
General secondary	10.3	39.7	20.1	23.0	6.9
Basic vocational	8.9	38.6	15.1	30.1	7.3
Lower secondary	13.3	33.3	33.3	20.0	0
Primary	16.0	37.0	8.6	32.1	6.2
Incomplete primary	0	57.1	0	42.9	0

Source: Authors' own research.

engagement may cause positive effects in a chain and favour other individuals starting their business.

One of the elements that affects the conditions of functioning of households with uncertain income is employment. Unemployment increases helplessness and in consequence, it sometimes leads to demanding attitudes. As results from the interviews, more than 40% of the respondents with uncertain income were not employed within the last week before the survey. Of those who were employed only every twentieth respondent was a full-time employee. It is noticeable that people with higher or vocational education (basic and technical) and men (Fig. 2) were much more often employed. It is interesting to see relatively low unemployment among the respondents with secondary and basic vocational education. Those people have some practical skills and thus they have higher chances to find a job or start their own business than the people in the other groups. Thus, some scientists' opinion that secondary vocational education should be abandoned does not prove to be justified [Leopold 2001].

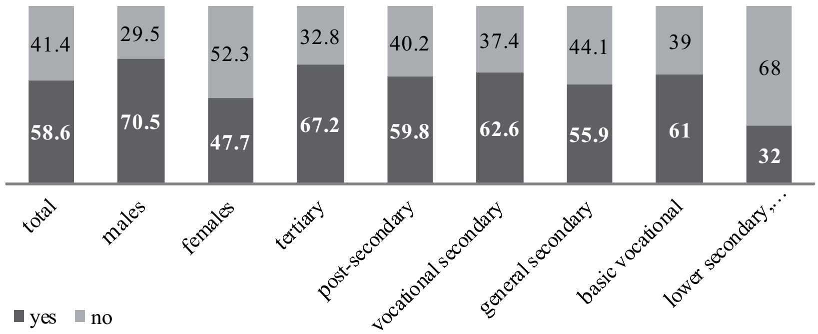


Fig. 2. Have you been employed in the last week? (%)

Source: Authors' own research.

As results from the research, neither unemployment nor an unsuitable form of employment are sufficient factors to encourage the respondents to search for a job. This attitude proves to be characteristic of all the respondents regardless of their sex and education. Despite researchers' opinions that education is a determinant of one's mentality and perception of reality, it is hard to conclude that the higher one's education is, the greater their tendency to seek employment is. The percentage of people searching for employment is the highest among the respondents with secondary comprehensive (44.6%) and secondary vocational education (37.4%), whereas the percentage is the lowest among the respondents with middle school (16.5%) and basic vocational education (28.2%). Simultaneously, it is noticeable that people with the lowest education more often accept their status quo and abandon active search for employment. Contrary to that people with higher education althought much more often indicate that they are ready to start work immediately. The fact that they do not search for employment is usually the result of two intermingling causes. The first is related with failure to meet the expectation that higher education guarantees a good job. The other cause is related with the fact that there is low absorption of people with higher education on the rural labour market.

Almost every fourth respondent does not find it necessary to actively search for employment. Many of them are discouraged due to their long unemployment. Some of them assume that they do not have a chance to find a job that meets their expectations. The second most frequent reason why men abandon their search for a job is their illegal employment (22.7%), whereas women explain this fact with their housework (24.7%). It is surprising to see that the continuation of education and improvement of qualifications is a rare reason why people do not search for employment – only every fifteenth respondent listed it (Table 3). This is a serious problem, because skills and knowledge are forms of capital and they should be a well-thought and long-term investment [cf. Schultz 1961]. Thus, people's main goal should be improvement of their skills, especially if they are excluded from the labour market. However, as results from analyses, this is not the case. In spite of the fact that in recent years there has been considerable educational progress in rural areas, the process is still insufficient to face the challenges of civilisation. Education, trainings and self-investments create wider possibilities of choice, which may be unavailable to people with low qualifications. Failure to take advantage of these opportunities may be the cause of social exclusion. However, Simmel [1997] observed that an increasingly high level of education favours the appearance of a gap between the groups with access to knowledge and those without such access.

The question related with a comparison of the economic situation of rural inhabitants with uncertain income with the situation of other households is a reflection of the respondents' subjective perception of their existence. In their opinion their situation is not much different from the situation of other families. Women with jobs make interesting assessments. They find their situation to be worse than the women who are unemployed (Fig. 3). Worse results for Poland are not isolated on the global scale [cf. Pahl 1989, Goode, Callender and Lister 1998][2]. This situation may be the effect of "hidden exclusion", which results from uneven distribution of income in a household. Simultaneously,

[2] Studies by R. Lister, J. Pahl, J. Goode, C. Callendar made in the United Kingdom also confirm this correlation.

Table 3. The sex- and education-dependent causes of failure to search for employment (%)

Specification	Total	Females	Males	Tertiary	Post-secondary	Secondary vocational	General secondary	Basic vocational	Lower secondary, primary and incomplete primary
I don't need it	23.5	19.6	27.6	37.3	20.0	23.9	16.8	25.3	8.1
I look after the household and my family	14.8	24.7	4.1	14.2	16.4	15.5	17.7	16.1	7.0
I am illegally employed	14.1	6.2	22.7	8.2	23.6	14.8	13.3	17.2	10.5
I am not the right age/I am retired	12.2	12.6	11.6	6.0	1.8	7.0	8.0	10.8	45.3
I am a student/I am improving my qualifications	6.1	7.3	4.9	3.7	1.8	6.3	18.6	1.6	5.8
I am ill/disabled	4.6	5.6	3.5	1.5	5.5	4.9	4.4	4.8	8.1
I have no chance to find a job because I am not skilled enough	3.4	3.5	3.2	0.0	1.8	4.2	2.7	6.5	2.3
Other	21.4	20.4	22.4	29.1	29.1	23.2	18.6	17.7	12.8

Source: Authors' own research.

such assessments are intensified by many women's double duties, which result from the combination of occupational and household duties. On the one hand, some women have a feeling that they do not do any of their duties appropriately. On the other hand, the excess of duties causes negative consequences such as discouragement and loss of belief that the job makes sense. Apart from that, women receive lower salaries than men, which causes them to feel economically dependent. Over the years there have been positive changes in the range and degree of women's economic dependence, but their earnings are still significantly lower than men's, especially if women have a flexible job. The consequences of inequality within a household go beyond the limit of hidden poverty. According to Lister [2007], the problem consists in women's dependence on their partners. Usually they are not ready to live on their own account. This situation favours worse living standard in the households headed by women, especially if they are the only supporters of the family.

The respondents' situation on the labour market and their attitude to the search for employment affects their assessment of reality and the living standard in their household. One of the elements of coping with the economic situation is the respondents' decisions related with the ability "to make ends meet", which are a key element of "human creative causative action" [Titterton 1992]. It is assumed that the respondents, who said they were hardly able "to make ends meet", are in danger of poverty, whereas those who cannot satisfy their demand are afflicted by poverty. It is noticeable that the respondents who were not employed in the last week before the survey assess reality and their potential to satisfy their expectations to be worse. The respondents' assessment is also influenced by their active search for employment. The respondents searching for jobs perceive reality and

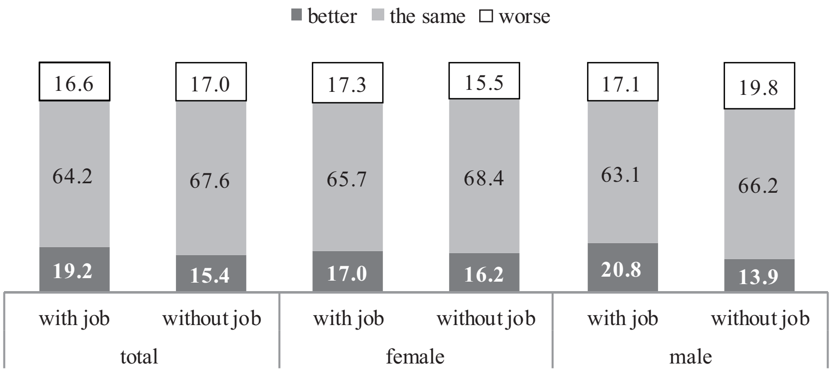


Fig. 3. A sex- and employment-dependent comparison of the income situation of one's own and other households

Source: Authors' own research.

their potential to cope with it to be worse than those who do not search for employment. It is possible to observe that the men who do not have a job, although they actively search for it assess their situation the worst. Almost every fourth of them says that he has no chance to satisfy his needs, whereas only every eighth woman respondent gave a similar answer. This assessment is affected by the stereotype that it is men who should keep the financial continuity in a household and they are responsible for a decent living standard. In a situation when they cannot meet this expectation, men become "compulsive altruists" more rarely than women. More often they are struck by the feeling of failure to meet this expectation, which intensifies pathological behaviours. This situation can especially be observed at the time of economic slowdown when men are more afflicted by layoffs than women, which is a new phenomenon. The elimination of many jobs in sectors that employ mostly men (building, heavy industry) enables creation of a certain scheme of exclusion. The men, who lose jobs and are usually less qualified, have problems finding employment. They usually earn a living doing undemanding casual work or they are illegally employed, which worsens their competitiveness on the market. A long period of time without legal employment causes them to lose touch with the labour market and intensifies passive attitudes. Apart from that there are problems related with their self-assessment, which result from feeling redundant and their lack of belief that the situation may change for better. The lack of sense of control of the situation causes the men to turn away from current problems of their families and fall into apathy, which often leads to self-destructive actions and withdrawal.

As Orłowska [2005] observes, anybody can be excluded at any time, but people with certain social, physical or mental dysfunctions and the inhabitants of outskirts and small towns are at the greatest risk. The most common social dysfunction is unemployment, which is a significant factor of marginalisation and intensification of the awareness of being deprived of one's material and immaterial needs. In consequence it affects the assessment of one's poverty. Although the unemployed respondents are at greater risk of poverty, it is intriguing to observe a considerable percentage of people who are employed but do not meet the appropriate standard of their needs. In consequence there is a specific group of poor people with jobs. It is particularly noticeable among people with uncertain income. In such households there are frequent anomic situations. In spite of the fact that the household members have a source of income, they cannot meet their needs by means of commonly accepted instruments. In consequence they adopt demanding and passive attitudes. This approach has negative influence both on the functioning of the households and their environment.

CONCLUSIONS

The pauperisation of the rural population with uncertain income is not equivalent to the feeling of exclusion, but there is considerable correlation between these phenomena. For many people the deprivation of material needs itself is not a major problem. It is more important that they cannot participate in certain aspects of social and economic life and cannot play the roles that particular individuals could and would like to play. Being deprived of an opportunity to participate in social life leads to the feeling of exclusion, but it occurs much less frequently than the sense of poverty. For many people the shortage of funds is not equivalent to deprivation of the opportunity to participate in everyday life. To a certain extent this results from their lower aspirations and the feeling that some activities are associated with "other groups". As results from the research, every eleventh respondent with a job and every fifth without a job is aware of their elimination from social life. This is a worrying tendency, because the incapability of participation in social life leads to limitation of the development of cognitive functions and in consequence, this limits people's competence. Apart from that, it leads to reduced human capital, weakens the openness to other people and events taking place nowadays, social activities and it makes interpersonal communication difficult. The main form of participation in everyday life is spending time in front of a computer or television screen and with people of a similar living standard, which leads to closure in specific ghettos for the excluded.

REFERENCES

Amin A., Cameron A., Hudson R., 2002. Placing the Social Economy. Routledge, London.

Flora J.L., 1998. Social Capital and Communities of Place. Rural Sociology 63, 484.

Goode J., Callender C., Lister R., 1998. Purse or Waller? Gender Inequalities within Families on Benefits. Policy Studies Institute, London.

Kabaj M., 1997. Strategies and programs avoiding unemployment. Scholar, Warszawa.

Leopold A., 2001. Kwestia opóźnienia w rozwoju wsi i rolnictwa (in:) L. Kolarska-Bobińska, A. Rosner, J. Wilkin (Eds). Przyszłość wsi polskiej. Wizje, strategie, koncepcje. ISP, Warszawa, 98.

Lister R., 2007. Poverty. Wydawnictwo Sic, Warszawa.

Lyon F., 2002. Measuring Enterprise Impacts in Deprived Areas, Report to the Small Business Service. URN 03/870. http://www.bis.gov.uk/files/file38356.pdf.

Martin J.P., Grubb D., 2001. What works and for whom: A review of OECD countries' experiences with active labour market policies. Swedish Economic Policy Review 8, 9–56.

Orłowska M., 2005. Słowo wstępne (in:) M. Orłowska (Ed.). Skazani na wykluczenie. Wydawnictwo Akademii Pedagogiki Specjalnej, Warszawa, 8.

Pahl J., 1989. Money and Marriage. Macmillan, Basingstoke.
Schulz T.W., 1961. Investment in Human Capital. The American Economic Review 1 (2), 1–17.
Simmel G., 1997. Philosophy of Money. Humaniora, Poznań, 413–414.
Titterton M., 1992. Managing threats to welfare: the search for a new paradigm of welfare. Journal of Social Policy 21, 1.

POSTAWY LUDNOŚCI WIEJSKIEJ O NIEPEWNYCH DOCHODACH NA RYNKU PRACY

Streszczenie: W artykule omówiono postawy ludności wiejskiej o niepewnych dochodach na rynku pracy. Zwrócono uwagę na główne źródło utrzymania w badanej grupie oraz wpływ wykształcenia na podejmowaną aktywność zawodową. Zauważono, że dominujące wśród respondentów są postawy pasywne i zachowawcze, przejawiające się małym zaangażowaniem w poszukiwanie zatrudnienia, a także brak woli, umiejętności i pomysłów na własną działalność. Zwrócono również uwagę na pogłębiające się niekorzystne zjawiska wśród ludności bez trwałego zatrudnienia, takie jak roszczeniowość czy też wycofanie. W artykule przedstawiono przyczyny nieposzukiwania pracy oraz przyjmowane postawy na rynku pracy. Ważnym elementem artykułu jest postrzeganie warunków funkcjonowania respondentów w porównaniu z członkami innych gospodarstw domowych, a także sposoby radzenia sobie z niekorzystną sytuacją życiową.

Słowa kluczowe: aktywność ekonomiczna, obszary wiejskie, niepewność dochodów, poziom życia

Accepted for print – Zaakceptowano do druku: 26.08.2013

ACTA SCIENTIARUM POLONORUM Oeconomia 12 (3) 2013, 39–50

FUNCTIONING OF THE POLISH LAG IN THE CONTEXT OF THE LEADER INITIATIVE

Roman Kisiel, Milena Gierwiatowska
University of Warmia and Mazury in Olsztyn

Abstract. Changes in perception of the rural areas from the perspective of agriculture only gave the impulse for emergence of a new direction in the Common Agricultural Policy (CAP) of the European Union (EU). The Leader initiative established in 1991 aims at activating rural communities and rational local resources management. Local action groups (LAG) that assume the form of agreements of three local sectors (representatives of community, entrepreneurs and representatives of authorities) are the units implementing the Leader approach. The questionnaire based survey covering 44% of the LAGs operating in Poland was conducted. Thanks to that survey knowledge of the specificity and outcomes of their work was obtained.

Key words: rural areas, Axis 4 of the Rural Development Programme for 2007–2013, local action group (LAG)

INTRODUCTION

Rural areas represent over 90% of the entire European Union area and almost 60% of its population live in such areas. Until mid-1990s rural areas were seen in the context of agricultural production only. The common agricultural policy of the EU (CAP) was equivalent to the rural policy because undoubtedly it influenced functioning of rural areas [Spychalski 2008, Brodziński 2011].

The rural area as a complete whole involves tight correlations between numerous areas. This results from a certain development philosophy that assumes that both agriculture and providing opportunities for development of other areas of activities play immense role in building the potential of rural areas. The strong ties between modernisation of agriculture and simultaneous development of multifunctional rural areas are noticed [Duczkowska-Małysz 1998].

Corresponding authors: Department of Economic and Regional Policy, University of Warmia and Mazury in Olsztyn, ul. M. Oczapowskiego 4, 10-719 Olsztyn, Poland, e-mail: kisiel@uwm.edu.pl

As a consequence of the rural area image widening, strong ties between functioning of agriculture and the space: natural, demographic and cultural surrounding it became more visible. The notion of rural areas' multifunctionality encompasses building the environment that is friendly to rural residents (not necessarily dealing with agriculture), the farmers and the tourists. The issue of rural areas' multifunctionality also involves extending its vitality and diversification of economic activity [Wilkin 2007].

As a consequence of the change in the earlier attitudes to the functions fulfilled by rural areas the objectives and directions influencing rural areas have been subject to significant evolution. Particularly well-visible changes took place in the CAP. The Leader initiative established in 1991 became one of the paths.

The name of the Community Initiative LEADER comes from French (Liaison Entre Actions de Développement de l'Économie Rurale) and means 'combining activities for rural economy development'. It contributed to emergence of the territorial partnership idea [Moseley, Ed. 2003]. Within its framework, collaboration of three sectors: public, private and non-government takes place [Furmankiewicz and Stefańska 2010]. This partnership is realized within the framework of local action groups (LAG). They are the units dealing with implementation of the Leader initiative into life.

Within the analysed initiative a special role is played by sustainable development, i.e. combination of economic, natural and social issues on the decision-taking process concerning local resources' management. The level of that development influences attractiveness of the region from both economic and living perspective [Bielecka 2011, Wiśniewska 2011].

During the programming period of 2007–2013, the CAP consumes ca. 56 billion EUR a year, of which 13 billion EUR is allocated to rural development. Poland is the largest recipient of funds allocated to the second CAP pillar. Despite that, the EU aid in creating the new image of rural areas should abandon the social character. The focus on innovation, modernisation and civic activity stimulation is necessary [Kisiel, Babuchowska and Marks-Bielska 2012].

The Leader initiative brings us closer to that objective. The EU funds transferred within the Leader initiative framework are allocated freely. This is linked to the innovation and "transferability" potential, i.e. independence in application of that approach [Chevalier 2012]. The solution offers rural areas the possibility of development and creating their own path using the external aid. The initiative aims at socioeconomic stimulation of the population of rural areas [Kłodziński 2006]. The most important change in building the new model of rural areas was that it started to be based on bottom-up initiatives originating from the rural community [McAlinden 2005].

OBJECTIVE, MATERIAL AND METHOD

The main objective of the paper is to present functioning and evaluation of work effectiveness of the LAG in Poland in the context of social outcomes and problems limiting those bodies. An attempt was undertaken to identify the priorities and the most frequent areas and sectors of measures undertaken. The studies also allowed finding the specific mode of operation of the Polish public-private partnerships dealing with the Leader initiative implementation.

The results of own studies formed the base for this paper. The questionnaire addressed to the LAG was the tool used for obtaining them. The primary data was obtained between 4 September and 11 October 2011. The statistical population consisted of 336 LAG operating in Poland.

The questionnaire based on survey requires definition of the surveyed sample. In the surveys the probabilistic selection was applied. This means that every unit of the population has the same chance of being included in the sample. The Internet based survey was applied and the questionnaire was sent by electronic mail to all the LAG that operate in Poland. The survey sample consisted of 147 LAG that responded. The sample represents almost 44% of the entire population. The results reflect the general outline of the situation in the entire country.

The questionnaire consisted of 23 questions that are diversified as concerns the method of providing the answer. The determination of the order of questions resulted from the principle of gradual expanding the subject and going from the general to the detailed questions. The questions were designed in the way that required no additional and complex actions by the respondents.

The secondary data concerning the number of qualified population resident in the area covered by the local development strategy (LDS), amounts of funds available for the individual voivodeships and funds used by them were obtained from all the Marshal Administration Offices across Poland. Moreover, the secondary data originated also from the document presenting the Rural Development Programme (RDP) 2007–2013.

RESULTS OF STUDIES

There are 336 LAG functioning in Poland. Their distribution across the country depends on compliance with the provisions of the Regulation by the Minister of Agriculture and Rural Development of 23 May 2008[1] on the detailed criteria for selection of LAG for implementation of the LDS within the frameworks of the RDP 2007–2013 (§ 2 section 1 point 3). The vast majority of the territory of Poland is predisposed for that. The willingness of the community, business and public entities to get involved in activities for the benefit of a given area is equally important.

Table 1 presents the data concerning conditions that relate to the LAG in the individual voivodeships. In total, 2,118 communes representing ca. 86% of all the Polish territorial government units of that level are involved in establishing the LAG. The qualified population within the framework of the LDS implementation, i.e. the potential beneficiaries of activities carried out by the groups represents over 46% of the population of Poland. This proves the very wide coverage by the Leader initiative. The LAG borders do not have to be within a single voivodeship. There are 23 inter-voivodeship LAG in Poland.

The last column of Table 1 presents the number of people per 1 LAG in a given voivodeship. This indicator allows evaluating the group impact strength. In some voivodeships the LAG are relatively few, but with their activities they reach a wide group of the potential beneficiaries. Lubuskie Voivodeship with only 10 LAG – the lowest number in Poland – but with 68,547 people per one group is a good example. This is the highest

[1] Journal of Laws from 2008 No 103, Item 659.

Table 1. Conditions of LAG operation in Poland in 2013

Voivodeship	Number of LAG	Number of communes included in the LAG	Qualified population	Population per 1 LAG
Dolnośląskie	19	130	1 193 569	62 819
Kujawsko-Pomorskie	20	125	1 010 049	50 502
Lubelskie	26	193	1 278 675	49 180
Lubuskie	10	88	685 468	68 547
Łódzkie	20	138	930 571	46 529
Małopolskie	39	156	1 863 333	47 778
Mazowieckie	35	253	1 949 335	55 695
Opolskie	12	66	677 983	56 499
Podkarpackie	31	146	1 460 100	47 100
Podlaskie	16	117	664 195	41 512
Pomorskie	16	110	924 440	57 778
Śląskie	15	99	954 158	63 611
Świętokrzyskie	18	109	913 335	50 741
Warmińsko-Mazurskie	13	99	784 748	60 365
Wielkopolskie	31	192	1 797 179	57 974
Zachodniopomorskie	15	97	768 607	51 240
Total	336	2 118	17 855 745	–

Source: Own work based on the data obtained from the Marshal Administration Offices in Poland.

value of that indicator among all the voivodeships. In average, there are ca. 53 thousand people per 1 LAG in Poland.

During the programming period of 2007–2013 the LAG can assume one of the four legal formats. Those formats include the: association, union of associations and "special" association. Among the LAG surveyed around 80% were associations. They are not, however, standard associations operating as legal entities operating only based on the Act of 7 April 1989 – The Law on Associations[2]. They are also subject to four different and very detailed principles stipulated in article 15 of the Act of 7 March 2007[3] on support to development of rural areas with participation of the EAFRD.

This trend concerning the most frequently chosen legal form applies to the entire country. Efforts are undertaken at unifying the administrative-organisational principles of functioning of the LAG. The groups that during the previous stages (Leader pattern II, Pilot Programme Leader+) operated as foundations or unions of associations, to make use of funds from Axis 4 of the RDP 2007–2013, had to implement numerous transformations to adjust to the requirements of the above Act on support to development of rural areas with participation of the EAFRD. Hence, establishing new LAG was a more rational solution. Consequently, foundations and unions of associations are infrequent as the legal form of the currently functioning groups. They represented 4 and 3% of the sample respectively.

[2] Journal of Laws from 2001 No 79, Item 854.
[3] Journal of Laws from 2007 No 64, Item 427.

The term “special” association is used in relation to newly established group that did not participate in the previous stages of the intervention. Among the surveyed population they represented 13%. They operate on the same principles and based on the same legal base as the associations. This is the form applicable only and solely to the LAG [Pestuszka 2012].

The principle is that the LAG coverage area is populated by from 10 to 150 thousand residents. Among the surveyed groups, only ca. 6% have a very wide coverage with more than 100 thousand and up to 150 thousand residents covered. LAG are also rarely composed of a large number of communes. In most cases they function as associations of 3–7 communes. This applies to over 57% of the sample. Very rarely a LAG is formed of more than 10 communes. In case of 50% of the groups surveyed, they encompassed with their activities the populations ranging from 10 to 50 thousand people. That characteristic might result from the fact that the larger the area the larger and the number of beneficiaries may cause more difficulties in the internal communication.

The inter-sectoral coalition is the contract between individuals and organisations acting on behalf of individual sectors. Their task is to undertake and catty collaboration for the purpose of creating social, economic and environmental values with positive influence on a given area. The LAG is a form of such a coalition [Biederman et al. 2004]. The contract involves three sectors: public, civic and economic. The first of them is represented by the local authorities, public utility institutions or government agencies. The civic sector also referred to as non-government sector consists of the residents and associations representing different profiles of activities. The economic (private) sector is understood as manufacturers, agricultural cooperatives, financial and service institutions [Serafin, Kazior and Jastrzębska 2005].

The civic sector is the most numerously represented sector in the structure of all the groups surveyed. Its representatives form 65% of the total number of members in the groups. The economic sector is the second with 19% of all the members in the LAG that formed the test sample. Representatives of the public sector formed 16% of the members in the LAG. The civic sector is the closest to the ordinary people. This distribution of forces indicates that the residents are willing to involve themselves in the fates of their “small motherlands” and to act for their benefits. The participation of the private sector is linked closely to the investment potential and creating new jobs. From that perspective, its share in the structure should be higher.

The sector activity is represented by involvement in and contribution to functioning and life of the LAG. According to the opinions by the groups, the civic sector is the most active – that response was indicated by 48% of the respondents. The public sector is considered the most involved in 30% of the surveyed groups. None of the groups indicated the private sector as the most active one. As many as 30% of the sample declared that the level of involvement of all three sectors was equal and that indicating one outstanding sector was impossible.

Although the civic sector is represented in the highest numbers and its activities are the most intensive, the level of involvement of a given sector does not depend on the number of its members in the given group. This is indicated by the situation where in 42% of cases the sector with the smallest representation is considered the most active. The opposite situation where the most active sector also has the strongest representation occurs in ca. 46% of the LAG surveyed. As the results are similar, there is no such correlation.

The higher number of representatives of one sector in the group does not translate on the origin of the LAG decisive body chairman either. In ca. 40% of the groups surveyed the chairman originated from the sector with the highest number of representatives. However, in 33% of cases, the chairman originated from the least numerously represented sector. His does not allow drawing clear conclusions. The activity of the sector does not translate on the election of the chairman either. Only in 33% of cases, the chairman was a representative of the most active sector. It should be pointed out that in 56% of the LAG surveyed the chairman of the decision-taking body originated from the public sector.

Participation of a given commune in the Leader initiative is absolutely voluntary. Commitment and activity of institutions, associations and people within it represent the necessary components for initiation of the process. A single person or a group of people can act the initiators of the LAG. Table 2 presents who gave the idea for establishment of the groups surveyed.

In the majority of cases the initiative came from the mayors. Such responses were given by 49% of the respondents. None of the other possible answers gained such a big advantage. The public sector was of large importance in establishing the LAG because its representatives were the initiators – not only the mayors, but also employees of the commune administration offices and of the council of the commune.

Residents associated in a non-government organisation proposed the idea in case of 15% of the LAG. Among the responses other than the options presented (24%) the groups of people, very often originating from different communities, e.g. all mayors, together with residents and employees of public units, county mayors and organisations associating communes acted the initiators. The residents in many cases contributed to including their area in the Leader initiative. This indicates their involvement in the issues concerning their nearest environment, and this is promising for the future.

Each LAG must develop the LDS for the area on which it operates. That document defines the directions of development of a given group and tools with which it wants to accomplish the defined objectives. Figure 1 presents the fundamental objectives and tasks formulated in their LDS by the individual LAG surveyed. Three of the responses given are particularly outstanding. The priorities for the activities of the groups include:

Table 2. Initiators of the LAG establishment

Initiator of the LAG establishment	Number of responses	Percentage of the response
Mayors	72	49
Heads of villages / members of village council	0	0
Commune council	1	1
Residents (associated in a non-government organisation)	22	15
Employees of the commune administration office	15	10
Employees of Agricultural Extension Service Centre	1	1
Other	36	24

Source: Own work based on the conducted studies.

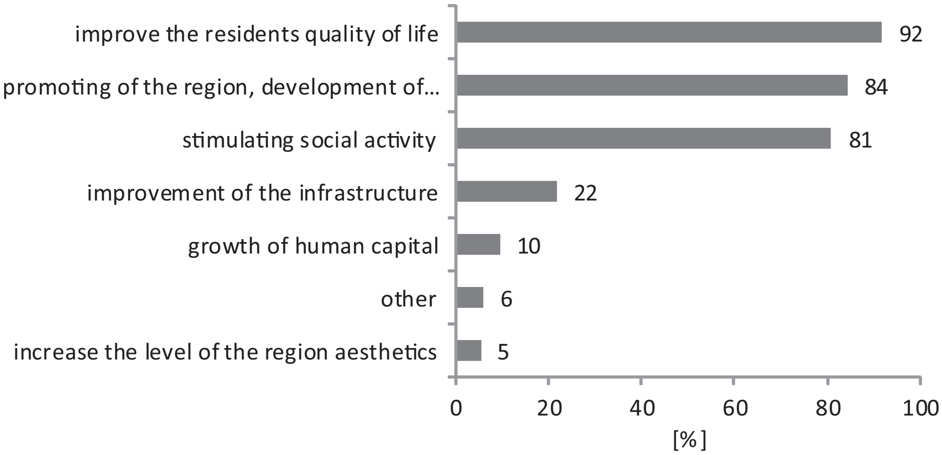
upgrading the living standards of residents (92% of responses), promoting the region and tourism development (84%) and stimulating civic activity (81%). In the response "other" (6%), the respondents indicated: protection and promotion of cultural heritage, promoting entrepreneurship and environment protection.

The areas in which the LAG function the most often support and confirm taking the measures helpful in accomplishment of the determined objectives. As indicated in Figure 2, in case of 67% of the respondents sport and recreation represented the major area of activities. They are followed by history and culture (53%) and civic activities (47%). Civic activities are understood as activities for the local community and supportive to uniting it.

Figure 3 presents the extent to which the groups are successful in implementing the 7-key characteristics of the Leader approach. According to the opinions from 93% of the LAG surveyed the Local Development Strategies are implemented. This is a good signal because the LDS is the document that forms the base for operation of each of those entities.

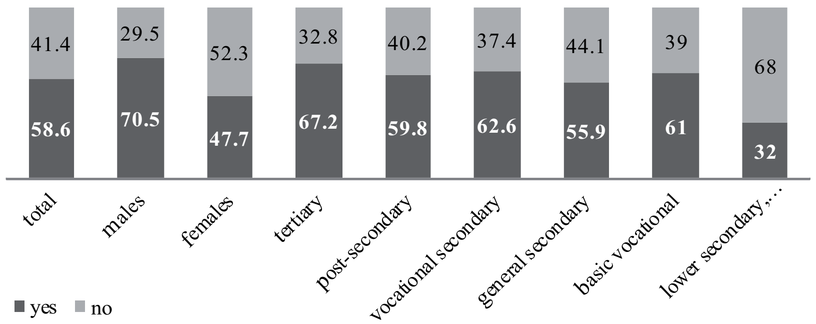
Almost 2/3 of the respondent LAG (61%) expressed also positive opinions concerning the component of collaboration with other groups. Had that component been more developed in a larger number of the LAG, then probably the result concerning the exchange of experience would probably have been higher (35%). Errors and successes of others may lead to conclusions facilitating creating own reality. And for that reason that component is missing. Nevertheless, the results of studies showed that more than 92% of the groups maintain interregional cooperation. Around 25% declare that they undertake foreign cooperation. Slovakia followed by Lithuania, France and Hungary were the most frequent partners among the LAG surveyed.

The fact that only 25% of the sample succeed in implementing the principle of public-private partnership is the reason for concern. This is the main principle on which functioning of the LAG is based. This might result from the fact that the cooperation of



*The respondents had the possibility of marking more than one answer.

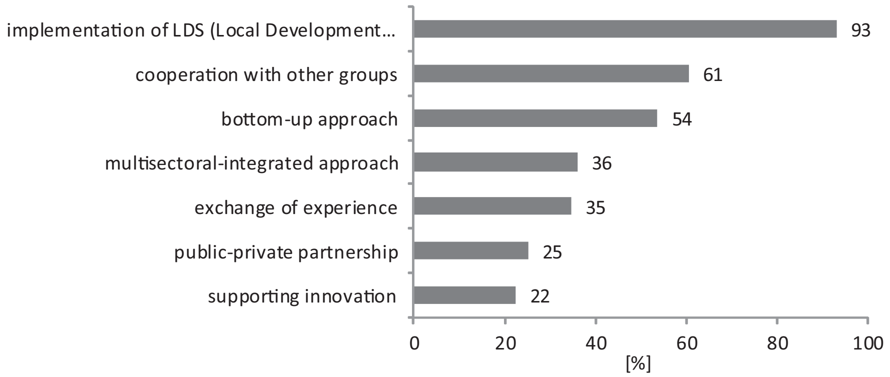
Fig. 1. Main objectives defined in the LDS*
Source: Own work based on the conducted studies.



*The respondents had the possibility of marking more than one answer.

Fig. 2. Most frequent areas of activities undertaken by the LAG*

Source: Own work based on the conducted studies.



*The respondents had the possibility of marking more than one answer.

Fig. 3. Implemented components of the Leader initiative according to the LAG surveyed*

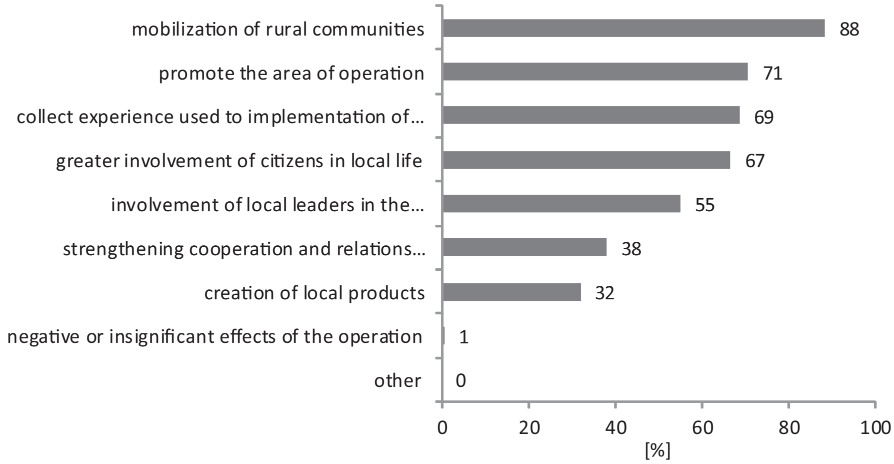
Source: Own work based on the conducted studies.

sectors does not develop correctly in the majority of the groups and hence they consider that element not fulfilled.

In addition to implementation of the Leader initiative characteristics that support efficient operation of the group – their activities should contribute to accomplishment of the objectives formulated in the LDS. Figure 4 presents the number of groups they concern and what are the results of the strategy implementation.

Activation of the local community is mentioned the most frequently among the outcomes. This is the outcome noticed by 88% of the respondent LAG. Promotion of the group activities' area (understood also as tourism development) is the next outcome indicated. That outcome was reported by almost 71% of the sample.

Implementing the Local Development Strategies involves the natural process of gaining experience in that field. That outcome was noticed in their activities by 69% of the respondents. Only one group noticed negative outcomes of the group functioning. All the other outcomes were positive, but they manifest among the LAG with different strength.



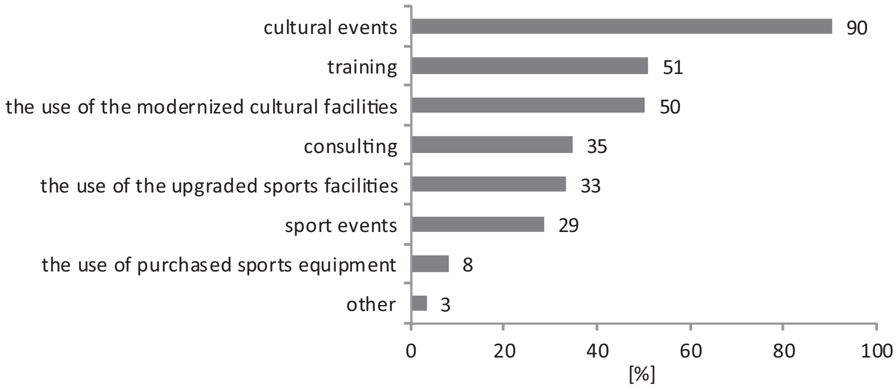
*The respondents had the possibility of marking more than one answer.

Fig. 4. Outcomes of the LDS implementation*

Source: Own work based on the conducted studies.

Figure 5 presents the expectations of local communities concerning the undertakings implemented by the LAG. Beneficiaries participate in cultural events the most willingly because 90% of the respondents gave that answer. Relatively willingly they participate in training programmes and use renovated cultural facilities, which is indicated by the fact that more than a half of the units participating in the survey indicated those options.

As can be noticed, rural community demands access to culture in its different forms. That trend may result from the fact that the rural community is in a way excluded from cultural life. The fact that expectations of the people concerning access to culture are



*The respondents had the possibility of marking more than one answer.

Fig. 5. Forms of activities chosen the most frequently by the local population*

Source: Own work based on the conducted studies.

satisfied by the LAG can be seen as a positive phenomenon. This is indicated by the second position of culture in the ranking of the most frequent areas of activities by the LAG.

Although people willingly express their activity through participation in training programmes, education is the most frequent area of activities for only ca. 10% of the surveyed LAG (Fig. 2). The groups should also focus more frequently on activities leading to increasing qualifications of the rural community. The more so as there are premises for that in the form of expectations from the public.

During fulfilment of the assumed objectives and performance of tasks, the LAG encounter barriers hindering their appropriate operation. The respondents, when asked about the factors limiting their activities, indicated finance (59%). This might result to a large extent from the system of project costs refunding. The funds are transferred to the LAG only after completing a given undertaking. That situation hinders performance of all the ideas by some groups as they do not have sufficient financial resources. The same problem was indicated by the LAG that indicated the EU legislation as the barrier to their operation (3%). Hence, totalling those values, it can be concluded that the financial issues represent a problem for over 61% of the groups.

Excess of duties related to the current functioning of the groups is another limiting issue (20%). This is correlated closely with another problem, which is the provisions of the domestic law. That issue was noticed by 16% of the surveyed groups that pointed in particular at the immense bureaucracy, lack of stability and transparency of the law as well as diversified interpretations of the law by the individual institutions.

CONCLUSIONS

Activities performed within the framework of Axis 4 of the Rural Development Programme 2007–2013 are addressed to more than 46% of the Poles. Hence, the Leader initiative contributes to satisfying the new needs and considering the social character of rural areas.

As concerns the specificity of the Polish LAG, ca. 80% of the groups surveyed assume the legal form of association operating on special terms and conditions, specific for those entities only. Considering the background of all the components of the tripartite agreement the civic sector is outstanding in the numbers as well as the activity. The public sector had immense influence on establishment of the LAG. Its representatives were, in most cases, the initiators of establishing the LAG.

The outcomes of functioning of the LAG in Poland meet to a large extent the objectives assumed in the prepared LDS. His proves consistency of the groups in their intended objectives and actions taken. This is a good signal that confirms that the strategies developed are not just documents but that they really create the reality.

Implementation of the Leader initiative assumptions has good influence on functioning of the rural areas. Rural residents involve themselves and influence the development, which means that they give shape to their “small motherland” in the way suiting them the best. In case of activities, they focus mainly on using local resources and potential embedded in the conditions of the given location.

REFERENCES

Biederman A., Kazior B., Serafin R., Szmigielski P., 2004. Building Partnerships. A Practical Manual. Fundacja Partnerstwo dla Środowiska, Kraków.

Bielecka M.J., 2011. Partnerstwo terytorialne dla rozwoju regionalnego i lokalnego (Territorial partnership for regional and local development). Barometr Regionalny. Analizy i prognozy 4 (26), 45–52.

Brodziński Z., 2011. Stymulowanie rozwoju obszarów wiejskich na poziomie lokalnym na przykładzie gmin województwa warmińsko-mazurskiego (Stimulating rural development at the local level based on example of the municipalities of Warmia and Mazury). Wydawnictwo SGGW, Warszawa.

Chevalier P., 2012. What effects does national regulation have on Leader Programming in EU-27? Wieś i Rolnictwo 3, 9–29.

Duczkowska-Małysz K., 1998. Rolnictwo, wieś, państwo. Wokół interwencji państwa w sferę wsi i rolnictwa (Agriculture, village, state. Around the state intervention in the sphere of rural areas and agriculture). PWN, Warszawa.

Furmankiewicz M., Stefańska J., 2010. Partnerstwa terytorialne jako sieci organizacyjne. Analiza powiązań w trzech wybranych lokalnych grupach działania w Polsce (Territorial partnerships as organizational networks. Analysis of linkages in three selected local action groups in Poland). Studia Regionalne i Lokalne 1 (39).

Kisiel R., Babuchowska K., Marks-Bielska R., 2012. Gospodarstwa rolne Polski Wschodniej i skłonność ich właścicieli do inwestowania z wykorzystaniem instrumentów wspólnej polityki rolnej (Agricultural farms of Eastern Poland and propensity of their owners to invest using instruments of the common agricultural policy). PTE, Toruń.

Kłodziński M., 2006. Aktywizacja społeczno-gospodarcza gmin wiejskich i małych miast (Activation of the socio-economic situation of rural areas and small towns). IRWiR PAN, Warszawa.

McAlinden G., 2005. Partnerstwo na rzecz rozwoju regionalnego – w kontekście funduszy strukturalnych Unii Europejskiej (Partnership for regional development – in the context of the EU Structural Funds (in:) M. Kubisza (Ed.). Praca, kształcenie, partnerstwo. Zbiór opracowań powstałych w ramach realizacji programu Phare 2000 „Rozwój Zasobów Ludzkich" (Work, education, partnership. Collection of papers arising from the implementation of Phare 2000 „Development of Human Resources"). PARP, Warszawa, 128–138.

Moseley M.J. (Ed.), 2003. Local Partnerships for Rural Development. The European Experience. CABI Publishing, Wallington Oxon.

Pestuszka S., 2012. Polityka regionalna Unii Europejskiej – cele, narzędzia, efekty (EU regional policy – goals, tools, effects). Difin, Warszawa.

Serafin R., Kazior B., Jastrzębska A., 2005. Grupy partnerskie. Od idei do współdziałania – praktyczny przewodnik (Partner groups. From the idea to cooperation – a practical guide). Fundacja Partnerstwo dla Środowiska, Kraków.

Spychalski G., 2008. Ewolucja polityki Unii Europejskiej wobec wsi i rolnictwa w nowym okresie programowania (2007–2013) (Evolution of European Union policy towards agriculture and rural areas in the new programming period (2007–2013)). Acta Sci. Pol., Oeconomia 7 (3), 109–119.

Wilkin J., 2007. Wielofunkcyjność rolnictwa i obszarów wiejskich (Multifunctionality of agriculture and rural areas). Nowe Życie Gospodarcze. Dodatek Specjalny 21, 3–5.

Wiśniewska J., 2011. Economic sustainability of agriculture – conceptions and indicators. Acta Sci. Pol., Oeconomia 10 (1), 119–137.

FUNKCJONOWANIE POLSKICH LGD W KONTEKŚCIE INICJATYWY LEADER

Streszczenie. Zmiany w postrzeganiu obszarów wiejskich jedynie przez pryzmat rolnictwa stały się impulsem do powstania nowego kierunku we wspólnej polityce rolnej (WPR) Unii Europejskiej (UE). Powstała w 1991 r. inicjatywa Leader ma na celu aktywizowanie społeczności wiejskiej i racjonalne gospodarowanie zasobami lokalnymi. Jednostkami wcielającymi w życie podejście Leader są lokalne grupy działania (LGD), które przyjmują formę lokalnych, trójsektorowych porozumień (sektor społeczny, przedsiębiorcy, przedstawiciele władz). Wśród 44% LGD funkcjonujących w Polsce przeprowadzono badanie ankietowe, dzięki któremu poznano specyfikę i efekty ich pracy.

Słowa kluczowe: obszary wiejskie, oś 4 PROW 2007–2013, lokalna grupa działania

Accepted for print – Zaakceptowano do druku: 03.09.2013

ACTA SCIENTIARUM POLONORUM Oeconomia 12 (3) 2013, 51–59

IMPACT OF ECONOMIC CRISIS ON CONSUMER BEHAVIOUR TOWARDS MEAT[1]

Małgorzata Kosicka-Gębska, Jerzy Gębski
Warsaw University of Life Sciences – SGGW

Abstract. The economic crisis with its origin in 2008 has influenced many areas of consumer life. It also determines their behaviour related to purchasing and consuming products, including food products. An example of an important product in the human diet is meat consumed by the Poles at the level of more than 75 kg per person per year, which on one hand has adequate nutritional value and is consumed by the consumers because of the reasons related to a tradition, habits and pleasure, but on the other hand, it is an expensive product and therefore, in the time of the crisis, its consumption level is decreased and consumers look for cheaper alternatives. The aim of the research carried out within the framework of a NCN in Kraków research project "Determinants of selection and consumption of meat in Poland – diagnosis and forecasts" was to assess the impact of the economic crisis on consumers' behaviour towards meat. The statistical analysis led to the conclusion that for 18.1% of the respondents it was the economic crisis that contributed to the changes in the consumption of meat. As calculated based on the 7-point scale (where 1 rating – the lack of any changes, and evaluation of 7 – changes with high intensity) in the past few years, consumers have noticed reduce the level of total meat consumption (5.02), an increase in the level of consumption of cheaper types of meat (4.85), reducing consumption of more expensive meats (4.48), buying a one-off smaller portions of meat than it was 2–5 years ago (4.23). They also began to pay more attention to the price of buying.

Key words: economic crisis, consumer behaviour, meat

[1] The work financed by National Science Centre within research project of NCN in Kraków No N N1 12 393840.

Corresponding authors: Department of Organization and Consumption, Faculty of Human Nutrition and Consumer Sciences, Warsaw University of Life Sciences – SGGW, ul. Nowoursynowska 166, 02-787 Warszawa, Poland, e-mail: malgorzata_kosicka_gebska@sggw.pl; jerzy_gebski@sggw.pl

INTRODUCTION

Human behaviour changes under the influence of many factors. One of the strongest impacts within this area is the current economic crisis with its origin in 2008. Its results are already noticeable in macro- (e.g. decrease of GDP, closing or restricting business activities by companies) and micro-economic scale (decrease of consumption). However, according to Drozdowicz-Bieć [2009], Pater and Skica [2011] and data included in Koniunktura… [2011], Poland has been recording a positive economic growth during the economic crisis which has weakened economies of many countries throughout the world. During the highest economical slump in 2009 yearly dynamics of actual GDP in Poland equaled 1.7%, whereas the European GDP has decreased during that year.

The crisis has resulted in behavioural changes of many consumers not only due to consequences related to financial situation, but also to emotional and psychological effects. A feeling of consumers' uncertainty has grown during this time [Rozmus 2010]. It has also been confirmed by Słaby [2009] according to whom, the basic social dimensions of the crisis are: growth of the unemployment rate, decrease of the household income, changes in consumption structure, changes in behaviour and serious states of anxiety and depression resulting from a fear of losing a job, difficulties in finding new employment, deterioration of the financial situation, fear of losing savings or incapability of repaying loans.

According to Frączak-Rudnicka [2009], crisis of the whole economy changes behaviour of individual purchasers to a small extent, until they do not feel directly threatened by the crisis and its effects. Direct experiences is a factor forcing people to change their behaviour. Within 2007–2012, the majority of households did not feel any effect of the crisis on their living standard. Lack of noticeable changes in the level nor structure of Polish households could have been a result of a delayed and mainly indirect effect of the economic crisis on consumption issues. However, other data prove that there is a significant relation between the economical crisis and consumption in households. The crisis results in worsening situation on the labour market and people's financial situation what triggers decreasing level of consumption and worsening consumption structure in households [Bywalec 2010, Kieżel and Smyczek 2011, Sobczyk 2013]. Society's consumption depends on a level and rate of development of the national economy measured with a level of the gross domestic product and household incomes. Other (non-economic) determinants of consumption in the macro scale are demographic and social processes and influence of the country realizing allocation, distributive and stabilization functions [Bywalec 2010].

Many research show that the consumers have begun to make decisions concerning selection of products more rationally what, in most cases, can be a result of worsening living standard and being afraid of the crisis effects [Kryzys… 2009, Czy Polacy… 2012]. According to the research conducted in Lubelskie Voivodeship, households maintained their level of consumption during the increasing economic crisis and over 58% of interviewed persons claimed that they 'will definitely not' and 'will rather not' lower the level of purchasing foodstuffs. The biggest group, which has denied lowering the level of such purchases, was households including 2–3 persons. Households with the oldest persons indicated the most significant decrease in consumption. These research have proven that changes in behaviour of consumptive households mainly consisted in changing decisions related to worsening financial situation of several social groups and changes in purchasing and consumption habits of households. Over 43% of interviewed households have 'resigned' or 'rather resigned' from purchasing some products, 44% has decided to purchase the same products as before the crisis but in smaller amounts. A characteristic approach (69%) has also been a replacement of more expensive, branded products with cheaper, more affordable ones [Sobczyk 2013].

Changes in previous behaviour can be a result of consumers' reaction to the atmosphere of anxiety related to the effects of the crisis created by the media [Słaby 2009]. Information about possible effects of the crisis presented by the media had a more significant influence on worsening public mood than on a decrease of actual living conditions of Polish citizens. Awareness of the crisis in media and actually worsening financial situation of several social groups have influenced (to various extent) behaviour-related purchasing and consuming products including foodstuffs [Sobczyk 2013].

The aim of this work was to evaluate the effect of the economic crisis on consumers' behaviour towards meat.

MATERIALS AND METHODS

The research was conducted within the framework of the research project by the National Science Centre in Cracow entitled "Determinants of selection and consumption of meat in Poland – diagnosis and forecasts". The evaluation of the economic crisis on changes in consumers' behaviour towards meat was made in June 2012 on a group of 1,500 people constituting all-Polish community sample. A group of 272 people was selected for final statistical analyses. All these people agreed that the economic crisis has the effect on meat consumption level. The research was qualitative and was conducted with the use of direct interview method. 16 voivodeships were included and selected proportionally to the number of citizens and according to the following criteria: gender, age, level of education and place of residence. Issues included in the questionnaire were related to factors determining changes in consumers' preferences towards meat and were particularly purposed for verifying if consumers actually feel the effect of the economic crisis in Poland and other countries since 2008 on changes in consumption of meat.

The interviewed group included mainly women (59.4%) and people living in urban environments (62.6%). 39.2% of interviewed respondents are people between 18 and 39 years of age, 33.7% declared to be 60 or more and 27.1% are people between 40 and 59. Over 30% of respondents declared higher education. Subjective analysis of opinions related to respondents' income has shown that the majority of them (35.2%) stated that their income allows to fulfill only basic needs. Interviewed respondents are characterized in Table 1.

Size (average rating) and descriptive statistics have been used in order to analyze the results and percentage share of ratings from 1 to 7 has been shown. Moreover, a sum of the lowest – 1 and 2 ratings and highest – 6 and 7 ratings has been calculated. Chi^2 statistics and Cramer's V correlation coefficient have been used in order to determine the statistical significance of the relationship between variables at the significance level of $p \leq 0.05$. Statistical analysis of the results has been developed with the use of SPSS 14.0 for Windows.

Table 1. Socio-demographic structure of respondents [%]

Whole population	Overall N = 272 (100%)
Gender	
Female	59.4
Male	40.6
Opinion related to income	
Insufficient	20.7
Enables only to fulfill basic needs	35.2
We can afford some but not all expenditures	17.9
We can afford all	12.9
We can afford all and we are able to save money	13.3
Place of residence	
City	62.6
Village	37.8
Age (years)	
18–39	39.2
40–59	27.1
60 and more	33.7
Level of education	
Primary	17.0
Vocational	25.4
Secondary	23.,2
High	34.4

Source: Author's own research.

RESULTS AND DISCUSSION

One of the most important foodstuff playing a significant role in everyday diet and nutrition of humans is meat. It is a compound product consisting of various chemical compounds indicating, e.g. its nutritional value. It also contains considerable amounts of proteins, vitamins and minerals [Layman et al. 2008, Paddon-Jones et al. 2008]. More and more often, apart from a positive impact of meat on human's health, it is assigned with a negative impact too. Some scientists claim that the excessive amounts of meat can result in obesity, circulatory system diseases and cancers [Gawęcki and Hryniewiecki 2003, Wagemakers et al. 2009]. Such concerns have also been reported by meat consumers what is confirmed by research related to behaviour of respondents consuming beef [Gutkowska et al. 2011].

Changes in consumers' behaviour towards meat depend on many factors, mainly including ones related to its quality, appearance and taste, but also lifestyle, fashion and affordability depending on the income and prices of products offered on the market.

According to 63.1% of respondents taking part in the empirical research, the amounts of consumed meat have changed over the last few years. For 18.1% of the respondents, it is the economical crisis which has been a reason of changes related to meat consumption, what is also reflected in European Union forecasts for 2012–2013. According to them, the economic slowdown in EU and high unemployment rate result in consumers buying cheaper food, including cheaper meat. Moreover, the additional problem negatively impacting the meat sector is growing prices of fodder as a result of drought in many regions throughout the world [Komisja… 2010]. Author's own research suggested other determinants which influenced changes in consumers' behaviour towards meat. These determinants are meat price growth (20%), poor quality of meat and consumers' concerns about possibilities of becoming infected with zoonotic diseases after consuming meat (Fig. 1).

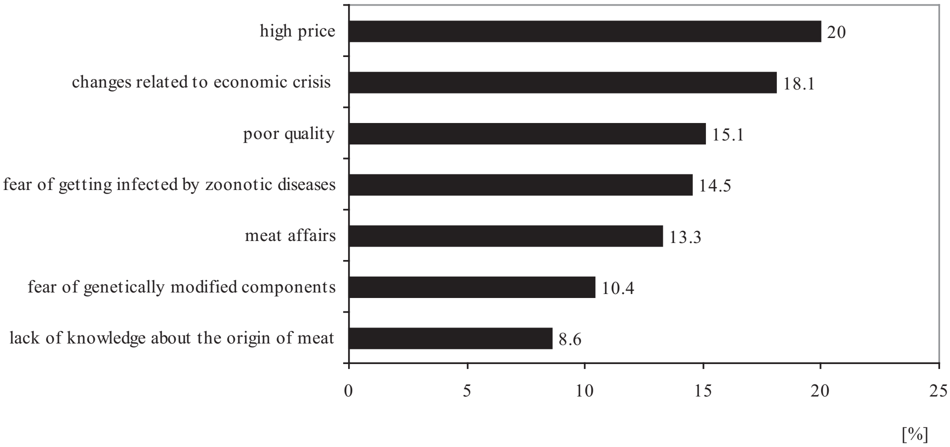


Fig. 1. Factors influencing changes in the meat market according to consumers [%]

Source: Author's own research.

With an assumption that the economic crisis is a process which considerably effects changes in consumers' preferences towards meat, it was found out that the crisis has been a cause of, e.g. limitation of total meat consumption (5.02), increasing level of consumption of cheaper types of meat, e.g. poultry, particularly chicken meat (4.85), decreasing level of consumption of smaller portions of meat in relation to 2–5 years ago (4.23). People also began to pay attention to prices of purchased meat (4.06) – Table 2. Results of the research are coherent with research executed by TNS OBOP [Kryzys… 2009] and CBOS [Czy Polacy… 2012], according to which, consumers' behaviour on the market of consumption goods is similar. And in these cases, consumers try to limit their expenditures by buying less amounts of products or by searching for cheaper substitutes.

Limitation of the total meat consumption as a consequence of the economic crisis, as Table 3 shows, was considerably more often noticed by men (5.15), people over 60 years of age (5.15), town citizens (5.17) and people with primary education (5.18). Changes consisting in increasing the level of consumption of cheaper types of meat, e.g. poultry, and particularly chicken meat was relatively more often noticed by women (4.97), responders between 40 and 59 years of age (4.96), agglomeration citizens (4.91) and

Table 2. Selected changes in consumer preferences due to the influence of the economic crisis

Perceived changes	Average rating	Sum of higher and the highest ratings (4, 5, 6, 7) [%]	Sum of the highest ratings (6, 7) [%]	Sum of low and the lowest ratings (1, 2, 3) [%]	Sum of the lowest ratings (1, 2) [%]
Limitation of total meat consumption	5.02	81.1	59.3	17.2	7.7
Increasing level of consumption of cheaper types of meat, e.g. poultry, particularly chicken meat	4.85	72.9	47.6	26.1	14.4
Decreasing level of consumption of more expensive types of meat, e.g. beef	4.48	68.7	43.5	20.9	13.5
Buying smaller portions of meat in relation to 2–5 years ago	4.23	67.1	52.8	13.5	11.0
Paying more attention to prices of purchased meat	4.06	59.8	46.2	21.2	8.3

Source: Author's own research.

people with higher level of education (5.21). However, changes consisting in decreasing consumption of more expensive types of meat, e.g. beef was noticed by men, respondents over 60 years of age (4.58) and between 40 and 59 years of age (4.51), town citizens (4.67) and people with lower level of education, particularly with primary (4.89) and vocational (4.76) education. Change in approach towards meat related to buying smaller portions in relation to the past was noticed by women (4.27), young people between 18 and 39 years of age (4.35) and villagers (4.37). This dependency was statistically significant considering respondents' level of education, since it was found out that the average rating decreased with an increase of respondents' level of education.

Decreasing life standard of some social groups in Poland resulted in the fact that consumers more and more often declared taking the price of meat into consideration before making a final decision of buying it. A research executed in this case has shown that the price of meat was a particularly significant variable for women (4.15), people over 59 years of age (4.21), villagers (2.25) and people with the lowest level of education (4.52).

Although some consumers have noticed the effects of the economic crisis and these effects have significantly influenced their approach towards meat, the experts emphasize that the situation on agricultural markets in Poland is not so bad. It was found that particularly in years 2008–2009, the largest economic benefits have been obtained by producers of vegetables, animals sold for slaughter and beet grower. A group mostly influenced by price changes was grain cultivators and dairy farmers [Rynek… 2009].

Table 3. Respondents determining changes in their preferences towards meat by gender, age, place of residence and level of education (average rating)

Perceivable changes	Gender		Age			Place of residence		Level of education			
	men	women	18–39	40–59	60 and more	town	village	primary	vocational	average	higher
Limitation of total meat consumption	5.15[a]	4.89	4.92	4.99	5.15	5.17	4.87	5.18[a]	5.09	4.99	4.82
Increasing level of consumption of cheaper types of meat, e.g. poultry, particularly chicken meat	4.73	4.97	4.76	4.96	4.83	4.91[a]	4.79	4.11	5.13	4.95	5.21[a]
Decreasing level of consumption of more expensive types of meat, e.g. beef	4.56	4.40	4.35	4.51	4.58	4.67[a]	4.29	4.89	4.76	4.31	3.96
Buying smaller portions of meat in relation to 2–5 years ago	4.19	4.27	4.35[a]	4.21	4.13	4.09[a]	4.37	4.69	4.51	4.01	3.71
Paying more attention to prices of purchased meat	3.97	4.15[a]	3.88	4.09	4.21[a]	3.87	4.25[a]	4.52[a]	4.17	4.02	3.53

[a]Statistically significant differences between variables, chi^2, Cramer's V, $p < 0.05$.
Source: Author's own research.

SUMMARY

Research conducted on all-Polish community sample has confirmed that for 18.1% of respondents, the economic crisis is a considerable determinant of their approach towards meat. According to the respondents, reminiscences of this process are mainly related to a necessity of lowering the total meat consumption level, perceived increase of cheaper meat consumption level, including poultry and decrease of more expensive meat consumption level, including e.g. beef. Meat consumers also stated that they buy less meat in relation to a past few years and moreover they more often pay attention to prices of meat.

REFERENCESS

Bywalec C., 2010. Konsumpcja a rozwój gospodarczy i społeczny (Consumption and the economic and social development). Wydawnictwo C.H. Beck, Warszawa.

Czy Polacy boją się kryzysu? (Is Poles fear the crisis?), 2012. Komunikat z badań CBOS, BS/2/2012, styczeń (Communication CBOS, BS/2/2012, January).

Drozdowicz-Bieć M., 2009. Wzrost w cieniu światowego kryzysu (Growth in the shadow of the global crisis). Barometr Regionalny. Analizy i Prognozy (Regional Barometer. Analyses and Forecasts) 3 (17), 7–14.

Frątczak-Rudnicka B., 2009. Konsumenci w gorszych czasach (Consumers in bad times). Marketing w Praktyce (Marketing in Practice) 4.

Gawęcki J., Hryniewiecki L., 2003. Żywienie człowieka. Podstawy nauki o żywieniu (Human Nutrition. Basic science of nutrition). Wydawnictwo Naukowe PWN, Warszawa.

Gutkowska K., Żakowska-Biemans S., Sajdakowska M., Kosicka-Gębska M., Wierzbicki J., 2011. Perception of beef attributes by Polish consumer as a factor determining demand for this food category. Acta Sci. Pol., Oeconomia 10 (4), 33–41.

Kieżel E., Smyczek S. (Eds) 2011. Zachowania polskich konsumentów w warunkach kryzysu gospodarczego (Polish consumer behavior in terms of the economic crisis). Placet, Warszawa.

Komisja Europejska przedstawiła nowe prognozy dla unijnego rynku mięsa w 2012 oraz 2013 roku (The European Commission presented new forecasts for the EU meat market in 2012 and 2013 years), http://ksow.pl/pl/rynki-rolne/news/entry/3582-komisja-europejska-przedstawila-nowe-prognozy-d.html (Accessed 24.10.2012).

Koniunktura gospodarcza w wybranych krajach w okresie kryzysu finansowego, 2011 (The economic situation in some countries during the financial crisis of 2011). Raport Ministerstwa Gospodarki. Departament Analiz i Prognoz, Warszawa, styczeń (Report of the Ministry of Economy. Analyses and Forecasting Department, Warsaw, January).

Kryzys: reakcja i adaptacja (Crisis: response and adaptation). 2009. Sondaż TNS OBOP z dn. 2–5.04 (TNS survey dated 2–5.04).

Layman D.K., Clifton P., Gannon M.C., Krauss R.M., Nuttall F.Q., 2008. Protein in optimal health: Heart disease and type 2 diabetes. American Journal of Clinical Nutrition 87, 1571–1575.

Paddon-Jones D., Westman E., Mattes R.D., Wolfe R.R., Astrup A., 2008. Protein, weight management, and satiety. American Journal of Clinical Nutrition 87, 1558–1561.

Pater R., Skica T., 2011. Skutki kryzysu gospodarczego lat 2007–2009 dla sfery realnej polskiej gospodarki na tle Unii Europejskiej (The effects of the economic crisis in 2007–2009 for the real sector of the Polish economy with the European Union). Barometr Regionalny. Analizy i Prognozy (Regional Barometer. Analyses and Forecasts) 1 (23).

Rozmus S., 2010. Psychologiczne i socjologiczne uwarunkowania kryzysu na brytyjskim rynku mieszkaniowym. www.ae.katowice.pl/images/user/File/katedra_ekonomii/S.Rozmus_Psychologiczne_i_spoleczne_uwarunkowania_kryzysu_na_brytyjskim_rynku_mieszkaniowymi.pdf (Psychological and sociological conditions of the crisis in the UK housing market). (Accessed 15.05.2010).

Rynek rolny (Farmer's Market), 2009. IERiGŻ-PIB 7–8, Warszawa.

Słaby T. (Ed.), 2009. Reakcje polskiego konsumenta na kryzys gospodarczy (Polish consumer reactions to the economic crisis). Oficyna Wydawnicza SGH, Warszawa.

Sobczyk G., 2013. Zachowania konsumenckie w warunkach kryzysu (na przykładzie województwa lubelskiego) (Consumer behavior in times of crisis (for example, Lublin Province)). Zeszyty Naukowe WSEI Seria: EKONOMIA (Scientific Papers Series WSEI: Economics) 6 (1), 323–345.

Wagemakers J.J.M.F., Prynne C., Stephen A.M., Wadsworth M.E.J., 2009. Consumption of red or processed meat does not predict risk factors for coronary heart disease; results from a cohort of British adults in 1989 and 1999. European Journal of Clinical Nutrition 63 (3), 303–311.

WPŁYW KRYZYSU GOSPODARCZEGO NA ZACHOWANIA KONSUMENTÓW WOBEC MIĘSA

Streszczenie. Kryzys gospodarczy zapoczątkowany w 2008 roku ma wpływ na wiele sfer życia konsumentów i istotnie warunkuje ich zachowania związane z nabywaniem i konsumowaniem produktów, w tym produktów żywnościowych. Przykładem ważnego w diecie człowieka produktu jest mięso spożywane przez Polaków na poziomie ponad 75 kg na osobę rocznie, które z jednej strony ma odpowiednie walory odżywcze i spożywane jest przez konsumentów ze względu na tradycję, przyzwyczajenie i sprawianie przyjemności głównie przez odczuwanie pozytywnych wrażeń smakowych, ale z drugiej strony jest produktem drogim, którego spożycie ogranicza się lub poszukuje się tańszych zamienników w niekorzystnych ekonomicznie warunkach. Celem podjętych badań realizowanych w ramach projektu badawczego NCN w Krakowie pt. „Uwarunkowania wyboru i konsumpcji mięsa w Polsce – diagnoza i prognozy" była ocena wpływu kryzysu gospodarczego na zachowania konsumentów wobec mięsa. Przeprowadzona analiza statystyczna pozwoliła na stwierdzenie, że dla 18,1% badanych to właśnie kryzys gospodarczy przyczynił się do zmian w zakresie spożywania mięsa. Jak obliczono na podstawie 7-stopniowej skali ocen (gdzie: ocena 1 – brak jakichkolwiek zmian, a ocena 7 – zmiany o dużym natężeniu), w ostatnich kilku latach konsumenci zauważyli obniżenie poziomu spożycia mięsa ogółem (5,02), zwiększenie poziomu spożycia tańszych rodzajów mięs (4,85), zmniejszenie poziomu spożycia droższych rodzajów mięs (4,48), kupowanie jednorazowo mniejszych porcji mięsa niż to miało miejsce 2–5 lat temu (4,23). Zaczęto także bardziej zwracać uwagę na cenę kupowanego mięsa.

Słowa kluczowe: kryzys gospodarczy, zachowania konsumentów, mięso

Accepted for print – Zaakceptowano do druku: 07.08.2013

ACTA SCIENTIARUM POLONORUM *Oeconomia 12 (3) 2013, 61–71*

IMPACT OF CONSUMER PRICES AND CASH INCOME ON CONSUMPTION OF DAIRY PRODUCTS

Ľubica Kubicová, Zdenka Kádeková
Slovak University of Agriculture in Nitra

Abstract. In the paper is modeled demand for dairy products based on the consumer price of milk product and disposable cash incomes available to households of employees, households of self-employed persons and pensioners by regression and correlation analysis and marketing research. In examining the consumption of dairy products was quantified elasticity of demand, own price elasticity, indirect (cross) elasticity of demand, substitution relationships, complementarity and association.

Key words: incomes, consumer prices for dairy products in the households of employees, households of self-employed persons and pensioners, income and expenditure elasticity, modeling of demand for dairy products, substitution, complementarity, association

INTRODUCTION

Analysis of demand and supply of food products is an essential part in making decisions by consumers, primary agricultural producers, processors and retail chains. In recent years, particularly in the times of the ongoing economic crisis, in the professional community and practice has grown interest in analysis of consumer behaviour in relation to changes in prices, income level, considering the differences in food consumption, between the different social and income groups. At present it is necessary to highlight the importance of income in the family budget. Its level significantly affects the expenses that have to be spent on consumption and other services needed for live. The purchasing power of many households do not allow to fully meet demand for food. Issues of nutrition and food chain is given much attention in Slovakia as part of the government, the manufacturing sector, as well as an intellectual level queue. Previous numerous works and studies [Križová 2007, Kubicová and Lušňaková 2009, Foltys and Kirchnerová 2012]

Corresponding authors: Department of Marketing, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovak Republic, e-mail: Lubica.Kubicova@uniag.sk, zdenka_kadekova@yahoo.com

and others point out, that nutrition and overall consumption of milk and milk products in Slovak households does not reach recommended rations of food.

AIMS AND METHODS

Food expenses take a special place at the final consumption of households. When income grows, the marginal propensity of expenditures on food decreases until it reaches a point where the energy consumption is independent on income. Food consumption is not increasing anymore and may also decrease due to changes in the objective conditions of consumption. Food costs are close to relative saturation and due to the effect quality, decrease in expenditures is relative and does not reach an absolute and saturation. Demand reacts for income growth inelastically in a case of goods and hence the foods, which supply (consumption) comes close to saturation.

When processing numerical material, which was taken from the website of Statistical Office of the Slovak Republic (income, expenditure and household consumption in the Slovak Republic) and also obtained through market research of purchase of milk and milk products, were used the methods of regression and correlation analysis and detection of association and contingency of qualitative characters.

When evaluating the results of the questionnaire survey were used contingency tables and tests of independence:

Chi-square (χ^2) test of contingency

$$\chi^2 = \sum_{i=1}^{R} \sum_{j=1}^{S} \frac{(n_{ij} - m_{ij})^2}{m_{ij}} \tag{1}$$

Intensity of associations of the quality variables plural sorted data (A, B) was determined by Pearson coefficient – *Cp*

$$Cp = \sqrt{\frac{\chi^2}{\chi^2 + n}} \tag{2}$$

The values of *Cp* – with association growth increasing from zero to close to one – expresses a high degree of dependence between the characters A, B.

The income elasticity of demand for food were analyzed by multiple linear regression function. A linear regression model of demand for dairy products (q_i) is based on the relationship (3) and (4)

$$q_i = f(P_1, I) + e_i \tag{3}$$

respectively:

$$q_i = f(P_1, P_2, .., P_n, I) + e_i \tag{4}$$

where: q_i – demand for i-th milk product per person in kg per year;
P_1, P$_2$, ..., P_n – prices in € of individual i-th dairy products in kg;
I – net cash income (NCI) in € per person per year;
e_i – random, residual component.

Statistical evidence of the regression parameters and appropriateness of the chosen regression model was verified by using the index of determination R^2.

Text is supplemented by tables. Data processing and calculations were performed by using Microsoft Excel software.

RESEARCH RESULTS AND DISCUSSION

Modeling of demand for cheese and curd

Cheese production in Slovakia due to the nature of the natural environment and a long tradition of breeding cattle, sheep and goats provides a fairly wide range of sheep cheese and cheese products as well as their quality. In recent years, assortment of cheeses has substantially changed and the quality of production of cheese and sheep cheese has improved as well. There were improved mainly the technological conditions of production, building of quality assurance systems of production (HACCP systems, IS 9001), all legislation was set on EU level and promotion in domestic and foreign markets increased.

Although the cheeses become increasingly popular in the group of consumers, their price is quite high due to the average cash income of surveyed households. Demand for cheese in consideration with their consumer prices P_i and cash flows in the surveyed households are characterized by linear demand functions and regression parameters listed in Table 1.

In the households of the self-employed persons, increase of the consumer price of cheese and curd was seen in decrease of its demand by an average of 0.645%, whereas, increase of cash income of 1% caused increase in demand for cheese and curd by an average of 0.416%.

Table 1. Estimates parameter of demand functions for cheese and curd (q_i)

Households	$q_{ij} = b_0 + b_1$ price + b_2 income	Elasticity		R^2
		E_{PDi}	E_{IDi}	
Employees	$q_{i,z} = 6.731 - 0.2678\ P_i + 0.00421\ PR$	–0.215	0.233	0.464[a]
Self-employed persons	$q_{i,s} = 8.372 - 0.7622\ P_i + 0.00705\ PR$	–0.645	0.416	0.517[a]
Pensioners	$q_{i,d} = 7.403 - 0.2502\ P_i + 0.00071\ PR$	–0.149	0.302	0.310[a]

[a] Model statistically significant at 10% significance level ($\alpha < 0.10$).

Source: SO SR, COICOP, own calculations.

Based on the index of determination (R^2) and the estimated parameters of the regression functions of demand for cheese and curd, which takes their values in the range from 0.517 to 0.310 can be so clear, that in the surveyed households, the consumer demand for cheese and curd is from 51.7 to 31.0% affected by the cash incomes of the household and consumer unit price of cheese and curd.

During the surveyed period, consumer demand for cheese, as opposed to the demand for drinking milk, was developed in accordance with the expected theoretical principles and intuitions. With an increase in consumer prices of cheese and curd by an average annual rate of €1, consumer demand responded the most flexible in the households of self-employed persons by decreasing in demand of 0.7622 kg per person, while in the households of employees demand declined by only 0.2678 kg and in households of pensioners by 0.2502 kg per person. In the households of pensioners, demand for cheese curd was affected in 31% by cash incomes and consumer prices of cheese and in 69% by other factors, not included in the model. In the group of self-employed households impact of the consumer price of cheese and cash income on demand for cheese was shown significantly, to 51.7% ($R^2 = 0.517$) and other, in the model untracked factors, affected demand only by 48.3%. In terms of Polish consumers, Wysocki and Kurzawa [2006] stated index of determination $R^2 = 0.883$ and the income elasticity for cheese $E_{IDi} = 0.43$.

Modeling of demand for other dairy products

Declining consumption of drinking milk is, due to the entry of new technologies in food production, opening of the market and increased supply of sour milk products in retail chains and advertising is in Slovak households, increasingly substituted by other dairy products, especially with higher added value. In 2011, from the total cash expenditures on milk, cheese and eggs, households of pensioners spent on other fermented products 62.61%, from which on cheese and curd – 31.63%, on other dairy products – 16.35% and on yoghurts – 14.63%. Households of self-employed persons spent on cheese and curds 30.47% of funds, 17.04% on yoghurt and 15.44% on other dairy products. Approximately the same proportion of funds was spent on the dairy products in the households of employees.

Based on the index of determination (R^2), as shown in Table 2, could be concluded that the estimates of the multiple linear functions parameters explain the dependence of the demand for other dairy products (q_i) on the unit price (P_i) and the average annual income (PR) in 55.8% up to 63% and only 44.2%, respectively 37% is accounted on the other factors, untracked in the model.

Table 2. Estimates parameter of demand functions for other dairy products (q_i)

Households	$q_{ij} = b_0 + b_1$ price + b_2 income	Elasticity		R^2
		E_{PDi}	E_{IDi}	
Employees	$q_{i,z} = 8.615 - 1.583\ P_i + 0.00092\ PR$	–0.426	0.409	0.630[a]
Self-employed persons	$q_{i,s} = 5.661 - 1.298\ P_i + 0.00145\ PR$	–0.354	6.774	0.574[a]
Pensioners	$q_{i,d} = 13.855 - 3.272\ P_i + 0.00133\ PR$	–0.558	0.409	0.558[a]

[a] Model statistically significant at 10% significance level ($\alpha < 0.10$).

Source: SO SR, COICOP, own calculations.

Based on the coefficients of income and price elasticities of demand for other dairy products can say that demand is growing in all surveyed households according to intuition and theoretical assumptions of supply and demand. The increase in consumer prices caused decrease in demand for other dairy products, while increase of the cash income of the households contributed to increased demand.

Coefficient of own prices conversion of other dairy products shows that the increase in the consumer price of 1% resulted in decrease in domestic demand in households of pensioners of 0.558%, in the households of employees of 0.426% and in households of self-employed persons only of 0.354%. Elasticity indicates similar trends [Thiele 2008]. Cash expenditures in these households respond more elastic to changes in cash income. Increase of cash income in the households of self-employed persons of 1% would make the increase in demand for other dairy products of 6.774%, while in the households of pensioners and employees only of 0.409%.

Modeling of demand for butter

In Slovakia, total consumption of butter oscillated with small fluctuations at around 3 kg per person per year over the previous seven years (from 1998 to 2004), but since 2004 the consumption of butter gradually decreased and stabilized at about 2 kg per person per year. In 2011, consumption was highest in households of pensioners (2.78 kg per person per year). The households of employees consumed 2.08 kg per person per year, the households of self-employed persons – only 1.91 kg. The gradual reduction and stabilization of consumption of butter was caused by a wider offer of substitute vegetable fats for favourable consumer prices.

Linear models of demand for butter in different groups of households explain the dependence of demand (q_i) on the consumer prices of butter (P_i) and cash income (PR) at level 16.6 to 3.45%. The highest tightness of demand dependency for butter is expressed by the coefficient of multiple correlations is seen in the households of employees (Table 3).

With an increase in the consumer price of butter of €1, the households of pensioners respond by decreasing of demand for butter in an average annual rate of 0.096 kg per person. Households of employees and self-employed persons, as opposed to households of pensioners, responded by reducing of demand for butter when increasing its unit price and their consumer buying behaviour did not comply according the law of supply and demand. The same differently, but not elastically responded households in terms of cash incomes. To increase the income of 1% the households responded by slight reduction in the demand for butter, especially in households of pensioners. The increase in cash income of 1% in the households of pensioners led to decrease in demand for butter of 0.061%, while in the households of employees demand for butter decreased of 0.353%,

Table 3. Estimates parameter of demand functions for butter (q_i)

Households	$q_{ij} = b_0 + b_1$ price + b_2 income	Elasticity		R^2
		E_{PDi}	E_{IDi}	
Employees	$q_{i,z} = 1.849 + 0.112\ P_i - 0.00017\ PR$	0.329	–0.354	0.166[a]
Self-employed persons	$q_{i,s} = 1.719 + 0.071\ P_i - 0.00009\ PR$	0.224	–0.226	0.035[a]
Pensioners	$q_{i,d} = 3.276 - 0.096\ P_i - 0.00004\ PR$	–0.198	–0.061	0.039[a]

[a] Model statistically significant at 10% significance level ($\alpha < 0.10$).

Source: SO SR, COICOP, own calculations.

in households of self-employed persons – 0.226%, these households probably substituted their consumption of butter by vegetable fats and oils.

Modeling of demand for yoghurt

In Slovak households, yoghurts belong among the most common and most popular sour milk products. According to the technological process for producing, yoghurt has a characteristic texture and rheological consistency. White yoghurt is made only from milk ingredients and without added starch, gelatin or other stabilizers. Yoghurts are often flavoured with fruit, chocolate and cereals. Fermented dairy products such as buttermilk and yoghurt are well tolerated even by those people, who can not digest lactose. Yoghurt provides similar nutrients as milk, is a good source of protein, vitamins B and D and minerals.

In the households of pensioners and self-employed persons, consumer demand for yoghurt did not develop according the laws of supply and demand. With increase of the yoghurt unit price, consumers continued to increase demand for yoghurt, which was more significant mainly in the households of self-employed. Only in the households employees, demand for yoghurt responded in accordance with the laws of supply and demand and an increase in the yoghurt unit price of 1% reduced demand of 0.167%. In the households of employees, with the money income increase of 1%, demand for yoghurt increased in diameter up to 1.567%, so demand for yoghurt in this group of households was elastic (Table 4).

There had been demonstrated a strong correlation dependence of demand for yoghurt on its consumer unit price and on the cash incomes mainly in the households of employees (r = 0.908), while in households of pensioners and self-employed persons (whose demand for yoghurt was not bound by the laws of demand) was experienced only moderate correlation dependence (r = 0.761, respectively r = 0.621). Multiple regression model of demand for yoghurt in these households captures variability of demand dependance on the unit price of the product and the money income to 38.51% respectively to 82.4%.

Table 4. Estimates parameter of demand functions for yoghurt (q_i)

Households	$q_{ij} = b_0 + b_1$ price + b_2 income	Elasticity		R^2
		E_{PDi}	E_{IDi}	
Employees	$q_{i,z} = 8.856 - 0.564\ P_i + 0.00363\ PR$	–0.167	1.567	0.824^b
Self-employed persons	$q_{i,s} = 2.784 + 2.242\ P_i + 0.000073\ PR$	0.617	0.033	0.385^a
Pensioners	$q_{i,d} = 2.734 + 1.069\ P_i + 0.00103\ PR$	0.281	0.419	0.579^a

[a] Model statistically significant at 10% significance level (α < 0.10),
[b] Model statistically significant at 10% significance level (α < 0.05).

Source: SO SR, COICOP, own calculations.

Modeling of substitution relationships of demand for drinking milk

Milk accompanies people from birth throughout all life and is also the raw material for producing other food products, allowing producers to offer a wide and varied scale of substitutes in the market. In recent years, human nutrition adversely reflected declining consumption of drinking milk, which is now under the recommended amount of food (91 kg per person per year). Previous surveys have prooved that the choice of the dairy affects mainly the price, taste, brand and product quality [Stávková et al. 2007]. On correlation of milk quality and production parameters points Foltys and Kirchnerová [2012]. Consumers consider price of milk and dairy products for high. Lower consumption of drinking milk is caused by a low level of consumer awareness and lack of understanding of its vital role in human nutrition. In recent years milk has been presented as one of the major sources of human nutrition during the International Day of Milk.

Based on the multivariate linear regression function and model of demand for drinking milk (q_i) features that in the households of employees the substitution function of demand fulfill mainly other dairy products, while the demand for yoghurt, cheese and curd is in a complementary relationship with the consumption of drinking milk. Complementary effect reflects economic relationship between changes of price and demand for goods which complement each other by the new consumer features. The substitution effect is the opposite of the complementary effect. Increase in the price of drinking milk in the households of employees raises in accordance with effects decreasing demand for this product and increasing demand for substitutable products (for other dairy products), but has no or almost no impact on the demand for independent products (after drinking milk). According to the pension effect [Vincúr 2000], increase (decrease) in prices is simply not reflected in demand for the concerned products, but leads to a decrease (increase) in purchasing power and therefore induces changes in the structure of consumer spending, which are analogous to those driven by changes corresponding to changes in this pension.

Parameters of multiple linear regression function of demand for drinking milk (g_i) in households of employees provides the regression equation:

$$g_i = 22.455 + 57.148\, P_1 - 6.986\, P_2 - 12.274\, P_3 + 16.106\, P_4 + 0.0102\, P_5 \quad \text{with } R^2 = 0.842 \qquad (5)$$

where: P_1 – price in € of drinking milk in kg;
P_2 – price in € of yoghurts in kg;
P_3 – price in € of cheese and curd in kg;
P_4 – price in € of other dairy products in kg;
P_5 – net money income in € per person per year.

Within 2004–2011, consumer demand for drinking milk was on average level 45.71 kg per person per year. As the parameters of multiple linear regression functions in the households of employees show, these substitute consumption of drinking milk when increasing its unit consumer prices by increased consumption of other dairy products. Indirect (cross) price elasticity of demand ($E_{gi,\, P4} = 0.804$) indicates that demand was inelastic and drinking milk price increase of 1% was shown in increasing (substitution) demand for other dairy products on average 0.804%, the consumption of which was at an average of 8.47 kg per person per year.

Demand and consumption of cheese, curd and yoghurt are characterized by complementary relationships that depending on the change in price and demand complement each other by the new features and when increases the price of first product, decreases the demand for the other product and vice versa. Complementarity of demand effect in relation to the consumption of yoghurt expresses the cross-price elasticity on level ($E_{gi,\, P2} = -0.396$) and in relation to consumption of cheese and curd ($E_{gi,\, P3} = -1.478$).

Parameters of multiple linear regression function of demand for drinking milk (g_i) in the households of self-employed persons are expressed by regression equation with following parameters

$$g_i = 29.317 + 99.724\,P_1 + 60.533\,P_2 - 30.989\,P_3 - 50.787\,P_4 + 0.0246\,P_5 \text{ with } R^2 = 0.687 \quad (6)$$

Based on the parameters of the regression linear function can be concluded, that in the households of self-employed persons demand for drinking milk is in the complementary relationship with demand for cheese and other dairy products and due to the change in the price complements each other. Consumer demand for drinking milk (average of 46.42 kg per person per year) in this group of households is substituted by an increased demand for yoghurt and indirect (cross) price elasticity of demand ($E_{gi,\,P2}$ = 0.8897) indicates that demand was inelastic and drinking milk prices increase of 1% was accompanied by point increase in demand for yoghurts of 0.8897% and an average annual consumption of yoghurt on level 8.77 kg per person.

Complementarity effect of demand for cheese and curd relative quantifies the coefficient of price elasticity ($E_{gi,\,P3}$ = –3.744) and the effect of demand for other dairy products ($E_{gi,\,P4}$ = –2.497) with an average annual consumption of other dairy products 8.37 kg per person.

Parameters of multiple linear regression function of demand for drinking milk (g_i) in the households of pensioners reflects the regression equation, which is given by the parameters:

$$g_i = 23.280 + 0.330\,P_1 + 118.714\,P_2 - 20.081\,P_3 - 76.960\,P_4 + 0.005\,P_5 \text{ with } R^2 = 0.942 \quad (7)$$

Consumer behaviour and demand for drinking milk in the households of pensioners shows the comparative consistent trend of behaviour of demand for this product, as was demonstrated in the households of self-employed persons in the period between 2004 and 2011. In the households of pensioners, within the compared households, the consumer demand for drinking milk (average 62.89 kg per person per year) was the highest price and in the cases of price increasing of drinking milk is substituted by increased demand and consumption of yoghurt. Indirect (cross) price elasticity of demand for drinking milk ($E_{gi,\,P2}$ = 4.516) suggests that drinking milk price increase of 1% was shown in increase of demand for yoghurt in average of 4.516% and showed an average annual consumption of yoghurt on level 9.10 kg per person. In terms of Polish households, Gulbicka and Kwasek [2006] stated index of determination R^2 = 0.93, income elasticity of whole milk consumption E_{IDi} = –0.076 and income elasticity of skim milk E_{IDi} = 0.164.

Demand and consumption of other dairy products (cheese and curd, other dairy products) act in the complementary relationship, which with the new consumer features complement each other. Complementarity effect of demand for cheese and curd relative quantifies the coefficient of price elasticity ($E_{gi,\,P3}$ = –1.667) and the average annual consumption of cheese was 8.74 kg per person and demand for other dairy products ($E_{gi,\,P4}$ = –2.518), and their average annual consumption was 8.47 kg per person. Consumer prices of drinking milk were in monitored households more less balanced, prices of the other dairy products were in the households of pensioners substantially lower (in average of €0.2).

RESPONSES OF THE RESPONDENTS ON THE INCREASE IN PRICES OF DAIRY PRODUCTS IN TERMS OF ECONOMIC STATUS OF HEAD OF HOUSEHOLD AT WORK

The results of a marketing survey, which was conducted in 2010 on a sample of 528 respondents, indicate (Table 5) that most respondents would slightly reduce the amount of purchased dairy products when the price increases. Such reaction is manifested primarily by students (55.64%), the households of unemployed (50%) and households of pensioners (44.74%). On increase in prices of purchased dairy products more or less unresponsive the households of self-employed persons (61.25%), employees (48.72%), and in 39.47% also households of pensioners. However, the purchase of dairy products would be significantly reduced when their prices increase by households of pensioners (2.63%) and students (2.61%). On the similar cheaper products (substitution effect) would pass mainly households of pensioners (13.16%), households of employees (11.36%) and students (8.69%).

Table 5. Relative expression of dependence between economic status of head of household (social groups of households) at work and response to increasing prices of dairy products (%)

Responses of the respondents	Unemployed	Employees	Self-employed persons	Pensioners	Students
Unresponsive	45.45	48.72	61.25	39.47	33.04
Substituted	4.55	11.36	6.25	13.16	8.69
Slightly reduced	50.0	39.19	32.50	44.74	55.64
Significantly reduced	0.00	0.73	0.00	2.63	2.61

Source: Own research.

Relative expression of the respondents reaction on purchase of dairy products in the cases of increasing prices, linked to the economic opportunities arising from the position of head of the household at work (respectively from unemployment) are characterized by a statistical analysis examining qualitative characteristics (mode of action, the head of the household status at work) that would allow on a certain (selected) level of evidence, express association relationships between them and their intensity.

From the data contained in the contingency Table 6 and a chi-square can be said that has been proven statistically significant association between the economic status of the head of household at work and ways of households responses to higher prices of dairy products. Our evaluation shows that the calculated statistics $\chi^2 = 25.213$ is higher than the table value at 5% significance level and 12 degrees of freedom, i.e. $\chi^2 = 25.213 > \chi^2_{0.05(12)} = 21.03$. Because we have rejected hypothesis H_0 of independence and accepted the alternative hypothesis H_1 is the actual question of the its measurement. To measure the intensity of association, we have used Pearson's contingency coefficient $C_p = 0.213$ on the basis of which can be concluded that, tightness of dependency between economic status of the head of the family at work and from this resulting incomes and and the reaction of households on increasing dairy prices is only modest.

Table 6. Contingency table expressing reaction on the increase in price of dairy products in terms of the position of head of the household at work

Indicator	Unemployed	Employees	Self-employed persons	Pensioners	Students	Total
Unresponsive	10	133	49	15	38	245
Substituted	1	31	5	5	10	52
Slightly reduced	11	107	26	17	64	225
Significantly reduced	0	2	0	1	3	6
Total	22	273	80	38	115	528

Source: Own research.

From the results of survey can be concluded that the increase in prices of dairy products has a negative effect on the consumption of milk and dairy products, especially in those social groups of households (households of pensioners, unemployed and students) who are not able to ensure the higher income.

CONCLUSIONS

In connection with the economic crisis in Slovakia, economic and social conditions contribute to further deepen the differences not only in income but also in the behaviour of people in the consumer market.

The share of expenditures on milk and dairy products in total consumption expenditures was the highest in the households of pensioners and between 2004 and 2011 represented an average of 25.61% annually, in the households of employees was lower – on the level 20.1%. The lowest share of food expenditures (19.33%) had the household of self-employed persons, which in turn showed a relatively higher share (18.95%) of expenditures on milk and dairy products.

Based on multivariate linear regression function and model of the demand for drinking milk results that in the households of employees is substitution function of demand met by other dairy products, while demand for yoghurt, cheese and curd is in a complementary relationship with drinking milk.

In the households self-employed persons, consumer demand for drinking milk is in the complementary relationship with demand for cheese and other dairy products. Consumer demand for drinking milk (average 46.42 kg per person per year) in these households is substituted by increased demand for yoghurt and indirect (cross) price elasticity of demand ($E_{gi,\ P2}$ = 0.8897) characterizes that demand was inelastic and increasing of drinking milk prices of 1% was accompanied by increasing demand for yoghurts of 0.8897% and by average annual consumption of yoghurt 8.77 kg per person.

In the households of pensioners, the consumer demand for drinking milk was on average annual level 62.89 kg per person, within the compared households was the highest one and in the cases of drinking milk price increasing was substituted by increasing demand and consumption of yoghurt. Indirect (cross) price elasticity of demand for drinking milk suggests that drinking milk price increase of 1% was shown in demand increasing for yoghurt in average of 4.516% and showed the average annual consumption of yoghurt 9.10 kg per person.

In the households of pensioners, demand and consumption of other dairy products (cheese and curd, other dairy products) performs in the complementary relationship.

Consumer prices of drinking milk were in the monitored households more less balanced, but the prices of other dairy products (as well as prices of cheese, yoghurt, butter) were significantly lower in the households of pensioners (in average of €0.2 per measurement unit) and therefore were probably lower quality.

It has been proven statistically significant association between the economic status of the head of household at work and the ways of response to higher prices of dairy products ($\chi^2 = 25.213 > \chi^2_{0.05(12)} = 21.03$). Pearson's contingency coefficient $C_p = 0.213$ indicates that the tightness of dependency between response of households to increasing prices of dairy products and economic status of the head of the family at work and from this resulting incomes is only modest.

REFERENCES

Gulbicka B., Kwasek M., 2006. The impact of income and food consumption – premises for food policy. Zagadnienia Ekonomiki Rolnej 306 (1), 19–33.

Foltys S., Kirchnerová K., 2012. Impact of lactation stage and milk production on milk fat fatty acidis ratio. Slovak J. Anim. Sci. 45 (1), 30–35.

Križová S., 2007. Food consumption in relation to income and household expenditure in the SR. Agricultural Economics 4 (6), 44–51.

Kubicová L., Lušňaková Z., 2010. Consumer foodstuffs demand and income standard development in the housholds of Slovakia. Acta Univ. agric. et silvic. Mendel. Brun. 58 (3), 99–106.

Stávková J., Prudilová H., Toufarová Z., Nagyová L., 2007. Factors influencing the consumer behavior when buying food. Agric.Econ.-Czech 53 (6), 276–284.

Thiele S., 2008. Elasticitäten der Nachfrage privater Haushalte nach Nahrungsmitteln. Agrarwirtschaft. German Jour. of Agric. Economics. Jahrgang 57, 258–268.

Vincúr P., 2000. Macroeconomic Analysis and Prognosis. Sprint vfra, Bratislava.

Wysocki F., Kurzawa I., 2006. Kształtowanie się preferencji konsumpcyjnych artykułów żywnościowych w relacji miasto-wieś. Zagadnienia Ekonomiki Rolnej 307 (2), 49–67.

WPŁYW CEN KONSUMPCYJNYCH I DOCHODÓW NA KONSUMPCJĘ PRODUKTÓW MLECZARSKICH

Streszczenie. W artykule przedstawiono modele popytu na przetwory mleczne opracowane na podstawie ceny detalicznej produktu mlecznego i dochodu dyspozycyjnego w gospodarstwach domowych pracowników, gospodarstwach domowych osób pracujących na własny rachunek, a także w gospodarstwach domowych rencistów, przy zastosowaniu regresji i analizy korelacji oraz badań marketingowych. W analizach spożycia produktów mlecznych wyznaczono elastyczność popytu, elastyczność cenową, krzyżową elastyczność popytu, skłonność do substytucji oraz komplementarności.

Słowa kluczowe: dochody, ceny detaliczne na produkty mleczne w gospodarstwach domowych pracowników, gospodarstwa domowe osób pracujących na własny rachunek i rencistów, dochody i elastyczność wydatków, modele popytu na przetwory mleczne

Accepted for print – Zaakceptowano do druku: 10.09.2013

ACTA SCIENTIARUM POLONORUM Oeconomia 12 (3) 2013, 73–82

THE EVOLUTION OF THE SOCIO-ECONOMIC SYSTEM OF SOUTHERN EUROPE DURING THE EUROPEAN UNION MEMBERSHIP OF GREECE, PORTUGAL AND SPAIN

Jakub Piecuch
University of Agriculture in Kraków

Abstract. The three decades, which started with the accession of Greece, Spain and Portugal to the European Union and are ending with the global financial crisis we have experienced during last few years, have brought about significant changes in the welfare system of Southern Europe. Its present form is a direct result of economic, social, as well as political changes which occurred there in the second half of the 20th century. They were determined by crucial events which re-defined the role of a modern state and its institutions, social solidarity and dependencies occurring in free market economy. This article aims to present the influence of changes related to the process of European Union integration and the membership of Greece, Spain and Portugal on the evolution of the socio-economic system functioning there, which is unique in Europe.

Key words: Southern Europe, employment, welfare system, unregistered economy, European Union

INTRODUCTION

The last thirty years, which started with the accession of Greece, Spain and Portugal to the European Union and are ending with the largest global crisis we have experienced recently, have brought about significant changes in the welfare system of Southern Europe. Its present form is a direct result of economic, social, as well as political changes which occurred there in the second half of the 20th century. They were determined by crucial events which re-defined the role of a modern state and its institutions, social solidarity and dependencies occurring in free market economy. The changes resulted from the collapse of authoritarian systems in Greece, Portugal and Spain in the mid-1970s, the creation of democratic states, the subsequent economic crisis, the integration with structures of the European Union and the period of prosperity connected with developing the euro

Corresponding author: Faculty of Agriculture and Economics, University of Agriculture and Economics, Al. Mickiewicza 21, 32-120 Kraków, Poland, e-mail: jpiecuch@ar.krakow.pl

zone. Changes in the demographic situation and the departure from the traditional roles of a working man and a woman taking care of the household also proved important. The factors shaping this part of Europe were complemented in an acute way by the consequences of the ongoing global financial crisis.

The pace of the changes which have occurred in the region after the reinstatement of the democratic system has been neck-breaking. Although the character of features of the welfare model employed in the Mediterranean countries has changed over that time, their basic set remains practically unchanged. Family, religion, state-controlled system of employment and an extensive gray economy still play the fundamental role in the lives of Greek, Spanish and Portuguese people. This is also due to frequent interactions between the public and private spheres, characterized by informal economic and political interdependencies, in which politicians take whole social groups under their protection in exchange for political support.

This paper aims to present the influence of changes related to the process of European Union integration and the membership of Greece, Spain and Portugal on the evolution of the socio-economic system functioning there, which is unique in Europe.

The paper uses publications issued by Spanish and EU institutions, as well as statistics databases of the Instituto National de Estadistica, EUROSTAT, and the annual macroeconomic database of the European Commission's Directorate General for Economic and Financial Affairs (AMECO).

THE ROLE OF FAMILY IN THE WELFARE SYSTEM OF SOUTHERN EUROPE

In the welfare system functioning in this part of Europe, the role of family is particularly important, and changes in the state-family-market nexus have a significant influence on social and economic changes. It can be said that it is those changes that bring about the most significant transformations experienced by the welfare state in this area. In Greece, Portugal or Spain, the family performs two basic roles related to economy: firstly, a household functions as a guarantee of social security, family members support one another financially and spiritually, thus mitigating shocks caused by the ongoing social and economic changes; secondly, the family also pursues economic activities within the family business, creating an important source of employment in the analysed area [Matsaganis et al. 2003].

This essential and central position of the family in the welfare systems in Southern Europe, coupled with the strong sense of solidarity among family members, determines the way in which social and economic needs of citizens are satisfied, and thus influences the structure and functioning of the welfare state. Undoubtedly, strong family ties, together with the obligation to support each member, both in the form of protection and providing means of support, decisively lessen the pressure on state institutions to introduce tools dealing with specific problems. Therefore, the family in the Mediterranean countries becomes not only one of the participants of social and economic life, but also frequently takes over the state's duties. This in turn allows the public administrations to save considerable amounts of financial resources as well as diminishes their responsibility despite e.g. the significant increase in women's economic activity rate. Taking care of dependents – the young, the sick and the elderly – remains the responsibility of women. However, the rise in women's employment imposes some changes with regard to the character of care provided to dependents. At present, the woman's role of taking care of the elderly is rapidly being taken over by paid caregivers, usually migrant workers. The employment of such a domestic help usually remain in the gray economy, and the scale of this phenomenon far exceeds what we observe in Western and Northern European countries. It should be emphasised that the necessity to look for alternatives for the care provided at home by women also stems from the minimalist approach of the state to its role in supporting its citizens in balancing family life and work.

This present-day central place of the family in the Mediterranean welfare states is closely related to the major role that religion continues to play in the family life of the communities living there [Naldini 2003]. Both the Catholic and Orthodox churches emphasise the role of marriage and family ties, which in turn affects the duties men and women perform in their work and family life. In the analysed countries, marriage has a more permanent and institutionalised form, particularly compared to Western and Northern European countries. As a result, the number of single person households is much lower there, and children leave their family home later in life.

Changes taking place in Southern Europe also have an influence on the fall of the fertility rate, which in the analysed countries is the lowest in the European Union [Castles 2003]. Its current level does not ensure demographic renewal. Whereas in the 1980s the fertility rate in the countries in question exceeded the average of 2.2 children per woman, in 2010 it fell to 1.32 in Portugal and 1.44 in Greece[1]. The basic reason for this may be, on the one hand a lack of an effective pro-family welfare policy implemented by the state, and on the other hand the ever growing activity of women in the labour market, following from the simple calculation of the opportunity costs related to the lack of employment during maternity and parental leave. However, we should also point out the specificity of the analysed countries and the legacy of their authoritarian regimes in the 20th century. Those governments promoted and actively supported pro-family policies, and the present lack of such efforts and the low fertility rates are sometimes interpreted as a reaction to the policies of the past decades [Gal 2010].

This situation undoubtedly translates not only into the roles performed in the family, but also into the economic situation of both genders and their functioning in the labour market. Until recently, the Mediterranean countries were characterized by a very low rate of women's employment. Portugal was an exception in this respect, since the political and economic situation during the dictatorship of António de Oliveira Salazar contributed to a high rate of women's employment, which has continued until present day [Piecuch 2010]. In the other two countries, the low economic activity of women results from factors directly related to the functioning of the labour market. In comparison to the situation observed in well-developed EU economies, the percentage of flexible forms of employment, such as part-time jobs or telework, are still not very

[1] Eurostat, Fertility rates by age [demo_frate].

popular in this area. In the analysed countries, women are mostly employed full-time, which on the one hand presents a considerable complication for their role in the family, but on the other hand gives them access to full social security benefits [Trifiletti 1997]. It should be added, however, that recent years have brought about important changes in this respect. The traditional roles of man as breadwinner and woman as housewife are changing. These changes are reflected in the considerable fall in the number of married couples where the man is the sole worker while the woman remains at home [OECD 2001]. At present, in the times of growing economic problems, one employed person per household receives too low an income to satisfy the needs of the family. In this situation, women tend to take up employment more frequently. The growing economic activity of women in Southern European countries has increased the need for the state to provide care of the youngest children. Whereas in the model prevalent so far, based on one male breadwinner, it was the woman's role to care for children, now it is increasingly frequently the role of the state. In the three analysed countries, in the late 1990s and the early 2000s the system of support for a family with two working parents was still among the least developed in the group of the first fifteen EU members [Ray 1997, De Henau et al. 2004].

THE ROLE OF RELIGION AND CHURCH INSTITUTIONS

The Mediterranean nations are perceived as traditional and conservative. Religion continues to be a characteristic element of the identity of the populations of these countries. However, today we may point out a certain duality of relations between the inhabitants of Southern Europe and church institutions. They may take on two, completely different and alternative to each other, forms, which shape the welfare state and influence the character of the implemented social policies. On the one hand, as is the case in Greece or Portugal, religious faith with its underlying moral and cultural values plays an important role in initiating and creating the institutions of social assistance of the welfare state and in formulating the scope, character and identification of social policy objectives. On the other hand, it may be concluded on the basis of the example of Spain ruled by the socialists of Jose Luis Rodriguez Zapatero, that the present character of the welfare state is the result of a reaction of the post-Francoist society to the Catholic religion; a reaction strongly supported by public institutions and the government's policy as well as anti-religious social groups [Gal 2010].

In each of the analysed countries, religion has been and still is one of the most important sources of moral and ethical values. As a result, church institutions, which apart from moral authority also have a real, albeit unofficial, influence on political decisions, effectually participate in creating the ultimate shape of the welfare state. Contemporary Spain is an exception, where the last years of the rule of the Spanish Socialist Workers' Party (PSOE) brought about a sudden move away from the religious values and institutions connected with the Roman Catholic Church. However, the Church also influences social policy in Spain, although more as a counterpoint and an object of contestation than a determinant of the direction of development.

THE SYSTEM OF EMPLOYMENT

The significance of the state for the labour market may be seen from the perspective of two types of activities pursued to fight unemployment (active and passive role). The first activity is based on using a set of economic tools aimed at improving the effectiveness of the functioning of the labour market and restricting the level of unemployment [Kluve 2006].

The passive role of the state in the labour market is quite different. It is limited to providing a number of various forms of financial aid for the unemployed. Both those functions of the state are implemented, to a larger or smaller extent, in all countries of the European Union, including the analysed Mediterranean countries. However, the social assistance programmes implemented in the analysed area do not have a wide range and, in the case of the unemployed, are often inefficient. As a result, unemployed individuals, without sufficient income, must, as has been said above, rely on the assistance of their own family; the state's insufficient involvement in this area leads to an aggravated problem of poverty. Spain has seen the most adverse changes; in 1995–2010 the percentage of poor families increased by almost 40 per cent to the level of over 23 per cent of all families (Table 1).

It is not only the state's care system for the unemployed that is insufficient. The situation is similar in the case of the state's active policy in the labour market. The system of vocational training and employment promotion was insufficient for years. The situation was somewhat improved by those elements of the EU structural policy which were aimed at improving the quality of labour resources. With the development of cohesion policy and the allocation of enormous funds to implementing its priorities, the related activity of the Mediterranean countries also grew. Nevertheless, for years public institutions in the analysed countries were subject to permanent criticism for their low effectiveness in performing the duties of a welfare state.

Table 1. At-risk-of-poverty rate in the Mediterranean states in 1995–2010 (%)[a]

Specification	1995		2000		2005		2010	
	Households (2+2)	Single-person households	Households (2+2)	Single-person households	Households (2+2)	Single-person households	Households (2+2)	Single-person households
EU 15[b]	13.0	25.0	13.0	23.0	13.4	23.6	14.3	25.0
Greece	16.0	31.0	15.0	29.0	18.2	27.9	20.3	27.2
Spain	17.0	15.0	20.0	20.0	22.7	33.7	23.3	25.7
Portugal	16.0	48.0	18.0	42.0	23.9	37.1	17.1	30.1

[a] Persons living in households in which disposable income is under the poverty threshold established at 60 per cent of the income median.
[b] 15 member states of the European Union.

Source: A. Atkinson, E. Marlier (Eds), Income and living conditions in Europe, Eurostat, Luxembourg 2010, Eurostat, At-risk-of-poverty rate by poverty threshold and household type (SILC database) [ilc_li03].

Another important feature of the labour market in the analysed countries, which sets them apart from the whole grouping, is the difference in the level of economic activity. The rate of men's economic activity is decisively higher than in the other groups of the work force: women, immigrants, and young individuals under 24 years of age. Men's places of employment are additionally characterised by stability and protection provided by the state system, whereas the other groups mentioned earlier are characterised by a high unemployment rate and the necessity to look for irregular employment in the gray economy. The observed tendency to labour market segmentation results in persistent inequalities both with regard to employment and social protection.

With the continued large share of agriculture in the value of the domestic product, there is also continued high level of employment in the first sector. Since the accession, there has been an increase in the dynamic of change in this regard, but the percentage of individuals employed in agriculture is still higher than the average values in the other EU countries. This situation largely determines social and economic changes in many regions of Spain and Portugal and virtually all of Greece. Undoubtedly, a distinguishing feature of the situation in the labour market in the analysed area, as compared to the other EU countries, is the percentage of self-employed workers, which is also much above the EU average.

CLIENTELISM OF THE WELFARE STATES IN SOUTHERN EUROPE

A characteristic feature of the functioning of the Mediterranean welfare states is also extensive clientelism and overlapping of the public and private spheres. In the analysed countries, politics is largely dominated by relations between the patron, usually a political party, and a client, i.e. a social or trade group. This dependence leads to the provision of material or monetary benefits in exchange for political support. It also has an influence on the development of economies in the macroeconomic scale, by underlying political cycles determining economic and social decisions.

It can be said that Southern Europe is characterised by a double deficit of the welfare state. On the one hand the area is characterised by a low level of penetration of the state welfare institutions. On the other hand public authorities in these countries are very susceptible to pressure and manipulation from their supporters. Therefore, the way the welfare state functions there is different from other parts of Europe and often takes the form of political corruption with considerable influence on the allocation of the limited resources. Most frequently, however, balancing on the edge of the law takes the form of political clientelism, where entities of economic democracy offer certain favours in exchange for support (e.g. voting for a party). The connection between an improved economic situation of certain social groups and voting in Southern European countries is particularly conspicuous when political parties take advantage of an unstable political situation in the labour market. Using the fluctuations of the level of employment and the employees' drive for stabilisation, ruling parties offer, and the opposition promises, financial transfers and beneficial changes in the law in exchange for votes in the elections. Trade unions are often mediators in such "transactions" and activate voters among their members [Ferrera 1996].

The analysed interdependency between groups of political interest and voters is particularly visible in the case of agriculture. Farmers' income is still dominated by state subsidies, despite the many years of the sector's evolution in the EU and despite its restructuring being supported with EU funds. This situation presents a great opportunity for the development of the patron-client relations. A low income, hidden unemployment and a lack of social security contribute to the decision about an "exchange" of votes for favours offered by the patron. They may, for instance, take the form of benefits for disabled persons who will in exchange vote for their patron. Indeed, the value of such benefits has been systematically growing in recent years. The largest increase in basic prices in 2000 occurred in Greece and reached almost 60 per cent. The changes in Spain reached 40 per cent, whereas the situation in Portugal did not change during the last decade.

Laws which regulate Southern European welfare states are not clear, universal or based on a political culture built for decades. They are based on a hermetic culture founded on particularist interests replete with the patron-client logic, which is still perceived as a characteristic feature of this part of Europe [Ferrera 1996]. In years of financial crisis, such a structure of dependencies and decision-making processes also leads to a low effectiveness of the analysed economies, and at the same time makes it more difficult to take the necessary steps to combat social and economic problems.

UNREGISTERED ECONOMY

The Mediterranean countries form an area characterised by the most extensive unregistered economy out of all the economies in the euro zone [Karamessini 2007]. Estimates show that at the time the euro zone was built, in the analysed countries the share of services and production produced in informal economy reached 30 per cent of the GDP, which to a large extent determined the economic policy of those countries and the amount of structural funds they received. Despite attempts to liberalise and improve the flexibility of the labour market, the law remains restrictive, which does not encourage large employers to increase employment. As a result, small and medium-sized companies and one-man businesses remain the dominant form. For smaller companies it is easier to evade regulations and they conduct a large part of their activity in the gray market much more frequently (Table 2).

The situation is further complicated by the ongoing deep economic recession which forces employees to look for work outside formal employment and forces employers to minimise their expenses, often by means of breaking the law [Schneider and Enste 2000].

The present macroeconomic situation of the Southern European countries indicates that the gray economy may be much more extensive at present than it was ten years ago. It should be added that such an enormous extent of the gray economy in the analysed countries is also influenced by other, non-economic, factors. The most important ones include: the high cost of conducting business, the ever-present and complicated regulations, the restrictiveness of the legal and tax systems, the considerable share of the public sector in the GDP, the susceptibility of the administration and public institutions employees to corruption, and the patron-client relation [Katsios 2006].

Table 2. Share in GDP of unregistered economic activity in developed free-market economies at the turn of the 20th and 21st centuries

Countries	Share of gray economy in country's GDP [%]
Greece, Italy	27–30
Spain, Portugal, Belgium	20–24
Ireland, France, The Netherlands, Germany, United Kingdom	13–16
Japan, USA, Austria, Switzerland	8–10

Source: S. Katsios, The Shadow Economy and Corruption, South-Eastern Europe Journal of Economics 1/2006.

As in the case of the labour market, the other elements of the functioning of the free market are also highly regulated by the state. A great number of laws and directives, licenses and certificates, leads to a considerable increase of the cost of labour and production in the official economy. The high level of regulation not only increases the businessman's expenditure and restricts the opportunities to find employment in the official sphere, but is also conducive to corruption in public institutions. Additionally, the influx of illegal immigrants has an important influence on the gray economy in Southern European countries. They arrive to the European Union mostly from North Africa and former socialist Balkan states. In the case of Spain and Portugal, there is also a significant influx of immigrants from former South American colonies.

It should also be noted that employment in the gray economy is very frequently combined with obtaining additional income transferred under the state's passive labour market policy. Financial tools of supporting the unemployed are often an additional source of income for persons whose employment is not registered by public institutions [Bryant, Garganas and Tavlas 2001].

THE INFLUENCE OF THE PERIOD OF AUTHARITARIAN RULE ON SOCIAL AND ECONOMIC CHANGES IN THE SECOND HALF OF THE 20th CENTURY

The last, but equally important factor influencing the specificity of the Mediterranean countries is their 20th century history, in particular the period of authoritarian rule, which contributed to complicating the processes of modernisation and democratisation in Greece, Portugal and Spain. In all these cases, the years of authoritarian rule left behind an influential legacy, whose most important impact on the present-day situation in the analysed countries follows from:

– the situation of left-wing parties; for years excluded from governing the state, in the period of democratisation in the 1970s and 1980s they were characterised both by a lack of experience, low qualifications and the radicalism of their postulates;
– the resilience of institutional traditions established during authoritarianism – corporatism and the dominant role of the state in the economic and social sphere;
– reactions against the policies of the authoritarian period; today, this reaction results e.g. in a lack of a strong family policy in Spain, characteristic for the regime of

Francisco Franco. The move away from religion, observed for many years, is also an effect of the church's significant role during the regime [Rhodes 1997].

CONCLUSIONS

The democratic change which occurred in the discussed countries in the mid-1970s left its mark on the character of the welfare states which were emerging at the time. The takeover of power by left-wing parties, which had been in opposition during the respective regimes, coincided in time with the growing economic crisis, which considerably restricted the scope of reform in the analysed countries. As a result, the countries opened up to the ideas and postulates of the neo-Liberal movement, which combined with the economic crisis and growing budget deficit and was reflected in the shape of the emerging welfare states in this area. Even today, the Mediterranean states very often forfeit their previous traditional obligations and delegate their tasks to other entities functioning in the social and economic life, such as the family or charitable organisations, often connected with the church. These tendencies grow with the increasing economic problems related to the economic recession in the euro zone, and as a result present-day state structures in Southern Europe are unable to retake the role of decision-making centres, drifting along, at this time of the deepest economic crisis for decades, to the beat of instructions coming from international financial institutions, whose representatives are unable or unwilling to understand the social and economic distinctness of this area.

REFERENCES

Bryant R., Garganas N., Tavlas G. (Eds), 2001. Greece's Economic Performance and Prospects. Bank of Greece and The Brookings Institution, Athens – Washington DC, 464–465.

Castles F.G., 2003. The World Turned Upside Down: Below Replacement Fertility, Changing Preferences and Family-Friendly Public Policy in 21 OECD Countries. Journal of European Social Policy 13 (3), 217.

De Henau J., Meulders D., O'Dorchai S., Périvier H., 2004. The relative generosity of the EU-15 member states' child policies (in:) The Rationale of Motherhood Choice: Influences of Employment Conditions and of Public Policies. Final raport, 43–68.

Ferrera M., 1996. The "Southern Model" of Welfare in Social Europe. Journal of European Social Policy 6 (1), 25–26.

Gal J., 2010. Is there an extended family of Mediterranean welfare states? Journal of European Social Policy 20 (4), 290–293.

Karamessini M., 2007. The Southern European social model: Changes and continuities in recent decades. International Institute for Labour Studies, Geneva, 5.

Katsios S., 2006. The Shadow Economy and Corruption in Greece. South-Eastern Europe Journal of Economics 1, 71–72.

Kluve J., 2006. The Efectiveness of European Active Labor Market Policy. RWI Essen and IZA Bonn, February 23, 2–5.

Matsaganis M., Ferrera M., Capucha L., Moreno L., 2003. Mending Nets in South: Anti-poverty Policies in Greece, Italy, Portugal and Spain. Social Policy and Administration 37 (6), 642.

Naldini M., 2003. The Family in the Mediterranean Welfare States. Frank Cass Publishers, London, 146–147.
Piecuch J., 2010. Ewolucja rynku pracy w Portugalii w latach 1986–2006 – wnioski dla Polski (in:) B. Balcerzak-Paradowska, A. Rączaszek (Eds). Międzynarodowa polityka społeczna – aspekty porównawcze. Wyd. AE w Katowicach, Warszawa – Katowice, 282–292.
OECD, Employment Outlook 2001, Paris, June 2001, 135.
Ray J.C., 1997. The Role of Demographic and Economic Characteristics of Twelve Member States of the European Union in the Diversity of State Support for Families. Journal of European Social Policy 7 (1), 5–16.
Rhodes M., 1997. Southern European Welfare States: Identity, Problems and Prospects for Reform (in:) M. Rhodes (Ed.). Southern European Welfare States. Between Crisis and Reform. Frank Class & CO. Ltd., London, 9–10.
Schneider F., Enste D., 2000. Shadow Economies: Size, Causes, and Consequences. Journal of Economic Literature 38, 80.
Trifiletti R., 1997. Southern European Welfare Regimes and the Worsening Position of Women. Journal of European Social Policy 9 (1), 54.

EWOLUCJA MODELU SPOŁECZNO-EKONOMICZNEGO EUROPY POŁUDNIOWEJ W OKRESIE CZŁONKOSTWA GRECJI, PORTUGALII I HISZPANII W UNII EUROPEJSKIEJ

Streszczenie. Mijające trzy dekady, które zapoczątkowała akcesja Grecji, Hiszpanii i Portugalii do Unii Europejskiej, a kończy największy od dziesięcioleci globalny kryzysu, przyniosły istotne zmiany w systemie społecznym Europy Południowej. Jego dzisiejszy kształt wynika bezpośrednio z przemian gospodarczych, społecznych, ale także politycznych, które dokonały się na tym obszarze w drugiej połowie XX wieku. Zdeterminowały je przełomowe wydarzenia, które na nowo formowały rolę nowoczesnego państwa i jego instytucji, społeczną solidarność, oraz zależności zachodzące w gospodarce wolnorynkowej.
Celem pracy jest przedstawienie wpływu zmian związanych z procesem integracji i członkostwa Grecji, Hiszpanii i Portugalii w UE, na ewolucję wyjątkowego w skali Europy systemu społeczno-ekonomicznego, funkcjonującego na tym obszarze.

Słowa kluczowe: Europa Południowa, zatrudnienie, system gospodarczy, Unia Europejska

Accepted for print – Zaakceptowano do druku: 31.08.2013

ACTA SCIENTIARUM POLONORUM Oeconomia 12 (3) 2013, 83–90

BENCHMARK VALUES FOR LIQUIDITY RATIOS IN SLOVAK AGRICULTURE

Marián Tóth, Zuzana Čierna, Peter Serenčéš
Slovak University of Agriculture in Nitra

Abstract. The primary goal of the paper is to state the financial benchmark values for liquidity ratios in Slovak agriculture. Authors measured liquidity with current ratio, quick ratio and cash ratio which are the traditional way of liquidity measurement. Using descriptive statistics authors describe the liquidity performance of more than 1,100 enterprises in each period in 2004–2011. Based on the results authors can conclude that the common recommended values for liquidity ratios cannot be used for agriculture. The overall liquidity in agriculture is much lower and therefore the results presented in this article can be used as a benchmark for individual enterprises comparison.

Key words: liquidity ratios, benchmarking, agriculture, Slovakia

INTRODUCTION

To understand better financial statements and consequently to make rational economic decisions, the users of financial statements must have analytical tools in order to undertake financial statement analysis. The type of analysis always varies according to the specific interests of the party involved. The basic tools to measure the company performance are financial ratios. They are divided in four main groups: liquidity ratios, activity (efficiency) ratios, long-term financial stability and profitability ratios.

The calculation of the ratios is based on financial statements, which vary among the countries, because of local accounting law. This article is focused on liquidity ratios which provide answers to question how liquid is the company. They compare short-term obligations with short-term (or current) resources available to meet these obligations. The liquidity ratios are in the literature often described generally [Brigham and Houston 2003, Vlachynský et al. 2006, Baran et al. 2008, Van Horne and Wachowicz 2009]. In some cases authors provide the full link to the Slovak balance sheet with specifying the

Corresponding authors: Department of Finance, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovak Republic, e-mail: marian.toth@uniag.sk, zuzana.cierna@uniag.sk, peter.serences@uniag.sk

lines of the statement [Kotulič et al. 2007]. The information provided in the article about the liquidity situation in Slovak agriculture is based on the balance sheets of individual cooperatives, limited liability companies and joint stock companies in Slovakia. These values indicate the benchmark of the liquidity in Slovak agriculture [Pogranová et al. 2011]. Such values exist in many of the countries [Swenson 2001] and therefore they are useful for the management of farms in Slovakia and they also can be used to compare the situation in Slovakia with other countries. In the literature we can identify three basic liquidity ratios: current ratio, quick ratio and cash ratio.

They differ only in the nominator of the ratio. The denominator is equal. Liquidity ratios provide answers to following questions: How liquid is the company? Can it easily lay its hands on cash, if needed?

Current ratio (Working capital ratio)

$$\frac{\text{current assets}}{\text{current liabilities}}$$

Current ratio is the primary liquidity ratio, which is calculated by dividing total current assets by total current liabilities. It can be interpreted as how many times are current liabilities of a company covered by its current assets. For a creditor, particularly a short-term creditor such as a supplier, the higher the current ratio, the better. To the firm, a high current ratio indicates liquidity, but it also may indicate an inefficient use of cash and other short--term assets. Absent some extraordinary circumstances, we would expect to see a current ratio of at least 1, because a current ratio of less than 1 would mean that net working capital (current assets less current liabilities) is negative. This would be unusual in a healthy firm, at least for most types of businesses [Ross et al. 2002]. Traditionally, a current ratio of 2 : 1 or higher was regarded as appropriate for most businesses to maintain creditworthiness. However, more recently a figure of 1.5 : 1 is regarded as normal. When assessing company's current ratio value, it is still worth considering factors such as seasonal nature of the business, availability of further finance, long-term liabilities or nature of the inventory.

Quick ratio (Acid test)

$$\frac{\text{current assets} - \text{inventory}}{\text{current liabilities}}$$

Quick ratio or Acid test is more conservative measure of liquidity, showing a firm's ability to meet current liabilities with its most liquid (quick) assets. This means that inventories are excluded from the calculation as they are typically considered as the least liquid of a firm's current assets. Normal levels for the quick ratio range from 1 : 1 to 0.7 : 1.

Cash ratio

$$\frac{\text{cash} + \text{short-term securities}}{\text{current liabilities}}$$

Cash ratio shows what proportion of company's current liabilities can be repaid by the most liquid assets, if it becomes due.

MATERIAL AND METHODS

Data were obtained from internal database of RADELA agency, which collects data for The Research Institute of Agricultural and Food Economics for the period 2004–2011. Authors analyzed data from the balance sheets of agricultural enterprises, in each period data were from more than 1,100 enterprises. These entities cover 80% of agricultural land in Slovakia and therefore analyzing this sample offers the possibility to describe the overall situation in Slovakia. Ratio analysis involves besides "internal comparisons" also "external comparisons", where a company's ratios are compared with those of other firms in the same industry, that is, to industry average figures. However, managers of companies often tend to go one step further and they compare their ratios also with those of a smaller set of leading companies – the top firms in their industry. This technique is called benchmarking, and the top companies are called benchmark companies. Using of benchmarking method is very advantageous, as it makes it easy for company's management to see exactly where the company stands relative to its strongest competition. To set the benchmark values authors use the descriptive statistics median, upper and lower quartile and upper and lower decile. These measures describe the performance of the 100% of enterprises by dividing them into 6 groups. Upper quartile – the performance of the 25% best companies – is often used by the managers as the benchmark value.

RESULTS AND DISCUSSION

All liquidity ratios in Slovak agriculture are affected by the subsidies. They are paid to the producer at the end of the year. Direct payments per hectare have influence on the liquidity, because the financial statement in Slovakia are as of the end of business year which end on the 31^{st} of December. Previous research shows, that the average values per

Table 1. The structure of current assets and current liabilities in Slovak agriculture in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Current assets	100	100	100	100	100	100	100	100
Inventories	0.562	0.526	0.513	0.486	0.514	0.482	0.492	0.505
Long-term receivables	0.015	0.017	0.013	0.013	0.021	0.020	0.017	0.013
Short-term receivables	0.314	0.328	0.350	0.373	0.357	0.378	0.366	0.365
Cash + short-term securities	0.109	0.129	0.124	0.128	0.107	0.123	0.126	0.116
Prepayments	0.026	0.025	0.022	0.014	0.014	0.011	0.011	0.013
Current liabilities	100	100	100	100	100	100	100	100
Short-term liabilities	0.652	0.595	0.575	0.595	0.558	0.603	0.610	0.604
Current bank loans	0.109	0.149	0.157	0.187	0.201	0.223	0.216	0.239
Short-term financial assistance	0.087	0.076	0.057	0.053	0.053	0.056	0.058	0.059
Accruals	0.152	0.181	0.212	0.165	0.188	0.118	0.116	0.098

Source: Own calculation.

year are much lower than the situation at the end of the year (observed period 2005–2009, cash ratio average value per year 0.71, average December value 1.28). But as the subsidies are paid to all entities is the whole agricultural industry affected and therefore the calculated values can be used for the comparison of individual corporations. In the first step authors analyzed the components of liquidity ratios. Table 1 shows the proportion of current assets and current liabilities in the analyzed set of enterprises.

It can be concluded, than more than a half of current assets of agricultural enterprises in 2011 were inventories (50.5%) and 36,5% short-term receivables. Out of current liabilities in 2011 the highest amount was linked to short-term liabilities (60.4%), current bank loans (23.9%) and accruals.

Over the observed period the highest increase was recorded in current bank loans.

Current ratio in Slovak agriculture

The ratio describes the relation between current assets and current liabilities. The values for agricultural enterprises are in the Table 2 and chart shown in Figure 1.

In 2011 for current ratio the situation in Slovak agriculture was as follows:

- 10% of the best enterprises regarding the current ratio had the ratio between current assets and current liabilities 5.53 and higher (upper decile),
- 25% of the best enterprises regarding the current ratio had the ratio between current assets and current liabilities 2.72 and higher (upper quartille),
- the average current ratio was 2.46,
- 50% of the enterprises had current ratio in the range from 0 to 1.30 and 50% of enterprises 1.30 and higher (median),
- 25% of the enterprises with the weakest current ratio had the ratio between 0 to 0.78 (lower quartile),
- 10% of the enterprises with the weakest current ratio had the ratio between 0 to 0.63 (lower decile).

Based on the recommended values for current ratio in the literature (2 resp. 1.5) it can be concluded, that more than 50% of the observed enterprises in Slovak agriculture do not have the recommended liquidity. This is due to the specifics of the industry – agriculture.

Table 2. Statistics for current ratio in Slovak agriculture in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Upper decile	4.63	4.30	5.00	5.00	4.50	5.07	5.26	5.53
Upper quartile	2.70	2.41	2.60	2.52	2.33	2.23	2.47	2.72
Average	2.32	2.19	2.51	2.37	2.38	2.35	2.45	2.46
Median	1.44	1.29	1.35	1.29	1.23	1.18	1.26	1.30
Lower quartile	0.87	0.80	0.82	0.81	0.82	0.75	0.73	0.78
Lower decile	0.53	0.47	0.49	0.50	0.51	0.45	0.44	0.63

Source: Own calculation.

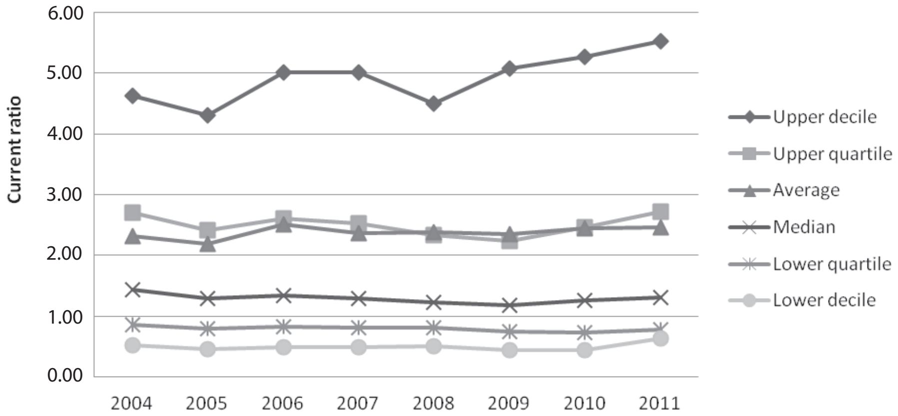


Fig. 1. Current ratio development

Source: Own calculation, Table 2.

Quick ratio (Acid test) in Slovak agriculture

Quick ratio in comparison with current ratio focuses on the more liquid components of current assets. It does not take into account Inventories. The calculated results of the quick ratio are in the Table 3.

In 2011 for quick ratio authors concluded the following:

– 10% of the best enterprises regarding the quick ratio reached values 3.47 and higher,
– 25% of the best enterprises regarding the quick ratio had results 1.34 and higher,
– the average quick ratio was 1.33,
– 50% of the enterprises had quick ratio in the range from 0 to 0.6 and 50% of enterprises 0.6 and higher,
– 25% of the enterprises with the weakest quick ratio had results between 0 to 0.29,
– 10% of the enterprises with the weakest quick ratio had the ratio between 0 to 0.19.

Table 3. Statistics for quick ratio in Slovak agriculture

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Upper decile	2.31	2.35	2.89	2.98	2.51	3.13	3.16	3.47
Upper quartile	1.23	1.23	1.37	1.35	1.13	1.19	1.30	1.34
Average	1.13	1.21	1.42	1.38	1.33	1.36	1.43	1.33
Median	0.64	0.65	0.67	0.68	0.58	0.60	0.57	0.60
Lower quartile	0.32	0.35	0.35	0.37	0.30	0.28	0.28	0.29
Lower decile	0.18	0.17	0.18	0.20	0.16	0.14	0.14	0.19

Source: Own calculation.

Recommended values for quick ratio range from 1 to 1.5. This recommended values were recorded only in case of 31.4% of observed enterprises. Figure 2 shows the trend of increasing differences in quick ratio between individual enterprises.

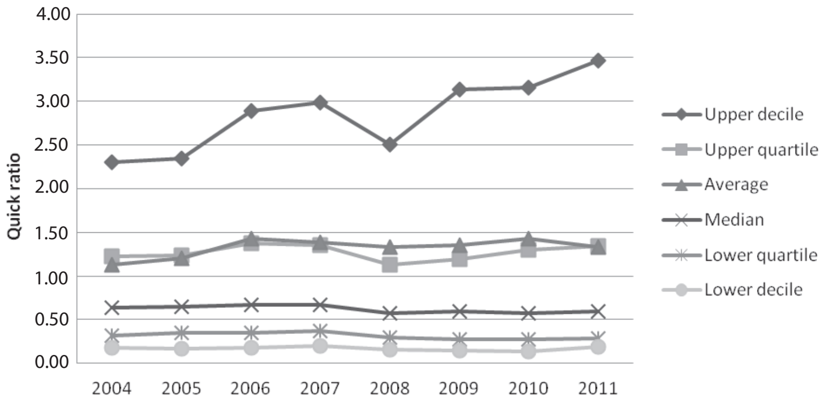


Fig. 2. Quick ratio development
Source: Own calculation, Table 3.

Cash ratio in Slovak agriculture

Cash ratio is the strict out of all liquidity ratios. It takes into account only the most liquid form of current assets – cash and short-term securities. Table 4 shows the cash ratio development in Slovak agriculture.

In 2011 for cash ratio authors concluded the following:

- 10% of the best enterprises regarding the cash ratio reached values 1.562 and higher,
- 25% of the best enterprises regarding the cash ratio had results 0.468 and higher,
- the average cash ratio was 0.605,
- 50% of the enterprises had cash ratio in the range from 0 to 0.092 and 50% of enterprises 0.092 and higher,
- 25% of the enterprises with the weakest cash ratio had results between 0 to 0.016,
- 10% of the enterprises with the weakest cash ratio had the ratio between 0 to 0.003.

Table 4. Statistics for cash ratio in Slovak agriculture in 2004–2011

Specification	2004	2005	2006	2007	2008	2009	2010	2011
Upper decile	1.154	1.295	1.626	1.551	1.267	1.600	1.775	1.562
Upper quartile	0.476	0.521	0.491	0.499	0.393	0.402	0.406	0.468
Average	0.531	0.620	0.663	0.658	0.584	0.643	0.748	0.605
Median	0.169	0.181	0.137	0.147	0.094	0.094	0.096	0.092
Lower quartile	0.037	0.045	0.030	0.030	0.021	0.019	0.017	0.016
Lower decile	0.009	0.008	0.007	0.007	0.004	0.004	0.003	0.003

Source: Own calculation.

Cash ratio recommended values range from 0.2 to 0.6. Only 16.4% out of observed enterprises had values in this range. 61.6% of enterprises had cash ratio below 0.2. Figure 3 shows the trend of increasing differences in cash ratio between individual enterprises.

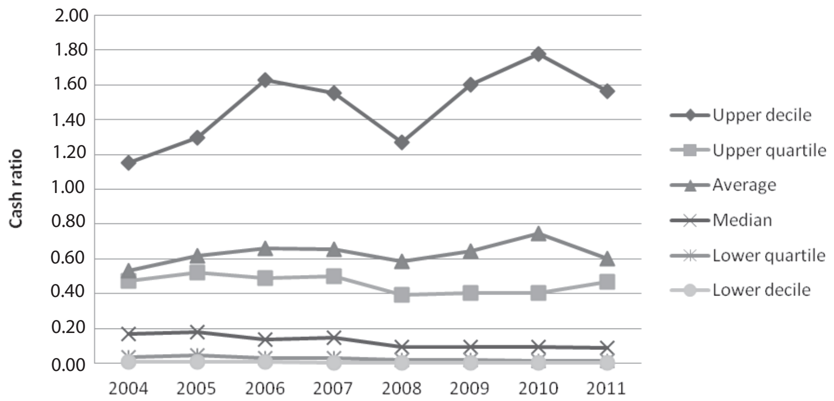


Fig. 3. Cash ratio development

Source: Own calculation, Table 4.

CONCLUSIONS

The results of the analysis presented in the article in form of descriptive statistics (decile, quartile, median and average) can be used for comparison of individual company with the competitors. Also creditors such as banks can compare the individual performance with the whole industry, because presented values cover 80% of the arable land in Slovakia.

The analysis of liquidity ratios in Slovak agriculture shows that generally recommended values for current ratio, quick ratio and cash ratio are in most cases not reached by individual enterprises. Agriculture as industry can be characterized as industry with low liquidity. In case of each ratio the generally recommended value was recorded only by 25% of the best companies regarding liquidity (upper quartile). Therefore the value of upper quartile can be used as a benchmark for liquidity ratios. Based on the development over the period 2004–2011 the changes in the industry show the increasing volatility in liquidity ratios. The best enterprises are improving the liquidity, but most of the companies remain unchanged. Further research is needed to divide the set of enterprises according to the legal form and type of production (animal or crop production) to find out the reason for differences in liquidity.

REFERENCES

Baran D. et al., 2008. Financial-economic analysis of companies in the praxis. IRIS, Bratislava.

Brigham E.F., Houston J.F., 2003. Fundamentals of Financial Management. 10th ed. South-Western College Pub., Nashville.

Kotulič R. et al., 2007. Company financial analysis. IURA, Bratislava.
Pogranová Z., Savov R., Lančarič D., Lenčéšová L., 2011. Benchmarking. SUA in Nitra, Nitra.
Ross S. et al., 2002. Fundamentals of Corporate finance. McGraw-Hill, New Delhi.
Swenson A., 2001. Financial characteristic of North Dakota Farms. North Dakota State University, AES, ND 58105-5636, available at: http://ageconsearch.umn.edu/handle/23487.
Van Horne J.C., Wachowicz J.M., 2009. Fundamentals of financial management. 13th ed. Prentice Hall, Upper Saddle River.
Vlachynský K. et al., 2006. Corporate finance. IURA, Bratislava.

WARTOŚCI WZORCOWE WSKAŹNIKÓW PŁYNNOŚCI W ROLNICTWIE SŁOWACKIM

Streszczenie. Podstawowym celem pracy jest określenie finansowych wartości odniesienia dla wskaźników płynności w rolnictwie Słowacji. Płynność określono z wykorzystaniem wskaźników płynności bieżącej, szybkiej i natychmiastowej, które są tradycyjnymi miernikami płynności. Wykorzystując metody statystyki opisowej, autorzy określili płynność w ponad 1100 przedsiębiorstwach w poszczególnych latach w okresie 2004–2011. Na podstawie wyników można stwierdzić, że powszechnie zalecane wartości dla wskaźników płynności nie mogą być stosowane w rolnictwie. Płynność w rolnictwie jest znacznie niższa i dlatego wyniki przedstawione w tym artykule mogą być stosowane jako punkt odniesienia dla porównania poszczególnych przedsiębiorstw.

Słowa kluczowe: wskaźniki płynności, benchmarking, rolnictwo, Słowacja

Accepted for print – Zaakceptowano do druku: 10.09.2013

ACTA SCIENTIARUM POLONORUM Oeconomia 12 (3) 2013, 91–100

TAX BURDEN IN SLOVAKIA AND EUROPEAN UNION COUNTRIES

Ivana Váryová, Iveta Košovská, Alexandra Ferenczi Vaňová
Slovak University of Agriculture in Nitra

Abstract. Tax burden expresses how high is the tax ratio or what part of gross domestic product is created by paid taxes and contributions. This article presents data on tax revenue and its relationship to gross domestic product in Slovakia and the European Union. Data of Eurostat and OECD Tax Database serve as the base for analysis, the reporting period presents years 2002–2011.

Key words: taxes, social security contributions, gross domestic product, tax-to-GDP ratio

INTRODUCTION

Tax burden and its comparison among individual countries is one of the most discussed topics. Generally the tax burden presents ratio between taxes and contributions on gross domestic product (GDP). The tax-to-GDP ratio is the sum of all taxes and social security levies in relation to nominal gross domestic product. It shows the percentage of GDP the general government uses to finance its tasks. In Slovakia, the tax-to-GDP ratio covers all the levied taxes, as well as the public social security contributions to sickness, retirement, permanent disability, unemployment, health, guarantee insurance and reserve fund.

The before mentioned tax burden of insurance character might be considered as additional tax levy, hereinafter called as tax quota II [Bojňanský, Tóth and Serenčéš 2012].

Slovakia's current tax system consists of following taxes:

1. Direct taxes
   a) personal income tax,
   b) corporate income tax,
   c) local taxes
      – real estate tax, dog tax, tax on the use of public space, accommodation tax, vending machine tax, non-gainful (entertaining) slot-machine tax, tax on the

Corresponding authors: Department of Information Systems, Faculty of Economics and Management, Slovak University of Agriculture in Nitra, Tr. A. Hlinku 2, 949 76 Nitra, Slovak Republic, e-mail: ivana.varyova@uniag.sk. iveta.kosovska@uniag.sk. Alexandra.ferenczi@uniag.sk

entry into and parking of a motor vehicle in a historical part of the city, nuclear facility tax,
- taxes for municipal waste and small construction waste,
- motor vehicle tax.

2. Indirect taxes
   a) value added tax (VAT),
   b) excise taxes.

AIMS AND METHODS

The aim of submitted article presents the assessment of development and structure of tax burden in Slovakia, countries of European Union (EU-27) and euro area (EA-17), as well as their comparison.

In order to compare correctly tax burden within individual countries, it is essential to be furnished by comparable data which are precisely set by methodology used in involved countries. Therefore authors derived from the data secured by OECD Tax Database and Eurostat summarized in the 2002–2011 period. The last data needed for article during the process of its preparing were for 2011, resp. 2010 relating to the structure of tax revenues.

Tax-levied burden, resp. compound tax quota, is the indicator, which is expressed by Eurostat methodology as the ratio of taxes and obligatory social contributions on GDP. Eurostat methodology defines the compound tax quota by the following items pursuant to the classification ESA 95 (The European system of national and regional accounts):

$$TQII = D2 + D5 + D91 + D611 + D612 - D995$$

where: $D2$ – taxes on production and import,
$D5$ – current taxes on income, wealth etc.,
$D91$ – capital taxes,
$D611$ – actual social contributions,
$D612$ – voluntary employers' actual social contributions,
$D995$ – capital transfers from general government to relevant sectors representing taxes and social contributions assessed but unlikely to be collected[1].

Main method of assessment is the comparable method of these data in the reporting period.

RESEARCH RESULTS AND DISCUSSION

The European Union is, taken as a whole, a high tax area. In 2011, the overall tax ratio in the EU-27 member states amounted to 40.1% in the GDP-weighted average, more than the levels recorded in the United States, Canada and New Zealand (Fig. 1). The tax level in the EU is high not only compared to those countries, but also compared to other

[1] Data for Slovakia are not available for the reporting period.

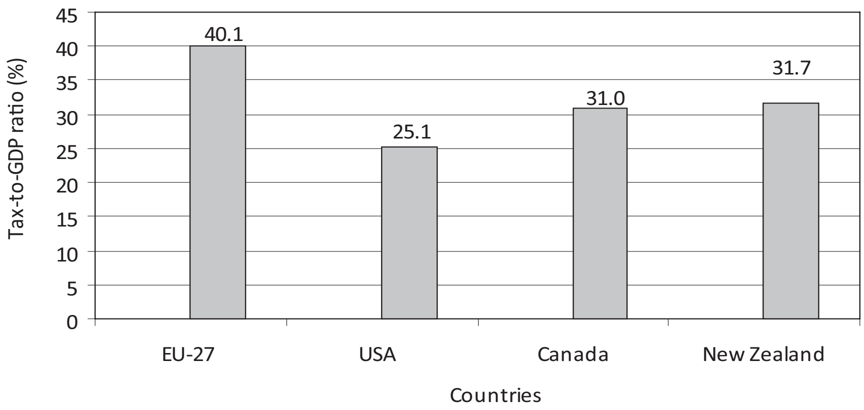


Fig. 1. Overall tax-to-GDP ratio (%) in the EU, USA, Canada and New Zealand (2011)
Source: OECD Tax Database.

advanced economies. Among the major non-European OECD members, only Canada and New Zealand have tax ratios that exceed 30% of GDP. As for less developed countries, they are typically characterised by relatively low tax ratios.

When looking at the evolution of tax revenues in the last decade, the effects of the economic and financial crisis on tax revenues from 2007 onwards are striking. From its last spike in 2006 in the EU-27 the ratio of tax revenue to GDP decreased by 1 percentage point to 39.6% in 2010, while the ratio for the EA-17 decreased by 0.9 percentage point of GDP from its peak of 41.2% in 2007 to 40.3% in 2010. This means that both in the euro area and in the European Union, tax revenue in terms of GDP has fallen to its lowest point in the period from 2002 onwards (Fig. 2).

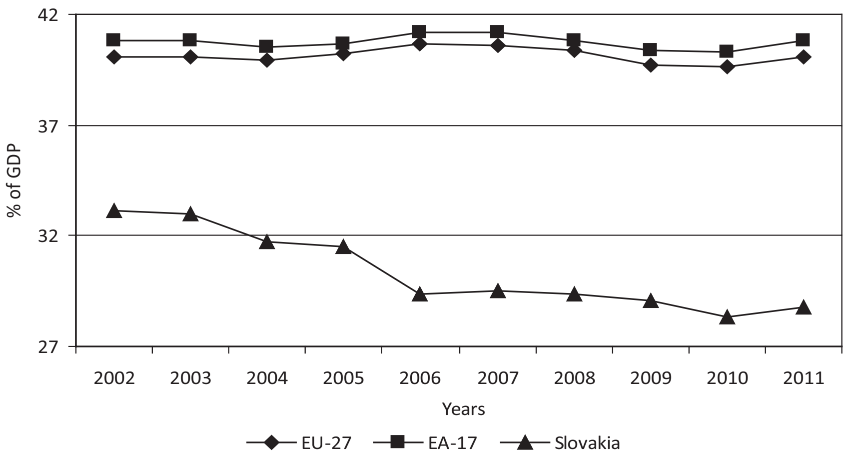


Fig. 2. Total tax revenue in the EU-27, euro area (EA-17) and Slovakia as a percentage of GDP (2002–2011)
Source: Eurostat database.

In 2011, tax revenues in the European Union increased both in absolute terms and as a ratio to GDP. As a ratio of GDP, tax revenues accounted for 40.1% of GDP in the European Union. This represents an increase of 0.5 percentage point, following four years of decline in terms of GDP. Tax revenues in the euro area followed a similar trend and increased from 40.3% of GDP in 2010 to 40.8% of GDP in 2011. The pattern for EU-27 and EA-17 is fairly similar in recent years. Both in the EU-27 and in the EA-17, the drop in terms of GDP was most marked between 2008 and 2009. In 2010, tax revenues in terms of GDP were at their lowest point in the 2002–2011 period.

The ratio of tax revenue to GDP in the EA-17 is slightly higher than in the EU-27. Higher tax burden in EA-17 in comparison with EU-27 is influenced by the fact that the original member states are mainly within EA-17, in which higher tax percentages are as in new member states.

Slovakia's tax ratio has decreased significantly over the last decade. It stood at 33.1% of GDP in 2002, whereas the 28.8% of GDP in 2011 falls short of the EU-27 average by 11.3 percentage points. This declining trend of Slovakia's tax ratio is a consequence of the overall cut in corporate and personal income tax rates.

In 2011 total tax burden within the European Union was in the range from 26.4% GDP to 48.6%. As Figure 3 shows, the ratio of tax revenue to GDP in 2011 was highest in Denmark (48.6%), Belgium (46.7%) and France (45.9%). The lowest shares were recorded in Lithuania (26.4%), Bulgaria (27.2%) and Latvia (27.7%). Among the countries which have joined the European Union since 2004, Slovenia and Hungary had the highest tax revenue-to-GDP ratios at 37.5% and 37.1% of GDP. Even so, tax revenues in Slovenia are still 2.6 percentage point of GDP lower than in the EU-27. Among the countries which joined the European Union before 2004, Ireland (30.4%), Spain (32.4%) and Greece (34.9%) record the lowest revenues from taxes. From the geographical point it can be concluded that the lowest tax burden is within countries of Central and Eastern Europe and vice versa – the highest tax burden is traditionally reported in the state of Western Europe and northern states.

Concerning the comparison of Slovakia with the average of European Union it can be stated that the tax burden in the Slovak Republic with the value 28.8% on GDP in 2011 is markedly lower than the ratio of taxes on GDP in the European Union with value 40.1% and in euro area with ratio 40.8%. Tax burden in Slovakia is the fifth lowest on GDP in the European Union, lower amount of taxes on GDP is levied in Romania, Latvia, Bulgaria and Lithuania. When comparing it with other countries, it is inevitable to take into account the facts that contributions to the second retirement pillar are not included in tax income. As regards these are not contributed to private funds, are not classified as income of public resort.

As Figure 4 shows, income tax present the lowest part of tax revenues in EU-27. Indirect taxes (VAT, excise taxes) take a first place in EU-27 and they present 13.6% of GDP. Social security contributions (13.1%) and direct taxes (12.9%) follow them. In EU-17 state repositories finance mainly social security contributions, presenting 14.8% of GDP, indirect taxes (13.4%) and direct taxes (12.1%). Differences between old and new European Union member states derive from the different conception of social state and tax system. Traditional social economics of Germany and France markedly influence the resulting ratio of contributions on GDP in EU-17. In both countries social security contributions present more than 15% of GDP together with the Czech Republic, so they

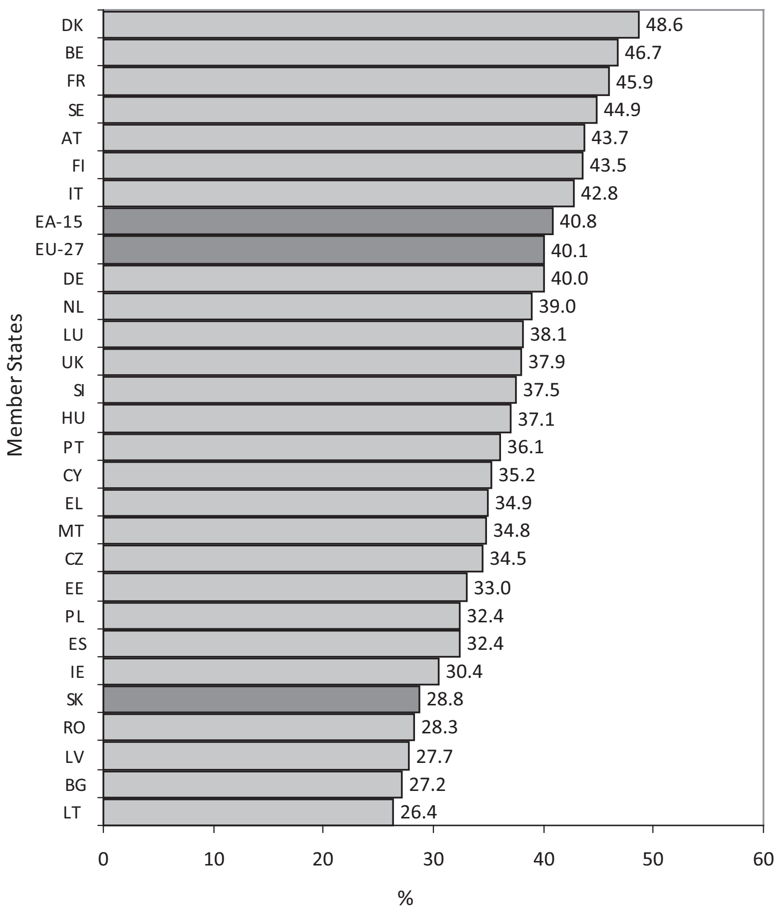


Fig. 3. Ranking of total revenue by EU member states in 2011 as a percentage of GDP
Source: Eurostat.

reach the top of European chart. Trend of decreasing indirect taxes and conception of equal tax is widely spread mainly in new member states. This decreases the ratio of direct taxes as well as total tax revenues.

In 2010 in Slovakia, indirect taxes raised 10.5% of GDP, 3.1 percentage points below the EU-27 average. Accounting for 37.2% of total tax receipts, they play a much more important role in Slovakia than direct taxes (19.1% of total revenues). Not surprisingly therefore, direct tax revenue is only 5.5% of GDP compared to a 12.9% of EU-27 average. Slovakia marked the third lowest ratio of direct taxes in EU-27. The share of social security contributions in total tax revenue is 43.7 % in 2010 – the second highest value in the European Union. The ratio of tax revenues from social security contributions to GDP has decreased over the recent years by 2.3 percentage points, from 14.6 % in 2002 to 12.3 % in 2010. It was decreasing from 2002 to 2007 and started growing from 2008 onwards, but still not reaching the level from 2002. The decrease was mainly driven by

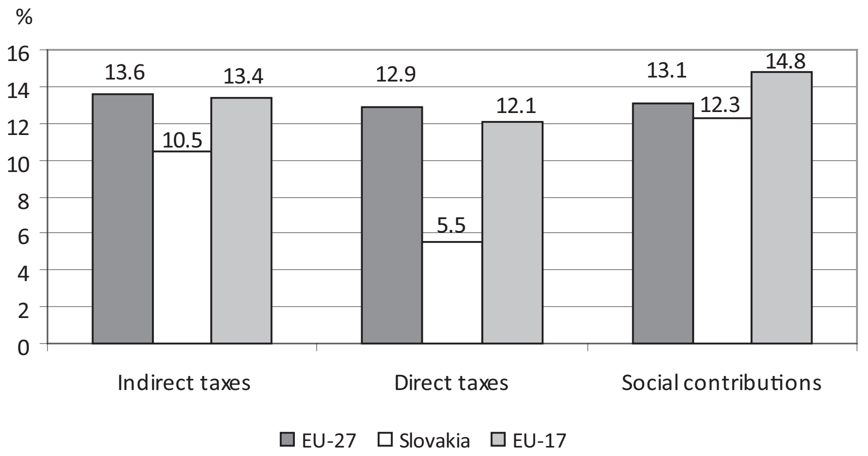


Fig. 4. Structure of tax revenues in EU-27, EU-17 and Slovakia (2010)
Source: Eurostat.

reduction of employers' social security contributions and, since 2005–2006, the introduction of a "second pillar" fully-funded pension scheme, as contributions to privately managed funds are not booked as government revenues.

MAIN FEATURES OF SLOVAKIA'S TAX SYSTEM

Personal income tax

The introduction of the 19% flat tax rate in 2004 has superseded the previous system of progressive rates. The new tax law has scrapped the majority of exceptions, exemptions and deductions. In 2009, an employee tax credit was introduced. It is a form of negative income tax which is paid to low income employees. As of 1 January 2011, the basic personal allowances can be claimed only with respect to aggregate income from employment, business activities and independent professional activities. The amount of the basic personal allowance and the relevant ceilings are generally based on the amount of the living minimum applicable on 1 January of the tax year, which is €194.58 for 2013.

From 1 January 2013 the progressive taxation of personal income with two tax rates (19 and 25%) came into force in relation to the amount of tax base. From this part of tax base, exceeding 176.8-times applicable subsistence minimum, tax will present 25%. Simultaneously the particular tax rate was set up for selected constitutional members in 5%.

Income is defined broadly as any benefit in cash or in kind. Aggregate income includes income from employment, occupational pensions, business, rent, capital and other occasional activities. Capital gains are generally included in aggregate income with exception of income from the sale of immovable property owned for at least five years. Gains from the sale of movable property owned for at least five years. And gains from the sale of shares and other securities up to a total annual amount equal to five times the living minimum. No tax deductions are allowed and even deductions for contributions to supplementary pension insurance and pension savings schemes are abolished as of 1 January 2011. There are two kinds of tax allowances: the basic allowance available to every taxpayer and the supplementary allowance for a spouse whose income, after deducting social security contributions, is below the basic allowance level. From 1 January 2013 temporarily till 1 January 2016 new tax allowance is set up – the sum of paid non-obligatory contributions to pension savings, in limited amount. This tax allowance can be applied firstly for tax year 2012, while the calculated sum cannot exceed €943.20.

A final withholding tax of 19% is levied on income from participation certificates, vouchers and investment coupons; interest on bank deposits and current accounts; income from private life or pension insurance and payments from the supplementary pension insurance.

Corporate taxation

The corporate tax rate was reduced from 25 to 19% with effect from 1 January 2004. Exceptions and exemptions such as tax holidays, tax breaks, individual tax bases and special tax rates applicable under the old tax regime have been eliminated from the corporate income tax law, providing for more transparency. A number of amendments have been made to the tax law in order to adapt it to EU regulations on direct taxation. Effective at 1 January 2013 the tax rate of legal entities increases from 19 to 23%.

Taxable income is calculated based on the income computed according to the accounting rules and is adjusted for several items for tax purposes. For depreciation purposes, a straight-line or a specific accelerated depreciation method may be used. Capital gains are included in the company's taxable ordinary income. Income from participation certificated and interest on corporate bonds, bearer deposit certificates, deposit accounts or current bank accounts are subject to a 23% withholding tax (the corporate tax rate with effect from 1 January 2013). Tax losses may be carried forward for up to seven years. No group taxation provisions exist; all entities are taxed separately.

VAT and excise duties

Prior to the tax reform in 2004 Slovakia applied two VAT rates: a standard rate of 20% and a reduced rate of 14%. As of 2004, a unified 19% VAT rate was introduced for all goods and services and as of 2011, it is temporarily increased to 20%. In 2007, a 10% reduced rate was reintroduced; applicable to medicines, certain other medical and pharmaceutical products, and, since 2008, to books. Zero rate applies to intra-Community supply of goods, export of goods, provision of services consisting of work on movable assets returned to a third country, transport services and passenger transport, and services directly related to import and export of goods.

Higher excise duties on natural gas are collected and excise duties on electricity and coal were introduced as from July 2008 in application of the EU energy taxation directive. In January 2010 a reduction of the excise duties on diesel fuel was approved, which would take diesel prices in line with those in Austria, but below those in Hungary and the Czech Republic. In 2011 only minor changes were introduced in the legislation relative to excise duties on alcohol, mineral oil, tobacco products, electricity, coal and natural gas.

For the excise duties on alcohol a unique taxation was established, that depends on the percentage of the alcohol in the final product.

Social contributions

Both employees and employers have to pay contributions for pension insurance, health insurance, disability insurance and sick leave insurance, as well as unemployment insurance (Table 1, Table 2). Additionally, employers have to pay for accident insurance, to a solidarity fund and to the guarantee fund. A contributions ceiling applies to all types

Table 1. Contributions paid by the employee (valid for 2013)

Contributions	Contributions percentage of gross monthly salary	Minimum computation base [€]	Maximum computation base [€]	Minimum contributions [€]	Maximum contributions [€]
Health insurance	4.00	337.70	3 930.00	13.50	157.20
Retirement	4.00	337.70	3 930.00	13.50	157.20
Permanent disability	3.00	337.70	3 930.00	10.13	117.90
Sickness	1.40	337.70	3 930.00	4.72	55.02
Unemployment	1.00	337.70	3 930.00	3.37	39.30
Total contributions	13.40	–	–	45.22	526.62

Source: Act No. 461/2003 Coll. on Social Insurance, Act No. 580/2004 Coll. on Health Insurance.

Table 2. Contributions paid by the employer (valid for 2013)

Contributions	Contributions percentage of gross monthly salary	Minimum computation base [€]	Maximum computation base [€]	Minimum contributions [€]	Maximum contributions [€]
Health insurance	10.00	337.70	3 930.00	33.77	393.00
Retirement	14.00	337.70	3 930.00	47.27	550.20
Permanent disability	3.00	337.70	3 930.00	10.13	117.90
Reserve fund	4.75	337.70	3 930.00	16.04	186.67
Sickness	1.40	337.70	3 930.00	4.72	55.02
Accident insurance	0.80	337.70	no limit	2.70	no limit
Unemployment	1.00	337.70	3 930.00	3.37	39.30
Guaranteed fund	0.25	337.70	3 930.00	0.84	9.82
Total contributions	35.20	–	–	118.84	1 383.35[a]

[a] Amount includes accident insurance assessment base of €3,930, but the amount may be higher, as the basis of assessment of the employer to pay the premium for accident insurance is limited to a maximum height.

Source: Act No. 461/2003 Coll. on Social Insurance, Act No. 580/2004 Coll. on Health Insurance.

of insurance except accident insurance. Part of social contributions (9 percentage points) is accumulated in private pension funds. As of 1 January 2011, non-monetary benefits to an employee and income of executive considered as taxable employment income are also subject to social and health insurance contributions.

CONCLUSIONS

The European Union is the area with high tax burden. higher than the tax burden e.g. in USA, Canada, Japan. In 2011 total tax burden was on the level 40.1% of GDP in EU--27. Slovakia within European Union belongs to countries with the lowest tax burden, which reached the value 28.8% of GDP in 2011, together with Romania, Bulgaria, Latvia and Lithuania in the European Union. Following the before mentioned. the ratio of redistribution of public budget belongs to the lowest in Slovakia. It is questionable whether the tax burden in Slovakia should be higher.

The increase of tax ratio on GDP can be performed by two different ways; whether by increasing the tax burden or increasing the effectiveness of tax and contribution administration. As regards the consolidation of public finance, effective at 1 January 2013, the amendment of income tax act was set up in Slovakia. The main task is to secure the additional incomes to state budget. The following arrangements were taken into account:

- set up of progressive taxation of personal incomes with two tax rates 19% and 25%, while higher tax rate will be applied for the individuals with superior income,
- more strict conditions to be applied for tax allowances as regards spouse,
- restriction of possibility to apply tax bonus only for so called active income,
- restriction of applying lump expenses for individuals – entrepreneurs, setting up their maximum value not exceeding €5,040 per year,
- cancellation of applying lump expenses as regards income from rent,
- increasing the tax rate for legal entities from 19 to 23%.

Concerning the high dependence of development of economics in the Slovak Republic from foreign investments, the increasing of tax rate for legal entities could have negative influence on the economy in the Slovak Republic. It could lead to decreasing of Slovakian competition towards surrounding states in the process of acquisition of foreign investments. As well as the increased tax rate for employees with superior income can have negative impact on the economy in Slovakia. Plenty of employees operate in companies, which manage to compensate the outage of net wages by increasing wages. Many of them can be motivated to establish its own company or set up in business by higher tax rate for personal income. In some companies such type of cooperation is not possible, this might cause the leaving of qualified employee to another company or abroad. However the minority of employees pays the majority of income taxes in the period before the increase in tax rate, therefore the higher tax rate cannot be considered as sympathetic.

The second possibility of increasing the tax ratio on GDP is the increase in effectiveness of tax and contribution collection. Authors believe that as the effect of tax evasion is quite significant in Slovakia, the fight against tax evasions is the alternative against increasing in taxes. Except for positive effects for budget it is an inevitable step towards the increasing the quality of business environment.

REFERENCES

Bojňanský J., Tóth M., Serenčéš P., 2012. Effect of public finances on financial management of agricultural primary production. Acta oeconomica et informatica 15 (1), 14–17.
Act No. 595/2003 Coll. on Income Taxes.
Act No. 461/2003 Coll. on Social Insurance.
Act No. 580/2004 Coll. on Health Insurance.
Act No. 222/2004 Coll. on Valued Added Tax.

OBCIĄŻENIA PODATKOWE W SŁOWACJI I INNYCH KRAJACH UNII EUROPEJSKIEJ

Streszczenie. Obciążenie podatkowe wskazuje, jak wysoki jest współczynnik opodatkowania lub jaka część produktu krajowego brutto jest tworzona z opłaconych podatków i składek. W artykule przedstawiono dane dotyczące dochodów podatkowych i ich związek z PKB na Słowacji oraz w innych krajach Unii Europejskiej. Podstawę do analiz stanowiły dane z zakresu podatków, udostępnione przez Eurostat oraz OECD. Za okres sprawozdawczy przyjęto lata 2002–2011.

Słowa kluczowe: podatki, składki na ubezpieczenia społeczne, PKB, udział podatków w PKB

Accepted for print – Zaakceptowano do druku: 10.09.2013

ACTA SCIENTIARUM POLONORUM Oeconomia 12 (3) 2013, 101–110

DIVESTMENTS AND ECONOMIC FALL OF FARMS – ATTEMPT AT TERMINOLOGICAL DIFFERENTIATION[1]

Tomasz Wojewodzic
University of Agriculture in Kraków

Abstract. Destruction processes are hardly identified with regard to farms being peculiar economic entities. The purpose of this paper is an attempt of differentiation between the following terms: divestments and the economic fall of farms. A theoretical analysis was illustrated with mass statistics data showing the scale on which farms in Poland discontinued farming activities and the results of quality research conducted among 50 landowners from the Podkarpackie Voivodeship. The analyses presented here allowed to more fully describe the concept of a divestment stressing scope and durability of destructive changes that have been occurring and their planned and intentional nature.

Key words: destruction, divestments, farm, economic fall

INTRODUCTION

Activities of farms are characterized by, among other things, a strong connection of a production farm with a household, an organic nature of undertaken production activities, considerable dependence on natural conditions and a lengthy production cycle. The specific nature of farms to a large extent contributes to their owners' focus on operational activities helping them survive. The existence was a peasant's (farmer's) main purpose of becoming engaged in economic activities. Such growth mostly involved the development of a materials base increasing the farm's potential and a chance for the family to survive.

According to Foster and Kaplan, at the end of the 20th century a new era of discontinuity began during which capital markets dominated by large financial institutions strived at

[1] The work developed as part of the project entitled "Dywestycje w gospodarstwach rolniczych – istota, zakres, skutki" (Divestments on farms – essence, scope, consequences) No. 3913/B/H03/2011/40 financed by the National Science Center.

Corresponding author: Faculty of Agriculture and Economics, University of Agriculture in Kraków, Al. Mickiewicza 21, 32-120 Kraków, Poland, e-mail: rrtwojew@cyf-kr.edu.pl

creation and destruction [2003]. The markets stimulate fast and broad-scale creation (development) of wealth and do not tolerate poor performance in a long-term perspective. As the number of population, and hence the demand for food and raw materials for biofuels increase, so does the markets' interest in agricultural land and at the same in agriculture. Generally peasants/farmers are expected to change their way of thinking and management. Though unavoidable, the surrender of agriculture to "gales of creative destruction" gives rise to numerous fears.

Destructive changes in agriculture and farms can be perceived both as a symptom of its weakness, but also as an indispensable element of transformation of the Polish agriculture. The purpose of this paper is an attempt at the differentiation between the following terms: the divestments and the economic fall of farms.

MATERIALS AND METHODOLOGY

The conducted research focusing on divestments on farms has encountered numerous methodic barriers, among others: defining divestments, assessing their effectiveness and measuring their economic effectiveness. The paper attempts at answering the question: where is the boundary between divestments and the economic fall of the farm? Theoretical analyses of a methodic nature were illustrated with empirical data gathered during Common Agricultural Censuses held in 2002 and 2010 and quality data collected through interviews with a questionnaire. Field research (a case study) was conducted in 2011 among 50 landowners in the Podkarpackie Voivodeship. Due to conducting the field research in the Southern and Eastern Poland, special attention was paid to regularities observed on small commodity farms, i.e. the farms where production for self-maintenance plays a considerable role. Mass statistics data quoted in the study show the scale of the liquidation of farms and resignation from economic activities by agricultural farms in Poland and in the Małopolska and Pogórze macroregion[2].

DESTRUCTION AND DIVESTMENTS ON FARMS – THEORETICAL CONTRIBUTIONS

Słownik języka polskiego [2007] defines destruction as 'complete devastation or complete spontaneous disintegration of something'. From Latin destruction (*destructio*) means devastation, disintegration, a breakdown, disorder, disorganization. Destruction is generally perceived as a negative phenomenon. The perception of this concept, however, differs when it is treated as a preliminary stage, the existence of which is necessary for new values to be created, and for new, improved and more efficient systems to be developed.

Destruction is omnipresent in nature, in the economy, in any enterprise. Foster and Kaplan [2003] suggest three forms of destruction: incremental, actual and transformational.

[2] Based on FADN nomenclature the macroregion consists of the following voivodeships: Małopolskie, Podkarpackie, Śląskie and Świętokrzyskie.

The most widespread form of destruction is incremental destruction, even though quite frequently it is hardly noticeable. Such incremental destruction includes small changes being part of an enterprise's current activities, e.g. changing individual procedures, improving work organization, liquidating individual job positions, which do not require the involvement of senior managers, contrary to actual destruction such as a decision to lay 10% of staff off, or to discontinue to research a new product that may significantly influence the organization's long-term competitive edge. Transformational destruction is a change that irrevocably affects the enterprise. Transformational destruction, for example, involves resignation from the enterprise's core activity or declaring it bankrupt. Such form of destruction is thus more permanent in nature than actual destruction, it is also closer to the concept of "creative destruction" as per Schumpeter's definition.

Regarding a farm, incremental destructive activities are the activities aimed at limiting production in certain areas, leading to the change of the production structure (e.g. decreasing the livestock population in a given group, reducing a cultivation area of a given plant) and a temporary withdrawal from the production of free (redundant) resources of land, labour and capital (among other things, abandoning cultivation of marginal and peripheral lands, starting odd-jobs by a farmer outside a farm, a long-term lease of unused machinery and equipment).

Changes of a more radical nature, which cannot be reversed in a short period of time, can be classified as actual destruction on a farm. Actual destruction includes, for example, discontinuing to breed a given group of a livestock or cultivate a specific variety of plants, taking a regular gainful job outside farming allowing the farmer to continue to be engaged in agricultural activities, leasing a part of land owned in a non-permanent manner (lending land, an oral short-period lease, selling unused machinery, dismantling equipment etc.). Actual destruction usually leads to the stabilization of production at a level lower than before.

The most radical changes are characteristic of transformational destruction that results in permanent changes accompanying the so-called strategic turn. Transformational destruction's nature can be complete or incomplete. Complete transformation results in winding up agricultural business on a farm and reallocation of resources used to-date to another entity (e.g. the sale of an enterprise, leasing land based on a written agreement in force for many years) or the transfer of resources to another area of production or services (e.g. non-agricultural activities). Incomplete transformational destruction allows to continue or even develop agricultural activities, however, it leads to a diametric change of the production structure (a permanent withdrawal[3] from breeding a given group of a livestock, cultivation of a given plant). Incomplete transformational destruction can be accompanied by increased activities in other production areas on a farm that remain unchanged or starting new ones (e.g. agritourism, partial processing of own agricultural produce).

[3] Permanent abandonment of a given activity means getting rid of fixed assets required for re-performing it in the future, e.g. dismantling and selling of a milker (in the case of breeding dairy cows), selling a potato harvester (in the case of farms engaged in cultivating potatoes) etc.

All three forms of the destruction on farms (i.e. incremental, actual and transformational) can be both a symptom of the farm's fall[4], and a manifestation of innovations or a stage of the process of restructuring required for its rescue or even development. The term of innovation is inseparably linked to the concept of creative destruction. Referring to Schumpeter's theory, innovations should be regarded as an effect of creative destruction which involves constant destruction of old structures and continuous development of (new) more effective ones. Wójcik [2011] stresses that in a more narrow understanding of the term, innovations are changes rated positively in light of criteria applicable to a given organization (e.g. a farm), improving conditions of its functioning on the market and in the environment, and contributing to its growth.

A decadent phase of the farm's functioning should be interpreted as its fall when the limitations of its production potential prevents the continuation of agricultural activities (the decapitalization and devastation of production assets, the absence of a labour force).

In professional literature changes of a destructive nature occurring in enterprises are more and more frequently described as divestments: 'Divestments on farms come to mean planned and purposeful limitations of agricultural production and/or involvement of resources of a farmer's household in production activities of the farm that lead to

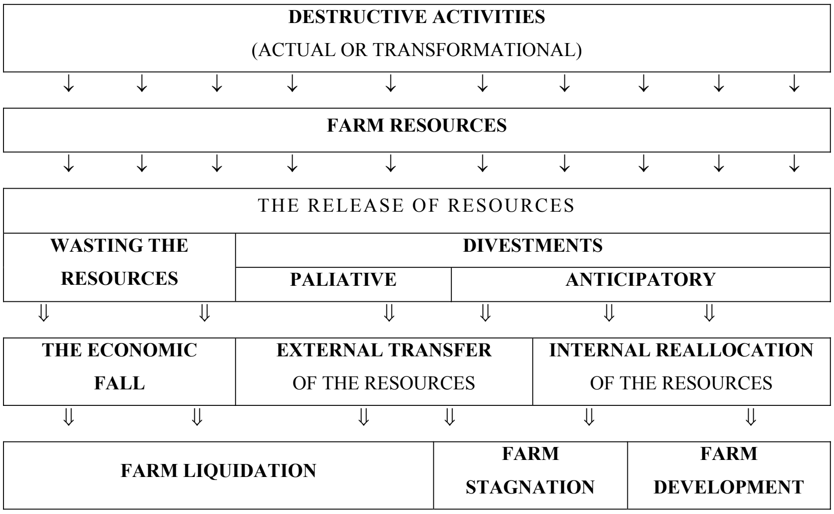


Fig. 1. Destructive activities versus farm development
Source: Own study.

[4] The economic fall of the farm does not mean its physical liquidation, even though it may lead to the same.

releasing resources of land, labor and capital that may be further used in other agricultural or non-agricultural activities...'[5].

Hence, in order to classify the destructive activities occurring on farms as divestments, the following three conditions must be met jointly:
- they should be planned and intentional ventures (rather than occasional, accidental or chance activities),
- they should be actual or transformational destruction forms,
- they should lead to the release of resources which will be utilized alternatively on or outside the farm.

If destructive changes occurring on the farm lead to releasing the resources which remain to be unused, including, in production and economic terms, they should be regarded as a symptom of the economic fall of the farm rather than as a divestment (Fig. 1). The above is also applicable where the absence of radical activities aimed at improving the economic standing of the farm results in peculiar entropy[6], causing the disintegration of an organized and ordered system such as a farm and its components, upon their release, become temporarily passive (e.g. land) or permanently passive (e.g. minor farming tools).

RESIGNATION FROM AGRICULTURAL ACTIVITIES – EMPIRICAL ILLUSTRATION

The process of transformations affecting Polish farms in the first decade of the 21st century was considerably influenced by globalization and integration processes. According to Gołaś and Kozera [2003], the change of the agriculture's structure and position in the economy was mostly impacted by the following three trends:
- relative and unconditional decrease of production potential engaged in the production of food, deprecating social and economic importance of agriculture in the national economy,
- a constant pressure to improve effectiveness and competitiveness (concentration of production factors, implementation of cost strategies),
- social and economic changes of the functioning of production units in agriculture leading to the marginalization of natural and self-maintenance forms of production organization (peasants farms) to the benefit of commodity, farmer agriculture or agribusiness.

In 2002–2010 the number of farms in Poland declined by 22.4% [Raport… 2010]. Moreover, out of nearly 2.3 millions farms formally in existence in 2010, 17% were not

[5] The definition used to-date included the following '... which, as a consequence, will lead to the increase of a personal income of a farmer and his family' [Wojewodzic 2010, 2012]. The shorter definition should be regarded as intentional, as in light of the conducted research, the increase of the personal income may be secondary, being an effect of the reallocation of the resources and cannot always be classified solely as destructive activities.

[6] Entropy is a process that leads to a system's disintegration and collapse. From a system perspective, management's task is to continuously reinforce an organization's energy for the purpose of avoiding entropy [Kisielnicki 2001].

engaged in any agricultural activity (Table 1). Processes of abandoning agricultural activities by farmers are typical for developing countries, and the economic policy (including the agricultural one) plays an important role in the development of their speed and scope. Simultaneously, the decrease of the number of farms is accompanied by concentration of land – an average area of utilized agricultural area on Polish farms rose from 5.76 ha in 2002 to 6.82 ha in 2010.

Table 1. Farms[a] in the Małopolska and Pogórze macroregion

Specification	Poland	Małopolskie Voivodeship	Podkarpackie Voivodeship	Śląskie Voivodeship	Świętokrzyskie Voivodeship
		2002			
Farms in total [in thous.]	2,933.2	373.7	311.9	253.1	172.3
Farms not engaged in agricultural activities [in thous.]	755.6	113.7	75.8	119.5	43.6
Farms not engaged in agricultural activities [%]	25.8	30.4	24.3	47.2	25.3
		2010			
Farms in total [in thous.]	2,277.6	283.5	261.4	163.3	141.9
Farms not engaged in agricultural activities [in thous.]	386.5	62.1	38.1	60.6	27.1
Farms not engaged in agricultural activities [%]	17.0	21.9	14.6	37.1	19.1

[a]Farm means arable land, including forest lands, buildings or their parts, equipment and livestock if they are or can be a part of an organized economic whole and rights related to maintaining a farm (CSO definition).

Source: Local data bank of the CSO (www.stat.gov.pl. Accessed 17.02.2013)

In the Małopolska and Pogórze macroregion characterized by the highest agrarian fragmentation in Poland in a period between censuses, the number of farms decreased by 260 thousand, that is, following a national tendency, nearly every fourth farm was closed. At the same time nearly 188 thousand farms in the macroregion were not engaged in agricultural activities in 2010. It means that every other farm not engaged in agricultural activities in Poland is located in the southern-eastern part of Poland (the Małopolska and Pogórze region). At the same time it can be easily observed that the processes of abandoning agricultural activities occur more quickly in voivodeship that have larger economic potential where it is easier to find jobs in other sectors than in agriculture, i.e. the Małopolskie, Śląskie voivodeships [cf: Musiał 2009, Satola and Wojewodzic 2011].

The processes of destruction have also been observed with regard to livestock production. The number of farms engaged in breeding animals decreased in 2002–2010 by 408 thousand (28.1%). Nation-wide, 43.8% farms breeding cattle decided to discontinue breeding the said animals in 2002, whereas 48.1% decided to discontinue breeding dairy cows. The process of withdrawing from the production of milk and keeping cattle was to a larger extent present in the Małopolska and Pogórze macroregion where 52.7% farms decided to cease raising cattle and 55.6% – raising dairy cows. The greatest scale of the destruction in that respect was recorded in the Podkarpackie Voivodeship (Table 2). For

Table 2. A change of a number of farms keeping individual groups of livestock in 2002–2010 (%)

Specification	Poland	Małopolskie Voivodeship	Podkarpackie Voivodeship	Śląskie Voivodeship	Świętokrzyskie Voivodeship
The change of a number of farms keeping					
cattle	–43.9	–49.8	–59.6	–56.2	–45.0
cows	–48.1	–52.1	–61.1	–59.0	–51.3
swine	–47.7	–50.6	–46.4	–52.0	–49.1
horses	–49.9	–52.0	–61.4	–44.0	–64.2

Sources: Calculations based on the Local database of the CSO (www.stat.gov.pl. Last modification 17.02.2013)

economic reasons farms keeping small herds of dairy cows were unable to make investments involving the adaptation of conditions of keeping animals to increasing sanitary standards. At the same time the progressing concentration of milk production on larger farms contributed to the increase of the efficiency of cows' milk productivity. Production concentration processes can also be regarded as a manifestation of creative destruction.

The process of concentrating the production was also observed in the case of the production of swine where the number of farms keeping this group of livestock decreased by 47.8% over the period of 8 years; at the same time it was observed that an average size of a swine herd grew bigger. Considerable fluctuations of the production's profitability are a major reason for discontinuing the production of swine on farms. The Małopolska and Pogórze region did not considerably differ from the remaining parts of the country in such respect.

The process of withdrawing from the production was also clearly visible in the case of other species – the number of farms keeping horses decreased by 49.9% Poland-wide, whereas in the macroregion discussed in this paper, it dropped by 57.6%.

DESTRUCTION – A CASE STUDY

The mass statistics data prevent an accurate assessment of processes occurring on agricultural farms, quality research is also extremely difficult due to the absence of records on farms and due to farmers being considerably distrustful to interviewers. The research focusing on recessive processes encounters an additional psychological barrier as no one likes to boast of consequences of processes that may put them in a negative light. Among others, divestments, economic fall, bankruptcy, abandoning production, informal lease are often classified as such processes.

Based on the conducted interviews it was possible to determine that, in 2011, 26% of the surveyed entities had unused buildings. They were mostly buildings built for keeping livestock or multi-function farm buildings located on farms that discontinued livestock production (types C and F in Table 3). Farms that ceased agricultural activities also most often had unused machinery.

Table 3. Changes of farm potential

Specification	Types of farms[a]						Total
	A	B	C	D	E	F	
The number of farms in a group	5	6	9	14	4	12	50
The number of farms with							
unused buildings	1	1	5	0	0	8	13
unused machinery	0	3	2	2	1	8	16
The number of farms that were engaged in over the past decade							
erecting farm facilities	1	0	4	5	0	0	10
converting buildings for other purposes	3	3	4	1	1	3	15
demolishing buildings	0	0	0	2	0	2	4
purchasing the machinery produced after 2000	4	5	4	5	3	0	21
selling the machinery	2	2	3	5	2	8	22
The number of farms planning over the coming decade							
to build farm buildings	2	3	2	2	1	1	21
to purchase the machinery	4	5	3	5	2	2	21

[a]A – farms that withdrew from the production of swine and focused on breeding cattle, B – farms that withdrew from the production of cattle and focused on breeding swine, C – farms that withdrew from animal production, D – farms whose owners are engaged in non-agricultural business activities, E – farms whose owners are engaged in agribusiness, F – farms of persons who abandoned agricultural activities or limited them considerably.

Source: Own study.

Selling and purchasing fixed assets should be treated as a natural process aimed at keeping up farms' production potential (reproduction). It is alarming that no building used for breeding livestock was built over the past decade on either of the farms being surveyed. The buildings erected during that period are mostly garages (7 farms), and in individual cases: a shelter, a silo, a multiple-purpose building. The purpose of converting buildings was also to transform them into garages or fuel yards of e.g. fuel wood. In the case of the farms changing their livestock production profile (types A and B, accordingly to Table 3), the buildings were converted from piggery into a building for cattle (twice) and vice verse (twice). Sporadically, farm buildings were demolished or liquidated. Regarding the surveyed farms, in two out of four instances buildings were demolished due to a fire. Only some farms decided to renew their machinery park: 30% of the surveyed farms purchased the machinery manufactured after 2000, 16% sold and purchased the machinery, 18% only sold the machinery and, with regard to remaining farms, no changes were recorded. Respondents' wish lists included mostly tractors (6), combined cultivators (3), grain drills (2), bale silage wrapper (2), trailers (4). A part of the planned purchases is not directly related to typical agricultural activities, e.g. purchases of construction machinery. Based on the observations, destructive activities may be both a stage of the economic fall, transformation into non-agricultural entities and specialization of farms.

SUMMARY

The topic is very up-to-date and progressive due to the intensification of destructive processes in agriculture affecting both the entities discontinuing their activities and those that have been developing. The processes, however, differ in regard of their genesis, direction, speed and economic consequences. Creative destruction is an unavoidable, yet needed process in the Polish agriculture if it wants to face up to competition from abroad.

The presented analyses will help describe in a more detailed way the concept of the divestments, stressing their planned and intentional nature and depth of the occurring destructive changes leading to releasing the resources, the release of which does not lead to wasting them (actual or transformational destruction).

The presented results of the quality research indicate that the destruction on the surveyed farms is quite advanced, however, in the majority of cases the occurring changes can be classified as divestments. Transformations leading to production specialization are characteristic for divestments, i.e. concentration on cattle production (type A farms) or swine production (type B farms) as well as withdrawing from animal production to increase the scale of plant production (a portion of type C farms). Also, certain activities on farms changing their production profile (types D and E) can be regarded as divestments provided that the released resources are adjusted to be used as part of other activities or for families' living needs, e.g. converting farm buildings into garages. The absence of records on such farms makes it impossible to determine whether the observed changes were intentional and resulted from an economic calculation.

REFERENCES

Bank Danych Lokalnych GUS (Local data bank of CSO). www.stat.gov.pl (Accessed 17.02.2013).

Foster R., Kaplan S., 2003. Twórcza destrukcja. Galaktyka, Łódź.

Gołaś Z., Kozera M., 2003. Ekonomiczne i społeczne uwarunkowania zmian struktury dochodowej indywidualnych gospodarstw rolnych. Roczniki Akademii Rolniczej w Poznaniu 358, 37–70.

Kisielnicki J., 2001. Zarządzanie organizacją. Zarządzanie nie musi być trudne. Oficyna Wydawnicza Wyższej Szkoły Handlu i Prawa im. Ryszarda Łazarskiego, Warszawa.

Musiał W., 2009. Rozważania nad upadłością gospodarstw rodzinnych w Polsce. Wieś i Rolnictwo 1 (142), 44–61.

Raport z wyników. Powszechny spis rolny 2010. GUS, Warszawa, www.stat.gov.pl/gus/5840_13853_PLK_HTML.htm (Last modification 26.08.2011).

Satoła Ł., Wojewodzic T., 2011. Wykorzystanie kategorii dochodu rezydualnego w poszukiwaniu renty gruntowej. Roczniki Naukowe Stowarzyszenia Ekonomistów Rolnictwa i Agrobiznesu 13 (8), 249–257.

Słownik języka polskiego (Dictionary of the Polish Language), 2007. PWN, Warszawa, Vol. 1, 116.

Wojewodzic T., 2010. Dywestycje w gospodarstwach rolnych – istota, definicje, podział. Wieś i Rolnictwo 2 (147), 96–108.

Wojewodzic T., 2012. Divestments in the proces of developing off-farm activity by farmers. Acta Sci. Pol., Oeconomia 3, 77–85.

Wójcik G., 2011. Znaczenie i uwarunkowania innowacyjności obszarów wiejskich w Polsce. Wiadomości Zootechniczne 49 (1), 161–168.

DYWESTYCJE A UPADEK EKONOMICZNY GOSPODARSTW – PRÓBA ROZGRANICZENIA TERMINOLOGICZNEGO

Streszczenie. Procesy destrukcji są słabo rozpoznane w odniesieniu do specyficznych podmiotów gospodarczych, jakimi są gospodarstwa rolnicze. Celem opracowania była próba terminologicznego rozgraniczenia między pojęciami: dywestycje oraz upadek ekonomiczny gospodarstw rolniczych. Rozważania teoretyczne zilustrowano danymi statystyki masowej pokazującymi skalę rezygnacji gospodarstw rolniczych w Polsce z działalności rolniczej oraz wynikami badań jakościowych przeprowadzonych wśród 50 właścicieli ziemi z województwa podkarpackiego. Prezentowane rozważania pozwoliły doprecyzować pojęcie dywestycji, podkreślając zakres i trwałość dokonywanych zmian destrukcyjnych oraz ich planowy i celowy charakter.

Słowa kluczowe: destrukcja, dywestycje, gospodarstwo rolne, upadek ekonomiczny

Accepted for print – Zaakceptowano do druku: 31.08.2013

CONTENTS
SPIS TREŚCI

Hanna Dudek, Grzegorz Koszela
Comparison of households' expenditures structure in selected countries of European Union 5
Porównanie struktury wydatków gospodarstw domowych w wybranych krajach Unii Europejskiej

Maria Golinowska, Michał Kruszyński
Organization structure in relation to the system of integrated production in farms 17
Struktura organizacyjna a integrowana produkcja

Sławomir Kalinowski
The attitudes of rural population with uncertain income on the labour market 29
Postawy ludności wiejskiej o niepewnych dochodach na rynku pracy

Roman Kisiel, Milena Gierwiatowska
Functioning of the Polish LAG in the context of the Leader initiative 39
Funkcjonowanie polskich LGD w kontekście inicjatywy Leader

Małgorzata Kosicka-Gębska, Jerzy Gębski
Impact of economic crisis on consumer behaviour towards meat 51
Wpływ kryzysu gospodarczego na zachowania konsumentów wobec mięsa

Ľubica Kubicová, Zdenka Kádeková
Impact of consumer prices and cash income on consumption of dairy products 61
Wpływ cen konsumpcyjnych i dochodów na konsumpcję produktów mleczarskich

Jakub Piecuch
The Evolution of the socio-economic system of Southern Europe during the European Union membership of Greece, Portugal and Spain 73
Ewolucja modelu społeczno-ekonomicznego Europy Południowej w okresie członkostwa Grecji, Portugalii i Hiszpanii w Unii Europejskiej

Marián Tóth, Zuzana Čierna, Peter Serenčéš
Benchmark values for liquidity ratios in Slovak agriculture 83
Wartości wzorcowe wskaźników płynności w rolnictwie słowackim

Ivana Váryová, Iveta Košovská, Alexandra Ferenczi Vaňová
Tax burden in Slovakia and European Union countries 91
Obciążenia podatkowe w Słowacji i innych krajach Unii Europejskiej

Tomasz Wojewodzic
Divestments and economic fall of farms – attempt at terminological differentiation 101
Dywestycje a upadek ekonomiczny gospodarstw – próba rozgraniczenia terminologicznego