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## **MATERNITY AND PROFESSIONAL WORK OF WOMEN**

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**Key words:** maternity, employment, professional activity.

### **A b s t r a c t**

The paper presents the results of the diagnostic survey concerning conditions of employment and professional consequences for women resulting from maternity. The analysis of opinions gathered showed mitigating difficulties in combining the roles of a mother and an employee depends mainly on the attitude of the employer as well as availability of nursery schools and/or kindergartens. The consequences of maternity include some limitations in the professional activity but also changes in attitudes and values increasing the employee competences of women such as feeling of responsibility, better self-organisation, patience and need for stabilisation. The legal regulations, information policy and proliferation of the best examples serve liquidation of employee limitations resulting from maternity and a change of the traditional mentality and paradigms hindering reconciliation of the roles of the mother and the employee.

## **MACIERZYŃSTWO A PRACA ZAWODOWA KOBIEŃ**

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**Słowa kluczowe:** macierzyństwo, zatrudnienie, aktywność zawodowa.

### **A b s t r a k t**

Artykuł zawiera wyniki sondażu diagnostycznego dotyczącego uwarunkowań zatrudnienia i skutków zawodowych dla kobiet wynikających z macierzyństwa. Analiza zebranych opinii wykazała, że ograniczenie trudności w pogodzeniu roli matki i pracownicy zależy głównie od postawy pracodawcy i dostępności żłobków oraz (lub) przedszkoli. Następnym macierzyństwa są pewne ograniczenia aktywności zawodowej, a także zmiany postaw i wartości zwiększających kompetencje pracownicze kobiet, jak: poczucie odpowiedzialności, lepsza samoorganizacja, cierpliwość, potrzeba stabilizacji. Regulacje prawne, polityka informacyjna, upowszechnianie dobrych przykładów służą likwidacji ograniczeń pracowniczych wynikających z macierzyństwa oraz zmianie tradycyjnej mentalności i stereotypów utrudniających godzenie roli matki i pracownicy.

## Introduction

Present times, at least in case of the western civilisation, are characterised by an increasing participation of women in the economic, social and political life. The beginnings of this process are not at all that distant while its clear symptoms go back to just the 19<sup>th</sup> and 20<sup>th</sup> century when feminist movements appeared and as a consequence women started gaining the voting rights (first in the USA in 1869, in Poland in 1918, and in Switzerland only in 1977), increased their professional activity, obtained economic independence and permit for behaviours that earlier only men could allow themselves, and so on. Gradually the paradigm of a woman as a “Polish woman-mother” who should only by the guardian of the homestead and the holly tradition changed. As a result we observe diverse manifestations of feminisation of the modern civilisation, which is clearly proven by the situation in the United States where in 2010, for the first time in the history of the world, the number of professionally active women equalled the number of professionally active men, the situation that economies of other countries are also nearing to or by the legally sanctioned parity (limits) of participation of women in the elected bodies of power or in the projects financed from the European funds. We can say that women, equally to men, have the right and possibility of active fulfilment in professional life and that they exercise those rights and possibilities to an increasing extent.

Maternity, creating by the nature of things the need for temporary limitation or absolute interruption (resignation from) professional activity is one of the natural limitations to that activity of women. Reconciliation of maternity and professional work, despite spreading positive standards and formal regulations mitigating or eliminating some of the barriers hindering fulfilment of the roles of the mother and employee still poses many problems to women (KOTOWSKA 2007). This probably is one of the causes for the situation that the indicator of the professional activity of women still shows lower values than the indicator of the activity of men. Sometimes it is even said that women are discriminated in the labour market, which means not only preference for men in employment at equivalent positions but also uneven remuneration at the same positions (*Raport...* 2007). The trend of eliminating any manifestation of discrimination in the labour market dominating during the recent years not only in the European Union countries is accompanied by numerous studies and publications concerning, among others, the professional activity and employee status of women (JANKOWSKA 2010). The results of survey presented in this paper are linked to those general trends and aim at identification of the factors influencing the consequences and effectiveness of combining maternity with professional

activity of women. The analysis was based on the results of the diagnostic survey conducted covering 53 women that returned to work after a break caused by giving birth to a child.

### **Women in the labour market**

Civilisation and cultural changes initiated at the end of the 19<sup>th</sup> century that gained significant momentum at the turn of the 20<sup>th</sup> and 21<sup>st</sup> c. are clearly expressed in extinction of social discrimination resulting from numerous reasons, including also discrimination resulting from the difference of gender. Inequality of the opportunities of women and men in the economic, professional, social and political life, once obvious, is gradually disappearing, at least in the western civilisation. It is enough to mention that the University of Lvov and the Jagiellonian University started admitting women for studies only recently, because just at the beginning of the 20<sup>th</sup> c. while currently the number of women possessing tertiary education exceeds that of the men. Liquidation of barriers and equalising the opportunities of women in relation to men was and is served by political decisions and legal regulations resulting from them. The issue was also noticed in the socialist economies, which was expressed in caricatured form by, for instance, the character of a woman-tractor driver. In the European Union countries, already during the 1970s, directives concerning various aspects of equality of the citizens, including the equality of genders, have been issued. Those directives covered, among others, the equal remuneration (1975), social insurance (1978), access to employment, vocational training, professional advancement and work conditions (1976), combining household duties and professional work (1992), preventing unemployment of women (2000), etc. Implementation of the ideas expressed in various declarations finds practical expression in the decisions on parities concerning participation of women in the national parliaments and the European Parliament, in the Union administration bodies, in allocations of parts of the European funds, in legal regulations eliminating inequalities and facilitating reconciliation of household and professional duties.

In the declarative and formal spheres, the issues of gender inequality have been practically eliminated. The issues of mentality and cultural character the changes in which occur definitely slower remain a problem. This covers, among others, the perception of roles, division of tasks into male and female ones, evident and hidden paradigms of cultural patterns and systems of values. As a result, not without a reason, people mention the phenomenon of glass ceiling concerning limited possibilities of vertical advancement of women or excessive representation of men in various political, self-government and managing

bodies and positions (LISOWSKA 2007). Despite still existing diversified barriers, the professional activity of women increases systematically, although the indicator of that activity is still lower by 20 percent points, and the employment indicator by 15 percent points, than the same indicators for men. The current trends show, nevertheless that those disproportions will decrease with the “risk” that the women might exceed the values of the indicators so far achieved by the men. Already now in Poland 36% of all managerial positions are held by women, they are owners of almost 38% of micro- and small enterprises and represent 45% of the total number of the employed (STACHURSKA 2009). The problem of increasing the professional activity of women gains particular importance in the context of unfavourable demographic phenomena resulting from decreasing number of children per woman. Effective preventing those phenomena requires actions facilitating reconciliation of the roles of the mother and the employee by women.

Experience and results of studies indicate that women-mothers as employees possess numerous positive characteristics that include responsibility for the work performed, conscientiousness, stability, patience and dutifulness (Tab. 1). Those characteristics though are not always appreciated and employers, under the influence of the established beliefs, frequently prefer men during recruitment.

During the recent years numerous legal regulations facilitating reconciliation of the role of a parent and the employee were implemented. This covers, among others, extension of the maternity leave, introduction of paternity leave

Table 1

Characteristics of women as employees

Characteristics of women as employees		Characteristics of women – mothers as employees	
Positive	negative	positive	negative
Ease of establishing contacts	more emotional	higher responsibility for work, creativity	lower availability
Better coping with bearing the responsibility	possibility of becoming pregnant	conscientiousness and dutifulness, empathy	higher ambitions at work
Higher patience	excessive exposure of physical attractiveness	acceptance of poorer work conditions	domination of family issues over the professional issues
Accuracy and precision of performance of tasks		skills of coping with stress	
Better education		emotional stability, better distance to work	

Source: [www.hvp.com.pl/mama w pracy](http://www.hvp.com.pl/mama_w_pracy).



or the “nursery school” Act enacted already in 2011. Those regulations complement the earlier regulations concerning the conditions of work, employee rights, social benefits for women during pregnancy and after childbirth. The employee expectations from mothers of small children cover mainly the flexibility and place of employment (Fig. 1). Satisfying those expectations will facilitate maintaining balance between the family and the professional functions.

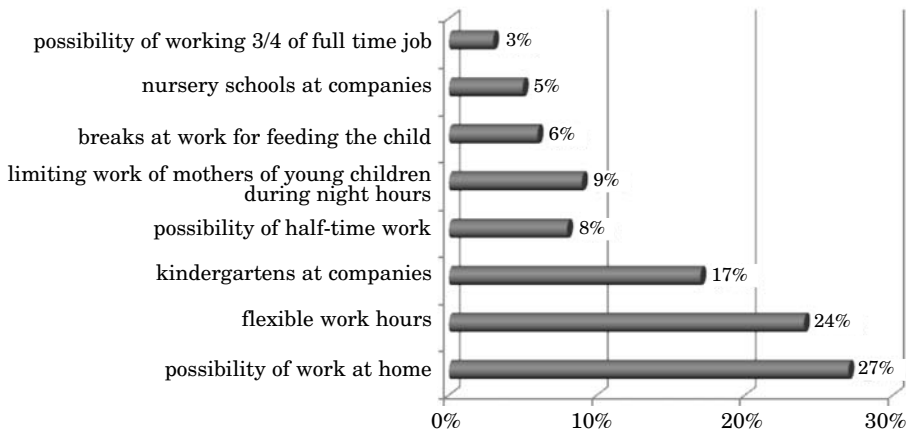


Fig. 1. Expected facilities for young mothers returning to work  
Source: Report “Mother returns to work” by Institute Millward Brown SMG/KRC.

## Consequences of maternity for employment

All the women covered by the survey currently worked although two of them took up the first job only after several months from childbirth. On return to work after childbirth the structure of employment changed as the number of women operating their own businesses increased from four to nine. Also the number of women employed on the base of the employment contract for an unspecified period of time decreased significantly (from 37 to 28) while the number of those employed for a specified duration increased significantly (from 7 to 12). Almost a half of the respondents (20) described their professional situation after returning to work after childbirth as the same as before the break in employment. The numbers of women that experienced deterioration or improvement in their professional situation were similar (17 and 16 respectively). The deterioration of the employee situation manifested through decrease of remuneration (13 cases), shortening the time of employment covered by the contract, change of work position to a worse one (8 cases)

or termination of employment. On the other hand improvement in perception of the professional situation resulted from an increase of remuneration (10 cases), receiving a higher position (14 cases), extending the contractual duration of employment and adjustment of work hours to the needs of the employee. In numerous cases of deterioration in the employment situation of women participating in the survey violation of the legal regulations could be observed, however, the female employees accepted less favourable conditions fearing loss of employment.

According to the respondents, it would be the best if the break in employment after childbirth could be 12 months (28 indications) or 24 months (11 indications). The actual duration of the break, however, was usually shorter and in 8 cases was just 3 months. The causes for the accelerated return to work included, among others, shortage of funds and necessity to generate income (15 indications), internal need to return to work (15 indications), fear of loosing the job (14 indications), unfavourable influence of long absence from work on professional career (12 indications), too low amount of the child care benefit or lack of eligibility to that benefit (20 indications). As a consequence, earlier return to work resulted in most cases from the financial reasons and belief that remaining home for longer and care for the child could in the future have negative influence of the professional situation of the respondents.

Independent of the involvement in the parental role and its importance in the system of values, the professional activity of women covered by the survey was very important for them and involves satisfying a diversity of needs (Tab. 2). Among those needs the need for contact with people and the related need for detachment from daily household works and need for self-fulfilment dominated. Obviously the financial considerations, starting with the necessity to earn funds for the living, through financial independence and finishing with the care for securing the funds for the old age were also not without importance.

Table 2

Functions of professional work according to the respondent women

Professional work	Indications <i>N</i> = 53
Allows contact with other people	39
Assures financial independence	33
Increases the feeling of own value	31
Allows self-fulfilment and personal development	30
Is the source of satisfaction	30
Secures funds for the living	29
Induces activity	27
Allows a change in household works	27
Secures benefits for the old age	17
Influences social position and appreciation	11

The degree of satisfying the expectations of young mothers by the employers in the area of the solutions facilitating combining maternity with professional activity varies (Tab. 3). Liquidation of those differences requires not so much new legal regulations but rather more empathy, understanding and willingness of the employers to consider the expectations and needs of employees-mothers. The expectation concerning the situation that the employers will organize nursery schools or kindergartens exceeds the capacity and needs of the majority of employers and stem probably from the generally low availability of places at nursery schools and kindergartens on which the employers have no influence. Access to institutional forms of care for the child, empathy of the employer, assistance and support from the family and other persons are, according to the women surveyed, the major factors limiting or eliminating even the conflict between maternity and professional work. Maternity resulted in numerous positive consequences in the attitudes of those women that were also of major importance from the perspective of employee competences. The changes in behaviour and emotions observed by them after childbirth included the following: I am better organised (15 indications), I am more responsible (11 indications), and I am more systematic (8 indications).

As the effect, considering all the advantages and disadvantages resulting from maternity in the context of vocational activity, only six women in the surveyed group concluded that maternity frequently limited such activity while the others declared that it never limited it (24 indications) or only sometimes limited it (23 indications). This is an optimistic conclusion slightly contrary to the common opinions and indicating spreading of positive practices facilitating combination of family (life) functions and professional functions. Probably not every company deserves the name of a “mother friendly company” but the number of “mother unfriendly” companies is decreasing.

Table 3  
Solutions facilitating combining maternity with professional work (Frequency of indication  $N=59$ )

Solution	Expected	Applied
Possibility of working at home	30	17
Subsidy for nursery school/kindergarten	26	5
Flexible work hours	26	19
Kindergarten/nursery school at the place of work	23	2
Higher availability of nursery schools/kindergartens	19	2
Possibility of working part time	16	21
Break in work for feeding the child	15	21
Training liquidating the consequences of break in work caused by maternity	13	3
Limitation of sending for business trips	11	14
Limitation of overtime work	10	17

## Conclusion

Civilisation and cultural changes taking place during the recent decades also include changes in the relation between life and work as well as a change in the perception of social roles resulting from gender. This includes a clear increase in the extra-family activity of women, such as the professional activity. Despite the decrease or even disappearance of the differences in activity of the men and the women cases of inequality of opportunities and sometimes a worse situation of women in the labour market, e.g. in the form of lower remuneration, difficulties in professional advancement or access to high positions are encountered. Maternity is one of the factors with major influence of the professional activity of women. As indicated by the results of the here discussed survey of opinions of women – mothers the majority of the barriers hindering combining the role of an employee and that of the mother may be eliminated in case of good collaboration between the employer and the employees bringing up the small children. Some of the limitations, however, require an active role of the State and local government administration. Maternity results in women in positive changes of values and attitudes that translates into an increase in their employee competences. This includes, e.g. an increase of responsibility, conscientiousness, need for stabilisation, better self-organisation and patience. Employment of women-mothers allows using those competences and gives them the possibility to satisfy the needs related to employee activity, including the needs of self-fulfilment and development, obtaining funds for the living and financial independence, social contacts, increasing own value and acceptance. Among the employers the belief is increasingly common in the benefits and not only inconveniences resulting from employing women after childbirth. Legal regulations, information policy and good examples serve elimination of employee limitations resulting from maternity and a change in the traditional mentality and paradigms that currently have just the form of dated staff.

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**DEVELOPMENT CONDITIONS  
OF THE ENTITIES OF SOCIAL ECONOMY**

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Key words: social entrepreneurship, economisation, non-government organisation (NGO).

**A b s t r a c t**

This paper discusses the issues of development conditions of the entities of social economy. The paper aims at drawing attention to the problems of “economisation” of the activities of social economy entities while the aim of the surveys was to identify the development barriers and opportunities faced by non-government organisations from Warmia and Mazury region and determine the attitudes of those organisations to the issues of economic activity and entrepreneurship (those attitudes was measured primarily from the perspective of the market revenues generated in 2009). The survey was conducted by electronic means employing the questionnaire-based survey.

The results of studies presented in the paper allow concluding that the non-market financing (public funds) dominates in the majority of NGO’s from Warmia and Mazury region, the entities surveyed considered lack of funds for investments and difficulties in obtaining them the major barriers while the inflow of aid funds from the European Union was considered the main development opportunity by those organisations.

**UWARUNKOWANIA ROZWOJU PODMIOTÓW EKONOMII SPOŁECZNEJ**

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Sł o w a k l u c z o w e: przedsiębiorczość społeczna, ekonomizacja, organizacja pozarządowa.

**A b s t r a c t**

W artykule poruszono kwestię uwarunkowań rozwojowych podmiotów ekonomii społecznej. Celem opracowania jest zwrócenie uwagi na problematykę „ekonomizowania” działalności podmiotów ekonomii społecznej, natomiast celem badań było zidentyfikowanie barier i szans rozwojowych, przed jakimi stoją warmińsko-mazurskie organizacje pozarządowe oraz określenie nastawienia tych organizacji do problematyki aktywności gospodarczej i przedsiębiorczości (nastawienie

to mierzono przede wszystkim przez pryzmat dochodów rynkowych uzyskanych w 2009 r.). Badania przeprowadzono drogą elektroniczną z wykorzystaniem metody ankietowej.

Przedstawione w artykule wyniki badań, pozwalają m.in. stwierdzić, że w większości warmińsko-mazurskich organizacji pozarządowych dominuje finansowanie nierynkowe (środki publiczne), za główne bariery rozwoju badane podmioty uznały brak środków finansowych na inwestycje i trudności z ich pozyskaniem, natomiast za główną szansę rozwojową badane podmioty uznały napływ środków pomocowych z Unii Europejskiej.

## Introduction

Entrepreneurship and bottom-up initiative are considered the drivers of progress and foundations of economic development in every market economy. Similar trends can be observed in the social policy within the frameworks of which an increasing importance is attributed to social entrepreneurship as the starting point is the view (based in numerous practical experiences) that not the rigid rules and transfer of increasing amounts of funds for non-reimbursable and unconditional social aid but conditional support forcing the beneficiaries of the aid to undertake entrepreneurial activities with the accompanying elements of market risk represent the best method for solving social problems and preventing marginalisation of the people threatened with it. And although A. Rymśa draws attention to the fact that Polish entities of social economy do not like to take risk and represent conservative attitudes to multiplying the financial resources in their possession (RYMSZA 2006, p. 9), one should hope that the initial steps taken by many non-government organisations in the field of commercialisation of their own revenues will set the positive example to be followed by the others. Any person that wants to accomplish its dreams and achieve the goals that the man would like to achieve must possess the adequate means (both dreams that the man would like to achieve and the things that he would like to possess require large financial outlays). As a consequence, he must present entrepreneurial attitudes to obtain the means allowing accomplishing those dreams and goals. The situation is similar in case of non-government organisations, i.e. to be able to implement their own missions and goals of their operation they should (if possible) in addition to the public funds take efforts to obtain funds from conducting commercial activities. Of course, despite the analogies between the activities of an individual and a non-profit organisation, there are numerous differences that frequently do not allow non-government organisations “commercialisation” of their activities to the extent it is possible in case of an individual. Nevertheless, conducting economic activities by the third sector is becoming increasingly common in Poland. As observed by A. Jarośniński, this happens not just because the law allows conducting it by non-government organisations but also because increasingly often this is important from the perspective of their statutory tasks (JAROSIŃSKI,

KUCZMIEROWSKA 2007, p. 9). In some non-government organisations performance of those tasks without funds from commercial sources performance of those tasks would not only be difficult but even impossible.

### **Objective of the studies and characteristics of entities surveyed**

The aim of the paper is to draw attention at the issues of “economisation” of the social economy entities activities while the main objective of the survey conducted in 2010 was to identify the development barriers and opportunities faced by non-government organisations as well as determination of the attitudes of those organisations to the issue of economisation of their activities (understood as an attempt at increasing the share of market revenues in the overall revenues). The following were assumed for the specific objectives of the study:

- Identification of the size as well as sources of revenues of non-government organisations from Warmia and Mazury region;
- Identification of the reasons for not undertaking attempts at economisation of own activities by non-government organisations from Warmia and Mazury region;
- Identification of reasons motivating efforts for economisation of own activities by those organisations.

In relation to performance of the above-indicated objectives, 72 non-government organisations operating in Warمیńsko-Mazurskie voivodship were surveyed. The survey was conducting by means of the questionnaire-based method. The survey questionnaires were completed by, e.g. 41 presidents and 4 vice-presidents as well as 8 members of the management boards of those organisations. The other respondents were members and office employees, including project department managers, heads of local units and specialists. The survey questionnaires were distributed to the non-government organisations by electronic means using the Internet and the completed questionnaires were also returned by electronic means. During that process the electronic database available at the Marshal;s Office of Warمیńsko-Mazurskie Voivodship was used. Out of 72 organisations 66 were associations, 2 were funds and 3 organisations had other organisational form.

The non-government organisations surveyed operate in a variety of areas and aspects of socioeconomic life with prevalence of activities related to education, social aid and social services, tourism and recreation (all those areas were indicated by 30 and more entities) as well as development of democracy and civic society, activities for the disabled, prevention of social pathologies, sports activities and activities in the field of culture and arts (each of those areas was indicated by more than 20 organisations).

As concerns the revenues obtained by the organisations surveyed in 2009 the most frequently indicated range in the questionnaire was that of from 50 000 to 100 000 PLN (that range was indicated by 30% of the respondent organisations). Revenues exceeding 1 million PLN were declared by 11% of the organisations while the same proportion of organisations indicated the ranges from 0 to 1000 PLN as well as from 100 000 to 500 000 PLN.

The fact that over 30% of the organisations surveyed do not generate year revenues exceeding 10 000 PLN must be considered a weakness of the third sector in Warmińsko-Mazurskie voivodship. In the sample surveyed, however, 11.1% of the organisations obtained revenues exceeding 1 million PLN. The share of the “poorest” NGOs in the group surveyed was 11.1%; one can say then that the revenues of the NGOs surveyed were diversified although the phenomenon of economic stratification is not marked as strongly as in the other regions or in relation to the national averages describing the national sector of NGOs (e.g. the surveys conducted in 2008 on the representative sample of 1714 associations and foundations published by Klon/Jawor Association indicates that as much as 5.0% of the organisations that had the budget exceeding 1 million PLN aggregated 70–80% of the financial resources of the entire sector (GUMKOWSKA et al. 2008, p. 63).

### **Development barriers and opportunities of non-government organisations from Warmia and Mazury region**

In the distribution of responses concerning barriers to development the domination of financial difficulties over the other factors is visible clearly, i.e. the highest number of points (in total 304 points awarded that is 19.0% of the total number of points<sup>1</sup>), was awarded to lack of funds for investments and difficulties in obtaining them. Not many points fewer were scored by the main barrier in the form of excessive public administration bureaucracy (276 points awarded, which gives 17.3% of all the points awarded).

The non-government organisations see the major opportunity for development in the inflow of the European Union aid funds (that opportunity scored the total of 286 points<sup>2</sup>). This is the signal that the NGOs see in themselves the

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<sup>1</sup> The respondents were asked to evaluate the factors with negative influence on the development of the NGOs specified in the questionnaire according to the 1 to 5 scale (the barrier could be: insignificant – 1; of low significance – 2; moderately significant – 3; important – 4; very important – 5).

<sup>2</sup> Similar to the evaluation of the barriers to development the respondents were asked to evaluate the factors with negative influence on the development of NGOs specified in the questionnaire according to the 1 to 5 scale (the opportunity could be: insignificant – 1; of low significance – 2; moderately significant – 3; important – 4; very important – 5).



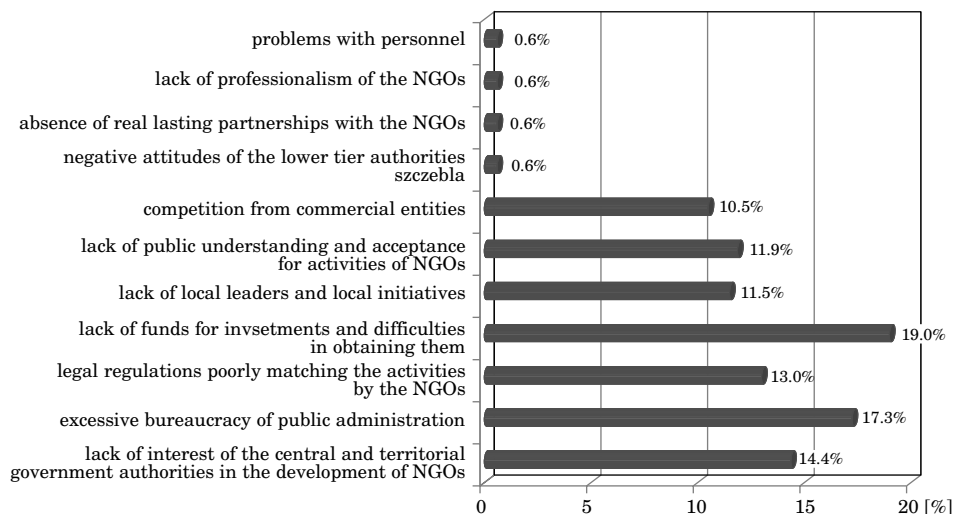
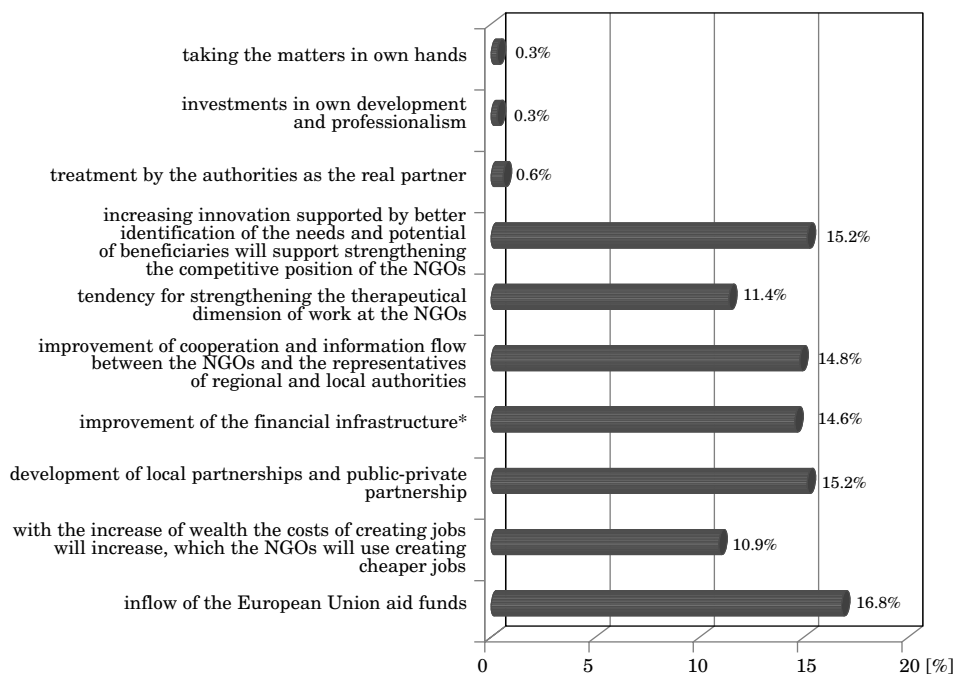


Fig. 1. Barriers to development of the non-government organisations surveyed

Source: own work based on the surveys conducted.



\*among others, capitalisation of loan and guarantee funds operating in the region, EU funds, development of institutions supporting NGOs in access to capital

Fig. 2. Factors with positive influence on development of NGOs

Source: own work based on the surveys conducted.

potential, which thanks to the EU funds they will be able to develop. In that respect they act and think in a similar way to the commercial sector and they take actions to improve their own attractiveness and development. On the other hand, which is pointed out by J. Hausner, despite the increasingly brave efforts at “commercialisation” of the NGOs sector, i.e. the search for the economic dimension of the civic activities, the chances are still low that the organisations would resign arduous but relatively stable procedures of access to the European Union funds for operation in the free market (HAUSNER 2006, p. 11). That fact in a way makes non-government organisations similar to public administration.

### **Sources of revenues in the organisations surveyed**

As concerns the sources of revenues of non-government organisations, they are highly diversified. Only 6 organisations had full clarity in that aspect because 4 of them defined their revenues as 100% non-market (including revenues from territorial government funds including those for performance of commissioned tasks, “revenues from 1%”, donations, collections, EU funds) and 2 defined them as others that cannot be considered to represent any class indicated in the questionnaire. The funds of other organisations had their sources in highly diversified activities. As concerns revenues from membership fees – 44 organisations obtain less than 25% of their revenues from them and only 9 organisations obtained more than 80% of their revenues but less than 100% from them. Non-market funds originating from the territorial governments, revenues from 1 percent of the tax, donations, collections and EU funds had a relatively high share in the revenues of NGOs (36 organisations declared that those sources correspond to more than 80% but less than 100% of their total revenues). The fewest responses were obtained to the question concerning generation of revenues using market mechanisms, i.e. strictly profit-oriented activities. Only 21 organisations undertake activities of that type generating revenues from that at the level of below 25% of their total revenues (17 organisations) and over 25% but under 75% of their total revenues (4 entities). This indicates clearly that still the major area of activities for the third sector organisations is represented by statutory activities in support of the general, social and local interests preferred to the purely economic activities generating revenues.

Investigating the correlation of the revenues obtained by NGOs in 2009 as concerns the source of revenues it can be concluded that the organisations generating the lowest revenues among those surveyed, i.e. under 10 000 PLN, obtained the largest proportion of those revenues from non-market source of membership fees. On the other hand the other organisations in case of which the

total revenues generated in 2009 exceeded 10 000 PLN (even those that generated over 1 million PLN) also indicated the major importance of non-market revenues (all 50 organisations generated 68% and more of those revenues from those sources) although those revenues were characterised by much higher diversification of sources. They included funds from bodies of territorial government (including funds obtained for performance of commissioned tasks), “revenues from 1%”, donations, collections and EU funds. This shows that organisations presenting higher revenues undoubtedly undertake more complex activities and initiatives than just collecting the membership fees. The entities that in 2009 generated revenues exceeding 1 million PLN obtained only 3% of the total revenues from the membership fees while 15% were revenues from purely economic activities that were profit oriented and profit generating.

Table 1  
Average revenues by type considering the total NGOs revenues obtained in 2009

Type of revenues obtained	Revenues obtained by NGOs in 2009 (average)						
	0-1 K	over 1 K – 10 K	over 10 K – 50 K	over 50 K – 100 K	over 100 K – 500 K	over 500 K – 1 M	over 1 M
	8 org.	14 org.	10 org.	22 org.	8 org.	2 org.	8 org.
Revenues generated by applying market mechanisms*	0	0.71	20.00	4.36	0	0	15.00
Non-market revenues including: – funds from territorial governments including funds for commissioned tasks, “revenues from 1%”, donations, collections, EU funds, other)	25.50	29.71	<b>69.60</b>	<b>82.91</b>	<b>68.00</b>	<b>99.00</b>	<b>79.38</b>
Non-market revenues, including membership fees	<b>55.75</b>	<b>36.50</b>	10.40	11.82	5.25	1.00	3.00
Others – cannot be classified directly to any of the above identified groups	18.75	33.07	0	0.91	26.75	0	2.62

\* includes, e.g. profit-oriented economic activity, statutory activities performed at a fee, interest and dividends, lease, sale of fixed assets, other market revenues

Source: own work based on the surveys conducted.

The surveys also touched upon the issue of “economisation” of own activities. Only 20 organisations surveyed have undertaken activities of that type during the past 3 years while other 20 have done nothing to economise their activities. All the organisations that generated revenues of from 100 000 to 500 000 PLN in 2009 have undertaken efforts at economisation of their own activities during the past 3 years. On the other hand only 25% i.e. 2 out of 8 organisations with the highest revenues have undertaken activities of that type.

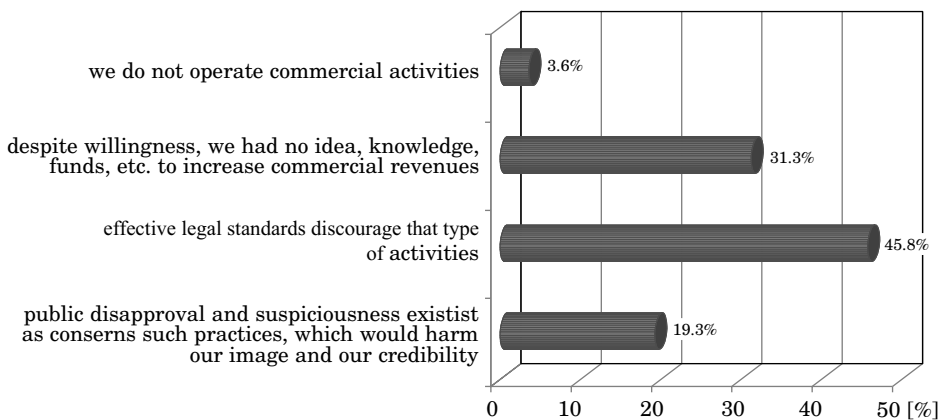
Table 2  
Organisations undertaking efforts at economisation of their activities during the last 3 years including the revenues generated

Economisation of activities during the last 3 years	Revenues obtained by NGOs in 2009 (average)						
	0-1 K	over 1 K – 10 K	over 10 K – 50 K	over 50 K – 100 K	over 100 K – 500 K	over 500 K – 1 M	over 1 M
Attempt made	0%	31%	36%	36%	0%	100%	25%
No attempt made	100%	69%	64%	64%	100%	0%	75%

\* The number of organisations included in the summary was 71 because one of the respondents did not give any answer to the question concerning economisation and as a consequence correlation with its revenues was not possible

Source: own work based on the surveys conducted.

Concluding, the majority of the organisations surveyed have not undertaken any efforts at economisation of their own units giving for the reasons justifying that situation (the respondents could mark more than one response) the discouraging legal regulations (45.8% of the respondents, i.e. 38 organisations) pointing first of all at tax regulations and unclear regulations concerning separation of economic activities from statutory activities.

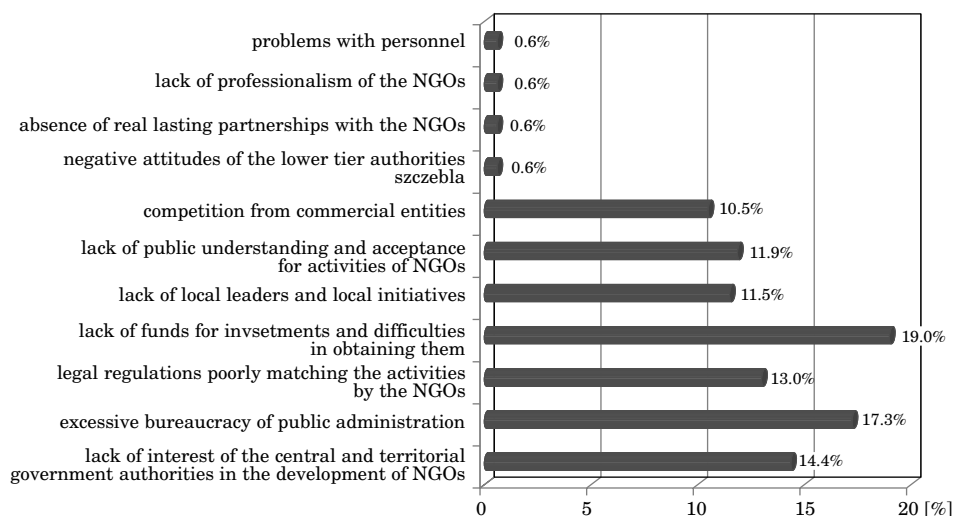


N=84; \* the respondents could mark more than one answer

Fig. 3. Reasons for not attempting economisation of own activities during the last 3 years according to the respondents

Source: own work based on the surveys conducted.

Only 20 of the organisations surveyed took an effort at economising their activities and generating revenues from commercial sources giving as the main reason for involvement in such activities that the funds obtained in that way assure stable planning and performance of statutory activities (18 organisations). In that case the organisations are not dependent on membership or collection and level of membership fees. They can plan the future activities and investments and those revenues secure their survival under difficult and competitive conditions.



$N=48$ ; \* the respondents could mark more than one answer

Fig. 4. Reasons for undertaking efforts at economising own activities of the organisation during the last 3 years of its operation

Source: own work based on the surveys conducted.

Lots of hopes are built by assurances given by the organisations concerning their own future and development. As many as 44 third sector organisations surveyed declare initiation (or expansion) of activities increasing their revenues from commercial sources. Only 28 organisations do not see such a need. The respondents asked to enter the percentage share of the revenues that should ultimately be provided by revenues from commercial sources provided diversified responses. The largest group would like to increase (or expand) revenues from commercial activities within the range of up to 25% of their total revenues (such prospects concerning revenues were seen by 25 respondent organisations). The second most populous group consisted of organisations that would like to increase revenues of that type to the maximum of 49% (that level was indicated by 21 organisations). It can be seen then that the vast majority of non-government organisations would like to come near to the definition of the social enterprise according to which it is the organisation operating in any business using the strategies of generating revenues for the

purpose of maintaining double or triple profit and loss account, and it applies only the such strategies or includes them in its diversified flow of revenues that also includes donations and subsidies from the public sector (*Przedsiębiorstwo społeczne...*, p. 209). Only two of the organisations surveyed would like to see their entire revenues originating from commercial sources (i.e. only two organisations would like to achieve self-sufficiency that is the ability of funding their future activities using the funds earned by them only).

## Conclusion

Non-government organisations fulfil a number of social and economic functions in any developed country with the market economy. Next to the profit-oriented organisations (e.g. enterprises) and the public sector (e.g. government, territorial government) they represent the power that in some areas of human activities allows better performance of responsible tasks and functions than both earlier mentioned sectors.

The results of the studies conducted allow concluding, among others, that:

- non-market financing (public funds) dominates in the vast majority of non-government organisations from Warmińsko-Mazurskie voivodship,
- lack of funds for investments and difficulties in obtaining them were considered the major barriers in their development by the organisations surveyed,
- the inflow of the European Union aid funds was considered the major development opportunity by the organisations surveyed,
- the assurances by the organisations concerning their own future and development sound optimistic. As many as 44 of the third sector organisations surveyed declared undertaking (or expanding) the activities increasing revenues from commercial sources. Only 28 such organisations did not see such needs.

Translated by JERZY GOZDEK

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## **THE PROCESS OF TRANSFORMATION OF RIGHTS TO RESIDENTIAL UNITS IN HOUSING COOPERATIVES IN POLAND**

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**Key words:** housing cooperative, occupancy right to a residential unit in a housing cooperative, ownership right to a residential unit in a housing cooperative, strata title to a residential unit.

### **A b s t r a c t**

This article deals with the rules and procedures for transformation of rights to apartments in housing cooperatives. The transformation means changing rights of housing cooperative members (occupancy right, ownership right) into strata titles. Housing cooperatives with an unregulated legal status of land are only conditionally allowed to transform the right to occupancy into the right of ownership to a residential unit. The rate of transformation of rights to apartments in housing cooperatives depends on the legal regulations which govern the procedures and financial conditions. This study has demonstrated that most transformations concern a change of occupancy right to an apartment into strata title. Consequently, the percentage of apartments in housing cooperatives to which tenants held occupancy right fell from 23.7 to 6.5% during the analyzed period of time.

## **PROCES PRZEKSZTAŁCANIA PRAW DO LOKALI MIESZKALNYCH W SPÓŁDZIELNIACH MIESZKANIOWYCH W POLSCE**

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**Słowa kluczowe:** spółdzielnia mieszkaniowa, spółdzielcze lokatorskie prawo do lokalu mieszkalnego, spółdzielcze własnościowe prawo do lokalu, odrębna własność lokalu.

### **A b s t r a k t**

W opracowaniu przedstawiono zasady i procedury przekształceń praw do lokali mieszkalnych w spółdzielniach mieszkaniowych. Przekształceniami objęte są prawa spółdzielcze (lokatorskie prawo do lokalu mieszkalnego oraz spółdzielcze własnościowe prawo do lokalu) w prawo odrębnej własności.

Warunkowo w spółdzielniach mieszkaniowych o nieuregulowanym stanie prawnym gruntów przepisy prawa dopuszczają przekształcenie prawa lokatorskiego w spółdzielcze własnościowe prawo do lokalu. Intensywność procesu przekształceń praw do lokali zależy od przepisów prawa, które określają procedury i warunki finansowe. Badania wykazały, że najwięcej przekształceń dotyczy spółdzielczego lokatorskiego prawa w odrębną własność lokalu. W związku z tym udział lokali lokatorskich w strukturze własnościowej mieszkań w zasobie spółdzielni w badanym okresie zmniejszył się z 23,7% do 6,5%.

## Introduction

Housing cooperatives were created to satisfy one of the primary needs of people, that is having own apartment, so as to be able to start and keep a family. The tangible assets of housing cooperatives comprise residential buildings, which in Poland make up the largest, structurally uniform resource of residential space, consisting of 3.17 million apartments (24.4% of all residential resources).

Two acts form the legal foundation of housing cooperatives: Cooperative Law and the Act on Housing Cooperatives. The Act on Housing Cooperatives introduced another form of the right to an apartment, next to the existing occupancy and ownership rights, that is a separate form of the ownership of an apartment. Hence, it opened up a possibility to transform either of the two former rights into a strata title.

The process of transforming property rights in housing cooperatives depends on the regulations formulated in the Act on Housing Cooperatives, which has been amended several times over the recent years and disputed by the Constitution Tribunal. The rules of property right transformations were different under the subsequently amended acts. The least favourable solutions, from the point of view of housing cooperative members, came into force on 15 January 2003; these regulations were far behind the world's standards, which the Polish Law was striving to attain, in terms of transferring the right of ownership to housing cooperative members. With housing cooperatives given two years for the transfer of rights and no penalties foreseen in case of failure to meet the deadlines, members of housing cooperatives could rightfully complain that their rights were ignored, limited and abused. After numerous parliamentary and government debates, the Act on Housing Cooperatives was amended one more time on 3 June 2005. The regulations included in that version of the law changed for the benefit of housing cooperative members, but the Constitution Tribunal resolved that some of the new regulations were not in compliance with the Constitution because they contravened the constitutional rule of protection of property and property rights. Consequently, on 14 June 2007, the Lower House of the Polish Parliament (the Sejm) amended



the Act on Housing Cooperatives again, and the amended law became effective on 31 July 2007. The amended act contained rules for the transformation of occupancy rights into strata titles which were much better for tenants and which were nicknamed accordingly as “a right to buy for a zloty”.

The purpose of this article is to evaluate the process of the transformation of property rights to units in housing cooperatives as governed by the current law. The analysis of the transformation covered the development prior to 31 July 2007, when the amended Act on Housing Cooperatives came into force, and afterwards. The data gathered by the Association of Housing Cooperatives in the Polish Republic in Warsaw were used for this purpose.

### **Rights to residential units in housing cooperatives**

In compliance with the Act on Housing Cooperatives, there are the following types of property rights in buildings owned by housing cooperatives:

- occupancy right to a residential unit in a housing cooperative,
- ownership right to a unit in a housing cooperative,
- strata title to a residential unit.

The occupancy right to an apartment in a housing cooperative arises when a housing cooperative member enters into a civil law contract with a housing cooperative. The member is obliged to pay his/her housing contribution to the cooperative, as stipulated in the cooperative’s statute, which is equal to the difference between the construction costs per given apartment and the support obtained by the cooperative from the public funds. The housing contribution does not cover the total costs of building a given apartment. If some of the housing contribution has been financed from a loan drawn by the cooperative to finance the costs of constructing a given apartment, then the member tenant is obliged to participate in paying off the loan together with the due interest proportionally to the share that is attributed to his/her apartment (DZIENIS, KANIEWSKI 2001). The housing cooperative is obliged to transfer the right of use (for indeterminate or determinate time) of a given apartment, which the cooperative owns or co-owns, to the member tenant. The occupancy right to a housing unit in a cooperative is non-transferable, is not a hereditament, may not be subject to execution and can belong to either one person or to a married couple. The housing contribution, in contrast, is a hereditament. The occupancy right to a housing unit in a cooperative entails a membership in the given cooperative and terminates when the membership terminates. Further, a housing cooperative member has a right to claim purchase of the ownership right to the apartment to which they hold occupancy right (BOŃCZAK-KUCHARCZYK 2008).

The ownership right to an apartment in a housing cooperative is a limited real estate right. It is, however, transferable and can be traded to all persons, including non-Polish citizens (NAPIÓRKOWSKA-BARYŁA, OSIECKA 2009). This right is a hereditament and may be subject to execution. If the ownership right to an apartment in a housing cooperative belongs to more than one person, only one of these persons can be a housing cooperative member, unless the buyers of the right are husband and wife. A housing cooperative member who is applying for an ownership right to an apartment enters into a contract with his/her housing cooperative for constructing this apartment. This contract, done in writing or else null and void, should oblige both parties to enter into a contract after the apartment has been built, which will grant the resident the ownership right to his/her apartment. A necessary condition for the acquisition of an ownership right to an apartment in a housing cooperative is the payment of a building contribution in the amount equal to the total costs of the construction investment (*Opracowanie...* 2003). At present, housing cooperatives cannot establish new ownership rights to apartments in housing cooperatives. The only exception is the transformation of occupancy rights into ownership rights to apartments in housing cooperatives with an unregulated legal status of the land they occupy.

The strata title to residential and non-residential units, with a percent share in the co-ownership of a multi-space garage, can encompass both a separate residential apartment or a lot of other than residential use. Definitions of both types of units are given in the Act on Ownership of Building Units. A separate residential unit, in the light of this legal act, is a room or rooms separated by permanent walls, to be used for permanent human residence, which, alongside other amenities, serve to satisfy people's housing needs. A non-residential lot (a unit used for commercial purposes) is a unit of analogous spatial, technical and construction properties, but of other than residential use, e.g. office, shop or services. Other amenities can belong to a housing cooperative lot (as their composite parts) such as an attic, a cellar, a storeroom, etc., even if they are not attached directly to the lot, or they lie within the boundaries of the premises outside the building in which the separated lot is located. Once the ownership right to a given unit is separated, the unit owner has a right to a share in the common property, which stems from the ownership of a unit in the housing cooperative. The common elements consist of the land and these parts of the building or facilities which are not used exclusively by unit owners. The strata title never terminates, is transferable, can be inherited and can be subject to execution (SIUDEM 2003).

## **Rules of the transformation of rights to housing units**

Rules for transforming rights to housing units in housing cooperatives (as well as establishing an ownership right to a unit in a housing cooperative) have been modified several times. These changes most often concerned the procedures, but also affected the financial conditions imposed on such transformations. The Act amended on 14 June 2007 nullified the right of housing cooperatives to demand that a member tenant holding an occupancy right to his/her apartments pay the difference between the market value of the apartment and the valorised value of the remitted housing contribution. The amended act also nullified the obligation to pay off credits and loans taken by the housing cooperative to finance repairs and refurbishment of the building proportionally to the share attributed to a given apartment. For hundreds of thousands of housing cooperative members, who found the previous financial conditions unacceptable, these amendments opened up a way to transform an occupancy right to a strata title. Under Article 12 of the Act on Housing Cooperatives, on written application by a member holding occupancy right to an apartment, a housing cooperative is obliged to enter into a contract with the applicant, in which it will transfer the property right to the given apartment to the applicant after he/she satisfies the following conditions:

- remits the payment of the part attributable to the given apartment of the housing cooperative's obligations incurred by the construction works, as specified in Article 10, item 1, point 1, and in particular, the respective part of the cooperative's bank loan with due interest, and if the cooperative has taken advantage of any support provided with the public funds or from other sources, the member should remit the payment of that part of the remitted credit that falls on the given apartment in the amount equal to the sum remitted by the cooperative to the state budget,

- remits the payment of any debts arising from the fees as listed in Article 4, item 1.

Under Article 17 of the Act on Housing Cooperatives, on written application filed by a member of a housing cooperative or a non-member who holds occupancy right to an apartment, the housing cooperative is obliged to enter into a contract with the applicant, in which it will transfer the property right to the given apartment after the applicant fulfils the following conditions:

- remits the payment of the share attributable to the given apartment of the housing cooperative's obligations incurred by the construction works, and in particular the respective share of the bank credit with due interests,

- remits the payment of any debt arising from the fees as listed in Article 4, item 1.

Table 1 shows the structure of domestic units divided according to the legal titles of occupants in housing cooperatives in Poland.

Table 1  
Structure of rights to domestic units in housing cooperatives in Poland

Legal title to a domestic lot	As of 31.07.2007		As of 31.08.2009	
	thousand	%	thousand	%
Occupancy right to a lot in a housing cooperative	2 534.00	72.40	2 271.00	64.90
Ownership right to a lot in a housing cooperative	830.00	23.70	227.00	6.50
Strata title	87.00	2.50	956.00	27.30
Lease	21.00	0.60	18.00	0.50
Lack of any legal title	28.00	0.80	28.00	0.80

Source: the author, based on the data provided by the Association of Housing Cooperatives in the Polish Republic (2009).

The data contained in Table 1 suggest that members of housing cooperatives who held occupancy rights to their apartments readily took advantage of the legal entitlements to acquire a strata title. Before the amended Act came into force (31 July 2007), there were 830 000 apartments to which tenants held occupancy rights (23.7% of the total number of housing cooperative apartments); after two years (31 August 2009), the number of such apartments fell to 227 000, which made up 6.5%. At the same time, 145 000 members of housing cooperatives filed written applications to transform their property rights and awaited decisions from boards of cooperatives (Tab. 2).

Table 2  
Number of applications for transformation of a legal title to an apartment being processed

Transformation of a legal title to an apartment	As of 31.08.2009	
	thousand	%
From occupancy right to ownership right to an apartment in a housing cooperative	9.00	1.60
From occupancy right to strata title	145.00	36.40
From ownership right to an apartment in a housing cooperative to a strata title	170.00	61.30
From lease to a strata title	4.00	0.70
In total	328.00	100.00

Source: the author, based on the data provided by the Association of Housing Cooperatives in the Polish Republic (2009).

The process of transforming ownership rights to apartments in housing cooperatives to strata titles was less dynamic (Tab. 1), which may be due to the fact that both rights are similar in character. Both the ownership right and strata title are transferable rights, both are hereditaments and both may be subject to execution. Both rights can be mortgaged and possession of any of the right does not entail the holder to be a member of a given housing cooperative. However, all this does not change the fact that the ownership right to an apartment in a housing cooperative is a limited property right and the housing cooperative remains the owner of the given apartment. The number of apartments to which tenants had ownership rights decreased to 263 000 during the analyzed period, which meant a fall from 72.4% to 64.9% (Tab. 1). Another 170 000 applications for transformation of rights were being processed (Tab. 2).

Another legal title to occupy residential units in housing cooperatives, not governed by the regulations concerning housing cooperatives, is the lease of an apartment. This is an obligation right, of the “power” comparable to the occupancy right to an apartment in a housing cooperative. Most tenants who rent apartments from a cooperative are former residents in company apartments which have been incorporated to housing cooperatives under specific legal regulations. Some of the apartments cannot be granted the status of a strata property because their tenants have not participated in the construction costs. Others can take advantage of the amended Act, for example during the analyzed period, 3000 tenants acquired strata titles to their apartments (Tab. 1) while four thousand other tenants applied for such transformation (Tab. 2).

Recapitulating, creating favourable financial conditions for housing cooperative members and tenants stimulated a dynamic transformation of property rights to strata titles. On 31 August 2009, the number of apartments to which residents held a strata title was 956,000, which was equal to 27.3% of the total housing resources of cooperatives (Tab. 1). As estimated by the Association of Housing Cooperatives of the Polish Republic, at the end of 2010, the percentage of apartments with strata titles of ownership could reach 35%, the apartments with the ownership right made up 60% and the remaining percentage is divided into apartments with the occupancy right, leased or with an unregulated legal status.

## **Summary**

The process of transformation of property rights in housing cooperatives has caused considerable changes in the structure of cooperative tangible

assets. These are irrevocable changes, and there are many indications suggesting that the transformation process is slowly stabilizing. According to the estimates made by the Association of Housing Cooperatives in the Polish Republic, the share of apartments either with occupancy rights or leased left in the housing resources of cooperatives is about 5%. These are mainly apartments built with some co-financing from the public funds and therefore they cannot be transformed into a strata property. Another factor which proves the gradual stabilization of the process of transformation of property rights in housing cooperatives is a relatively poor interest on behalf of residents in transforming ownership rights to their apartments to strata titles. We are also witnessing the beginnings of a discussion on the management of real estate in housing cooperatives. With a much higher percentage of apartments to which residents hold strata titles, housing cooperatives are turning into managers of real estate owned by other persons. This will necessitate changes in the qualifications of persons employed to manage such properties. Until now, this problem has been neglected because most of the apartments were occupied by residents holding occupancy or ownership rights. In both cases, a housing cooperative remained the owner of a given estate and did not need licensed managers to run own property. Finally, let us not omit the question of new owners of strata titles being adequately prepared and well-informed to manage their own property. A housing cooperative in sound financial condition and with effective management strategies may encourage strata title owners to leave their apartments under the previous management.

Translated by JOLANTA IDŹKOWSKA

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## **AN ATTEMPT TO IDENTIFY THE LEVEL OF EMPLOYMENT FLEXIBILITY IN ORGANIZATIONS**

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**Key words:** employment, employment flexibility, flexible forms of employment, the level of employment flexibility.

### **Abstract**

The changing business environment requires organizations to adopt flexibility, including employment flexibility, enabling them to compete on the market. This area seems to be widely discussed in literatures, but it has not been the subject of in-depth analyses. The analysis presented in this paper aims to identify the level of employment flexibility in organizations. The paper identifies the major factors which determine employment flexibility levels and presents the main measurement methods for diagnosing the levels of employment flexibility in organizations. In order to achieve this objective, the author presents a critical analysis of literatures in the area in question. The paper claims that the specific forms of flexible employment may have a different impact on the organization's employment flexibility. The level of employment flexibility is conditioned by the scope and type of the applied forms of employment, which are closely related to the time and costs of the recruitment and dismissal process. In this context, a diagnosis of employment flexibility plays a significant role. Its measurement may be based on different indicators which reflect changes to the organization's employment including the modified ratios of employment structure, employee movement and its areas as well as employment stability.

### **PRÓBA IDENTYFIKACJI POZIOMU ELASTYCZNOŚCI ZATRUDNIENIA W ORGANIZACJI**

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**Słowa kluczowe:** zatrudnienie, elastyczność zatrudnienia, elastyczne formy zatrudnienia, poziom elastyczności zatrudnienia.

## Abstrakt

Zmienny charakter otoczenia sprawia, że organizacje, aby konkurować na rynku, muszą być wyposażone w atrybut elastyczności, w tym elastyczności zatrudnienia. Problematyka ta, choć wydawałoby się często poruszana w literaturze, nie jest dogłębnie zbadana. Przedmiotem analizy w artykule jest identyfikacja poziomu elastyczności zatrudnienia w organizacji. Celem natomiast jest próba określenia głównych czynników wyznaczających poziom elastyczności zatrudnienia oraz wskazania podstawowych miar przydatnych do diagnozowania poziomu tej elastyczności w organizacji. Narzędziem realizacji tak sformułowanego celu jest krytyczna analiza literatury przedmiotu. W artykule wykazano, że poszczególne elastyczne formy zatrudnienia w zróżnicowany sposób kształtują elastyczność zatrudnienia w organizacji. Poziom elastyczności zatrudnienia jest uwarunkowany zakresem i rodzajem wykorzystywanych w organizacji form zatrudnienia, z którymi ściśle są powiązane czas i koszty pozyskiwania i zwalniania pracowników. W tym kontekście istotna staje się diagnoza poziomu elastyczności zatrudnienia. Do jej pomiaru można stosować różne mierniki obrazujące zmiany w sferze zatrudnienia w organizacji, np. odpowiednio zmodyfikowane wskaźniki: struktury zatrudnienia, natężenia ruchu zatrudnionych, obszarów ruchliwości pracowniczej oraz stabilności zatrudnienia.

## Introduction

Labour (market) flexibility is referred to macro rather than micro dimensions. A number of research studies and publications are dedicated to labour market flexibility (deregulation) (e.g.: BORKOWSKA 2004, p. 285–314, *Deregulacja polskiego rynku pracy...* 2003, *Deregulacja rynku pracy i koszty pracy...* 2009, WIŚNIEWSKI 1999, ZAWADZKI 2005), while less attention is given to labour flexibility (or, more specifically – employment in organizations). These issues seem to be significant not only in the context of the external labour market, but also from the perspective of individual business entities.

The analysis presented in this paper aims to identify the level of employment flexibility in organizations.

The paper identifies the major factors which determine employment flexibility levels and presents the main measurement methods for diagnosing the levels of employment flexibility in organizations.

The author formulates the following research hypotheses for the needs of the presented analysis:

- increased employment flexibility in an organization may be achieved through a wider use of flexible forms of employment,
- the organization's employment flexibility level is conditioned by the application of different forms of flexible employment,
- the major factors which determine employment flexibility levels are those related to the time and costs dedicated to employee recruitment and dismissal processes; those factors are conditioned by the applied forms of employment,
- the following modified indicators may be applied to measure the



organization's employment flexibility, e.g.: employment structure, employee movement and its areas, and employment stability.

The above hypotheses are verified on the basis of a critical analysis of literatures.

### **The essence of employment flexibility**

Employment flexibility (quantitative, numerical) – apart from financial flexibility, functional flexibility and working time flexibility – is a component of a broader concept – labour flexibility. Employment flexibility is understood as the organization's ability to adapt its current employment level and structure to the changing internal and external conditions of functioning (KRÓL 2007, p. 83, KWIATKOWSKI 2003b, p. 18, PIÓRKOWSKA-WOJCIECHOWSKA 2008, p. 96). The process of adjusting employment structures to the changing environment in terms of quantitative and qualitative changes performs the function of an adaptation mechanism. The organization which is characterized by employment flexibility is able to achieve the desirable level and structure of employment without the need to incur high costs and dedicate much time to the process. Higher (lower) employment flexibility indicates the organization's higher (lower) sensitivity in case of the level and structure of employment to the determinants of labour demand (KWIATKOWSKI 2003a, p. 20). The discussed type of flexibility (more precisely – its levels) is related to the forms of employment applied by an organization. The traditional forms of employment are being replaced by more flexible forms, increasing employment flexibility in organizations.

Referring to the major employment flexibility factor cited in literatures – the scope of employment protection (KWIATKOWSKI 2003b, p. 18) – two approaches may be adopted. They are derived from the proposed in literatures definitions of flexible employment (FLOREK 2001, p. 27, SZYLKO-SKOCZNY 2004, p. 250). Employment flexibility could be defined in:

- the narrowly understood approach to employment flexibility – it is considered in the context of employment within the legal framework of employment contracts (increased flexibility under employment contracts),
- the broadly understood approach to employment flexibility – it is considered not only in the context of employment flexibility within employment contracts but also from the perspective of other than labour code regulations.

## The identification of the level of employment flexibility

Employment flexibility has an external character – employee acquisitions and dismissals involve interactions with the external labour market (SZYLKO-SKOCZNY 2004, p. 254). It is the nature of such interactions that determines the level of employment flexibility. More precisely – the level of the organization's employment flexibility is determined by two factors: time and costs. Time refers to employee acquisition as well as the dismissal process (the period of time between the formal dismissal and the moment at which the employee actually leaves the organization – employee dismissal notice). The incurred costs result from the recruitment, selection and dismissal process (severance pay).

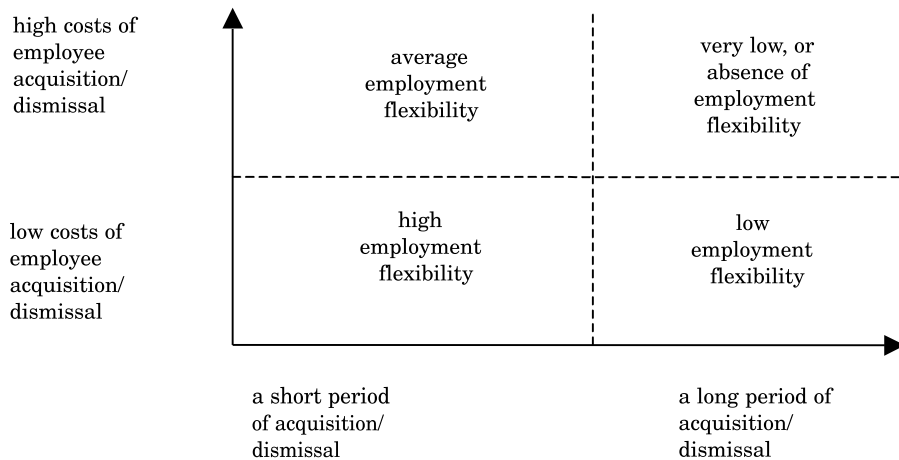


Fig. 1. Employment flexibility levels in terms of cost and time of employee acquisition and dismissal  
Source: author's research.

In terms of the costs and time dedicated to employee acquisition and dismissal, four simplified levels of employment flexibility may be identified (Fig. 1):

- very low – a long period of employee acquisition and dismissal and high costs of these processes,
- low – a long period of employee acquisition and dismissal coupled with low costs,
- average – a relatively short period of acquisition and dismissal coupled with high costs,
- high – a short period of acquisition and dismissal and low costs.

Obviously, it is a simplification to jointly consider the issues of time and costs in relation to employee acquisition and dismissal. The costs (time) of employee acquisition and the costs (time) of dismissal are not always comparable. It may happen that acquisition time and costs are average or low, and the dismissal process is not postponed, and it does not generate any costs.

The time and costs of employee acquisition and dismissal result from the applied forms of employment. On the basis of such criteria different forms of employment may be regarded to be less or more flexible. It may be assumed that the level of employment flexibility is dependent on the application of different forms of employment.

In this context, a typical form of employment – an unlimited employment contract for a full-time position is the least flexible one: all the analyzed indicators are at a high or very high level, leaving no space for any flexibility.

The flexible forms of employment, on the other hand, include those at low, average, high and very high levels of flexibility, depending on the time of employee acquisition and dismissal as well as the related costs.

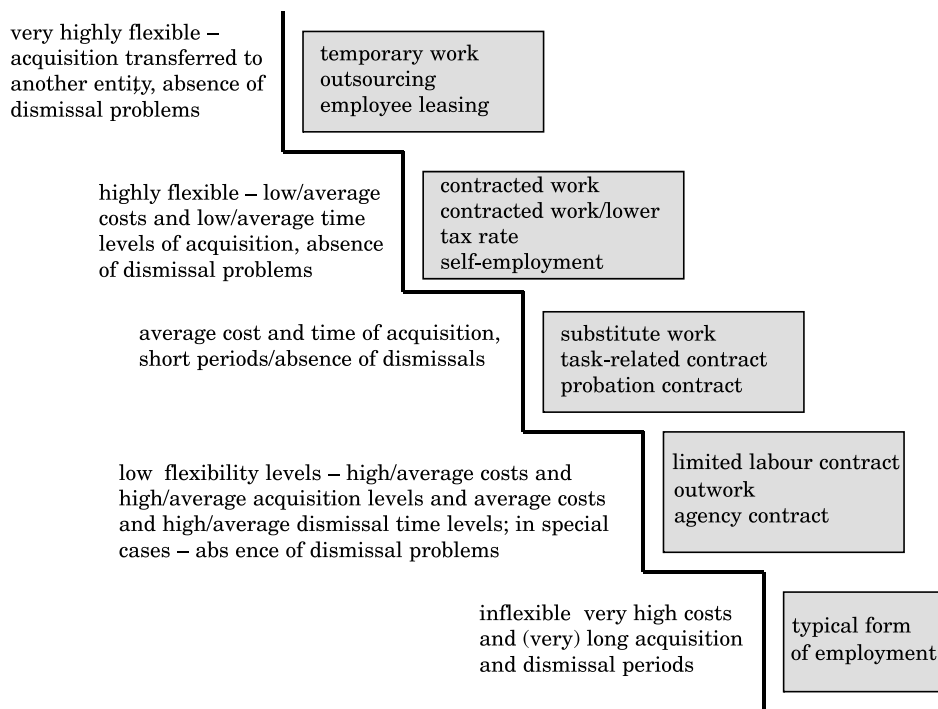


Fig. 2. Flexibility of selected forms of employment

Source: author's research.

According to the adopted criteria, the inflexible forms of employment which determine low or very low employment flexibility include outwork employment, employment agency agreements and unlimited employment agreements. Such forms are characterized by high/average acquisition and dismissal costs and long/average duration of the process. As regards dismissal, limited labour contracts (for a specified period of time) are exceptional cases in which termination of the contract does not involve any costs.

The group of average level flexible forms includes the remaining limited labour contracts. They are characterized by average time and cost levels, while dismissal does not involve any costs or relatively low costs. The application of such forms results in average flexibility levels.

Highly flexible employment forms are characterized by low/average acquisition costs, low/average time levels, while the dismissal process does not require time and does not generate costs. This group includes different forms of contracted work and self-employment.

Very highly flexible forms of employment, as a result of the transfer of acquisition procedures to other entities and elimination of dismissal processes, include temporary work, employee leasing and outsourcing.

### **A diagnosis of different methods for assessing employment flexibility**

When employment flexibility is indispensable to the organization's functioning, being an adaptation mechanism or a source of competitive advantage, the identification of its level plays an important role.

The following modified measurements may be applied, which describe (ARMSTRONG 2004, p. 289–290, LEWICKI 1981, p. 101–103, POCZTOWSKI 1991, p. 231–235, POCZTOWSKI 2007, p. 158–160, TYLOR 2006, p. 41–42):

- organization's employment structure with the share of flexible forms in total employment,
- levels of employee movement connected with the forms of employment using in organization,
- areas of employee movement,
- employee stability.

The measurement of employment structure from the point of view of flexible employment forms may be based on general ( $S_{zo}$ ) and specific employment structure indicators.

The former one may be calculated on the basis of the following formula:

$$S_{zo} = \frac{P_E}{P_O} \cdot 100,$$

where:

$P_E$  – number of employees working on a flexible basis in organization,  
 $P_O$  – total number of employees in organization.

The general employment structure indicator shows the share of employees working on a flexible basis in the total number of staff. In other words, it indicates the level of applying flexible forms. It may be calculated as at a given day (usually the end of the month) or as an average value in the analyzed period (e.g. month, quarter, year). The weakness of this indicator is the fact that it does not indicate the working hours of the particular staff members. The same is true of the two specific indicators presented below.

In addition to that, the above indicator's numerator includes all the applied forms of flexible employment, so it does not present a reliable picture of employment flexibility because, as already mentioned, the particular forms of employment vary in terms of their flexibility. Some of them, for example temporary or contracted work, considerably increase the level of flexibility unlike such forms as long-term labour contracts.

More precise indicators include in their numerators specific forms or groups of employment methods. A detailed analysis of employment structure may be based on the following indicators:

– a detailed employment structure ( $S_{sz}$ ) which presents the share of staff members working under a specific flexible contract or a group of such contracts in the total number of employees in organization:

$$S_{sz} = \frac{P_{ES}}{P_O} \cdot 100,$$

where:

$P_{ES}$  – number of staff members working under a specific flexible contract (e.g. contracted work) or a group of flexible forms of employment (e.g. all civil and legal contracts);

– employment structure based on flexible forms of employment ( $S_{ze}$ ) – it represents the share of staff members who work under a specific flexible contract or a group of such contracts in the total number of staff employed on a flexible basis:

$$S_{ze} = \frac{P_{ES}}{P_E} \cdot 100.$$

Both indicators may be calculated as at a given day (usually the end of the month) or as an average value for the analyzed period (e.g. month, quarter, year). However, an analysis based on the status at a given day may not represent the actual structure which changes in the course of time.

If the organization does not employ any staff under typical labour contracts, then:

$$S_{zs} = S_{ze}.$$

The other group of indicators which measure employment flexibility are those which describe employee movements in an organization. General or specific movement indicators may be applied.

The general movement indicator ( $R_o$ ) is calculated on the basis of the following formula:

$$R_o = \frac{N + O}{P_o} \cdot 100,$$

where:

- $N$  – number of recruits in the analyzed period in organization,
- $O$  – number of staff members who leave the organization in the analyzed period,
- $P_o$  – average number of staff employed in the analyzed period in organization.

The movement indicator may be made more specific when the “entries” of new staff members and “exits” are considered in separation, and when such events are analyzed in the context of the particular forms of flexible employment.

The specific movement indicators include the following:

- “entry” indicator ( $R_w$ ):

$$R_w = \frac{N}{P_o} \cdot 100,$$

- “exit” indicator ( $R_o$ ):

$$R_o = \frac{O}{P_o} \cdot 100,$$

- “entry” structure indicator ( $R_{we}$ ):

$$R_{we} = \frac{N_E}{N} \cdot 100,$$

where:

- $N_E$  – number of people “entering” the organization under specific contracts in the analyzed period;

– “exit” structure indicator ( $R_{oe}$ ):

$$R_{oe} = \frac{O_E}{O} \cdot 100,$$

where:

$O_E$  – number of people who “exit” the organization under specific contracts in the analyzed period.

Both structure indicators (“entry” and “exit”) may be calculated for the particular flexible forms of employment and for the entire groups. The “entry” structure indicator shows the percentage of recruits employed under specific flexible contracts, while the “exit” structure indicator – the percentage of those who leave the organization and who were recruited under a specific flexible contract. In analyzing movement indicators it should be remembered that not all “entries” and “exits” are related to employment flexibility. A number of such events result from the natural movement of employees (labour market entries/exits, change of a workplace, old age/disability pension). From the point of view of identifying the level of employment flexibility in the analyzed group “entry” and “exit” indicators for the particular forms of employment are of greater significance.

The diagnosis of employment flexibility may also be based on the indicator which measures the areas of employment movement ( $R_s$ ):

$$R_s = \frac{S_R}{S} \cdot 100,$$

where:

$S_R$  – number of workstations affected by employee movement in the analyzed period,

$S$  – total number of workstations at the end of the analyzed period or average values in that period.

The indicator shows the number of workstations affected by employee movement (most of them, or only few). In calculating the indicator it is important to eliminate the inclusion of the same workstation for a number of times, which would distort the true picture of the situation and lead to wrong conclusions.

The last group of the proposed indicators for measuring employment flexibility is related to employment stability. The stability indicator ( $S_t$ ) provides information on the percentage of staff members who have been

employed for longer than average periods of time in a given organization (months or years). The indicator may be calculated on the basis of the below formula:

$$S_t = \frac{S_X}{P_O} \cdot 100,$$

where:

$S_X$  – number of staff employed in organization for longer than the adopted minimum;

$$\bar{S}_t = \frac{\sum_{X=1}^n L_X S_X}{\sum_{X=1}^n S_X} \cdot 100,$$

$\bar{S}_t$  – average period of employment per person in organization,

$L_X$  – employment period in years,

$S_X$  – number of employees working in organization for a specific period of time;

$$S_t = \frac{S_t + 1}{P_O} \cdot 100,$$

$S_{t+1}$  – number of people working for longer periods than the calculated stability minimum level  $\bar{S}_t$ .

The employment stability indicators describe the reverse of the analyzed phenomenon. However, they may be useful in determining the duration of employment in an organization. Optional stability indicators may be calculated for the particular flexible forms of employment.

### Concluding remarks

The need for flexibility, including employment flexibility, in contemporary organizations is unquestionable. It is confirmed by practitioners and theoreticians alike. The issues related to employment flexibility at the micro level require further research – in the areas, for example, discussed in this paper.

Referring to the hypotheses formulated in the introduction to this paper, the following statements may be made:



- departure from traditional forms of employment leads to increased employment flexibility. Moreover, the wider the range of flexible employment contracts, the higher the level of employment flexibility;
- the particular forms of flexible employment are characterized by different levels of flexibility. The application of different forms of employment in organizations affects the level of employment flexibility;
- employment flexibility levels are determined by the time and costs of employee acquisition and dismissal. The easier the acquisition and dismissal procedure, the more flexible the employment form is, increasing the organization's general level of employment flexibility;
- different indicators may be applied to measure the organization's employment flexibility. They include the modified indicators of employment structure, employee movement, employee movement areas and employment stability. The determination of the level of employment flexibility should also be based on the costs and time of employee acquisition and dismissal.

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## UNUSUAL OBSERVATIONS IN LINEAR REGRESSION

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**Key words:** linear regression, unusual observations, measure of observation depth in the sample.

### Abstract

In the analysed set of socioeconomic phenomena and processes results differing from the others may occur. Revealing such unusual observations is an important research issue as they may distort the statistical analysis of the investigated phenomenon. The paper discusses the types of unusual observations in two-dimensional sample. The method for detecting unusual observations in linear regression based on the measures of observation depth in the sample was proposed that was illustrated on the base of a numeric example.

## OBSERWACJE NIETYPOWE W REGRESJI LINIOWEJ

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**Słowa kluczowe:** regresja liniowa, obserwacje nietypowe, miara zanurzania obserwacji w próbie.

### Abstrakt

W analizowanych zbiorze danych zjawisk i procesów społeczno-ekonomicznych mogą wystąpić wyniki odbiegające od pozostałych. Ujawnienie takich obserwacji nietypowych jest istotnym zagadnieniem badawczym, gdyż mogą one zniekształcać analizę statystyczną badanego zjawiska. W pracy omówiono rodzaje nietypowości obserwacji w próbie dwuwymiarowej. Zaproponowano metodę wykrywania obserwacji nietypowych w regresji liniowej opartą na miarach zanurzania obserwacji w próbie, którą zilustrowano przykładem liczbowym.

## Introduction

The sources of statistical data are diversified and depend on the character of the object that is the subject of research. Analysing the general population from the perspective of two or more statistical characteristics the search for and obtaining knowledge on the relations linking individual phenomena is important. Knowledge of correlations occurring between phenomena and processes is helpful in, among others, projecting their development. Analysis of regression is one of the more important and frequently applied statistical methods finding application in, among others, enterprise management and economy. Always, however, the risk exists that observations not matching the other observations will appear in the sets of data. The consequences of using data containing untypical observation for designing the regression function may be expressed by poorer matching of the function to the empirical data.

Currently the methodology of statistical research applicable to analysis of untypical data has developed widely. It has become one of the more important problems in multidimensional statistical analysis. The problem of untypical observations is presented relatively widely in the statistical literature. In the work by BARNETT (1978) the causes for appearance of untypical observations and methods of dealing with them have been described. The untypical observations in the deterministic sense that resulted from specific explainable causes and untypical observations in statistical sense that are inconsistent with the assumed probability distribution were identified. For the purpose of untypical observations identification, e.g. the Dixon's tests based on the quotient of the difference of the observation suspected to be untypical with the preceding or following observation (see, e.g. TRYBUŚ 1983) of Ferguson's skewness and kurtosis tests (FERGUSON 1961) can be applied.

In the subject literature considerations on the here discussed subject can be found, among others, in the works by: BARNETT and LEWIS (1978), CARONI (1993), CZEKAŁA (2001), HUBER (1981), ROUSSEEUW and LEROY (1987), ZELIAŚ (1996). The issue of untypical observations in case of a small sample is discussed in the work by KOWALEWSKI (1994).

In 1975, Tukey introduced the notion of the depth of a point in multidimensional sets. Thanks to allocating to each observation of a value of the depth measure corresponding to it, it is possible to rank statistical units according to their distance from the central cluster. The depth may be used for visualisation of numeric data, both one- and multidimensional and for determination of untypical observations. The notion of depth of the data was developed extensively by many researchers also from the perspective of its suitability for statistical description of one- and multidimensional data. Considerations concerning that issue can be found, among others, in the works by: HE and

WANG (1997), KOSHEVOY (2002), Yeh and SINGH (1997), ROUSSEEUW and RUTS (1997), STRUYF and ROUSSEEUW (1998) as well as ZUO and STERFLING (2000).

The paper discusses the types of untypical observations in the two-dimensional sample. The method for detecting untypical observations in linear regression will be proposed in which the standardised residues (see, e.g. PAWELEK and ZELIAŚ 1996) as well as measures of depth of the observation in the sample will be used. At the beginning it will be discussed in detail and next illustrated on the numeric example.

### **Untypical observations in two-dimensional sample**

The observation that does not match the configuration of the entire set of elements is called the untypical observation (ZELIAŚ 1996). Such observations may be a consequence of an error in measurement or in recording, application of inappropriate random sample selection method; they may originate from a different population or result from lack of homogeneity of the statistical sample. If untypical observations appear in the analysed set of data, they can be rejected, their values can be adjusted or they may be accepted and appropriate methods of statistical data analysis can be applied. Untypical observations change and distort the character of correlation between the investigated variables. This is of major importance in case of, e.g. forecasting on the base of the estimated models.

The correlogram of two-dimensional sample may present different configurations of points on the surface. That is why it is reasonable to identify the types of homogeneity in two-dimensional space depending on what compact figure we analyse. As a consequence we identify (JAJUGA 1993):

- ellipsoidal homogenous sets when the set analysed as a set of points in two-dimensional space forms a compact figure similar in shape to the ellipse,
- sets homogenous in the sense of linear regression, if the set analysed as a set of points in two-dimensional space creates within it a compact figure with the shape that allows its approximation by means of linear regression,
- homogenous sets that are none of the above types.

As concerns the ellipsoid homogeneity certain proposals are presented in the work by JAJUGA (1987).

The notion of homogeneity is very important in statistics but unfortunately underappreciated and used in imprecise way by many researchers. It should be highlighted that homogeneity of the set of observations is the condition necessary for usefulness of many statistical methods, including the methods of statistical multidimensional analysis. Homogeneity of the set of observations is linked to closely the notion of the distance of points in two-dimensional sample.

If the set is homogenous the distances of observations from a certain characteristic are small. Individual values in the sample with high values of that distance may be treated as untypical.

The untypical character may appear in:

- marginal distributions,
- joint distribution.

The following types of untypicalness of two-dimensional sample can be identified (WAGNER et al. 1997):

- Linear type with points detached in the direction of the  $OY$  axis (Fig. 1a)
- They are characterised by the following properties:

(w1)  $\min P_y^2 - \max P_y^1 \gg 0$ ,

(w2)  $\acute{s}r P_y^2 - \acute{s}r P_y^1 \gg 0$ ,

(w3)  $\text{med } P_y^2 - \text{med } P_y^1 \gg 0$ ,

where  $P_y^2$  and  $P_y^1$  are projections of the two-dimensional sample with the population of  $n$  on the  $OY$  axis, to which populations  $n_y^2 = \# P_y^2$  and  $n_y^1 = \# P_y^1$  correspond so that  $n_y^2 + n_y^1 = n$  and  $P_y = P_y^1 \cup P_y^2$ ,  $P_y^1 \cap P_y^2 = \emptyset$ ,  $\acute{s}r P_y^2$  and  $\acute{s}r P_y^1$  represent arithmetic averages from the elements of samples  $P_y^2$  and  $P_y^1$ ,  $\min P_y^2$  and  $\max P_y^1$  - minimum and maximum from elements of samples  $P_y^2$  and  $P_y^1$ ,  $\text{med } P_y^2$  and  $\text{med } P_y^1$  - medians from elements of samples  $P_y^2$  and  $P_y^1$  while the symbol  $\gg$  means "much larger than".

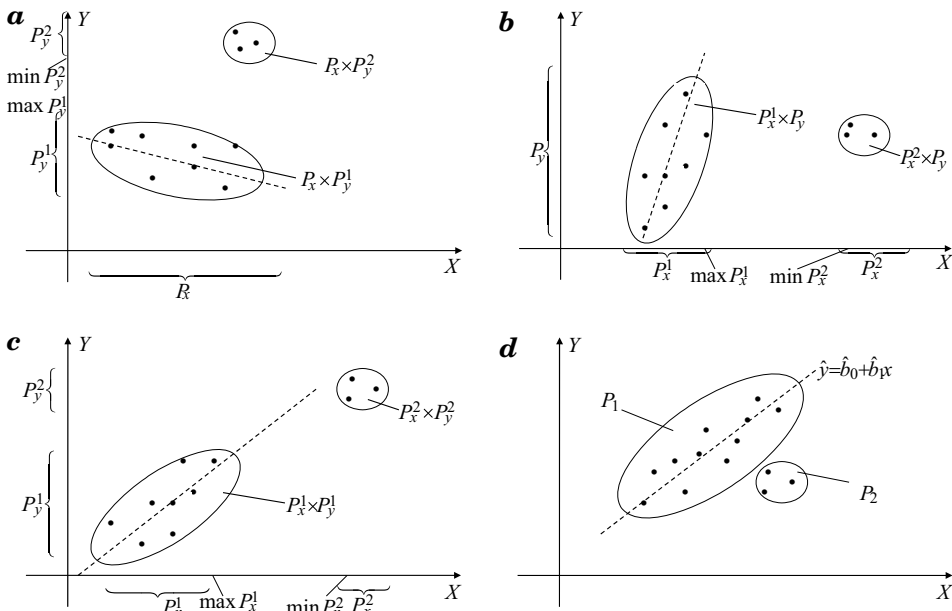


Fig. 1. Linear type with detached points: in the  $OY$  direction (a), in the  $OX$  direction (b), in the  $OX$  and  $OY$  direction (c), in geometrical sense (d)

Source: based on WAGNER et al. 1997

– Linear type with points detached in the direction of the  $OX$  axis (Fig. 1b) with the properties:

$$(w1) \min P_x^2 - \max P_x^1 \gg 0,$$

$$(w2) \acute{s}r P_x^2 - \acute{s}r P_x^1 \gg 0,$$

$$(w3) \text{med } P_x^2 - \text{med } P_x^1 \gg 0,$$

where  $P_x^1$  and  $P_x^2$  are projections of two-dimensional sample with the population of  $n$  on the  $OX$  axis, to which populations  $n_x^1 = \# P_x^1$  and  $n_x^2 = \# P_x^2$  correspond, so that  $n_y^1 + n_x^2 = n$  and  $P_x = P_x^1 \cup P_x^2$  and  $P_x^1 \cap P_x^2 = \emptyset$ ,  $\acute{s}r P_x^2$  and  $\acute{s}r P_x^1$ , present arithmetic averages from the elements of samples  $P_x^2$  and  $P_x^1$ ,  $\min P_x^2$  and  $\max P_x^1$  – minimum and maximum from elements of samples  $P_x^2$  and  $P_x^1$ ,  $\text{med } P_x^2$  and  $\text{med } P_x^1$  – medians from elements of samples  $P_x^2$  and  $P_x^1$ , while the symbol  $\gg$  means “much larger than”.

– Linear type with points detached in the direction of the  $OX$  and  $OY$  axes characterised by the following properties (Fig. 1c):

$$(w1) \min P_x^2 - \max P_x^1 \gg 0, \min P_y^2 - \max P_y^1 \gg 0,$$

$$(w2) \acute{s}r P_x^2 - \acute{s}r P_x^1 \gg 0, \acute{s}r P_y^2 - \acute{s}r P_y^1 \gg 0,$$

$$(w3) \text{med } P_x^2 - \text{med } P_x^1 \gg 0, \text{med } P_y^2 - \text{med } P_y^1 \gg 0,$$

where  $P_x^1, P_x^2, P_y^1, P_y^2$  are projections of two-dimensional sample on axes  $OX$  and  $OY$  with populations of:

$$n_x^k = \# P_x^k, n_y^k = \# P_y^k, \text{ for } k = 1,2, \text{ where } P_x^1 \cup P_x^2 = P_x, P_x^1 \cap P_x^2 = \emptyset,$$

$$P_y^1 \cup P_y^2 = P_y, P_y^1 \cap P_y^2 = \emptyset \text{ and } n = n_x^1 + n_x^2 = n_y^1 + n_y^2 \text{ and also } n_x^1 = n_y^1, n_x^2 = n_y^2,$$

– Linear type with points detached in the geometric sense (fig. 1d)

Existence of separate concentrations  $P_1$  and  $P_2$  such that  $P = P_1 \cup P_2$ , but without separation of concentrations for samples  $P_x$  and  $P_y$  is assumed. The following conditions are also satisfied:

$$(w1) \bigwedge_{x_i \in P_2} \{x_i \in \langle \min P_x^1, \max P_x^1 \rangle\},$$

$$(w2) \bigwedge_{y_i \in P_2} \{y_i \in \langle \min P_y^1, \max P_y^1 \rangle\}.$$

The measure of detachment of the set  $P_2$  from the nucleus  $P_1$  of two-dimensional sample is expressed by the geometrical distance of point  $(x_0, y_0) \in P_2$  from the regression line  $\hat{y} = b_0 + b_1x$  estimated on the base of the data contained in sample  $P_1$  with the form where  $d = \frac{|\hat{b}_1x_0 + \hat{b}_0 - y_0|}{\sqrt{\hat{b}_1^2 + 1}} \geq d_0$ , where  $d_0$

represents the distance set arbitrarily.

Also the residues from the estimated linear regression function are used for detection of untypical observations (PAWEŁEK and ZELIAŚ 1996). In the theory of linear regression, next to the typical observations also observations that are:

- untypical (Fig. 2a),
- influential (Fig. 2b),
- distant from the other observations (Fig. 2c)

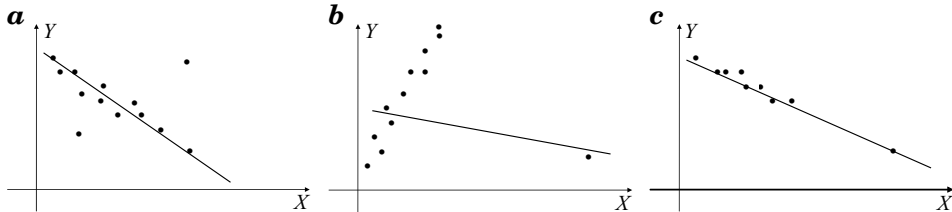


Fig. 2. Observations typical and untypical in relation to the linear regression (a), typical observations and influential observation (b), typical observations and observation distant from the other observations (c)

Source: based on PAWELEK and ZELIAŚ 1996.

Standardised residues can be used for determination of untypical observations in linear regression

$$\tilde{e}_i = \frac{e_i}{S_e}, 1, 2, \dots, n \quad (1)$$

where

$\tilde{e}_i$  – standardised residue for observation  $i$ ,

$e_i$  – residue  $i$  of regression,

$n$  – number of observations,

$S_e$  – standard deviation of the regression residue determined according to the formula

$$S_e = \sqrt{\frac{\sum_{i=1}^n e_i^2}{n - k}} \quad (2)$$

where  $k$  is the number of estimated parameters.

### Method for determination of untypical and influential observations in linear regression

Let  $P_n^2 = \{x_1, x_2, \dots, x_n\}$  be a system of observable vectors expressing the two-dimensional sample with population  $n$  originating from a certain two-dimensional distribution defined by the distribution function  $F_2$  and let  $\theta \in R^2$  represent a certain point from the real space  $R^2$ . In particular, it may belong to the system of points from sample  $P_n^2$ . It is assumed that at least



$h = [n/2] + 1$  observations from sample  $P_n^2$  are not positioned on any straight line. If no more than two observations belong to any straight line then sample  $P_n^2$  is called the generally positive set of points according to the nomenclature introduced by DONOHO and GASKO (1992). The criterion for determination of the Mahalanobis depth measure in case of two-dimensional case assumes the following form:

The function

$$Mzan_2(\theta; P_n^2) = [1 + Q(\theta, P_n^2)]^{-1} \tag{3}$$

where  $Q(\theta, P_n^2) = (\theta_1 - \bar{x}_1)^2 s^{11} + 2(\theta_1 - \bar{x}_1)(\theta_2 - \bar{x}_2) s^{12} + (\theta_2 - \bar{x}_2)^2 s^{22}$ ,

while

$$\theta = \begin{bmatrix} \theta_1 \\ \theta_2 \end{bmatrix}, \bar{x} = \begin{bmatrix} \bar{x}_1 \\ \bar{x}_2 \end{bmatrix}, \bar{x} = \frac{1}{n} \sum_{j=1}^n x_j, S = \frac{1}{n-1} \sum_{i=1}^n (x_i - \bar{x})(x_i - \bar{x})^T, S^{-1} = \begin{bmatrix} s^{11} & s^{12} \\ s^{21} & s^{22} \end{bmatrix},$$

we call the Mahalanobis depth measure  $Mzan_2$  for point  $\theta$  in sample  $P_n^2$ .

In the mathematical sense the depth measure  $Mzan_2$  obtained according to the formula (3) is based on the distance between the point of the space  $R^2$  and the vector of averages  $\bar{x}$  according to metrics determined by the inverse  $S$  matrix. It should be pointed out that for determination of the Mahalanobis distance in case when matrix  $S$  is not positively defined the so-called generalised Mahalanobis distance can be determined (see, e.g. BARTKOWIAK 1988). Other criteria for determination of the measures of depth of the observation in a sample are presented, among others, in the works by WAGNER and KOBYLINSKA (2000, 2002).

The algorithm for determination of untypical observations in linear regression using the measure of depth of the observation in the sample will be proposed. It involves the following steps:

Step 1. We estimate the linear regression equation for the values of analysed variables observed in the sample. The linear regression model of  $y$  in relation to  $x$  is represented by the equation

$$\hat{y} = a_1x + a_0$$

where:

- $\hat{y}$  – theoretical values of the regression function  $\hat{y} = f(x)$  corresponding to the given level of performance of variable  $X$ ,
- $a_0, a_1$  – estimates of the parameters of regression function  $Y$  to  $X$ , where  $a_1$  is the estimate of the linear regression coefficient of variable  $Y$  in relation to  $X$ ,  $a_0$  – the estimate of the free expression.

Step 2. Determination of the values of standardised residues  $\tilde{e}_i$  according to formula 1,

Step 3. Determination of the Mahalanobis depth measure  $Mzan_2(x_i, P_n^2)$  of observations in two-dimensional sample according to formula 3,

Step 4. Each observation  $x_i$  of the two-dimensional sample is represented by the vector  $[Mzan_2(x_i, P_n^2); \tilde{e}_i]$ . For the purpose of determining untypical and influential observations in linear regression we conduct a review of observations  $P_n^2$  relative to the determined values of the depth measures and the standardised deviations. Observations represented by the lowest values of the depth measure and relatively high or low values of the standardised residues can be considered untypical in relation to the estimated linear regression. Observations represented by the lowest depth measures and the values of standardised residues close to zero can be considered distant from the others.

**Numeric example.** The two-dimensional sample  $P_{34}^2$  is the set of 34 pairs. On the correlogram (Fig. 3) significant concentration of observations in the area of low and mean values of both variables and presence of untypical observations can be noticed. The Pearson's linear correlation coefficient value is  $r = 0,303$ . This does not indicate strong correlation of the analysed variables.

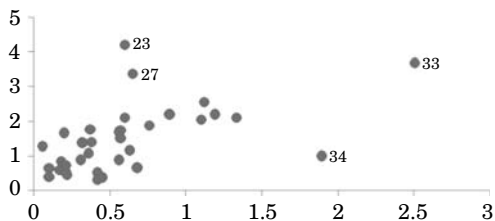


Fig. 3. Correlogram of the two-dimensional sample

Source: own work.

Table 1, next to the values of observations  $X$  and  $Y$ , presents values of depth measures and the standardised residues computed for them. Vectors  $[Mzan_2(x_i, P_n^2); \tilde{e}_i]$  were organised according to the values of Mahalanobis depth measures for observations in two-dimensional sample. Considering the values of standardised residues and depth measures it can be noticed that observations 23, 34 and 27 are represented by the lowest depth measure values and relatively high values of standardised residues. They can be considered untypical in relation to the linear regression. The low value of the depth measure and relatively low value of the standardised residues correspond to observation 33. It can be considered influential.

Table 1  
Values of observations in two-dimensional sample, values of depth measures and standardised residues

Value of observation of the two-dimensional sample			Value of observation of the two-dimensional sample			Observations of the two-dimensional sample and values of standardised residues organised according to the values of the depth measure			Observations of the two-dimensional sample and values of standardised residues organised according to the values of the depth measure		
no of observations	X	Y	no of observations	X	Y	no of observations	Mzan <sub>2</sub>	standard residues	no of observations	Mzan <sub>2</sub>	standard residues
1	0.06	1.28	18	0.45	0.39	<b>33</b>	<b>0.068</b>	<b>0.375</b>	4	0.495	-0.524
2	0.1	0.65	19	0.56	0.9	<b>23</b>	<b>0.077</b>	<b>3.367</b>	15	0.519	0.101
3	0.1	0.4	20	0.56	1.69	<b>34</b>	<b>0.082</b>	<b>-2.161</b>	8	0.564	-0.402
4	0.17	0.6	21	0.57	1.74	<b>27</b>	<b>0.151</b>	<b>2.296</b>	5	0.573	-0.217
5	0.18	0.86	22	0.57	1.5	32	0.334	-0.124	13	0.593	0.665
6	0.2	1.66	<b>23</b>	<b>0.6</b>	<b>4.2</b>	17	0.383	-1.18	24	0.604	0.785
7	0.21	0.55	24	0.6	2.1	25	0.397	0.703	30	0.618	0.547
8	0.21	0.74	25	1.12	2.56	3	0.404	-0.683	10	0.688	-0.33
9	0.22	0.45	26	0.63	1.16	18	0.407	-1.131	19	0.692	-0.641
10	0.31	0.9	<b>27</b>	<b>0.65</b>	<b>3.38</b>	1	0.425	0.449	11	0.724	0.248
11	0.32	1.38	28	0.68	0.67	31	0.432	0.174	12	0.793	-0.158
12	0.36	1.09	29	0.76	1.87	28	0.446	-1.073	14	0.81	0.186
13	0.37	1.77	30	0.89	2.2	6	0.451	0.742	29	0.844	0.303
14	0.38	1.39	31	1.19	2.2	9	0.454	-0.771	26	0.848	-0.408
15	1.1	2.05	32	1.33	2.1	2	0.47	-0.376	21	0.863	0.38
16	0.42	0.53	<b>33</b>	<b>2.5</b>	<b>3.69</b>	16	0.491	-0.922	20	0.889	0.331
17	0.42	0.32	<b>34</b>	<b>1.89</b>	<b>1.01</b>	7	0.492	-0.636	22	0.987	0.084

Source: own work based on the conventional data.

Tables 2 and 3 present the results of the linear regression equation estimation. The linear regression equation was estimated for all 34 observations of  $P_n^2$  (Tab. 2) and after elimination of untypical observations (Tab. 3). The determination coefficient is 0,303 and 0,662 respectively. It is significantly higher for the estimation after elimination of observations 23, 34 and 27.

Table 2  
Estimations of regression equation parameters for 34 observations in two-dimensional sample

$a_0$	$t_{a_0}$	$a_1$	$t_{a_1}$	$R^2$
0.854 (0.216)	3.954	1.012 (0.272)	3.721	0.303

Source: own work.

Table 3

Estimations of regression equation parameters for 31 observations in two-dimensional sample

$\alpha_0$	$t_{\alpha_0}$	$\alpha_1$	$t_{\alpha_1}$	$R^2$
0.601 (0.128)	4.695	1.300 (0.172)	7.558	0.662

Source: own work.

## Conclusion

The paper discusses the types of untypical observations in two-dimensional sample and proposes a method for elimination of untypical observations using the measure of depth of the observation in the sample. The considerations presented lead to the conclusion that the problem of appearance of untypical observations is a major limitation encountered during estimation of statistical population parameters. Detecting them is the first stage followed by elimination of them and application of the appropriate data analysis method.

In the STATISTICA package many tools (statistics and graphs) exist that facilitate detection of diverging observations. For that purpose the model residues are used. Next to the observed values, the values of the residue and their standardised values we find numerous statistics intended for residue analysis. The Mahalanobis distance and Cook distance are popular and frequently applied.

The presented paper presents the usefulness of measures of depth of the observations in the sample for detecting and elimination of untypical observations in linear regression. Elimination of those observations improves matching of linear regression to the empirical data. Using the values of the measures of depth in the sample and considering at the same time the values of standardised residues (according to formula 1) the observations that are distant from the other ones can be determined.

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## **BUSINESS MODELING IN THE PROCESS OF INFORMATION SYSTEMS DEVELOPMENT**

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**Key words:** business model, business modeling, external perspective, internal perspective, UML modeling language.

### **A b s t r a c t**

The paper aims at presenting the role and importance of business modeling in the software generation process. The business model is the simplified description of the organisation that allows designing the optimal information system (IS) satisfying the needs of the user and allowing achievement of the company goals. Both generation and integration of information systems are dependent on the business modeling quality.

The Enterprise Architect tool and the object approach were used for drafting the description of phenomena and processes taking place within the organisation. This allowed presenting the organisation in two perspectives: external and internal. Understanding the perspective that was considered in designing the given model is an important factor influencing appropriate interpretation of the model and its correct use in the information system development process.

## **MODELOWANIE BIZNESOWE W PROCESIE TWORZENIA SYSTEMÓW INFORMATYCZNYCH**

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**Słowa kluczowe:** model biznesowy, modelowanie biznesowe, perspektywa zewnętrzna, perspektywa wewnętrzna, język modelowania UML.

### **A b s t r a k t**

Celem artykułu jest przedstawienie roli i znaczenia modelowania biznesowego w procesie wytwarzania oprogramowania. Model biznesowy to uproszczony opis organizacji, który pozwala zaprojektować optymalny system informatyczny (SI) realizujący potrzeby użytkownika i umożliwiający osiągnięcie celów firmy. Od jakości modelowania biznesowego zależy zarówno tworzenie, jak i integracja systemów informatycznych.

Do realizacji opisu zjawisk i procesów zachodzących w organizacji wykorzystano podejście obiektowe i narzędzie Enterprise Architect. Pozwoliło to na ukazanie organizacji w dwóch perspektywach: zewnętrznej i wewnętrznej. Zrozumienie perspektywy, która była brana pod uwagę w trakcie konstruowania danego modelu, jest ważnym czynnikiem wpływającym na prawidłowe zinterpretowanie modelu i jego poprawne wykorzystanie w procesie tworzenia systemu informatycznego.

## **Introduction**

The point of business modeling is to create such an image of the organisation, which, being the description of the reality will become the base of the software backbone or the description of that backbone. Business modeling allows understanding the structure of the organisation and the processes taking place within it. For each employee of the organisation the role that he performs within it is defined. That method of description allows finding imperfections and bottlenecks that frequently hinder operation of the organisation or limit the undisturbed flow of knowledge or information.

In case of business processes modeling the authors use business objects and classes of business objects to present models understandable to the future IS users. Business processes are modelled to define the scope of the information system design involving optimisation of processes and modification of functioning of the organisation.

The object approach, thanks to the characteristics such as abstraction, encapsulation, polymorphism, modularity, hierarchy, specific meaning of notions used, ease of reflecting the reality seen by the user in the formalised format and legible diagrams, can be applied in business processes modeling. That way of seeing the reality facilitates development, formulation and design of the information architecture and infrastructure in the organisation.

Process approach to the description and analysis of the organisation allows presenting the dynamism of changes occurring in the organisation as well as its internal structure, understanding of interactions among the people, processes and technologies and removing the differences between the language of the IT and the language of business.

### **The nature of business modeling in the context of the information system development**

Business processes modeling means obtaining and organising the knowledge on the organisation, the rules effective in it as well as goals and expectations of software users. The methods of obtaining the knowledge involve analysis of the available documents, including the legal regulations,



descriptions of workstations, principles of employing and financing of the activity as well as observation of work in the organisation and interviews with the potential users. Systematically conducted interviews and observation of the organisation facilitate adjustment of the primary model and enrich the model with additional details.

It is worth remembering that the aim of modeling is to catch the image of the whole and disregarding the unimportant details. As a consequence, modeling is done to perform restructuring of business processes and also to introduce fundamental changes in the functioning of the organisation or company.

Business models are used in defining the functional and non-functional requirements for the software being developed and present the image of interactions between the organisation and its business environment.

The business model development process is of iterative character, it is developed gradually and improved with the progress of analysis and expanding the knowledge on the subject organisation. Describing a business process requires defining the operations that are components of that process, defining the order of performance of those operations and indicating the scopes of responsibilities of the process participants.

The author proposes that any business system should be analysed considering the external and the internal perspective. Each of the perspectives focuses on slightly different aspects of the system, although they are mutually interlinked.

The first of them, the external perspective, describes the business system environment. The focus is just on those processes that involve objects external to the system (e.g. client, business partner, supplier, etc.). The second one, the internal perspective, allows obtaining answers to the question how the business system provides the services within the identified business processes<sup>1</sup>. In this case the employees and tools involved in satisfying the needs of the environment (presented by the external objects) and the operation of the necessary business processes are identified here.

The software developing team should take care to establish the correct model of the organisation, so that the artefacts<sup>2</sup> created could become the backbone of the information system. Business modeling represents the first stage of the IS development. It allows finding the elements of organisation in

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<sup>1</sup> The business process is the set of activities contributing to the results of the company, organisation taking into account both the processes involved in creating the goods/services and supporting processes (DĄBROWSKI et al. 2007, p. 28). The processes of, e.g. production, sales of products, processing of complaints, supply of goods, purchase of materials, repair of equipment, etc. are examples of processes.

<sup>2</sup> Artefact is the result of modeling – a specific design product, e.g. specification, model, software file, application file, test, report, etc.

the structure or behaviour that allows achievement of the situation where the software developed is consistent with the earlier specified needs of the users. It is worth noticing that before the costs of software development are incurred optimisation of business processes will take place, which will result in elimination of errors and minimisation of costs in the information system development process.

The business systems modeling process may accelerate comparison of processes to the similar or identical ones employed at other companies significantly.

### **Languages and tools of business processes modeling**

The UML (Unified Modeling Language) allows presenting various business system aspects in the descriptive and graphic way and serves visualisation, specification, construction and documentation of the artefacts of the systems using computer software. Three famous methodologists of software engineering – Grady Booch, Ivar Jacobson and James Rumbaugh, created the UML. The contribution of each of them to the development of the new concept is presented by, e.g. WRYCZA et al. 2005, pp. 18, 19, DĄBROWSKI et al. 2007, p. 28, GRAESSLE et al. 2006, p. 32.

Many CASE (Computer Aide Software Engineering) tools, such as, e.g. Enterprise Architect, MagicDraw UML, Visual Paradigm, Star UML etc. that use the UML can be used for modeling of business processes. Application of the CASE tools increases the level of communication between the specialists in different scientific disciplines, influences strengthening the relations with the client and also improves the legibility of the documentation prepared and facilitates its modification. This results in the correct formulation of the problem (specification of requirements) and better understanding of it, which helps in more accurate determination of criteria for verification of the assumptions made (TAŃSKA 2009, p. 184).

Increasingly rarely IT solutions are developed by individual programmers and increasingly frequently they are developed by specialised project teams. As a consequence use of tools supporting the development process is fully justified as highlighted by Sacha 2010. The UML and the Enterprise Architect are good tools facilitating efficient and comprehensive development of applications by analysts and designers. They also facilitate verification of work progress by the managers and design team members.

The initial models are created during the strategic analysis and they precede the decision on system development. They usually describe the business processes taking place in the user organisation. The use cases

diagram with the basic elements in the form of the icons representing the actors, ovals representing the cases of use and lines representing the relations between them is the graphic representation of the model.

Business modeling can be defined as the bridge between two worlds that is the business and the information technology. Supporting the organisation with the IT solutions is possible when the needs in that field have been diagnosed. The developed models of business processes represent simplified, abstract images of the actual business processes.

### **External perspective**

From the external perspective the business system is seen as a black box. The focus is on the external objects and their links to the business system. Three groups of business diagrams are used: the use cases diagram – DPU, the activities diagram – DA and the sequences diagram – DS.

The use cases diagram (Fig. 1) presents the actors, business cases of use and their mutual interrelations. It does not describe the internal procedures but provides a good insight of the functions supplied by the business system to the actors (participants from outside the system). The link between the actor and the business case of use occurs when the actor has the possibility of using a specific function of the business system.

DPU design from the external perspective involves 7 stages. The first involves identification of the suppliers of the knowledge on the business environment and gathering the knowledge obtained. Stage two is the identification of clients, partners, other business systems using the goods and services rendered by the business system. Stage three involves identification of the potential cases of use, that is which goods and services are available to the actors. Stage four is immensely important as during it the cases of use and actors are linked to determine who may use the goods and services rendered by the system. The focus of stage five is on the description of the actors, i.e. whom or what they represent while stage six focuses on what should be done. The verification of correctness of the model created is the seventh stage.

As it can be noticed easily, the use cases diagram is not the element sufficient for the complete description of organisation operation. Yes, it presents the role and services (functions) rendered by the organisation to the entire environment but it lacks the information on how those services are rendered. That is why it is necessary to use the activities diagram and the sequences diagram.

The activities diagrams (Fig. 2) describe the procedures effective in the business system. The interactions between the environment (the actors) and

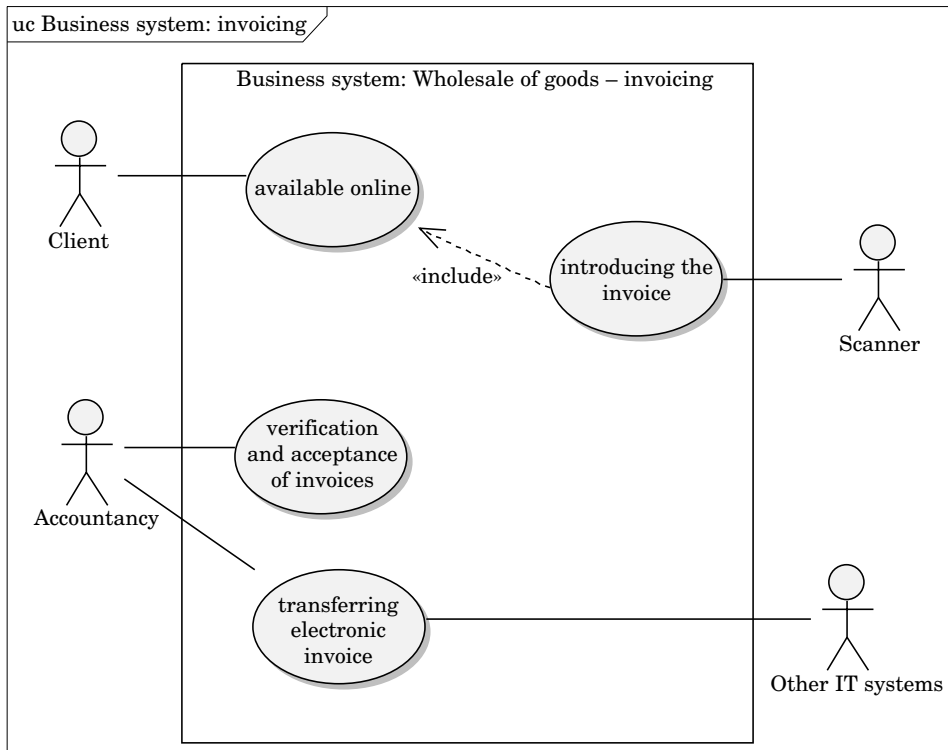


Fig. 1. Business use case diagram for the business system

Source: Author's own work.

the business system are the subjects of those diagrams. The activities diagrams allow looking at the system from the perspective of the functions held in it. They allow representing the events taking place in parallel or in sequence. The activities diagrams may be developed at different levels of detail. From the external perspective those diagrams represent business processes as seen by the external objects. The actions and the control elements (decisions, division, merger, initiation, completion, etc.) are the key components of the activities.

I propose starting the design of the activities diagrams with those at the low level of detail (high level of abstraction) encompassing a few business cases of use. Thanks to that we may obtain a good insight in the chain of interrelations between the clients and partners on one hand and the business system on the other.

The sequence diagrams (Fig. 3) describe the chronological development of the interaction. They focus on the information passed between the parties to the interaction. Those diagrams provide a good base for describing the exchange of information between the system and the partners and clients.

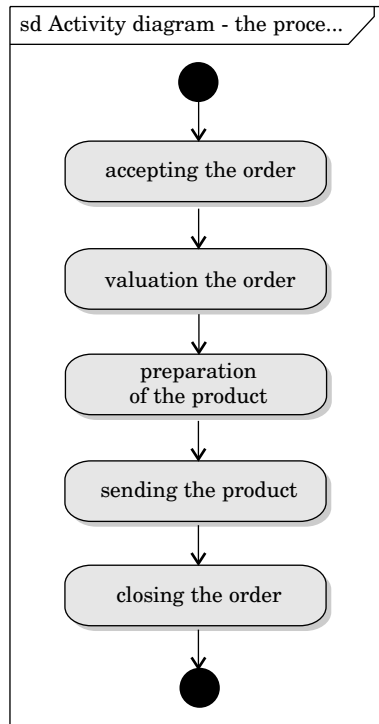


Fig. 2. Business activity diagram – the client’s perspective

Source: Author’s own work.

The sequence diagrams serve visualisation of information exchange and illustrate the chronology of that exchange. If the client or business partner uses the service offered than between the supplier and recipient communication takes place. That process may be described as a series of interactions. As a consequence, sequence diagrams may be used in case of the exchange of messages between the business system and the external objects.

The DS design from the external perspective involves six stages. The first represents the answer to the question of who participates in the sequence. This means identification of the actors and the business system. It is also important to determine who initiates the sequence – stage two. Stage three involves the description of the exchange of messages between the actors and the business system, i.e. what messages are exchanged. Stage four involves identification of the interaction development, i.e. the sequence of interactions. Stages five and six involve input of complementary important information and verification of the perspective.

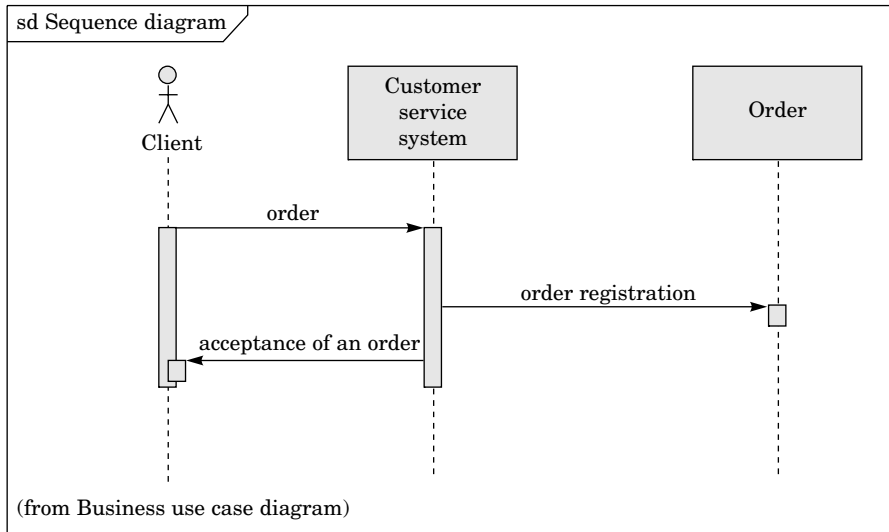


Fig. 3. The diagram of sequence

Source: Author's own work.

As a consequence, identification of the major processes of the organisation determining its position and success in the competitive market is the outcome of the analysis from the external perspective. The: actors, activities, interrelations between the actors, activities and resources, entry conditions/effects of the processes/operations, the sequence of events, simultaneous progress of processes and synchronisation points are the basic elements of that process.

### The business system seen from inside

The internal perspective describes the internal process and activities as well as the structures of the business system. Information systems and people involved in the business process are responsible for supplying the goods and services. It is irrelevant whether the process conducted is manual or supported by IT tools. The internal perspective of the business system is described by means of the business diagrams of packages (DP), classes (DC) and activities (DA).

The organisation structure plays an important role in the internal perspective of the business system. The units within the organisation (e.g. departments, sections, positions, etc.) are described in the form of packages. This is the universal mechanism for organisation of objects (elements) into groups. The diagram of packages (Fig. 4) serves modelling the aggregates of objects

that the packages are and allow modeling the business system at high level of abstraction. This means that it can contain employees, business objects and other organisational units. The organisational units are responsible for performance of activities that are components of processes. Those units are in whole the components of the model business system while the units functionally corresponding to them situated outside that system are the actors.

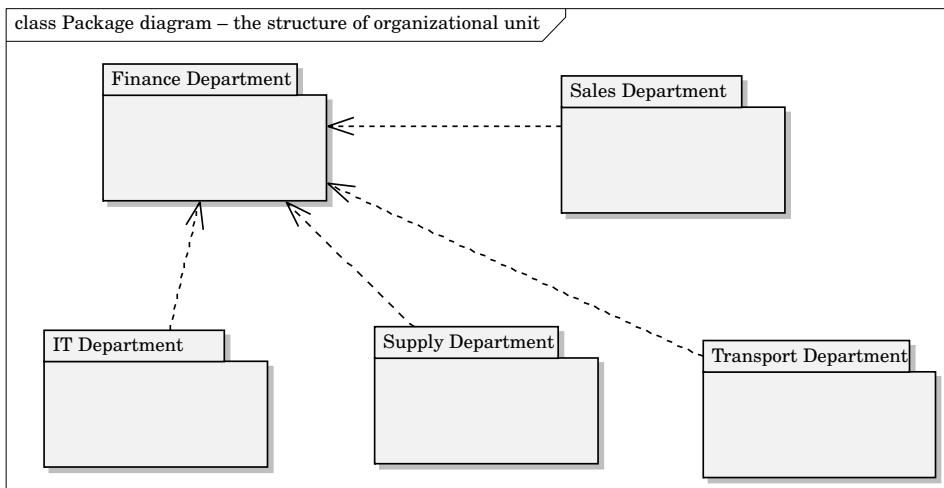


Fig. 4. Package diagram

Source: Author's own work.

The DP design involves a number of stages, including drafting the DP outline in the business system, identification of the additional organisational units, attributing employees and business objects to appropriate organisational units, identification of additional organisational units (employees, business objects) and verification.

The diagram of classes (Fig. 5) illustrates the structural elements of the business system. It describes the interrelations and links between the employees, business objects and external objects.

Designing the DC involves identification of classes, associations between classes and verification of correctness. It is worth noticing that it is useful to use classes defined in the diagrams of packages.

The diagram of activities (Fig. 6) illustrates the internal business processes within the business system. The goods and services offered by the business system are the subject. It should be remembered that as opposed to the activities diagrams created from the external perspective the diagrams of activities for the internal perspective do not cover the links to the actors. They

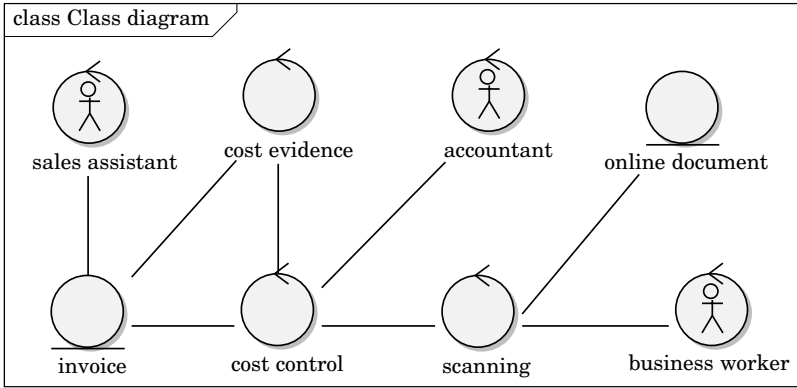


Fig. 5. Class diagram

Source: Author’s own work.

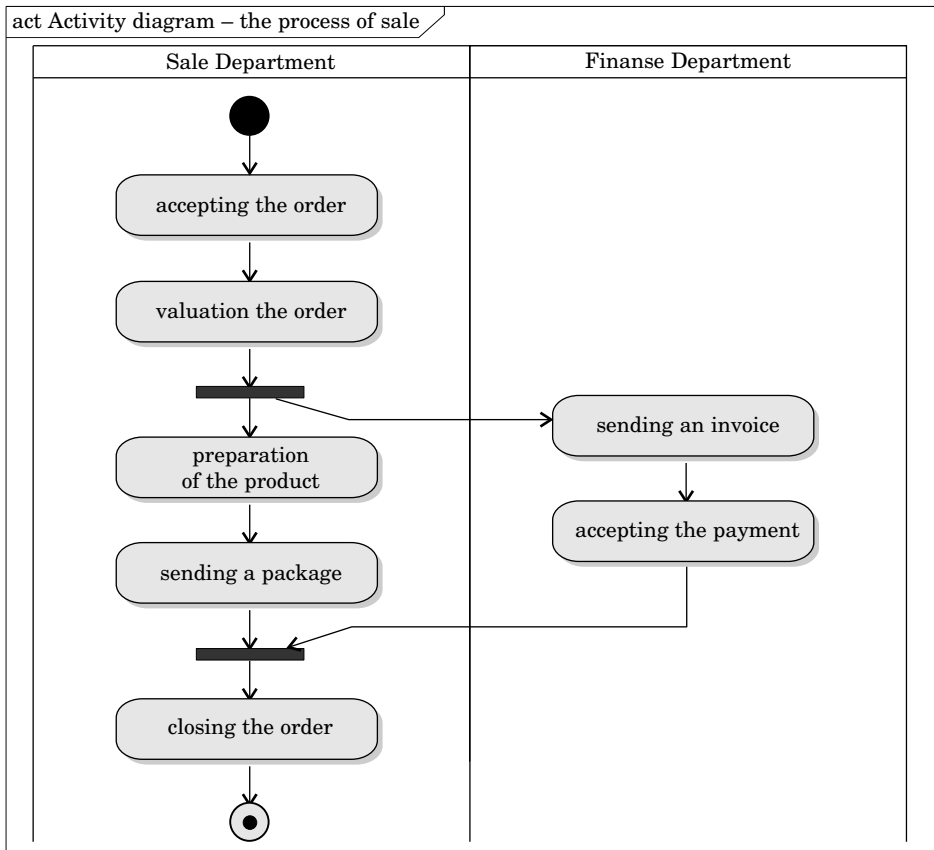


Fig. 6. Activity diagram – internal perspective

Source: Author’s own work.



form the base for creating instructions on the base of which the employees operate.

The sample diagram of activities illustrates the method of performing the sales of goods and it requires cooperation of the sales department that prepares the dispatch and the accounting department that issues the invoice. Here the direct division of activities and allocation to departments (sales department and accounting department) was employed using the swimlane mechanism.

## Conclusion

In this paper the author draws attention to the issue of business modeling and the role it plays in the information system development and integration process. Every business system is analysed as a whole employing two perspectives – the external and the internal one. The comprehensive study and description of the reality are possible thanks to the business techniques such as the case use diagram, diagram of classes, diagrams of activities, diagrams of packages and diagrams of sequences.

The business model developed according to the proposed methodology documents the interactions of the organisation with the external world, collaboration of objects within the organisation, flow of data in the system and communication inside the system. The process of designing the business system model is presented in the paper in the synthetic way.

Development of the correct business system model forms the base for further design works. Application of the CASE – Computer Aided Software Engineering tool allows systematic introduction of changes to the design and monitoring of consecutive software development stages.

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## **A PROPOSAL OF VERIFICATION OF THE INDICATOR METHOD FOR EVALUATION OF SUSTAINABLE DEVELOPMENT**

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**Key words:** sustainable development, economic order, environmental order, social order, indicator method.

### **A b s t r a c t**

Sustainable development should be viewed in the context of environmental, social and economic order. The objective of the present study has been to evaluate to what extent the development occurring in the Province of Warmia and Mazury is sustainable in terms of the environment, society and economy, and to suggest some improvements to the evaluation method applied so far. The theoretical, empirical and competence research was conducted in 2006–2010. The empirical part of the research was performed in 2008–2009, based on the data of 2007 obtained from the Regional Data Bank. Applying the comparative indicator method, 70 indicators were developed of opposite preference orientation. It has been suggested that the area covered by forests, waters, etc., i.e. the land where people cannot be settled, should be omitted from calculations of the population density indicator. Furthermore, the forest cover indicator in the present study was used without making a distinction between private and public woodlands. The author's analysis of the social and economic order has demonstrated that the local society is poor, which entails low comfort of living and underfinanced health care and education. The evaluation of environmental order has yielded more positive results.

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**Słowa kluczowe:** rozwój zrównoważony, ład gospodarczy, ład środowiskowy, ład społeczny, ocena wskaźnikowa

## A b s t r a k t

Rozwój zrównoważony należy rozpatrywać, uwzględniając: ład środowiskowy, społeczny i gospodarczy. Celem badań było określenie stopnia zrównoważenia rozwoju w aspektach środowiskowym, społecznym i gospodarczym województwa warmińsko-mazurskiego oraz propozycja wprowadzenia poprawek w stosowanej dotychczas metodzie. Badania teoretyczne i kompetencyjne prowadzono w latach 2006–2010, empiryczne w latach 2008–2009 na podstawie danych z 2007 r., zebranych z zasobów Banku Danych Regionalnych (BDR). Wskaźnikową metodą porównawczą opracowano 70 wskaźników o różnych kierunkach preferencji. W badaniach zastosowano klasyfikację dziedzinową wskaźników. Zaproponowano, aby w obliczaniu wskaźnika gęstości zaludnienia pomijać przestrzenie, na których nie można osiedlić ludzi, np. wód i lasów. Ponadto w badaniach zastosowano wskaźnik dotyczący lesistości województwa bez podziału na lasy prywatne i publiczne.

**Introduction**

Sustainable development discussed in the literature (*Wskaźniki ekorozwoju* 1999, *Wskaźniki zrównoważonego rozwoju* 2005), in practice should be evaluated on different levels, including the regional one (*Zrównoważony rozwój regionów uprzemysłowionych* 2009), which means that it should be included into regional and local planning. Sustainable development is not a measurable goal to attain, but is a time dynamic phenomenon. It should take many years or even generations to proceed. Sustainable development needs to be monitored and objectively evaluated. The evaluation can be aided by adequately selected indicators. When working out the indicator method for monitoring the attainment of sustainable development goals, it is essential to answer the question what sustainable development actually means in the sense of constructing indicators and what indicators can be applied to monitor its progress on the regional level. The selected regional measures, theoretically adjusted to describe the environmental, social and economic order, will enable us to develop a model of sustainable development for the whole province. For some of the indicators, it is difficult to determine the preference orientation, e.g. the share of privately-owned forests in the total woodland cover (a stimulant or de-stimulant?). Some problems arise when dealing with issues which pertain to more than one order. Some indicators can appear in evaluation of two orders and may have opposite preference orientation, e.g. number of passenger cars per 1000 residents. With respect to the environmental order, this is a de-stimulant, but in the social and economic order – this indicator acts as a stimulant. The elaborated model may serve to evaluate the status of the examined orders and to assess the progress of sustainable development in the future. Thus, it is suggested to apply indices rather than indicators in order to examine this development in time.

The purpose of this study has been to determine the degree of sustainability of development in the Province of Warmia and Mazury in the context of environmental, social and economic order, and to propose some improvements in the method applied so far.

### **The current indicator method for evaluation of the sustainability of development in regions**

Back in the mid-1990s, the Polish Ministry for the Environment (then the Ministry for Protection of Natural Resources and Forestry) initiated the establishment of a team of researchers from scientific centres in Warsaw, Wrocław and Jelenia Góra to work on sustainable development indicators. Once the researchers became acquainted with analogous research in the world and in Poland, they presented the results of their investigations in the book *Wskaźniki ekorozwoju* (Indicators of Eco-development), published in 1999 (BORYS 1999). Another book, which came out in 2005 under the title *Wskaźniki zrównoważonego rozwoju* (Indicators of Sustainable Development), was written to popularize the results of previous studies, including the following levels of management: local, regional and countrywide (BORYS 2005, pp. 9–13). The book contained a presentation of the indicator method with a comprehensive commentary on the subject. A few hundred indicators were suggested, grouped according to different criteria (*Wskaźniki zrównoważonego rozwoju* 2005, pp. 62–321). Such measures need to be created and improved mainly because it is necessary to monitor the implementation of various planning and strategic documents.

The selection of environmental indicators was guided by the principle of causality, which states that every human activity produces some effect on the environment and can be a cause of positive and negative changes. These indicators are associated with groups of goals as specified in the Ecological Policy of the Polish State. They show the current status, major sources of problems and neutralization or alleviation of effects of man-made pressure. In the social context, the indicators were predominantly concerned with demography, poverty, health, education and culture, that is the level of living. Their selection, analogously to economic indicators, was subjected to the strategic and operational aims.

For each of the indicators, the so-called indicating value was computed, which showed the percentage by which the indicator was better or worse than the average for comparable provinces in Poland (ROGALA 2005, pp. 237–246). This evaluation took into consideration the uniform preference, hence the higher the evaluation indicator, the better the status of the analyzed unit, with the average value for the other units being 100%. The study took advantage of the zero unitarization method to refer ‘unitarized’ indicators to the means by

employing the following formulas (BORYS, ROGALA 2004, pp. 601–608, ROGALA 2005, pp. 237–246):

– for stimulants

$$O_P = [(W_i - W_{\min.}) / (W_{\max} - W_{\min.})] \times 100\%;$$

– for destimulants

$$O_R = [(W_{\max} - W_i) / (W_{\max} - W_{\min.})] \times 100\%;$$

– for the mean of a stimulant

$$O_{P-\text{mean}} = [(W_{\text{mean}} - W_{\min.}) / (W_{\max} - W_{\min.})] \times 100\%;$$

– for the mean of a destimulant

$$O_{R-\text{mean}} = [(W_{\max} - W_{\text{mean}}) / (W_{\max} - W_{\min.})] \times 100\%;$$

where:

$O_P$  or  $O_R$  – point valuation of indicator  $W$  for the province,

$O_{P-\text{mean}}$  or  $O_{R-\text{mean}}$  – point valuation of the average of indicators for a comparable group of units (provinces); this value depends on the distribution of the level of an indicator:

$W_i$  – level of the indicator of the evaluated unit,

$W_{\min.}$  – minimum level of the indicator for a given sample,

$W_{\max}$  – maximum level of the indicator for a given sample,

$W_{\text{mean}}$  – mean of the indicator for a given sample.

– The calculated indicators were referred to the average level in a comparable group of units, according to the formula:

$$[(OP/OP\text{-mean}) \times 100\%] - 100\% \text{ or } [(OR/OR\text{-mean}) \times 100\%] - 100\%$$

### **Evaluation of the degree of sustainability of the development of the Province of Warmia and Mazury in the environmental, social and economic context**

The Province of Warmia and Mazury is one of the 16 provinces distinguished in Poland by the latest administration reform, which took place at the end of the 20<sup>th</sup> century. On 1 January 1999, by virtue of law (Ustawa z dnia 24 lipca 1998 roku o wprowadzeniu zasadniczego trójstopniowego podziału terytorialnego państwa, DzU nr 96, poz. 603), a new, three-tier division of the territory of Poland was introduced, in which – above communes with local governments, there are districts and provinces with local governments as well as ‘state government’ provinces. The Province of Warmia and Mazury incorporated the whole Province of Olsztyn (as existed in 1975–1998), half of the Provinces of Suwałki and Elbląg) and single communes from the provinces of

Toruń, Ciechanów and Ostrołęka. To a large extent, the current boundaries of the Province of Warmia and Mazury coincide with the borders of former East Prussia except in the north (ŁAGUNA, WITKOWSKA-DĄBROWSKA 2008, pp. 92–102).

The area of the Province of Warmia and Mazury is 24 203 km<sup>2</sup>, which corresponds to 7.7% of the territory of Poland and makes it the fourth largest province in our country. The province has a highly varied landscape relief and is characterized by diverse natural resources, with a large percentage of inland surface waters (over 6% of the area). The forest cover equals 30% and is close to the country's average. Over 54% of the total area belongs to farmland. The population of the province is 1.4 million. The population density is the lowest in Poland, i.e. 59 persons per 1 km<sup>2</sup> (Cf. ŁAGUNA, WITKOWSKA-DĄBROWSKA 2008, pp. 92–102; WITKOWSKA-DĄBROWSKA 2009, pp. 61–71; WITKOWSKA-DĄBROWSKA, BĄCZKOWSKI 2010, pp. 258–268). The population is ethnically varied and relatively young: 23.2% are people in the pre-working age,

Table 1  
Orders and domains as well as the number of indicators chosen for the present study on the sustainable development of the Province of Warmia and Mazury

Orders					
Environmental		social		economic	
Domains	number of indicators	domains	number of indicators	domains	number of indicators
Environment and landscape protection	6	demography	3	consumption of raw materials and production of industrial waste	5
Forest protection and sustainable development	4	education and development	6	employment	5
Wastewater and sewage management	5	poverty and social exclusion	5	investment outlays	2
Water management	5	level and quality of life	6	entrepreneurship	4
In total	20	lifestyle and public health	5	agriculture	3
x	x	in total	25	availability of goods and services	6
x	x	x	x	in total	25
In total			70		

Source: the author, based on *Wskaźniki zrównoważonego rozwoju*. 2005. s. 62–321.

13.3% are in the post-working age and 63.5% are people in the working age. The province is among one of the least polluted in Poland. The major branches of industry are food processing and furniture making. The tourism industry and fisheries are developing well owing to the favourable natural conditions. The REGON system in 2007 had 113 058 registered business enterprises, i.e. 0.08 per capita (WITKOWSKA-DĄBROWSKA, BĄCZKOWSKI 2010, pp. 258–268). For the present study on the sustainable development of the Province of Warmia and Mazury, the author chose these indicators which can be calculated from the statistical data available from the Regional Data Bank (the RDB). The domain classification of indicators was applied, with which it is possible to construct the so-called pyramids of indicators. Within each order, several domains were distinguished. In total, 70 indicators of different preference orientation (stimulants and destimulants), grouped in three order: environmental, social and economic ones, were chosen (Tab. 1).

Table 2 contains collected data for particular domains in 2007, which was the last year included in the study. Particular indicators have been discussed in detail in the authors' earlier publications. However, the indicators suggested previously have undergone some modifications and transfer as well as adjustment to different domains during the study. As a result, the domain structure shown in Table 2 has been achieved.

Among the several examined domains, just one, namely agriculture, scored a higher value than the average from other comparable provinces in Poland during the whole analyzed period. The high score was mainly attributable to a high level of purchased agricultural produce per 1 ha of arable land and an increase in the use of fertilizers per 1 ha of arable land. The assessed value for the use of raw resources and materials was lower than the average for the other provinces (but gradually approximating it) and ranged within 90.85–00.11%, mainly due to the poorly developing infrastructure in the environmental protection sector (gas pipelines, sewerages, wastewater treatment plants). The general value attained for the domain employment was similar. The fact that it was below the country's average was mainly due to the demographic load indicator. In the domain goods and services availability, the value kept increasing in the analyzed years but it never exceeded 59% of the country's average. The low degree of availability of sewerages and gas pipelines in the province was a lasting obstacle.

The lowest values versus the country's average were obtained by the Province of Warmia and Mazury in the domains entrepreneurship and investment outlays. In the former domain, the province scored the lowest in the whole country due to the low participation of the private sector business entities and the number of the REGON registered business per 10 000 people. The value scored in comparison to the country was very low during the whole analyzed period.



Table 2  
Evaluation of the sustainability of the Province of Warmia and Mazury versus the country's average in 2007

Orders					
Environmental		social		economic	
Domains	indicator %	domains	indicator %	domains	indicator %
Environment and landscape protection	99.48	demography	108.21	consumption of resources and industrial waste generation	96.53
Forest protection and sustainable development	379.50	education and development	46.37	employment	105.14
Wastewater and sewage management	46.18	poverty and social exclusion	21.18	investment outlays	22.10
Water management	54.13	level and quality of life	61.07	entrepreneurship	61.02
Sustainability of development	144.82	lifestyle and public health	78.82	agriculture	112.85
		sustainability of development	63.13	availability of goods and services	58.77
				sustainability of development	77.30

Source: the author, based on data from the RDB in 2007.

The general value of the sustainability of the economic development fell below the country's average, compared to the other provinces in Poland, and varied from 72.18 to 78.88% in the analyzed years. The dynamics of changes in the analyzed years, however, confirms some increase of the general value of economic sustainability. Similar results were yielded by the author's analysis of the sustainable development in the social and environmental context. Among the social order indicators, very few scored below the country's average for comparable provinces. These were the indicators which belonged to the domain demography and the indicator showing the number of housing units built per 1000 residents. The indicator which informs us about the number of pupils per 1 teacher in primary schools reached the value equal to the average for the compared provinces. The remaining indicators were below the average values. The lowest values were scored by the indicators from the domains poverty and social exclusion and public health, especially the sums allocated to health care and the number of residents per 1 physician.

The social order was characterized by low mean values in as many as four domains out of the five ones submitted to analysis. Demography was the exception in that it scored above the country's average. As the study demon-

strates, the Province of Warmia and Mazury is a region inhabited by a poor population, as a result of which the level of living is low and the health care or education are underfinanced. This conclusion is confirmed by such findings as a low number of college and university students per 10,000 people, i.e. 421.70 versus the average of 474.2 for the other provinces, as well as a high number of people per 1 physician, i.e. 617 versus the country's average of 514.

The evaluation of the environmental order was more favourable, although no more than two domains, water management as well as wastewater and sewage management scored above the average. Forest protection and sustainable development reached a high score owing to the forest regeneration and afforestation projects carried out in the province, as well as the forest cover above 30%.

Many of the problems encountered in the province are persistent. These include low employment activity of residents or a high long-term unemployment rate. The province used to have a large share (compared to other regions in Poland) of arable land managed by the State Farms, which – when liquidated – caused a drastic increase in the number of unemployed people. Further, the level of education among the population of our province is lower than the country's average. Individuals with primary and incomplete primary education make up 39% of the total population of the province (Poland's average is 33%). Just 8% of the province's residents hold higher education diplomas (Poland's average is 10%). As a result, finding employment is much more difficult. Consequently, the problem of poverty and social exclusion is growing. The high share of agriculture in the economic structure of the province as well as the specific natural conditions favour the development of organic farming, tourism and agri-tourism. Obviously, a short tourist season is a barrier. What is needed here is more investment in the tourist industry facilities, as well as monitoring the demands and preferences of incoming and potential tourists. Among the economic factors that could stimulate the province's development are large areas left for possible investment. Their development, however, often collides with the priorities of nature conservation (BARTKIEWICZ et al. 2010, pp. 9–116).

### **Suggested changes in the method for evaluation of sustainable development**

The present study relied on the domain classification of indicators. This approach enabled the author to construct the so-called pyramids of indicators, because within each order several domains had been distinguished. A similar domain classification is used by the RDB. Thus, using their data was feasible.

However, not all the RDB's indicators adequately decipher the sustainable development, e.g. population density, which is calculated based on the total area (Tab. 3).

Table 3

Suggested changes in sustainable development indicators

Orders	Currently used indicators	Indicators proposed for evaluation of sustainable development of the Province of Warmia and Mazury
Environmental	share of area of private forests in total area of forests [%]	forest cover [%]
Social	population density (number of people per 1 km <sup>2</sup> )	population density (number of people per 1 km <sup>2</sup> of land excluding forests and surface waters)
Economic	number of cars per 1000 residents	number of cars manufactured after the year per 1000 residents

Source: the author, based on the studies carried out in 2006–2010, Province of Warmia and Mazury.

It is rather difficult to expect high population density rates in areas with a high share of surface waters and forests, i.e. the land where people cannot be settled. In the Province of Warmia and Mazury, the population density is on average 59 persons per 1 km<sup>2</sup>. It is therefore suggested to exclude the land covered by forest or surface water from calculations of a population density rate, as the respective rate for Warmia and Mazury would then reach 92 persons per km<sup>2</sup>. However, additional calculations would be needed then, because the official statistics do not contain such data. In turn, for some of the indicators it is difficult to state a preferences orientation. This is an important issue because different formulas are applied to calculations concerning stimulants than their opposites, e.g. the share of privately-owned forests to total forests – is it a stimulant or destimulant? Both types of ownership rights – private and public – are governed by the same forest management regulations, therefore the forestry production output is similar in both types of woodlands. In this study, the author used the indicator expressing the total forest cover in the Province of Warmia and Mazury.

Another problem appears where two orders overlap. Some of the indicators can be assigned to two orders and, to make matters more complicated, they can have opposite preferences orientation, e.g. number of passenger cars per 1000 residents. For the environmental order, this is a destimulant, but for the social and economic orders, this factor acts as a stimulant. Possessing a car is no

longer a determinant of the social status. Some other attributes, such as the car make and year of production should be considered.

Beside changing some of the indicators, it is also suggested to apply indices rather than indicators in the future because when discussing development we more often think about a dynamic process, changing in time, and not a static phenomenon.

## Summary

The Province of Warmia and Mazury is not a uniform area due to some differences in the history of two regions: Warmia and Mazury, which make up most of the province's territory. Despite such differences, the Province of Warmia and Mazury appears as a very distinct part of Poland. The present study on the social order in this part of Poland has demonstrated that the local communities are poor, which entails a low level of living and underfinanced health care and education. The evaluation of the environmental order yielded better results. The region is characterized by good quality of the environment, which is extremely important for maintaining high natural assets in the whole province, including various forms of nature conservation. The general evaluation of the sustainability of the economic development generated results below the country's average.

During this investigation, the author has suggested several changes in the selection of indicators, e.g. forest cover, number of passenger cars per 1,000 residents or the way of calculating population density. Further, the concept of using indices rather than indicators should allow us to examine sustainable development as a time-dependent process.

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## **PRODUCT LIFE CYCLE THEORIES – IMPLICATIONS FOR MARKETING**

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**Key words:** classical product life cycle, product evolution, international product life cycle, marketing.

### **A b s t r a c t**

Paper presents review of chosen product life cycle theories that should be, in the assumption, treated as specific guide for marketing actions and tools. Levitt' classical theory of product life cycle was the starting point of consideration of nature product life, and it's implications for marketing. Presenting this theory, there was underline, presented in the marketing literature, common critics with reference to possibility of utilize theory in the real marketing world. In the view of this, there was presented also another conception of product life – Ensis, Garce and Prell (theory of extending product life cycle), Tellis and Crawford (En evolutionary approach to product growth theory) and Vernon's theory of international product life cycle.

### **TEORIE ŻYCIA PRODUKTU – IMPLIKACJE DLA MARKETINGU**

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**Słowa kluczowe:** klasyczny cykl życia produktu, ewolucja produktu, międzynarodowy cykl życia produktu, marketing.

### **A b s t r a k t**

Opracowanie stanowi przegląd wybranych teorii cyklu „życia produktu”, w założeniu mających stanowić rekomendacje odnośnie wyboru działań i instrumentów marketingowych. Punktem wyjścia rozważań nad naturą życia produktów i wynikającą z tego implikacji dla marketingu była klasyczna teoria „cyklu życia produktu” Levitta. Przedstawiając tę teorię, uwypuklono wyrażaną na łamach literatury marketingowej powszechną krytykę w odniesieniu do możliwości jej wykorzystywania w praktyce. W tym świetle przedstawiono inne koncepcje „życia produktu” – Enisa, Garce'a i Prella (teorię ponownego życia produktu), Tellisa i Crawforda (teorię cyklu ewolucji produktu) oraz Vernona (teorię międzynarodowego życia produktu).

## **Introduction**

The first product life cycle theory defining the regularities in the development of products' sales and profits over time was elaborated during the sixties of the past century. According to that cycle that was based on the analogy to the biological nature of higher order organisms' life the individual goes through a series of fixed and identifiable stages starting with birth through growth, maturity, decrepitude and finally its death. Although the studies on the product life cycle were initiated by Dean during the early 1950s the further works, in particular the innovation spread model by Roger of 1962 (KOZŁOWSKI, MICHALAK 2010) and the 4-stage product life cycle model presented three years later by LEVITT (1965) provided the impulse for the discussions on the product life cycle and its application in marketing.

The attempts on empirical verification of the paradigm by Levitt undertaken indicate the existing problems related to practical application of the model as a strategic marketing management tool. That is why consecutive researchers of "product life" developed alternative marketing theories explaining that phenomenon on one hand while on the other they took efforts at applying the "cycle" not only in managing the product of the company but also, among others, strategic planning in retail trade, explaining the functioning of foreign trade and as a tool for linking production with marketing and for forecasting the sales (KOBÁ 2006a). This paper represents an attempt at presenting more closely the selected marketing concepts concerning the "product life" while drawing particular attention to their suitability for formulating a marketing strategy. In that context the classical product life cycle theory as well as the theory of extending the product life cycle, the evolutionary approach to product growth theory and the theory of international product life cycle were presented.

### **Classical product life cycle theory by Levitt**

As Theodor Levitt stated rightly, the success of every product in the market depended on the length of its life cycle and the total volume of its sales from the moment of its appearance in the market until the moment of its withdrawal. According to the classical life cycle theory the majority of successful products represent the history of their sequential transition through the identifiable stages assuming the form of the "S-shaped curve of sales/profit" that appear according to the following, sequential order: market development, market growth, market maturity and market decline (Fig. 1). Each of those stages represents not only a different level of sales and profits generated, different



marketing costs, different characteristics of clients and competition as well as different market goals of the company but also the need for diversifying the marketing activities of the company concerning the same product, its price, distribution and promotion resulting from those characteristics<sup>1</sup>.

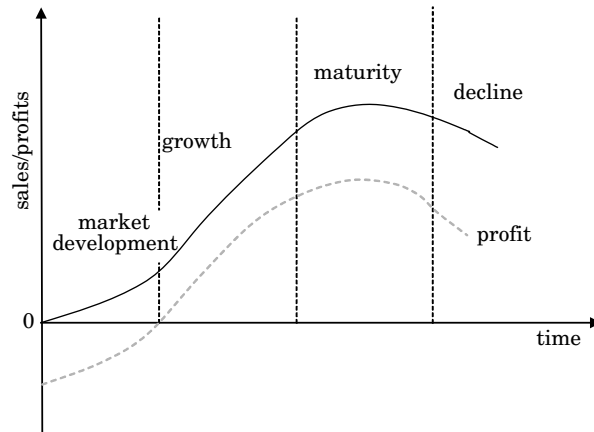


Fig. 1. Classical product life cycle

Source: own work based on: LEVITT (1965).

The concept of biological product life cycle, because of its simplicity and assumptions made, is highly controversial. It raises numerous controversies among both the theoreticians and the practitioners as a consequence of the limitations existing in its application in product marketing management practice. One of the fundamental objections against that model is that actually we may deal with different numbers of stages in the product life cycle and with different durations of the individual stages, and as a consequence, different shapes of the curve diverging from the S-shape (Fig. 2). That is why formulation of straight conclusions concerning the choice of marketing strategies for each of the stages in the market life of the product is not justified fully. In the subject literature other objections against the rightness and usefulness of the concept by Levitt are formulated (Tab. 1). Currently, the majority of practitioners and theoreticians realize that the development of the product life cycle is a dynamic process where the individual stages imply appropriate marketing strategies on one hand, while on the other the strategies applied influence the sequence and duration of those stages.

<sup>1</sup> The marketing strategies for every stage of the market life of product are presented exhaustively in every marketing course book. The books by MRUK and RUTKOWSKI (1994) as well as GARBARSKI et al. (1998) deserve recommendation in that aspect.

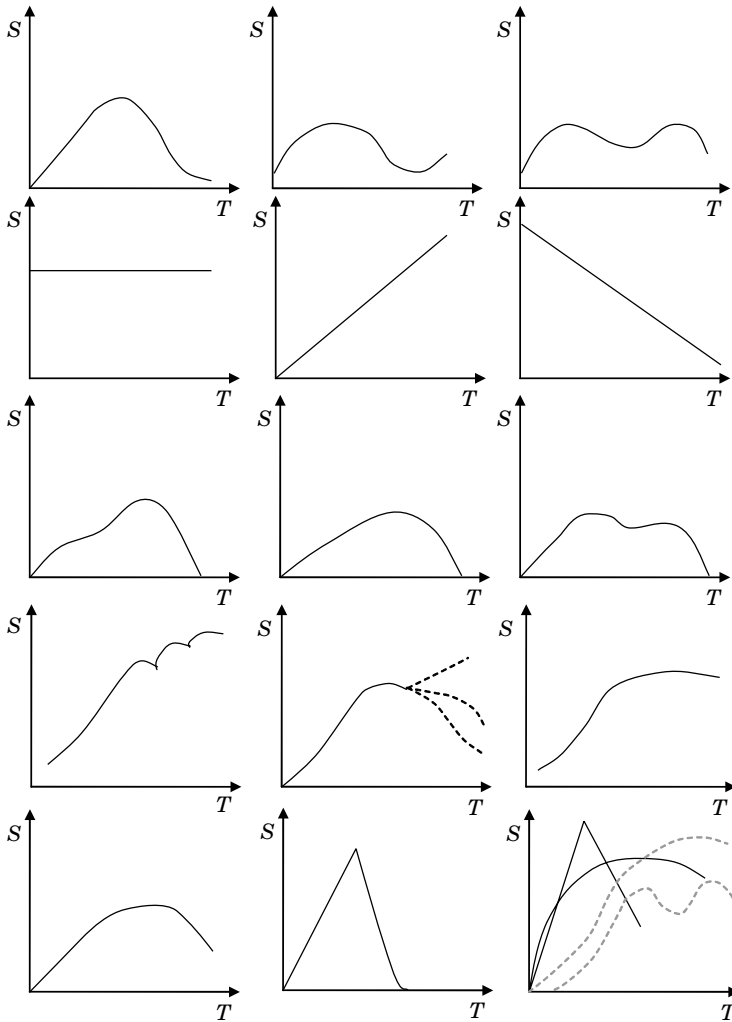


Fig. 2. Alternative shapes of product life cycle curves

Source: own work based on: COX (1967), KLUYVERT (1977), MEENAGHAM, O'SULLIVAN (1977), SWAN, RINK (1982), TELLIS, CRAWFORD (1989), WOOD (1999), GOLDER, TELLIS (2004).

Table 1  
Sample problems related to application of the classical product life cycle concept

Model assumption	Model application limitations	Author (publication year)
The model represents an analogy to the biological life cycle of the organism	<ul style="list-style-type: none"> <li>- products are not organisms and have no natural development cycle</li> <li>- product life is more complex and is not so predictable and characteristic as the life of a natural being</li> </ul>	ENIS, GARCE, PRELL (1977), TELLIS, CRAWFORD (1981), MASSEY (1999)
The model applies to the class, form and brand of product	<ul style="list-style-type: none"> <li>- opinions concerning the model usefulness for analysis of life or product classes and forms are diversified</li> <li>- the theory reflects a little or does not reflect at all the life cycle of product brands – their life cycle is more stable, much longer than provided according to the classical model</li> </ul>	POJLI, COOK (1969), DHALLA, YUSPEH (1976), MERCER (1993), TELLIS, CRAWFORD (1981)
The sequence of cycle stages is determined in advance	<ul style="list-style-type: none"> <li>- determination of the actual stage and forecasted future levels of sales becomes ambiguous</li> <li>- the duration of each stage may be different in case of different products, products may go through the cycle in different sequences and for different times</li> </ul>	DHALLA, YUSPEH (1976), O'SULIVAN (1977), SWAN, RINK (1982), KOTLER (1988), GOLDER, TELLIS (2004)
The model assumes inevitable and natural death of the product	<ul style="list-style-type: none"> <li>- the danger of self-fulfilling prophecy of product death appears because managers do not take any actions</li> <li>- when the product is in the last stage of its life this does not mean that the product must die; only unsuccessful or poorly managed products are condemned to death</li> </ul>	DHALA YUSPEH (1976), ENIS (1977), SMITH (1980), WOOD (1990)
The stages are determined by the level and dynamics of sales and profit	<ul style="list-style-type: none"> <li>- there are no clear and generally accepted criteria defining the beginning and the end of a stage in product life</li> <li>- identification of boundaries between stages depends on different life cycle patterns, as a consequence, the more variations of the classical model exist the more difficult the positioning of the product on the curve becomes</li> </ul>	TELLIS, CRAWFORD (1981), DAY (1981), WOOD (1990)
The product life curve is independent and company actions have no influence on it	<ul style="list-style-type: none"> <li>- the product life cycle development is a dependent variable conditioned by marketing activities</li> <li>- actions taken by managers may actually determine the shape and development of the curve over time</li> <li>- the time and development of product life are determined by the strategy applied and not the other way round</li> </ul>	DHALLA, YUSPEH (1976), HARRIGAN (1980), TELLIS, CRAWFORD (1981), WOOD (1990)
The model recommends the sequential strategies for product life cycle stages	<ul style="list-style-type: none"> <li>- the strategies in the model are very general and simplified, there is no unique strategy for every stage, different action strategies may be applied for the individual stage,</li> <li>- the product life cycle does not happen but it is rather the result of various factors that should be considered by those planning the marketing</li> <li>- marketing strategies depend not only on the stage and shape of the product life cycle but also the objectives of the company, nature of the market environment and business characteristics – the model dismisses those more important than sales that are to a certain degree more controllable by the managers</li> </ul>	SWAN, RING (1982), THIETART, VIVASA (1984), DHALA YUSPEH (1976), HARRIGAN (1980), ENIS (1977), THORELLI, BURNETT (1981), GALBRAITH, SCHENDEL (1982), WOOD (1990)

Source: own work based on: DHALLA, YUSPEH (1976), LAMBKIN, DAY (1989), MERCER (1993), RYAN, RIGGS (1996), WOOD (1999), GOLDER, TELLIS (2004), KORA (2006b).

## Theory of the extended product life cycle by Enis, Garce and Prell

As different from the “classical product life cycle theory” the “extended product life cycle theory” is based on the assumption that products are not like organisms and that they have no natural development cycle and that the product life cycle is not a function of time. This means that the shape of the sales curve and the time of product existence in the market are influenced directly by the strategic decisions taken by the company as concerns the given product. According to the proposed model ENIS et al. (1977) point out that it is the company that decides whether the product that was developed earlier is to enter the market, what level of sales is optimal, what forms the product is to assume and whether it is to be withdrawn from the market or to continue its life. In the theory of the extended product life cycle the product passes through the 5 stages identified below (Fig. 3), that are characterized by the specific cost to profit relations.

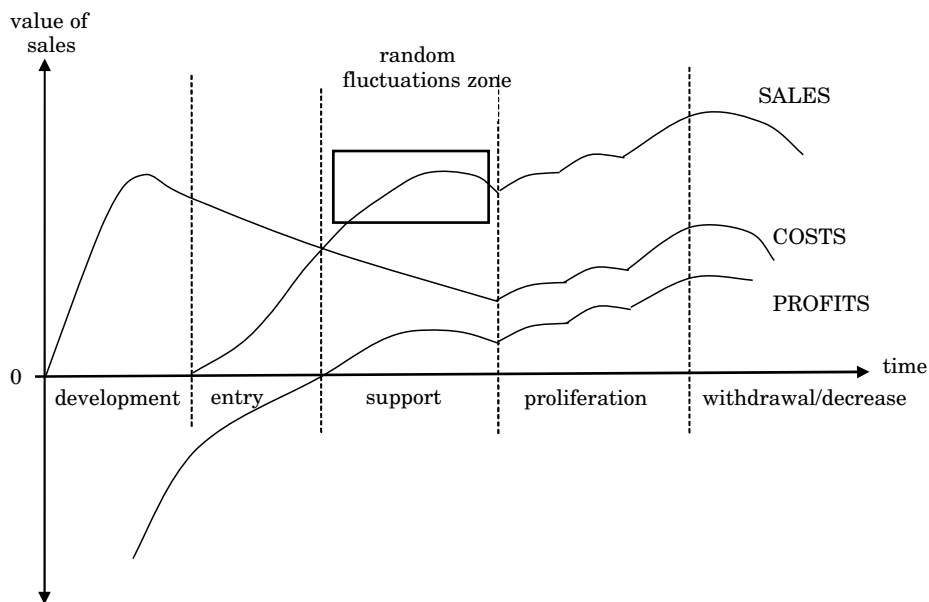


Fig. 3. Sales, costs and profits in the extended product life cycle

Source: ENIS, GARCE, PRELL (1977).

1. Development – this is the cost-intensive period of preparation of the product for floating to the market. Four types of new products may result from works on development of a new product: the product that incorporates a new

concept (a completely new way of satisfying the client needs), it may represent a new process (substitutes for an existing method of satisfying the specific desires of the client), it may be new for the company although similar products may already be available in the market or it can be a new model or improved version of the existing products.

2. Entry – the type of a new product is floated to the market with significant marketing support. At that stage, achievement of the predetermined level of sales or market share is the objective of the marketing strategy. At the entry stage the costs start decreasing although they remain significantly higher than revenues.

3. Support – the aim of the marketing activities at that stage of the product life is to maintain sales of the basic product at the predetermined and stable level although the sales may fluctuate (within the range of the so-called random fluctuations). Maintaining the product sales growth dynamics is becoming increasingly impossible because the competitors enter the market with similar products and the product loses the characteristics of a novelty. At that stage the break-even point is achieved – the product starts generating profits, the costs should reach a low level and the profits generated should allow recovery of financial outlays incurred in the new product development process.

4. Proliferation – this is the product diversification stage during which the managers alter the product offered in various ways to differentiate it from the competitors (numerous variants of the product appear differing in, e.g. packaging, price or attributes). The aim of that stage is to improve the degree of product adaptation to market segments that have not acquired the basic product yet. Taking the decision concerning diversification is, obviously, linked to the expectations of increasing the product sales. The marketing costs related to product diversification (promotion, product innovations) as well as profits increase during that stage.

5. Withdrawal/decline – at that final stage of product life the managers have two options. First, the product may be withdrawn from the market and substituted by a new, improved version of the dying product. Second, the product may be allowed to die its own death. In this case the brand is retained in the market without marketing support as long as the product sells. The decrease in sales results in a dynamic decrease of costs and gradual decrease in profits.

The presented concept provides a much better framework for development of the marketing strategy than the classical theory. The supremacy of that theory results from the fact that the manager that knows for how long he would like to keep the product in the market may plan the duration of each stage by modification of one of the variables (costs/profits). According to this

approach, in case of each stage in product life the product price level can be modified to obtain the appropriate cost to profit relation. Which is more, the duration of every stage, the appearing costs and revenues, depend heavily on the activities undertaken in product marketing in relation to the internal (production, finance, personnel) and external (competition, government regulations, client perception) conditions.

### **Theory of the “product evolution cycle” by Tellis and Crawford**

The “product evolution” model, referring, similarly to the model by Levitt to the nature of biological development of organisms formulated by Darwin, represents a different concept of “life” of the product. TELLIS and CRAWFORD (1981), conducting the review of the scientific materials on empirical confirmation of the classical product life cycle prove that many products do not pass through the foreseeable pattern of sales development assumed by Levitt. Which is more, they indicate that the majority of products change during their lifetime – the product evolves towards the forms that are more complex and better adjusted to the client demands. In that context Tellis and Crawford formulate the conclusion that instead of depending on the rigid and deterministic analogy to the biological life cycle according to which the organisms pass through the inevitable cycle from birth to death we should look at the product life more in the categories of the evolutionary process. As a consequence, like the biological evolution theory, it assumes gradual and continual change of the product at five characteristic levels of evolution:

- product is not an individuality in itself because it stems from the line of its predecessors, the changes taking place during product evolution are cumulated because every new version of the product is based in the earlier model and is a better version of it (the changes are cumulated);
- product evolution is perceived from the perspective of the consecutive, sequential changes in product characteristics; as a consequence we deal with the new or improved products (better usable for the buyers) in the market that substitute for the earlier models offered in the market and cause that the offer of products is much more diversified allowing more choice options for the clients within a given group of products (the changes are directional);
- product evolution occurs as a consequence of three interrelated and unique forces motivating the product change process over time, i.e. creativity of the managers, consumer behaviors and competitor behaviors; those forces influence the decisions on which products stay in the market and which products will have to vanish from the market (the changes are motivated);

– the product life curve shape is not predetermined as its shape and length are highly dependent on the external environment, i.e. the influence of the three forces and the strategy assumed by the company (the changes are model changes).

The character of those changes causes that the product passes through five patterns of the evolution process. Each of the following patterns actually has undetermined length, it can follow or precede other patterns and it is dependent not so much on the preceding pattern but on the ability of meeting the market challenges:

- divergence – represents introducing product of a new type to the market,
- development – represents rapid growth in sales of the new product; the product is gradually adjusted to the consumers to meet their needs the best,
- differentiation – appears when a highly successful basic product is diversified to adjust it to different interests of the consumers,
- stabilization – represents the model of stable or fluctuating sales characterized by several major changes in the product category,
- demise – appears when the product is unable to meet the client expectations or is unable to satisfy the changes in consumer demand any longer.

The evolution theory by Tellis and Crawford was subjected to critique by, among others, MASSEY (1999). He states, among others, that as the application of the Darwin model to product development description and its evolution and lasting in the market requires acceptance of the fact that product versions are accidental and entirely independent of the market needs it is contrary to the product development reality and its later economic results achieved in the market.

## **Theory of the international product life cycle by Vernon**

From the perspective of the current dynamic development of international business and marketing the classical analysis of local marketing activities for specific markets in the context of product life cycle should be enriched with the analysis of regularities concerning the international product life cycle. This could be useful for analysis and choice of the international marketing strategies. That is why it is also justified to present the classical theory by VERNON (1966) stemming from the neo technological approach to foreign trade. That pioneer theory has become the inspiration for creating the consecutive international product life cycle concept and its use by the international business. It describes the process of proliferation of innovation across state borders explaining why the countries initially exporting a specific product ultimately become the importers of that product (Fig. 4). Vernon identifies three product development stages (VERNON 1966, DULINIEC 2009, RYMARCZYK 2004):

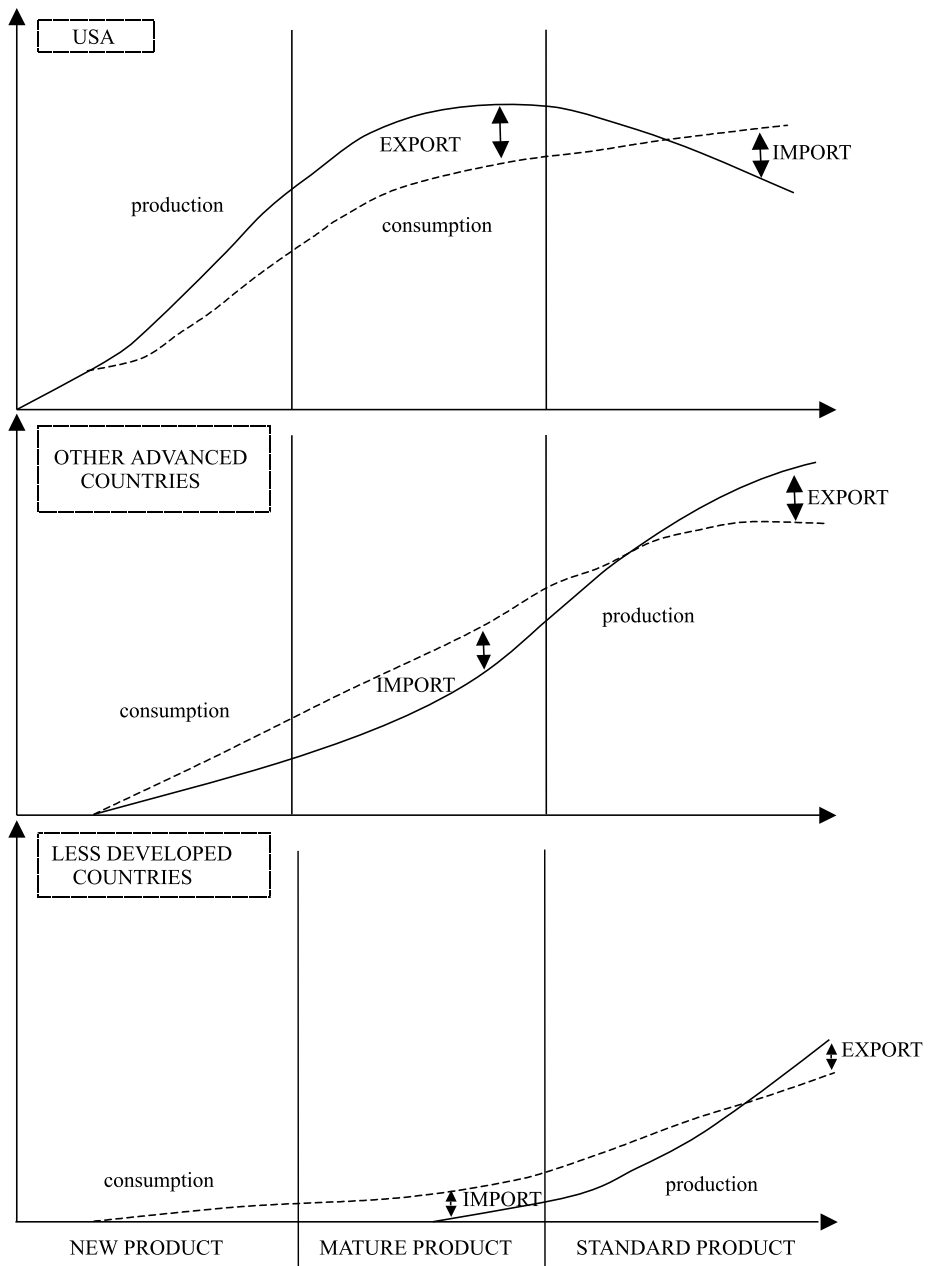


Fig. 4. International product life cycle

Source: own work based on VERNON (1966).



1. New product (stage 1). During the first stage production of a new product is initiated in reaction to the needs of the client in the country of origin<sup>2</sup>, where supportive production and market conditions exist. After some time, i.e. when the supply of the product has sufficiently satisfied the domestic consumption, the surplus of the product is exported to the markets of other advanced countries where the demand increases.

2. Product maturity (stage 2). During the second stage of the product life cycle export becomes an important aspect of the company innovation strategy. In this case the export covers highly developed countries that are not the innovators. After a period of increasing imports production of the earlier imported product starts in the importer country<sup>3</sup>. The production technology is already more mature and developed, production is cheaper and no labor possessing particularly high qualifications is necessary. Those countries decrease the imports of that product and start exporting it to the markets of poorer developed countries.

3. Standard product (stage 3). This stage presents the situation in the poorer developed countries initially participating in the international trade as importers. At the stage of product standardization the company transfers production to low cost (of labor, raw materials, energy) countries to control the costs<sup>4</sup>. Production in those countries is only partially focused on satisfying the local market needs because, as it is impossible to achieve the economy of scale there, a significant part of production is exported. Within the longer time perspective, with standardization of the product, the innovation country and the countries of the second group become net importers of the product as for the cost reasons production in those countries decreases as a consequence of moving production to other countries. In case of standardized products poorly developed countries can achieve comparative competitive advantage resulting from production location. As a consequence, advanced countries import products from their former clients because that is cheaper than continuation of production in their own markets.

Although the theory by Vernon is commonly presented in course books on internationalization, it is currently questioned for a number of reasons of key importance. First, it is losing its validity increasingly as a consequence of emergence of the Triad, BRIC<sup>5</sup>, globalization and dynamic development of

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<sup>2</sup> i.e. a highly developed country with technology innovation available.

<sup>3</sup> This may result from the company marketing strategy in the country of the innovative solution related to the choice of the foreign markets entry strategy: sale of the license, contracted production or construction of an own production facility.

<sup>4</sup> This may lead to contract production in such countries, establishment of companies or own production branches.

<sup>5</sup> BRIC – Brazil, Russia, India, China – countries forming the counterweight for the countries forming the Triad.

China. Second, the United States is not the only country in the world in which the product ideas are born currently. New products are born everywhere where the activities of companies in the field of research and development of product are subject to globalization. Third, at present companies create new products and introduce product modification within a very short time and in numerous markets simultaneously to recover the costs involved in research and development<sup>6</sup>. Fourth, An increasing number of companies operate in the international markets from their very establishment<sup>7</sup>. Internet caused that this is much easier, particularly for small and medium companies (HOLLENSSEN 2004). Despite those limitations, nevertheless, the theory by Vernon may provide the companies with knowledge useful in the process of company internationalization, particularly as concerns transfer of production to foreign markets that in a longer perspective and with the technology maturing substitutes for exports (DULINIEC 2004).

## Conclusion

The classical product life cycle model by Levitt is one of the most frequently quoted and taught elements of marketing theory. Nevertheless, considering its significant imperfections indicated in this paper it is losing its usefulness for business practitioners. That is why more pronounced exposition of other, more useful for marketing managers, alternative models explaining the relations existing between the product life cycle stages and choice of marketing activities and instruments in marketing literature is becoming increasingly justified.

None of the theoretical models presented is ideal and can be employed to provide simple solutions for marketing problems that are complex by nature. They rather create the frameworks for development of marketing strategies. Managers responsible for managing sales of product brands should be aware that the stage of life in which the product is represents just one of the criteria for choice of marketing activities and instruments. The choice of the marketing strategy is also determined by the objectives that the company intends attaining, tangible and intangible resources available to the company as well as widely understood micro and macro business environment. In this context the product evolution cycle concept represents a valuable and deserving attention model reflecting the current reality of product life. The superiority of the concept by Tellis and Crawford as compared to other concept is determined by

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<sup>6</sup> In the subject literature such a strategy is commonly referred to as the shower strategy.

<sup>7</sup> Those are companies referred to as born globalists.

the fact, among others, that through application of appropriate marketing strategy the company can influence directly the lifespan of the product in the market and the development of its sales within the determined market environment.

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## **ANALYSIS OF SELECTED INSTRUMENTS FOR MANAGING THE TAX RISK IN THE COMPANY**

„The brain of a mathematician will not be enough  
for taxes; here a philosopher is needed...”

*Albert Einstein*

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**Key words:** tax planning, tax optimisation, tax risk, tax risk management instruments, written individual interpretations, explanations by the National Tax Information Service, general interpretations, application for establishing of overpayment.

### **A b s t r a c t**

Planning, optimisation and tax risk are the fundamental components of tax risk management. Written individual interpretations represent one of the most frequently used instruments of tax risk management in Poland. They are a mass and highly popular means of mitigating the consequences of ambiguities in the tax law net to the explanations by the National Tax Information Service, general interpretations or the application for establishing overpayment that are the subject of consideration of this paper.

## **ANALIZA WYBRANYCH INSTRUMENTÓW ZARZĄDZANIA RYZYKIEM PODATKOWYM W FIRMIE**

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**Słowa kluczowe:** planowanie podatkowe, optymalizacja podatkowa, ryzyko podatkowe, instrumenty zarządzania ryzykiem podatkowym, pisemne interpretacje indywidualne, wyjaśnienia Krajowej Informacji Podatkowej, interpretacje ogólne, wniosek o stwierdzenie nadpłaty.

### Abstrakt

Podstawowymi elementami zarządzania ryzykiem podatkowym są planowanie, optymalizacja oraz ryzyko podatkowe. Wśród najczęściej wykorzystywanych instrumentów zarządzania ryzykiem podatkowym w Polsce znajdują się pisemne interpretacje indywidualne. Stanowią one masowy i bardzo popularny środek łagodzenia skutków niejasności prawa podatkowego obok wyjaśnień Krajowej Informacji Podatkowej, interpretacji ogólnych czy wniosku o stwierdzenie nadpłaty, które stanowią przedmiot rozważań tego artykułu.

## Introduction

Tax risk is the derivative of the tax regulations quality. Aiming at reduction of that risk the entrepreneurs employ various measures and actions that are referred to as the tax risk management instruments. The entrepreneurs take care of the adequate professional level of the accounting personnel, appropriate choice of the external advisors, introduce the internal procedures – mechanisms of settlements' control, in a conscious way identify transactions bearing an increased risk, etc. The instruments that require collaboration with the tax administration represent a special group of such instruments. And it is that group that includes the individual interpretations, explanations by the National Tax Information Service, general interpretations and applications for establishing overpayment that are the subject of consideration in this publication.

## Stages of tax management process

Planning, optimisation and risk are the key stages of the tax risk management process. Those notions or measures involved in them overlap frequently, mix and mutually influence one another.

## Tax planning

In the wider meaning tax planning means consideration of tax consequences in economic planning. Tax planning may cover a given undertaking or represent a component of continual monitoring of the current activities of the enterprise. Taxes represent a component in numerous elements of the financial plan such as revenues, operational and financial costs, depreciation and as a consequence appropriate identification of the tax consequences of the actions taken is of major importance for the financial result. In the practice of tax

advisory services special methods of tax burden measurement are applied on the base of which the so-called effective tax rate is one of the computed factors.

Tax planning does not cover just the issues related to the tax level. It should consider various elements such as, e.g. financial liquidity. Choice of longer settlement periods or payment of advances (e.g. quarterly) allows longer settlement times with partners and offers competitive advantage not only in the tax area (INIEWSKI, NIKOŃCZYK 2011, p. 4).

The choice of paying tax advances in the simplified form as 1/12 of the tax amount for the preceding tax year is an example of tax planning. A decision of that type allows avoiding the duty of computing the amounts of advances during the tax year and limits the risk related to the correct representation of revenues and costs during the tax year. However, limitation to the incidental choice without further analysis of its consequences for the conducted activity and economic environment may result in the lack of possibilities for performance of duties and even collapse of the company. In case the year according to which we determine the advances in the simplified form was a year of high profits and the current year is a crisis year it may happen that we are unable to generate revenues guarantying payment of the tax in the simplified way and we will be forced to pay taxes at the expense of the working capital. Continuity of tax planning, market observation and mitigating the demand as well as adequately early decision on a change of payment of the advances may protect the taxpayer against that risk.

In case of small taxpayers tax planning also encompasses the decisions concerning the magnitude of the conducted business activities. Tax regulations stipulate various forms of settlements for them. The costs of accounting activities according to those principles differ fundamentally. Exceeding the threshold of revenues (equivalent of 1 200 000 Euro) results in the duty of maintaining the accounting ledgers. The costs of implementing full accounting may be much higher than the profit achieved, which sometimes is just a one-time occurrence. For that reason many entities applying simplified forms of settlements plan exactly the levels of revenues generated in a given tax year and they are not interested in exceeding them, in particular if that could be of incidental character.

Given the complexity and variability of tax regulations, appropriate identification of the tax consequences is not always a simple task, e.g. the rules concerning the VAT reimbursement for those starting a business represent a relatively complex issue and some issues are interpreted in various ways (e.g. the right to reimbursement of the VAT prior to the registration). Appropriate identification of the times and amounts of the VAT reimbursement will allow effective planning of the cash flows and the ultimate costs of investment projects (INIEWSKI, NIKOŃCZYK 2011, p. 5).

The tax audit can be a helpful instrument in tax planning. Within the frameworks of the audit the complex analysis of correctness of tax settlements is conducted. The audit results allow implementing and designing a specific tax plan that indicates the possible directions of optimisation, methods of limiting and eliminating the tax risks or the methods for improving the financial liquidity.

Tax planning is frequently applied by taxpayers incidentally. In case of larger transactions planning of just a segment of activities without the detailed knowledge of the entire activity may lead to consequences opposite to the intended ones. Effective planning should be a continual process conducted with consideration for the market situation, development plans or changes in tax regulations.

Tax planning in the narrow sense means conducting material operations in a way allowing application of the possibilities for minimisation of tax burdens provided by the law. The typical issues considered within the frameworks of tax planning include: tax losses management, liquidity management, taxation on restructuring or transformation operations, mergers, divisions and contributions in commercial companies.

Tax planning is not only minimising the tax burdens but also elimination or assessment of the potential risk level. For many entrepreneurs the stability and predictability of business and legal environment represent the true value. Sometimes considering the differences in decisions and interpretations given by bodies of administration the taxpayers decide to opt for the transaction model that involves higher taxation but offers high level of certainty concerning the profit generated.

In the science of tax law and in the jurisprudence applied by tax administration bodies and courts of administration the debate on legality of tax planning leading to a decrease in the tax burden has continued for years. According to Prof. Z. Radwański “there is no legal base to assume the masochistic principle that the parties should always regulate their civil-legal relations in the way most beneficial to the fiscal system” (RADWAŃSKI 2000).

### **Tax optimisation**

The choice of the form and structure of transaction, within the frameworks and limits of the effective tax law, aiming at decreasing the tax burdens level is defined as tax optimisation (KUDERT, JAMROŻY 2007).

Narrow understanding of tax evasion is understood as bypassing the tax law and the method that is applied to prevent that phenomenon is the tax bypassing clause. In this context the term of legal use of gaps in the tax law is also applied (KARWAT 2003).



The sources of tax optimisation are to (KUDERT, JAMROŹY 2007, p. 23):

1. The right of choice – the legislator consciously established the choice of a specific method of taxation between the general rules and lump sum taxation, choice between the linear rate and progressive rate or the choice of a given method of depreciation. Similar options are provided in case of the indirect taxes. For example, the taxpayer may choose between entity exemption (a small taxpayer to the limit of 150,000 PLN, a farmer lump sum tax without a limit) and the general principles of the tax on goods and services. The right of choice also applies to the settlement periods, shift of the tax year or the intervals at which we pay the tax advances. All tax decisions should be preceded by appropriate calculation of benefits.

2. The discretionary freedoms – we deal with discretionary freedoms when providing or determining the exact values is not possible. The example here are all the tax regulations that provide for value estimation (valuation) of a given component of assets. The taxpayer may usually determine the market value of the object by means of one of the methods allowed by the regulations – the valuation method or the comparative methods. The method chosen may influence the object value and, as a consequence, the amount of tax.

3. The stimulating norms – the stimulating function of taxes means encouraging the taxpayers to specified behaviours. Tax regulations allow application of tax credits leading to decreasing the tax burdens that is making deductions from the taxation base or deductions from the income tax.

4. The development of the actual or legal situation – the same behaviours may actually result in different legal consequences, e.g. two persons performing actually the same job may be employed on the base of employment contract or provide a service on the base of a civil-legal contract. From the perspective of the regulations on the income tax those persons may achieve revenues from different sources: the employment relation, personal activity or non-agricultural business activity. From the economic perspective financing a capital company by its shareholder through own capital or through a long-term loan is almost equivalent while the tax on remuneration obtained from that (dividend and interest) is different.

5. Changes in regulations – the legislator, planning changes in the regulations concerning the principles of settlements or the taxation level, provides the possibility of optimisation by including a given transaction to the settlement period prior or post the change. In case of an increase in the income tax rate the taxpayers are interested in generating the income earlier and subjecting it to taxation using the lower tax rate while in the opposite situation they are willing to put off the sales so that it can be accounted for during the consecutive year and taxed by applying the lower rate.

The aim of the enterprise may also be to achieve simultaneous maximisation of profit and minimisation of income tax burden as the tax amount increases with the profit level. That is why the “maximisation of profit after tax” should be the actual objective of optimisation (KUDERT, JAMROŻY 2007, p. 25).

### **Tax risk**

The tax risk is a special type of business risk related to both application of certain sanctions and suboptimal control of expenditures. The nature of that risk is represented by the lack of certainty concerning tax consequences of the completed, current or future business transactions. It results from the measures undertaken in the tax environment and in the enterprise as well as negligence in the field of entity regulation and decisions. It is understood in most cases as the risk of appearance of an error, delay in tax settlements or appearance of irregularities exposing the taxpayer to tax arrears and interest or eventual penalties related to it.

Tax risk management means taking actions aimed at identification, assessment and control of the risk as well as control of the measures employed. The elimination or limitation of risk and protection against its consequences represent the objective of the tax risk management (NADOLSKA 2006). Types of tax risk sources are presented in table 1.

The results of surveys concerning the tax risk conducted by Ernst & Young and the Centre for Tax Documentation and Studies in Łódź in Poland in 2005 covering 170 Polish companies are as follows:

- the level of tax risk in Poland increases and is higher than in other countries,
- tax risk management is an increasingly important element in the financial policies of companies,
- self-evaluation of the tax policy conducted is higher than the conclusions from the detailed evaluation of individual functions,
- “human factor” based tax policies that, however, do not consider employees from outside the finance department,
- absence of written tax procedures,
- low evaluation of the IT systems role in tax risk management,
- tax risk management is of fundamental importance for company reputation and its governance,
- effective tax risk management is the most important criterion for evaluation of the directors for tax issues – the traditional criteria such as management of tax cash flows of the effective tax rate are of secondary importance,

Table 1

## Types of tax risk sources

Tax risk sources	
internal	external
1. Sources concerning resources <ul style="list-style-type: none"> <li>– insufficient knowledge or employees</li> <li>– errors in IT systems or absence of appropriate systems</li> <li>– not using tax advisory services</li> </ul> 2. Sources concerning organisation and procedures: <ul style="list-style-type: none"> <li>– unclear or not defined division of tasks among employees (departments)</li> <li>– absence of internal tax procedures</li> </ul> 3. Sources concerning communication: <ul style="list-style-type: none"> <li>– limited influence of the financial department on planning of transactions and format of contracts</li> <li>– absence of the exchange of information and documents among employees (departments)</li> <li>– lack of collaboration between the tax advisor (financial department) and the legal advisor (legal department)</li> </ul>	1. In the legislation development area: <ul style="list-style-type: none"> <li>– high variability of tax regulations</li> <li>– complicated and unclear tax regulations, legal gaps in regulations</li> <li>– inappropriate implementation of the EU directives in the domestic tax regulations</li> <li>– changes of regulations in linked areas</li> </ul> 2. In the law application area: <ul style="list-style-type: none"> <li>– differences in the decisions by tax and fiscal administration bodies</li> <li>– change of trends in jurisprudence concerning the official interpretations</li> <li>– pro-fiscal approach of tax and fiscal authorities</li> <li>– differences in the decisions by courts of administration</li> <li>– differences between decisions by tax and fiscal administration bodies and decisions by courts</li> <li>– not applying the principle of direct application of the EU directives by the tax and fiscal administration bodies</li> <li>– application by bodies of administration and courts of the judiciary concept of bypassing the tax law</li> <li>– lack of jurisprudence after amendment of regulations</li> </ul>

Source: own work based on INIEWSKI, NIKOŃCZYK 2011. pp. 32–33.

– Polish entrepreneurs devote too much time to routine operations related to tax settlements and too little time to tax risk management (NADOLSKA 2006).

The following can be considered the main tax risk management components:

- using tax advisory services.
- implementation of appropriate procedures in internal communication, documentation and maintenance of documents,
- implementation of the appropriate IT system,
- monitoring of changes in regulations and decisions by tax authorities and courts (NADOLSKA 2006).

A conscious taxpayer should also consider the risk of litigation and costs of litigation, the risk of the verdict and the risk related to differences in jurisprudence in evaluation of the tax risk.

## Tax risk management instruments

### Individual interpretations

The official interpretations of tax regulations represent now one of the main tax risk minimisation instruments. The format of the institution of the official interpretations has been subject to changes over the year – starting with the “unofficial letters by the Ministry of Finance”, through the official “written interpretation concerning the scope and method of application of tax law regulations” provided in the form of a decision and ending with the current text of the regulations governing the individual interpretations.

As of 1.01.2005, individual interpretations started protecting the taxpayer to the full extent. Initially the interpretations were binding to the bodies that issued them. Currently the key aspect is not so much the “binding” character for the bodies but the protection of the taxpayer, although the name “binding interpretation” is still commonly used. Implementation of full protection was the effect of the extensive activities undertaken by the Tax Board of the Polish Confederation of Private Employers Lewiatan.

The individual interpretations are issued on the base of the Regulation by the Minister of Finance on authorising issuance of interpretations of the tax law regulations of the 20<sup>th</sup> of June 2007 (DzU 2007 nr. 112, poz. 770), according to which the Directors of Tax Chambers in: Bydgoszcz, Katowice, Poznań, Łódź and Warsaw were authorised to issue, on behalf of the Minister of Finance, the individual interpretations specifying the scope of authorisation and the local and material competence of the authorised bodies (*Ordynacja podatkowa. Źródła i wykładnia prawa podatkowego...* 2010, p. 65).

Interested persons, if the question concerns their individual case, that is taxpayers, payers, collectors as well as third persons (e.g. future taxpayers, i.e. persons planning establishment of a company or foreign entrepreneurs planning establishment of a branch or representative office) are the entities eligible to apply for an interpretation (INIEWSKI, NIKOŃCZYK 2011, p. 37).

In the application for the individual interpretation the existing actual situation or the future event should be presented exhaustively and completely. Appropriate description of the actual situation requires knowledge of the regulations for interpretation of which we apply to avoid neglecting any elements of the actual situation that could influence taxation and scope of protection. According to the regulations, the application should also present the applicant’s position concerning the legal evaluation of the actual situation. Professionally and precisely supported position is of major importance, because there is a possibility to persuade the body to issue the “decision” favourable to the taxpayer.

If the application does not satisfy the formal requirements (the above-indicated elements), of the fee of PLN 40 is not paid within 7 days as of lodging the application, the application will not be considered.

The body of administration may relinquish presenting the legal reasons for the interpretation if it shares the opinion of the applicant. In case of negative opinion on the position of the applicant the individual interpretation contains the appropriate position with presentation of the legal reasons for it.

The individual interpretation shall be issued not later than within 3 months as of receipt of the application. That time does not include, e.g. the periods given for complementing the application or the delay on the side of the taxpayer. If the interpretation is not issued within the above time it is considered that on the day following the day on which the time for issuing it expired the interpretation confirming correctness of the position by the applicant to its full scope (so-called silent interpretation) was issued.

Full protection of the taxpayer is due when the application for providing the interpretation the taxpayer requests concerns the future event so distant that it will take place only after service of the interpretation. If the taxpayer enquires about the event that is future, current of that takes place in the near future the taxpayer protection is limited to absence of penal fiscal sanctions and interest for arrears. If the taxpayer enquires as concerns the actual situation that in his enterprise occurs as a permanent and repeated situation and the body of administration confirms his interpretation than only after receipt of the interpretation he may apply the tax regulations in the way specified in the application. Transactions or actions that took place before receipt of the interpretation are burdened with the risk that in the future as the result of control activities (as a result of which it can be changed) the duty of paying the tax in arrears (without interest) can be established (INIEWSKI, NIKOŃCZYK 2011, p. 40).

The individual interpretations, together with the application for issuance of the interpretation, after removing the data identifying the applicant and other entities indicated in the text of the interpretation are published in the *Biuletyn Informacji Publicznej* [Bulletin of Public Information], on the Ministry of Finance website. Careful and in depth analysis of the interpretations published provides knowledge on the interpretation of specific regulations by the tax authorities, which represents a useful instrument of tax planning and building tax strategies.

The interpretation protects the applicant only; it does not protect either a contractor, partner or family member, even if the actual situation and the method of applying the regulations is the same. Every person or entity participating in the transaction or in conducting business activity should lodge the application for providing the interpretation individually.

The individual interpretations are used frequently where the formal consultations with the officials could suffice. On all the minor issues, supported by the jurisprudence line applied by the courts, frequently obvious, the taxpayers should rely on such consultations without engaging the bodies in a relatively complex “interpretation” procedure (FILIPCZYK 2011, p. 162). Promotion of individual contacts in cases that because of their “low weight” do not require application of formalised procedures would allow the interpretation bodies concentration on complex issues that, thanks to that, could be determined in a more considerate and fully aware way.

The fee for consideration of the application was set at the level making the necessity of paying it no obstacle for any taxpayer that would be interested in receiving an answer to the enquiry of importance for his tax settlement according to the “interpretation” procedure. The level of that fee does not depend on either the degree of the legal issue complexity or the value of transaction, which the question concerns.

The fee dependent on the transaction value (the tax risk involved in it) and as a consequence reaching significant levels functions, e.g. in Germany. In case it is impossible to define that risk the cost is determined by the time devoted for the interpretation (EUR 50 per half an hour of work, but not less than EUR 100 for the interpretation). On the other hand, in the countries where involvement of tax administration resources in the interpretation proceedings is significant, issuance of individual interpretations is free (Spain, The Netherlands, Luxembourg, Cyprus) (FILIPCZYK 2011, pp. 151, 155).

### **Explanations by the National Tax Information Service**

Taxpayers may obtain information on correct ways of tax settlements through the infoline of the National Tax Information Service established on the 3<sup>rd</sup> of July 2006 on the base of the Regulation No. 13 by the Minister of Finance on organisation of tax offices and chambers and instituting their charters of the 13<sup>th</sup> of June 2006 (Official Journal of the Ministry of Finance No 7, item 55 as amended). The Service operates on the base of the Offices of the National Tax Information Service situated in Bielsko-Biała, Leszno, Płock and Toruń.

Taxpayers make mass use of the possibility of obtaining explanations on the contents of the tax law regulations by telephone from the National Tax Information Service. As of the 3<sup>rd</sup> of July 2006, i.e. the moment of establishment of the Service, until the end of May 2011, the total number of as many as 5,882,840 enquiries has been recorded. The number of questions asked by taxpayers during the entire period of operation of the Service is presented in

Table 2  
Number of questions from the taxpayers within the telephone consultations provided by the infoline of the National Tax Information Service concerning the PIT, year settlements, CIT, VAT, excise and e-returns during the years 2006–2011

Subject of questions	Year					
	2006	2007	2008	2009	2010	2011
VAT	54 469	323 306	497 248	605 210	664 556	303 307
PIT	54 177	422 895	631 199	548 796	553 520	193 056
Year settlements	–	–	–	146 788	155 934	156 841
CIT	10 886	80 757	104 903	115 617	113 242	54 936
Excise	–	–	251	9 193	6 543	3 254
e-return	–	–	4 342	5 697	10 279	8 663
Total	119 532	826 958	1 237 943	1 431 301	1 504 074	763 032

Source: own work based on the Reports from operation of the National Tax Information Service 2006–2008, 2009, 2010, January, February, March, April, May 2011, [www.mf.gov.pl/\\_files\\_/kip/statystyki](http://www.mf.gov.pl/_files_/kip/statystyki)

Table 2. Mass character and rapid increase of the telephone consultations provided by the Service year by year can be noticed.

As of 2008, the National Tax Information Service started providing explanations on the excise tax and e-return, and as of 2009 it has also opened the infoline devoted especially to the year settlements of the PIT. As of 2011, another subject of enquiries concerning the tax on civil-legal transactions, the PCC has also emerged. The number of questions in that area was at the similar levels during the consecutive months: in January 7613, in February 8292 in March 9585, in April 8524 and in May 8961.

The highest numbers of questions concerning the PIT, year settlements and e-declarations comes in April when the deadline for filing the year tax statements is coming. In case of the CIT the end of that period comes in March and as a consequence the largest number of questions in that area was recorded during that month. Questions concerning the VAT, excise and the PCC maintained similar levels during the individual months.

In practice both the courts and the Ministry of Finance marginalise the validity of explanations provided on the infoline by consultants. Proving that the taxpayer actually received the specific information may encounter significant difficulties as concerns the evidence. Recording of the conversation would be the simplest method; however, it is difficult because it would require consent by the parties talking. That situation makes conscious taxpayers that want to obtain full protection to apply for the individual interpretation.

## General interpretations

The Minister of Finance may also issue general interpretations. He issues them *ex officio* without a taxpayer's application when he considers it appropriate. General interpretations are published in the Official Journal of the Minister of Finance and in the Bulletin of Public Information. The publication date is of the same effect as service of the individual interpretation.

The general interpretations are few. General interpretations are not available for many tax problems important in practical terms. The actual situations to which those interpretations refer are outlined in them in arbitrary and general ways. In economic practice the actual circumstances appear in non-standard configurations and deviations from the situation described in the general interpretation appear. As a consequence obtaining the response fully "adjusted" to the specific issue is required (FILIPCZYK 2011, p. 28).

## Applications for establishing overpayment

To eliminate the tax arrears risk it is prudential to first pay the amount that the doubts concerning interpretation apply to as the tax (prudential measure) and then to apply with the application for establishing tax overpayment concerning that situation. This is not an ideal solution, nevertheless, because that instrument may be applied only *a posteriori* that is after performance of the operation. The taxpayer may not change the business plan or target or choose another development of his economic relations.

The analysed solution requires freezing, frequently significant, funds, which influences the financial liquidity of the entrepreneur. The "overpayment" procedure usually takes longer than proceedings for issuance of the individual interpretation and is highly complex as concerns the procedure. It also frequently involves bearing higher costs, particularly for the court registration fees (in this case we will have the ordinary proportional fee while in the cases concerning interpretation the fixed registration fee is paid) (FILIPCZYK 2011, p. 161).

Application of that instrument may result in control of the tax accounting to the extent exceeding the issue covered by the application for establishing overpayment, which represents the additional risk. Based on the experience it can be concluded that the awareness of the tax being already paid may influence the attitude of the tax authorities and even courts of administration with the negative influence on the chances for winning the litigation.

Still, however, in many cases the recommended path of proceeding may assume applying the application for establishing overpayment. This happens, in particular, in the situation when considering the circumstances of the case even the positive "interpretational" solution would have to be then comple-



mented by such an application. Employing that method is also recommended in case of a significant risk of incorrectness of the preferred method of tax settlement.

## **Summary and Conclusions**

The magnitude and diversity as well as mutual influences of the tax risk sources causes that the entrepreneur is unable to eliminate the tax risk imbedded in the activity he is conducting entirely. With no influence on the external factors, the entrepreneur should employ all the measures possible to prevent its internal sources.

The group of tax risk management instruments that require collaboration with the fiscal administration includes the individual interpretations, explanations by the National Tax Information Service, general interpretations and applications for establishing overpayment.

Among the above instruments the individual interpretations are used the most frequently. According to the data obtained from the Ministry of Finance, between the 1<sup>st</sup> of July 2007 and the 17<sup>th</sup> of September 2010 the bodies authorised by the Minister of Finance issued 78 567 interpretations in total. The number of interpretations increases year by year (from the 1<sup>st</sup> of July 2007 until the 31<sup>st</sup> of December 2007 – 4406, in 2008 – 24 214, in 2009 – 28 152, in 2010 by the 17<sup>th</sup> of September – 21 795 interpretations were issued).

Skilful use of individual interpretations as the tax risk management instrument is difficult. However, possessing such skills represents the condition for the taxpayers and their advisors to find the right place in the difficult reality of the Polish tax law. Thanks to the individual interpretations it is possible to survive in that reality (FILIPCZYK 2011, p. 165).

The Polish model of written individual interpretations of tax law is immensely popular and applied in mass scale in practice. It represents a measure for mitigating the consequences of ambiguities in the tax law. The individual interpretations are used frequently where informal consultations with officials could well suffice. In all the minor issues, supported by the line of jurisprudence by the courts, obvious as concerns the facts, the taxpayers should rely on such consultations without involving themselves and the bodies in the relatively complex “interpretational” procedure. The current position of the courts of administration encourages searching for protection of own interests in the formal procedure in every case.

It is worth noticing that currently, in the interpretational proceedings the minor and the major cases, easy and difficult, are treated in the same way as concerns the input of the efforts and means. Popularisation of informal contacts in easy cases would allow the interpretational bodies focusing on the

complex issues. It should also be noted that the low fee for consideration of the application on one hand allows general access of the taxpayers to obtaining the “interpretational” response while on the other the issues solving which is both complex and causes significant financial consequences for the State budget should not drown in the flood of trivial questions.

From year to year, the infoline of the National Tax Information Service is becoming an increasingly popular instrument used in tax risk management. During 6 years of its operation it has provided almost 6 million telephone consultations. The scope of advisory services provided has been expanded and next to the questions concerning the VAT, PIT and CIT the questions concerning the excise tax and the tax on the civil-legal transactions were added in 2008. However, as a consequence of absence of the evidence of the consultation provided the taxpayers that want to obtain full protection still apply for individual interpretations.

The institution of general interpretations is employed insufficiently. Such interpretations are issued rarely and in their contents the Ministry of Finance frequently takes the line unfavourable to the taxpayers.

The application for establishing overpayment is also used rather infrequently. This is related to a number of serious defects of that instrument. Overpayment of a tax requires freezing the funds, may result in the control of the entire business by the tax authorities, the taxpayer may not change the business plan while the “overpayment” proceedings take longer and is more complex than the individual interpretation.

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## **THE ROLE OF REAL PROPERTY TAX IN MUNICIPAL BUDGET MANAGEMENT**

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Key words: revenue, expenditure, real property tax, budget, municipality.

### **A b s t r a c t**

This study has been performed to analyze and evaluate some of the issues related to the budget of the municipality of Mława. The purpose has been to investigate the role of real property tax revenue in managing the municipal budget, and its effect on the municipal finances. The analysis comprised five years, from 2005 to 2009. The information necessary for analyzing the role of revenue from immovable property tax in the municipal budget consisted of secondary data (official statistics, available online in the electronic form, legal acts, reports prepared by the municipality, data from the Main Office of Statistics). Pearson's linear correlation coefficient has been used to demonstrate dependences between the revenue from real property tax and budget expenditure on investment projects.

## **ROLA PODATKU OD NIERUCHOMOŚCI W ZARZĄDZANIU BUDŻETEM GMINY**

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Słowa kluczowe: dochody, wydatki, podatek od nieruchomości, budżet, gmina.

### **A b s t r a k t**

Przedmiotem opracowania jest analiza i ocena zagadnień związanych z budżetem gminy Mława. Celem opracowania jest zbadanie roli dochodów z tytułu podatku od nieruchomości w zarządzaniu budżetem gminy oraz ich wpływu na gospodarkę finansową gminy. Analizą objęto 5 lat: 2005–2009. Materiały źródłowe, niezbędne do zbadania znaczenia dochodów z podatku od nieruchomości w zarządzaniu budżetem gminy, stanowiły dane wtórne (oficjalne statystyki udostępniane za pośrednictwem sieci web, w wersji elektronicznej, akty prawne, sprawdzania przygotowywane przez gminę oraz dane z GUS). Do przedstawienia zależności między dochodami z podatku od nieruchomości a wydatkami z budżetu na inwestycje zastosowano współczynnik korelacji liniowej Pearsona.

## **Introduction**

In Poland, a municipality (*gmina*) is the basic local government unit. It is a complex social and economic system. The law (Act on Municipal Government, Journal of Law 2009, No 157, item 1241) which specifies how municipalities are financed underlines the fact that each municipality runs its financial economy based on its own budget. The budget of a municipality functions separately from the state budget. When creating a budget, the overriding aim is to pay attention to the municipality's tasks and competences. The budget of a municipality is an important tool in managing this local government unit. It is considered to be the basic and the main instrument for running the finances of a municipality. With the budget, the municipal authorities can take action to shape the municipality's revenue and expenditure. The authorities can also rationally distribute the budgetary means, work out a local policy and reinforce the role of a municipality as an entity that can actively shape its budget. Ongoing changes in the world of economy force local government units, like municipalities, to improve the use of available financial means. For this purpose, however, municipalities must manage their budgets in the best possible way (KORZENIOWSKA, KRAWCZYK 2005, pp. 29–30).

This paper presents some issues related to a municipal budget, revenues and expenditures, with particular attention paid to the role of income from real property tax and the effect of taxes on the fiscal policy of a municipality. It is commonly believed that rational management of real property, and especially tax policy, can be a source of finance for investment in infrastructure.

## **Aim and methodology of research**

The authors have undertaken an attempt to specify the role of revenue from real property tax in managing the budget of a municipality and, consequently, in running local finances. Another objective has been to indicate how the tax policy can be improved. The study has been carried out on a case study of the urban municipality of Mława. The municipality of Mława lies in the northern part of the Province of Masovia. The study comprised the years 2005-2009. The data needed for our analysis of the role of property tax in municipal budget management were derived from indirect sources, such as official statistics available online in the electronic form, legal acts, reports prepared by the municipality and the data collected and made available by the Main Office of Statistics.

The comparative analysis method was employed, mainly vertical (dynamic) comparisons, owing to which it was possible to demonstrate how the revenue

from immovable property tax varied between 2005 and 2009; the analysis also enabled the authors to indicate and evaluate the dynamics of such changes in the consecutive years.

In addition, the research determined the dependence between real property tax revenue and investment expenditure in the municipality of Mława. To this aim, Pearson's linear correlation coefficient was applied, which showed the dependence between these two variables. The dependence was calculated from the following formula:

$$r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2} \sqrt{\sum_{i=1}^n (y_i - \bar{y})^2}} .$$

When Pearson's linear correlation coefficient is in the range  $\{-1,1\}$ , where  $r_{xy} = 1$  means exact positive linear dependence between the properties,  $r_{xy} = -1$  means exact negative linear relation between the properties, and  $r_{xy} = 0$  means lack of linear relation between the properties. The sign of Pearson's correlation coefficient indicates the correlation direction, whereas the absolute value of this coefficient determines the strength of the association between the variables. The higher the absolute coefficient between these two variables, the stronger the linear relationship between them (BUDA, JARYNOWSKI 2010, pp. 5–8). The results of our analysis are set in the tables and diagrams included in this article.

### Characterization of the analyzed area

Mława is an urban municipality, located in the northern part of the Province of Masovia. The municipality covers the town of Mława, which is nearly 600 years old. In 1975–1998, the town was in the Province of Ciechanów. After the administrative reform, on 1 January 1998, it was incorporated into the Province of Masovia. The municipality lies in the geographical region called the Mława Uplands, near the Mławka River. With respect to the physico-geographical division of Poland, Mława belongs to the macro-region called the Central Polish Lowlands, or more specifically, to their north-eastern part, known as North Masovia Lowland (*Plan rozwoju...* 2004).

On 1 January 2004, two villages, Piekiełko and Krajewo, were incorporated into the administrative boundaries of Mława, so the town's area rose by 1051 ha. The incorporated land was mainly woodland. In 2009, the municipality of Mława covered around 35 000 km<sup>2</sup> (3486 ha), with a large percentage of undeveloped land, as shown in Table 1.

Table 1

Area and structure of land use in the Municipality of Mława in 2009

Structure of land use	Area [ha]	Structure of land use [%]
Farmland	1 881	53.96
– arable land	1 474	–
– orchards	18	–
– permanent meadows	186	–
– permanent pastures	80	–
– developed farmland	118	–
– drainage ditches	5	–
Forest land, land with trees and shrubs	838	24.04
Developed and urbanized land	726	20.83
– residential area	427	–
– industrial areas	4	–
– other developed areas	3	–
– urbanized undeveloped areas	10	–
– recreational areas	19	–
– roads	188	–
– railroads	73	–
– others	2	–
Land under waters	5	0.14
– surface flowing waters	5	–
Ecological utility areas	0	0.00
Wasteland	32	0.92
Other land	4	0.11
Total registered area	3 486	100

Source: the authors, based on the data from the *Municipal Office in Mława* (2009), pp. 5–7.

About 54% (1881 ha) of the territory of the municipality consist of farmland, a prevalent type of land in this municipality, which belongs to typically agricultural areas, as reflected by the structure of land use. The farmland was dominated by arable lands. The remaining farmland (meadows and pastures) made up a small percentage of the total area of the municipality. Forests as well as areas covered by trees and shrubs, which covered 24.04% of the municipality's total area, as well as developed farmland made up another important component in the land use structure. Undeveloped and urbanized lands, which covered 20.83% of the total area, were mostly the land zoned for residential development.

The population structure of the municipality of Mława is presented in Table 2. Although two villages were incorporated into the town in 2004, the

total number of population was slightly decreasing during the study. In 2009, the population was 29 489 and a slight increasing tendency was observable compared to the previous year.

Population in the municipality of Mława in 2005–2009

Table 2

Specification	Years				
	2005	2006	2007	2008	2009
Number of population	29 761	29 648	29 465	29 480	29 489
Population density (persons/km <sup>2</sup> )	838	852	847	847	849

Source: the authors, based on the data of the *Main Office of Statistics*.

The average population density in 2009 was 849 persons per square kilometer. The District Employment Office in Mława had 1995 registered unemployed persons in 2009, including 987 women and 1008 men (as of 31 December 2009).

There were 2925 business entities registered in the Polish REGON system, operating in the municipality of Mława (Fig. 1).

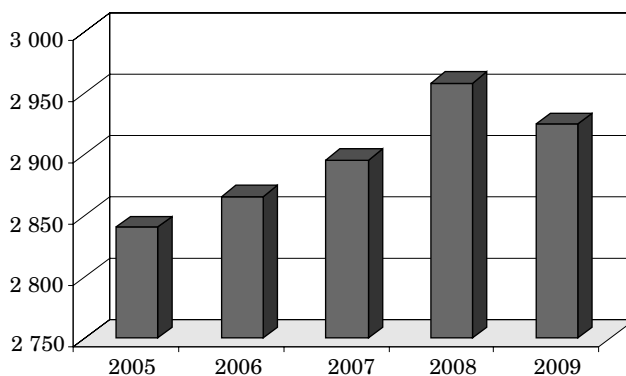


Fig. 1. Business entities operating in Mława

Source: the authors, based on the data of the *Main Office of Statistics*.

The number of business enterprises steadily grew until 2008. During the five analyzed years, it increased by 4.15%. In 2009, it fell slightly, with 34 business entities fewer than in the previous year. Most businesses registered in 2009 operated in section G, i.e. wholesale and retail trade, car and

motorcycle repairs, sale of personal and household goods. There were 1089 entities in this section, which corresponds to 37.23% of all registered businesses (*Strategia ... 2015*, pp. 14–15).

### The budget of the municipality of Mława in 2005–2009

The budget of the municipality of Mława is approved by the Council of the Municipality. Both budget revenues and expenditures over the five analyzed years changed significantly (Tab. 3).

Table 3

The budget of the municipality of Mława in 2005–2009 (in PLN)

Specification	Years				
	2005	2006	2007	2008	2009
Total revenue	53 597 095	56 803 151	66 038 962	69 478 476	73 420 126
Total expenditure	59 851 445	61 692 602	68 583 456	77 414 723	77 135 029
Balance	-6 254 350	-4 889 451	-2 544 494	-7 936 247	-3 714 903

Source; the authors, based on the data from the *Municipal Office in Mława*, pp. 10–12.

In 2005, the revenue did not exceed 53.6 million PLN, while the expenditure was about 59.9 million PLN. In the subsequent years, both the income and the expenses increased. In 2009, the revenue reached about 73.5 million PLN, and the expenditure slightly less than 77.1 million PLN. During the five years, we could observe an increase on both sides – the revenue and the expenditure. The revenue rose by 36.99% whereas the expenses grew by 28.88%. This was, to some extent, explained by the fact that in 2009 the expenditure decreased slightly versus the previous year, while the revenue continued to increase.

The highest per cent increase in the revenue versus the preceding year was noticed in 2007 (by 16.26%). In the other years, the revenue increased by about 5% compared to the previous year. The highest increase was recorded in 2008. The expenses rose by 12.88% versus the previous year. In 2009, the expenses fell by 0.36%.

The deficit in the municipality of Mława showed some considerable, periodical variations (table 3). In absolute value, the highest deficit appeared in 2008, when it reached 7.9 million PLN, which equalled to 11.42% of the municipality's total revenue. The smallest deficit was noted in 2007, when it was approximately 2.5 million PLN, that is 3.85% of the total revenue. The deficit compared to the total revenue was the highest in 2005 (11.67%) and the



smallest in 2007 (3.85%). However, it is worrying to notice such high periodical variations in the budgetary deficit. On the other hand, the deficit kept increasing because the municipality had to perform additional tasks, both own and commissioned ones.

### Revenue from real property tax

The revenue that the municipal budget obtained originated from different sources. The acquisition of budgetary revenue depends mainly on tax revenue. Tax revenue comprises the revenue from levied and collected local taxes, because the municipality is responsible for imposing their tax rates and can therefore freely use the income thus derived. This is the revenue that is collected exclusively for the budget of the municipality and not shared with any other budget.

Local taxes constituted one of the most numerous groups of income sources that affected the revenues acquired by the municipality and enabled the municipality to execute its own tasks (Tab. 4).

The revenue from collected taxes grew steadily. From just slightly above 11.2 million PLN in 2005, it went up to 15.0 million PLN in 2009. The revenue from local taxes equalled on average 20.21% of the total income. In the five analyzed years, real property tax dominated over all other forms of local taxes, as it generated on average 75.03% of the revenue. Another significant source of revenue was the tax on civil law transactions, which made up over 12.9% of the total revenue from taxes.

The income from real property tax is an important source of budget profits in the municipality of Mława (Fig. 2).

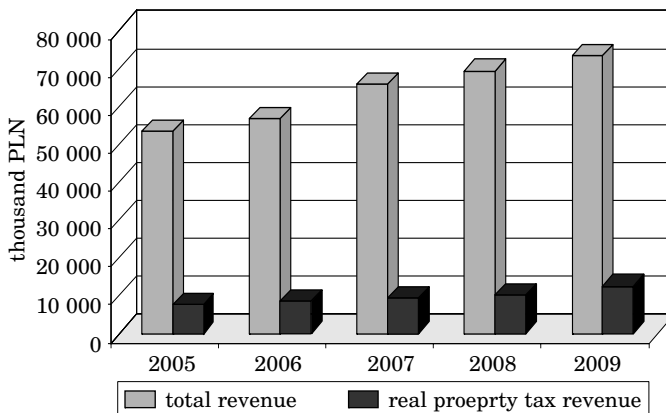


Fig. 2 Revenue from real property tax versus the total revenue of the municipality  
Source: the authors, based on the data from the *Municipal Office in Mława*, pp. 15–20.

Table 4

Revenue from local taxes in 2005–2009 in PLN

Specification	Years											
	2005		2006		2007		2008		2009			
	PLN	%	PLN	%	PLN	%	PLN	%	PLN	%	PLN	%
Real Property Tax	7 839 953	69.70	8 576 987	74.33	9 421 571	68.74	10 195 666	79.23	12 489 979	83.16		
Farmland Tax	94 171	0.84	76 733	0.66	85 239	0.62	100 500	0.78	96 330	0.64		
Forest Tax	15 431	0.14	11 734	0.10	11 973	0.09	13 100	0.10	14 532	0.10		
Vehicle Tax	894 445	7.95	937 162	8.12	1 061 140	7.74	1 130 000	8.78	1 033 354	6.88		
Dog Tax	30 771	0.27	37 047	0.32	31 023	0.23	20 000	0.16	16 083	0.11		
Inheritance And Gift Tax	136 174	1.21	234 988	2.04	996 443	7.27	200 000	1.55	211 858	1.41		
Self-Employment Tax (Tax Deduction Card)	79 186	0.70	64 820	0.56	45 379	0.33	40 000	0.31	33 386	0.22		
Tax On Civil Law Transactions	2 157 256	19.18	1 599 744	13.86	2 084 244	14.99	1 169 962	9.09	1 123 790	7.48		
Sum of local taxes	11 247 387	100	11 539 215	100	13 707 012	100	12 869 228	100	15 019 312	100		

Source: the authors, based on the data of the *Municipal Office in Mtawa*, pp. 15–20.

Figure 2 shows a simultaneous increase in the revenue, both total and derived from real property tax. It needs to be added, however, that in actual values the total revenue rose more quickly than the revenue generated by real property tax, although the per cent growth was varied. Should we take into consideration the per cent increase versus the previous year, than the total revenue rose more dynamically only in 2007. In the other years, the per cent increase in the revenue from real property tax was much higher. Thus, it can be concluded that the income from this tax was an important element of the municipal budget of Mława.

The revenue from real property tax was compared not only with the total budget revenue but also to the municipality's own income. The municipality's own income showed a high dynamics of growth in the town's budget (on average 12.64%) – Fig. 3.

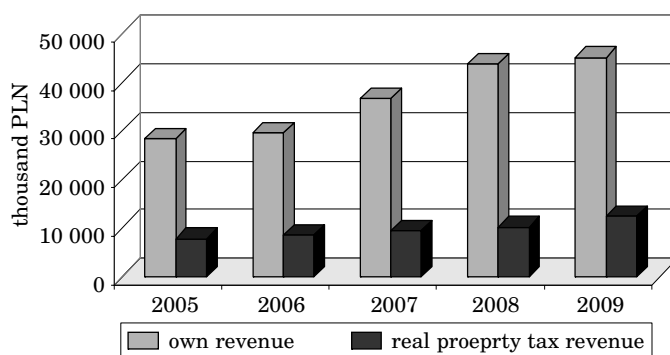


Fig. 3. Revenue from real property tax versus the municipality's own revenue  
Source: the authors, based on the data from the *Municipal Office in Mława*, pp. 15–16.

The revenue from real property tax kept increasing at a similar rate (on average, 12.49%) but, two years, i.e. 2006 and 2009, were an exception because then the municipality's own income rose more slowly and the tax-generated revenue increased faster. The municipality's own revenue in 2005 and in 2006 was similar. In the other years, the revenue of this type tended to increase. In turn, the revenue from real property tax rose steadily compared to each previous year. In 2009, a large increase in the municipality's revenue from real property tax was observed. Real property tax seems to be the most efficient source of own income for the municipality of Mława. In 2009, the share of real property tax revenue in total revenue in that municipality was about 17.01%, while in the other analyzed years it remained on a similar level of about 15% (Tab. 5).

Table 5

Share of real property tax revenue to own revenue and total revenue (%)

Specification	Years				
	2005	2006	2007	2008	2009
Share of real property tax revenue in total income	14.63	15.10	14.27	14.67	17.01
Share of real property tax revenue in own income	27.57	28.98	25.73	23.23	27.66

Source: the authors, based on the data from the *Municipal Office in Mława*, p. 19.

With respect to the years 2005–2009, in general the average increase in the contribution of real property tax revenue to the total revenue was 15.14%. The increase in the share of real property tax revenue in total revenue did not, however, show a definite direction of change. Regarding the share of real property tax revenue in the total own revenue, it was the lowest in 2008, when it equalled 23.23%, and the highest in 2006, reaching 28.98% of the total own income. The annual average revenue from real property tax during the analyzed period of time equalled 26.63% of the municipality's own revenue.

### Revenue from real property tax divided between taxpayers

The revenue from real property tax paid to the budget of the municipality of Mława originated from two groups of taxpayers. The first one consisted of physical persons and the other one was composed of legal persons. In all the analyzed years, the legal persons paid more in real property taxation than physical persons (Fig. 4). Both physical and legal persons paid increasingly more real property tax in each subsequent year. The increments, however, were not equal.

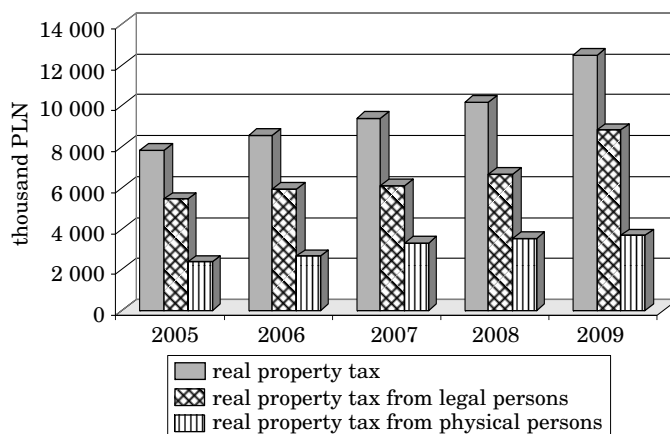


Fig. 4. Revenue from real property tax according to taxpayers

Source: the authors, based on the data from the *Municipal Office in Mława*.

The highest increase in the revenue paid by physical persons occurred in 2007, when they paid 24.91% more in real property tax than in 2006. In 2006 and 2007, the revenue obtained from real property tax paid by legal persons was similar. The highest increment in the revenue from real property tax paid by legal persons occurred in 2009, when it reached 32.14% versus the previous year.

In order to analyze the structure of revenue from real property tax according to taxpayers, percentages of the revenue obtained from each group of taxpayers in the total revenue from this tax collected by the municipality were calculated. The total revenue from this tax in each analyzed year was treated as 100%.

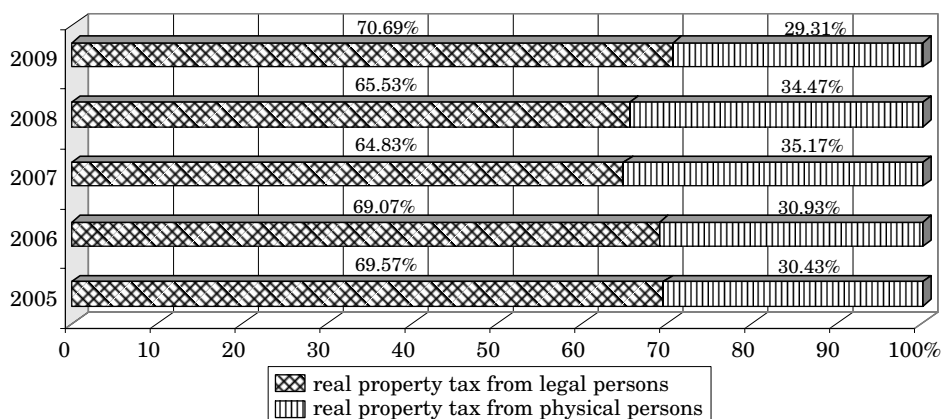


Fig. 5. Payers of the real property tax and their contribution to the total real property tax revenue  
Source: the authors, based on the data from the *Municipality Office in Mtawa*, pp. 15–20.

In 2005, 69.57% of the real property tax revenue was paid by legal persons. The remaining 30.43% originated from physical persons. In the subsequent two years, the percentage of the revenue from legal persons in the total revenue obtained from that tax decreased slightly to the advantage of the revenue acquired from physical persons. In 2008, the percentage of the real property tax revenue from legal persons rose again. Despite the value-related increase in the revenue from real property tax, the percentages of the revenue acquired from either of the two groups of taxpayers remained on a similar level in 2007–2008. This means that both groups paid higher amounts in the actual value due to real property tax. The authorities of the municipality should concentrate on both of these groups, but more attention should be paid to legal persons, as they generate higher budget revenue. However, the revenue obtained from physical persons as real property taxpayers should not be neglected.

## Revenue from real property versus the municipality's investments

The value of the real property tax revenue versus the investment projects carried out by the municipality of Mława is presented in table 6. The municipality was engaged in many investment projects, which required high financial outlays. The investment projects can be divided into the current and long-term ones. Some of the tasks the municipality carried out together with the District of Mława.

Table 6

The investment outlays versus the total expenditure

Specification	Years				
	2005	2006	2007	2008	2009
Investment expenses [PLN]	18 880 265	16 503 799	17 763 343	19 309 787	13 671 104
Total expenses [PLN]	59 851 445	61 692 602	68 583 456	77 414 723	77 135 029
Share of investment expenses in total expenses [%]	31.55	26.75	25.90	24.94	17.72

Source: the authors, based on the data from the *Municipality Office in Mława*.

The highest share of investment expenditure in the total expenditure appeared in 2005, when it reached 31.55%. In 2006–2008, the percentage of investment outlays to the total expenditure of the municipality decreased steadily. The decrease, however, was attributable to a higher rate of increase in the total expenditure rather than a decrease in the value of all investment projects. On average, during the five analyzed years, the investment outlays made up 25.37% of all the expenses of the municipality in Mława. The growing value of the investments proves that the local authorities are highly interested in completing investment projects. The year 2009 was an exception in that the investment outlays were on a low level. In that year, they made up just 17.72% of the total expenditure of the municipality. The investment outlays comprised mainly the funds allocated to construction and development of the municipal infrastructure, purchase of tangible assets and capital investments. The projects completed by the municipality contribute to enhanced attractiveness of the municipality to prospective investors and residents.

A considerable share of the means allocated to financing investment projects originated from the municipality's own revenue and especially from the real property tax revenue. It is, therefore, important to possess efficient sources of budgetary revenue. Among the factors which condition the volume

of investment outlays is the level of acquired real property tax revenues. In all the analyzed years, the investment outlays exceeded the revenues from real property tax.

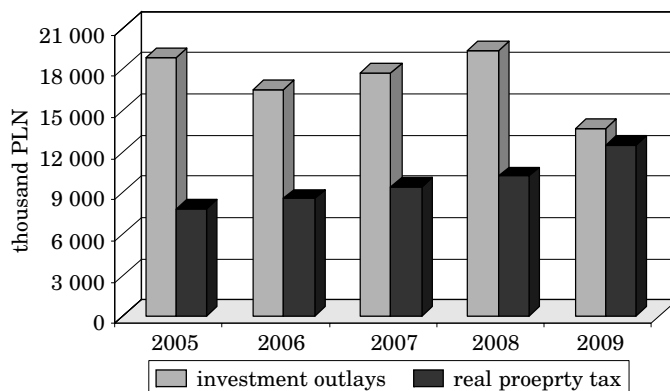


Fig. 6. Investment expenses versus the real property tax revenue  
Source: the authors, based on the data from the *Municipality Office in Mława*, p. 33.

In 2005–2006, the real property tax covered about 50% of the investment outlays. In 2009, the situation changed. The revenue from real property tax increased and the investment expenditure decreased. Both values came close to a similar level. The strength of the association between these two variables expressed the dependences between own revenues, especially real property tax revenue and the size of investment expenditure incurred by the municipality of Mława. Pearson's linear correlation coefficient was applied, which enabled the authors to determine the dependence between these two variables, indicating the direction and strength of this interaction.

The linear correlation coefficient for the revenue from real property tax and investment outlays indicates a strong dependence between these two values. The coefficient calculated for the municipality of Mława was +0.70 (Tab. 7).

Table 7  
Dependence between investment outlays and real property tax revenues

Specification	Years				
	2005	2006	2007	2008	2009
Real property tax [PLN]	7 839 953	8 576 987	9 421 571	10 195 666	12 489 979
Investment outlays [PLN]	18 800 265	16 503 799	17 763 343	19 309 787	13 671 104
Pearson's linear correlation coefficient	+ 0.70				

Source: the authors, based on the data from the *Municipality Office in Mława*, pp. 25, 35.

The above value of the coefficient supports quite a strong dependence between the revenue obtained from real property tax and the municipal investment outlays. The sign + in front of the coefficient defines the direction of the dependence between the two variables. The positive value of this coefficient informs us that as the investment outlays increase so does the revenue from real property tax, which is predominantly composed of betterment levy sums, imposed because of the constructed municipal infrastructure. The municipality is obliged to carry out such investment projects which will improve the development of local areas, and therefore encourage business enterprises to start operating on its territory.

### Summary

In the budget of the analyzed municipality, both the revenue and expenditure were observed to increase. It is worrying, however, to notice that the value of the budget deficit fluctuated periodically. Among the budget revenue, the strongest position is occupied by the revenue from legal persons, physical persons and other entities without legal personality. The revenue obtained from real property tax enables the municipality to perform its own basic tasks. The budget preparation depends mainly on the collection of real property tax revenue.

The revenue from real property tax is an important source of revenue for the municipal budget in Mława. The annual average share of this revenue in the total revenue of the municipality was 15.14%. In 2005–2009, the revenue from real property tax constituted on average 26.63% of own income.

There is correlation between the revenue from real property tax and investment expenditure (0.70). This is a positive relationship. An increase in the investment outlays is accompanied by an increase in the revenue from real property tax. The real property tax revenue is composed mainly of betterment levy, imposed because of the constructed municipal infrastructure.

Being able to make decisions about the acquired revenue, the municipality can manage its budget and shape relations between the budget income and expenditure.



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## **THE POTENTIAL OF CLUSTERS AS A DRIVING FORCE FOR REGIONAL DEVELOPMENT IN POLAND**

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**Key words:** potential of clusters, clusters, innovativeness, investment attractiveness, region.

### **A b s t r a c t**

In the age of economic globalization, regional development strategies have to take account of cluster-based development. The establishment of clusters encourages competition as they rely on the resources and key skills of enterprises on the one hand, and on the cooperation between enterprises within integrated production chains and on the learning process on the other. The objective of this study was to evaluate the potential of regional clusters and to determine their effect on regional development analyzed based on the levels of innovativeness and investment attractiveness. The research hypothesis formulated for the study was that the potential of clusters is correlated with the innovativeness and investment attractiveness of regions. The above hypothesis has been validated. A close positive correlation was noted between the tested variables. The benefits of clusters include increasing the innovativeness and investment attractiveness of regions, as well as improving the productivity of companies and stimulating the emergence of new businesses. Clustering contributes to reducing the unemployment rate and transaction costs, supports the absorption and diffusion of innovation and knowledge. Therefore, local authorities should promote cluster development as a driving force for regional development. This can be done through implementing cluster-based policies adapted to local conditions.

### **POTENCJAŁ POLSKICH GRON I IMPLIKACJE DLA ROZWOJU REGIONÓW**

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**S ł o w a k l u c z o w e:** potencjał klastrów, grona, innowacyjność, atrakcyjność inwestycyjna, region.

### **A b s t r a c t**

Obecnie w erze globalizacji w strategii rozwoju regionalnego wiele uwagi poświęca się rozwojowi gospodarczemu opartemu na klastrach. Wydaje się, że grona to realny sposób konkurencyjności w warunkach gospodarki globalnej wykorzystujący z jednej strony zasoby i najważniejsze

umiejętności firm, z drugiej zaś – bazujący na współpracy przedsiębiorstw w ramach powiązań w łańcuchu wartości i na procesie uczenia się. Celem artykułu jest ocena potencjału klastrów regionalnych oraz zbadanie jego wpływu na rozwój regionu analizowany w kategoriach innowacyjności i atrakcyjności inwestycyjnej. Do tak sformułowanego celu badań postawiono hipotezę badawczą mówiącą, że siła gron jest skorelowana z innowacyjnością regionów i ich atrakcyjnością inwestycyjną. Przeprowadzone badania potwierdziły słuszność postawionej hipotezy. Stwierdzono, że między badanymi zmiennymi istnieje ścisła, dodatnia zależność korelacyjna. Podnoszenie innowacyjności regionu oraz jego atrakcyjności inwestycyjnej to tylko nieliczne z wielu korzyści generowanych przez grona, do których zalicza się m.in.: wzrost produktywności przedsiębiorstw, przyspieszanie powstawania nowych firm, zmniejszanie bezrobocia, absorpcję i dyfuzję innowacyjności i wiedzy oraz niższe koszty transakcyjne. Władze lokalne powinny zatem dążyć do rozwoju klastrów, przynoszących wymierne korzyści w rozwoju obszarów, na których funkcjonują, przez kreowanie polityki opartej na klastrach, uwzględniającej lokalne uwarunkowania.

## Introduction

In the age of economic globalization, regional development strategies have to take account of cluster-based development. As noted by B. Asheim, P. Cooke and R. Martin „clusters (...) became a worldwide craze, a sort of academic policy fashion item” (ASHEIM et al. 2006, p. 3). In Poland, clusters became a topic of interest at the turn of the new millennium. Initially, that interest was spurred by the Lisbon Strategy whose aim was to make the European Union the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion. The provisions of the Lisbon Strategy have been since translated into the Europe 2020 strategy which focuses on partnership in the process of stimulating economic growth and creating new jobs. The goal of the new strategy is to develop an economy based on knowledge and innovation.

Clusters seem to offer a realistic approach to competition in a global economy which relies on the resources and key competencies of companies, business cooperation as part of the value chain and the learning process. The cluster concept appeared in Marshall's industrial district model, and it was popularized by M.E. PORTER in the 1990s. According to M.E. Porter, management guru and promoter of cluster policies, clusters are ready-made business tools that support local, regional and national development (PORTER 1998, p. 207). As defined by Porter, a cluster is “a geographic concentration of competing and cooperating companies, suppliers, service providers, and associated institutions” (such as universities, agencies and business associations of various lines) (PORTER 2000, p. 15).

Porter's concept gained widespread popularity among academics, business practitioners and politicians, and it resulted in the development of a cluster-based policy. In Poland, the cluster model is promoted on account of the

benefits generated for cluster participants and the regions where the clusters operate. Clusters can be the driving force for regional development, and they offer a fertile ground for innovation and increased competitiveness (SOLVELL et al., 2006, p. 24). It has been argued that effective and conscientiously implemented cluster-based policies support the transformation of clusters into regional innovation systems that absorb and create process, product and organizational innovations (BRODZICKI et al., 2004, p. 7).

Clusters can be classified according to the following three criteria:

1. Type of initiated action – initiatives aiming to search and analyze clusters, programs for creating new clusters, supporting the existing clusters and their upgrading, i.e. the transformation of the existing clusters. The above search efforts are referred to as mapping. The results of the mapping process constituted the experimental material for this study;

2. Territorial coverage of initiatives – initiatives may be classified as local, regional, trans-border operations, national policies or international actions;

3. Key animators – local or regional authorities, associations of non-governmental organizations (e.g. entrepreneurs, universities), international organizations. Clusters also attract the interest of self-governments, business organizations, the European Union and the OECD (OLEJNICZAK 2002, p. 18).

The above criteria for cluster classification clearly indicate that there is no single approach to cluster analysis or research. According to Jacobs and de Man, clusters can be classified in one of the three categories. The first covers clusters representing the geographically focused business activity of a group of companies that operate in related market segments and cooperate with universities, research and development centers. The second category includes clusters that are vertically integrated production chains. The third category is represented by clusters covering entire markets or market segments, e.g. dairy clusters, food clusters, etc. (JACOBS, de MANN 1996, p. 426, BRODNICKI, SZULTKA 2002, p. 47).

## **Methods**

The research method has been developed by the European Cluster Observatory (ECO). The cluster map (database) in the EU countries accounts for two dimensions: regional and sectoral. The cluster sector is a group of all industries classified in one of the 38 cluster categories. They have been defined based on Porter's definition of a cluster, as cited above, and elaborated by the Institute for Strategy and Competitiveness of Harvard Business School. The cluster category comprises industries with similar attributes. The "agricultural products" category, for example, covers the sugar industry, agricultural services

and alcoholic beverages. A region, on the other hand, is a specific geographic area where the establishment and growth of clusters is stimulated through the advantage of agglomeration. For statistical purposes (data comparability), the European Union has been divided into 41 NUTS-2 regions that cover the territory of the new Member States.

The strength of regional clusters was evaluated with the use of the following three parameters in respect of which stars were awarded to each cluster:

- cluster size – showing whether the cluster fits in the group of the top 10% clusters in Europe in a given cluster category as regards employment. If so, the cluster is awarded a star. If employment reaches a satisfactory level (at which a star is awarded), it is assumed that the probability of the cluster generating significant and positive effects will be high;

- cluster specialization – the more specialized the cluster in a given category, the higher the probability that the desired economic effects will be achieved. The following relationship is a measure of specialization:

$$\frac{\text{employment in the region of the given cluster category} / \text{overall employment in the region}}{\text{employment in a given category in Europe} / \text{overall employment in Europe}}$$

The cluster was awarded a star when the specialization quotient was 2 and higher;

- employment concentration – this parameter compares employment within the cluster to overall employment in the region. If the cluster had a high share of overall employment in the given region, it was assumed that the probability of the cluster generating economic advantages was high. A star was given to a cluster in the top 10% group of all clusters in the region classified in accordance with this parameter.

The above three parameters were based on employment data. Other measures, such as productivity in the region or added value, were not applied because data could not be operationalized in particular Member States. The power and strength of clusters functioning in a specific regional environment were determined in the regional and sectoral dimension.

The objective of this study was to evaluate the potential of regional clusters and to determine their effect on regional development analyzed based on the levels of innovativeness and investment attractiveness. The research hypothesis formulated for the study was that the potential of clusters is correlated with the innovativeness and investment attractiveness of regions. The analysis was carried out with the use of secondary data published by ECO in 2008. It also relied on secondary data regarding the innovativeness and investment attractiveness of Polish regions, defined as their ability to attract investors by

providing them with an optimal combination of location benefits in the proposed investment sites. Location benefits are the potential benefits of cluster attractiveness.

### Stars as a measure of clusters' regional strength

As discussed in the methodology section, to receive a star, a cluster has to fulfill a set of requirements in three areas: cluster size, specialization and employment concentration (aggregation). The above factors indicate whether the cluster reached critical mass (SZULTKA 2004 et al., p. 15)<sup>1</sup>. The attainment of critical mass determines the achievement of economic results that support the growth of the region and industries in a given cluster category. The potential of clusters in Poland is presented in Table 1.

Table 1

The potential of clusters in Poland

Voivodeship	Number of stars awarded to clusters			Total number of clusters	Total number of stars awarded
	3	2	1		
Dolnośląskie	–	1	9	10	11
Kujawsko-Pomorskie	–	3	6	9	12
Lubelskie	–	3	6	9	12
Lubuskie	–	2	6	8	10
Małopolskie	–	2	8	10	12
Opolskie	–	3	7	10	13
Podkarpackie	–	3	5	8	11
Podlaskie	–	1	6	7	8
Pomorskie	–	2	7	9	11
Świętokrzyskie	–	1	6	7	8
Zachodniopomorskie	–	1	6	7	8
Mazowieckie	1	6	7	14	22
Warmińsko-Mazurskie	1	3	4	8	13
Łódzkie	2	2	7	11	17
Śląskie	3	2	4	9	17
Wielkopolskie	3	4	4	11	21
Total for Poland	10	39	98	147	206

Source: own work based on European Observatory Cluster 2008.

<sup>1</sup> As noted by T. Szultka, the attainment of a given critical mass level implies the availability of sufficient resources for building the cluster's potential and a significant share of regional economy. Refer to: Szultka 2004.

The cluster potential in Poland is generally average or low, as demonstrated by a small number of clusters awarded three stars. Those clusters were situated in Wielkopolskie, Śląskie, Łódzkie, Mazowieckie and Warmińsko-Mazurskie voivodeships. The clusters' low potential could be attributed to short operating time. Cluster-based policies had been popular in the world for many years, but in Poland, the clustering concept began to be promoted on a large scale only in the new millennium. Programs supporting the development of clusters and cooperation, financed from the European Structural Funds, have significantly contributed to the popularization of clusters. One of them is the Innovative Economy Operational Program for 2007–2013 and measure 5.1, Support for Cooperative Connections of Supraregional Importance. In Wielkopolska, the best-known clusters include the Boiler Cluster, the Wielkopolska Furniture Cluster and the Wielkopolska Chemical Cluster. The Śląskie voivodeship operates the Innovative Silesian Cluster of Clean Coal Technologies. The Media Cluster and the Łódź Cluster have been called into existence by the local authorities to maximize the growth potential of the city and region of Łódź by involving the self-government, research and development centers, universities and local businesses in the process of creating new jobs (40 000 by 2015) and reducing unemployment (ROMANIUK 2008, p. 223–227). The leading cluster in the Warmińsko-Mazurskie voivodeship is the Furniture Cluster of Elbląg, and in Mazowieckie region – the Multimedia and IT Systems Cluster.

The majority of clusters characterized by average development potential (two stars) were found in Mazowieckie (6 clusters), Wielkopolskie (4) and Warmińsko-Mazurskie (3) voivodeship. Clusters with the lowest growth potential operated in Dolnośląskie (9 clusters awarded 1 star) and Małopolskie (8) regions. The Mazowieckie voivodeship operates Dolina Ekoprodukcji (Organic Valley) and the Construction Cluster. The Warmińsko-Mazurskie region seats food clusters (Beef Cluster) as well as Mazurskie Okna which brings together door and window manufacturers. Other regional clusters include the Raw Materials Cluster in Dolnośląskie voivodeship and Eklaster IT Cluster in Małopolska. The clusters in Podkarpackie voivodeship have been rated relatively poor. The Aviation Valley, one of the best known Polish clusters from the Podkarpackie region, has been awarded two stars in a ranking of the European Observatory Cluster.

The Polish clusters were differentiated with regard to all factors determining their regional potential (strength), i.e. size, specialization and employment concentrations. As regards size, the highest cluster potential was noted in the voivodeships of Mazowieckie (average size 1.15), Śląskie (0.93) and Wielkopolskie (0.87) (Tab. 2).



Table 2

## Determinants of cluster potential

Voivodeship	Cluster size	Cluster specialization	Employment concentration
Mazowieckie	1.15	1.96	2.29
Śląskie	0.93	1.86	3.00
Wielkopolskie	0.87	2.38	3.34
Małopolskie	0.85	2.74	2.40
Łódzkie	0.67	2.51	3.09
Pomorskie	0.63	2.72	3.48
Podkarpackie	0.61	3.13	3.45
Dolnośląskie	0.60	1.98	2.62
Kujawsko-Pomorskie	0.52	2.48	3.24
Zachodniopomorskie	0.40	2.46	4.13
Lubelskie	0.38	2.17	3.38
Warmińsko-Mazurskie	0.38	2.89	4.01
Lubuskie	0.33	3.33	3.70
Opolskie	0.20	2.13	3.16
Podlaskie	0.20	2.03	3.84
Świętokrzyskie	0.17	1.60	3.11

Source: own work based on European Observatory Cluster 2008.

Cluster specialization paints a different picture. The most highly specialized clusters delivering the highest economic benefits for their respective regions were noted in the voivodeships of Lubuskie (average specialization quotient of 3.33, i.e. 1.33 higher than the threshold of 2 points required for one star), Podkarpackie (3.13) and Warmińsko-Mazurskie (2.89). The predominant cluster categories in each region seem to be determined by the growth of industries and sectors of the national economy. North-eastern Poland is a predominantly agricultural region, whereas the voivodeships of Mazowieckie, Dolnośląskie and Śląskie have an industrial orientation. The above division explains the higher variation in cluster categories in a given area and, consequently, a lower degree of specialization. To illustrate, Warmińsko-Mazurskie and Podlaskie voivodeships are characterized by a predominance of food clusters, including the Beef Cluster or Poland's first Dairy Cluster, whereas a total of 20 cluster categories have been identified jointly in Mazowieckie and Wielkopolskie regions.

Employment concentration was the last factor determining cluster potential. The highest ranking voivodeships in this category were: Warmińsko-Mazurskie (average employment in cluster to total employment reached 4.01), Podlaskie (3.84) and Lubelskie (3.38). The regions of Mazowieckie, Małopolskie and Dolnośląskie ranked last in this respect.

## Cluster strength, and regions' investment attractiveness and attractiveness to investors

The regions' investment attractiveness and attractiveness to investors were compared against the strength and number of clusters in every voivodeship. Their investment attractiveness is presented in Table 3.

Investment attractiveness of voivodeships in Poland in 2008

Table 3

Voivodeship	Investment attractiveness of the region		Region attractiveness to investors	
	value	rank	value	rank
Śląskie	0.85	1	0.02	8
Mazowieckie	0.58	2	1.20	3
Dolnośląskie	0.50	3	1.29	2
Wielkopolskie	0.41	4	1.30	1
Małopolskie	0.25	5	-0.44	11
Pomorskie	0.14	6	0.42	4
Łódzkie	0.10	7	0.33	5
Zachodniopomorskie	0.02	8	0.24	6
Lubuskie	0.01	9	0.18	7
Opolskie	-0.08	10	-0.11	9
Kujawsko-Pomorskie	-0.21	11	-0.69	13
Podkarpackie	-0.34	12	-0.45	12
Warmińsko-Mazurskie	-0.40	13	-0.17	10
Świętokrzyskie	-0.55	14	-1.06	15
Lubelskie	-0.61	15	-1.00	14
Podlaskie	-0.67	16	-1.08	16

Source: *Atrakcyjność inwestycyjna województw i podregionów Polski 2008*, Ed. T. Kalinowski, IBnGR, Gdańsk 2008, p. 6.

The ranking of investment attractiveness is topped by four regions: Śląskie, Mazowieckie, Dolnośląskie and Wielkopolskie. Those voivodeships score above average results in various attractiveness categories. They are characterized by well-developed social and economic infrastructure, large markets and high availability of transport networks. Their weaknesses include low levels of public safety (excluding Wielkopolska) and, in particular in the Mazowieckie region, very high employment costs due to a high level of wages in the region.

The ranking closes with Świętokrzyskie, Lubelskie and Podlaskie regions which received the lowest marks as regards their investment attractiveness.

The above voivodeships scored high marks in respect of public safety. Public safety contributes to investment attractiveness by fostering a feeling of personal safety and responsibility for the investor's closest co-workers and partners (*Atrakcyjność...* 2008, p. 6–8).

Voivodeships were also evaluated with regard to their attractiveness to investors. Regions that scored high marks in this respect were characterized by a high number of investment offers, high availability of promotional information and a high number of competition winners, such as the Fair Play Municipality contest. The data presented in Table 2 indicate that Wielkopolskie was the most attractive voivodeship for investors, followed by Dolnośląskie, Mazowieckie, Pomorskie and Łódzkie.

Clusters with the highest potential, i.e. with best access to resources required for growth, were situated in regions characterized by the highest investment attractiveness and attractiveness to investors. The strength of those correlations was tested by determining Pearson's correlation coefficient. A close correlation was reported between the number of stars and the region's investment attractiveness (correlation coefficient of 0.632). Similar dependencies were noted between the number of clusters and the voivodeship's investment attractiveness ( $r = 0.626$ ). The correlations between the number of stars, the number of clusters in the region and the region's attractiveness to investors was also studied. The coefficients of correlation reached 0.613 and 0.655, thus showing that the above variables were relatively strongly correlated.

### **Cluster strength and innovativeness**

The analyzed regions' innovativeness was compared against the strength and the number of local clusters. The ranking of voivodeships evaluated based on the Regional National Summary Innovation Index (a total of 10 indicators) and an index-based ranking is presented in Table 4. The most innovative regions that received above average scores in the RNSII ranking and an index-based ranking that takes into account the weights of 10 EIS (European Innovation Scoreboard) indicators were: Mazowieckie, Małopolskie, Dolnośląskie, Pomorskie, Śląskie and Wielkopolskie. The above regions are characterized by large populations of university graduates, considerable spending on R&D, financed by both the State and businesses, a high share of turnover generated by innovations, high level of employment in the high-tech market. The ranking ends with the voivodeships of Świętokrzyskie, Warmińsko-Mazurskie and Lubuskie. In the above regions, a relatively high number of innovations were introduced by SMEs in the industrial sector, but the remaining indicators remained low.

Table 4

Ranking of voivodeships in the group of EIS indicators (a total of 10 indicators)

Voivodeship	RNSII (10)	Ranking according to RNSII (10)	Index	Index-based ranking
Dolnośląskie	0.5957213	3	0.0085921	3
Kujawsko-Pomorskie	0.3565590	12	0.0042267	13
Lubelskie	0.4323588	8	0.0053648	10
Lubuskie	0.2504307	16	0.0030001	16
Łódzkie	0.4104266	9	0.0054511	7
Małopolskie	0.6846804	2	0.0098792	2
Mazowieckie	0.8089620	1	0.0133084	1
Opolskie	0.3758403	11	0.0047551	12
Podkarpackie	0.3827155	10	0.0041468	14
Podlaskie	0.4391708	7	0.0060080	9
Pomorskie	0.5887526	4	0.0078180	5
Śląskie	0.5618853	5	0.0069632	6
Świętokrzyskie	0.3054953	14	0.0043671	11
Warmińsko-Mazurskie	0.2756757	15	0.0032874	15
Wielkopolskie	0.5401345	6	0.0081412	4
Zachodniopomorskie	0.3412197	13	0.0052106	8

Source: *Analiza porównawcza regionów w Polsce*, 2008, p. 47.

Coefficients of correlation were determined to investigate the dependency between the strength and the number of regional clusters and the studied regions' innovativeness. The number of clusters and their potential were compared with the voivodeship's innovativeness according to RNSII criteria to reveal a close correlation between the analyzed variables. The coefficients of correlation were determined at 0.73 and 0.56, respectively. The higher the number of strong clusters in a given region, the greater the voivodeship's level of innovativeness. Similar correlations were reported by comparing the number and the potential of clusters with the regions' innovativeness evaluated based on EIS indicators. The coefficients of correlation reached 0.75 and 0.57, respectively.

## Conclusions

The results of this study point to a close correlation between the strength and the number of clusters, the region's innovativeness, investment attractiveness and attractiveness to prospective investors. These are only some of the

benefits generated by cluster initiatives. Many authors claim that clusters are the new approach to increasing the competitive advantage of the national economy and regional economies in the international arena (BRODZICKI et al., 2004, p. 9). Effective clusters boost productivity, they contribute to the number of new businesses, they reduce unemployment, they promote the absorption and dissemination of innovations and knowledge, they lower transaction costs, they promote market specialization and contribute to overall economic growth. The above explains why clusters have attracted the interest of market actors and institutions responsible for regional growth. Local authorities should support the growth of clusters by implementing cluster-based policies that account for the specific needs and assets of the local market.

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**REGIONAL DIFFERENTIATION OF THE FOREIGN  
DIRECT INVESTMENT INFLOW IN POLAND  
IN 2003–2008**

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**Key words:** region, foreign investments, regional development.

**A b s t r a k t**

The inflow of foreign direct investments (FDI), according to many theories, can be a factor facilitating the processes of regional business convergence. These concepts indicate that FDI not only create additional demand in the internal market, but also contributes to the improvement of the efficiency of domestic entities through the transfer of new technologies and production organization methods. At the same time, there is a group of theories which emphasize the significant role of FDI in deepening spatial disproportions in the level of economic development.

This study is an analysis of regional diversity in the inflow of direct foreign investment in Poland in 2003–2008. In particular, the research focuses on settling the issue of whether FDI have reached the least developed provinces and contributed to the reduction of regional development disproportions in Poland, or on the contrary, have been concentrated in regions with a relatively high level of development.

The results indicate that the inflow of FDI in Poland in 2003–2008 were spatially-concentrated. The most-developed provinces were the main source of their location, which indicates that FDI could have contributed to the increase in developmental disproportions in Poland.

**REGIONALNE ZRÓŻNICOWANIE NAPŁYWU BEZPOŚREDNICH INWESTYCJI  
ZAGRANICZNYCH W POLSCE W LATACH 2003–2008**

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**Słowa kluczowe:** region, inwestycje zagraniczne, rozwój regionalny.

**A b s t r a k t**

Napływ bezpośrednich inwestycji zagranicznych (BIZ) w myśl wielu teorii może być czynnikiem, który będzie wspomagał procesy regionalnej konwergencji gospodarczej. W koncepcjach tych się wskazuje, że BIZ nie tylko kreują dodatkowy popyt na rynku wewnętrznym, lecz także przyczyniają

się do poprawy efektywności podmiotów krajowych przez transfer nowych technologii i sposobów organizacji produkcji. Jednocześnie istnieje wiele teorii, w których podkreśla się istotną rolę BIZ w pogłębianiu przestrzennych dysproporcji w poziomie rozwoju gospodarczego.

W pracy przeanalizowano regionalne zróżnicowanie napływu bezpośrednich inwestycji zagranicznych w Polsce w latach 2003–2008. Skupiono się na rozstrzygnięciu kwestii, czy napływały one do województw najsłabiej rozwiniętych, czy mogły więc przyczynić się do zmniejszenia regionalnych dysproporcji rozwojowych w naszym kraju, czy przeciwnie, lokowano je przede wszystkim w regionach o relatywnie wysokim poziomie rozwoju.

Wyniki przeprowadzonych analiz pozwalają stwierdzić, że napływ BIZ w Polsce w latach 2003–2008 był przestrzennie skoncentrowany. Źródłem ich lokalizacji były głównie województwa najlepiej rozwinięte, co pozwala na stwierdzenie, że BIZ mogły przyczynić się do wzrostu dysproporcji rozwojowych w naszym kraju.

## Introduction

Foreign direct investments are often listed as one of the factors which can influence the process of levelling out the degree of economic development in regions. In view of the high dynamics of international capital flows, including FDI, and their significant effect on the economy of the host country or region, this issue has received a lot of attention in research and popular science studies in recent years. The prevailing opinion is that foreign direct investments constitute an important and beneficial element of regional development and, for this reason, local, regional and state authorities often try to attract the highest possible level of FDI (NOWARA, RYNARZEWSKI 2006, p. 199). The aim of this study is to settle the question of whether the inflow of FDI has been a factor increasing regional development disproportions in Poland, or to the quite contrary, if it has reduced such disproportions.

## Aim, hypotheses and scope of research

Poland is one of the countries in which a significant regional differentiation in terms of economic development can be observed. Moreover, in recent years these disproportions have increased (BOGDAŃSKI 2010, p. 274–275). One of the reasons for the polarization of economic development could be the spatial concentration of foreign direct investments in the areas of the most-developed provinces.

The aim of the study was to carry out an analysis of the regional diversity of the FDI inflow in Poland in 2003–2008, and to assess its possible effect on changing regional disproportions in economic development. The study adopted the hypothesis that the inflow of FDI in the examined period was subject to strong concentration in the region characterized by the highest level of the economic development. Therefore, it was one of the factors that affected the growth of regional development disproportions in our country.



In order to verify the thesis, an analysis of statistical data reflecting the dynamics of FDI inflow into Poland in 2003–2008 was carried out in a regional perspective. It was performed with application of descriptive and tabular methods and an analysis of the index of saturation with foreign direct investments. Data concerning the dynamics of the FDI inflow were presented both in direct and indirect approach. They were analysed for individual provinces, as well as for groups of provinces characterized by different levels of economic development.

The selected time frame of the research was determined by the availability of comparable statistical data. The data were derived from publicly available databases of the Central Statistical Office, including the online Local Data Bank ([www.stat.gov.pl/bdl](http://www.stat.gov.pl/bdl)). The studies were preceded by presentation of theoretical concepts explaining the motives for the FDI inflow and the effects of their location on the regional economy.

### **Determinants and results of the foreign direct investments inflow**

Regardless of the industry structure or the amount of FDI, the main motive of the foreign investor is to achieve additional benefits. The literature of the subject provides various concepts accounting for the causes of this form of capital involvement. The concept which comprehensively explains the motives of the FDI flow between countries and regions is the so-called OLI paradigm by Dunning. Pursuant to this paradigm, benefits (advantages) obtained due to investments are of three kinds. Thus, investments in countries and regions offering specific localization advantages make it possible to reach additional internalization advantages, which can be the source of ownership advantages (WINT, WILLIAMS 2002, p. 363).

Localization advantages are achieved by the foreign investor obtaining access to raw materials and resources of production factors specific for the host country or region. Their sources are varied depending on the integration degree of national enterprises. In case of horizontal integration, localization advantages emerge when the market of the host country is so large as to ensure profitability of the investment, and the costs of transport are so high that it would be unprofitable to provide for this market through export. On the other hand, when DFI enables vertical integration, their sources will derive from differences between remuneration for production factors in the country exporting and receiving the investments (CIEŚLIK 2005, pp. 30–31). According to some authors, a higher level of social and economic development of the host country or region implies a higher level of location advantages achieved (BITZENIS 2003, p. 97).

Ownership advantages are most often related to intangible assets, owned by the entire enterprise, and not by individual subsidiaries. These assets, such as patent-protected ownership rights, brands, trademarks or goodwill, provide the enterprise with the possibility to conduct business at lower costs than competitors in the host country (CIEŚLIK 2005, pp. 29–30).

On the other hand, changes in the level of transaction costs can be a source of internalization advantages. International enterprises sometimes engage in foreign markets by commissioning domestic entities to perform specific operations. It is particularly justified in cases when the foreign investor does not have sufficient knowledge concerning the specificity of running the business activity in the area of the given country. Such cooperation poses a risk that the licensee will take over a part of the investor's assets (usually knowledge) and will use it for its own, competitive business activity. In order to minimize the risk and achieve internationalization advantages, the international enterprise can change the form of its involvement by making direct investments (CIEŚLIK 2005, p. 31).

From the point of view of the regional policy, the most important problem is posed by the effects of locating FDI in a given country or region. If they are to be the source of regional economic convergence, their positive effects must exceed the costs related to locating them in a given area. The type of prevailing effects depends mainly on the structure of the inflowing investments. Generally, the most desired investments are of the greenfield type, i.e. consisting of the establishment of new enterprises from the ground up, as opposite to brownfield investments, meaning the entire or partial purchase of existing business entities. The emergence of the first type of investments usually involves the creation of new jobs and of additional demand in the regional and national market. Similarly, the prevailing opinion is that investments made by small and medium foreign enterprises are more attractive for the host region or country, since these entities are more interested in developing business activities requiring higher expenditures of labour (OZIEWICZ 1998, p. 118).

The most important, positive effects of FDI for the economy of the host region and country can be divided into three categories. They are related to (after CIEŚLIK 2005, pp. 223–234):

a) financial external effects resulting from vertical relations between foreign entities and local enterprises. These effects are related, above all, to creating additional demand in the internal market and growing specialization of domestic enterprises;

b) financial external effects resulting from the flow of the labour force. Migration of employees from foreign enterprises (usually better-managed and having the newest technologies at their disposal) to domestic entities contributes to the improved competitiveness of the latter group;

c) technological external effects accompanying local research and development activities (R&D). Cooperation between domestic and foreign entities also contributes to more intensive transfer of knowledge and technology.

Business practice also demonstrates that the level of technology and innovation potential of the host country are other important factors conditioning the flow of knowledge and technologies within FDI. The technological advancement of domestic enterprises must be high enough to enable efficient implementation of new technologies and production methods (WIŚNIEWSKA 2004, pp. 88–89). This explains why FDI are generally concentrated in selected regions of the country, usually being the capital city areas and/or most industrialized regions.

The strength of impact of positive effects resulting from FDI on the economy of the host country also depends on the branch structure of the investments made. Investments in fields characterized by the highest competitiveness and the level of added value generated are the most desirable from the perspective of creating economical development. They include: production of highly processed goods (ICT, household appliances and automotive goods) and development of telecommunication and information technologies. Location factors for these types of investments include factors that are typical for metropolitan or strongly urbanized regions – living conditions, access to education and culture, access to qualified workforce, efficient market institutions and favourable political and business climate, good transport connections with other centres of growth and technology parks, etc. (DZIEMIANOWICZ, JAŁOWIECKI 2004, pp. 24–26).

An alternative takes the form of investments aimed at the production of standardized goods, with low processing which do not require qualified workforce resources. This production is characterized by a low level of added value generated and high sensitivity to changes in production costs including, above all, personnel costs. It is transferred to the least developed regions and countries, the competitiveness of which, pursuant to the classification proposed by M. Porter, can be described as competitiveness based on production factors (RADŁO 2003, p. 20). This means that countries and regions can count on the location of these types of investments on the condition that their competitiveness is based on the price of employing production factors. Therefore, they will be competitive as long as their level of economic development is low. In other words, as long as they are poor.

Another aspect of the FDI inflow to host countries is also an increase in the capital equipment of those countries, which makes it possible to overcome the problem of low capital accumulation (POPLAWSKI 2008, p. 276). This is particularly important in such countries as Poland, where due to the shortage of national savings, there is not any other alternative for an increase in the total capital resources in the economy than through FDI (BIENKOWSKI 2006, p. 352).

The most important negative results of the FDI location include the growth of competition in domestic markets, the consequences of which include the bankruptcy of domestic parts of enterprises and the draining of local personnel and material resources. However, it is generally assumed that positive effects of DFI outweigh their negative impact (BOGDAŃSKI 2009, p. 29).

### **Spatial diversification of the FDI inflow in Poland in 2003–2008**

The inflow of FDI in the latest years has significantly contributed to the growth of the economic development rate of Poland, thus reducing the gap between it and other more developed European countries. However, the question arises as to whether and to what extent the inflow of FDI has contributed to the decrease of regional disproportions concerning economic development in Poland. According to classical and neo-classical theories of regional development, the capital will flow first of all to the poorest regions, which are relatively poor in capital and abundant in labour. On the other hand, migrations of the labour force will take the opposite direction. This process will last until the levels of extreme work efficiency and capital and levels of economic development align in both regions. This is how the mechanism of regional convergence should work, e.g. according to W. Rostow, (ANCYPAROWICZ 2009, p. 1). However, according to the proponents of the New Economic Geography (NEG), a free flow of capital, also in the form of FDI, will rather result in increasing regional economic disproportions. The areas better equipped with infrastructure, human capital or natural resources are usually seen as more attractive for locating foreign direct investments (FDI) than more backward areas (KULAWIK 2006, p. 25).

Therefore, the question is: how has the process of the inflow of foreign investments occurred in Poland? Table 1 presents the dynamics of changes in FDI in Poland in 2003–2008 for individual provinces. The value of basic capital taken over by foreign entities was used as the measure of foreign investors' involvement in the business activity in Poland. This quite imprecise perspective results from the lack of data of suitable quality. The Central Statistical Office does not follow the commonly assumed definition of FDI and publishes data concerning all enterprises in which foreign capital is involved (according to the OECD, direct foreign investments take place when the foreign contractor takes over at least 10% of the shares in the domestic entity, intending to influence its business and to carry out the activity for a longer period) (DZIEMIANOWICZ 2003, p. 2).

Table 1  
Regional diversification of the inflow of basic foreign capital in Poland in 2003–2008

Province	Value of basic capital in PLNm								Structure of basic capital (Poland = 100%)									
	2003	2004	2005	2006	2007	2008	2003	2004	2005	2006	2007	2008	2003	2004	2005	2006	2007	2008
Łódzkie	2 423.9	2 632.4	2 941.5	3 207.8	3 776.9	4 094.3	2.00	2.05	2.22	2.20	2.46	2.39	2.00	2.05	2.22	2.20	2.46	2.39
Mazowieckie	70 638.5	69 839.5	68 668.1	74 335.3	77 794.3	86 864.5	58.41	54.47	51.86	50.97	50.77	50.80	58.41	54.47	51.86	50.97	50.77	50.80
Małopolskie	8 490.6	9 224.6	9 905.8	12 001.4	10 629.0	11 308.0	7.02	7.19	7.48	8.23	6.94	6.61	7.02	7.19	7.48	8.23	6.94	6.61
Śląskie	8 068.1	10 645.1	11 142.4	11 660.8	12 628.1	14 447.6	6.67	8.30	8.42	7.99	8.24	8.45	6.67	8.30	8.42	7.99	8.24	8.45
Lubelskie	719.0	817.2	822.8	823.9	782.7	897.4	0.59	0.64	0.62	0.56	0.51	0.52	0.59	0.64	0.62	0.56	0.51	0.52
Podkarpackie	1 758.8	2 221.8	1 515.6	1 853.7	1 951.7	2 253.7	1.45	1.73	1.14	1.27	1.27	1.32	1.45	1.73	1.14	1.27	1.27	1.32
Podlaskie	313.6	278.2	267.1	276.9	430.3	445.6	0.26	0.22	0.20	0.19	0.28	0.26	0.26	0.22	0.20	0.19	0.28	0.26
Świętokrzyskie	2 277.6	2 557.0	2 997.0	3 155.6	3 164.8	3 012.5	1.88	1.99	2.26	2.16	2.07	1.76	1.88	1.99	2.26	2.16	2.07	1.76
Lubuskie	1 469.3	1 858.3	1 444.6	1 991.8	2 199.7	2 136.3	1.22	1.45	1.09	1.37	1.44	1.25	1.22	1.45	1.09	1.37	1.44	1.25
Wielkopolskie	9 324.9	10 489.2	10 926.9	11 317.5	12 469.9	14 041.9	7.71	8.18	8.25	7.76	8.14	8.21	7.71	8.18	8.25	7.76	8.14	8.21
Zachodniopomorskie	2 622.9	2 730.5	3 004.2	3 035.3	3 306.3	3 892.2	2.17	2.13	2.27	2.08	2.16	2.28	2.17	2.13	2.27	2.08	2.16	2.28
Dolnośląskie	5 654.5	7 458.6	10 213.4	12 179.1	13 890.5	15 526.5	4.68	5.82	7.71	8.35	9.06	9.08	4.68	5.82	7.71	8.35	9.06	9.08
Opolskie	1 328.1	1 253.4	1 440.4	1 481.0	1 544.7	1 692.5	1.10	0.98	1.09	1.02	1.01	0.99	1.10	0.98	1.09	1.02	1.01	0.99
Kujawsko-Pomorskie	1 307.9	1 583.6	1 896.5	2 098.0	2 322.0	2 564.4	1.08	1.24	1.43	1.44	1.52	1.50	1.08	1.24	1.43	1.44	1.52	1.50
Pomorskie	3 423.6	3 681.1	4 523.0	4 824.3	4 804.6	6 281.7	2.83	2.87	3.42	3.31	3.14	3.67	2.83	2.87	3.42	3.31	3.14	3.67
Warmińsko-Mazurskie	1 104.2	955.5	688.8	1 609.7	1 548.2	1 538.0	0.91	0.75	0.52	1.10	1.01	0.91	0.91	0.75	0.52	1.10	1.01	0.91
POLAND	120 925.5	128 225.9	132 398.0	145 852.0	153 243.8	170 977.1	100	100	100	100	100	100	100	100	100	100	100	100

Source: own study on the basis of the Local Data Bank of the Central Statistical Office [http://www.stat.gov.pl/bdl/app/dane\\_podgrup.dims?p\\_id=390005&p\\_token=0.7146447155900781\(31.05.2011\)](http://www.stat.gov.pl/bdl/app/dane_podgrup.dims?p_id=390005&p_token=0.7146447155900781(31.05.2011)).

The inflow of FDI to Poland in 2003–2008 was subject to strong regional diversification. The province of Mazowieckie clearly stands out against the rest of the country, as it accumulated almost half of the foreign capital flowing into the country in the period under analysis. This is obviously caused by the capital city of Warsaw situated within its boundaries, being at the same time the largest Polish city and the most important economic centre. However, the scale of advantage over the province of Dolnośląskie, next in the ranking, leads to the conclusion that differences in the economic development level observed so far will deepen even further and one of the reasons for this will be the concentration of FDI in more developed regions. Similar tendencies (which, to some extent, could account for currently existing disproportions in the development level between regions) which were already noted in the past and confirmed by research carried out e.g. by A. CIEŚLIK and M. STAWICKA (CIEŚLIK 2005, pp. 87–90, STAWICKA 2007, pp. 108–112).

The research carried out by the above-mentioned authors also indicate that in the 1990s, a significant majority of FDI were located within the area of several provinces which currently make up part of Mazowieckie, Śląskie and Wielkopolskie Provinces.

Taking into account the level of economic development of individual provinces in 2003 (using the value of regional GDP per inhabitant as a measure of this development), the provinces can be divided into three quite uniform groups.

Table 2  
The structure of the foreign basic capital inflow in groups of provinces in 2003–2008

Group	Structure of basic capital (Poland = 100%)					
	2003	2004	2005	2006	2007	2008
Group 1	77.47	76.76	76.25	75.07	76.21	76.54
Group 2	17.42	17.91	19.00	19.64	18.65	18.70
Group 3	5.11	5.33	4.75	5.29	5.14	4.76

Source own study on the basis of data from Table 1.

The first group includes provinces in which the value of regional production per inhabitant was at least 100% of the GDP *per capita*. These are the following provinces: Mazowieckie (155.28%), Śląskie (108.99%), Wielkopolskie (104.61%) and Dolnośląskie (102.44%).

Group 2 includes the provinces where the GDP value *per capita* ranges from 80% to 99% of the domestic level: Pomorskie (98.18%), Zachod-

niopomorskie (94.74%), Łódzkie (92.39%), Kujawsko-Pomorskie (89.61%), Lubuskie (86.45%), Małopolskie (85.68%) and Opolskie (80.39%).

Group 3 is composed of provinces in which the value of regional production per inhabitant is below 80% of the value of this indicator for the entire country. These are the remaining provinces forming the so-called “eastern wall”: Warmińsko-Mazurskie (78.83%), Świętokrzyskie (78.16%), Podlaskie (75.96%), Podkarpackie (70.79%) and Lubelskie (70.69%).

On the basis of the division of provinces into groups differing in the level of economic development, the regional structure of the FDI inflow, measured by the value of the basic capital, would look as follows.

Also in this case, the regional concentration of FDI can be clearly noticed. It can be observed for all years under analysis that over  $\frac{3}{4}$  of all foreign investments were located in the area of Mazowieckie, Śląskie, Wielkopolskie and Dolnośląskie Provinces. Obviously, such a large advantage of regions from group 1 over other provinces results from the absolute dominance of the Mazowieckie Province in the structure of the foreign investments received. It is also worth noticing that after a gradual lowering of the share of this group of provinces in the value of the foreign basic capital involved in 2003–2006, in 2007 and 2008, an increase of over 1 percentage point took place.

In provinces from group 2, the value of the basic foreign capital involved in each of the years under analysis was over three times lower than in group 1. The province which stands out in this group of provinces is Małopolskie, which during the period under examination “took over” almost  $\frac{1}{3}$  of the total foreign investments directed to this group of provinces.

Provinces of the “eastern wall” come out definitely worse in this regard. On average, only 5% foreign investments were located in this conventional macroregion. In this context, the situation of Podlaskie and Lubelskie Provinces is the worst, as those provinces received, on average, only 0.2% and 0.6% of foreign investments, respectively.

In order to obtain a more complete picture of regional diversity concerning the intensity of foreign investors; involvement in Poland, the index of saturation with FDI was calculated for each of the separated groups of provinces, where the value of the basic capital owned by foreign entities was applied as a FDI measure. This index was calculated according to the following formula:

$$IN_{FDI} = (FDI_G):(FDI_K) / (GDP_G):(GDP_K)$$

where:

- FDI<sub>G</sub> – value of FDI involved in a given group of provinces;
- FDI<sub>K</sub> – value of the FDI stream in the scale of the entire country;
- GDP<sub>G</sub> – value of GDP produced in the group of provinces;
- GDP<sub>K</sub> – national GDP.

If the value of INFDI is higher than 1, this means that the given group is characterized by a larger share of FDI accumulation than would result from the value of the GDP produced. In other words, these are the provinces where the foreign capital flows in with the highest intensity. On the other hand, when the value of the indicator drops below 1, this shows a low interest of foreign investors in a given area. The values of the calculated indicators of saturation with direct foreign investments for groups of provinces are presented in Table 3.

Table 3  
Index of saturation with direct foreign investments (FDI) in groups of provinces in 2003–2008

Group	Structure of basic capital (Poland = 100%)					
	2003	2004	2005	2006	2007	2008
Group 1	1.51	1.49	1.47	1.44	1.46	1.47
Group 2	0.53	0.55	0.58	0.60	0.57	0.57
Group 3	0.32	0.34	0.31	0.35	0.34	0.30

Source own study on the basis of the data from Table 1 and Local Data Bank of the Central Statistical Office, <http://www.stat.gov.pl/bdl>. (3105.2011).

The data included in the table once more confirm the thesis that direct foreign investments are characterized by strong spatial concentration. A definite majority of them, in relation to the GDP produced, were located in the area of the following provinces: Mazowieckie, Śląskie, Wielkopolskie and Dolnośląskie. The region which stands out in particular is the Mazowieckie Province, where in each of the years under analysis the value of basic foreign capital was almost by 50% higher than would result from the volume of the production output in this region. This proves the very high potential of the Mazowieckie Province in attracting foreign investors. It can also be expected that in the future, investments will contribute to even more dynamic development of the region. Similar tendencies with high probability will also be visible in other provinces of this group.

In regions from group 2, the FDI saturation index, except for two last years from the examined period, was characterized by a growing trend. Although the value of foreign basic capital involved in this group of provinces is lower in relation to the value of the GDP produced, in the future, the maintenance of the growing trend could contribute to making up for the economic distance between this group of provinces and the most developed regions. An increased interest of foreign investors in provinces of this group could result from various implemented and planned infrastructural investments, mostly related to the construction of motorways in the area of



Łódzkie, Małopolskie, Pomorskie and Zachodniopomorskie Provinces. As demonstrated by R. Domański, over 70% of greenfield type investments are located within 30 km from existing or even planned transportation infrastructure (DOMAŃSKI 2001, p. 92).

Clearly, the situation of provinces from group 3 is the least favourable. They attract the lowest interest of foreign investors. The FDI saturation index in the period under analysis was very low (without a clear growing tendency) which, taking into consideration a low share of those regions in the value of the GDP produced in the scale of the entire country is particularly alarming.

### Summary and conclusions

To summarize, it can be concluded that Poland shows a clear spatial concentration of FDI and location advantages, whereas the division into groups of regions that are the most and the least attractive for investors (and thus “receiving” the largest and the lowest share of FDI) overlaps with the previously carried out division into the most and the least urbanized and economically developed regions. In value terms, almost 1 of FDI is located within the boundaries of four most developed provinces: Mazowieckie, Dolnośląskie, Śląskie and Wielkopolskie, while five provinces, the so-called “eastern wall”, receive the lowest share. The differences that are currently observed result from the processes which occurred in the past. The accumulation and interrelations between them are the reasons for the increasing development gap.

The relative durability of this division partially accounts for the differences in the level of economic development observed nowadays. However, this also suggests that those differences will continue to deepen in future unless a radical change in the regional FDI structure occurs.

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**THE ROLE OF TERRITORIAL GOVERNMENTS  
IN DECENTRALISATION OF THE ECONOMIC  
ACTIVITIES OF THE STATE  
(DURING THE YEARS 2004–2009)**

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**Key words:** territorial government, State, decentralisation.

**Abstract**

The aim of the research was to assess the decentralisation of the economic activity of the State. Analysis of the general activity of territorial governments in Poland during the years 2003–2009 provided the base for that assessment. In practical terms two methods of economic activity are employed: indirect and direct. In the towns possessing the status of counties and in urban municipalities the indirect method dominates. In counties and rural municipalities the direct methods dominate. Employment of different methods leads to systemically different paths of development of the territorial governments in Poland. The need for organisational changes that might correct that unfavourable trend exists. One of the methods for achievement of that goal would involve combining rural counties with rural and urban-rural municipalities in a single organisational structure based on the example of the towns possessing the status of counties.

**ROLA SAMORZĄDÓW TERYTORIALNYCH W DECENTRALIZACJI AKTYWNOŚCI  
EKONOMICZNEJ PAŃSTWA (W LATACH 2004–2009)**

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**Słowa kluczowe:** samorząd terytorialny, państwo, decentralizacja.

**Abstract**

Celem badań była ocena decentralizacji aktywności ekonomicznej państwa. Podstawą tej oceny była analiza ogólnej działalności samorządów terytorialnych w Polsce w latach 2003–2009. W praktyce wykorzystuje się dwie metody aktywności ekonomicznej: pośrednią i bezpośrednią. W miastach

na prawach powiatów oraz w gminach miejskich dominuje metoda pośrednia. W powiatach oraz w gminach wiejskich przeważają metody bezpośrednie. Wykorzystanie różnych metod prowadzi do ustrojowo odmiennych dróg rozwoju samorządów w Polsce. Istnieje potrzeba zmian organizacyjnych, które mogą skorygować ten niekorzystny trend. Jedną z dróg prowadzących do tego celu jest połączenie powiatów ziemskich z gminami wiejskimi oraz miejsko-wiejskimi w jedną strukturę organizacyjną na wzór miast na prawach powiatów.

## **Reasons for the subject and goal of the research**

Economic activity of the State, i.e. in practical terms the activity that aims at growth and economic development has been and still is the subject of numerous research programmes within the frameworks of economic sciences. Usually, however, in case of that type of works in Poland the perspective of the country as a whole was assumed. The centralised character of the State determined domination of the sectoral system for managing the country. The role of territorial authorities was limited to performance of centrally defined tasks and duties only. Studies presenting the active and not only the passive role of those bodies proved highly interesting only as of the moment of departing the clearly centralised model of the state. In Poland that took place together with initiation of the systemic transformation.

Establishment of municipal governments represented the first indication of decentralisation of the State. Formally it took place in the Act on territorial government of the 8<sup>th</sup> of March 1990 combined with the package of other acts on territorial governments (WALDZIŃSKI 2005, pp. 151–152).

The process of decentralisation of the State was continued in the consecutive legal acts. With the new territorial division of the country, on the 1<sup>st</sup> of January 1999 the counties managed by territorial governments and voivodships managed by territorial governments jointly with central government were established while 65 cities were granted the status of territorial government managed counties. In that way the economic activity of the State performed by territorial governments became as integral part of the more general process of decentralisation of the State. Further important changes in the structures of drafting the budgets of territorial governments took place as of the 1<sup>st</sup> of January 2004. That evolutionary character of transformation is, however, not completed in 2004 as J. Osiatyński states that the “Proposed changes were divided into the provisional ones (for the years 2004–2005) and target ones that are yet to be implemented” (OSIATYŃSKI 2006, p. 198).

In the here presented research we conduct assessment of the changes implemented during the last stage, i.e. as of 2004. That is the goal of the research presented. The analysis of economic activity of the State in various legal-economic forms of territorial governments during the years 2004–2009

provided the base for that assessment. The State economic activity decentralisation process is implemented at territorial governments by means of two different methods. The dual character of decentralisation then may lead to permanent diversification of territorial governments and those differences may even be of systemic character. That is the research hypothesis.

### **The nature of decentralisation and the method for investigating the economic activity of the State**

The history of the last few decades proves that in Poland the problem of territorial consolidation of the state occurred more frequently. It appeared after both World War I and World War II. Those were the objective premises justifying also centralisation of economic decisions. Additionally, that was also favoured by statism based model of the State that during the years 1945–1989 was implemented in the particularly extreme – non-market formula. Only the systemic transformation initiated in 1990 created favourable conditions for progressing decentralisation of not only the administration but also as a form of economic activity of the State.

In search for the benefits stemming from decentralisation of the economy it is worth to refer to the well-known and very distant in time but still valid theoretical argumentation by Friedrich von Hayek, who presents the fundamental reason for that. The whole knowledge and all the information cannot be gathered in one central location or a few auxiliary centres. The knowledge and information necessary for rapid and effective decision taking are decentralised by necessity. To achieve the situation in which the decision-takers can and are willing to use those resources (or at least a significant part of them) efficiently they must obtain their own benefits from that. Decentralised information then must be coupled with the free enterprise and private ownership. Not all the information, however, but only as much of it as possible must be used in the decentralised way (HAYEK 1935, pp. 210–211).

The processes of decentralisation in the State may not, however, be associated with the progressing liberalisation in our economy only. The special role of the European Union should also be considered. In that way we get to the heart of decentralisation of the economy in the democratic state in which the market system is in operation. In the practice of the European Union it is the division of competences between the community institutions and the national institutions, i.e. the principle known under the name of *subsidiarity*. The Community undertakes actions according to that principle but only when and to such an extent as the goals of the proposed actions cannot be attained efficiently by the Member States. Additionally, that principle is based on a few

practical premises, and the most important of them are, among the others, the following ones (GAWLIKOWSKA-HUECKEL, ZIELIŃSKA-GŁĘBOCKA 2004, pp. 7, 8, 13):

- division of powers into exclusive competences, shared competences and decentralisation of competences;
- the duty of providing the lower tier authorities with financial resources necessary for exercising their competences and allowing them taking independent decisions as concerns allocation of those funds.

As can be seen, the theoretical formula by F.A. von Hayek has been used in the practice of the European Union in formulating the principle of subsidiarity. Although that example applies to the relations between the European Union and the Member States, it can also be used in the practice of departing from the centralised State to the model based on more decentralised economy as this principle is so universal that it also functions effectively in the relations between the central and regional authorities of the country.

In our domestic practice it has found expression from the beginnings of functioning of the municipal governments as well as in the consecutive reforms effective as of 1999 and 2004. That last reform, as claimed by J. Osiatyński – was of the provisional character only but still it implemented an increase in own revenues of territorial governments at the expense of decreasing the share of subsidies and subventions. Special purpose subsidies for financing or co-financing own tasks as well as some of the subsidies for tasks from the domain of government administration have been substituted by increased own revenues of territorial governments. The new solutions aimed at strengthening the position of territorial governments by increasing their revenues and their independence in disposal of funds, and in particular, among others (OSIATYŃSKI 2006, p. 198):

- further decentralisation of public tasks and funds,
- increased share of own revenues in their total funds,
- increased capacity for absorption of the European Union funds,
- creating mechanisms for stimulating enterprise.

Particular attention should be drawn to that last aspect. That opinion indicates the belief that in constructing the economic-financial system in which the share of own revenues is increased simultaneous establishment of mechanisms stimulating local and regional governments is assumed. The mechanism of stimulating enterprise as addressed to territorial governments and it is to work in two directions of which the first one is to support more rational use of the resources available while the other is to serve releasing the initiatives increasing own revenues. **As a consequence, it is a classic example of indirect influence of the State on the increase of revenues of territorial governments and increase in effectiveness of the use of them.**

Both theoretical and practical considerations concern the processes of decentralisation of the State that is transfer of competences, rights and responsibilities from the central authorities onto the bodies of territorial government (municipal, county and voivodship). In practice, the increasing revenues of territorial governments mean increased general decentralisation of the economic activity of the State. However, not only that general activity but, first of all more detailed identification of two different methods of that activity of the State was the key subject issue of the resented studies. Of those two methods the first one was defined as indirect while the second as the direct form of economic activity of the State.

**The indirect form of economic activity of the State** is identified with the category of own revenues. In territorial governments those, among others, consist of (Ustawa z dnia 26 listopada 1998 r. o dochodach jednostek samorządu terytorialnego w latach 1999, 2000, DzU nr 150, poz. 983, Ustawa z dnia 1998 r.; 26 listopada 1998 r. o finansach publicznych, DzU z 1998 r., nr 2003, poz. 1014, Ustawa z dnia 13 listopada 2003 r. o dochodach jednostek samorządu terytorialnego, DzU nr 203 z 2003 r., poz. 1966):

- revenues from local taxes – agricultural, forest, real property, means of transport taxes as well as tax card, on possession of dogs, on inheritances and donations and on civil-legal transactions;
- revenues from charges – the stamp tax, operational charges, market charges and revenues from property, e.g. tenancy and lease;
- revenues from the share in the PIT and CIT.

The State creates the legal frameworks that are establish the source for generating an important proportion of revenues (own revenues). They are allocated to satisfying the local and regional needs and expectations of the residents. The State requires only that the revenues are spent according to the existing legal regulations and does not intervene in the allocation of such funds. That formula increases economic independence of territorial governments. The level of revenues in that group is determined by the form of territorial government, its location (conditions) and activity of territorial government authorities and residents that J. Osiatyński defines, among others, as enterprise.

**The direct form of economic activity of the State** is identified with the second part of the total revenues in the budget of territorial governments. It consists of subsidies and subventions. This obviously is an important part of decentralisation of the State but it expresses the level of direct economic activity of the State only. It consists of various forms of subsidies (e.g. allocated for performance of administrative tasks, but not only) and subventions (e.g. educational, balancing, equalizing and compensating). In the revenues of voivodship governments the regional part of the subvention is also included. It

is allocated for equalizing the differences in revenues between voivodships that result from different revenue generating potential, i.e. population density, area of public roads and unemployment rate o (*Budżety jednostek... s 2007*, p. 17). The funds represented by that part of the budgets of territorial governments are in their major part allocated to the purposes defined by the State or serve closing the gaps in the level of development between the regions also as determined by the State. According to that formula the economic independence of territorial governments decreases. The level of that group of revenues is also determined by the form of territorial government and its location while the activity of those governments has no influence. In this case, instead of entrepreneurial attitudes the attitudes based on claims that expect direct support from the central budget in the form of the increased subsidy or subvention are released.

We purposefully point at revenues and not outlays as instruments of the economic activity of the State as outlays may also be financed from other sources and not only from revenues. This can include e.g. loans, territorial government bonds or the European funds. The loans and bonds, however, result in the increased indebtedness of the beneficiaries. The scale of that indebtedness is limited by the law but still within the frameworks of the existing legal possibilities differences can develop between territorial governments that are not consequences of endogenous conditions or institutional economic activity of the State but that result from a combination of frequently incidental circumstances, including also subjective decisions of local or regional authorities.

The choice of research tools for analysis of the economic activity of the State represented another methodological issue. The most general macro-economic indicator, which is the GDP level, was assumed for the reference point. The relations of total revenues of territorial governments to that indicator define the general level of decentralisation. With the increase in the share of the total revenues of territorial governments in the GDP the general level of decentralisation of the economic activities of the State also increases. Then, the share of own revenues in total revenues of territorial governments defines the character of that activity of the State that is whether it was indirect or rather direct. With the increase in the share of own revenues in the total revenues the indirect economic activity of the State increases and the other way round, when that share decreases the direct activity increases. The studies covered the period of 7 years from 2003 until 2009 and the first year of the resented study was the last before the reform effective as of the 1<sup>st</sup> of January 2004. In that way the effect of the changes introduced at that time as well as the consequences of that change during the consecutive years could be captured.



## General decentralisation of economic activity of the State

Both upward and downward phase of the market cycle occurred in Poland during the period covered by the study. That entire period could be divided into three different parts where the two earlier parts are the upward stages while the third one represents the downward trends. During the years 2003–2005 the economic growth rate was moderate as it was within the range of 3.6%–5.3%. The high growth rate was recorded during the years 2006 and 2007 when the GDP growth rate exceeded 6%. During the last stage, the years 2008 and 2009 are the period during which downward stage of the market cycle is evident.

The data presented in Table 1 indicate that the highest increase in general decentralisation of economic activities of the State was recorded during three consecutive years (2004, 2005 and 2006). This for sure is the effect of changes introduced by the reform effective as of the 1<sup>st</sup> of January 2004. In each of the years covered by the studies the increase in general decentralisation takes place. Those relations, however, do not consider the cyclic character of changes in the GDP growth rates. The evident slow-down of economic growth during the years 2005 and 2009 did not inhibit the increasing general decentralisation of economic activities of the State. This results from the fact that changes in the GDP growth rates are not decisive for the increasing level of general decentralisation of the State where it rather is the effect of changes in legal solutions.

Table 1  
General level of decentralisation of the economic activity of the State during the years 2003–2009

Item	2003	2004	2005	2006	2007	2008	2009
GDP growth rate in % Preceding year = 100	103.9	105.3	103.6	106.2	106.6	105.0	101.7
Relation of total revenues of territorial governments to the GDP in %	9.4	9.9	10.5	11.0	11.2	11.2	11.5

Source: own computations based on:

Year economic measures by the Central Statistical Office (GUS), PUBL\_roczne\_mierniki\_gospodarze\_cz.IV;

Budgets of the units of territorial governments 2003–2009 GUS, PUBL\_rn\_budz\_jedn\_sam\_teryt\_lata\_2003-2009-20.02.2011, 9.41 hours. Poland – macroeconomic indicators GUS, Warszawa 2008, [http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL\\_polska\\_wskazniki\\_makroekonomiczne2008\\_pl.pdf](http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL_polska_wskazniki_makroekonomiczne2008_pl.pdf), [http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL\\_rn\\_produkty\\_krajowy\\_brutto-2009-szac\\_wst.pdf](http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL_rn_produkty_krajowy_brutto-2009-szac_wst.pdf) (14.10.2010).

Considering the assessed issue of the relations between the indirect and direct form of economic activity of the State not only the analysis of total revenues but first of all the structural sources of those revenues, that is own

revenues as well as subsidies and subventions obtained by various tiers of territorial governments are particularly important.

### **Economic activity of the State in different forms of territorial government**

As of the 1<sup>st</sup> of January 1999, in Poland, territorial governments are practically divided into 4 different and hierarchically not interdependent legal-economic forms. Next to the territorial governments of municipalities, counties and voivodships 65 territorial governments of the largest towns obtained the status of towns with the status of counties combining the competences of the municipalities and counties. In that way the concentration of real powers occurred that has its source in two different systems – one of the municipalities and one of the counties. That fact should be related directly to the subject of the presented studies. As a consequence the analysis of decentralisation of economic activities of the State covers all territorial governments in Poland and its four legal-economic forms.

Studies based on a similar system but for the years 1999–2005 were also conducted by L. Jędrzejewski. The results he obtained indicate that as of 2004 own revenues started dominating among sources of revenues of all territorial governments. Their share during the years 1999–2003 was at the level of slightly above 40% (40.8%–43.7%) while during the years 2004 and 2005 51.5% and 53.3% respectively. Towns possessing the status of counties with over 60% share and voivodships in case of which that share is at a similar level are characterised by the best situation as concerns financing their activities with own revenues. In case of the municipalities that share does not exceed 50% while the situation of the counties looks the worse as the share of own revenues in them does not exceed the threshold of 30% (JĘDRZEJEWSKI 2007, p. 36).

In practical terms the general process of decentralisation of economic activity of the State can be achieved by two possible methods. If the structure of revenues is dominated by own revenues we talk about domination of the indirect economic activity of the State. On the other hand, when the budgets of territorial governments are dominated by subsidies and subventions we also deal with decentralisation but it is based on domination of the direct economic activity of the State. The possibility of choosing various combinations of the direct and indirect economic activity of the State in case of one institution of territorial government provides a very handy tool for gradation of transformations. That evolution based direction of development was also assumed in Poland and year 2004 was one of the consecutive stages in those transformations.

The data presented in Table 2 indicate that the highest increase in the indirect economic activity of the State took place in 2004 which means that we dealt there with the decisive role of the legislator. During the consecutive two years (2005 and 2006) that share stabilised at the level similar to that of 2004. During the further years (2007 and 2008) a certain increase in the indirect economic activity as well as a very serious decrease by as much as 6.4 percent points in 2009 (from 55.0% to 48.6%) could be observed.

Table 2  
Indirect economic activity of the State in different legal-economic forms of territorial governments during the years 2003–2009

Item	2003	2004	2005	2006	2007	2008	2009
Relations of own revenues to total revenues of territorial governments in %	42.0	50.2	50.6	50.1	52.3	55.0	48.6
Including							
Relations of own revenues to total revenues of municipalities in %	44.7	46.5	44.9	43.6	46.6	49.3	46.3
Relations of own revenues to total revenues of counties in %	10.4	24.1	27.2	27.9	29.6	32.4	28.4
Relations of own revenues to total revenues of towns with the rights of counties in %	55.7	63.4	64.5	64.5	65.7	69.5	66.1
Relations of own revenues to total revenues of voivodships in %	15.4	58.9	62.5	55.9	57.9	58.5	32.3

Source: own computations based on:

Year economic measures by the Central Statistical Office, PUBL\_roczne\_mierniki\_gospodarcze\_cz. IV; Budgets of the units of territorial governments 2003\_2009 GUS, PUBL\_rn\_budz\_jedn\_sam\_teryt\_lata\_2003–2009-20.02.2011, 9.41 hours. Poland – macroeconomic indicators GUS, Warszawa 2008,

[http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL\\_polska\\_wskazniki\\_makroekonomiczne2008\\_pl.pdf](http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL_polska_wskazniki_makroekonomiczne2008_pl.pdf)

<http://www.stat.gov.pl/cps/rde/xbcr/gus/PUBL-rn-produkt-krajowy-brutto-2009-szac-wst.pdf> (14.10.2010).

That significant decrease was the consequence of evident decrease in revenues of the budgets of territorial governments from own revenues. While the total revenues in 2009 increased as compared to 2008 (at current prices) by more than 8.6%, the own revenues decreased during the same time by ca. 3.9%. Simultaneously the general subventions from the State budget increased by almost 12%. The decrease of revenues from the corporate income tax by almost 11.5% and personal income tax by ca. 5.5% was the main reason for the decrease of own revenues in absolute terms in 2009 (Budgets-2009, own

computations). The evident slowdown of economic growth in Poland then was of decisive influence on the decrease in the indirect economic activity of the State in 2009.

The statutory changes effective as of 2004 and the serious slowdown of the economic growth in Poland in 2009 influenced not only the total effects for territorial governments but also manifested themselves in the individual legal-economic forms of those governments. In all of them the increase in the indirect economic activity was recorded in 2004 but the largest changes in that respect occurred in territorial governments of voivodships and counties. In all territorial governments that level also decreased in 2009. The conducted studies indicate, however, that the differences occurring between individual legal-economic forms of territorial governments seem to be much more interesting. Only in the towns possessing the status of counties the indirect method of economic activity of the State dominates. For sure this is not just the result of combining the rights of municipalities and counties. The largest towns in Poland concentrate in their areas the dominating part of production and service activities and as a consequence they generate own revenues at such a level that it determines the character of the economic activity of the State (indirect) in that group of territorial governments. A relatively high share of indirect economic activity but highly diversified during individual years, can also be recorded in case of the territorial governments of voivodships. Counties, on the other hand, are mainly associated with domination of the direct activity of the State although changes in the law as of 2004 increased clearly in that case also the role of indirect instruments.

Municipalities seem to be the most stable form as concerns the here presented subject of studies. In that case the direct activity of the State dominates and the relation of own revenues to total revenues retains the similar level within the range of from 43.6% in 2006 to 49.3% in 2008. All the municipalities in Poland operate in the identical legal-economic form but they have the form of urban, urban-rural and rural municipalities. This has consequences that are presented in Table 3. The data indicate that within the same legal-economic form there are urban municipalities with evident domination of the indirect for of State activity and the rural municipalities where direct activity dominates. The practical explanation for that dichotomy is relatively simple. The major sources of generating own revenues that are personal income tax and corporate income tax as well as real property tax are positioned in towns. The rural areas on the other hand are compensated for that specific shortage with the increased specific purpose subventions from the State budget and in that way the direct economic activity of the State in rural municipalities increases.

Table 3

Indirect economic activity of the State in municipalities during the years 2003–2009

Item	2003	2004	2005	2006	2007	2008	2009
Relations of own revenues to total revenues of municipalities in %	44.7	46.5	44.9	43.6	46.6	49.3	46.3
Including							
Relations of own revenues to total revenues in urban municipalities in %	59.0	61.6	61.7	62.5	64.8	65.2	61.9
Relations of own revenues to total revenues in urban-rural municipalities in %	48.9	50.0	50.1	49.1	51.1	51.0	48.0
Relations of own revenues to total revenues in rural municipalities in %	39.7	39.6	40.5	38.0	39.9	39.3	36.8

Source: own computations based on:

Year economic measures by the Central Statistical Office, PUBL\_roczne\_mierniki\_gospodarcze\_cz.IV; Budgets of the units of territorial governments 2003–2009 GUS, PUBL\_rn\_budz\_jedn\_sam\_teryt\_lata\_2003–2009-20.02.2011, 9.41 hours. Poland – macroeconomic indicators GUS, Warszawa 2008,

[http://www.stat.gov.pl/cps/rde/xbr/gus/PUBL\\_polska\\_wskazniki\\_makroekonomiczne2008\\_pl.pdf](http://www.stat.gov.pl/cps/rde/xbr/gus/PUBL_polska_wskazniki_makroekonomiczne2008_pl.pdf)

[http://www.stat.gov.pl/cps/rde/xbr/gus/PUBL\\_rn\\_produkty\\_krajowy\\_brutto-2009-szac\\_wst.pdf](http://www.stat.gov.pl/cps/rde/xbr/gus/PUBL_rn_produkty_krajowy_brutto-2009-szac_wst.pdf) (14.10.2010).

Not the causes are the most important here but consequences resulting from the fact that different legal forms of territorial governments (towns possessing the status of counties and urban municipalities) are becoming very similar in the level of indirect activity of the State while among municipalities very serious differences in that respect occur. Among Polish territorial governments a specific development dualism develops as a consequence. On one hand, we have relatively wealthy towns and relatively wealthy rural areas situated around large and medium size towns. The economic potential existing in those units allows favourable development of local self-government. That development is based on high and increasing own revenues that are, among others, the consequence of reforms introduced in Poland including the last one, effective as of 2004. The other pole is occupied by municipalities, particularly rural ones, and among them those most distant from towns in which the economic potential is so small that it requires substantial support from the State budget. If the currently existing legal solutions are retained for consecutive years than even systemic differences can become well established between so diversified territorial governments because on one hand this is the process of progressing real decentralisation of the state and inspired by that process of increasing local self-government that in a longer perspective will surely result in the

initiatives supporting local development, not only economic but also cultural and civilizational. That direction is already visible in the towns, particularly those possessing the status of counties, and in urban municipalities in which authentic self-government that has support of the local economic base provides the base for local development.

On the other hand, actual limitation of real self-government caused by the lack of potential for increasing own revenues in territorial governments situated in worse positions – so characteristic for rural municipalities distant from towns – already now causes different attitudes. In such local communities expectations of external support increase explaining at the same time the creative initiatives that find no sufficient support in the local material resources. If no changes take place there then in the perspective of a few years that process will not only cause permanently dominating attitudes based on claims but may also cause permanent escalation of such behaviours. So those are not just technical differences in the methods of managing the State but they are almost entirely different philosophies of performance of territorial government.

**Under such circumstances the project of combining rural municipalities and counties in one organisational structure based on the example of the towns with the status of counties may seem worth considering.** That proposal might be particularly interesting for all the units of territorial government possessing rather limited powers that is possessing low own revenues to their budgets. It is addressed in particular to rural counties and rural and urban-rural municipalities situated within their areas. Currently in those cases we deal with scattering of the real power that results not only from the low level of own revenues but also the necessity of sharing the revenues with municipalities that are not hierarchically subjected to them. In the Polish reality we frequently deal there with the competition between the county authorities and the municipality. If additionally those authorities originate from different political options then lack of agreement is almost certain. As a result deconcentration of already small economic potential takes place, which for sure does not lead to any improvement in rationality of governance. To prevent those negative processes the current locations of counties could be converted into centres with more real authority resulting from combining the revenues of the counties and municipalities. With the dynamically developing road transport and electronic communication there is no necessity for maintaining the centres of municipal authority within the distance of less than 20–30 km from the place of residence; that is why such a systemic suggestion that would actually increase the scope of local authority is worth considering. Good experiences and examples from towns possessing the status of counties could be used here relatively easily. Increasing in that

way the scope of local power – through its concentration – we would, at least partly, decrease the progressing dichotomy between the development of towns possessing the status of counties and urban municipalities on one hand and the other units of territorial government on the other. Merging counties with municipalities situated within their area will not, however, eliminate the consequences of their disadvantaged location. Those unfavourable conditions should be improved by increasing the share of local budgets in revenues from the PIT and CIT while subsidies and subventions from the State budget would play the complementary role only.

## **Conclusions**

1. The progressing processes of systemic transformation in Poland encompass also three important stages of decentralisation of the State that took place in 1990, 1999 and 2004. The general decentralisation of economic activity of the State – in relation to the territorial governments – is expressed by the increasing relation of total revenues of territorial governments to the GDP level. During the years 2003–2009, however, it was not a significant increase but it was systematic and it ranged from 9.4% to 11.5% that is it increased by over 2 percent points. This indicates that during that time the increase of total revenues in the budgets of territorial governments was ahead of the GDP increase in Poland.

2. The process of progressing general decentralisation of economic activity of the State, with institutional use of territorial governments, is developing in Poland in dual form. The increase of economic independence of territorial governments is the first of the practical methods employed for that purpose. That direction of transformations leads to development of the indirect form of economic activity of the State. Limiting economic independence of territorial governments and substituting it with subsidies and subventions from the State budget for performance of specific tasks is the other method. This method leads to development of the direct form of economic activity of the State. Those two represent fundamentally different paths that differ not only in the technical aspect but have serious consequences of even systemic character.

3. As of 2004, clear diversification in selection of methods for economic activities of the State has been observed. In the towns possessing the status of counties and in urban municipalities the indirect influence dominates while in counties and urban-rural municipalities, and in particular rural municipalities, the direct form of activity dominates. It can be assumed then that if no significant changes take place in that dual form, territorial governments will develop in two different directions. Of those two the first, indirect, one will

represent self-government based model while the other, direct, one will have less and less in common with self-government. That systemic dissonance could be mitigated by, among others, changes of organisational nature. One of the proposals that support that postulate could be, for example, merging municipalities (particularly rural ones) and rural counties into one organisational structure similar to the towns possessing the status of counties.

**4. Creating a mechanism that increases effectiveness of local authorities in efforts for economic development represents the most effective instrument of the indirect economic activity of the State. This is also the active role of the territorial government authority that initiates and supports local development at the same time limiting the expansion of attitudes based on claims.** That initiative also matches the opinion expressed by J. Osiatyński that the “proposed changes have been divided into provisional ones (for the years 2004–2005) and the target ones that are to be implemented yet”. This can be the direction of the further increase of the indirect economic activity of the State.

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## EUROPEANIZATION OF THE LABOUR LAW AFTER 1989

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**Key words:** labour law, harmonisation of the law, implementation, labour code, economies.

### Abstract

The paper discusses the process of Polish labour law adjustment to the European Union requirements. The process of labour law regulations evolution prior to the accession of Poland to the European Union can be divided into three stages: the first one started with the systemic transformation and continued until the coming into effect of the Europe Agreement made between Poland and the European Communities and their Member States, the second one started in February 1994 and continued until commencement of negotiations concerning membership of Poland in the European Union while the third one was the period of negotiations with the European Commission that ended in the accession.

During the early years of operation of the new system the focus was on two important issues – first, elimination of the regulations referring directly to the planned economy system that did not fit the market economy realities and second, protection of the interests of employees losing jobs as a consequence of restructuring of their employers.

During the period of association with the European Union, Article 68 of the Europe Agreement contained, expressed *expressis verbis*, the requirement for the approximation of Poland's existing and future legislation to that of the Community. The provision also stated that Poland shall use its best endeavours to ensure that future legislation is compatible with Community legislation. The Europe Agreement did not, however, impose the general duty of Poland's accession to the European Union. The process of Polish labour law harmonisation gained the highest dynamics during the years of negotiations with the European Union. That period was characterised by the largest number of changes in regulations while major novellas to the regulations occurred in 2001, 2002 and 2003.

This paper aims at presenting the process of Europeanization of the Polish labour law that took place after 1989. The paper presents the stages in the evolution of regulations and major directions of changes in the labour law. It also presents the issues of the novellas becoming effective, interpretation of regulations and critical comments to the process of Polish labour law adjustment to the European Union directives.

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Słowa kluczowe: prawo pracy, harmonizacja prawa, implementacja, kodeks pracy, ekonomia.

**A b s t r a k t**

W artykule omówiono proces dostosowania polskiego prawa pracy do wymogów Unii Europejskiej. Proces ewolucji przepisów prawa pracy do wejścia Polski do Unii Europejskiej można podzielić na trzy etapy: pierwszy zaczął się wraz z transformacją ustrojową i trwał do wejścia w życie układu europejskiego zawartego między Polską a Wspólnotą Europejską i jej krajami członkowskimi, drugi rozpoczął się w lutym 1994 r. i trwał do rozpoczęcia negocjacji o członkostwo Polski w Unii Europejskiej, etap trzeci to okres negocjacji z Komisją Europejską, który zakończył się akcesją.

W pierwszych latach funkcjonowania nowego ustroju skupiono się na dwóch istotnych problemach, po pierwsze na usunięciu przepisów nawiązujących bezpośrednio do systemu gospodarki planowanej, które nie pasowały do realiów gospodarki rynkowej, po drugie na ochronie interesów pracowników, który tracili zatrudnienie w związku z restrukturyzacją zakładów pracy.

W okresie stowarzyszenia z Unią Europejską o obowiązku zbliżenia ustawodawstwa Polski z prawem wspólnotowym *expressis verbis* stanowił artykuł 68 układu europejskiego. Przepis mówił o podejmowaniu adekwatnych starań, aby zapewnić zgodność przyszłego ustawodawstwa w Polsce z ustawodawstwem wspólnotowym. Układ europejski nie nakładał jednak obowiązku wstąpienia Polski do Unii Europejskiej. Proces harmonizacji polskiego prawa pracy największego dynamizmu nabrał w latach negocjacji z Unią Europejską. Okres ten charakteryzował się największą liczbą zmian przepisów, a do poważnych nowelizacji przepisów dochodziło w latach 2001, 2002 i 2003.

Celem pracy jest ukazanie procesu europeizacji polskiego prawa pracy, który dokonał się po 1989 r. Artykuł wskazuje etapy ewolucji przepisów oraz zasadnicze kierunki zmian w prawie pracy. Ukazano także problematykę wejścia w życie nowelizacji, wykładni przepisów oraz krytyczne uwagi do procesu dostosowania polskiego prawa pracy dyrektyw unijnych.

**Introduction**

Labour law is one of the areas of the law that is subject to dynamic evolution. This takes place as a consequence of changing economic and social conditions, including rapid technological development, development of certain industries and sectors of the economy coupled with the recession in the other ones, demographic changes, development of new forms of work and thanks to the more extensive access of employees to knowledge and means of communication. The industrial revolution that took place during the 19<sup>th</sup> c. represents a historical example that reflects the influence of technological development on the development of work relations' formats. The shape of the labour law regulations is also influenced by the social partners, i.e. the trade unions and organisations of employers.

The dynamism of changes in the law was subject to in depth discussion in the European science of the labour law. In the doctrine of the law, particularly the German one, the discussion was conducted on whether the matter so variable as the labour law regulations should be subject to codification at all. Prior to 1989, the Polish doctrine of the labour law presented an entirely different position. There was the unanimous opinion concerning the need for existence of codified form of the labour law (ZIELIŃSKI 2006, p. 3). During the late 1980s and early 1990s theoreticians of the labour law supported the concept of labour law recodification that is a fundamental novella to the Labour Code of the 26<sup>th</sup> of June 1974. The Commission for the Reform of the Labour Law was established already in 1990 (ZIELIŃSKI 2006, p. 4).

The evolution of the Polish labour law during the past two decades was determined by two fundamental factors: the economic transformation, and exactly the transition from the centrally controlled economy to market economy, and adjustment of the Polish law to the European Union standards. The process of the Polish labour law adjustment to the European Union regulations was conducted in three stages:

1. stage one started with the systemic transformation and continued until the beginning of 1994, that is the effective date of the Europe Agreement made between Poland and the European Communities and their Member States,

2. stage two continued from February 1994 through the end of March 1998. That period is linked to the commencement of negotiations for membership of Poland in the European Union,

3. stage three started with the end of March 1998 and ended at the moment of Poland's accession to the European Union, i.e. the 1<sup>st</sup> of May 2004 (*Europeizacja...* 2004, p. 16).

### **Changes in the Polish labour law after 1989 (Period from 1989 until the 1<sup>st</sup> of February 1994)**

The events of 1989, political and economic transformations initiated during that time, caused the necessity of transformations in the labour law. The first novella of the Labour Code was implemented by the Act of the 7<sup>th</sup> of April 1989. During the initial months of the new system operation the focus was on two important issues – first, elimination of the regulations referring directly to the planned economy system that did not fit the market economy realities and second, protection of the interests of employees losing jobs as a consequence of restructuring of their employers (MITRUS 2006, p. 122).

Polish labour law started evolving towards the European standards already in 1989, although at that time Poland was not under the obligation of

considering the achievements of the Community law, the so-called *acquis communautaire* yet. As indicated by Leszek Mitrus, the Community solutions were treated as the model for the Polish legislator. Among the legal acts inspired by the European law the following can be listed: the Act of the 28<sup>th</sup> of December 1989 on special principles for terminating the employment relations with employees for reasons concerning the employer and amendment to some other acts (DzU, nr 20, poz. 107) (Directive 75/129) and the Act of the 29<sup>th</sup> of December 1993 on protection of employee claims in case of employer's insolvency<sup>1</sup> (Directive 80/987).

It should be noticed that the labour law already at that time was a strongly "internationalised" branch of the law (MITRUS 2006, p. 105). The shape of the domestic provisions was influenced by the conventions of the International Labour Organisation (ILO). Currently, under Article 87 section 1 of the Constitution of the Republic of Poland the ratified ILO conventions are the source of the Polish labour law without the need for causing their entry into force by specially issued regulations (ŚWIĄTKOWSKI 2010, p. 81). It is worth adding that the ratified ILO convention may introduce regulations to the benefit of employees but it may not lead to decreasing their rights or increasing their burdens (LISZCZ 2009, p. 67). As Teresa Liszcz remarks, Poland is the country with one of the largest numbers of ratified conventions although we have not ratified a number of conventions important from the perspective of the rights of the employees, such as, among others, Minimum Wage Fixing Convention No 131 of 1970 (LISZCZ 2009, p. 68).

### **The effective date of the Europe Agreement (the 2<sup>nd</sup> of February 1994 – March 1998)**

Entry into force of the association agreement with the European Communities and their Member States that took place on the 1<sup>st</sup> of February 1994 is considered the date initiating the process of systematic Europeanization of the Polish labour law (MITRUS 2006, p. 105). Article 68 of the Europe Agreement contained, expressed *expressis verbis*, the requirement for the approximation of Poland's existing and future legislation to that of the Community. The provision also stated that Poland shall use its best endeavours to ensure that future legislation is compatible with Community legislation. The Europe Agreement did not, however, impose the general duty of Poland's accession to the European Union. In such a case, as highlighted by the doctrine, the duty of undertaking actions aimed at assuring consistency of our legislation with the

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<sup>1</sup> Uniform text, DzU of 2002, No 9, item 85 as amended.

European Communities *acquis communautaire* was of conditional nature (*Europeizacja...* 2004, p. 17).

In 1996, a major novella of the Labour Code of 1974 took place. The catalogue of fundamental principles was complemented by, among others, the principle of equal rights of employees in performance of the same duties and prohibition of discrimination in employment relations (Art. 11<sup>1</sup>, 11<sup>2</sup>, 11<sup>3</sup>), the principle of employees participation in management of enterprises (18<sup>2</sup>), the duty to observe the dignity and other personal goods of the employee (11<sup>1</sup>, 11<sup>2</sup>, 11<sup>3</sup>) and the principle of freedom of association of employees and employers in organisations aiming at representation of their rights and common interests (18<sup>1</sup>) (ZIELIŃSKI 2006, p. 26).

Changes to the Labour Code made in 1996 imposed a number of new duties on the employer including, among others, the duty of notifying the employees about the change of employer and resulting consequences for employees taken over (art. 231 § 3), the duty of specifying the place of work in the employment contract (art. 29 § 1 point 1) and the duty of confirming the contract conditions within 7 days as of the date of commencement of work by the employee (art. 281 pkt. 2). The new regulations also increased the duration of holidays of employees with employment history of up to 6 years (art. 154 § 1) and specified clearly the right of the employee to refrain from work when its conditions do not comply with the OHS regulations (art. 208). The novella strengthened the legal position of the employee bringing the Polish labour law closer to the European Union Standards (FLOREK 2011).

The legislator, nevertheless, retained art. 300 of the Labour Code stipulating that all issues not regulated by the provisions of the labour law will be governed by provisions of the civil law unless they are contrary to the principles of the labour law. At the same time art. 12 of the Labour Code concerning the requirement of observing work discipline that was a socialistic relic in the Polish labour law was repealed (ZIELIŃSKI 2006, pp. 26, 27).

Given lack of duty to create legal norms corresponding with the Community standards, during the first and second period of creating the labour law the Community standards were not considered in full. At that time no such need was seen. The novella of the labour code enacted on the 2<sup>nd</sup> of February 1996 or the reform of collective work contracts implemented by the Act of the 29<sup>th</sup> of September 1994 on amendment to the Act – The Labour Code and amendment to some other acts are examples of such legislation (DzU nr 113, poz. 547). This does not mean that designing changes to the regulations contained in the labour code the Community legislation was not considered either. Just the opposite, it was known to the working legislators that earlier consideration of European achievements in the labour law in that field would contribute to making a smaller number of amendments in the future years

related to implementation of the *acquis communautaire* in our system of legislation. However, during the pre-negotiations period adjustment of the labour law regulation to the economic and political reality of market economy still played the priority role (*Europeizacja...* 2004).

### **Negotiations with the European Union**

Commencement of negotiations with the European Union was a clear signal that the process of harmonisation of the Polish law with the *acquis communautaire* was entering the decisive stage. That period was characterised by the largest number of changes in the regulations. Major novellas of the legislation took place during three consecutive years 2001, 2002 and 2003 completing the process of harmonisation 2003 (FLOREK 2011). Those changes were made in the Labour Code as well as in the other Acts.

The first novella took place in August 2001. Article 261 of the Act on trade unions introduced the duty of notifying the trade unions about the change of the employer. The novella introduced the contract conditions for employees delegated to work abroad in the European Union countries and additional contractual provisions concerning those employed in the countries that were not Members of the European Union. Regulations concerning equal rights of men and women in employment relations were subject to further evolution that was supported by new standards concerning the liability for damages (FLOREK 2011).

Another novella was enacted in July 2002. The new regulations allowed more extensive overtime work than so far and also offered the possibility of shortening the work time in case of persons eligible to child care leave. Those changes allowed more flexible work time and its adjustment to the personal needs of the employee and the employer. Harmonisation with the Community regulations covered the regulations concerning insolvency of the employer (novella of the Act of the 29<sup>th</sup> of December 1993 on protection of employee claims in case of employer's insolvency).

The last novella of 2003 generally ended the process of adjustment of the domestic legislation to the *acquis communautaire*. The main stream of changes concerned the anti-discrimination regulations. The new regulations implemented the standards of the Directives 2000/43 and 2000/78 into the Polish law expanding the prohibition of discrimination of employees by further criteria such as the racial origin, religion, disability, age and sexual orientation (FLOREK 2011). Provisions of art. 9 § 4, art. 11<sup>3</sup>, art 18<sup>3a</sup> and art. 18<sup>3e</sup> can be included in the group of regulations concerning the issues of even treatment of men and women. This resulted in the change of the title of

Chapter IIa, which started indicating that equal treatment in employment is its basic subject.

Definition of the frameworks of indirect discrimination, i.e. such, where as a consequence of seemingly neutral decision, criterion or action differences occur in the employment conditions that have negative influence on the situation of all or a significant number of employees of the identified group unless those differences can be justified by objective reasons (art. 183a § 4 of the Labour Code) was an important novelty. The definitions of molestation and sexual molestation were also provided (art. 183a § 5 of the Labour Code). The definition of mobbing was also introduced. The Act also determined the liability for damages to persons that suffered from discrimination (art. 183d of the Labour Code).

The novella also introduced new regulations concerning flexible forms of employment, i.e. work in less than full time and for specified time expressing the principle of proportionality (*pro rata temporis*). The new regulations stipulated that in the situation where different treatment is not justified by objective considerations employees employed on the above-indicated principles might not be treated for that reason in a less favourable way than the employees employed for unspecified time or full time.

Important changes also applied to work time and holidays. The novella implemented the standards of the directive 93/104. The Act stipulated that the work time per week may not exceed the average of 48 hours during the assumed accounting period and that during each week the employee is eligible to uninterrupted rest of at least 35 hours.

Prof. dr hab. Andrzej Patulski and legal counsel Grzegorz Orłowski presented relatively critical opinions concerning the reforms of the Polish labour law on the verge of accession to the European Union in the „Monitor Prawa Pracy” (1/2004). Those lawyers, in the article „Ewolucja polskiego prawa a model polski” (Evolution of the Polish law and the Polish model) presented three fundamental theses. First, the novellas made prior to the accession did not implement systemic changes. *The system of work, which is in the statu nascendi, seems to be now a hybrid of the market (encompassing also the “grey zone”, statism and quasi welfare state. The weakness of the state apparatus (corrupt to a significant extent) and absence of effective mechanisms of State intervention in the economic processes as well as high costs of work facilitate “work in the grey zone” (according to the statistical studies every fifth Pole in the productive age admits working in the “grey zone”)* (PATULSKI, ORŁOWSKI 2011).

Second, the legislator was unable to catch up with the changes taking place in our labour market. An example here is, among others, the legal regulation of temporary employment agencies. As indicated by the authors, such agencies had operated in Poland since mid-1990s but only in 2001 the

notion of temporary employment agency was introduced in the Labour Code while the comprehensive regulation of legal relations under that system was introduced only by the Act of the 9<sup>th</sup> of July 2003 on employment of temporary employees.

Finally, and third, the liberalisation of the Polish labour law was taking place by means of the judiciary liberalisation (PATULSKI, ORŁOWSKI 2011). According to the lawyers, the judiciary responded to the needs of the changing labour market earlier than the legislator. The resolution by the Supreme Court of the 9<sup>th</sup> of October 1997 allowing inclusion of unpaid and not included in the work time breaks in the collective employment contract, other agreement based on the Act, work rules and regulations, charter or employment contract is presented as an example of that trend<sup>2</sup>. The novella of the 26<sup>th</sup> of July 2002 in art. 129<sup>10</sup> § 2 of the Labour Code offered the possibility of implementing by the employer of one break that is not included in the work time, which does not exceed 60 minutes and is meant for consumption of a meal or arrangement of private matters. The judgment of the Supreme Court of the 7<sup>th</sup> of December 1999 declared the then effective art. 240 § 3 of the Labour Code unconstitutional, which was later confirmed by the legislator that in the novella of the 9<sup>th</sup> of November 2000 amended the text of that provision<sup>3</sup>.

### **The issue of the adjustment regulation coming into force and of the interpretation of the law**

Determination of the date of entry into force for the regulations adjusting the Polish law was an important issue during the period of implementation of the regulations. Some of the regulations entered into force with accession of Poland to the European Union, some, however, on an earlier date. The legislator opted for still another procedure in case of art. 25<sup>1</sup> of the Labour Code. That regulation was included in the Polish labour code for performance of the Directive No 99/70 of the 28<sup>th</sup> of June 1999 concerning the framework agreement on fixed-term work. The consecutive novella of the labour code suspended application of that regulation by stipulating that the regulation shall not be effective as of the 28<sup>th</sup> of November 2002 until the date of accession of Poland to the EU, i.e. the 1<sup>st</sup> of May 2004. That legislative operation, however, was not a common component in the process of Polish legislation adjustment to the *acquis communautaire* (*Europeizacja...* 2004,

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<sup>2</sup> III ZP 21/979

<sup>3</sup> I PKN 438/9911



p. 19). The issue was additionally complicated by the next novella of the labour code that took place during “suspension” of art. 25<sup>1</sup> application. The novella of the labour code of the 14<sup>th</sup> of November 2003 added two new paragraphs, which caused that after termination of the “suspension” the regulation entered into force with changed text.

The institutions of the labour law are subject to rapid transformations and changes. The labour law must catch up with the changes taking place as concerns the conditions of employment, wages, protection of work, occupational health and safety, etc. Professor Sanetra expresses the opinion that haste in implementation of directives before the dates set in them is not recommended. He motivates it by the fact that the directives already drafted may be changed. The role of the Court of Justice of the European Union, which may clarify possible doubts developed during implementation, is also important here. Observation and taking example from other countries may also facilitate the process of implementation of directives. It is also worth noticing that the economy of the law for which representatives of many fields of the law and legislators themselves opt requires avoiding mistakes and making multiple changes.

The fact that the directives impose mainly new duties on entrepreneurs – employers represents another argument presented by the doctrine of the labour law that speaks for moderation in rapid implementation of the solutions from the directives in our labour law. Increased burdens resulting from strengthening protection of the employee may lead to weakening the competitive advantage, and as a consequence the economic position, in case of countries representing a weaker level of economic development. That situation in turn will not contribute to the process of equalising the living standards in the EU countries assumed by the European Union.

It is also indicated in the doctrine that implementation of the directive in one operation and not “part by part” is necessary (*Europeizacja..* 2004, p. 21). This allows more effective verification of errors and introduction of appropriate amendments at a later time. Obviously implementation of the complete directive before expiration of the deadline specified for its implementation is necessary.

A problem may also emerge in the situation when a specific directive is not enacted yet but discussions and works on enacting it are in progress or the draft text is already known. Such a draft may become inspiration for enactment of the legal solutions specified in the draft but on condition that the directive is enacted in the format presented in the draft. Polish labour legislation knows such an example and such a situation occurred in case of the Act on employment temporary of employees enacted on the 9<sup>th</sup> of July 2003 (DzU nr 166, poz. 108). This is the conclusion stemming from the fact that

regulations included in the draft European Union directive of the 20<sup>th</sup> of March 2002 concerning temporary employment were included in it. At this point it should also be added that a part of the doctrine criticises the fact that the provisions concerning temporary employees have not been included in the labour code (*Europeizacja...* 2004, p. 22).

It can be concluded that undertaking the legislative effort in the field of the labour law or in the other fields of the law under the inspirations stemming from the draft directives or in general the legal acts of the European Union is not a mistake and such actions could be qualified as positive and needed, however, it should be remembered that legislative activities based on drafts of the European Union legal acts may lead to the need for amending the Polish legislation in case, e.g. the directive does not enter into force or enters into force in a format different than initially assumed in the draft. Also the action of the Polish legislator in the form of implementation of the European Union provisions concerning the individual employment relation by placing such regulation in separate Acts should be criticised as this leads to segmentation of the labour law.

Interpretation of the European labour law represents an important issue. In case of the regulations implemented from directive the purpose based interpretation that is the purpose expressed by the regulations of the directives and the intents of their creators as well as the interpretational achievements of the Court of Justice of the European Union is of primary importance. The language, logical, systemic, functional and historical interpretations in the context of our labour law must give priority to the purpose based interpretation of the European labour law. The question whether the interpretation of the labour law that implemented the *acquis communautaire* should be considered binding before Poland obtaining membership in the European Union, i.e. before the 1<sup>st</sup> of May 2004 is the issue worth mentioning. In the opinion of the doctrine the answer to this question must be positive under a certain condition, that is, such interpretation will be binding, but only when specific regulations of *acquis communautaire* have been implemented for the purpose of satisfying the requirements of the European labour law and not on the base of general inspiration with that law (*Europeizacja...* 2004, p. 29). Under such circumstances it should be considered that in case of Poland that situation occurred as of the time when the authorities of the State started negotiations on accession of our country to the European Union.

## Conclusion

Polish labour law was subject to major metamorphosis during the years 1989-2004. The factors that determined its development that is the economic transformation and the process of adjustment of the Polish law to the European Union standards influenced the major directions of labour law evolution.

During the pre-negotiations period (1989-1998) the process of adjustment of the Polish labour law to the requirements of the market economy was the priority. "Modernisation" of the labour law was inspired by the European solutions in frequent cases. That trend was visible in particular during the period of association with the European Union. As of that moment we can talk about systematic Europeanization of the Polish law. The novellas strengthened the position of the employee bringing the Polish labour law closer to the European Union standards.

Commencement of the negotiations with the European Union gave the clear signal that the process of Polish law harmonisation with the European Union law is entering the decisive stage. That period was characterised by the largest number of changes in the adjustment regulations. The major area of changes covered antidiscrimination provisions in both the direct and indirect dimension. The issues of mobbing found a wide regulation. The changes also allowed more flexibility in the regulations concerning the work time.

The accession of Poland to the European Union has not completed Europeanization of the labour law as this is a continuous process because as a Member State we are implementing new directives of which some tens were enacted after 2004.

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Ustawa z dnia 29 września 1994 roku o zmianie ustawy – kodeks pracy oraz o zmianie niektórych innych ustaw. DzU nr 113, poz. 547.

Ustawa z 29 grudnia 1993 roku o ochronie roszczeń pracowniczych w razie niewypłacalności pracodawcy. DzU nr 9, poz. 85 z późn. zm.

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1. I PKN 438/9911
2. III ZP 21/979

## GUIDELINES FOR TEXT PREPARATION FOR THE "OLSZTYN ECONOMIC JOURNAL"

### ZASADY PRZYGOTOWANIA ARTYKUŁU DO "OLSZTYN ECONOMIC JOURNAL"

The "Olsztyn Economic Journal" is a scientific magazine published by-yearly in English. It publishes methodological, review and empirical papers in economic sciences.

The publication is also available in electronic format at **www.metapress.com**.

On the base of the parametric evaluation by the Ministry of Science and Higher Education in Warsaw of 2009 "Olsztyn Economic Journal" scored 4 points.

Papers presented by the Authors should be written in the WORD text editor in Times New Roman, 12 points font with at least 1.5 spacing (on the A 4 page there are 25 lines, the right margin is 3 cm). The maximum text is 15 pages.

Polish Authors should supply the text in Polish and the foreign Authors in English.

All papers shall be subject to evaluation by the Scientific Editor and the peer review. The Authors should consider the comments by the reviewers or respond to them.

The Author should send the text of the paper to the Publisher in Polish or English in 1 copy.

On receiving the review the Author should send to the editors:

- the copy with the comments by the reviewer,
- the corrected copy of the paper with the copy on electronic medium (disc or CD),
- the response to the review,
- the corrected copy of the paper in English.

In the scientific papers for the "Olsztyn Economic Journal", the following header should be positioned at the top of the page:

Olsztyn Economic Journal – Abbrev.: Olszt. Econ. J., No..., Y...

Underneath the paper title (in Polish and English), followed by the name and surname of the author (authors), name of the organizational unit (institute, faculty, chair, division) and the school should be provided.

The key words (maximum 5 words) and abstract in Polish should also be provided. The paper together with the abstract may not exceed 12 pages of the text. The abstract of up to 0.5 page should present the objective, subject, methodology and results of the research/study.

Each paper should consist of the identified following parts:

- introduction with the clearly formulated objective,
- description of the methodology of studies,
- interpretation of the results obtained, discussed in the individual parts of the paper,
- conclusion,
- bibliography.

The units of measurement should be given according to the international SI system. Tables and figures (photographs and graphs) should be numbered with Arabic numbers and provided with the title and source. Mathematic formulas should be written in the WORD editor. Letters of the Greek alphabet, symbols, special signs should be clearly explained in the margin with indication which of them are to be set in ordinary, italics or bold set.

Graphic materials (drawings, diagrams, graphs) should be prepared in the software operating in the Windows environment (e.g. Excel, Corel Draw). Figures prepared in other specialist software should be recorded in the Windows Metafile (\*.wmf) format allowing importing them to Corel. In the text references to the figures and tables should be made in the sequence from 1 to n (according to the numbering).

Under the tables and figures their source should be given.

We do not accept handmade drawings, photocopies, scans and materials from the.

The literature should be quoted in the paper by providing the author's name, year and pages in brackets (e.g. KOWALSKI 1999, p. 23, KOWALSKI, NOWAK 2000, pp. 5–8, WIŚNIEWSKI et al. 2003, pp. 34–56) or according to WIŚNIEWSKI (2000, pp. 11–12).

If the reference in the text concerns a collective paper, instead of the author's name the full title of the paper (Elektronika. 1993) or the abbreviated title (Dbajmy o właściwe suszarnictwo... 1992) should be given.

The bibliography should be set in the alphabetic order (without numbering) in the following way: surname(s) of the author(s), initials, year of publication (when more papers were published by the same author during the same year the individual papers should be marked by letters a, b, c etc. after the year), title (in italics), bibliographic abbreviation of the publisher and place of publication or name of the periodical, volume number, number and page number.

Groups of works by the same author(s) should be set in chronological order (from the oldest to the most recent).

In case of books, following the name of the author the year of publication, title, publisher and place of publication should be given, e.g.:

KARPACKI M., SAWICKI H. 1980. *Ekonomia i organizacja gospodarstw wiejskich*. PWN, Warszawa.

KOS C. 1997. *Marketing produktów żywnościowych*. PWRiL, Warszawa.

Collective papers:

Dbajmy o właściwe suszarnictwo ziarna. Red. K. LEWIN 1982. T. 1. PWN, Warszawa.

When use is made of a particular part or chapter only:

LENARTOWICZ M. 1963. Opis bibliograficzny. W: *Metodyka bibliograficzna*. SBP, Warszawa, s. 6–16.

Periodicals:

In the bibliography the following information should be given in sequence: surname of the author and initial, year of publication, paper title and next the official abbreviation of the periodical, volume, number (in brackets) and pages on which the paper is published, e.g.:

CZAJA J., ŻAK M. 1993. *Systemy przetwarzania danych przy szacowaniu nieruchomości metodami rynkowymi*. Acta Acad. Agricult. Tech. Olst., 451, Geod. Ruris Regulat., 24: 7–19.

TOMCZYK Z. 1996. *Wynalazczość i racjonalizacja źródłem postępu technicznego*. Gosp. Narod., 6: 21–25.

Unpublished papers:

MALICKI K. 1990. *Ubój świń*. Instytut Żywienia Zwierząt ART, Olsztyn (typewritten text).

KOWALSKI H. 1992. *Wychów cieląt*. Katedra Hodowli Bydła ART, Olsztyn (doctoral dissertation).

In case of electronic documents the site name, link and access date should be given, e.g.:

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Tables, figures and other appendices should be recorded in separate files. On the CD the number of the figure in the paper should be included in its title.

The publisher reserves the right to make style adjustments. Any material changes to the text will be agreed with the authors. Making changes to the content or editorial changes by the author at the proofreading stage is not recommended.

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In case of material editorial corrections the publisher can return the paper to the author for corrections.