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Identification of trends and determinants related to the level of earnings in Poland on the basis of average real wages paid over the period 2004-2014

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Abstract:

Aim: The aim of this article is to identify trends and determinants related to the development of the level of wages in Poland. The issue is important as the level of payment received by employees in return for their work reflects the state of economic development.

Design / Research methods: In the article data of average wages in Poland available in the Social Insurance Institution as well as the Central Statistical Office are presented and analyzed.

Conclusions / findings: During the researched period (2004-2014), average real wage has systematically increased. This is a positive phenomenon, both from the point of view of an individual worker as well as the whole economy, as it indicates continued economic development of in Poland.

Keywords: wage level and structure, Poland, real wages

JEL: J31

1. Introduction

In the theory, wages are described as a form of remuneration for the work done. In exchange for performing a specific task for his/her employer, an employee receives a certain amount of money, set out in advance, in exchange for the time and effort spent doing this work (Kostera 2006: 93). J. Meller argues that the pay is

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essentially the price of work. His view on this matter arises mainly from the role payment plays objectively in the relationship with wage labor known from the market economy system (Kopertyńska 2000: 13). A defined equivalent of work capability is given to an operator. This is the requirement which must be met so that somebody else could use those capabilities and results by purchasing them. An important element used to specify the relevant amount of payment is a metric which puts value on work. It evaluates work performed at a particular job. This is done from the point of view of an entire organization as well as specific objectives set by it. The effort put into work, energy, skills required and qualifications necessary to attain the set objective are all subject to assessment. Evaluating work at a particular entity is usually conducted by the job evaluation committee. The committee is made up of experts, managers and possibly representatives of employees or external advisors (Kostera 2006: 93).

One of the underlying elements in the proper development of the system of wages is to have suitable forms of remuneration incorporated and that is such which take into account both the content and manner of the job performed. L. Martan argues that the form of remuneration is the way of making the payment and structure of remuneration dependent on the employee's workload and effect of his/her work (Martan 1997: 11).

Appropriately chosen remuneration forms which are properly related to the content and effect of the job allow for a correct calculation of the wage rate to be paid to the employee. Correctly defined workload which employees need in order to perform the task they have been appointed to is necessary for the motivational function of work to be fully exploited. The workload units include (Listwan 2010: 193):

- duration of work (the number of hours, time units spent on work),
- number of products produced by an employee, services he/she provided, actions performed (natural, contractual units, number of customers, etc.), required result of a particular job,
- monetary value (such as: turnover, sales, the commission level achieved).

A properly designed and implemented form of remuneration should be based on the norms (workload metrics) which are verifiable and match the company's needs,

and which will take into consideration such factors as technology level and work organization. In order for the remuneration form to fulfill the assumed function, employees should do their job without having to encounter unnecessary impediments or having to make additional effort. Employees should perform the tasks appointed applying normal qualifications at a particular level. Every task should be given in a manner that is understandable to the person doing it. By complying with these criteria, a company has a greater chance of attaining the goals intended for a particular job. By linking the amount of payment to the employee's workload, we can receive a variety of forms of payment applied in practice (Jacukowicz 1998: 47).

The paper seeks to identify the trends and determinants related to the level of wages in Poland. In order to perform this identification, an analysis was conducted regarding the changes in the level of earnings paid in some sectors, comparing the data illustrating the year 2004 and 2014. However, it is impossible to ignore, while starting the analysis, the change of the level of average nominal wages paid within the whole economy.

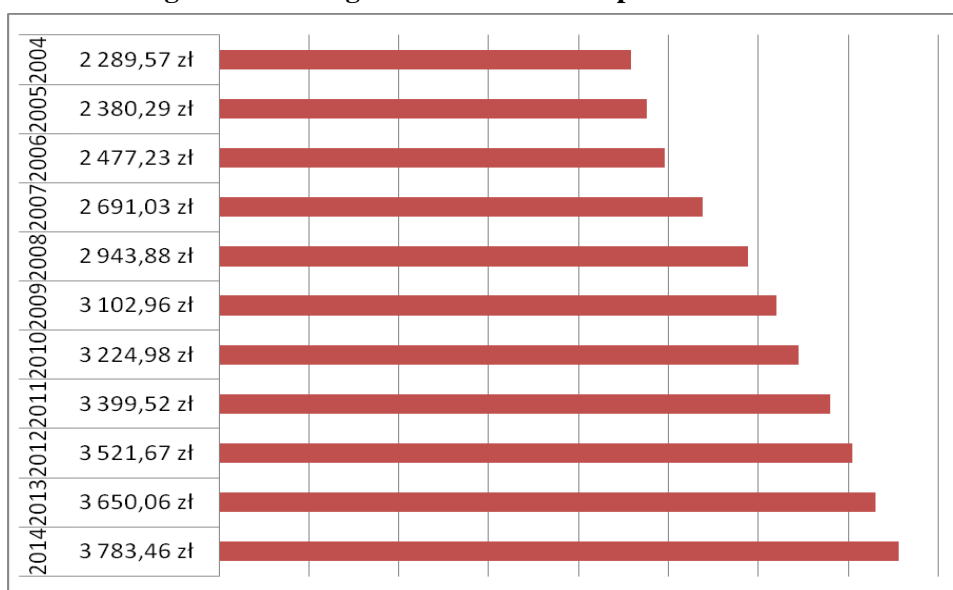
2. Development of wages in the period 2004-2014

The average monthly wage in the national economy is defined as the ratio of the sum of gross personnel remunerations, fees paid to some groups of employees for doing work specified by them which arises from the contract of employment, payments of the share in the profit distributed or the balance surplus in cooperatives and additional annual pay for state employees to the average number of the employed during the period concerned, after eliminating from this group persons doing home-based work and those employed abroad (www.stat.gov.pl).

The nominal wage, on the other hand, in line with its definition, is the money an employee receives for his/her work. However, employees' actual income is expressed in what they can buy for their earnings at the market. This depends not only on the amount of earnings but also on the prices of consumption goods. If the wages of employees are stationary, while the market prices are growing, then

employees can purchase fewer goods for their wages than before. The actual wages, that is the real wages get automatically reduced. The real wage defines the number of goods and services employees can purchase for the job they have completed. The real wage is dependent on two figures: the nominal wage and the level of the market current prices. The real wage may be stationary if the prices of consumption goods do not change in the economy, or it may increase if the nominal wage grows faster than the prices of the consumption goods.

Chart 1 – Average nominal wage in Poland over the period of 2004-2014



Source: www.stat.gov.pl

Chart 1 presents average nominal wages in the national economy over the period of 10 years – from 2004 to 2014. Even a cursory observation allows for the conclusion that the average earnings of Poles grew steadily over the last years. In 2004, the average nominal wage was at PLN 2 289.57. A year later, this value grew by PLN 90.72, thus making the employee's average earnings in 2005 at the level of PLN 2 380.29. In 2006, it was the level of PLN 2 477.23 marking the average wage. Thus, it increased by PLN 96.94, compared to the previous year. Moreover, the year 2007 saw the average nominal wage at PLN 2 691.03. This implies that the increase, compared to the year before, was by PLN 213.80. So far, the knock-on growth of the

average nominal wage was slightly bigger in the years 2005 and 2006, being at the level, respectively of PLN 90.72, and PLN 96.94. In 2007, on the other hand, this amount doubled, which brought about an average nominal wage bigger by as many as PLN 213.80. The year 2008 saw the employee's nominal wage at PLN 2 943.88, thus making it higher by PLN 253.85, compared to 2007. In 2009, the average wage, for the first time in the course of the 10 years analyzed, exceeded PLN 3 000, being exactly at PLN 3 102.96, thus having increased by PLN 159.08, against the previous year. At the same time, this increase was for the first time lower than the year before. So far, from the year 2004 until the year 2008, average nominal wage grew each year, with this increase being steadily higher each year in question. In the year 2010, the average nominal wage in the economy is equal to PLN 3 224.98. It is higher by PLN 122.02, compared to the previous year. In the next year examined, 2011, earnings were at PLN 3 399.52. That year they were higher by PLN 174.54 against the same period of the preceding year. This implies that in 2009 and 2010 the increase in average earnings fell. In those two years they were respectively at PLN 159.08 and PLN 122.02. In 2012, the average wage level in the economy was equal to PLN 3 521.67. In relation to the previous year 2011, it grew by PLN 122.15. This increase is similar to that from 2010. In 2013, the amount of PLN 3 650.06 represented the average nominal wage. This makes it higher by PLN 128.39, compared to 2012. The last year analyzed was 2014, when the average 12th wage in the economy was at PLN 3 783.46. In that year, it grew by PLN 133.40. While exploring those data, one can see that average monthly wages, starting with the year 2012, grew each year by the amount bigger than the amount from the preceding year. Over the whole period in question, from 2004 to 2014, average nominal wages grew by PLN 1 493.89.

Table 1 presents the inflation level in the Polish economy over the period of 2004-2014. In 2005, the Consumer Price Index with corresponding period of the preceding year =100% was at 102.1. The following year this index equaled 101.0%, and was lower by 1.1%, compared to the previous year. In 2007 inflation was at 102.5%. This shows that the inflation rate increased by 1.5% compared to the preceding year. 104.2% represents inflation from 2008. It follows that the inflation rate was higher that year by 1.7% than in the previous year. In 2009, inflation was at

103.5%, that is, it was lower by 0.7% than the year before. Between 2008 and 2010, the Consumer Price Index with corresponding period of the preceding year = 100% continued to fall steadily. In 2010 it was at 102.6%. Comparing this index level with the same period of the preceding year, we can see that it fell by 0.9%. In 2011, the inflation in our economy was at 104.3%. That was the highest level recorded over the years between 2004 and 2014, which is why its level was higher by 1.7%, compared to corresponding period of the preceding year. Since 2011 the inflation rate decreased gradually over the next three years included in the study. The level of 103.7% of the Consumer Price Index of corresponding period of the previous year = 100 was the same as in the year 2012. Based on this, we know that its value fell by 0.6% compared to the same period of the preceding year. In 2013, Poland's inflation was one of the lowest in the period under study. It was at 100.9%. This makes it lower by as many as 2.8% compared to the year before. The lowest level of inflation in Poland, lower by 0.9% than in the previous year was recorded for the last year analyzed, that is 2014. Then the Consumer Index Price with corresponding period of the previous year = 100 % was at 100.0%.

Table 2 also shows an increase in the inflation rate in our economy over the period of 10 years, between 2004 and 2014, comparing its increase at that period using the Consumer Price Index 2004 = 100%. In 2005, the inflation rate was at 102.1%. It grew by 2.1% compared to the first year examined, that is 2004. At the same time, this year constitutes the base year. Over the successive years, this rate kept growing steadily; since 2006 it was at, respectively: 103.12 %, 105.70 %, 110.14 %, 113.99 %, 116.96 %, 121.99 %, 126.50 % and in 2013 it was at 127.64 %. In the last year examined, the inflation rate was at the same level as the year before, which is 127.64%.

Table 2 illustrates the changes in the real wage level in the Polish economy over the period of 10 years, between 2005 and 2014, as covered by the study. While calculating the real wage rate, nominal wages were divided by the inflation rate relevant to the year in question.

Table 1 – Annual Consumer Price Index – inflation level in 2004-2014

Year	Consumer Price Index previous year = 100 (%)	Consumer Price Index 2004 = 100 (%)
2004	-----	100
2005	102.1	102.10
2006	101.0	103.12
2007	102.5	105.70
2008	104.2	110.14
2009	103.5	113.99
2010	102.6	116.96
2011	104.3	121.99
2012	103.7	126.50
2013	100.9	127.64
2014	100.0	127.64

Source: www.stat.gov.pl

Table 2 – Real wages in the national economy over the period of 2004-2014

Year	Average nominal wage	Real wage	Real wage analysis			
			against the previous year		against the base year	
				PLN		PLN
2004	2 289.57	2 289.57	-----	-----	-----	-----
2005	2 380.29	2 331.33	101.82%	41.76	101.82%	41.76
2006	2 477.23	2 402.28	103.04%	70.95	104.92%	112.71
2007	2 691.03	2 545.91	105.98%	143.63	111.20%	256.34
2008	2 943.88	2 672.85	104.99%	126.94	116.74%	383.28
2009	3 102.96	2 722.13	101.84%	49.28	118.89%	432.56
2010	3 224.98	2 757.34	101.29%	35.20	120.43%	467.77
2011	3 399.52	2 786.72	101.07%	29.38	121.71%	497.15
2012	3 521.67	2 783.93	99.90%	-2.79	121.59%	494.36
2013	3 650.06	2 859.65	102.72%	75.72	124.90%	570.08
2014	3 783.46	2 964.16	103.65%	104.51	129.46%	674.59

Source: www.zus.pl

In 2005, real earnings in the domestic economy were equal to PLN 2 331.33. The following year, they grew by 103.04% - PLN 70.95 against the preceding year,

so in 2006 the real wage that was paid in Poland was equal to PLN 2 402.28. In 2007, it was at PLN 2 545.91, which means that it grew by 105.98%, compared to the same period of the year before. In 2008, this increase was slightly smaller, as it was by 104.99%, against the preceding year. This resulted in employees receiving a salary which was higher by PLN 126.94 than in the same period of the previous year. A substantially smaller increase in earnings was recorded in 2009. That year, wages grew only by PLN 49.28, that is 101.84%, compared to the year 2008. The increase was smaller by 3.15% against the previous year. The downward trend with respect to the amount by which real earnings grew continued over the next three years. In 2010, real wage was at PLN 2 757.34, with the increase being at the level of 101.29% in relation to the preceding year, thus making it higher by PLN 35.20. The following year, real earnings increased by marginally lower percentage compared to the previous year; percentagewise it was by 101.07%, which was directly reflected in the increase in real earnings by PLN 29.38. Thus, Poland's real wage paid in 2011 was at PLN 2 786.72. In 2012 it was at PLN 2 783.93 and was smaller by 99.90%, PLN 2.79, compared to the previous year. That was the first and last time that over the period under study real wages grew by a negative value, successively compared to the preceding year. Moreover, in 2013 real wages grew by PLN 75.72, that is 102.72% compared to the same period of the year before, and were at PLN 2 859.65. The last year analyzed was 2014. At that time the real earnings in the domestic economy grew merely by 103.65% compared to the same period of the preceding year. Thus, the increase in wages was at PLN 104.51 with the real wage being at PLN 2 964.16.

It can also be gleaned from Table 2 how the real wages changed in Poland over the course of the years against the first year that was analyzed, that is, 2004. As mentioned before, in 2005, real earnings increased by 101.82% compared to the preceding year, that is by PLN 41.76. In 2006 they grew by 104.92% compared to 2004, that is by PLN 112.71. While analyzing the data contained in Table 2, it becomes clear that each year the percentage increase in the real wage in the Polish economy compared to the base year kept on growing. In 2007 real wages were at PLN 2 545.91 and were higher by 111.20% compared to the same period of the year 2004, which makes them higher than three years before by PLN 256.34. In 2008

they increased by PLN 383.28 compared to the base year, making the real wage paid in that year equal to PLN 2 672.85. The year 2009 saw an increase in real wages by 118.89%, that is by PLN 432.56 compared to the first period, and so that year the average real wage was at PLN 2 722.13. The percentage increase by 120.43%, that is an increase in real wages by PLN 467.77 compared to 2004, made the average real wage equal to PLN 2 757.34 in 2010. The following year, the average wage in our economy was at PLN 2 786.72, which was an increase by 121.71%, that is by PLN 497.15 compared to the base year. In 2012 the average wage level was equal to PLN 2 783.93. Compared to the base year 2004, it grew by 121.59%. Real earnings were thus higher by PLN 494.36 than in 2004. In 2013 real wages were higher by PLN 570.08 than nine years before. This increase equaled 124.90%, which made the average wage grow to PLN 2 859.65. In the last years analyzed 2014, real wages were at PLN 2 964.16. They increased by 129.46% compared to the base year, which means that the real wage received by employees was higher by as many as PLN 674.59, compared to that from the base year 2004.

Table 3 – Analysis of real wages in 2004 and 2014 in the selected sectors

Analyzed sector	Real wage		Real wages increase over the years in question	
	2004	2014	PLN	PLN
Heavy industry	2 400.00	3 600.75	1 200.75	150.03 %
Construction	2 224.51	3 045.69	821.18	136.92 %
Agriculture, hunting and forestry	2 263.61	3 574.49	1 310.88	157.91 %
Transport, storage and communication	2 752.74	2 944.37	191.63	106.96 %
Trade and repairs	2 317.98	2 791.58	473.60	120.43 %
Health care and welfare services	1 888.23	2 764.35	876.12	146.40 %
Education	2 376.94	3 167.83	790.89	133.27 %
Public administration and defence	2 930.21	3 652.28	722.07	124.64 %

Source: www.stat.gov.pl

National economy creates a structure where economic activity of enterprises operating in our country is summed up. It encompasses all individual and group units existing in the realm of production, services, distribution, turnover and

consumption across the entire country. The essential characteristic of a national economy is that the economic activity is carried out within the territory of a particular country. This concept is often referred to as: national economy. In some publications, economy is also referred to as a minor social system. In using this term, one emphasizes that national economy is a certain whole which is made up of individual elements mutually supportive, working towards a common purpose. This is above all to meet the needs of people living in one specific community through the production of necessary goods and services and their distribution among members of that community (Okoń-Horodyńska 2000: 83-95).

Table 3 shows the changes in average real wages paid in 2004 and 2014 in the selected sectors of the Polish economy. The smallest pay rise was received by persons whose occupation was involved in transport, storage and communication. In 2004 the average real wage for employees working in these sectors was at PLN 2 752.74. 10 years later, in 2014, their average earnings were at PLN 2 944.37. Thus, they grew only by 106.96%. 120.43% is the precise figure by which the average real wage grew for people working in the trade and services sectors. In 2004, those employees' average real earnings were at the level of PLN 2 317.98, while in 2014, they increased by PLN 473.60. In 2014 an average employee working in the trade or service sector received PLN 2 791.58. Employees working in the public administration and defense recorded only slightly bigger rise over the course of the period in question. The average employee's earnings working in those sectors were at PLN 2 930.21 in 2004. Moreover, in 2014 this value increased by 124.64%, bringing it to the level of PLN 3 652.28. Between the years 2004 and 2014, a similar growth was recorded for the average real wage paid in education and construction sector. The percentage increase was respectively at 133.27% and 136.92%. The person employed in the education sector received PLN 2 376.94 in 2004, while 10 years later his/her wage grew by PLN 790.89. The average employer working in the construction sector, on the other hand, received PLN 2 224.51 in 2004. The earnings grew exactly by PLN 821.18. Over the examined period, average real wages of persons involved in health care and welfare services increased by 146.40%. The average real wage in these sectors in 2004 was at PLN 1 888.23. 10 years later it was higher by PLN 876.12, which made it equal to PLN 2 764.35 in 2014. With

respect to people employed in the heavy industry, the precise figure by which their real wage grew was PLN 1 200.75, that is, it grew by 150.03%. Their average real earnings were at PLN 2 400.00 in 2004, while in 2014 their level was at PLN 3 600.75. The period under study encompasses the years between 2004 and 2014. In the course of that time, the highest growth of the average real wage was recorded for agriculture, hunting and forestry, its exact figure being at 157.91%. The average employee working in those sectors received PLN 2 263.61 for his/her work in 2004. 10 years on, those wages were at PLN 3 574.49.

3. Conclusion

The issue of wages paid in Poland is paramount. It refers to all the working population. The level of earnings illustrates, among other things, the changes in our country's economic situation. Drawing on the analysis conducted in this paper, we find that over the course of 10 years, between 2004 and 2014, the average wages changed in our country. Clearly, those changes were influenced by Poland's economic situation, as well as that of the European Union, and also other regions outside Europe.

In this paper, Poland's average real wages were demonstrated and analyzed over the period of 2004-2014. This period saw the growth of the average real wage in the entire economy by PLN 674.59. At the beginning of 2004, it was at PLN 2 289.57. In 2014 the average real wage meanwhile was at PLN 2 964.16. The inflation at the period in question also changed. What makes it interesting is that in 2004 and 2014 inflation was the same – 100%. It reached its highest level in 2011. That year saw it reflected, obviously, in the entire economy. The analysis of the real wages paid in the main sectors shows that in almost all sectors the real wage paid was higher each year. The highest growth recorded between 2004 and 2014 was in agriculture, hunting and forestry. There is no question that this was hugely influenced by Poland's accession to the EU in 2004. One may thus conclude that the financial situation of our country's employees was improving every year.

Poland is a country which is still growing. The study conducted in the paper shows that our economic development, as reflected in the level of wages paid, is improving every year.

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Identyfikacja tendencji i uwarunkowań związanych z poziomem płac w Polsce, na podstawie przeciętnych wynagrodzeń realnych wypłacanych w latach 2004-2014

Streszczenie

Cel: Celem niniejszego artykułu jest identyfikacja tendencji oraz uwarunkowań związanych z poziomem kształtowania się płac w Polsce. Temat ten jest ważny, gdyż wysokość otrzymywanej płacy przez pracowników w zamian za wykonanie przez nich określonych prac odzwierciedla stan rozwoju gospodarczego.

Metodyka badań: W artykule zostały zaprezentowane oraz poddane analizie dane odzwierciedlające przeciętne wysokości płac w Polsce dostępne w bazie Zakładu Ubezpieczeń Społecznych jak również Głównego Urzędu Statystycznego.

Wnioski: Na przestrzeni przedstawionego w artykule okresu (2004-2014) wysokość przeciętnych wynagrodzeń realnym systematycznie wzrastała. Jest to pozytywne zjawisko zarówno z punktu widzenia indywidualnego pracownika, jak również w odniesieniu do całej gospodarki. Świadczy to o ciągłym rozwoju gospodarczym naszego kraju.

Słowa kluczowe: poziom i struktura płac, Polska, realne dochody

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