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**THE IMPACT OF FINANCIAL CRISIS
ON THE NON-LIFE INSURANCE MARKET
IN LITHUANIA: WILL THE MARKET GROWTH
EXPECTATIONS BE MET?**

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Key words: insurance, financial crisis, growth, non life insurance.

A b s t r a c t

The article analyzes the insurance market trends, which have been determined by the financial crisis, and reveals the development features and prospects of non-insurance market, which accounts for almost 70% of the total insurance market, in Lithuania. The obtained results showed that after the market shrank by a quarter in 2009, the insurance sector is recovering, and while the volume of issued insurance premiums increased in 2013, they still remain lower than during the pre-crisis period. 2010 is a distinctive year for the Lithuanian non-insurance market due to a track of unusual abundance of adverse events. Throughout the analyzed period the structure of the non-insurance market issued portfolios remained the same in Lithuania, and throughout the whole analyzed period non-insurance market is dominated by Mandatory Third Party Liability Insurance (MTPLI), Voluntary vehicle insurance (CASCO) and Property insurances, which, according to estimates and analysts' forecasts, have growth potential.

**WPŁYW KRYZYSU FINANSOWEGO NA LITEWSKI RYNEK UBEZPIECZEŃ
MAJĄTKOWYCH – CZY RYNEK SPROSTA OCZEKIWANIOM?**

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Słowa kluczowe: ubezpieczenia, kryzys finansowy, wzrost, ubezpieczenia majątkowe.

A b s t r a k t

W artykule omówiono wynikające ze światowego kryzysu finansowego trendy na rynku ubezpieczeń i przedstawiono szczegóły rozwoju i perspektywy rynku ubezpieczeń majątkowych, które stanowią ok. 70% całego rynku ubezpieczeń na Litwie. Wyniki badań wskazują, że po redukcji rynku

o jedną czwartą w 2009 r., branża ubezpieczeń odżywa i chociaż w 2013 r. składka przypisana wzrosła, to przypis ten jest niższy niż w okresie przedkryzysowym. Na litewskim rynku ubezpieczeń majątkowych szczególnie obfitujący w nieprzychylnie wydarzenia był 2010 r. W całym okresie badań litewskiego rynku ubezpieczeń majątkowych struktura portfela składki przypisanej pozostała niezmienna, a w całym badanym okresie dominują ubezpieczenia OC, AC oraz pozostałe ubezpieczenia majątkowe, które według obliczeń i prognoz analityków mają potencjał wzrostowy.

Introduction

Among financial intermediaries, in performing functions of financial system, insurance companies play important role (ĆURAK et al. 2009). Insurance companies and insurance intermediaries effectively redistribute the funds among economic sector units with a surplus, and economic sector units with a budget deficit using insurance policies in the financial system. Insurance is one of the main risk management instruments for both natural and legal persons, therefore, according to the theory, insurance sector could be one of the factors contributing to economic growth (ĆURAK et al. 2009, p. 31, 32, BALKEVIČIUS 2012, p. 87, LEZGOVKO 2003, p. 33, 34). The importance of insurance in Lithuania is undeniable. Insurance services have multiple effects on the country's economy: ensure the financial stability to businesses and individuals; increase the population saving rate, which in turn increases investments; reduce the budget means allocated to social security; raise public awareness of the potential risks and ways to manage them. The ongoing globalization of the financial markets has affected the insurance market as well; therefore national insurance markets throughout the world have experienced a number of significant changes. More and more countries are tied to the so called integration agreements, which aim to remove the operational barriers of the insurers in the countries-participants, providing services to national customers, in the national territories of other countries. These processes take place in the European Union countries, where due to the coherent actions of the last 50 years, a united insurance space has formed, where the actions of the insurers is regulated by the inclusive EU law, together with the national financial and civil laws (LEZGOVKO 2003, p. 34, 35). One of the advantages of the insurance market globalization is the foreign insurers' financial strength, which allows them to take risks that exceed the financial capacity of local insurers; this ensures reliability and uninterrupted operations of an insurance company. BERNAT, GRUNDEY (2007, p.189, 190) notice that market economy has long been the dominant market leverage in developed countries. However, in the new European Union countries, including Poland and Lithuania, that have stepped many market transformation phases, insurance market behavior is constructed according to the models of developed countries, which have long operated and are cost-effective. This

view is shared by ULBINAITE et al. (2013, p. 144) who suggest, that when speaking about insurance service consumption, Lithuania is usually seen as a market that has shared behavioral patterns within the group of Central and Eastern European countries. Since modern insurance is not limited by national borders, residents of one country may get insurance from a company, whose share capital's origin is physically distant from the place of the transaction. In addition, not only insurance companies engage in insurance activities – many banks, having received the necessary license, establish or buy insurers, provide their own name and integrate these services to the activities of the entire financial group. These options generate very different results in different countries as their legal systems, economic structure, purchasing power, the power of insurers and banking markets, consumer needs are different (LEZGOVKO, LASTAUSKAS 2008, p. 128). In the insurance market, we are dealing with the economic and social insurance. Social security insurance includes: retirement, disability, sickness and accidents. However, business insurance can be divided into property and casualty. Social security ensures the social minimum for people who: have reached retirement age, have had an accident or become sick. The objective is to protect economic security of property, and life and health of the insured. Institutions offering insurance cover should take care of the quality of services and quality customer service. And so the strategy of customer orientation in the insurance market seems to be the right course of action (WITKOWSKA, LAKSTUTIENE 2014, p. 104). In order for the consumer to be satisfied which results in the need for the consumer to insure, it is required that the client would actively participate in the entire quality assurance process (WITKOWSKA, LAKSTUTIENE 2014, p. 110). Since non-life insurance in Lithuania accounts for 68 percent of the whole insurance market, it is important to analyze the changes taking place in the non-life insurance market and make assumptions that enable to expand the quality and development of the insurance services offered. Therefore, the purpose of this article is to carry out the analysis of the effect of the financial crisis on the Lithuanian insurance market and reveal non-life insurance market development characteristics and prospects in Lithuania.

Data and methods

The survey sample includes the registered insurance companies in the Republic of Lithuania operating from 2006 and branches of insurance companies of other European countries. The study period covers 2006–2013. Data of the Bank of Lithuania regarding insurance companies for the

mentioned period and the annual reports of the Insurance Supervisory Commission of the Republic of Lithuania for the period of 2006–2010 are used for carrying out the research.

Research methods used to reach the aim of the article and to solve the scientific problem are following: scientific literature review, analysis of analytical and empirical studies and synthesis of fragmentary knowledge on the subject, as well as mathematical statistical method – correlation and regressive analysis, and *P*-value negating the Null hypothesis. Indicators, describing the development level of non-insurance market – insurance penetration and insurance density – are calculated.

In general terms, insurance penetration is an economic indicator that reflects the ratio of insurance premiums issued during the research period to country's GDP. This indicator helps to compare the importance of insurance activities for the country's economy and helps to monitor the insurance sector (OECD.statExtracts 2014). Since the study is focused on the non-life insurance market, the calculations are based on formula (1):

$$\text{Penetration non life} = \frac{\sum_{i=1}^n D_1}{GDP} \cdot 100\% \quad (1)$$

Insurance density is an economic indicator that describes the development of the insurance market. Insurance density indicator shows the average amount of insurance premium per capita (OECD.statExtracts 2014). Since the study is focused on the non-life insurance market, the calculations are based on formula (2):

$$\text{Density non life} = \frac{\sum_{i=1}^n D_1}{\text{Population}} \quad (2)$$

D_1 is Direct gross premiums in formulas (1) and (2).

These formulas will allow calculating the non-life insurance penetration and density. It is recommended to interpret these indicators with caution because the contracts can be purchased by citizens of different countries than that where the insurance policy was issued; moreover, there might also be essential differences among countries' levels of development and standards of living.

The impact of the financial crisis on the insurance market

Lithuanian insurance market immediately after the restoration of Lithuanian independence was small with regards to the number of insurance organizations, but the situation began to change over the time. In 1990, the Insurance Law of the Republic of Lithuania came into force, which made it possible to establish the first private capital insurance companies. The statistics of 1992 show, that more than 90 percent of the insurance market was managed by the State insurance company. 1993 is marked in the Lithuanian insurance history as a year of a very rapid establishment of insurance companies because 32 insurance companies were registered (*Draudimas Lietuvoje* 2002. 2004). But over time, some insurance companies went bankrupt, some merged, some withdrew from the market and already from 2006, the same tendencies as in 2013 can be seen, i.e. the number of Lithuanian insurers is decreasing while the number of insurers from other EU member countries is increasing. In the non-life insurance market, affected by the financial crisis, 8 branches of European insurance companies out of 11 non-life insurance companies were operating in Lithuania in 2008. In 2013, 12 non-life insurance companies are operating in Lithuania, 9 of them are branches of European countries; while 9 insurance companies are operating in the life insurance market out of which 4 are branches.

The year 2008 was unfavorable to the world market, especially the second half of the year when the consequences of the financial crisis were felt by most of world countries. For the first time since 1980, the real world insurance market growth rate was negative and amounted to -2.0 percent. In 2008, insurance premiums, issued in the world insurance market, amounted to 4.3 billion US dollars, i.e. 3.4 percent more than in 2007. The amounts of issued life insurance premiums, decreased by 3.5 percent if compared to 2007, while the non-life insurance premiums decreased by 0.8 percent (in the industrialized countries, the non-life insurance market declined by 1.9 percent, and the life insurance market declined by 5.3 percent). The average growth rates in Europe significantly differed between the Western Europe countries (where the growth rates were negative and amounted to -6.9 percent) and the Central and Eastern Europe countries (they experienced a positive growth rate which amounted to 18.7 percent in life insurance and 5.7 percent in non-life insurance markets). Rapid growth, which was typical to the Lithuanian insurance market for several years, took the opposite direction in 2008. As similar trends prevailed in the global insurance market, Lithuanian insurance input in it has not changed and amounted to 0.02 percent of global insurance market in terms of issued premiums – the same as in 2007 (World insurance report 2008).

2008 was a breakthrough year for the Lithuanian insurance market. Even though the issued premiums decreased only slightly (2.6 percent), the market went into decline, which was influenced by the change of the country's economic cycle, i.e. transition from growth to recession period. It is interesting to note that during the downturn, when the life insurance market decreased by 32.2 percent, the amounts of issued non-life insurance premiums increased by 15.4 percent; however the real growth rate was negative in 2008 (-12.6 percent; the real growth rate was positive in 2007 – 34.7 percent). If compared to other European countries, the insurance market shrank more than in Lithuania only in the United Kingdom – 13 percent, Estonia – 13.2 percent, Liechtenstein – 15.4 percent. The largest of the insurance market among European countries was in Poland – 30.5 percent (World insurance in 2009).

One of the main indicators that reflect the development of the insurance market is part of the life insurance in the whole market. In the developed countries, the life insurance market amounts to more than 50 percent of a country's insurance market, while it ranges for about 60 percent in the global market. Lithuanian insurance market is dominated by non-life insurance, which amounts to 70 percent of the whole insurance market on the average (in 2007 – 62 percent, in 2012 – 68 percent) (*Draudimas Lietuvoje* 2008. 2010). The life insurance market in Lithuania, which has been growing until 2007, shrank and in 2008 returned to the level of 2005 (26 percent). The decrease of Lithuanian life insurance market share was mostly influenced by the decrease of the attractiveness of investment life insurance, which was caused by the subprime mortgage crisis in the United States in 2007 as well as by the stock price drop. It did not meet the expectations of the insurers to gain from the investments and particularly reduced the number of single premiums.

Lithuanian insurance market is traditionally dominated by the non-life insurance, whose rapid growth was slowed down by the global financial crisis, declining agricultural and household income (AIDUKIENĖ, SIMANAVIČIENĖ 2010, p. 12). Changes in the conditions and economic environment encouraged both insurers and assurers to begin adequately assessing potential risks and their consequences. The threats of the emerged recession influenced the insurance business to find new opportunities. Insurance companies had to take a fresh look at the business strategy and pay more attention not only to the retention of the existing insurance portfolio, but also to the development of complex insurance products, simplification of procedures, service culture and performing obligations on time. Fair competition, whose evidence was not only service price, but the value added of the insurance companies, should also contribute to that.

Non-life insurance market: yesterday, today and what to expect tomorrow?

As it was already noted, the non-life insurance market grew by 15.4 percent even at the time of the economic recession. After accounting for the annual inflation, the real non-life insurance market growth amounted to 4.1 percent. The largest impact on the non-life insurance market growth was made by the property insurance premiums which increased by almost 58 percent. These increased results in this insurance group were determined by the increased insurance coverage in the agricultural sector. A faster growth rate was noticed in 2008 in the Mandatory Third Party Liability Insurance (MTPLI) – 8.2 percent, health insurance – 19.4 percent and credit insurance – 38.3 percent as well. However, the financial crisis, that emerged in the second half of 2008, determined that non-life insurance market shrank by 29.5 percent in 2009 (slightly later than in other economic sectors), and it was the most unfavorable year throughout the history of the Lithuanian non-life insurance market (see Table 1).

Table 1

Non-life insurance market indicators

Specification	2006	2007	2008	2009	2010	2011	2012	2013
Issued premiums [mill. Lt]	1,011	1,300	1,504	1,059	1,009	1,139	1,214	1,314
Claims paid [mill. Lt]	453	599	758	834	730	744	698	743

Source: own calculations based on data of the Central Bank of the Republic of Lithuania.

According to the insurers, the main factors that contributed to the market decline in 2009 were the following: unfavorable business environment, reduction of companies' solvency, increased distrust in the financial sector, the change in the legal framework. While the business kept changing, the competition intensified so in order to keep its market share, hasty decisions were taken which were not always justified, the risk assumed was underestimated. Given the strong decrease in the non-life insurance market, it was expected that the amount of claims paid should also decline, yet the total insurance payments made in 2009 were by 11.6 percent higher than a year ago and reached 834 million Lt. In general, the growth of the claim settlements was determined by the credit insurance premiums, whose sum rose more than 5 times and amounted to 154.3 mill. Lt. (*Draudimas Lietuvoje 2009 2011*). It should be noted that the year 2010 was not favorable to the non-life insurance market due to the slow recovery of country's economic areas related to the non-life insurance market. The ongoing recession in transport and construction sec-

tors, lack of effective measures to stimulate the economy limited the demand of non-life insurance products. Also, the unfavorable labor market indicators determined the fact that the population buying the services of this market has not been active. In 2010, the extent of non-life insurance market decline was increased by the credit insurance, whose insurance premiums decreased by 56.6 percent to 11.0 mill. Lt. Due to the high credit insurance premiums, one of the insurers withdrew from the credit insurance market, and other insurance companies started assessing credit risk much rigorously. However, it can be seen that the largest impact on the decline of the non-life insurance premium was made by the decrease of credit insurance claims by 33.3 percent (*Draudimas Lietuvoje 2010 2012*).

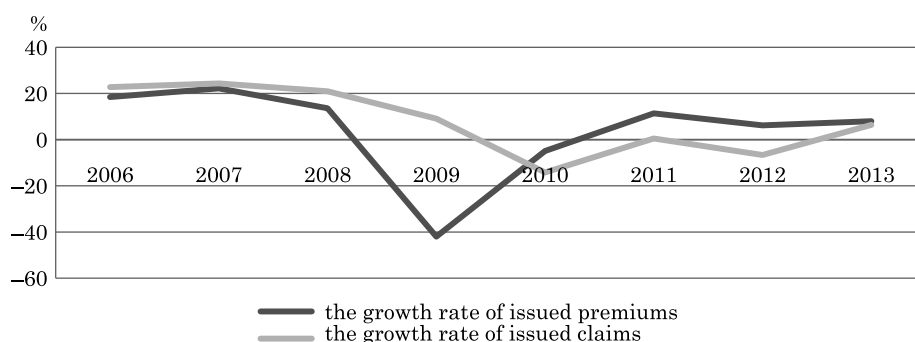


Fig. 1. The growth rate of issued premiums and claims, in percent

Source: Own study on the basis of data in Table 1.

The number of non-life insurance contracts concluded in 2013 has been growing at a similar rate as for three consecutive years. Only during 2013, the Lithuanian non-life insurance market had 5.2 million units of insurance contracts; this is 3.7 percent more than in 2012, and even 18.3 percent more than in 2008 when non-life insurance market was of highest capacity in terms of premiums (Central Bank of the Republic of Lithuania 2013). The growth rate shows that the largest decline in paid non-life insurance claims was from 2009 until 2010 and amounted to 14.2 percent (see Fig. 1). In 2013, 742.6 million Lt of claims were paid in the non-life insurance market, or 6.5 percent more than in 2012. It was influenced by the growing volume of MTPLI insurance, therefore in 2013 the amounts paid increased significantly. During 2013, in the insurance group covering the largest part of the portfolio there were 271.3 million Lt paid as insurance benefits, 5.2 percent more than in 2008. After evaluating the changes in the number of claims, it was noted that both MTPLI and Voluntary vehicle insurance (CASCO) average insurance

benefits exceeded the average of the previous periods – the increase in the average amounts was due to the rising prices of services and auto detailing.

The analysis of the non-life insurance penetration indicator evidenced that 299 Lt of non-life insurance premiums were attributed per capita in 2006 (see Table 2). While the non-life insurance was growing, the number of premiums also increased, and that influenced the increase in insurance density in 2008 up to 449 Lt. After the beginning of the crisis, the residents of the country started insuring their property less, therefore the density decreased in 2009 as well and amounted to 318 Lt, while in 2011 – to 311 Lt. Since 2011, as the insurance market situation started improving, the number of payments also increased, therefore one resident of the country would on average spend 446 Lt for the non-life insurance services in 2013, which is almost the same as before the crisis.

Table 2

Non-life insurance density and penetration

Specification	2006	2007	2008	2009	2010	2011	2012	2013
Density [Lt]	299	386	449	318	311	356	407	446
Penetration [%]	1.22	1.31	1.34	1.15	1.06	1.07	1.07	1.11

Source: own calculations based on data of the Central Bank of the Republic of Lithuania

Non-life insurance penetration rate shows the rate of the non-life insurance premiums to gross domestic product. Since the non-life insurance premiums rose faster than the gross domestic product in Lithuania, the indicator has been rising every year until 2008 and amounted to 1.34 percent in 2008.

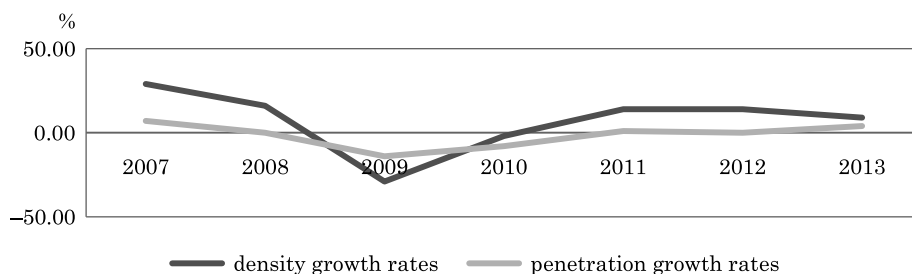


Fig. 2. The growth rate of the non-life insurance market density and penetration, in percent
Source: Own study on the basis of data in Table 2.

After the crisis hit the country's economy in 2009, the amount of insurance premiums decreased, and the penetration rate in 2009 decreased to 1.15 percent, while in the 2010 it reached the lowest value of 1.06 percent.

During the period of 2011–2012, a slight increase was recorded (the penetration rate was 1.07 percent), and in 2013 it reached 1.11 percent. The analysis of the density and penetration growth rates evidenced that the greatest decline occurred in 2009. Since non-life insurance market growth depends on the demand for insurance in other sectors of economy, it is likely that as the main sectors of economy start growing, non-life insurance market should also grow and the sector of the commercial insurance should recover. As the competition in the non-life insurance market remains high, it is necessary to search for new progressive solutions in order to maintain the market share. After the country's economy returns to the growing tendencies, non-life insurance market is dominated by an optimistic forecast, because as the economy grows, the demand for the insurance products grows as well, and in the long run the main challenge remains to increase the customers' trust in insurance coverage.

Analysis and prospects of the MTPLI, CASCO and Property insurance market

During the period analyzed, the Lithuanian non-life insurance premiums' portfolio structure was stable and throughout the whole period non-life insurance market is dominated by MTPLI, CASCO and property insurance. All road vehicles registered in Lithuania must be insured with Motor Third Party Liability Insurance. MTPLI insurance is an insurance that has the highest volume of signed contracts among all non-life insurance groups. In 2009, even though a little decreased, MTPLI insurance group remained the main non-life insurance market maker. In terms of premiums, it takes 34.4 percent of non-life insurance market (*Draudimas Lietuvoje* 2009. 2011). The number of contracts concluded in the largest insurance group (MTPLI) increased by 5.7 percent in 2013 (see Table 3).

The growth of MTPLI insurance premiums in 2012 was determined by the changed amount of insurance for a single accident in Lithuania, as well as increasing losses due to damages abroad. In 2013, 469 million Lt of MTPLI insurance premiums were issued, i.e. 6.3 percent more than before the crisis in 2008. As the business volume of MTPLI insurance grew, the amounts paid increased significantly (Central Bank of the Republic of Lithuania 2013). The insurance group covering the largest part of the portfolio paid 271.3 million Lt of insurance benefits in 2013, or 11.4 percent more than in 2012, and 5.2 percent more than in 2008. Commercial MTPLI insurance in Lithuania is much less common than the non-commercial, yet every year the number of commercial vehicles is almost twice if compared to non-commercial. The part of commercial vehicles, when compared with non-commercial decreased signifi-

Table 3

The indicators of Mandatory Third Party Liability insurance, CASCO and Property insurance

Specification	2006	2007	2008	2009	2010	2011	2012	2013
Mandatory Third Party Liability insurance								
Concluded contracts [th. Units]	2,314.4	2,571.0	2,354.6	2,248.1	2,336.5	2,472.3	2,535.7	2,680.4
Contract growth [%]	20.7	11.1	-8.4	-4.5	3.9	5.8	2.6	5.7
Issued premiums [mill. Lt]	366.2	450.1	480.9	376.7	374.6	390.0	425.0	469.1
Claims paid [mill. Lt]	187	239	268.5	256.3	232.6	234.9	243.5	271.3
Commercial insurance [%]	38	38	34	28	32	36	36	39
Non-commercial insurance [%]	62	62	66	72	68	64	64	61
CASCO insurance								
Concluded contracts [th. Units]	163.1	170.5	186.3	167.6	169.8	178.7	210.6	237.4
Contract growth [%]	6.7	1.05	8.5	-10.9	1.4	5.6	15.3	11.1
Issued premiums [mill. Lt]	301.0	411.8	401.0	245.3	223.3	256.3	287.0	307.3
Claims paid [mill. Lt]	163.1	210.2	258.5	225.1	212.1	212.1	198.4	213.3
Commercial insurance [%]	67	67	66	57	57	59	59	60
Non-commercial insurance [%]	33	33	34	43	43	41	41	40
Property insurance								
Concluded contracts [th. Units]	430.7	496.2	519.8	863.3	952.4	989.4	1,051.1	1,090.5
Contract growth [%]	8.2	15.2	4.6	39.8	9.3	3.7	5.9	3.7
Issued premiums [mill. Lt]	165	219	345.2	223.2	207.8	243.3	234.6	255.2
Claims paid [mill. Lt]	50.0	101.1	126.1	122.7	121.5	170.4	104.4	77.7
Commercial insurance [%]	56	57	62	52	47	49	43	43
Non-commercial insurance [%]	44	43	38	48	53	51	57	57

Source: own calculations based on data of the Central Bank of the Republic of Lithuania

cantly in 2009 (in 2008 it was 34 percent) (see Table 3), and it was determined by the shrinkage of the business sector due to the financial crisis. After the number of companies decreased, the number of commercial vehicles decreased as well, which resulted in the decrease in compulsory vehicle insurance. However, there is a new trend in 2013 – since the economy and business sectors are recovering, the share of commercial insurance in the whole market is also increasing.

After Lithuanian car park slowly upgraded, CASCO insurance group amount increased to 307.3 million Lt in 2013, i.e. 7.1 percent more than in 2012. Unlike contracts, there were more payments issued in the commercial insurance segment. The slower relative of growth of insurance contracts concluded in MTPLI, if compared to the growth of premiums, shows the growth of average premium in this insurance group; yet the trends of CASCO insurance are the opposite – the relative growth of concluded insurance contracts was higher than the growth in premiums which resulted in the

decline of average payments. It should be noted that the fixed CASCO insurance average premium was the lowest over the last ten years, while MTPLI insurance average premium in the commercial segment was the highest, but lower in the population segment if compared to 2008. The relative growth of CASCO insurance benefits was lower than that of TPVCA insurance – 7.5 percent. After evaluating the change in the number of benefits, it was noted that average benefits of both MTPLI and CASCO insurance exceeded the average paid amounts of previous periods – the increase in the average sums was determined by the rising prices in repair and car parts.

Property insurance was the fastest growing insurance type in all non-life insurance market until 2008 when the economic crisis sharply reduced the volume of insurance premiums. The premiums issued in 2008 amounted to 345.22 million Lt. This growth was determined by the rising inflation, which increased value of the private and commercial property throughout the mentioned period quite significantly. As the asset prices rose, so did the insurance premiums for any movable or immovable property. However, the amount of issued premiums decreased by 39.8 percent already in 2008 (*Draudimas Lietuvoje 2010. 2012*). The property insurance market began to recover from the second half of 2010; even though the amount of claims paid remained huge, the number of premiums and contracts increased.

One of the most successful periods for the non-life insurance market was 2013. There were no huge natural disasters during this period in Lithuania. The decrease of the amounts paid in the property insurance group (25.6 percent, to 77.7 million Lt) was determined by the smaller amounts paid to the legal persons. The amount of property insurance benefits for the residents increased by 8.7 percent, up to 45.4 million Lt and exceeded the amounts paid to the legal entities by 40 percent (Central Bank of the Republic of Lithuania, 2013). This indicates that the residents insure their property more actively than the business and the amounts of the property insurance of the residents exceeds the amounts of property insurance of the legal entities for several years now. The premiums issued in the property insurance segment for residents amounted to 145.1 million Lt, i.e. the most during the last ten years.

As for non-life insurance market prospects, AIDUKIENĖ, SIMANAVIČIENĖ (2010, p. 13), note that insurance market indicators are related to social environment factors such as unemployment level, the decrease in purchasing power of population, migration, etc. Therefore, when predicting results of MTPLI, CASCO and property insurance, it was determined that the strongest relation was between the issued MTPLI premiums and the average monthly gross wages ($r = 0.90$, $P\text{-value} = 0.002$), between the property insurance premiums and the unemployment rate ($r = 0.94$, $P\text{-value} = 0.001$), and

between the CASCO insurance premiums and the unemployment rate ($r = 0.98$, P -value = 0.000). After determining the determination coefficients and regression equations, it is likely that if the unemployment rate in 2014 is 10 percent, and the average monthly gross salary rises to 2274.4 Lt (Central Bank of the Republic of Lithuania, forecast), the growth of these three main non-life insurance groups is expected to be about 7 to 10 percent. This forecast is in line with the forecast of Deputy Director of the Maintenance Office Prudential Supervision department of the Bank of Lithuania M. Šalčius, who states that the Lithuanian non-life insurance, in terms of premiums should grow by 8 to 10 percent in 2014 if compared to 2013, if the economic trends remain unchanged (Central Bank of the Republic of Lithuania 2013). In summary, the property commercial insurance demand should increase both due to the development of individual business areas and urbanization, public spending on infrastructure projects. Vehicle insurance coverage will increase if new car sales increase, higher household income will increase the demand for property insurance, but if similar trends of the development of loss ratios remain, non-life insurance market growth in the future will be accompanied by inevitable increase in insurance prices.

Conclusions

Developing economy, agriculture and business sector resulted in rapid expansion of insurance market and until 2008 Lithuanian insurance market developed rapidly. However, as the crisis began in 2008, both life and non-life insurance markets shrunk. After a very large (by a quarter) decrease of the market in 2009, it is noticed that the insurance sector is recovering. However, though the volume of premiums issued in 2013 increased if compared to 2012, they still remain lower than during the pre-crisis period.

It can be said that the changes in the insurance market is determined by the efforts of the market participants and the environment in which the market operates. The year of 2010 is distinguished in the Lithuanian non-life insurance market with a track of unusual abundance of adverse events. Unexpected natural disasters were additional challenges for the economy and population of the country which has been recovering hard from the crisis. However, the insurers had no problems, when compensating for the losses due to disasters, the companies' trust in the insurance as a mean to protect from unexpected losses increased, and that encouraged a rapid growth in the main non-life insurance groups, whose results can be seen already today.

Throughout the whole period analyzed the structure of the portfolio of the issued premiums in Lithuanian non-life insurance market remained stable and

non-life insurance market is dominated by MTPLI, CASCO and property insurance. The identification of customer needs and search of the opportunities to offer them attractive products, retention of existing customers, monitoring and analyzing of the market situation and reacting to the market changes remain as priorities which should result in non-life insurance market growth.

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MYTHS AND FACTS CONCERNING LABOUR COSTS IN POLAND

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Key words: labour costs, taxation of labour, unemployment, grey economy, investments, inflation, social benefits.

A b s t r a c t

Many opinions have been expressed for years concerning labour costs in Poland. Unsurprisingly, those opinions have been far from consensus. Basically, low wages are treated as a factor increasing the competitiveness of our economy and it is argued that they constitute major proof that Poland is attractive for foreign investors. On the other hand, however, entrepreneurs and various organisations representing them have repeatedly pointed out that high labour costs in Poland are the principal cause of unemployment, growth of grey economy, and low competitiveness of the country's economy. The above problems assumed particular significance after Poland's accession to the European Union. Basing on statistical data and empirical research we try to verify some myths concerning the labour costs in Poland.

MITY I FAKTY O KOSZTACH PRACY W POLSCE

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Słowa kluczowe: koszty pracy, opodatkowanie pracy, bezrobocie, szara gospodarka, inwestycje, inflacja, świadczenia społeczne.

A b s t r a k t

Od lat funkcjonuje wiele opinii o kosztach pracy w Polsce. Opinie te są ponadto sprzeczne. Z jednej strony niski poziom płac jest traktowany jako czynnik zwiększający konkurencyjność gospodarki i wysuwany jako ważny argument świadczący o atrakcyjności Polski dla inwestorów zagranicznych. Z drugiej zaś, zwłaszcza w gronie przedsiębiorców i w ich organizacjach, dużo mówi się o wysokich kosztach pracy w Polsce jako przyczynie bezrobocia, rozwoju szarej strefy i niskiej konkurencyjności gospodarki. Problemy te nabrały szczególnego znaczenia po wejściu Polski do Unii Europejskiej. Wykorzystując dane statystyczne i wyniki badań empirycznych, autorzy postarają się zweryfikować niektóre mity dotyczące kosztów pracy w Polsce.

Introduction

In 2006 we took an attempt to verify seven myths concerning the costs of labour in Poland:

1. Cheap labour force is the decisive factor in making Poland attractive as a site for foreign capital investments.
2. High labour costs in Poland are caused predominantly by high taxes (social security contributions and PIT rates).
3. High labour costs lead to a further growth of grey economy.
4. The increase in labour costs leads to rising inflation.
5. High labour costs hamper the growth of investments and the creation of new jobs.
6. Lowering labour costs will decrease the rate of unemployment.
7. A market-oriented transformation of economy is accompanied by reduction of social benefits.

It turned out that none of the above myths were confirmed. Statistical data and results of empirical research used then (KRAJEWSKA, KRAJEWSKI 2007, p. 179–193) covered the period until 2004 and in some cases until 2005. Now, having access to the 2012/2013 statistical data, we will make another attempt at verifying the above enumerated myths.

Labour costs in the European Union – the level and pace of changes

Total labour costs cover wage and non-wage costs less subsidies. They do not include vocational training costs or other expenditure such as recruitment costs, spending on working clothes, etc. Wage costs include direct remunerations, bonuses, and allowances paid by the employer in cash or in kind to the employee, etc. Non-wage costs include the employers' social contributions plus employment taxes regarded as labour costs less subsidies intended to refund part or all of the employer's cost of direct remuneration.

Before the enlargement of the EU with 8 new countries from the Central and Eastern Europe the differences between old (EU-15) and new states (EU-8) were enormous. According to the data included in table 1, in 2002 the labour costs in the old EU countries per hour¹ were over 5 times higher than in the countries which got accepted into the Community in 2004. In the periods under discussion the lowest labour costs were registered in Lithuania (EUR 2.7),

¹ Hourly labour costs are calculated by dividing annual labour costs by the overall number of hours worked.

and the highest in Sweden (EUR 28.6), thus marking an over 10-fold difference. Poland's labour costs amounted to EUR 4.5 per hour, an index which was lower only to that of Slovenia (EUR 9.0).

In 2013 labour costs were lowest in the two countries which entered the EU in the next stage of enlargement, namely in Bulgaria (EUR 3.7 per hour) and Romania (EUR 4.6), while the highest costs were registered in Sweden (EUR 40.1), Denmark (EUR 38.4) and Belgium (EUR 38.0), which means that the labour costs per hour in Bulgaria are over 10 times lower in comparison with the countries having the highest labour costs. However, the situation of the remaining Central and Eastern European countries in comparison with the countries having highest labour costs improved considerably. The fastest growth of labour costs per hour was noted in Estonia (from EUR 3 in 2000 to EUR 9 in 2013) and Slovakia (from EUR 3.1 to EUR 8.5). In Poland labour costs per hour grew at a slower pace than in the other Central and Eastern European countries (from EUR 4.5 to EUR 7.6). As a result, 5 EU countries have lower labour costs per hour than Poland: Bulgaria, Romania, Lithuania, Latvia and Hungary. Nevertheless, the position of Poland in relation to the countries with highest labour costs was also improved: from 6.5 times lower to in 2002 to 5.3 times lower in 2013.

It should also be emphasized that the share of non-wage costs in total labour costs is distinctly varied (Tab. 1). In 2013 it ranged from 8% in Malta to 33.3% in Sweden. These differences result primarily from the rate of social insurance contributions paid by entrepreneurs in various EU countries. However, the differences between old and new EU countries are not huge.

The verification of myths

Low labour costs increase the competitive position and are a decisive factor in Poland's attractiveness as a location for foreign capital investment

Since labour costs in the Central and Eastern European countries which were integrated into the European Union are much lower than in the Western Europe, there were high hopes for attracting foreign capital. A good criterion for measuring the given country's attractiveness for foreign investors is the volume of foreign direct investments (FDI) per one inhabitant. The data included in table 2 point out that labour costs are not the decisive factor as far as the influx of FDI is concerned. In the initial stage of transformation the economies of the Czech Republic, Hungary and Estonia attracted the largest FDI per capita, although their hourly labour costs were not among the lowest.

Table 1
Labour costs per hour in EUR, whole economy (excluding agriculture and public administration)

Specification	2002	2008	2010	2011	2012	2013	Non-wage costs (% of total), 2013	Change 2013/2008, %	Change 2013/2002, %
1	2	3	4	5	6	7	8	9	10
EU-15 ^a	21.4	26.4	27.6	28.2	28.9	29.2	22.4	10.6	38.4
EU-13 ^a	4.1 ^b	8.4	8.5	8.7	8.9	9.0	20.4	7.1	119.5
EU-28 ^a	.	18.0	18.7	19.2	19.6	19.8	21.5	10.0	32.9
Belgium	.	32.9	35.3	36.3	37.2	38.0	27.4	15.4	.
Bulgaria	.	2.6	3.1	3.3	3.6	3.7	15.8	44.1	.
Czech Republic	3.9	9.2	9.8	10.5	10.5	10.3	26.8	12.4	164.1
Denmark	27.1	34.4	36.7	37.3	38.0	38.4	12.4	11.7	41.7
Germany	26.3	27.9	28.8	29.6	30.5	31.3	21.8	12.2	11.9
Estonia	3.0	7.8	7.6	7.9	8.4	9.0	26.7	15.2	200.0
Ireland	17.3	28.9	28.9	28.7	29.0	29.0	13.8	0.5	67.6
Greece	11.6	16.7	17.0	16.2	15.0	13.6	19.1	-18.6	17.2
Spain	14.2	19.4	20.7	21.2	21.0	21.1	26.6	8.7	48.6
France	24.4	31.2	32.6	33.6	34.3	34.3	32.4	9.9	40.6
Croatia	.	9.2	8.6	8.7	8.7	8.8	15.4	-4.0	.
Italy	19.0	25.2	26.8	27.2	27.6	28.1	28.1	11.4	47.9
Cyprus	.	16.7	17.7	18.0	18.0	17.2	16.6	2.6	.
Latvia	3.0	5.9	5.5	5.7	6.0	6.3	20.6	7.1	110.0
Lithuania	2.7	5.9	5.4	5.5	5.8	6.2	28.5	5.0	129.6
Luxembourg	24.6	31.0	32.9	33.9	34.7	35.7	13.4	15.4	45.1

cont. table 1

1	2	3	4	5	6	7	8	9	10
Hungary	3.8	7.8	7.0	7.3	7.5	7.4	24.6	-5.2	94.7
Malta	.	11.3	11.9	12.2	12.5	12.8	8.0	13.9	.
Netherlands	23.0	29.8	31.1	31.6	32.3	33.2	24.7	11.7	44.4
Austria	23.6	26.4	28.0	29.0	30.5	31.4	26.7	18.9	33.0
Poland	4.5	7.6	7.2	7.3	7.4	7.6	16.7	0.1	68.9
Portugal	8.1	12.2	12.6	12.6	11.6	11.6	19.3	-5.1	43.2
Romania	.	4.2	4.1	4.2	4.1	4.6	23.2	10.6	.
Slovenia	9.0	13.9	14.6	14.9	14.9	14.6	14.7	4.9	62.2
Slovakia	3.1	7.3	7.7	8.0	8.3	8.5	27.4	17.0	174.2
Finland	22.1	27.1	28.8	29.5	30.8	31.4	22.1	15.9	42.1
Sweden	28.6	31.6	33.6	36.4	39.2	40.1	33.3	26.9	40.2
United Kingdom	23.8	20.9	20.0	20.1	21.6	20.9	15.3	-0.3	8.8

^a arithmetic mean^b arithmetic mean for EU-8Source: 2008–2013: *Labour costs in the EU28* (2014), 2002: CHALAS (2005), p. 41.

With time passing Estonia became the leader in attracting foreign capital (EUR 12,030 per capita in 2013), whereas in Poland (in spite of lower labour costs) the influx of FDI was much slower (EUR 4,810 per capita).

Table 2
Foreign direct investments of the „new” EU countries (in EUR per capita)

Countries	2002	2004	2008	2013	2013 (2002=100)
Bulgaria	498	951	4,211	5,238	1,051.8
Czech Republic	3,818	4,123	7,876	9,379	245.6
Estonia	2,916	5,397	8,798	12,030	412.5
Lithuania	1,105	1,380	2,861	4,170	377.4
Latvia	1,154	1,460	3,707	5,668	491.2
Poland	1,206	1,663	3,074	4,810	398.8
Romania	341	446	2,343	3,073	901.2
Slovakia	1,600	2,347	6,738	7,884	492.8
Slovenia	1,980	2,795	5,034	5,211	263.2
Hungary	3,392	4,461	6,172	7,983	235.4

Source: the author's report on the basis of Eurostat data: http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database (access: 25.07.2014).

This means that between the years 2002 and 2013 in Estonia the influx of foreign capital increased over 4 times, while hourly labour costs increased 3 times (from EUR 3 to EUR 9 per hour) and are among the highest in this group of EU members.

In 2002 labour costs in Poland were, in comparison with other new EU member states, relatively high, and the influx of foreign capital was moderate. However, gradually it turned out that the labour costs in Poland in the period under analysis were increasing at a relatively slow pace (from EUR 4.5 to EUR 7.6, i.e. by 68.9%), whereas in all the other countries (apart from Slovenia) they were increasing much faster (cf. table 1). Nevertheless, this fact did not improve Poland's position in terms of competitiveness; in the competitiveness ranking it even fell from the 6th position among 10 countries under analysis to the penultimate position (EUR 4810 per capita). Romania, where the FDI index per capita is the lowest (EUR 3073), made considerable progress, after all – in 2002 the influx of FDI per capita was over 3.5 times lower than in Poland, whereas in 2013 it was lower only by 36%. It should also be added that in Bulgaria in the analogous period the FDI index per capita rose over 10 times, thanks to which the country moved from the penultimate position in the ranking to the 6th spot.

It should, therefore, be stated that, apart from labour costs, many other factors affect the given country's economic competitiveness and attractiveness for the foreign capital. Among other things, one should enumerate factors such as the quality of infrastructure, companies' access to financial services, institutional and legislative frameworks, stability and transparency of the tax system, efficiency of the judiciary and enforcement of contractual provisions, and high expenditure on R+D and education. According to the World Bank report on the competitiveness of Polish economy and investment climate assessment, in Poland all the above mentioned factors concerning competitiveness were at a lower level than the average in those Central and Eastern European countries which were integrated into the European Union in 2004. The structural changes taking place in Poland were also negatively assessed in comparison with the transformations in the new member states. The report (*Poland – Convergence to Europe* 2004) states: „The manufacturing production structure remains dependent on low-skill, low-value-added, labour-intensive industries. Like Romania and Bulgaria, Poland remains locked in a traditional pattern of industrial trade and specialization... [However,] the other EU-8 show a more dynamic pattern of integration into the European division of labour. Hungary, the Czech Republic, Slovakia, and Estonia are catching up relatively fast in technology and more sophisticated branches of industry”. Unfortunately, these assessments remain accurate as far as the situation in Poland is concerned.

High social security contributions and high wage taxes result in high labour costs in Poland

One of the typical arguments frequently made by entrepreneurs in Poland is that social security contributions and taxes should be lowered. Indeed, these burdens are high in Poland.

Social security contributions constitute a significant share of labour costs in EU countries (Tab. 3). They are exceptionally low only in a few countries: Denmark, Finland, Ireland and Great Britain, as well as in Cyprus and Malta. However, several EU countries had bigger tax and contribution burdens on gross earnings than Poland (38.64–41.3%): Belgium – 48.0%, Czech Republic – 45.0%, France – 59%, Greece – 47%, Slovakia – 48.6% and Italy – 45%. However, it should be admitted that the income tax rates for physical persons in Poland (18% and 32%) are relatively low in comparison with PIT rates in other EU countries, particularly in the „old EU” countries, where the upper PIT rates exceed 40% (KRAJEWSKA 2012, p. 95).

Table 3

The rate of social security contributions in the EU countries in 2011

Countries	Total burden on gross earnings	Including:	
		the worker's contribution	the employer's contribution
Austria	39.5	18.0	21.5
Belgium	48.0	13.0	35.0
Bulgaria	29–29.7	11.4	17.6–18.3
Cyprus	17.3	6.8	10.5
Czech Republic	45.0	11.0	34.0
Denmark	9.0	9.0	0
Estonia	35.0	2.0	33.0
Finland	9.81	8.62	1.19
France	28.0–59.0	14.0	14.0–45.0
Greece	44.0–47.0	16.0–19.45	28.0
Spain	28.3	4.7	23.6
Ireland	14.75	4.0	10.75
Lithuania	30.8	3.0	27.8
Latvia	35.09	11.0	24.09
Luxembourg	22.4	11.9	10.5
Malta	20.0	10.0	10.0
Germany	39.0	19.5	19.5
Poland	38.64–41.3	23.71	14.93–17.59
Portugal	34.75–37.85	11.0	23.75–26.1
Romania	31.3	10.5	20.8
Slovakia	48.6	13.4	35.2
Slovenia	38.2	22.1	16.1
Sweden	38.42	7.0	31.42
Hungary	44.5	17.5	27.0
Great Britain	15.8–25.8	2.0–12.0	13.8
Italy	40.0–45.0	31.0–36.0	9.0

Source: *Taxation trends in European Union* (2011).

The burdening of workers and employers with full labour costs, i.e. not only social insurance contributions, but also income tax, is commonly described as tax wedge. Since the rate of taxation for workers is influenced not only by their earnings, but also their family situation, tax wedge is calculated for specific worker groups, e.g. single taxpayers, taxpayers opting for joint taxation with spouses, having one or two children and earning close to median value (which often amounts to 2/3 of the average earnings), the national average or two national averages. Table 4 presents calculations of total burdens on the gross

wages of the single worker, having no children and earning 2/3 of average wages. In the period under analysis the tax wedge in Poland was lower than the EU-27 average.

Table 4
Tax wedges for a single worker with 67% of average earnings, no children, as % of total labour costs

Country	2000	2004	2008	2012	Difference (2000–2012)
Belgium	51.3	49.0	50.2	50.5	-0.8
Bulgaria	40.0	35.8	35.1	33.6	-6.4
Czech Republic	41.3	41.9	40.1	39.3	-2.0
Denmark	40.8	38.9	38.5	37.0	-3.8
Germany	47.5	46.9	46.6	45.6	-1.9
Estonia	39.8	39.6	37.0	39.2	-0.6
Ireland	18.1	19.5	15.0	20.1	2.0
Greece	36.0	36.1	35.5	38.6	2.6
Spain	34.8	35.3	34.0	37.0	2.2
France	43.7	46.2	46.4	47.1	3.4
Italy	43.6	42.2	43.2	44.5	0.9
Cyprus	16.7	18.6	11.9	11.9	-4.8
Latvia	42.2	41.9	39.9	43.5	1.3
Lithuania	42.9	41.6	40.3	38.9	-4.0
Luxembourg	31.1	28.1	28.2	28.9	-2.2
Hungary	51.4	44.8	46.7	47.6	-3.8
Malta	16.6	17.6	17.9	18.6	2.0
Netherlands	42.2	40.8	34.0	33.2	-9.1
Austria	43.2	44.0	44.5	44.2	1.0
Poland	37.0	37.2	33.6	34.6	-2.4
Portugal	33.2	32.8	32.1	32.0	-1.2
Romania	44.7	42.9	40.9	43.8	-0.9
Slovenia	42.6	43.6	40.3	38.5	-4.1
Slovakia	40.6	39.2	36.0	36.9	-3.7
Finland	43.0	39.4	38.6	36.7	-6.2
Sweden	48.6	47.2	42.5	40.7	-7.9
United Kingdom	29.1	30.5	29.7	28.2	-0.9
EU-27	38.6	37.8	36.3	36.7	-1.9
EA-17	36.7	36.4	34.8	35.5	-1.2

Source: *Taxation trends in European Union* (2013, p. 36).

An important measure of economic fiscalization is the proportion of taxes and contributions in relation to GDP. According to Eurostat data (*Taxations trends.*, 2013, p. 195, 196), in the majority of EU countries the share of

contributions is high and relatively stable. For instance, it constitutes ca 16% of GDP in France and between 12-13% in Belgium, Czech Republic, Estonia, Greece, Italy, Slovenia, Slovakia, as well as in Poland (12.7%).

The high, and in many countries growing share of social insurance contributions in relation to GDP results from the wide range of social benefits and the growing number of old age pensioners, retirees, unemployed and persons receiving social benefits. At the same time, however, many people notice the negative consequences of high contributions (high labour costs, decrease of profit rate, a less competitive economy). The aging of Western Europe societies only aggravates the already existing problems. Nevertheless making „cuts” in social benefits generates considerable social resistance everywhere, as a result of which changes are introduced at a very slow pace.

High labour costs lead to a growth of grey economy

The proponents of lowering taxes and social insurance contributions very frequently point out to the high share of grey economy in Poland's economy (WYRZYKOWSKI, 2013, p. 192). It is argued that the lowering of taxes and contributions would facilitate the „coming out” of a significant number of entrepreneurs; they would pay taxes and insurance contributions, which would lead to the increase of budget income.

The share of grey economy in Poland ranges, depending on the methodology of research, from 16% GDP (GUS²) to 25% GDP (WYRZYKOWSKI 2013, p. 185–192). According to most recent research data (SCHNEIDER 2011, p. 192), grey economy in Poland amounts to 25% of GDP. However, a higher share of grey economy was noted in countries which have much lower labour costs, lower social insurance contributions and lower taxes, e.g., 32.3% in Bulgaria, 29.6% in Romania, 29.5% in Croatia, 26% in Cyprus and 25.8% in Malta.

On the other hand, the share of grey economy in Western European countries is relative stable. In many of them (Germany, Holland, France, Austria) it ranges between 8-10% of GDP (SCHNEIDER 2011), although the level of tax burdens and social insurance contributions there is rather high.

Although high taxation burdens, especially high social insurance rates, are, indeed, conducive to the growth of grey economy, in reality there are many more factors responsible for this tendency. Among other things, one should enumerate the following causes:

- Weak and inefficient tax administration system, as a result of which tax collectability is low, and the sanctions not severe enough,

² Central Statistical Office of Poland.

- Ineffective, corrupted government institutions and links between politicians and business which facilitate illegal activities,
- Overly bureaucratic administrative and legislative regulations,
- A poorly developed banking system, as a result of which funds necessary to finance economic activities often come from illegal sources,
- A high rate of unemployment and an unsatisfactory social protection system which encourages people to take up illegal jobs,
- A wide range of natural economy (in small towns and in villages) making it possible to live on meagre means and working irregularly,
- Poor filing system of some economic activities (e.g., agriculture, artisanship, services).

The above quoted results of Schneider's research clearly indicate lack of correlation between the level of labour costs and the size of grey economy. In the new EU countries grey economy constitutes a significant share, although the tax burdens measured by the share of taxes and social insurance contributions are relative low. Conversely, a small share of grey economy has been observed in many countries with a high degree of fiscalization.

High labour costs contribute to inflation

The view that labour costs contribute to inflation is closely related to the wage/price spiral, which occurs when increase of wages leads to increased prices of goods, which, in turn, gives trade unions an argument to pressure for growth of wages. A similar spiral is set in motion by the increase of labour costs, however, provided that producers can balance some of the costs by increasing prices. Research analysing the time period from 1992 to 2004 (STASIAK 2007, p. 18) demonstrates that the pace of increase of real wages was (with the exception of the years 1996–1998) lower than the pace of increase of workforce productivity, and since 2002, the wedge was becoming wider and wider. Also in the subsequent years the workforce productivity increased faster than the real wages in the enterprise sector. This trend was confirmed by the research covering the years 2000–2012 (KABAJ 2013). According to the results of the research, the gap between the increase of workforce productivity and real wages (with the exception of the years 2007–2009) is distinctly growing (Fig. 1). Therefore, the above quoted data do not confirm the assumption that labour costs contribute to inflation.

It is fortunate that the problem of disproportion between the increase of workforce productivity and wages was noted in the *Konkurencyjna Polska* [*Competitive Poland*], report prepared and edited by Jerzy HAUSNER (2013, p. 16, 126). One can find there the following passage: „The relatively high

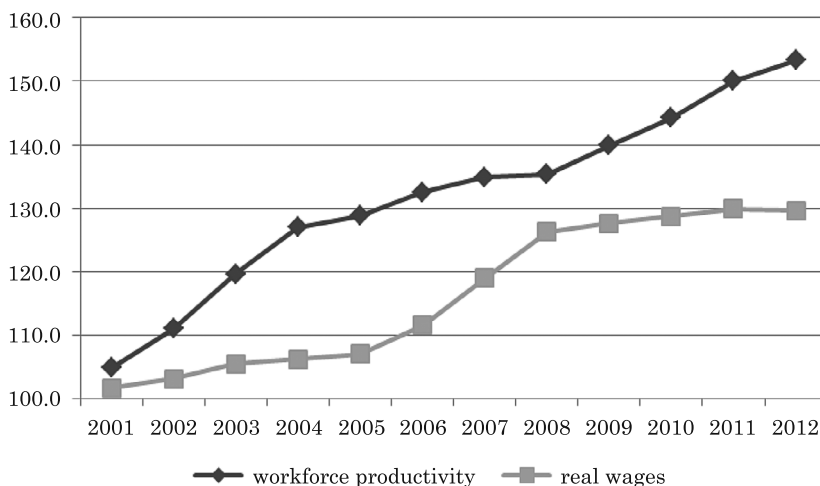


Fig. 1. Dynamic of increase of real wages and workforce productivity in the enterprise sector (2000 = 100)

Source: KBAJ (2013).

competitiveness of enterprises results from systematically maintaining the low-paid increase of workforce productivity. Thanks to this the increase of real wages is moderate and does not spoil the macroeconomic balance. Reining in real wages is relatively easier when high structural unemployment persists. However, apart from being beneficial, such as situation has also negative consequences [...] A mechanism crystallizes, which, even while being helpful from the point of view of business cycle, is nevertheless harmful structurally". Hausner expressed his reservations even more clearly in his interview for „Gazeta Wyborcza”: „If Poland wants to enter a higher level of development, we have to pay more for work. If we don't, we will not have good employees, who would be able to design all those innovative products and technologies. People are the most valuable capital for the company" (*Dokąd idziemy* 2014).

High labour costs hamper the growth of investment, ergo they make it difficult to create new jobs

Entrepreneurs tend to think that growth of labour costs, including increase of wages, reduces funds for investment and thus makes it difficult to create new jobs. However, their opinions would be fully justified if labour costs and wages grew at a faster pace than workforce productivity. On the basis of the above quoted statistical data it can be concluded that entrepreneurs enjoy more benefits from increase in workforce productivity, which leads to the

increase of gross operating surplus. Gross operating surplus is a balancing item in the generation of income account, created as a result of subtracting from gross domestic product transactions related directly to production processes, i.e. costs connected with employment and tax on products (VAT, excise, custom duty) minus subventions connected with production and import.

Table 5
Dynamic of labour costs, wages, operating surplus and investment (current prices – 2012)

List of items	2000 = 100
Average monthly labour costs per 1 person employed	181.1
Average gross monthly wages and salaries	186.4
Gross operating surplus	257.6
Including the enterprise sector	318.1
Investment outlays	178.5
Including the enterprise sector	200.8

Source: The author's calculations, based on GUS Statistical Yearbooks.

Gross operating surplus can be spent on investments, savings and entrepreneurs' consumption. GUS data (Tab. 5) suggest that in the years 2000–2012 gross operating surplus grew at a faster pace than labour costs and average wages. At the same time, however, the pace of increase of investment outlays was lower than the pace of increase of labour costs and wages, although, judging by the level of operational surplus, the investments could potentially be higher. The difference between the pace of increase of gross operating surplus and the pace of increase of investment outlays can be seen most clearly in the enterprise sector. This means that the possibilities for increasing investments were higher and they were not hindered by the growing labour costs.

Lowering labour costs leads to decrease of unemployment rate

Entrepreneurs often use the argument that the lowering of labour costs leads to a smaller rate of unemployment. The statistical data presented in table 6 do not support this myth. Two time periods were used to verify the above claim: years 2000–2003 and 2008–2013.

In 2003 only 4 out of the countries researched saw decrease in unit labour costs (in comparison with the year 2000). In 2 countries the lowering of labour costs was, however, accompanied by the growth of the unemployment rate (Austria and Poland), whereas only 1 country saw decrease of the unemploy-

ment rate (Great Britain), while no change was observed in 1 country (Sweden). In the countries where unit labour costs were increased the situation varied: the rate of unemployment either grew or decreased, or remained the same.

Between 2008 and 2012 hourly labour costs decreased in countries such as Greece, Germany, Portugal and Hungary, whereas in Ireland they remained more or less the same. The rate of unemployment decreased only in Germany, whereas in other EU countries (i.e. in those where labour costs got lower, and in the remaining ones) the rate of unemployment was significantly higher, for example, in Greece from 7.7% in 200 to 24.3% in 2012 r., in Spain up to 25%, in Portugal up to 15.9%, and in Ireland up to 14.7%. This was an obvious aftermath of the sudden crash of the business cycle in these countries.

Table 6

Rate of unemployment and hourly labour costs in the EU

Country	Rate of unemployment (in %)		Hourly labour costs (2000=100)	Rate of unemployment (in %)		Hourly labour costs (2008=100)
	2000	2003	2003	2008	2012	2012
Austria	3.7	4.4	98.8	3.8	4.3	115.5
Belgium	6.9	8.1	108.2	7.0	7.6	113.1
Czech Republic	8.7	7.8	106.4	4.4	7.0	116.7
Denmark	4.4	5.6	109.8	3.4	7.5	110.5
Finland	9.8	9.0	107.5	6.4	7.7	113.6
France	9.3	9.4	102.8	7.8	10.2	109.9
Greece	11.0	9.3	107.6	7.7	24.3	89.8
Spain	11.3	11.3	110.0	11.3	25.0	108.2
Holland	2.9	3.8	119.8	3.7	5.3	108.4
Ireland	4.3	4.6	100.7	6.4	14.7	100.3
Luxemburg	2.3	3.7	105.9	4.9	5.1	111.9
Germany	7.8	9.7	104.9	7.5	5.5	96.2
Poland	16.4	19.2	76.8	8.1	10.1	109.3
Portugal	4.1	6.4	109.1	8.5	15.9	95.1
Slovakia	18.7	17.1	105.0	9.6	14.0	113.7
Sweden	5.6	5.6	96.0	6.2	8.0	124.0
Great Britain	5.4	5.0	97.3	5.6	7.9	103.3
Hungary	6.3	5.8	131.0	7.8	10.9	96.2
Italy	10.4	8.6	117.4	6.7	10.7	109.5

Source: the years 2000-2003 – the author's report on the basis of: CHALAS (2005, p. 39); the years 2008-2012 – the author's report on the basis of the table 1 and Eurostat: <http://epp.eurostat.ec.europa...>

Together with the market-oriented transformation of economy, companies reduce social benefits

Before the transformation Polish state-owned companies had a very well developed infrastructure making it possible to offer to the workers and their families many social services. Companies financed workplace crèches and kindergartens, canteens, community centres, sport clubs, holiday houses located in very attractive tourist regions. Winter and summer camps were organized for children. Many companies granted their workers flats or co-financed their fees for housing cooperatives. Due to ongoing privatization processes the expanded social infrastructure was becoming an unnecessary burden negatively impacting the financial results of companies. Therefore, the process of closing or commercializing crèches, kindergartens and canteens began, while holiday houses and residential buildings were sold. It was commonly believed that because of the advent of free market economy companies started reducing social benefits.

However, we treated this assumption as a myth, rather than an unquestionable fact. Our scepticism was based on the results of empirical research conducted by various teams KRAJEWSKI (1996), MORECKA (1999), which did not offer definitive conclusions. In the initial stage of transformation the range of social benefits in the companies which were still state-owned did not change. Social benefits were not severely reduced in privatized companies with a share of foreign capital. This policy may have resulted from the fact that working crews agreed to privatization in exchange for obtaining guarantees concerning employment, level of wages and social benefits. The investors' pledges were written into contracts or annexes to privatization contracts. Employee-owned companies did not want to reduce social benefits either. It is also worth emphasizing that companies frequently offered various benefits in kind or tokens (Christmas or summer vouchers) in order to avoid the burden of income tax and social insurance contributions.

In the initial stage of transformation the benefits were reduced in a very conservative manner. Gradually, however, a considerable diversification of the extent of social benefits could be noticed, influenced, to a large degree, by the improved or worsened economic condition of various companies. The value of benefits grew in a relatively small sample of the companies under research, while the poorly performing state-owned and private companies decreased the social benefits. Employee-owned companies and state-owned companies mounted the strongest defence against the dramatic decrease of the benefits (KRAJEWSKA, KACZOROWSKI 2007, p. 105, 106). The social benefits which are not wage-related are also changing as well as the criteria for granting them. Social benefits are slowly losing their status as a widely accessible, egalitarian

option. More and more frequently, they are addressed at the employees considered „strategic” for the company and constitute a form of nonwage integrating motivation. Growingly popular are referral bonuses for attractive holiday leaves for the best employees and „bonding events” for medium and high level personnel.

According to GUS data, the share of outlays on Employee Social Fund in labour costs decreased from 3.1% in 1996 to 2% in 2000 (Rocznik Statystyczny Pracy 2001, p. 222, Rocznik Statystyczny Pracy 2010, p. 332) and retained this value in 2012. However, it is distinctly higher in the public sector (3.3%) than in the private sector (1.1%), in which big companies (1.3%) attach more importance to social spending than the small ones (0.5%) (*Koszty pracy w gospodarce narodowej w 2012 r.*, 2013, p. 90). The share of outlays on Employee Social Fund in general labour costs is also quite diverse depending on the economic sector: from 0.9% in construction and trade to 4.4% in education and 5.5% in public administration and national defence (*Koszty pracy w gospodarce narodowej w 2012 r.*, 2013, p. 104, 106, 122, 124).

In the recent years the following tendencies could be observed: 1) The share of outlays on Employee Social Fund in the general labour costs is decreasing, 2) there are significant differences in the share of the outlays on Employee Social Fund among companies depending on their form of ownership, size and financial situation as well as belonging to the given economic sector (the share of the above specified social benefits is relatively high in the following sectors: administration, education, culture), 3) the criteria for granting these benefits are changing – they are starting to play a motivational role to a larger degree, while the income situation of the given family is taken into account less and less frequently.

Conclusions

1. It turns out that out of the seven commonplace opinions about the labour costs in Poland which were not positively verified in the first stage of research, six remain unverified now, after taking into consideration the statistical data for the subsequent years. The statistical data confirm the conclusions drawn on the basis of the earlier analysis. The only factor that has changed is the companies’ attitude towards social benefits, which could not be seen clearly in the first years of Poland’s economic transformation.

2. Contrary to popular belief, labour costs are not a factor making Polish economy more competitive. Despite the low wages and relatively low labour costs our country does not have much to offer in comparison with either old EU countries or the new member states, a fact proven by the low level of FDI per capita in Poland. A serious challenge for Poland is the change of economic

structure, growth of workforce productivity and an improvement of economic and social infrastructure in order to make it more business-friendly.

3. The reduction of social security contributions rates, which are widely criticized as a major burden on labour costs, will be difficult to achieve in the upcoming years because of the disadvantageous proportions between the number of persons employed and the number of persons receiving social benefits which persists in Poland³. Although the lowering of social security contributions will be difficult to carry out, at least some changes are necessary. Worth considering are the solutions applied by EU countries, which consisted in selectively decreasing the contributions and tax burdens for persons with lowest incomes and those newly employed. Such policy encourages employers to employ low qualified persons (among whom the rate of unemployment is the highest), and, moreover, it creates additional demand in economy.

4. Employers' opinions concerning labour costs result from treating this category just like other elements of the costs. What the employers are aware of is the necessity of reducing the costs since the lower labour costs are, the better financial performance of companies are, and such a trend benefits the whole economy. However, they do not take into account that labour costs, similarly to the labour market, are not entirely free market categories and they include various elements which should not be approached solely from the point of view of minimizing costs.

Main elements of labour costs are wages, social and health insurance contributions and taxes. The lowering of wages increases companies' profits, but at the same time it decreases the income of households, which affects negatively consumption demand and hinders economic development. The budget revenues from taxes and social insurance contributions are also smaller. In addition, the state of public finances is worse, too, because of the lowering of taxes and social insurance contributions, which has negative repercussions, namely decreased supply of public goods and social benefits.

5. The proponents of slowing down the increase of labour costs are at the same time proponents of a competitive strategy based on low wages and low taxes, because this combination makes it possible to gain price advantage. However, this is a short-term strategy, typical for countries characterized by a relatively low level of economic development. A strategy of this kind is not conducive to improving the quality of labour resources and to making economy more innovative.

Translated by ANNA KRAWCZYK-ŁASKARZEWSKA

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³ In 2012 Poland had 14.2 million people in employment, 7.7 million old age pensioners and retirees and 2.1 million persons unemployed. *Rocznik Statystyczny GUS*, 2012, p. 45 and 47.

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THE DIFFERENTIATION OF WAGES IN POLISH ECONOMY IN THE YEARS 2005–2012

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Key words: wages, differentiation of wages, criteria and main reasons for wage differentiation.

A b s t r a c t

The study characterized and analysed the differentiation of wages in Poland in the years 2005–2012. The analysis present changes of the level of wages in connection with such criteria as sections of economic activity, owner-ship sectors, occupations, sex, level of education and work experience. The analysis will make it possible to reflect on the main socio-economic reasons for wage differentiation, which may have a significant impact on the change of employment structure in Poland.

ZRÓŻNICOWANIE WYNAGRODZEŃ W GOSPODARCE POLSKIEJ W LATACH 2005–2012

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Słowa kluczowe: wynagrodzenia, zróżnicowanie wynagrodzeń, kryteria i główne przyczyny zróżnicowania wynagrodzeń.

A b s t r a c t

Celem opracowania jest charakterystyka i ocena zróżnicowania wynagrodzeń w Polsce w latach 2005–2012. Przeanalizowano poziom wynagrodzeń w przekroju sektorów własności, sektorów ekonomicznych, zawodów, poziomu wykształcenia, stażu pracy i płci. Pozwoliło to wskazać główne, ekonomiczne i społeczne, przyczyny różnic między wynagrodzeniami, co może mieć znaczący wpływ na zmiany struktury zatrudnienia w polskiej gospodarce.

Introduction

Remuneration for work constitutes an important socioeconomic category. This is due to the many significant functions it performs, impacting the economic effects of companies and economy as a whole, the degree of satisfying the employees' needs, their attitudes at the workplace, and the shape of social relations.

Wages depend on a variety of factors, which are connected with the economic situation of the given country (among other things, GDP fluctuations, inflation processes, the situation on the labour market), the economic and financial situation of its companies, but also with the level of difficulty of the jobs performed by employees, their results and work experience, as well as aspects of a social nature. The numerous determinants help to account for the differentiation of workers' wages, although it is generally accepted that remuneration should be fair and just.

The aim of this article is to characterize and assess the differentiation of wages in Poland in the years 2005–2012/2013. In order to achieve this aim, I propose an analysis of the level of wages in connection with such criteria as sections of economic activity, ownership sectors, occupations, sex, level of education and work experience. The present analysis will make it possible to reflect on the main reasons for wage differentiation, which may have a significant impact on the change of employment structure in Poland.

My description of the differentiation of wages in various areas is based on the data collected from Central Statistical Office (Główny Urząd Statystyczny – GUS) and the results of Polish Nationwide Salary Survey (Ogólnopolskie Badanie Wynagrodzeń – OBW), conducted in 2012 by Sedlak & Sedlak company, on the sample of 114,718 respondents from over 20,000 companies. The differences between wages are demonstrated by comparing average gross nominal monthly wages and the median of wages in accordance with the adopted criteria.

The differentiation of wages according to the section of economic activity in Poland

Differentiation of wages depends on the type of work performed in specific sections of economic activity. According to the Labour Code, the basic legislative act regulating the rules of remuneration in Poland, „remuneration for work should be established at a level which would be, above all, commensurate with the type of work performed and the qualifications demanded for performing it, as well as its amount and quality” (Journal of Laws 1998, no 21, item 94). This

regulation emphasizes the importance of the motivational aspect of wages, which in itself assumes differentiation of wages based on the type of work, the amount of work and its effectiveness (CZAJKA 2009, p. 22, 23). Motivating through remuneration is supposed to encourage greater professional qualification and spatial mobility, i.e. employees are expected to raise their qualifications, invest in self-development, engage in performing more difficult tasks, or even change their careers and locations of professional placement (JANUSZEK 2003, p. 86).

Data concerning the differentiation of wages according to the section of economic activity are included in table 1.

Table 1
Average gross monthly wages according to the section of economic activity in Poland in 2005 and 2013, in PLN (Polish zlotys)

Sections	2005	2013	Changes	
			in PLN	2005=100
Agriculture, forestry, hunting and fishing	2,387	4,021	1,634	168.4
Industry	2,362	3,751	1,389	158.9
– mining and quarrying	4,343	6,805	2,462	156.7
– manufacturing	2,099	3,374	1,275	160.7
– electricity, gas, steam and air conditioning supply	3,615	6,231	2,616	172.5
– distribution of water, sewer and waste management, recultivation	2,380	3,566	1,186	150.2
Construction	1,938	2,964	1,026	152.9
Trade, repair of motor vehicles	1,914	2,974	1,060	155.5
Transport and storage	2,327	3,241	914	139.2
Accommodation and catering	1,506	2,251	745	149.5
Information and communication	4,219	6,141	1,922	145.4
Financial and insurance activities	4,239	6,149	1,910	145.0
Sections	2005	2013	Changes	
			in PLN	2005=100
Real estate services	2,578	3,834	1,256	148.9
Professional, scientific and technical activities	3,055	4,474	1,419	146.5
Administrative and support service activities	1,582	2,563	981	162.1
Public administration and national defence; compulsory social security	3,061	4,523	1,462	147.8
Education	2,469	3,904	1,435	158.0
Health care and social work	1,950	3,383	1,433	173.4
Activities connected with arts, entertainment and recreation	2,197	3,204	1,007	145.7
Other service activities	2,192	2,595	403	118.3

Source: Mały Rocznik Statystyczny Polski (2010, pp. 172, 173, 2014, pp. 177, 178).

Average gross nominal monthly salary in Poland amounted to PLN 2,361 in 2005, whereas in 2013 it amounted to PLN 3,650, which means it was higher by PLN 1,289 (54.6 %). In 2005 the highest wages were paid in the industry sector, particularly in the mining and quarrying section, surpassing the average wages in national economy by 84%. Relatively high were also the wages in the financial and insurance activities section (79.5% higher than average), in the information and communication section (higher than average wages by 78.7%) and in the electricity, gas, steam and air conditioning supply section (higher by 53%).

The lowest wages in 2005 were observed in the following sections: accommodation and catering, administrative and support service activities. In rela-

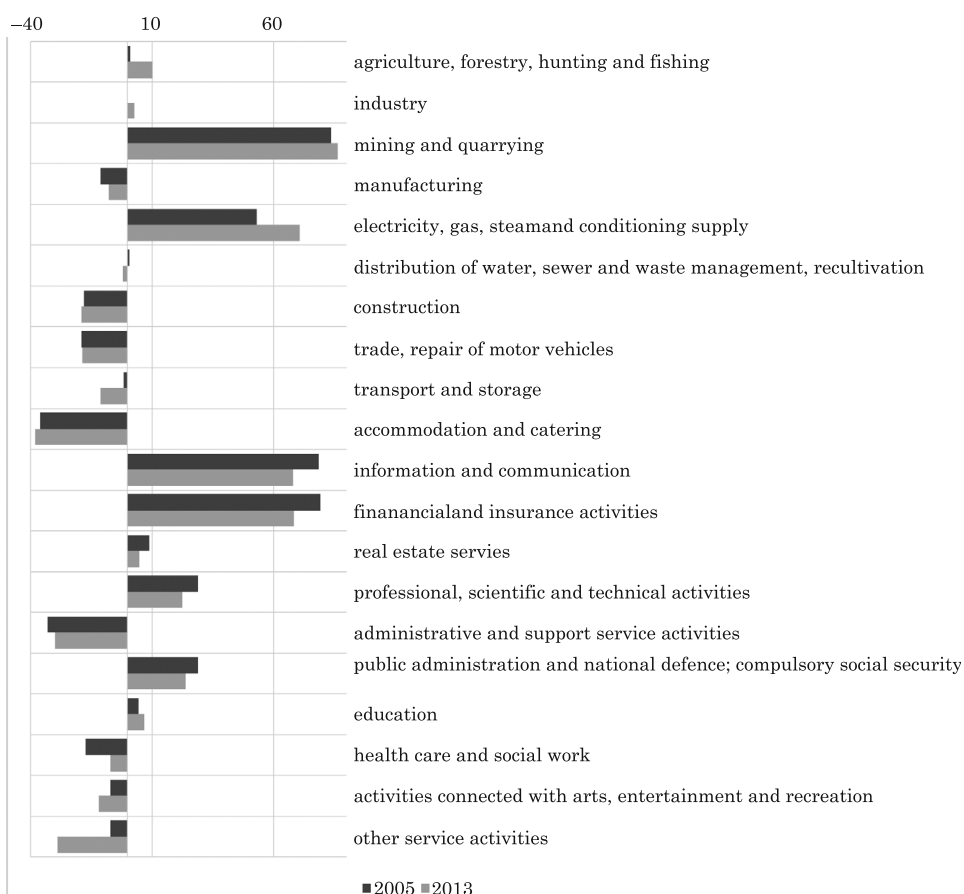


Fig. 1. Relative deviations of average gross monthly wages in selected sections from the average gross wages in Poland in the years 2005 and 2013, in %

Source: author's calculations on the basis of the data in table 2.

tion to the average wages, they were lower by 36% and 33%, respectively, while in relation to the financial and insurance activities they were lower by more than PLN 2600–2700, i.e. by 181% and 168%, respectively.

In 2013 relatively high wages (more than PLN 6100 per month) were paid to employees in the same sections as in 2005. The highest wages were paid in the mining and quarrying section (86.4% higher than average), due to the high degree of arduousness of work and the risk of losing health or even life. Wages in the electricity, gas, steam and air conditioning supply section were higher by 71% than average. The next two slots, with wages higher by 68% than average, were taken by sections which are considered state-of-the-art: financial and insurance activities and information and communication. Among the employees remunerated the least there were those working in accommodation and catering (their wages were lower by 38% than the average) and in the section: administrative and support service activities (lower by 30% than the average).

The difference between relatively high wages (electricity, gas, steam and air conditioning supply) and the lowest ones (accommodation and catering) amounted to 177%.

The differentiated increase of wages in the years 2005 and 2013 retained the number of sections with wages higher and lower than the average gross monthly wages in Poland.

Thanks to raises, wages in some sections in the year 2013 decidedly exceeded the average level, e.g., in the agricultural section from 1% to over 10%, or approached the level to a larger degree, e.g., in the health care and social work activities section (from -17.4% to -7%) and industrial processing (from -11% to -7.6%). In the years under discussion one can also observe the decrease of the surplus of average wages in some sections in relation to the average national wages, e.g., in the professional, scientific and technical activities section (from 29% to 22.6%), which is important from the point of view of the development of Polish economy.

Wages according to ownership sectors

One of the many aspects of wage differentiation in economy is the presence of the public and the private ownership sectors, which identify the employees' workplace. Data concerning this criterion are included in table 2.

According to the data in table 2, average gross nominal monthly wages were higher in the public sector than in the private sector and, additionally, they exceeded the average wages calculated for the whole economy. In 2005 wages in the public sector were higher by 24.8% in comparison with the private

Table 2

Average gross nominal monthly wages in Poland according to ownership sectors in the years 2005, 2010, 2012, 2013

Specification	2005		2010		2012		2013	
	in PLN	in %	in PLN	in %	in PLN	in %	in PLN	in %
Total	2,361	100.0	3,224	100.0	3,522	100.0	3,650	100.0
Public sector	2,692	114.0	3,758	116.6	4,110	116.7	4,249	116.4
Private sector	2,157	91.4	2,952	91.6	3,240	92.0	3,369	92.3

Source: Rocznik Statystyczny Rzeczypospolitej Polskiej (2011, p. 252), Mały Rocznik Statystyczny Polski (2014, p. 177, 180), author's calculations.

sector. In 2010 the difference increased to 27.3%, but in the subsequent years under discussion one can observe the decrease of the difference between wages in both ownership sectors: to 26.9% in 2012 and 26.1% in 2013. It is a result of the improvement of economic situation and the gradual increase of share of the private sector in the wages total, as well as a slightly faster increase of wages (by 14.1% in the years 2010–2013) than in the public sector (by 13.1%), and, in particular, the result of increasing average gross wages in private companies with foreign capital by 44% in the years under discussion (from ca PLN 3,200 in 2005 to ca PLN 4,600 in 2012).

The differentiation of average gross wages and average employment in the public and private sectors in individual sections of economy in the year 2013, in economic entities employing more than 9 people, is presented in table 3.

Table 3

Average employment and average gross monthly wages in national economy according to ownership sectors in 2013

Specification	Average employment ^a	Average gross wages in PLN	% difference between wages in public and private sectors
1	2	3	4
Total	8,197.7	3,650.06	
Public sector	2,974.5	4,239.36	22.3
Private sector	5,223.2	3,466.90	
Including			
Agriculture, forestry, hunting and fishing	70.5	4,407.23	
Public sector	32.0	5,964.78	91.4
Private sector	38.6	3,116.70	
Industry	2,462.8	3,954.62	

cont. table 3

1	2	3	4
Public sector	323.8	5,306.68	41.5
Private sector	2,139.0	3,749.97	
– mining and quarrying	168.0	6,743.90	
Public sector	114.4	6,938.20	9.6
Private sector	53.7	6,329.96	
– manufacturing	2,030.1	3,591.54	
Public sector	65.1	4,397.26	23.4
Private sector	1,965.0	3,564.85	
– electricity, gas, steam and air conditioning supply	135.8	6,192.52	
Public sector	52.3	5,590.62	-15
Private sector	83.6	6,568.84	
– distribution of water, sewer and waste management, recultivation	128.9	3,678.62	
Public sector	92.1	3,762.20	8.4
Private sector	36.8	3,469.61	
Construction	445.8	3,727.83	
Public sector	13.1	4,147.58	11.6
Private sector	432.7	3,715.09	
Trade, repair of motor vehicles	1,114.8	3,429.15	
Public sector	3.6	4,709.14	37.5
Private sector	1,111.2	3,425.03	
Transport and storage	487.4	3,621.19	
Public sector	247.0	3,925.39	18.6
Private sector	240.4	3,308.74	
Accommodation and catering	116.7	2,691.73	
Public sector	12.9	3,226.15	22.9
Private sector	103.8	2,625.19	
Information and communication	176.7	6,685.25	
Public sector	12.0	5,925.73	-12.1
Private sector	164.7	6,740.58	
Financial and insurance activities	259.3	6,429.15	
Public sector	46.6	7,298.59	17
Private sector	212.7	6,238.64	
Real estate services	111.3	4,037.02	
Public sector	32.5	4,072.69	1.3
Private sector	78.8	4,022.34	
Professional, scientific and technical activities	239.3	5,443.36	

cont. table 3

1	2	3	4
Public sector	74.9	4,847.23	-15.2
Private sector	164.4	5,715.08	
Administrative and support service activities	325.8	2,621.04	
Public sector	10.7	3,225.17	24
Private sector	315.1	2,600.48	
Public administration and national defence; compulsory social security	621.7	4,523.60	
Public sector	621.2	4,523.47	-3.6
Private sector	0.5	4,691.65	
Education	1,015.4	3,926.67	
Public sector	931.4	3,995.96	26.5
Private sector	84.0	3,158.45	
Health care and social work	622.0	3,448.63	
Public sector	519.5	3,516.30	13.2
Private sector	102.5	3,105.53	

^a Without economic entities employing 9 people or less.

Source: Mały Rocznik Statystyczny Polski (2014, p. 29, 30), author's calculations.

According to the data in table 3, the total average employment in the private sector exceeded the employment in the public sector by 2,248.7 thousand people. The domination of the private sector in employment occurs in the decisive majority of the sections which are considered market-oriented, with the exception of mining and quarrying, distribution of water, sewer and waste management, recultivation and, to a considerably smaller degree, transport and storage. A relative high share of the public sector in employment characterizes those sections of economy which are classified as not market-oriented, i.e. public administration and national defence; compulsory social security, education and health care and social work.

The situation is different as regards the average wages in ownership sectors in individual sections of the economy. In most sections the average gross monthly wages were higher in the public sector than in the private sector, particularly in the agricultural section (by PLN 2,848, i.e. 91.4%), industry (by PLN 1,556.7, i.e. 41.5%), trade and repair of motor vehicles (by PLN 1,284.1, i.e. by 37.5%) and by more than 20% as regards the public sector in the following sections: education (26.5%), administrative and support services activities (by 24%), manufacturing (by 23.4%), accommodation and catering (by 22.9%). The smallest differences between ownership sectors occurred in the real estate services section (1.3%). Only in four sections wages

in the public sector were lower than in the private sector: by 15% in professional, scientific and technical activities and electricity, gas, steam and air conditioning supply, by 12% in information and communication, and only by 3.6% in public administration and national defence, compulsory social security.

On the basis of the analysis conducted, it can be stated that the large share of the private sector in employment does not translate into its higher share in wages. One assumes that the reason is high competition between employees for job positions, which enforces approval of lower wages offered by employers. The fear of unemployment, particularly in the period of economic slowing down, weakens the bargaining power of employees. Also, trade unions have a relatively small influence on the wages in private companies, particularly small and medium ones (BARTOSIK 2013, p. 23). On the other hand, employers aim at lowering labour costs, which have an impact on the effectiveness and competitiveness of their companies, and that often leads to conflict between the income function and cost function of wages. That is why the criterion of wage differentiation should take into account the degree of correlation with work effects (KWIATKOWSKA 2013, p. 311). Higher productivity in specific sections should be conducive to an increase of average wages in them, while lower than required productivity in other sections of the economy will contribute to lower wages. This is yet another, rather significant rationale for the differences between the wages. It seems that the positive effects of noticeable economic recovery in Poland will, with some delay and in various ways, influence the increase of wages in the private sector in its individual sections.

Wages according to occupational groups and specializations

The differentiation of wages depends on belonging to a particular occupational group. The social status of an occupation, its prestige and recognition to a large degree depend on the level of wages. Even if the given occupation is considered important in the society, relatively low wages paid for working in this occupation discourage people from choosing it (POCZTOWSKI 2008, p. 330).

Performing a particular job is connected with having relevant qualifications, both theoretical and practical. The former are gained through education and reflect the employee's level of education, whereas the latter are connected with the work experience at the given job. The qualifications required in the given job should be commensurate with the employee's qualifications. If the employee's qualifications are higher, it means they are not fully utilized, and, moreover, they can produce a lack of satisfaction with the job performed because the wages are lower than the potential wages. On the other hand, qualifications which are lower than the ones required for a particular job may

be the reason for worse work results in comparison with the employer's expectations. Adjusting employees' qualifications to specific work requirements constitutes, then, an important element of shaping the remuneration system, which is beneficial for both the employer and the employee in the form of a commensurate level of remuneration (CARLSSON 2008, p. 36). According to the theory of human capital (BECKER 1975), the dispersal of wages reflects the differences in the level of employees' qualifications. The increase of wages is conditioned by the development of qualifications. Therefore, a person who wants to find work should make sure that s/he has the right qualifications. Hence, of great importance measures which will increase the human capital resources, i.e. the so-called human capital investments (BECKER 1975, p. 9). They are undertaken consciously by the individuals who think about higher wages in the future and the opportunities for finding a job which would be commensurate with their qualifications.

The differences in the level of average gross monthly wages according to major occupational groups in Poland are shown in table 4.

Table 4

Average gross monthly wages according to occupational groups^a in Poland in the years 2010 and 2012, in PLN

Group no	Occupational groups	Wages			
		2010	2012	increase in PLN	level of qualifications
	Total	3,544	3,896	352	
1	Legislators, senior officials and managers	7,344	8,143	799	3+4
2	Professionals	4,327	4,771	444	4
3	Technicians and associate professionals	3,653	3,889	236	3
4	Clerks	2,979	3,197	218	2+3
5	Service workers and shop sales workers	2,107	2,267	160	2+3
6	Skilled agricultural and fishery workers	2,203	2,631	428	2
7	Craft and related trades workers	2,772	3,108	336	2
8	Plant and machine operators and assemblers	3,006	3,233	227	2
9	Elementary occupations	2,074	2,241	167	1

^a The data refer to the full-time employed and part-time employed in the entities where the number of employees exceeds 9.

Source: Rocznik Statystyczny Rzeczypospolitej Polskiej (2011, p. 255), Mały Rocznik Statystyczny Polski (2013, p. 181).

The level of average gross nominal wages presented in table 4 is based on the classification of occupations and specializations for the labour market. This classification underwent modifications each 2-3 years, because it was necessary to adjust it to the changes taking place on the labour market, resulting

from the vanishing of old occupations and the emergence of new occupations and specializations. The most recent new classification of occupations has been in force since 1 July 2010¹. It is based on the International Standard Classification of Occupations (ISCO-08), adopted at the meeting of Labour Statistics Experts. This classification is compliant with the European Union requirements, because Eurostat recommended using it by all the member states.

The classification structure of occupations and specializations is defined on the basis of the similarity of professional qualifications necessary to perform tasks involved in the given profession. Four skill levels were distinguished characterizing specific occupations and specializations:

- The first skill level refers to elementary skills obtained in primary school (1st stage of education – ISCED category 1²);
- The second skill level refers to lower secondary education (2nd stage of education in ISCED) and education obtained in vocational school, general secondary school and specialised secondary school (3rd stage of education in ISCED);
- The third skill level refers to education obtained in postsecondary school (4th stage of education in ISCED) and after technical secondary school (3rd stage of education in ISCED);
- The fourth skill level refers to tertiary education which leads to a university or postgraduate university degree (B.A., B.A. Eng., M.A. and postdiploma education – 5th stage of education in ISCED) and to doctorate studies degree (6th stage of education in ISCED).

In the classification structure of occupations and specializations unit groups are distinguished for individual occupations and specializations. The unit groups are grouped into minor groups, and subsequently into sub-major and major groups. Major groups are marked with a single-digit symbol (code) and a specific skill level is ascribed to them.

The data in table 4 show that in the years 2010 and 2012 legislators, senior officials and managers, who reached third and fourth skill level, were the highest-earning occupational group. The wages in this occupational group increased by ca 11% in the course of two years; additionally, it was the highest increase in comparison with the other occupational groups. In 2010 employees in this group were paid gross monthly wages which were higher by 107% than the total average wages, while in 2012 their wages were higher by 109%. Furthermore, in 2010 employees in this occupational group earned 354%, and in 2012 363% of the wages that were paid to the lowest-earning 9th major

¹ A new classification of occupations and specializations was made on the 27 April 2010, on the basis of the Directive of the Minister of Labour and Social Policy, Journal of Laws no 87 of the 27th of May, 2010, item 537.

² ISCED – International Classification of Educational Standards.

group, comprising employees working in elementary occupations. Among the occupational groups in which the wages were higher than the total average wages in the years under research there were technicians and associate professionals. The remaining occupational groups had lower wages in relation to the average wages in Poland in both years.

Professionals with the highest, fourth skill level, (i.e. the fifth and sixth stage of education) were paid ca 59% of the wages earned by employees in the first major occupational group. Their average gross monthly wages were higher than the national average by more than 22%. It can be observed that the wages of technicians and associate professionals were at approximately the same level as the total average wages in the years under research. The lowest wages were paid to employees working in elementary occupations as well as service workers and shop sales workers. In the years 2010 and 2012 the wages of employees working in elementary occupations constituted 57.5–58.5% of the general level of wages in the country.

Table 5
Average gross monthly wages in occupational groups: legislators, senior officials and managers and employees working in elementary occupations in selected European Union states in the year 2010 (in EUR)

Country	Legislators, senior officials and managers	Employees working in elementary occupations (2)	Index 2:1 in %
Luxembourg	8,496	2,156	25.4
Ireland	4,967	2,391	48.1
Germany	6,141	1,725	28.1
Italy	5,971	1,636	27.4
Slovakia	1,714	470	27.4
Poland	1,698	483	28.4
Czech Republic	1,962	523	26.7
Bulgaria	808	201	24.9
UE-27	4,364	1,450	33.2

Source: Eurostat data: Mean monthly earnings by sex, age and occupation, http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=earn_ses10_21&lang=en, (access: 19.03.2013).

For comparison, table 5 presents average gross monthly wages of the employees belonging to major occupational groups 1 and 9 in selected European Union countries in 2010. In EU27 the wages of employees working in elementary occupations constituted 33.2% of the wages of legislators, senior officials and managers (the difference amounted to EUR 2,914). In the member states presented above the average wages of employees working in elementary

occupations constituted 25–28% of average wages of employees belonging to the first major occupational group. Ireland was an exception to the rule, because the lowest wages there constituted 48% of the highest wages in this country. In Luxembourg the wages of legislators, senior officials and managers constituted 394% of the wages of employees working in elementary occupations, whereas in Poland, despite significantly lower wages, the difference amounted to 352%.

I will now present gross nominal monthly wages in individual sectors in Poland in 2012, on the basis of Polish Nationwide Salary Survey (Fig. 2). Instead of average wages the median of wages is used in the sectors under research.

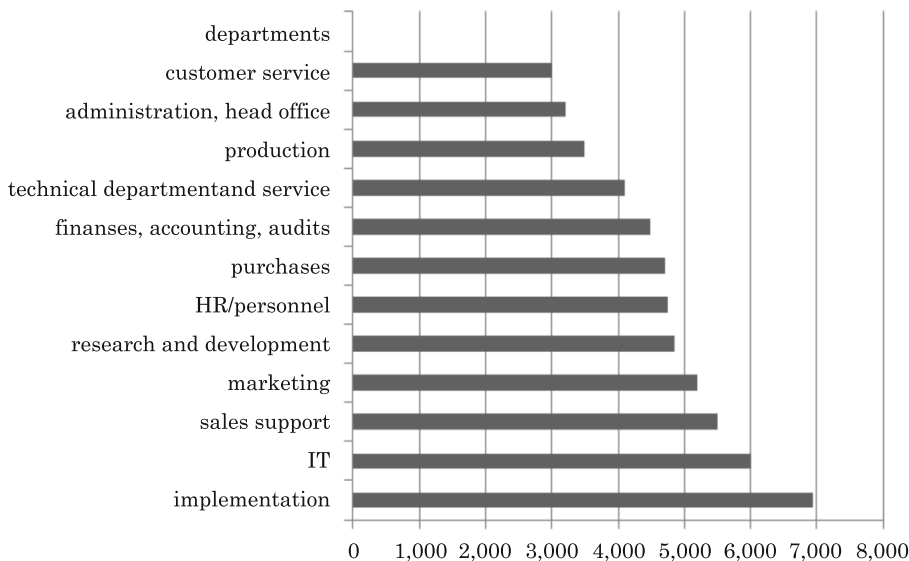


Fig. 2. Wages of employees in selected departments in Poland in 2012 (median, in PLN)

Source: Polish Nationwide Salary Survey (OBW) carried out by Sedlak & Sedlak in 2012 (access 20.03.2013).

The highest wages were paid to employees in the implementation departments (PLN 6,950), and (lower by PLN 950) in IT. These are state-of-the-art departments, in which employees have to demonstrate a high level of knowledge and skills: departments which have a decisive influence on the development and competitiveness of economic enterprises. Relatively high wages, exceeding PLN 5,000, were noted in sales support and marketing departments. In the next four departments the median of wages amounted to PLN 4,100 (technical department and service) and PLN 4,850 in research and development departments. Wages in production departments (median of PLN 3,500)

were among the lowest: they were nearly two times lower than the highest wages in implementation departments. Lower wages were paid to employees in administration departments, head offices (median of PLN 3,200) and customer service departments (median of PLN 3,000). On the basis of the above analysis one can draw the conclusion that in the functioning of companies of growing importance are departments which support production processes, decide about hiring the right people and about motivational remuneration systems. They strengthen the position of their companies on the market, conduct research, provide technical assistance to production processes; in other words, those departments directly influence the achieved financial and economic effects.

Table 6 shows monthly wages of production workers in foreign capital companies and domestic capital companies in 2012, at various management levels.

Table 6
Wages of production employees in selected employment tiers in companies with either foreign or domestic capital in 2012 (median of wages), in PLN

Employment tier	Companies		Wages surplus in foreign capital companies, in %
	foreign capital	polish capital	
Low-level worker	2,890	2,500	15.6
Specialist	4,100	3,290	24.6
Senior specialist	5,200	4,000	30.0
Manager of small team (2-10 employees)	6,000	4,000	15.0
Team leader (more than 10 employees)	6,700	5,250	12.8
Director of the company	15,000	8,500	17.6

Source: Polish Nationwide Salary Survey (OBW) carried out by Sedlak & Sedlak in 2012.

The data in table 6 show that wages in foreign capital companies were higher than in the domestic capital ones. As a rule, the wages in both types of companies increase together with the employment tier. Low-level workers were paid the lowest; the median of their wages in the year under research was comprised within the PLN 2,500–2,900 bracket, and it should be added that the wages in foreign capital companies were higher by 15.6% (PLN 390 difference) than in the domestic capital companies. The median of the wages of specialists and senior specialists in the foreign capital companies was decisively higher in comparison with the wages in domestic capital companies, by 24.6% (PLN 810) and 30% (PLN 1,200), respectively. It also correlates with the average wages of specialists on the domestic market (PLN 4,771). The wages of managers of teams employing up to 10 people and teams exceeding 10 people in foreign capital companies differed by PLN 700, while in the domestic capital companies the difference amounted to PLN 1,250 and the median did not

exceed PLN 6,000, as was the case with team leaders in foreign capital companies. The highest wages were paid to the director of the company, especially in companies with mostly foreign capital. The median of the director's wages reached PLN 15,000 and it was higher by 17.6% in comparison with the median of the wages of the director in domestic capital companies.

Higher wages of team leaders and directors, who occupy one of the highest management levels in the company, result from the specific requirements concerning their job functions. Of great importance in this case are not only knowledge, the level of competences and work experience, but also the ability to think rationally, creativity, negotiation and conflict prevention skills, coping with stress successfully, the willingness to take risks, taking responsibility for oneself and one's team members, for the correct functioning of the company, realizing its goals and making decisions rationally (ARMSTRONG 2001, p. 426, SEKUŁA 2003, p. 64).

In order to round up the above analysis, in table 7 I present the level of wages for specific job positions in the production departments in Polish companies in the year 2012. Apart from the median of wages, the table also shows the wages of the 25% employees who earn less and the 25% employees who earn more. The highest wages were paid to the production manager, but at the same time the wages of the lowest-earning managers and highest-earning managers differed in relation to the median wages (PLN 12,000) by PLN 4,000. PLN 4,000-5,000 was the bracket for the median of wages for production planning managers and manufacturing engineers, production process engineers and production planning specialists. These wages were much lower than in the case of production manager, e.g., production planning manager got less than 45% of the remuneration paid to the production manager, while specialist – ca 35%. The differences between the medians of wages in these job positions were comprised within the PLN 300–500 bracket, whereas the differences between the medians and the lowest wages amounted to PLN 850–980. As regards the gap between the highest wages and their medians for manufacturing engineers, engineers and specialists, it decreased together with the medians of their wages, for instance, in the case of production planning manager it amounted to PLN 2,300, engineers were able to get PLN 1,700 more, manufacturing engineers – PLN 1,420 more, while specialists – PLN 992. Relatively low wages were paid to production technologists (PLN 3,750 median) and machine operators/setters (PLN 3,000 median), whereas the lowest wages were paid to production line operators (PLN 2,696 median). The difference between the lowest wages and the median was decreasing: from PLN 850 in the case of production technologists, PLN 770 in the case of machine operators/setters, to PLN 546 for the job position as a production line operator. Bigger differences were observed between the wages of the 25%

employees earning more and the median of wages in these job positions, e.g. in the job position of a production technologist they amounted to PLN 1,250, machine operator/setter – PLN 800, while production line operator – PLN 904. Therefore, alongside the decrease of the median of wages in specific job positions the differences between the median and the highest and the lowest wages are also decreasing. This tendency is important from the point of view of keeping the remuneration relatively fair.

Table 7

Gross nominal wages in selected job positions in production departments in 2012 (in PLN)

Job position	25% earn less	Median	25% earn more
Production manager	8,000	12,000	16,000
Production planning manager	4,400	5,350	7,650
Production process engineer	3,950	4,800	6,500
Manufacturing engineer	3,500	4,480	5,900
Production planning specialist	3,315	4,183	5,175
Production technologist	2,900	3,750	5,000
Machine operator / setter	2,230	3,000	3,800
Production line operator	2,150	2,696	3,600

Source: Polish Nationwide Salary Survey (OBW) carried out by Sedlak & Sedlak in 2012 (access: 20.03.2012).

Differentiation of wages according to level of education and work experience

Together with skills and work experience, education indicates employees' level of professional competences. It constitutes the basic for evaluating the quality of individuals' human capital resources, which has been previously commented upon, in relation to the requirements for belonging to major occupational groups and job positions. The quality of human capital resources can be improved depending on the development of education level and knowledge gained in the process of school education as well as employees' pro-educational attitudes, e.g. through their participation in lifelong learning processes, vocational trainings, additional training courses, accumulation of professional experience (DOMAŃSKI 1993, p. 3–5).

Changes of the human capital resources are an important factor influencing the level of socioeconomic development and a major aspect of the production process in companies. Employees who are better educated and have high professional skills are more productive and are able to meet the challenges resulting from technological process, implementation of new methods of organizing and managing production process, and creation of new and modern-

ized products and services. Therefore, in generating these changes of great significance are more flexible education systems, offering varied education profiles and education paths adapted to the new socioeconomic requirements.

Education affects a person's situation on the labour market and his/her remuneration. The higher the level of education, the higher the remuneration and the resulting prestige and social recognition. Thus there exists positive correlation between education and the amount of wages earned. Different levels of education constitute a basis for a differentiation of wages. This correlation is visible in Fig. 3.

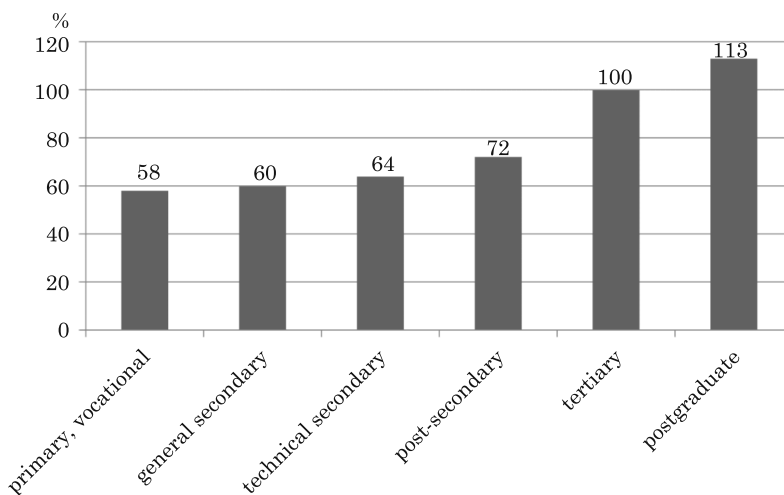


Fig 3. Correlation between the level of education and the average gross nominal monthly wages in 2012 in Poland, in %

Source: Polish Nationwide Salary Survey (OBW), Sedlak & Sedlak, 2012, www.wynagrodzenia.pl.

The level of tertiary education and the related remuneration were specified on the basis of correlation index = 100%. The highest wages were paid to the employees with postgraduate education. The lowest wages were paid to employees with primary and vocational education; in 2012 their average wages constituted more than a half of the wages paid to employees with tertiary education. The wages of the employees with general and vocational secondary education constituted 60 and 64%, respectively, while in the case of employees with post-secondary education – 72% of the tertiary education-related remuneration.

Specific jobs require a specific professional experience. It is connected with work experience, which means there is a correlation between the level of remuneration and the number of years spent at the workplace. The basic expectation is that longer work experience is conducive to a higher remuner-

ation for the given employee; thus the higher remuneration is a form of gratification for employees' longstanding loyalty and attachment, their professional experience, knowledge and skills. On other words, it is a form of appreciating the value and usefulness of such employees in realizing the companies' goals (SEKUŁA 2011, p. 259). The influence of work experience on the level of remuneration is presented in table 8.

Table 8

Average gross nominal monthly wages according to work experience in Poland in 2012, in PLN

Education level	Work experience in years						
	1 or less	2–3	4–5	6–8	9–10	11–15	16+
Tertiary MA	2,800	3,500	4,200	5,000	5,400	6,200	5,800
Tertiary vocational (BA/Eng)	2,500	2,700	3,200	3,804	4,200	4,900	4,700
Secondary	2,000	2,200	2,500	2,800	2,900	3,050	3,075
Primary or vocational	1,950	2,300	2,500	3,000	3,050	3,580	3,000

Source: Polish Nationwide Salary Survey (OBW), Sedlak & Sedlak, 2012.

The data in table 8 indicate a differentiation of average gross monthly wages according to the employees' work experience, and taking into account various levels of education. It can be observed that the wages increased proportionately to the work experience lasting up to 15 years, but longer work experience (16 years and more) led to a decrease of wages, although the pattern varied depending on the level of education, for instance in the case of employees with tertiary education – by PLN 400, tertiary vocational – by PLN 200, primary or vocational – by PLN 580, and a stable trend as regards the wages of employees with secondary education. The decrease of wages may be a result of the decrease of productivity on the part of the employees with longer work experience or their inability to adapt themselves completely to the changing work conditions.

The lowest wages, still differentiated depending on the level of education, were paid to the employees whose work experience did not exceed 1 year. The difference between the wages of employees with tertiary, MA education and those with primary or vocational education amounted to PLN 850. The longer the work experience was, the greater the pay difference was, because of the bigger increase of wages for employees with tertiary education, rather than those with primary or vocational education, for example, in the case of 2–3 years' work experience the difference amounted to PLN 1200, 6–8 years of work experience increased the pay gap to PLN 2,000, and in the case of 11–15 years of experience to PLN 2,620.

The wages of employees with secondary education were relatively low, although they also increased in correlation with work experience. In the first

year of work the wages of these employees were higher only by PLN 50 in comparison with the wages of employees with primary or vocational education; during the 4th and 5th year of work the wages of the employees with these levels of education became similar (PLN 2,500), but in the course of the subsequent years the wages of employees with secondary education rose at a slower pace and reached a relatively lower level. In addition, employees with secondary education could expect to earn more than PLN 3,000 only after 11–15 years of working, while the employees with tertiary education – after 2–3 years of working (tertiary MA) or after 4–5 years of working (tertiary vocational).

Tertiary MA education guarantees the highest wages alongside accumulated work experience and relative high pay raises, e.g. after 11–15 years of working they increased by PLN 3,400. Employees with tertiary vocational education had to work 9–10 years in order to be able to earn the wages (PLN 4,200) which employees with tertiary MA education earned after 4–5 years of working. It can therefore be stated that the relatively high level of wages and their increase achieved by employees with tertiary education together with the accumulation of work experience constitutes a significant motivation to raise one's qualifications and aim for professional development.

Women's wages and men's wages

In accordance with the European Social Charter of 1961, workers of both sexes have the right to equal remuneration for the work of equal value (*European Social Charter*, 1999). The non-discriminatory and fair remuneration for working women and men is also emphasized in the Convention no 100 of International Labour Organisation (Journal of Laws 55.38.238). Despite regulations forbidding the differentiation of wages depending on sex, in the economic practice of many countries these regulations, although legally binding, are not applied (JACUKOWICZ 1999, pp. 24–29). The fact that women are paid less than men for work of equal value is considered to be a reflection of pay discrimination against women. Among the reasons for the discrimination one should enumerate hiring women for lower-paid jobs, problems with being promoted for higher positions, for example at the executive level, in politics; a lower degree of women's availability due to household and family obligations; lowering wages where mostly women's jobs are involved. The differences between women's wages and men's wages in Poland in the years 2004–2012 are shown in table 9.

Table 9

Average nominal gross monthly wages for women and men in Poland in the years^a
2004, 2006, 2008, 2010, 2012, in PLN

Specification	Wages				
	2004	2006	2008	2010	2012
Women	2,150	2,386	2,893	3,256	3,540
Men	2,572	2,904	3,557	3,832	4,249
Men's wages surplus	422	618	664	576	709

^a Data for October; they refer to workers employed full-time and part-time, in entities in which the number of employees exceeds 9.

Source: Roczniki Statystyczne Rzeczypospolitej Polskiej (2006, p. 272, 2007, p. 274, 2011, p. 255), Rocznik Statystyczny Pracy (2010, p. 294), Mały Rocznik Statystyczny Polski (2014, p. 181).

The data in table 9 confirm that women's average monthly wages are lower in relation to men's wages in the years under research. The fact that men's wages grew faster than women's wages caused a growing gap between the two sexes' wages. The year 2010 was an exception insofar as the gap between women's wages and men's wages was smaller due to a slightly higher increase of women's wages in the years 2008–2010 (by PLN 363) than men's wages (by PLN 275). However, already in 2012 the gap between the wages increased again due to the higher increase of men's wages (by PLN 417) than women's wages (by PLN 284) in comparison with 2010.

The differences between women's wages and men's wages were confirmed by the data from Polish Nationwide Salary Survey, carried out in the years 2009 and 2012 (Fig. 4).

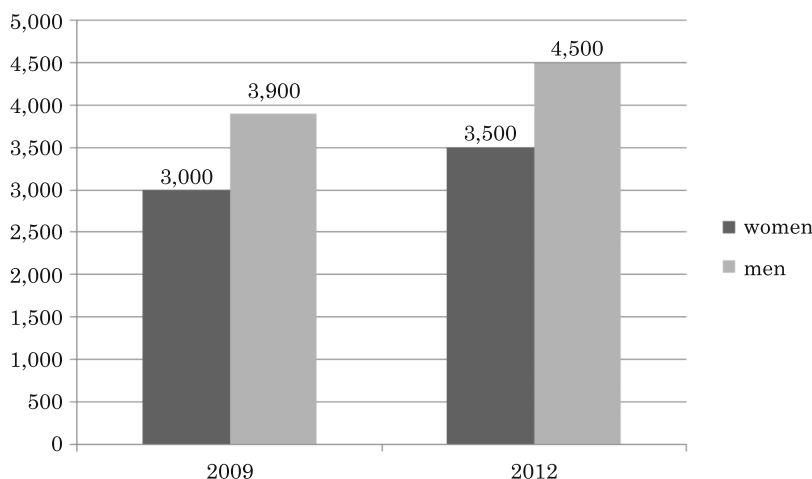


Fig. 4. Gross monthly wages for women and men in Poland in the years 2009 and 2012 (median), in PLN

Source: Polish Nationwide Salary Survey (OBW) in the years 2009 and 2012.

In 2009 the median of total gross wages for men amount to PLN 3,900 and it was 30% higher than the median for women. In 2012 the difference between men's wages and women's wages amounted to PLN 1,000. The median of total wages for men increased by 28% in relation to the median of women's wages. In the years under research, women's wages constituted 76-77% of men's wages.

Let us consider the differentiation of wages according to sex from the point of view of the level of education. This criterion was used in figure 5.

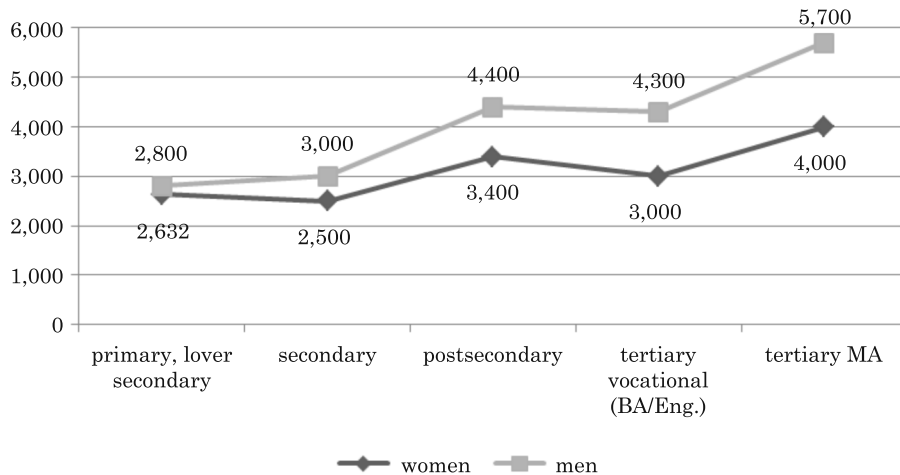


Fig. 5. Gross monthly wages of women and men according to the level of education in Poland (median) in 2012, in PLN

Source: Polish Nationwide Salary Survey (OBW), carried out by Sedlak & Sedlak in 2012.

Figure 5 demonstrates clearly pay inequalities between women and men. It can also be observed that as the level of education increases, so does the disproportion between their wages. At the primary and low secondary level the difference amounted only to PLN 168, at the secondary level the difference amounted to PLN 500, postsecondary – PLN 1,000, tertiary vocational – PLN 1,300. As regards the employees with MA degrees, the difference between women's wages and men's wages increased to PLN 1,700. Such a huge difference may result from a high concentration of women in low-paid, low-level jobs, despite their high qualifications.

The data in table 10 present the share of women and men in general employment and their wages according to major occupational groups in October 2012.

Analysis of the data confirms the observation that women earn relatively lower wages than men in each major occupational group, regardless of their

Table 10

Employees^a and average gross wages according to occupational groups – data for October 2012

Occupational groups	Employment in per cent			Average gross wages in PLN			Women's and men's wages ratio index 2:1
	total	men	women	total	mean (1)	women (2)	
Total	100.0	100.0	100.0	3,896	4,249	3,540	0.83
Legislators, senior officials and managers	8.1	8.8	7.3	8,143	9,295	6,749	0.73
Professionals	26.0	17.2	35.0	4,771	5,677	4,321	0.76
Technicians and other mid-level personnel	11.6	10.2	13.0	3,889	4,458	3,437	0.77
Clerks	9.3	6.8	11.8	3,197	3,237	3,175	0.98
Service workers and shop sales workers	10.6	7.0	14.1	2,267	2,482	2,159	0.87
Skilled agricultural and fishery workers	0.2	0.3	0.1	2,631	2,659	2,519	0.95
Craft and related trades workers	14.1	23.5	4.8	3,108	3,295	2,185	0.66
Plant and machine operators and assemblers	11.4	19.2	3.5	3,233	3,346	2,611	0.78
Elementary occupations	8.7	7.0	10.4	2,241	2,569	2,019	0.79

^a The data refer to workers employed full-time and part-time, without conversion into full-time employment, and comprise entities in which the number of employees exceeds 9.

Source: Mały Rocznik Statystyczny Polski (2014, p. 181).

share of total employment. The share of women (two times greater in comparison with men) in the employment of professionals did not translate into at least equal wages. The average gross monthly wages for women constituted 76% of the wages paid to men; the difference between them amounted to PLN 1,356. Almost equal (PLN 62 difference) were the wages of women and men in the clerks' group, where women dominated in terms of employment. Relatively big differences between wages when women had a significant share of the labour market were noted in the following occupational groups: technicians and other mid-level personnel as well as employees performing simple jobs, where women's earnings constituted 77% and 79% of men's earnings. Relatively smaller differences concerned the group of service workers and shop sales workers, in which the share of women was also two times higher than that of men, whereas their earnings constituted 97% of men's wages. The existing differences between women's wages and men's wages are often based on employers' prejudices concerning the value of women's work and men's work and result from prioritizing the activity spheres ascribed to them.

Conclusions

On the basis of the above considerations and analyses, several conclusions can be drawn.

1. Differentiation of wages is, to a large degree, conditioned by the use of its motivational function in economic entities. – Differentiation of wages should reflect the kind, amount and quality of work and its effectiveness, i.e. it should demonstrate a positive correlation with the value of work..

2. Differentiation of wages cannot be contrary to maintaining their fair and just character. Therefore, the social and ethical aspect of shaping and diversifying wages is of great importance.

3. Differentiation of wages is a result of numerous factors connected with the economic situation of the given country, the economic and financial condition of companies, and the employees' traits.

4. The type of job performed in individual sections of economic activity also affects the differentiation of wages. In the years 2005 and 2013, in the same sections the highest and the lowest wages were noted in relation to the average gross nominal monthly salary in Poland. The highest wages were earned by those working in the following sections: mining and quarrying, electricity, gas, steam and air conditioning supply, financial and insurance activities, information and communication. The lowest wages were earned in the following two sections: accommodation and catering, and administrative and support service activities.

5. The differentiation of wages according to ownership sectors indicates a higher level of wages in the public sector than in the private sector, even though the private sector dominates in terms of employment. Among the reasons for this situation, one could enumerate: high level of competition between employees who want to get or retain jobs, the fear of unemployment, particularly in the period of economic slowing down, weakness of trade unions, the employers' drive towards lowering labour costs which underlie the effectiveness and competitiveness of companies. The basis for diversifying wages should be the real work results achieved in individual sections in both ownership sectors.

6. Belonging to a specific occupational group has an impact on the differentiation of wages as well. Higher wages in the given profession should be a result of the employee's higher qualifications. In addition, the qualifications should be adapted to the specific job requirements in the given profession. The top-earning occupational group included legislators, senior officials and managers, as well as professionals, although the latter earned ca 59% of the wages paid to people from the former major occupational group. The lowest-earning group consisted of employees performing elementary jobs. Their wages con-

stituted 27.5% of the wages paid to the first major occupational group (in EU the respective figure amounted to 33.2%).

7. In production companies of growing importance are the departments which have a decisive influence on their growth and competitiveness, and which offer relatively high wages, e.g. implementation department, IT, marketing, sales assistance, research and development.

8. Wages in companies with foreign capital were higher than in the companies where Polish capital prevailed, but the pattern was the same in both: the higher the employee level, the higher the wages were (Low-level workers were paid the lowest wages while production managers and team leaders were paid the highest wages, which is connected with their responsibility for themselves, for their co-workers and their companies).

9. An important prerequisite for the differentiation of wages is the level of education, which affects the individual's position on the labour market. There is a positive correlation between education and wages. The relatively high wages are connected with tertiary (including post-graduate) level of education. The lowest wages, amounting to 58% of the wages paid to people with higher education, were paid to employees with primary and vocational training.

10. The basis for the differentiation of wages is the number of years people are employed: a marker of their professional experience. Longer work experience correlates with higher wages, particularly when employers have obtained higher education.

11. In spite of the legally guaranteed equality of men's wages and women for the work of equal value, in the economic reality of Poland and other EU countries the average nominal wages for women are lower than those for men, regardless of their level of education and their being employed in the same professional group.

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MINIMUM WAGE AND ITS FUNCTIONS IN POLAND

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Key words: remuneration, minimum wage, costs of work.

Abstract

The article discusses the issues concerning the minimum wage. Remuneration is the inseparable element of work provided to the employer. Currently, numerous forms and types of it exist, among them the minimum wage which has been the subject of political and media discussions for many years. That subject attracts immense attention and one can find many different and contradictory opinions concerning it. The objective of this article is to draw attention to the issues of minimum wage in Poland analysing the results of own studies that were conducted in 2013. The questionnaire based survey covered 200 respondents, mainly employees, people searching for a job and employers. The questionnaire consisted of 21 questions with the legend (the last 5 questions concerning the sociodemographic situation of the respondents). The minimum wage in Poland is the subject of numerous arguments and disagreements among the employees, trade unions and the government; that is why the article presents not only the principles of minimum wage operation but also the consequences both positive and negative. It also presents the correlation between the costs of work and the minimum remuneration as well as its influence on employment moving from the discussion and analysis of own studies concerning the functioning of the minimum wage in Poland as seen by the unemployed, employees and employers. The vast majority of the respondents (79%) are for the minimum wage increase. And 69% of the respondents believe that the minimum remuneration has the largest influence on the employer.

PLACA MINIMALNA I JEJ FUNKCJE W POLSCE

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Słowa kluczowe: wynagrodzenie, płaca minimalna, koszty pracy.

Abstrakt

W artykule poruszono kwestie dotyczące płacy minimalnej. Wynagrodzenie jest nieodłącznym elementem pracy świadczonej na rzecz pracodawcy. Współcześnie istnieje wiele różnych jego form i rodzajów, m.in. płaca minimalna, która od wielu lat stanowi temat dyskusji politycznych i me-

dialnych. Temat ten przyciąga ogromną uwagę i można znaleźć wiele różnych oraz sprzecznych opinii. Celem artykułu jest zwrócenie uwagi na problematykę płacy minimalnej w Polsce analizie wyników badań własnych, które przeprowadzono w 2013 r. Badaniami ankietowymi objęto 200 osób: głównie pracowników, osoby poszukujące pracy i pracodawców. Kwestionariusz zawierał 21 pytań wraz z metryczką (5 ostatnich pytań dotyczących sytuacji społeczno-demograficznej badanych). Płaca minimalna w Polsce jest przedmiotem wielu sporów i nieporozumień między pracującymi, związkami zawodowymi a rządem, dlatego też w artykule przedstawiono nie tylko zasady funkcjonowania płacy minimalnej, lecz jej skutki: pozytywne i negatywne. Pokazano również zależność między kosztami pracy a wynagrodzeniem minimalnym i jego wpływem na zatrudnienie w analizie i omówieniu wyników badań własnych dotyczących funkcjonowania płacy minimalnej w Polsce przez pryzmat bezrobotnych, pracujących i pracodawców. Zdecydowana większość badanych (79%) jest za podniesieniem płacy minimalnej. Aż 69% osób jest też zdania, że wynagrodzenie minimalne ma największy wpływ na pracodawcę.

Introduction

The definition of remuneration indicates that it represents payment for the work for the employer (*Encyklopedia biznesu*, 1999). In Poland, this is the amount defined in the law below which full time employees cannot be employed in the entire country. The minimum remuneration is determined by the Tripartite Commission consisting of the representatives of the employers, trade unions and government (OLEKSYN 1997, p. 37). The minimum remuneration can be compared to the minimum price for the good that work is instead of a merchandise or service. Under certain conditions that minimum price fulfils its function as in case of any „good” for which the price has been determined in advance. We should refer here to the fundamental law of demand and supply. People looking for a job or working create the supply while the employers generate the demand for work. The wage is the price the employer has to pay for the work provided to him. Had that price been set at the point of equilibrium then there would have been no unemployment. Only the individuals that do not want or cannot work would be unemployed. In the situation of the minimum price for work lower than the equilibrium price and the demand exceeding the supply, the level of minimum wage would not have much influence on the market. In that situation there would be no exploitation of employees. In Poland, however, the situation is the opposite because the supply exceeds the demand. The minimum remuneration is above the equilibrium point and consequently a significant number of people are unemployed because the employers cannot employ them as a consequence of the high costs of employment (PIECHOWIAK 2012).

Dilemmas concerning the minimum wage

In Poland, the minimum wage is applicable to every job performed; there is no division into industries and that makes striving towards the equilibrium point very difficult. The situations happen when the remuneration of the cleaned without secondary education amounts 1,600 PLN gross, the same as that of the university graduate accountant. Only the persons employed based on employment contracts for unspecified time that earn the lowest national salary may benefit from that. During the last two years the increase of their remuneration exceeded 12% (PIECHOWIAK 2012). Theoretically, existence of the minimum wage aims at protection of employees against exploitation. In practice, however, it happens that it makes more harm instead of helping both the employees and the employers (OGŁODZIŃSKI 2013), thus the aim of this article is to present the minimum wage issues, with special attention paid to its functions and opinions expressed by workers, unemployed and employees.

Functions of the minimum wage

Among the practitioners and theoreticians there are both supporters and opponents of the minimum wage. According to its opponents the people that could take employment are the losers because their work is valued below the lowest remuneration. They are usually young, unskilled people that cannot work as, e.g. cleaners or couriers because the employers do not want to employ them. The benefits to the employers would not equal the costs of their salaries. That is why employment based on specific work or mandate contracts (PIECHOWIAK 2012). The opponents believe that legal regulation of the minimum remuneration hinders independent economic development, mainly of small businesses, and offers benefits to the trade unions only. Inhibiting development of small business entities development by the existing payroll barrier is another negative consequence of the minimum wage that concerns violation of the free market principles. This leads not only to the unemployment but also to spread of poverty (FRIEDMAN 1982, p. 15), even though many people would be willing to take a job for the wage lower than the minimum. It would offer not only decent existence but also the feeling of value and sense of life, often related to the work (SEKUŁA 2011, p. 13). Opponents of the minimum wage claim that it has bad influence on functioning of the economy. According to their opinion, the minimum salary distorts the correlation between productivity and wage. The minimum wage should not be separated administratively from the value of the work performed. The wage should correspond to the value of goods and services produced by the given employee. The legal

regulations require the employers to pay the minimum salary indifferent of the employee productivity as a consequence of which the employer must sometimes subsidise the employee, which is unprofitable. This may result in the loss of competitiveness by the enterprise or a decrease in production and that may lead to impoverishment of the entire society. The statutory minimum wage frequently forces employment of a smaller number of employees because every person employed generates high costs that the employer must bear, e.g. the insurance or other benefits. Without the legally defined minimum wage rate the employer could employ two employees instead of one and pay the same costs. The employers would prefer the lowest possible minimum wage because the higher it is the fewer employees they can employ. The supporters of the lowest national salary highlight the functions it fulfils. The key is preventing the situation of receiving excessively low remuneration relative to the difficulty of the given work and the input in it. It provides the security against excessive exploitation of the less resourceful people that would not cope with the negotiations of wage appropriate to their skills. Existence of the minimum wage protects against unexpected actions of the employers, e.g. excessively low wages, it prevents development of differences in the minimum wage levels between sectors and industries and self-exploitation of the employed for the excessively low salary (LISZCZ 1995, p. 26). In considerations on whether the minimum wage should exist, different conclusions can be reached. The majority of Poles are for increase of the minimum wage. Those are mainly people employed or unemployed for whom the minimum wage represents protection against elimination from the social and economic life because the salary that is lower than the price of the basket of fundamental goods may lead to being pushed to the margin of the society. It may even lead to poverty or pathology, resignation from work if the unemployment benefits are higher than the remuneration. The minimum wage secures against excessively low salary. It allows satisfying the so-called decent bases of existence (e.g. food, medicines, clothing and access to basic services); it may prevent criminal activities or corruption. Remuneration below the minimum required for survival may lead to crime – the employee faces the choice whether he prefers earning a low salary which is insufficient to satisfy the fundamental needs or he wants to act illegally, e.g. by theft or working in the grey zone, which may, theoretically, generate higher profits. Protection of the consumer when the wage is lower than the costs of support is the advantage of the minimum wage. This however influences the situation where companies decrease funds for improvement of goods or introduction of new goods. This leads to narrowing the offer of goods; the market is overfilled with lower price goods, which is correlated with the quality of those goods, because the consumers can afford such goods only. That situation may even lead to loss of health as a consequence of using low-quality

products. Thanks to the adequately high minimum wage the clients are not exposed to such situations, they can afford products at higher prices and better quality and durability. The level of the lowest national salary determined in the top-down process influences the negotiation position of employees during recruitment. The situation is generally assumed where the employee is the weaker party and needs support and the statutory minimum wage guarantees that ultimately the employee will not get less than the lowest national salary. The state is the major beneficiary of the minimum remuneration because an increase of the minimum wage results in increasing the compulsory contributions paid to the Social Insurance Institution (ZUS) and the income tax. The minimum wage is also the base for computation of the maternity and sickness benefits. Its increase causes that the amount of those benefits increases in the same way as the level of contributions paid by the employers to the ZUS. Thus, the state gains more on increasing the minimum salary than it loses. That is why the government representatives in the Tripartite Commission are for increasing the wages.

Costs of work and minimum wage

The costs of work are an immensely important issue that must be considered in discussing the minimum remuneration. Those costs are the total charges covered by the employer in connection with employing people. They also discourage people from the self-employment (MARKS-BIELSKA, KORDECKI 2008, p. 673, MARKS-BIELSKA, KRZYWIEC 2009, p. 105, SZCZEBIOT-KNOBLAUCH, KISIEL 2014, p. 97). In addition to the gross remuneration of the employee (before tax), they also include additional, non-payroll charges (e.g. a half of the contributions to the disability and pension insurance) (SZABAN 2013, p. 36). The level of those costs depends on whether the employee is employed based on the employment, mandate or specific work contract. The net remuneration disbursed to the employee employed based on the employment contract is ca 60% of the costs to the employer. The actual cost of employee employment is not the amount of the salary paid to him, i.e. 1680 PLN gross (1,237.20 PLN net), but 2,028.43 PLN gross. The difference consists of the contributions paid to the ZUS insurance, Labour Fund and the Fund of guaranteed employee benefits (*Minimalne-wynagrodzenie...* 2014). In 2014, the contributions paid by the employer for insurance amounted to 305.59 PLN gross a month while the payments to the Labour Fund and the Fund of guaranteed employee benefits amounted to 42.84 PLN gross. Thus the lower the minimum wage is the lower the costs paid by the employer are. In Poland they are among the lowest in the European Union. For example, compared to a highly developed

country such as France, those costs are very high, but the minimum salary is also high at 1,430 EUR while in Poland it is 370 EUR a month. This is not the only classification in which we rank very low among the EU Member States. We also work longer. The French work, in average, 35 hours a week while the Polish average is 41 hours a week. According to the Eurostat data, in 2011 the costs of work in France were 34.2 EUR per hour while in Poland they amounted to 7.1 EUR only (*Płace i koszty pracy 2015, Pracujemy za półdarmo 2013*).

The influence on minimum wage on employment

High minimum wage may have negative influence on employment. This applies in particular to the people with low skills or little vocational experience, i.e. people offering low productivity. Excessively high remuneration compared to the productivity may result in the situation that employing such people is unprofitable. The employer is limited by the costs imposed by the state and prefers employing a skilled employee offering higher productivity. In such circumstances, the unskilled worker is frequently searching for employment in the grey zone, which leads to inhibiting the economic development. Although the minimum wage in Poland expressed in the euro is lower than in the countries of the so-called old Union, compared to the New Member States (NMS) it is still relatively high. It is higher in Slovakia and Malta only. This is the consequence of the minimum wage increase in Poland by more than 70% during the years 2007–2012. Comparing that relation to the average remuneration, it increased from 34 to 42% during that time. The correlation also exists that the higher the minimum wage is the higher the product manufacturing costs and price are. Trade unions strive at the highest possible share of the minimum wage in the average remuneration while the consequences of that include not only the increase in the costs of benefits and insurances, but also in process of goods and services.

Analysis of the minimum wage in Poland based on the conducted surveys

Aiming at obtaining opinions of different social groups on the minimum wage the survey was conducted encompassing 200 respondents of which some were unemployed (42 persons), some were employed (142 persons) and some representing a minor percentage were employers (16 persons). As the result of that choice of the respondents diversified opinions concerning the minimum

wage were obtained. The survey questionnaire consisting of 21 closed questions, including questions concerning the sociodemographic status of the respondents that allowed drawing conclusions of factors conditioning their responses was the research tool. Studies indicate that remuneration represents the motivation to work for the respondents; the higher the minimum wage level is, the more willing they are to take a job. The majority of the respondents believe that the minimum wage should exist and that it is needed. Without the minimum statutory rate effective in all the sectors of the economy in Poland the society could not be sure whether the remuneration would be sufficient to satisfy the fundamental needs. The minimum salary aims at eliminating harmful competition among employers in decreasing the costs by freezing the wages. More than 70% of the respondents point at the level of the minimum wage. That level determines the levels of various derivatives that become higher automatically with the minimum wage increase. Although the majority of the respondents know how the benefits are computed, they do not realise the magnitude of the costs to the employer. 79% of the respondents (the unemployed and employees) believe that the minimum wage should be increased because it is insufficient to cover the fundamental needs of the society (Fig. 1).

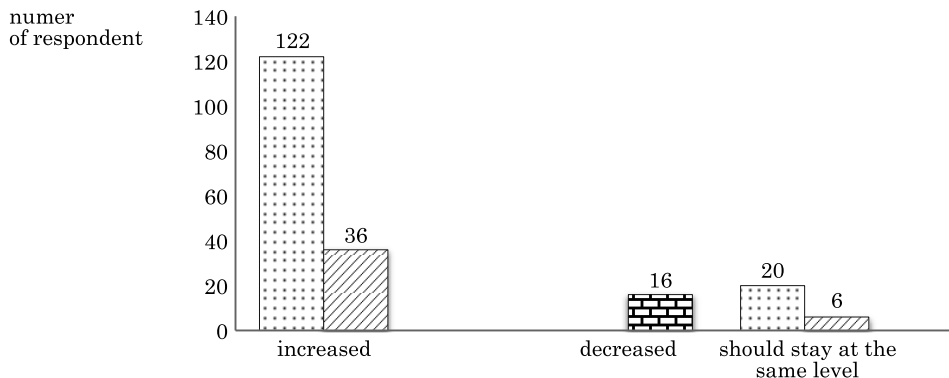


Fig. 1. Opinions of respondents concerning changes in the minimum wage level

Source: own work based on the studies.

Employers that participated in the survey are for decreasing the minimum salary because every increase of it discourages increasing employment. It is unprofitable for the employers to employ people that would produce less than they cost because in addition to the remuneration disbursed to the employee they must pay the costs of social insurance contributions, taxes, absenteeism caused by medical reasons or employee holidays. The issue of the relation between the minimum wage and the average wage also is a subject of disputes because the employees would like it to be the highest possible while the

employers are of the opposite opinion. The higher it is the more intense the problems presented by the employers become; when it is lower the employees and trade unions protest. Trade unions strive at the situation where the minimum wage exceeds a half of the average wage. In 2013, the ratio between the minimum wage and the average remuneration was 43%. The parliament does not plan further increases because it believes that such increase could have negative consequences for employment resulting in unemployment increase. The respondents also expressed their opinions concerning the ratio between the minimum wage and the average salary; 53% of them believe that the minimum wage should represent 30–50% of the average salary while 34% of the respondents agree with the trade unions that the minimum salary should be higher than 50% of the minimum. Only 13% of the respondents expressed the opinion that the ratio of the minimum to average salary should be lower than 30% (Fig. 2).



Fig. 2. Opinion of the respondents concerning the relation of the minimum to the average wage
Source: own work based on the studies.

The respondents also expressed their opinions concerning the influence of the minimum wage on the employer and employees. As many as 69% of them present the opinion that the lowest national salary has the largest influence on the employers because it depends on them how many people they employ and on what terms and conditions (Tab. 1).

Table 1

Influence of the minimum wage level on the employees and employers

Party in the labour market	Number of respondents	Share [%]
Employee	62	31
Employer	138	69

Source: own work based on the studies.

The analysis of the data contained in the table indicates the correlation between the social position or the position at work and the opinions on existence and level of the minimum wage. The unemployed and people holding the basic, low positions aim at the highest minimum wage possible while the employers and employees holding higher positions at work have the opposite opinions.

Conclusion

The minimum wage is an important component of the labour market policy as it, among others, combats poverty and social inequality or protects employees against dishonest practices of employers. However, when it is at an excessively high level, it discourages employment of new employees and consequently inhibits economic development. Based on the statistical data and results of own studies, diversified positions concerning the minimum wage were discussed. Two approaches to the minimum wage have been presented, i.e. the remuneration as a component of the costs of work the increase of which results in harmful consequences to the economy and minimum wage as a component of social security. The majority of the respondents (79%) are for an increase of the minimum wage.

The issue of the relation between the minimum and average remuneration is an important issue. More than a half of the respondents (53%) present the opinion that the relation between the minimum and average salary should be at the level of 30-50%. This is a relatively rational approach because that ratio of those salaries is maintained in the majority of highly developed EU countries. The higher that ratio is the more pronounced the problems presented by the employers become. The lower it is the more extensive appeals and protests by employees and trade unions become. According to the trade unions, the ratio between the minimum and average salary should be at least 50%. Work productivity increase is the best solution. It can be increased by better education of the employees and training, increasing the number of machines that help the employees and influence better organisation of work. The more is produced by a single employee the higher that employee's productivity is; the productivity of the enterprise increases and as the outcome, the society becomes richer.

The conducted studies indicate that the remuneration is the major factor motivating the respondents to work. The higher the minimum wage is the more willing to work they will be.

In conclusion, we may not state, however, whether the minimum wage should exist or not. The opinions on the subject are diversified depending on

the side of the labour market represented. For the employers it involves costs that they cannot always afford while for the employees it secures partial stabilisation and certain sense of security.

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**THE EUROPEAN UNION TRANSPORT POLICY
AND THEIR CONSEQUENCES FOR
THE INFRASTRUCTURE DEVELOPMENT IN POLAND
IN 2014–2020
PART II**

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Key words: transport infrastructure, EU Common Transport Policy, Transport Policy options.

Abstract

In part I of the paper discussed the evolution of the objectives of the COMMON TRANSPORT POLICY over the last 20 years, of a major impact on the level of spatial cohesion achieved, and ensuring competitive, reliable, safe and environmentally friendly transport opportunities. On that basis, dilemmas regarding the outcomes of their implementation after 2020 until 2050 are analyzed. 3 options for policy outcomes are formulated: POLICY OPTION I suggesting the pursuit of the applicable policy, i.e. the completion of the construction of the motorway network in Poland, with possible difficulties for the State budget. POLICY OPTION II assumes that there will be a shift of some road traffic onto rail following the launch of an adequate fee and toll policy, decreasing the burden placed on car transportation. Finally, POLICY OPTION III delineates the perspective of a sustainable and durable transport development thanks to appropriate allocations of funds, and, in consequence, an improved competitiveness of national traffic and the completion of the construction of motorway infrastructure. The choice of policy option may have dramatic implications as to Poland's ability to manage its development opportunities ahead.

**POLITYKA TRANSPORTOWA UNII EUROPEJSKIEJ I JEJ KONSEKWENCJE
W ROZWOJU INFRASTRUKTURY W POLSCE W LATACH 2014–2020
CZĘŚĆ II**

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Słowa kluczowe: infrastruktura transportowa, wspólna polityka transportowa UE, warianty polityki transportowej.

Abstrakt

W części I artykułu przedstawiono ewolucję celów wspólnej polityki transportowej, mających istotny wpływ na poziom spójności przestrzennej w ostatnich dwudziestu latach, a przez to zapewniających wzrost: konkurencyjności i niezawodności usług transportowych oraz ich bezpieczeństwa i przyjazności dla środowiska naturalnego. Na tej podstawie określono skutki ich realizacji po 2020 r., w perspektywie do 2050 r. Sformułowano trzy warianty konsekwencji tej polityki: wariant I zakładający kontynuację dotychczasowej polityki polegającej na zakończeniu budowy sieci autostrad w Polsce, co spowodowałoby określone problemy budżetu państwa; wariant II przyjmujący przesunięcie części ruchu drogowego do sektora kolejowego dzięki odpowiedniej polityce opłat i taryf, co odciążałoby przewóz samochodowy, oraz wariant III zakładający zrównoważony i trwały rozwój transportu dzięki odpowiedniej alokacji zasobów finansowych. Spowodowałoby to zwiększenie konkurencyjności ruchu krajowego po dokończeniu budowy infrastruktury autostrad. Wybór jednej z tych alternatyw może mieć istotne znaczenie dla wykorzystania bądź niewykorzystania szansy rozwojowej jaka stała przed naszym krajem.

Introduction, research aim and methodology

The increased Cohesion Policy spending at the level of EUR 82.3 billion in the newly opened EU multiannual financial framework for 2014–2020 aims at reducing development disparities across various regions of the EU, which, over the last 20 years, has undergone important changes. Part II of the paper covers the presentation and assessment of 3 options of the future transport policy. In both parts the following analytical methods have been used:

- Methodology applicable for the study of investment attractiveness of regions-voivodships, as suggested by the Institute for Market Economic (*Instytut Badań nad Gospodarką Rynkową – IBGR*), based on the comparative analysis of national official documents from 2006–2010 (see: Gawlikowska-Hueckel 2000, *Atrakcyjność inwestycyjna... 2006–2010*);

- External factors cover also the European Transport Policy; the changes of its priorities over the last 20 years and the scenarios of its development in 2014–2020 perspective will be discussed in this part of the paper. They will be presented through the comparison of documents elaborated by international and national institutions.

Recommendation of the world bank and eu institution regarding transport policy until 2025

In documents concerning the future Common Transport Policy, from reports of international institutions, e.g. the World Bank reports, to national strategic documents delineating orientations for infrastructure development, special attention has been paid to the discussion on policy priorities until 2030, and even until 2050, as well as to threats to its implementation.

In February 2011, the World Bank published its Report on the Polish transport network. The Report: „Poland. Transport Policy Note – Towards a Sustainable Land Transport, 2011” took into account the effectiveness of the institutional system in place and existing forms of infrastructure financing. The analysis covered the applicable transport policy. Based on this, key reservations and recommendations were formulated and 3 policy reform options were elaborated, considering new orientations of infrastructure development included in national documents established until 2020 and 2030.

The World Bank Report challenged the applicable transport policy priorities aiming at improving road mobility through road investments as potentially dangerous to sustainable growth of the whole sector. It listed, among all, the following threats (CHŁOPEK, 2012):

- lack of consideration of climate impact on transport policy and the need to include GHG emissions to transport charges;
- insufficient measures to improve traffic safety in cities and in non-urban areas;

Regarding the sources of financing, the Report points, among all, to:

- limitation of increasing road maintenance replacement investments;
- bigger share of extra-budgetary sources of financing, considering the need to balance national budget revenue and expenditure and the actual fund levels in the future EU budget;
- diversification of sources of financing for road maintenance and new road construction leading to self-financing and consisting in shifting the burden of charges onto users responsible for the material wear of road infrastructure.

The recommendations would ensure the implementation of objectives thanks to the use of following instruments:

- consistent implementation of the „user pays” model in which the user covers the costs of their responsibility for the degradation and wear of roads during exploitation;
- increase of payments from users by augmenting direct charges, taxes and levies on fuel prices, combined with reduced payments from the State budget;
- streamlining of road toll levels in order to promote the competitiveness of other transport sectors.

Following the above mentioned analysis, 3 policy reform options were formulated. Policy Option I defined as priority road mobility and further implementation of the respective investment program co-financed with EU funds. The negative impact of that option was identified as a deteriorated financial, economic and environmental sustainability due to the involvement of domestic and EU funds in further road investments, which, in the long term will cause environmental pollution.

Policy Option II assumes a shift of a small part of road traffic onto rails thanks to the reduction of charges for access to railway infrastructure and the increase of charges for road users and fuel costs; this would expand railway traffic at the expense of car transport, and would simultaneously require the increase in financing of railway infrastructure.

Policy Option III would have the biggest impact on the objectives of sustainable and durable transport development and on better allocation of funds. The main priority would be to improve the competitiveness of railway and further investments in road infrastructure co-financed with the EU funds with the view of their completion.

The objective of „Transport 2050” Strategy, adopted by the European Commission in March 2011 was to create a Single European Transport Area, featuring a competitive and resource efficient transport system. 10 key tasks were defined, to be implemented by 2050. They may be clustered into 3 categories:

1. development of new technologies and launch of new fuels (among all, reduction by half of conventionally-fuelled cars (in cities) until 2030, and their total elimination until 2050.

2. streamlining of operation of multimodal logistic chains, resulting in shifting 30% of road freight over 300 km to rail or waterborne transport, and 50% until 2050, which would foster the development of ecological (green) and effective transport corridors. Thanks to the completion of the high-speed European railway network construction program, until 2050 the major part of medium-distance passenger transport will be transferred to rail. Earlier, until 2030, the construction of the TEN-T will have been completed and until 2050 the network will be optimized. Also until 2050, all core network airports and major maritime ports will be well-connected with passenger and freight rail infrastructure;

3. Improved effectiveness in use of transport modes and their infrastructure thanks to the implementation of information and transport service provision systems. Already in 2020 works will be completed on the Single European Aviation Area and a framework will be established for a European multimodal transport information, management and payment system. Moreover, there will a progressive move towards the full application of the payment system compliant with „user pays” or „polluter pays” principles. The above mentioned objective entails putting in place in Europe a transport system based on resource effectiveness and sustainable development principles, and alternative fuels, implemented within the three areas as described above. Until 2050, this will allow for the implementation of cohesion strategy in order to establish the Common European Transport System.

Thanks to a multimodal, integrated transport network, based on modern and well-designed, new technology-led infrastructure, until 2050 forecast

traffic in the UE will go up by almost 80%. In order to meet these needs the concept of „green corridors” was forged; in the upcoming ten years it will be instrumental to the achievement of the objectives of the EU transport policy defined in the Third White Paper of March 2011. The concept of „green corridors” appeared already in 2007 with the view of combining, in an optimal manner, various modes of transport and, as a result, of contributing to CO₂ emission reduction and to the decrease of noise generated during transport. „Green corridors” should become the testing ground for new transport technologies.

The shift in priorities operated in order to achieve sustainable development, founded on natural resources efficiency was then translated into the strategic document published by the European Commission and titled: „Roadmap towards a competitive and resource-efficient transport system” and concerning the establishment of the Single European Transport Area as one of the Europe 2020 Strategy elements. Effective transport is a key precondition for future prosperity in Europe. Infrastructure investments should be planned with the assumption of maximizing their positive impact on economic growth and of minimizing their negative impact on environment. The White Paper assumes that there will be more long-distance road traffic as well as road transport services based on emission reduction technologies.

The review of the transport policy is driven by the shift from corridor-oriented policy towards a vision of coherent EU transport network. The TEN-T Network should consist of a core network and a comprehensive network to attenuate their impact on natural environment. Minor corridors would link key corridors. Thanks to the extension and the connection of all TEN-T elements such priorities as economic and social cohesion and Single European Market could be achieved. According to the Visegrad Group’s opinion of August 2011, measures taken in order to expand the European transport network should aim at ensuring a geographically balanced access to the future TEN-T components. The lack of access to the TEN-T Network could hamper the pace of economic growth of the whole EU. If specificities of Member States are taken into account during planning of the TEN-T Network accessibility, sustainable and durable transport development may be achieved for all Member States, as well as their integration with the EU Network.

Principles for the implementation of the national transport development policy and strategy in Poland

The Trans-European Transport Network (established based on Trans-European Transport Corridors and the comprehensive network) is composed of transport infrastructure sections of international reach, with transport

routes going along, dotted with transport hubs (e.g. logistic centers). The EU transport policy will focus on the construction and rehabilitation of the existing TEN-T Network. This is EU key (core) network which fulfills transport needs in terms of the free movement of persons, goods and services. The TEN-T comprehensive network is located outside the Pan-European Corridors and delineates routes in transport corridors in Central and Eastern Europe Countries (see Fig. 1). „The Draft Transport Development Strategy by 2020, with the perspective by 2030” was elaborated in March 2011 only. It aims at: „raising territorial accessibility and improving the safety of road users and the effectiveness of transport sectors through creation of a coherent, sustainable and user-friendly transport system in the national, European and global dimension”. The Strategy includes modifications formulated for the TEN-T by the Visegrad Group countries in order to handle financial, social, environmental and institutional issues. Even if Poland holds some room of maneuver in defining the national transport development strategy, the timetable and financing capacities limit significantly its practical application. This is due to the structural and cohesion funds absorption rates and an increasing burden of debt of economic self-government institutions. This creates the need for Poland to adopt a long-term strategy for the recovery of investment activities in transport and logistical infrastructure, in order to ensure stable and effective sources of financing, from the EU funds, the State budget and private investors, to further expand and maintain the transport network infrastructure in a longer run.

Development conditions of the Polish transport infrastructure in the light of the TEN-T development concept after 2010

The Trans-European Transport Network is the EU basic multimodal transport network and needs to meet the requirements enabling the free movement of persons, goods and services. Each new EU Member State agreed on network routes going through its territories, as dictated by the economic internal cohesion of the whole Union. The network setup should foster international transit via Member States’ respective territories. The Polish transport infrastructure still falls behind transport infrastructure standards of the majority „Old Union” countries. Due to a poor condition of railway infrastructure, dramatically high tolls for rail track use and insufficient financial support from the State budget, the competitiveness of railway transport – a key to achieve sustainable transport development – is impaired. A bigger share of railway transport over road transport could relieve excessive-

ly congested road networks, especially for long-distance transportation. Despite a 3-fold increase in access to financing for infrastructure investments, until 2009 the total of 761 km of roads had been built. In 2000–2009, the length of upgraded local commune roads increased by one third, from 60 to 80 thousand km, and the quality of public transport services remained at a low level. The level of expenditure proposed in draft 2014–2020 multiannual financial framework, as presented in June 2011, to be spent on transnational infrastructural connections within the TEN-T Network was of EUR 82,9 billion. Considering that, corridors crossing Poland (see Fig. 1) may become eligible as part of the Green Corridor Network in Europe. This will create new functional and spatial connections and new structures of territorial cooperation, and consolidate the potential of economic regional centers. The quality of other transport system components, including the quality of regional and local roads, will be of key importance in ensuring the accessibility of corridor connections.

Studies carried out by various international centers prove that transport infrastructure could fuel economic growth solely if combined with investments in human capital and its innovation. It may still give an impetus for the development of both developed and less developed regions. However, a well-developed transport infrastructure may sharpen competition and, without the active implication of infrastructural factors, including social infrastructure, it may impede economic activity in the region and cause the exodus of potential employees

Two models prevail in the debate on orientations of the future Polish regional policy: balance-oriented development model and polarization-diffusion model. The former suggests the balancing of inter-regional disparities and achieving social, economic and territorial cohesion by allocating funds to less developed regions to foster their effectiveness. The latter proposes to support growth poles by creating diffusion conditions between and inside regions. This model was reiterated in „Poland 2030” document.

Transport network development orientations in Polish planning documents

The importance of transport, and namely road transport-related topics in the Country Spatial Planning Concept („KPZK by 2030”) is proven by the fact that 20% of expert opinions issued for its purpose concerned transport; in fact, transport was considered to be the weakest component of the Polish spatial situation. That is why one of the aims of the Draft KPZP became to improve

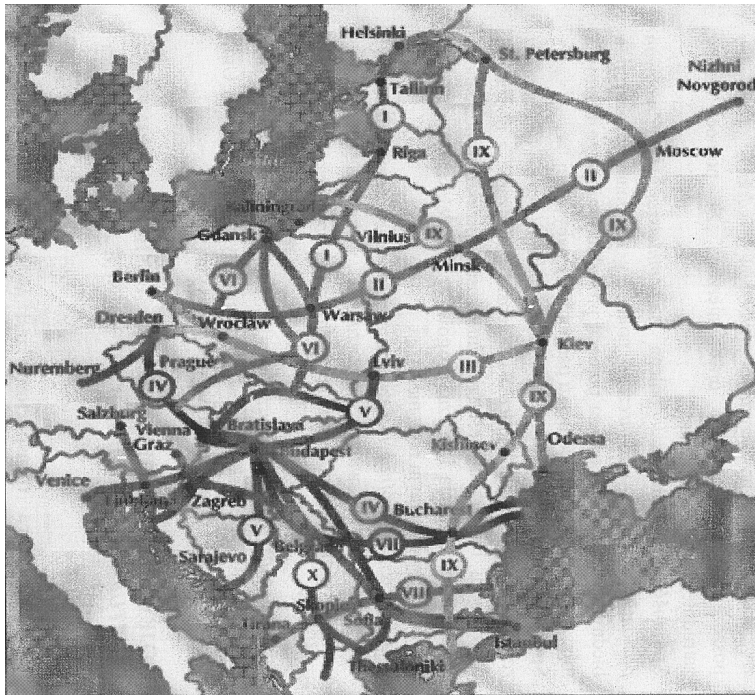


Fig. 1. Routes of 10 Pan-European Corridors after 2010

Source: [Bulletin rec.org/bull03/corridors.html](http://Bulletin.rec.org/bull03/corridors.html)

territorial accessibility in the country through the development of transport and telecommunication infrastructure (KPZK 2030, 2011, p. 91). The priority will be given to investments which help improve accessibility inside the country, including among major centers of the network metropolis. In the context of the Polish regional policy, KSRR 2010-2020 (National Regional Development Strategy) became the key programming document.

Transport infrastructure development should serve 2 main objectives:

1. Support the growth of competitive regions through the development of infrastructural connections between voivodship centers deemed to be network hubs in international and national settings; and

2. Establish conditions for the diffusion of development processes and for their absorption outside voivodship centers through spatial integration of voivodship areas, a higher impact of urban centers and their improved connection with sub-regional centers and rural areas. This objective is, among all, implemented through better transport accessibility to voivodship centers.

The integrated approach to development processes helps ensure economic effectiveness in a long run. The approach is reflected in the possible implemen-

tation of the second KSRR aims, i.e. building the territorial cohesion and counteracting the marginalization of „problematic” areas. The aim is implemented via the following measures:

- support for the development of regions with the lowest accessibility to communication and tele-communication goods and services, determinant for civilizational progress; and
- improving transport accessibility of voivodship centers in areas with the lowest accessibility rate thanks to the extension and rehabilitation of road and rail infrastructure in order to shorten spatial distance. Even if basic planning documents put a great focus on the implementation of the transport policy, its implementation after 2013 will significantly depend on the level of allocated funds (See Note 7, Part I).

The adopted National Regional Development Strategy (KSRR) 2010–2020: Regions, Cities, Rural Areas, in compliance with the Green Paper on Territorial Cohesion which turns territorial diversity into a „Strength”, suggests that potential resource discrepancies should be used in a better way in order to actualize the territorial dimension of the cohesion policy. The KSRR endeavors to reconcile the existing dilemma of the regional policy, i.e. equity and convergence versus efficiency and polarization, by turning territorial diversity into a „Strength”. The new regional policy paradigm consists in shifting from traditional targeted redistribution of funds to a policy based on the strength of territorial potential (See Reference 1). This will entail the shift from inter and intra-regional policy towards one single policy defining for each region objectives to be attained by all public entities. Instead of implementing a short-term model with the top-down distribution of subsidies to the „most underprivileged areas”, regional policy should be based on a long-term, periodically updated model with multi-sectoral, territorially-driven approach with investments carried out in order to implement decentralized regional policies supporting all regions across the board and redirecting measures so as to use their territorial endogenic features.

Such reorientation will contribute to the realization of the three objectives of mid-term development strategies with non-public sources of financing. However, it is highly improbable that sources of financing of replacement investments due to the wear of road infrastructure be based on the „user pay” principle. In fact, the implementation of the Policy Option I, as suggested in the World Bank Report, would shake the financial, economic and environmental sustainability attained thanks to the commitment of domestic funds, including extra-budgetary means, and, would compel road transport sector entities to the pursuit of polluting investments in a long time span.

The „National Road Construction Program 2011-2015” dated January 2011, takes into consideration the change of the road investments financing

scheme, carried out so far mainly with resources of the National Road Fund (KFD). It takes note, among all, of the increase of revenues from road tolls for which the payment system was launched on 1 July 2011. Despite the forecast increase of revenue from road tolls, no plans have been made to fully implement the „user pays” principle.

Thus, the World Bank Recommendations suggest the reduction of the share of public funds, including those from the State Budget, in the financing of the construction and maintenance of road infrastructure and propose to increase the share of the private sector instead. A price policy driven by the increase of express road tolls and the decrease of railway transport charges will foster the competitiveness of rail versus road, which would result in a higher GDP growth and would be compliant with the World Bank Policy Option II.

Considering the limitations of the demand side meant as financial capacity of future transport network users, the orientation formulated in the above mentioned documents regarding the Polish transport services market pave the way for the implementation of the Policy Option I. This may, in consequence, result in shaking financial, economic and environmental sustainability as domestic (including private) funding would need to be committed to pursue polluting road investments in a longer run.

Conclusions

The paper discusses the spatial conditions of the Polish regional development by 2020-2030 and even until 2050. The EU Transport Policy should create conditions of change in order to ensure the adaptation to new circumstances imposed by sustainable development requirements. The policy can be implemented via further construction of the network transport system (See Figure 1), based on co-modality and the use of new technologies and energy sources at the voivodship and sub-region levels. Transport and technical infrastructures are key determinants of present and future evolutions in economic, social and environmental space. And their role will increase in the next ten years, considering unprecedented (and discussed herein) EU-wide spending on the construction of modernized and cohesion-driven European Economic Area. In the first four years of 2007–2013 planning perspective, the use of infrastructure spending was insufficient, which may now lead to the realization of Policy Option I, as suggested by the World Bank

A new paradigm adopted for regional planning focuses on the identification of endogenic factors, with transport and communication infrastructure as major ones. This infrastructure remains a universal development tools for various types of areas: metropolitan, urban-rural and integrated rural areas,

gaining in development potential thanks to the consideration of endogenic factors. They may also play a vital role for peripheral rural areas by helping them tackle barriers to their development. Studies carried out by the Institute for Market Economics in 2005-2009 reveal that in that period localization factors did not evolve and that in 2010 their stable gradation occurred. That is why more in-depth studies are needed to probe into factors stimulating the demand in equipment and institutions which determine the smooth operation of functionally differentiated rural areas and of their business environment, as they may become hurdles to their sustainable development in future.

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INNOVATION IN URBAN REVITALIZATION PROGRAMS IN THE REGION OF WARMIA AND MAZURY¹

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Key words: innovation, urban revitalization, urban development.

A b s t r a c t

The objective of this study was to describe the level of innovation in urban revitalization projects in the Region of Warmia and Mazury and to determine whether urban renewal projects foster a supportive climate for business innovation in the region. Most revitalization programs rely on the following innovative solutions: new sources of financing, creativity of the operator supervising the revitalization process, novel methods for soliciting the local community's support for urban renewal projects, and the establishment of technology parks that foster business innovation. Revitalization projects stimulate innovation among local entrepreneurs and residents, they promote urban development based on a local innovation system, knowledge and social capital, and encourage the implementation of the smart city model where innovations are diffused from a revitalized area to other parts of the city.

INNOWACYJNOŚĆ PROCESÓW REWITALIZACJI OBSZARÓW MIEJSKICH W WOJEWÓDZTWIE WARMIŃSKO-MAZURSKIM

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Słowa kluczowe: innowacyjność, rewitalizacja obszarów miejskich, rozwój miast.

A b s t r a k t

Celem badań było określenie poziomu innowacyjności programów rewitalizacji realizowanych w miastach województwa warmińsko-mazurskiego oraz próba odpowiedzi na pytanie: czy podejmowane działania rewitalizacyjne przyczyniają się do kształtowania odpowiedniego klimatu dla

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rozwoju innowacyjności podmiotów działających w miastach regionu? Do najczęściej stosowanych podczas realizacji programów rewitalizacji innowacyjnych rozwiązań zaliczono: wykorzystanie nowych źródeł finansowania, kreatywność operatora nadzorującego proces rewitalizacji, nowatorskie techniki organizacji partycypacji społecznej procesu rewitalizacji, a także utworzenie parku technologicznego sprzyjającego rozwojowi innowacyjności przedsiębiorstw. Głównymi efektami proinnowacyjnej rewitalizacji są: kreowanie innowacyjnej przedsiębiorczości lokalnej, pobudzenie innowacyjności mieszkańców miasta, oparcie rozwoju miasta na lokalnym systemie innowacji, zasobach wiedzy i kapitale społecznym, a tym samym dążenie do realizacji modelu miasta kreatywnego lub miasta inteligentnego (tzw. smart city), w którym można obserwować efekt dyfuzji innowacji z obszaru rewitalizowanego na pozostałe części miasta.

Introduction

Contemporary cities are constantly faced with the dilemma of choosing the most appropriate instruments and measures that will guarantee the achievement of social and economic growth. The variations in global, domestic and regional prerequisites for development as well as endogenous urban resources, including limited funding, further contribute to the complexity of the problem. What measures and tools are needed to build competitive cities that continue to improve local standard of living and business opportunities? What instruments should be deployed to stimulate development in cities plagued by mounting social and economic problems as well as degradation of urban space? Revitalization is one of the solutions for reviving problematic urban areas that have been deprived of their former functions.

Revitalization is a comprehensive, coordinated and multi-year process of spatial, technical, social and economic transformations in a degraded urban area. It is initiated by the local authorities to terminate a crisis, in particular by introducing a new functional quality and fostering a supportive environment for urban development based on specific endogenous factors (Regulation of the Minister of Regional Development of 9 June 2010).

In a broader approach, urban revitalization involves planned measures that are initiated by the local authorities based on comprehensive analyses and assessments of the existing resources (social, cultural, economic, financial, spatial and environmental) as well as business needs and opportunities associated with specific local, regional, domestic and global conditions. Such measures are implemented to stimulate the existing functions or introduce new functions in crisis areas to promote the development of problem areas and the entire city (FARELNİK 2011, p. 96).

Multi-year revitalization programs address economic, social and infrastructure problems with the aim of terminating a crisis in a degraded urban area and creating favorable conditions for growth. The relevant measures are carried out by various entities, based on different sources of financing, and in

line with a schedule that is developed, adopted and coordinated by municipal authorities (Regulation of the Minister of Regional Development of 9 June 2010).

In contemporary cities, revitalization projects often promote the development of new types of local growth centers, creative cities (FLORIDA 2010, LANDRY 2008), innovative cities and smart cities, therefore, the introduction of innovative solutions in urban planning and renewal strategies seems to be the most desirable course of action (MAKIEŁA 2013, p. 212, BACH GŁOWIŃSKA 2014, p. 217).

Innovation is a distinctive feature of people and organizations capable of and willing to undertake challenges that lead to change. The concept of innovation has been explored by numerous authors over the years and explained by various theories of regional development, including the theory of the learning region, New Economic Geography, creative milieu, cluster theory and regional development theories based on endogenous resources, such as models that rely on product and process innovation (cf. KORENIK, ZAKRZEWSKA-PÓŁTORAK 2011, pp. 49-79).

For the needs of our discussion, innovation will be defined as a new process, procedure or product, even if it results from imitation or adaptation, that constitutes a novelty for the local community or the local authorities (*Innowacje w zarządzaniu miastami...* 2014, p. 225). Such innovations include:

- institutional and organizational innovations such as public management, governance, networking, regional innovation systems, learning cities and regions, urban marketing, innovative city managers and all solutions that actively involve members of the local community in the decision-making process;
- product innovations such as new multifunctional space, new infrastructure, innovative urban transport systems, industrial zones for entrepreneurs, business incubators and technology parks;
- technological innovations (electronics, information technology) that support the growth of smart cities (cf. BACH GŁOWIŃSKA 2014);
- innovative financial management, such as public-private partnership in revitalization projects, repayable assistance and EU funds for urban regeneration projects.

Urban revitalization projects significantly contribute to economic, social and spatial (in particularly infrastructural) development, and the higher the level of innovation of the undertaken urban renewal program, the greater the chance that the project will generate long-lasting effects (cf. JADACH-SEPIOŁO, RACHOŃ 2014, pp.111–156).

This paper attempts to answer the following questions: are high levels of innovation observed in cities whose authorities rely on revitalization programs

as a tool for stimulating urban growth? Do revitalization projects foster a supportive environment for the introduction of innovative solutions in business, the local community, public organizations and agencies?

The objective of this study was to identify the level of innovation in urban revitalization projects initiated in the Region of Warmia and Mazury. Attempts were made to describe the most popular innovations in urban renewal programs and the outcomes of such schemes which promote innovative attitudes and solutions in the analyzed region.

Materials and Methods

In 2014, urban revitalization projects were evaluated in selected towns and cities of the Region of Warmia and Mazury during a survey addressed to the operators and coordinators of renewal programs implemented in the analyzed areas. In most cases, program operators and coordinators were civil servants, including city mayors, city presidents or employees representing various departments of local offices, such as the department of planning and development.

In recent years, the number of urban revitalization projects launched in the Region of Warmia and Mazury increased steadily from 32 in 2007 to 40 in 2008 and 54 in 2009. In 2010, only six towns had no previous experience with urban renewal (Biała Piska, Miłomłyn, Młynary, Ruciane-Nida, Sępól, Zalewo). By 2014, the majority of towns and cities in the region (40) had conducted at least one revitalization project in the 2007–2013 planning framework and had planned successive programs until even 2020.

Ten out of 49 towns and cities in the Region of Warmia and Mazury participated in the survey. In a group of three towns (Bisztynek, Kisielice, Ruciane-Nida), one participant did not report any problem areas that would require revitalization. In another town, an urban revival scheme was being developed at the time of the survey. In the third town, revitalization measures had not been undertaken due to a shortage of funding, and selected investments were scheduled to commence in 2014 with the financial assistance the Regional Operational Program for the Region of Warmia and Mazury for 2014–2020 and the Ministry of Culture and National Heritage. The remaining 7 respondents supplied comprehensive information for evaluating the level of innovation in urban revitalization programs. This group included 3 small towns (with a population of up to 20,000) of Mikołajki, Morąg and Orneta, 3 medium-sized cities of Działdowo, Elk and Kętrzyn, and 1 large city (with a population higher than 100,000) of Elbląg.

All types of problem areas that typically undergo revitalization were represented in the analyzed towns and cities: former industrial, military, railway and port sites, historical city centers (old towns), fallow and degraded land, residential areas (highrise neighborhoods), green areas and parks.

The planned renewal programs had long-term goals, some of which extended to 2020, and they incorporated a broad range of activities. Selected revitalization projects covered up to 60% of city area.

Innovation in urban revitalization programs

The respondents listed the following factors that determine the success of urban revitalization projects and their innovative character:

- a) availability of funds, including EU financial instruments (19% of respondents),
- b) legal status of property in revitalized areas (11%),
- c) number of entities participating in a revitalization project (8%),
- d) involvement of local leaders in a revitalization project (8%),
- e) cooperation between public and private sectors (8%),
- f) complexity of the revitalization process (8%),
- g) social participation and local community's attitudes to urban revitalization (8%),
- h) local authorities' leading role in initiating and performing revitalization measures (6%),
- i) support from external investors (6%),
- j) social problems in revitalized areas (poverty, alcoholism, social exclusion, high crime rates) (6%),
- k) high unemployment (3%),
- l) creativity of operators/coordinators or revitalization projects (3%),
- m) support from organizations that stimulate local development (such as the Revitalization Forum) (3%),
- n) use of advanced technology (3%).

According to the respondents, the following factors play a minor role in urban revitalization: duration of the renewal program relative to the local authorities' term in office, transparent housing policy, cohesive urban policy at national level, legal regulations (such as the absence of a revitalization act), a project's local or regional uniqueness.

In none of the evaluated towns and cities, the level of innovation in the adopted revitalization methods, projects and measures was evaluated as very high. It was regarded as quite high by 12.5% of the surveyed subjects, whereas 50% of the respondents were of the opinion that the implemented programs

were moderately innovative. According to 25% of the participants, renewal projects were characterized by a low level of innovation, and according to 12.5% – by a very low level of innovation. None of the projects were evaluated as completely non-innovative.

The respondents expressed similar opinions about the various stages of the revitalization process (planning, organization, performance, evaluation). The level of innovation characterizing solutions adopted at the stage of goal planning was regarded as low by 12.5%, as average – by 75%, and as high – by 12.5% of the respondents. The remaining three stages (organization, performance and evaluation) were assessed identically, i.e. 25% of respondents declared low levels, and 75% of subjects – average levels of innovation.

In the respondents' opinion, revitalization projects implemented by the local authorities, associations and unions of territorial self-governments (60%), housing communities (23%) and cooperatives (14%) were characterized by the greatest originality and creativity. In the remaining cases (3%), innovative ideas were contributed by entrepreneurs, local residents, non-governmental organizations and associations, universities, churches and religious organizations. According to the participants, cooperative skills significantly contribute to the innovative character of urban revitalization projects that are initiated by public and private sector organizations.

The following innovative solutions in urban revitalization projects in the Region of Warmia and Mazury were most frequently cited by the respondents:

- a) novel sources of financing (28%),
- b) advanced technologies and environmentally-friendly solutions (22%),
- c) revitalization programs as innovative tools (nearly 17%),
- d) creativity of operators supervising urban renewal programs (11%),
- e) establishment of technology parks in a revitalized area (11%),
- f) novel methods of soliciting social participation in a revitalization program (6%),
- g) novel approach to managing the revitalization process (governance, public-private partnership, etc.) (5%).

The surveyed subjects did not list innovative solutions such as modern systems for monitoring revitalization projects, good practices and collaboration with twin towns and sister cities, partnership in the Cittaslow network, modern transport and road solutions, use of modern IT solutions during the modernization and conversion of urban facilities.

The respondents listed the following long-term positive outcomes of revitalization projects:

- a) promoting innovation in the local community (26%),
- b) pursuing the model of a creative city or a smart city (16%),
- c) promoting innovation in the local business arena (11%),

d) technology parks – the majority of respondents who gave this answer represented big cities (11%),

e) basing urban development on a local system of innovation, knowledge, social capital, network communication and communication between organizations (11%),

f) ability to raise funds for innovative solutions from external sources (such as the EU) (10%),

g) potential for attracting innovative businesses (regional, domestic, international) (5%),

h) collaboration between local actors for the benefit of high innovation projects (5%),

i) diffusion of innovations from a revitalized area to other parts of the city or region (5%).

The respondents did not choose any of the following outcomes of urban revitalization that were proposed in the questionnaire: creation of a local innovation system, fostering the development of an innovative environment for business operations, establishment of innovation clusters, development of innovation-driven governance systems. The above can be attributed to the fact that most respondents were representatives of small towns and medium-sized cities where highly complex, innovation-driven systems and environments are not implemented.

Innovative urban revitalization projects in the Region of Warmia and Mazury

The Elbląg Technology Park and the Science and Technology Park in Elk are undoubtedly the most prominent outcomes of revitalization projects that catalyze innovation in the local business arena and local communities in the Region of Warmia and Mazury.

The Elbląg Technology Park (ETP) was created as part of the Local Revitalization Program for the City of Elbląg for 2007–2020 which covers former military grounds (Modrzewina Południe), including a military training center, and an industrial landfill with combined area of 189 ha (*Local Revitalization Program for the City of Elbląg*, pp. 44-47). The ETP was founded in 2010 as the first technology park in Warmia and Mazury.

The ETP was established with the aim of improving business conditions and opportunities by promoting and popularizing innovative undertakings, enhancing the region's potential in the area of innovation, and fostering cooperation between research and development centers and businesses. The ETP hosts the Business, Development and Innovation Center as well as

Table 1

Examples of innovative urban revitalization projects in the Region of Warmia and Mazury

Project organizer	Description	Goals and expected outcomes
City of Elbląg, Roman Catholic parish	Renovation of a spire in Elbląg's Old Town Cathedral, opening the spire to the public as the tallest structure in the region; reconstruction of the cathedral square; introduction of a city game, construction of an interactive information board and a fountain.	Partial revitalization of the Old Town in Elbląg; estimated 5000 visitors to the cathedral spire
City of Elk	Comprehensive land development project for the needs of the Elk Technology Park in the Municipal Development Zone (construction of internal roads with access to the existing transport network, utility networks). Expansion of the Elk Technology Park (construction of a three-story office building, conference rooms, educational and laboratory facilities, production facilities).	Encouraging the search for innovative technological solutions, development of innovative businesses and ideas based on advanced technologies. The developed infrastructure will be used by the Logistics and Service Center, Technology Incubator, Business Incubator, Research, Development and Education Center and Laboratory, Young Einstein Science Center.
Morąg municipality	Comprehensive reconstruction of the 14th century Town Hall building in Morąg and revitalization of the surrounding area.	The reconstructed Town Hall building will host non-governmental organizations, an art gallery and the Morąg Memorial Chamber.
Orneta municipality	Revitalization of the historical center in Orneta, restoration of historical buildings, construction of parking lots, playgrounds, street furniture, management of abandoned space, improvement of environmental standards, etc.	Preservation of historical architecture, management of abandoned space, improvement of safety standards, development of high-quality urban space.
Mikołajki municipality, Municipal Welfare Center, Kłobuk Community Center, Mikołajki Society for Local Innovation	Preventing Social Exclusion – a Community Revitalization Program covering downtown areas and the Łabędzia estate in Mikołajki (information and promotional campaign for combating social exclusion, employment promotion, civic and legal consulting, social and cultural animation, training services, alternative recreational options for children and adolescents, leisure activities for 55+ residents).	Alleviating problems associated with social exclusion or threat of social exclusion through preventive measures, improving the competencies and quality of services offered by institutions in revitalized areas, active integration of the local community, assisting at last 142 local residents in the social rehabilitation process.
Kętrzyn urban municipality	Conversion of the area on Kajki Street into outdoor event space (construction of an amphitheater for 1474 spectators, a playground and green space for children).	Developing human potential by expanding the range of recreational and cultural attractions in the town and creating a community gathering place.

Source: own elaboration based on the results of the survey.

research and development centers, including the Center for Metal Science, Environmental Quality (Occupational Health and Emissions Laboratory and the Advanced Environmental Laboratory) and IT Transfer, and the Center for Wood Technology and Furniture. The ETP has 23 commercial tenants, and the ETP business incubator has 3 tenants (*Lokatorzy ETP* 2014).

The Science and Technology Park in Elbląg (STP) occupies a post-industrial site. Planning work was initiated in 2000, and the park was opened in 2012. The STP aims to increase the region's competitive advantage, stimulate the local economy, attract investors, promote employment in the local community, support environmentally-friendly investments, the development and transfer of advanced technologies to the SME sector, support innovation, integrate scientific institutions with businesses and providers of business support services. The STP integrates business support processes with a broad range of innovation processes. It brings together innovative companies that implement advanced technological solutions and promote technological progress. The STP aims to increase Elk's economic potential and competitive advantage by fostering a supportive environment for the transfer and commercialization of new technologies, promoting the development of small innovative enterprises and the most promising sectors of regional economy.

The STP hosts a business incubator and a technology incubator whose tenants are innovative enterprises that represent all industries, implement advanced technologies, collaborate with universities and scientific institutions, supply unique products and services which are protected by patents and licenses. The STP has 35 commercial tenants (Park Naukowo-Technologiczny w Elku. On line).

Other facilities which were developed as part of urban revitalization projects and which, in the respondents' opinion, are characterized by high levels of innovation are presented in Table 1.

Conclusions

The urban revitalization projects implemented in the Region of Warmia and Mazury are characterized by varied levels of innovation. In smaller towns, innovative solutions were generally incorporated into individual projects that were carried out by the local authorities, entrepreneurs and housing cooperatives (revitalization of highrise neighborhoods). The highest levels of innovation were noted in urban renewal projects launched by the largest cities in the region where complex projects, such as science and technology parks, were initiated to foster a supportive environment for innovative business development and knowledge-based innovation.

The success of urban revitalization projects and their innovative character are determined by numerous factors, including the complexity of renewal programs, availability of funds, the local authorities' leading role in initiating and performing revitalization projects, the number of entities participating in renewal measures, involvement of local leaders, cooperation between public and private sectors, and support from external investors.

According to the surveyed respondents, the revitalization methods, projects and measures deployed by the towns and cities in the Region of Warmia and Mazury are characterized by average levels of innovation at the stage of project planning, organization, performance and evaluation.

Many respondents observed that the very presence of revitalization programs in local planning strategies testifies to the innovative character of local projects. In the opinion of the surveyed subjects, the following innovative solutions are most often deployed in urban revitalization projects: novel sources of financing, creativity of operators supervising urban renewal programs, novel methods of soliciting social participation in the revitalization program, establishment of technology parks in revitalized areas, and the use of advanced technologies and environmentally-friendly solutions in urban renewal projects.

The respondents listed the following long-term outcomes of revitalization projects that foster positive attitudes towards innovation among local residents and entrepreneurs: promoting innovation in the local business arena by creating technology parks (this answer was given by the representatives of the largest cities in the region), stimulating innovation in the local community, basing urban development on a local system of innovation, knowledge, social capital, network communication and communication between organizations, pursuing the a creative city or smart city model, and promoting the spread of innovations from a revitalized area to other parts of the city or region. Revitalization projects that aim to introduce modern solutions and stimulate innovation also promote collaboration between local actors for the benefit of high innovation projects and the ability to raise funds from external sources, such as the European Union.

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GUIDELINES FOR TEXT PREPARATION FOR THE "OLSZTYN ECONOMIC JOURNAL"

The "Olsztyn Economic Journal" (ISSN 1897-2721) is a scientific magazine published in English at the Faculty of Economic Sciences of the University of Warmia and Mazury in Olsztyn. During the years 2007-2012 the magazine was published semi-annually and as of 2013 it was transformed into a quarterly. It publishes scientific papers of methodical, review and empirical nature in economic sciences. The Olsztyn Economic Journal is published by the University of Warmia and Mazury in Olsztyn Publishing House. The printed format is the primary form of the magazine. Additionally, all numbers of the magazine are available also in the electronic format on the website: <http://www.uwm.edu.pl/wne/oj.php>, <http://wydawnictwo.uwm.edu.pl> (subpage Czytelnia).

„Olsztyn Economic Journal” is indexed in the following reference databases: BazEcon, BazHum, Index Copernicus Master List (ICV in 2012 5.27 pts, ICV in 2013 5.92 pts), The Central European Journal of Social Sciences and Humanities (CEJSH).

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- Papers presented for publication should be written in the Word text editor in Times New Roman font, size 12 points, 1.5 line spacing (A4 page holds 25 text lines, right hand margin 3 cm). The paper length may not exceed 12 pages of typescript).

- Polish authors deliver paper text in Polish and English (the English language version should present the name and surname of the translator). Correction of the English text should take place after receiving the positive review and/or responding to the reviewer's comments.

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- All papers are subject to the initial evaluation by the editor in chief, subject editors, statistical editor and evaluation of contents by reviewers.

- Authors should consider comments by reviewers and comment on them.

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Tomeczyk 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).

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