

**MACROECONOMIC CONDITIONS DETERMINING  
THE LEVEL AND THE RATE OF CHANGES OF WAGES  
AND SALARIES IN POLAND IN 2007–2012**

*Walentyna Kwiatkowska*

Department of Microeconomics  
University of Łódź

Key words: wages, kind of wages, determinants of wages.

Abstract

This study characterized and evaluated the level and rate of change in wages and salaries in Poland in 2007–2012 and analysed the main macroeconomic determinants of their development. The analysis present changes to average wage, minimal wage and fair wage. Their level and rate of change are determined by macroeconomic factors, particularly economic growth processes, changes in productivity of labour, inflation rate and the situation on the labour market. A quite strong correlation can be observed between the rate of changes of the real GDP and the development of average nominal wages. Inflation processes affect the growth of nominal wages but they lead to a decrease in real wages. The growth of the unemployment rate affected the reduction of the growth rate of nominal wages.

**MAKROEKONOMICZNE UWARUNKOWANIA DYNAMIKI ZMIAN POZIOMU  
WYNAGRODZEŃ W POLSCE W LATACH 2007–2012**

*Walentyna Kwiatkowska*

Katedra Mikroekonomii  
Uniwersytet Łódzki

Słowa kluczowe: wynagrodzenia, rodzaje wynagrodzeń, determinanty wynagrodzeń.

Abstrakt

Celem opracowania jest charakterystyka i ocena poziomu i dynamiki zmian wynagrodzeń w Polsce w latach 2007–2012 oraz ukazanie głównych, makroekonomicznych determinant ich kształtowania. Analizą objęto wynagrodzenia przeciętne, wynagrodzenia minimalne i tzw. wynagrodzenie godziwe. Do głównych czynników makroekonomicznych, determinujących zmiany poziomu tych wynagrodzeń, zaliczono: zmiany realnego PKB, zmiany wydajności pracy, procesy inflacji

i zmiany sytuacji na rynku pracy. Wyniki przeprowadzonych badań pozwoliły stwierdzić, że zmniejszenie dynamiki wzrostu wynagrodzeń nominalnych w ostatnich latach wynikało zwłaszcza z osłabienia dynamiki wzrostu PKB, wzrostu stopy bezrobocia i osłabienia dynamiki wzrostu wydajności pracy, procesy inflacyjne zaś przyczyniły się do spadku wynagrodzenia realnego i wzrostu rozbieżności między nim a wynagrodzeniem nominalnym.

## **Introduction**

This study characterized and evaluated the level and rate of change in wages and salaries in Poland in 2007–2012 and analysed the main macroeconomic determinants of their development. Attainment of this objective is related to the important functions fulfilled by wages and salaries in each economic system. They determine the level of satisfaction of social needs. From the perspective of social and economic development, they constitute an important incentive factor and are a key element of the business costs of enterprises. These costs, in turn, affect the employment rate and, consequently, the situation on the labour market.

Remuneration involves complex, multi-aspect social and economic categories as well as legal and ethic aspects. Its level and rate of change on the scale of the economic system are determined by macroeconomic factors, particularly economic growth processes, changes in social productivity of labour, inflation rate and the situation on the labour market. The analysis of these determinants is aimed at evaluating their influence on the development of wages and salaries and the trends of these changes.

## **Nature, features and functions of remuneration**

Remuneration is a complex category, examined not only in its economic aspects, but also in social, legal and ethical aspects. These aspects are emphasized in various definitions of remuneration in economic literature, legal regulations, international documents and treaties and in the statistics. Let us take a look at some of them.

According to the Convention of the International Labour Organisation No. 95, ratified by Poland on 1 July 1949, concerning the protection of wages, „wages means remuneration or earnings, however designated or calculated, capable of being expressed in terms of money and fixed by mutual agreement or by national laws or regulations, which are payable in virtue of a written or unwritten contract of employment by an employer to an employed person for work done or to be done or for services rendered or to be rendered”. On the other hand, Convention No. 100 emphasizes the need of equal remuneration

for men and women workers for work of equal value (*Konwencje i zalecenia Międzynarodowej Organizacji Pracy* 1996, pp. 400–411). In turn, in the Treaty Establishing the European Community of 1967, „pay means the ordinary basic or minimum wage or salary and any other consideration, whether in cash or in kind, which the worker receives directly or indirectly, in respect of his employment, from his employer” (*Traktat...* 2006, art. 141, point 2).

In 1993, the International Conference of Labour Statisticians defined remuneration as payments in cash and in kind paid to employees, as a rule at regular intervals, for time worked or work done together with remuneration for time not worked, such as for annual vacation, other paid leave or holidays. Earnings exclude employers’ „contributions that their employees paid to social security and pension schemes and also the benefits received by employees under these schemes. Earnings also exclude severance and termination pay” (KARASZEWSKA 2003, p. 20). This definition differs, as far as remuneration components are concerned, from the definition used in the statistics of the Central Statistical Office. Although the general definition is identical, since „wages and salaries include monetary payments as well as the value of benefits in kind or their equivalents due to employees for work performed” (*Rocznik Statystyczny Rzeczypospolitej Polskiej* 2011, p. 250), but the components of personal remuneration cover various types of bonuses and allowances or compensation benefits.

A broad definition of remuneration, described as payment for work performed in a position of subordination for the employer, is used in research by S. BORKOWSKA (2012, pp. 13, 14, 23). The author distinguishes remuneration in cash and additional benefits. Remuneration in cash includes a regular salary, which covers: basic pay, regular bonuses to the basic pay (e.g. seniority allowance) and remuneration for time not worked. Another element of remuneration in cash is variable pay, including short-time incentives (e.g. bonuses, awards, commissions) and long-term incentives (e.g. a share in profit). Additional benefits can be of a financial nature (e.g. severance payments, service anniversary awards, allowances), but they also include in-kind bonuses (e.g. health care, recreation or training benefits). Therefore, this definition corresponds to the concept and the method for calculating remuneration applied in statistical analyses of the Central Statistical Office as far as payments and in-kind benefits are concerned.

The basic legal act in Poland regulating conditions and principles of remuneration for work is the Labour Code (Dz.U. 1998). Due to the fact that the regulations of the labour law do not provide a uniform definition of remuneration for work, the Supreme Court ruled that this is an obligatory benefit, paid by the employer to an employee at least once a month for the time of work on a specified time basis, with an asset-increasing nature, established

according to the type, amount and quality of the work performed (SEKUŁA 2011, p. 22). An important principle set forth in the Labour Code is observation of equal rights for equal fulfilment of the same duties. This refers, in particular, to equal treatment of men and women in employment and remuneration, but also prohibition of any of signs of discrimination. Principles of remuneration, i.e. its amount, remuneration rates for work of a specific type or at a specific position, and other additional components of pay can be included in the collective bargaining agreements or in the remuneration regulations (if the employer hires at least 20 employees) or in the employment contract (if the employer hires less than 20 employees).

The definitions presented above highlight certain common features of remuneration, which include:

- an obligatory nature, meaning the employer's obligation to pay remuneration to the employee for work performed;
- an individual (i.e. personal) character of remuneration, which emphasizes the unquestionable right of every employee to receive remuneration, the impossibility of relinquishing it or transferring the right to remuneration to another person;
- an asset-increasing nature, indicating the role of remuneration in developing a proper level of income and satisfying the current and future needs of the employee;
- equivalence, which means that remuneration must correspond, in particular, to the type of the work performed, qualification required for its performance and must take into consideration the quality of the work performed;
- non-discriminatory character, meaning equal treatment of each employee in remuneration for work of equal value;
- reciprocity, understood as the employee's obligation to perform work of a specific type for an employer, under his supervision, in the place and time determined by the employer, enabling the achievement of the objectives of the enterprise.

The above list should be extended by two more features, namely:

- legitimisation of a minimum wage as a basis to establish higher rates of remuneration;
- fairness, meaning remuneration ensuring a fair standard of life for the employee and his family.

The nature of remuneration determines their functions, of which the most frequently mentioned in the economic literature include: income, motivation, social, cost and market functions (BORKOWSKA 2012, p. 26).

The income function of remuneration is analysed from the perspective of an employee, for whom it is usually the main source of income. The amount of

remuneration determines the level of satisfying the needs of the employee and his family. Therefore, he will strive for increasing his remuneration, to ensure a higher standard of life and development of his own personality. The significance of the income function is demonstrated in ensuring a fair wage, and its main measure is the real level of remuneration. According to the idea of performance-dependent pay, fair remuneration for work contributes to improvement of the performance of the enterprise, allows employers to maintain valuable employees and prevents unreliable delivery of their duties (KWIATKOWSKI 2002, p. 183).

The incentive function of remuneration is the basis for differentiating wages in view of the type, amount and quality of work and labour productivity of the employee. It specifies the place of the employee in the staff hierarchy, makes it possible to develop desired attitudes and behaviours and realize the current and strategic aims of the organisation. The nature of the incentive function of remuneration is reflected in prompting the employees to improve their qualifications, undertake increasingly more complex tasks, or change their profession. This means that wages should demonstrate a positive correlation with the value of work (SEKUŁA 2003, pp. 26, 27). They should be fairly developed and differentiated, according to clearly specified rules.

The social function of remuneration reflects its social aspect. It shows that the level of pay determines the social status, prestige and recognition for a specific profession. Satisfaction of the social function requires establishing and protecting the minimum level of remuneration to prevent impoverishment of employees, reduce excessive differentiation of wages and solve social conflicts in this respect (SEKUŁA 2003, p. 30).

The cost function indicates that remuneration is a significant component of costs of the business activity of the enterprise, and therefore it affects the prices of produced goods and services. Thus, the employer will strive to maintain labour costs at the minimum level, in view of strengthening the competitive position of the company. The cost function can be seen in searching for appropriate relations between labour costs and its productivity. In order to minimize the unit labour cost, while establishing the level of remuneration, the rule that should be observed is that the growth of pay cannot precede an increase in labour productivity (BORKOWSKA 2001, p. 16).

According to the market function of remuneration, the amount of pay depends on the rarity or the surplus of labour supply in the labour market in relation to the demand of the employers. Unsatisfactory supply of specific employees in relation to the demand results in increased remuneration for work.

The literature also indicates other functions of wages and salaries. An example can be a participatory function, demonstrating the participation of

employees in the management of the company, or a political function, related to making decisions at the macroeconomic level concerning admissible growth of pay, the amount of minimum wage, and regulation of wages and salaries in the public sector (SEKUŁA 2003, p. 26).

Z. JACUKOWICZ (2010, pp 33–37) broadens the catalogue of functions of wages and salaries from the perspective of their relations to various disciplines of knowledge. In addition to social and economic functions, he also distinguishes: organisational, ethical, physiological and legal functions. The organisational function emphasizes those methods of work organisation that enable fair remuneration. The ethical function of remuneration indicates the need to apply fair wages and ethics in business, reflected in the manner of treating employees, as well as observing the rules of remuneration, such as timeliness of payments and other benefits in the established amounts. The physiological function denotes an appropriate relation between time and conditions of work with remuneration, e.g. work in hazardous and harmful conditions should be appropriately rewarded. A legal function indicates that regulations of the labour law form the basis for the remuneration system, providing the employees with a sense of security.

It should be noted that functions of remuneration are closely related, although some conflicts may occur between them, e.g. between income and cost functions, or between income and incentive functions due to a limited nature of financial means.

## **Trends of changes in the average nominal gross wages and salaries in Poland in 2007–2012.**

### **Minimum wage vs. fair wage**

The average monthly gross wage paid per employee is one of the basic measures and reference points in research on remuneration relations. It is defined as the ratio of the sum of all earnings for the work performed (e.g. personal gross wages and salaries, share in profits, royalties) to the average number of persons employed at a given time. The level and tendencies of changes in those wages and salaries in Poland are presented in Table 1.

On the basis of data presented in Table 1, it can be claimed that average nominal wages and salaries demonstrated a growing trend in the years under examination. In a 6-year period, they grew by PLN 849.09 (31.5%). Their development was varied. In the period of good economic conditions of 2007–2008, the average gross wages and salaries grew by 8–10%. Deterioration of market conditions as a result of the financial crisis contributed to a reduc-

Table 1  
Level and changes in the average monthly nominal gross wages and salaries in Poland in 2007–2012

Year	Average monthly gross wages and salaries in PLN	Indices of changes previous year = 100
2007	2,672.58	107.9 <sup>a</sup>
2008	2,942.17	110.1
2009	3,101.74	105.4
2010	3,224.13	103.9
2011	3,403.51	105.6
2012	3,521.67	103.5

<sup>a</sup> In 2006, the average monthly gross remuneration was PLN 2,475.88.

Source: *Rocznik Statystyczny Rzeczypospolitej Polskiej 2008*, p. 258; 2011, p. 252; *Mały Rocznik Statystyczny Polski 2012*, p. 176, GUS, Warsaw, [http://stat.gov.pl/gus/5848\\_1630\\_PLK-HTML.htm](http://stat.gov.pl/gus/5848_1630_PLK-HTML.htm) [accessed on: 27.06.2013], own calculations.

tion in the rate of remuneration growth, which ranged from 3–5%. The lowest growth was recorded in 2012, by 3.5% in relation to the previous year.

As result from the available statistical data, in October 2010, 57.1% of employed persons received wages and salaries below the average remuneration (PLN 3,224.13), of which 8.6% received very low pay. Wages above the average level were received by 42.9% of employees, while 8% employed persons received pay twice as high as the average (between PLN 6,378.31 and 9,921.81 and more) (*Rocznik Statystyczny RP*, 2011, pp. 256–257)<sup>1</sup>.

The research of the Central Statistical Office of 2013 (KUROWSKI 2013, pp. 34–36) concerning the minimum living wage, shows the strengthening of the extent of extreme poverty in Poland under conditions of the economic slowdown. The minimum living wage, also referred to as the biological minimum, defines the lowest standard of life, i.e. a lower limit of poverty, below which a biological risk to human life and psychophysical development emerges. For a single person at productive age, the living wage in 2012 (annual mean) was PLN 521.11. In 2011–2012, the share of persons at risk of extreme poverty was 6.7%. In 2008–2010, the percentage of those persons was lower, amounting to 5.6–5.7%. Extreme poverty is particularly high in households with unemployed persons (32.9%) and in families with children (27% families with four and more children). The social support offered to those persons is based on the income threshold criterion in a given year. In 2012, this limit was PLN 542 for a single person, and PLN 456 for a person living in a family. But the estimated living wage for households of three and five persons exceeded the income threshold qualifying for social support.

<sup>1</sup> The data concern full-time and part time employees, and include entities employing more than nine persons.

A close relationship exists between the average wage and the minimum wage. An increase in the minimum wage may increase the average wage, but a growth of the average wage can also contribute to the growth of the minimum wage. The minimum wage is the lowest legally-regulated remuneration for full-time work performed within the employment relationship, which is to satisfy basic needs of employees and their families (GOLNAU 2007, p. 16). The establishment of the minimum wage provides a basis for establishing higher rates for work requiring higher qualifications and more responsibility, i.e. a vertical range of wages and salaries (JACUKOWICZ 2007, pp. 15–16). In Poland, pursuant to the Constitution of the Republic of Poland (Art. 65.4), a minimum level of remuneration for work, or the manner of setting its levels should be specified by statute. The Minimum Wages Act of 10 October 2002 (Dz.U. of 2002, No. 200, item 1679) provides such a legal basis. Pursuant to this Act, every year, the amount of the minimum level of remuneration for work is a subject of negotiation in the Tripartite Commission, comprising representatives of the government, employers and trade unions. This level is uniform for the entire country, and the amount of pay is indexed every year, at least to the level equal to the anticipated increase of consumer price indices.

The data concerning the amount of the minimum wage and its changes are presented in Table 2.

Table 2

Level and changes to the minimum nominal wage in Poland in 2007–2012

Year	Minimum monthly wage in PLN	Changes to the minimum wage previous year = 100	The minimum-to-average wage ratio
2007	934	103.9 <sup>a</sup>	0.35
2008	1,126	120.6	0.38
2009	1,276	113.3	0.41
2010	1,317	103.2	0.41
2011	1,386	105.2	0.41
2012	1,500	108.2	0.43

<sup>a</sup> In 2006 the minimum wage was PLN 899 a month.

Source: Own study based on: *Wynagrodzenia w Polsce według GUS – płaca minimalna*, [http://www.wynagrodzenia.pl/gus\\_płaca\\_minimalna.php](http://www.wynagrodzenia.pl/gus_płaca_minimalna.php) [accessed on: 27.06.2013].

As results from the data presented in Table 2, the minimum nominal wage in Poland demonstrated a growing trend in the examined years, growing over six years by PLN 564 (60.6%). Its highest increase occurred in 2008 (by 20%), causing the highest growth of the average wage by 10%. The lowest increase of the minimum remuneration took place in 2010, only by 3.2%, causing a growth



in the average wage by 3.9%. In 2010–2011, growth indices for minimum and average wages were similar. In 2012, the minimum wage increased by 8%, while the average wage grew only by 3.5%. Although increases in the minimum wage are determined, to a high extent, by the inflation rate, what is also important is the aspect of the living standard it ensures, since it is the main source of income for some households.

While analysing the level of the minimum wage, it is compared to the average wage and the minimum subsistence level, reflecting the necessary costs of maintaining a family. As results from a comparison of both wages, in 2007–2008, the minimum wage made 35–38% of the average wage. In 2009–2011, this relation remained at a steady level of 41%. In 2012, the minimum wage accounted for 43% of the average wage. According to the recommendations of the International Labour Organisation, the minimum wage should constitute 50% of the average wage. To reach the target value, the minimum wage in 2012 would have to grow to the level of PLN 1,761, i.e. by PLN 261. Although the minimum wage in 2013 is, in fact, PLN 1,600, since the average wage has also grown, it can be assumed that the 50% relation between the wages has not been reached.

The amount of the minimum wage raises numerous controversies. Supporters of this remuneration emphasize that it prevents reduction of wages by entrepreneurs and abusing persons with the lowest qualifications. Opponents of the minimum wage claim that it hinders entrepreneurship and leads to a growth of unemployment, increases social inequalities and dimensions of poverty and is contrary to free market principles (SEKUŁA 2003, pp. 27, 28, GOLNAU 2007, p. 69). Therefore, postulates emerge claiming that the amount of the minimum wage should be regionally differentiated and it should take into account the conditions of the labour market, as well as maintenance conditions and costs (KASPROWICZ 2013, p. 16).

While comparing the minimum wage with the minimum subsistence level, i.e. the index measuring costs of household maintenance under price and market conditions on the basis of mean annual data of 2012, it can be observed that the value of the minimum subsistence level for a single person was PLN 1,026.94, i.e. it was lower than the minimum wage by PLN 473.06, making 68.5% of this wage. For two adults in the employee household, the subsistence level was assessed at the level of PLN 1,698.42, i.e. it exceeded the minimum wage. However, for multiple-person households, the minimum subsistence level was still higher than the minimum wage, e.g. in a 5-person household (two adults and three children), it reached the amount of PLN 4,103.92 (KUROWSKI 2013, pp. 31–34). With the assumption that two persons are employed and receive a minimum wage of PLN 3,000, a problem arises with meeting the needs of such a family.

The basis for evaluating the level of the minimum wage in the Polish economy is its comparison to minimum wages of 20 other member states of the European Union, where they are established by statute. In seven states, the minimum wages are not established by law. These countries include: Germany, Austria, Denmark, Cyprus, Finland, Sweden and Italy. The minimum wages in some of those countries are varied according to professions and business sectors (Cyprus, Italy), or established by employers, who take into consideration regulations set forth in collective bargaining agreements and postulates of trade unions (Germany, Austria, Scandinavian countries).

Table 3  
Minimum wages in selected countries of the European Union in: 2008, 2011, 2012 (in EUR)

Country	2008	2011	2012
Luxemburg	1,570	1,758	1,801
Ireland	1,462	1,462	1,462
Netherlands	1,335	1,424	1,446
Belgium	1,310	1,415	1,444
France	1,280	1,365	1,398
United Kingdom	1,242	1,136	1,202
Greece	794	863	877
Slovenia	539	748	763
Spain	700	748	748
Malta	617	665	680
Portugal	497	566	566
Poland	313	349	336
Slovakia	241	317	327
Czech Republic	300	319	310
Hungary	272	281	296
Estonia	278	278	290
Latvia	230	282	286
Lithuania	232	232	232
Romania	139	157	162
Bulgaria	112	123	138

Source: Eurostat, Minimum wages, <http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tps00155&plugin=1> [accessed on: 26.02.2013]

According to the data provided in Table 3, in the years under analysis, Poland (with a minimum wage of EUR 336 in 2012) was ranked the 12<sup>th</sup> among 20 EU member states. This represents a five-fold lower minimum wage than the highest pay in Luxemburg. The lowest level of minimum wages occurred in

Bulgaria and Romania. These were the only EU countries in which the amount of the minimum wage did not reach EUR 200 in the years under analysis. The highest minimum wages (above EUR 1,000) were effective in developed EU states, such as Luxemburg, Ireland, Netherlands, Belgium, France and the United Kingdom.

While examining the development of minimum wages in 2008–2012, it should be emphasized that they increased in comparison to 2008 in almost all EU states. The only exceptions are Ireland and Lithuania, in which the minimum wage remained at the same level in the years under examination, and the United Kingdom, where its level decreased by 3.2%. The lowest growth rate of the minimum wage was observed in the Czech Republic, amounting only to 3.3%. The highest growth of this wage, reaching 41.6%, could be observed in Slovenia and was relatively high in such states as: Luxemburg (by 14.7%), France (by 9.2%) and Slovakia (by 35.7%). Against the background of other member states, Poland in 2012 was ranked the 14th in terms of the dynamics of the minimal wage growth, which amounted to 7.3% in relation to 2008. In Bulgaria, the minimum wage increased by 23.2%, and in Romania it increased by 16.5% in the analysed years, although, as it is known, the ranking of those countries did not improve.

An important feature of the remuneration, namely its fair nature, is worth analysing. The right to fair (sufficient and satisfactory) remuneration was established in 1948 in the Universal Declaration of Human Rights. On the European level, the notion of fair remuneration can be found in the European Social Charter, a document of the Council of Europe, which was adopted on 18 October 1961. In 2001, in Poland, the Constitutional Tribunal, on the basis of the Constitution of the Republic of Poland, ruled that remuneration cannot be agreed upon only on the basis of market principles, or through negotiation between the employer and the employee. It is necessary that the work should be fairly paid (SEKUŁA 2011, pp. 42, 43). The right of the employee to fair remuneration for work is included in the Labour Code (Art. 13).

Due to difficulties with the interpretation of the fair remuneration, the Committee of Independent Experts (appointed by the Council of Europe) formulated its own definition: Fair pay must ensure satisfaction of all economic, social and cultural needs of employees and their families, adequately to the degree of social and economic development of the country where they live. This is remuneration received by the most numerous group of employees in a given country at a given time. The right to a fair remuneration is vested in persons employed on the basis of an employment contract and it does not apply to self-employed persons. In addition, methods of estimating the level of fair remuneration have been specified, namely, assuming that:

- it amounts to 68% of the gross average wage,
- 66% of the national income to be divided per capita.

Data for Poland, concerning fair remuneration are presented in Table 4.

Table 4

Fair remuneration as 68% of the average gross monthly wages and salaries in Poland in 2007–2012, in PLN

Year	Average gross monthly wages and salaries (1)	Fair remuneration (2)	Difference (1–2)
2007	2,672.58	1,817.35	855.23
2008	2,942.17	2,000.67	941.50
2009	3,101.74	2,109.18	992.56
2010	3,224.13	2,192.41	1,031.72
2011	3,403.51	2,314.38	1,089.13
2012	3,521.67	2,394.74	1,126.93

Source: Own calculations on the basis of Table 1.

Assuming 68% of the average gross wage as the basis for fair remuneration, it can be claimed that the amount of income ensuring a fair standard of life significantly exceeds the level of the minimum wage between PLN 800 and PLN 900, e.g. in 2012 it was PLN 894.74.

The average monthly gross wages and salaries vary across voivodships. This situation is presented in Table 5.

While analysing the data for 2008, voivodships with pay above the average level for Poland can be indicated, amounting to over PLN 3,000. These are: Mazowieckie (with the highest remuneration over PLN 4,000), Śląskie, Pomorskie, Dolnośląskie and Małopolskie, with activities concentrated in the developed sector of services and industry. Remunerations ranging from PLN 2800 to PLN 3000, close to the average value for Poland, were recorded the following voivodships: Zachodniopomorskie, Wielkopolskie, Lubelskie, Łódzkie, Podlaskie and Świętokrzyskie. In other voivodships: Kujawsko-Pomorskie, Lubuskie, Podkarpackie, Warmińsko-Mazurskie, average remunerations varied from PLN 2,600 to PLN 2,700 a month.

Over five years, a growth in wages in all voivodships was observed. The highest growth occurred in Łódź Province, by 19.2%, corresponding to the growth of the average remuneration for Poland, related to diversification and modernization of the business structure. A relatively high growth of the average remuneration, ranging from 16% to 17%, concerned the following voivodships: Lubelskie, Podkarpackie and Warmińsko-Mazurskie, classified as economically poorer regions. It should be emphasized that in 2012, in all

Table 5  
Average monthly wages and salaries in Poland per voivodships in 2008 and 2012

Voivodships	Average gross monthly wages and salaries		Indices of changes	
	2008 (1)	2012 (2)	in PLN (2-1)	in % (2:1)
Dolnośląskie	3,225	3,634	+409	12.7
Kujawsko-Pomorskie	2,761	3,159	+398	14.4
Lubelskie	2,825	3,323	+498	17.6
Lubuskie	2,748	3,142	+394	14.3
Łódzkie	2,822	3,363	+541	19.2
Małopolskie	3,020	3,498	+478	15.8
Mazowieckie	4,105	4,721	+616	15.0
Opolskie	2,978	3,349	+371	12.5
Podkarpackie	2,680	3,117	+437	16.3
Podlaskie	2,853	3,259	+406	14.2
Pomorskie	3,278	3,692	+414	12.6
Śląskie	3,347	3,830	+483	14.4
Świętokrzyskie	2,823	3,239	+416	14.7
Warmińsko-Mazurskie	2,692	3,123	+431	16.0
Wielkopolskie	2,976	3,424	+448	15.1
Zachodniopomorskie	2,974	3,352	+378	12.7
Total	2,942	3,522	+548	12.7

Source: *Roczniki Statystyczne Województw*, Central Statistical Office, Warsaw, years 2009 and 2012 <http://stat.gov.pl/gus/> [accessed on: 27.06.2013].

voivodships, the average gross remuneration exceeded PLN 3,100. The lowest wages were still observed in the same voivodships as in 2008.

It should be noted that differences between the highest and the lowest gross remuneration increased across the voivodships. In 2008, this difference was PLN 1,425, increasing to PLN 1,604 in 2012. Diversification of wages and salaries results from differences in the social and economic structure of voivodships, e.g. agricultural regions are characterised by a lower level of wages (e.g. Warmia and Mazury), while voivodships with modern industry and services sections, with a large concentration of business activity, have relatively higher wages.

An increase in average remuneration on the scale of the entire country means that the fair remuneration also increases. In individual voivodships, the fair remuneration is varied in relation to differences in the level of average remuneration. Its value was usually lower than the average value by PLN 1,000–1,200, only in the case of the Masovia by PLN 1,511. On the other hand, the fair income in each voivodship was higher than the minimum wage effective in Poland, which in 2012 amounted to PLN 1,500.

Table 6

Fair income as 68% of the monthly gross remuneration in the voivodships of Poland in 2012

Voivodships	Average gross monthly wages and salaries	Fair income (in PLN)
Poland	3,521.67	2,394.74
Dolnośląskie	3,634	2,471.12
Kujawsko-Pomorskie	3,159	2,148.12
Lubelskie	3,323	2,259.64
Lubuskie	3,142	2,136.56
Łódzkie	3,363	2,286.84
Małopolskie	3,498	2,378.64
Mazowieckie	4,721	3,210.28
Opolskie	3,349	2,277.32
Podkarpackie	3,117	2,119.56
Podlaskie	3,259	2,216.12
Pomorskie	3,692	2,510.56
Śląskie	3,830	2,604.40
Świętokrzyskie	3,239	2,202.52
Warmińsko-Mazurskie	3,123	2,123.64
Wielkopolskie	3,424	2,328.32
Zachodniopomorskie	3,352	2,279.36

Source: Own study on the basis of data in Table 5.

## Macroeconomic determinants of changes in the level of wages and salaries in Poland

The basic factors determining fluctuations in wages and salaries include: rate of change of the gross domestic product (GDP), labour productivity, inflation rate and changes in the situation in the labour market.

Let us analyse now the relations between changes of GDP and the average gross nominal remuneration in Poland in 2007–2012.

Table 7

Changes in the average monthly gross wages and salaries vs. changes in GDP in Poland in 2007–2012 (previous year = 100)

Specification	2007	2008	2009	2010	2011	2012
Changes of remuneration – gross nominal	107.9	110.1	105.4	103.9	105.4	103.6
Changes of GDP at constant prices	106.8	105.1	101.6	103.9	104.3	103.1

Source: *Mały Rocznik Statystyczny Polski 2012*, GUS, Warsaw, p. 476 and p. 179 and as in Table 1.

Gross domestic product is the basic measure of business activity, reflecting the value of goods and final products produced in the economic system in a given year. Its fluctuations reflect changes in the business situation. Data provided in Table 7 prove the existence of a close correlation between the examined variables. In years of good economic results (2007–2008), when the GDP grew by 6.8%, the remuneration increased by almost 8%. A year later, a slightly lower growth of GDP (5%) resulted in the highest remuneration in the examined period (an increase in the nominal remuneration by 10%) which also resulted, as we recall, from an increase in the minimum wage. The financial crisis observed in 2009 in the form of a large decrease in GDP growth to 1.6%, also resulted in weakening the growth of the average remuneration to 5.4%. A higher rate of GDP growth in 2010–2012 (between 3% and 4% a year) brought about an increase in wages at the same, or at a similar, rate.

To justify the relations presented above, GDP per capita will be compared to the average net remuneration. GDP per capita is one of the most popular measures of economic well-being (level of the standard of living). Those relationships are presented in Figure 1.

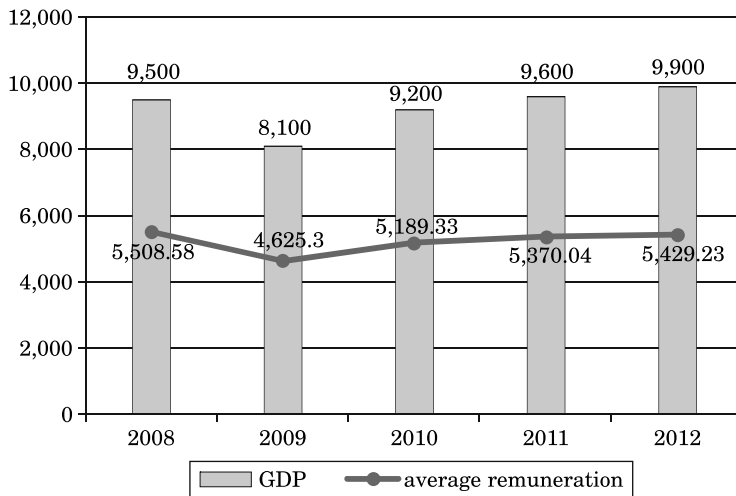


Fig. 1. GDP per capita and the average remuneration in Poland in 2008–2012, in euro  
 Source: Own study on the basis of Eurostat: GDP per capita – annual data <http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do> [accessed on: 19.06.2013] and annual net earnings, [http://appsso.eurostat.ec.europa.eu.nui/show.do?dataset=earn\\_nt\\_net&lang=en](http://appsso.eurostat.ec.europa.eu.nui/show.do?dataset=earn_nt_net&lang=en) [accessed on 22.03.2013].

This graphical illustration supplemented with data confirms the strong relationship between GDP per capita and the level of wages. A decrease in GDP per capita by 14.7%, observed in 2009, resulted in a decrease in the nominal

wages by 12% compared to 2008. An increase in GDP per capita in 2010 by 13.6% contributed to an increase in remuneration by 12.2%. A slightly lower growth rate of GDP per capita in subsequent years (in 2011 by 4.3% and in 2012 by 3.1%) also resulted in a weaker growth of the average remuneration (by 3.5% and 1.1%, respectively). Therefore, the conclusion can be drawn that a higher standard of living and its growth is reflected in a higher growth rate of wages, and vice versa, a lower level of economic well-being is related to a lower level of remuneration.

It is worth remembering that 66% GDP per capita is also a measure of fair remuneration. In 2008–2012, its value in euro would amount to: 6,270, 5,346, 6,072, 6,336, and 6,534, respectively, i.e. it would be lower by about EUR 3,000 than the level of GDP per capita.

Another factor determining changes in wages salaries are changes in labour productivity. According to assumptions of neoclassical economics and the so-called „wage gap” concept, an increase in real wages is economically justified only when the labour productivity grows. This relation affects the amount of demand for labour. If real remuneration grows faster than labour productivity, then the number of workers will be reduced. On the other hand, an increase in the number of workers will take place at a lower growth of real wages in relation to labour productivity (BACKHOUSE 1991, pp. 124, 125).

Table 8  
Changes in labour productivity and the average real gross monthly wages and salaries in Poland in 2007–2011 (previous year = 100)

Year	Real labour productivity <sup>a</sup>	Real gross wages and salaries	Real wages and salaries /labour productivity
2007	100.0	105.5	1.06
2008	102.8	105.9	1.03
2009	102.4	102.0	0.99
2010	105.9	101.4	0.96
2011	107.2	101.2	0.94

<sup>a</sup> Calculated as a quotient of GDP at constant prices of 2007 and the number of workers in a given year

Source: Own calculations on the basis of *Kwartalna informacja o rynku pracy*, Central Statistical Office, Warsaw 2006, pp. 4, 6; *Kwartalna informacja o aktywności ekonomicznej ludności*, Central Statistical Office, Warsaw 2009, p. 4; 2011, p. 6; 2012, p. 1; *Mały Rocznik Statystyczny Polski 2008*, p. 473; 2012, p. 475, 478.

As results from the data presented in the table, in 2007–2008, real gross remunerations grew faster than labour productivity. A high rate of GDP growth, exceeding the growth rate of labour productivity, contributed to this effect. The relation of those values was higher than 1. Starting from 2009, the



growth rate of labour productivity was higher than the growth rate of real wages. The relation between those values was 0.9 and it should translate into the growth of demand for work. It should be emphasized that this relation complies with the recommendation of the European Commission that state governments should maintain a remuneration growth rate and labour productivity growth rate at the level of 0.9 (MÜLLER 2013, p. 19).

The development of remuneration policy is significantly affected by relations occurring between inflation and wages. Inflation processes illustrate changes in the consumer price index.

Table 9

Changes of nominal wages, consumer prices and real wages in Poland in 2007–2012,  
previous year = 100

Specification	2007	2008	2009	2010	2011	2012
Changes in average monthly gross nominal wages and salaries	107.9	110.1	105.4	103.9	105.4	103.6
Consumer price index	102.3	104.0	103.3	102.5	104.1	103.7
Changes in average monthly gross real wages and salaries	105.5	105.9	102.0	101.4	101.2	99.9

Source: *Mały Rocznik Statystyczny Polski 2012, 2013*, Central Statistical Office, Warszawa, p. 179.

The data presented in Table 9 show a positive relation between the growth rate of the average monthly nominal gross remuneration and the consumer price index. In each of the examined years, inflation processes resulted in a growth of nominal wages, but at the same time, they caused a decrease in real wages and lowered their growth rate. In 2007–2008, the growth of nominal wages was significantly higher than the growth of the consumer price index, which also affected the growth of real wages by more than 5%. In 2009–2011, nominal wages grew more slowly, exceeding the growth of the price index by 1–2 percentage points. This decreased their purchasing power, which can be seen in the decrease of the growth rate of real income. In 2012, the growth of prices slightly exceeded the growth of nominal income, which contributed to a decrease in the real income by 0.1 percentage point. Therefore, it can be claimed that the higher inflation, the larger discrepancy between the nominal and the real remuneration.

The last of the macroeconomic factors affecting the level of remuneration is the situation in the labour market. Table 10 presents the data concerning this issue.

Table 10

Changes in employment, registered unemployment, registered employment rates, average nominal and real gross wages in 2007–2012

Specification	2007	2008	2009	2010	2011	2012
Change in employment (previous year = 100)	104.2	103.0	99.3	101.2	100.8	99.9
Change in unemployment (previous year = 100)	75.6	84.4	128.4	103.3	101.4	104.5
Registered unemployment rate in %	11.4	9.5	11.9	12.4	12.5	12.8
Change in nominal gross wages and salaries (previous year = 100)	107.9	110.1	105.4	103.9	105.4	103.6
Change in real gross wages and salaries (previous year = 100)	105.5	105.9	102.0	101.4	101.2	99.9

Source: *Kwartalna informacja o aktywności ekonomicznej ludności*, Central Statistical Office, Warsaw 2009, p. 4; 2011, p. 6; 2012, p. 1; 2013, p. 3; *Mały Rocznik Statystyczny Polski 2008*, p. 153; 2010, p. 155; 2012, p. 159; *Rocznik Statystyczny Rzeczypospolitej Polskiej 2011*, p. 235.

In 2007–2008, an improvement in the labour market, started in 2004, was continued. Downward trends of unemployment and unemployment rate were closely related to an increase in GDP and employment in the Polish economy. In this period, a quite significant growth of nominal and real wages was observed. Deterioration of the economic situation in 2009–2012 contributed to an increase in the number of unemployed persons. A particularly high growth, by 28.4%, occurred in 2009, in relation to a decrease in the rate of the GDP growth to 1.6% and employment growth by 0.7%. In subsequent years, the growth of the unemployment level was much weaker, particularly in 2011 only by 1.4%, and in 2010 and 2012 by 3–4.5%. Employment slightly increased by 1.2% and 0.8% in 2010–2011, and in 2012, it decreased by 0.1%. Basically, we can observe a stable level of employment in this period, which was related to the higher labour productivity of employees. On the other hand, growing trends in the unemployment rate were observed since 2009 – from 11.9% to 12.8% in 2012. A deterioration of the situation in the labour market was accompanied by a reduction of the growth rate of nominal wages. Therefore, higher unemployment weakens the pressure on the growth of wages.

## Conclusions

An analysis of the level of average gross wages and salaries in Poland and their fluctuations shows that remunerations were characterized by a growing trend, although the rate of this growth was varied: relatively high (7.9–10%) in 2007–2008 and much weaker (3–5%) in 2009–2012, along with a deterioration in the economic situation.

The minimum wage demonstrated a growing trend and increased over the six years under analysis by PLN 564 (by 60.3%). In 2010–2011, the growth rates of minimum wages and average wages were similar. In 2012, the growth of the minimum wage was higher than the average wage, which was caused, to a great extent, by the inflation rate.

The proportion of the minimum wage to the average wage increased from 35% (2007) to 43% (2012). The target value of this relation of 50% was not achieved; the minimum wage would have to be higher by PLN 260 in 2012 and amount to PLN 1760.84.

The minimum wage in Poland is still relatively low, particularly in relation to EU-15 countries.

The level of income ensuring a fair standard of life, the so-called fair remuneration, was at a higher level than the minimum wage (by PLN 894.74 in 2012), and on a lower level than the average wage (by PLN 1,126.93 in 2012). Taking four persons in a household as a point of reference for the fair income (according to the definition) in 2012 it should amount to PLN 3,381.31 (PLN 845.33 per person), according to estimates of the minimum subsistence level.

The diversity of remuneration across provinces increased in the examined years, despite their growing trends. The difference between the highest and the lowest gross remuneration was PLN 1,425 in 2008 and in 2012 it grew to PLN 1,604.

It can be claimed that the income function of remuneration still has a dominating importance in the Polish economy, due to the relatively large share of low wages. However, the awareness of advantages in the form of higher remuneration in the future for a growing quality of human capital is increasing higher, which will strengthen the incentive function of remuneration.

A quite strong correlation can be observed between the rate of changes of the real GDP and the development of average nominal gross wages. In 2007–2008, a high rate of GDP growth caused a high growth of nominal wages. Deterioration of the growth dynamics of GDP in subsequent years resulted in a reduction of the growth rate of wages, while their increase was similar to the increase in GDP (except for 2009).

An economic justification for the growth of real wages is an increase in labour productivity, and the correlation between them should amount to about 0.9. Such a situation occurred in the Polish economy after 2009, when the growth rate of labour productivity was higher than the growth rate of real wages.

It should be noted that there is a relationship between the inflation rate and the development of nominal and real wages. Inflation processes affect the growth of nominal remuneration, but at the same time, they lead to a decrease in real wages and weakening of their growth rate. It can be observed that a higher level of inflation results in a higher discrepancy between the nominal and the real wages. This was particularly noticeable in 2011–2012.

While examining the correlation between the situation in the labour market and wages, the conclusion can be drawn that a higher unemployment rate weakens the pressure on the growth of wages. The growth of the unemployment rate observed in 2009–2012 affected the reduction of the growth rate of nominal wages at a quite stable level of employment.

Translated by JOANNA JENSEN

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