*ISSN 1392-3110*
*Socialiniai tyrimai / Social Research. 2010. Nr. 3 (20), 132–143*

# Comparative Analysis of Wages and Labour Productivity in Lithuania and Other EU-15 Countries

**Algis Sileika, Zita Tamasauskiene, Neringa Barteliene**
*Siauliai University*
*Architektu str. 1, LT-78366 Siauliai, Lithuania*
*E-mail: algis.sileika@dsti.lt, zita.tamasauskiene@smf.su.lt, neringabarteliene@gmail.com*

**Abstract**

Lithuania's decision to integrate itself into economic and political European structures in the context of integration and globalization causes the need to match wages and labour productivity to the level of other EU countries. When analyzing the relationship between wages and labour productivity in Lithuania and EU-15 countries, a different change in these two indicators is noticed. Till 2009 Lithuanian economy was rapidly growing, the borders of EU countries opened and these changes had influence on the increase in wages and labour productivity. However, an obvious difference is noticed between the wages and labour productivity in Lithuania and other EU countries. The performed analysis has shown that wages (calculating in euros) in Lithuania in comparison to old EU countries are lower 3 to 7 times, but labour productivity calculated as GDP per capita – only 2 times. In rapidly developing countries wages and labour productivity adjust to economic changes; therefore, there is a necessity in the context of other EU countries to investigate the relationship between wages and labour productivity in Lithuania so that these differences could be gradually reduced.

**Keywords:** wage, labour productivity, share of wages in total GDP, wage elasticity.

## Introduction

Wages is the main income source for working people that directly influences their standard of living, the main component of overall consumption, and the key factor of countries' economic activities. Labour productivity and wages have undoubted relation with competitiveness at macro and micro levels. During the World Economic Forum in the Global Competitiveness Report 2009-2010 (Xavier Sala-i-Martin, et al. 2010) competitiveness was defined as a set of institutions, policies and factors that determine the level of productivity in a country. The level of productivity, in turn, sets the sustainable level of prosperity that can be earned by an economy. In other words, more competitive economies tend to be able to produce higher levels of income for their citizens. Modern competitive environment determines that employees are at the maximum interested in increase in labour productivity which may be achieved only by appropriate material motivation and hence scientifically based determination of wage level. Consequently, this requires an appropriate comparative analysis of these processes in Lithuania with other EU countries.

Economists constantly observe the relationship between wages and labour productivity, analyse it in many articles using different approaches and research methods. Researchers create models in order to determine relationship between wages and labour productivity (Kumar et al, 2009; Wakeford, 2004; Narayan, Smyth, 2009; Hall, 1986; Alexander, 1993).

Labour productivity most clearly shows the efficiency of the use of labour force. With the growth of labour productivity, the quantity of production made during the same period of time increases and society becomes richer. With the increase in labour productivity, business subjects can increase wages without increasing the prices, they can increase dividends and expand production. Like labour productivity, wages have always been an essential economic and legal problem. The level of wages is determined by market and institutional factors. Employees' professional qualification, competence, level of region's development, and social and economic country's opportunities, general standard of living, etc. may be considered the market factors. Minimum wages policy, collective agreements may be considered the institutional factors. Comparative analysis of wages and labour productivity as well as their relationship in Lithuania and other EU countries has been chosen for further investigation, since this problem has not been investigated more deeply in economic literature.

***The aim*** of the article is to analyse and compare the relationship of wages and labour productivity in Lithuania and other EU countries, to determine the tendencies of their change.

***The subject*** is wages and labour productivity.

***The objectives:***

- To reveal functions, conception of wages. To describe factors increasing labour productivity.
- To compare and evaluate the relationships between wages and labour productivity in Lithuania and other EU countries.

Till 2009 Lithuanian economy was rapidly growing, the borders of EU countries opened. The-

se changes influenced the increase in wages and labour productivity. Lithuania's decision to integrate into economic and political European structures in the context of integration causes an inevitable need to adjust wages as well as labour productivity. Subject to present situation there is a noticeable difference between wages and labour productivity in Lithuania and other EU countries. The article raises a question – are the wages matched with labour productivity in Lithuania comparing it with other EU member states?

**Theoretical questions and empirical research on wages and labour productivity**

Wages is an economic and legal category. Regarding legal relations, various concepts are being used – "wages", "pay for work", "salary", therefore it is purposeful to discuss the conception of this category. Legal regulation of wages involves not only imperative (state) regulation determining certain wages guarantees for the employees, but also dispositive (local or individual) regulation determining supplementary guarantees other than determined by laws and other normative legal acts or when particular pay conditions and amounts for each employee are determined in his work contract. In Lithuania, like in other European Union countries, work execution and pay conditions are determined by the laws. The formation of wages system in many European countries is based on collective bargaining between employers and representatives of employees. Besides, in many countries the system of collective bargaining is based on legal acts (Broughton, 2009).

According to Lithuanian economists (Martinkus, Savaneviciene, Sakalas, 2006) "wages" in the narrow sense is understood as a salary paid to employees for the use of their labour force or an amount of money calculated for the wage-earners during the accounting period. Labour Code of the Republic of Lithuania defines wages as a pay for work did by the employee according to the labour contract. Thus, we can draw a conclusion that legally wages are an amount of money that a person receives as a pay for certain activities performed by him.

However, wages is more an economic category than a legal one, therefore it is important to discuss wages with regard to this aspect. From the economic point of view wages must perform certain functions. First of all, *restoring function*. This title originated from the term of restoration of used labour force. First, the costs of living of ordinary, unqualified worker must be compensated. As Smith (2004) stated, a person must survive on his work and wages must be enough at least to live. However, under modern conditions, labour force is restored when satisfying not only physical needs but also spiritual (intellectual), social ones and creating satisfactory conditions for an employee to obtain and improve qualification as well as to develop his creative potential. This can already be considered as a *motivating function* of the wages which determines differentiated pay rate depending upon general education, special education of all forms, skills obtained in practical work and inherent personal features. While wages perform these two functions at the same time the *function of social guarantees* is realized that ensures the restoration of cost not only of ordinary but also of complex, qualified work. Also it is worth to mention the *compensatory function* of wages – when an employee works under worse than ordinary conditions (night work, work under complicated conditions, etc.). Finally, it would be logical to distinguish *accumulative function* of wages. In Lithuania like in many other post-soviet countries retirement pension averagely comprises up to 40% of the rate of former wages. Whereas statistics of economically developed countries indicates that pensions there reach 70-75% of former wages what ensures socially normal living conditions after retirement. It is logical because the process of reproduction of labour force is not terminated by person's retirement – it starts when a future employee is not even born yet (a pregnant woman already uses certain privileges guaranteed by society) and finishes only with the death of a former employee. Therefore, socially normal living conditions are to be ensured during the retirement period. The researches show that when an employee is retired his personal needs decrease and when receiving 25-30% less comparing to the incomes of the former wages in the form of pension he does not "fall" into the so-called economic hole. Therefore, an employee of post-socialist countries must save a part of wages for the period of retirement in order to ensure such living conditions.

The discussed functions define economic content of wages, its qualitative and quantitative margins. Thus, wages are an economic category – they are not any amount of money paid to an employee referring to his work load and quality, they ensure the realization of all his functions at a socially necessary level i.e. they ensure normal reproduction of labour force pursuant to employee's level of qualification. Naturally, any (even very low) level of earned income may be defined as a wage. However, in such case it (wage) assumes irrational expression, i.e. expressed only with regard to the form. Wages like any other economic category have objective qualitative and quantitative parameters. Ignorance of the latter in economic practice destructively influences dialectal unity of content and form of wages. At empirical level it finally asserts as a weakening of work stimuli at particular economy sectors (at work places), the increase in the number of people who use social benefits, the growth of emigration of employable people and shadow economy as well as similar ineffective phenomena.

Many problems appear when determining this level practically. For the determination of objective work complexity as well as a particular level of qualification of an employee necessary for performance of work Sileika et al. (2004) suggests to apply a widely used analytical-point work (occupation) evaluation method the basis of which consists of generalized criteria/factors of evaluation of work places (occupations) (they were published in 1950 in the conference of International Labour Organisation in Geneva and called "Geneva Scheme"). This scheme was modified by the authors of the publication referring to the experience of developed countries when creating the scales of basic wages and to the practice of evaluation of occupations of the service of Lithuanian state, also to the opinion of representatives of country's social partners (employers and employees) about the weights of evaluation criteria of jobs (occupations).

Real wages are especially influenced by inflation processes that worsen the standard of living. With the increase in prices of consumer economic goods, trade unions of developed countries aspire to include in labour contracts the point regarding the increase in wages due to the changes in the index of prices. In some countries this is formalized in normative documents in other countries this requirement is not formalized. Here the purchasing power of wages is maintained by regulating (changing) tariff rates and official salaries or making new collective agreements.

In order to develop its economy and satisfy constantly increasing people's needs society must continuously increase production of material goods and extent of provided services. This may be achieved in two ways: by employing more people in production or by using their work more efficiently. These two ways are not anyhow similar in their meanings. The increase in the number of employees depends not only upon the increase in the number of country's total population but first of all upon the growth of number of population of working age. The history of society's evolution shows that economic needs grow more rapidly than the number of population of working age. Therefore, the main way to increase social goods is the expansion of labour productivity. Even in 1918 a famous economist prof. Albinas Rimka in newspaper "Varpas" wrote: "The only right and real way to improve people's existence is the raise of their labour productivity".

In order to compare labour productivity in EU countries the indexes of Gross Domestic Product (GDP) per capita or per working person are used, which are calculated by purchasing power standards (PPS)[1]. GDP is calculated by summing up all income earned per year (the income approach), or by summing up all expenses experienced per year (the expenditure approach), or by summing up all economic goods produced per year (the product approach). Change in GDP has a significant impact on country's economic life. Remarkable increase or decrease in GDP first of all influences stock market. It is not difficult to understand why: economic decline usually means lower profit for the enterprises (also lower prices of stocks) as well as decline in wages.

Talking about the evolution of Lithuanian economy it is often emphasized that one of the problems that Lithuania encounters is a low level of labour productivity in comparison with other EU countries. Lower than the average of EU countries labour productivity level means a greater demand for unqualified or low qualification labour force and at the same time bigger quantitative dependence upon labour force as a production factor. Increasing labour productivity creates a bigger "economic pie". Everyone who helped "to bake" it receives bigger slice of it. Economic theory states that great labour demand increases labour price (wages) and vice versa – decreased demand reduces it. The demand for labour like for other resources increases with the growth in marginal product of labour. If labour supply remains fixed the average rate of real wages grows slowly. GDP level and dynamics reflect the changes in labour productivity that depend upon many of factors. First of all, it is worth to mention the volume and quality of used physical capital, level of technologies, efficiency and flexibility of work organization and management, business, social, and political environment. The quality of labour force, its education, professional training, wellness, work traditions have especially great importance.

Increasing labour productivity is the key not only to economic growth but also to higher wages. Employees working more productively are more valuable to business enterprises and consumers whom they serve – the latter receive more new and better goods for a lower price. Business owners also win – they receive greater reward for the invested capital. The relationship between the real wages and labour productivity is based on the fact that greater capital stock increases labour demand as well as real wages. The increase in wages stimulates to substitute capital for labour, which increases labour productivity.

Foreign scientists have determined a direct relationship between the real wages and labour productivity (Wakeford, 2004). Two main arguments are presented. First, higher real wages increase alternative costs of the loss of a job that may stimulate greater work efforts in order to avoid redundancy (an efficien-

[1] PPS is a unit of artificial currency eliminating the differences in price level among countries. The same amount of goods and services in different countries may be bought for one PPS. This measurement unit allows comparing various indexes among the countries. The indexes expressed by PPS are calculated by dividing indexes of current prices and national currency by particular purchasing power parity (PPP).

cy-wage type hypothesis). Second, an increase in real wages results in an increase in average costs of labour and forces companies to substitute capital for labour, which will be reflected in an increase in marginal productivity of labour. Gordon (1987) emphasizes that substitution from labour to capital in response to inexorable increases in real wages determined economic growth.

Relationship among inflation, real wages, and labour productivity is widely analysed in the works by foreign scientists (Hondroyiannis and Papapetrou, 1997, Bildirici and Alp, 2008). Kumar et al. (2009) presents the interdependence of real wages, inflation and labour productivity in Australia using the tests of cointegration, Granger causality and structural changes. The performed researches indicate that in case of increase in real wages of the employees of manufacturing industry by 1%, the productivity of the industry increases from 0.5 to 0.8%.

Hall (1986) and Alexander (1993) determined that higher wages stimulate labour productivity providing the arguments for effective wages. Narayan and Smyth (2009) used cointegration technique when investigating relationship between inflation, real wages, and productivity growth in G7 countries during the period of 1960-2001. They found a positive and statistically meaningful relationship between real wages and labour productivity growth. Mora et al. (2005) investigated the convergence in wages and productivity for 11 European countries in 1981-2001 and found reductions in the dispersion of nominal wages and unit labour costs, but did not find similar dispersion reductions in productivity or real wages.

Other empirical researches focused on separate countries. For instance, Strauss and Wohar (2004) investigated long-run relationships between inflation, real wages and labour productivity in 459 branches of manufacturing industry in the USA in 1956-1996 and determined two-way Granger causality between real wages and labour productivity. Verbic and Kuzmin (2009) investigated relationship between the wages and labour productivity in Slovenia in 1998-2007.

**Relationship of wages and labour productivity in Lithuania and old EU-15 countries**

In order to identify the relationship of growth of wages and labour productivity in Lithuania and EU countries first of all we will discuss the alternation of the mentioned indicators, later we will analyse the relationship of changes in real wages and labour productivity and finally we will evaluate the share of GDP that goes to wages and its change in Lithuania and EU-15 countries.

With the development of economies in Lithuania and EU-15 countries, wages and labour productivity have also changed accordingly. Eurostat database presents only general expenditures on wages and salaries in millions of euros, average expenditures per month on hiring one employee (all employer's expenditures when hiring employees), part of general expenditures used for wages. Referring to the data provided in Eurostat database, the authors have calculated average monthly gross wages in different EU countries.

Table 1

**Average monthly wages in EU countries (EUR)**

| Country \ Year | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|---|---|---|---|
| Ireland | n* | n* | n* | n* | n* | n* | n* | n* |
| Austria | 2511.1 | 2546.5 | 2645.2 | 2683.5 | 2736.9 | 2785.2 | 2858.7 | 2861.5 |
| Belgium | 2482.6 | 2579.3 | 2765.2 | 2654.4 | 2713.0 | 2784.2 | 2865.5 | 2971.5 |
| Denmark | 2742.9 | 3429.1 | 3552.2 | 3642.2 | 3779.1 | 3846.6 | 3985.1 | n* |
| United Kingdom | 3105.7 | 3171.1 | 2925.2 | 3078.5 | 3223.7 | 3386.0 | 3460.0 | n |
| Greece | 1347.7 | 1444.4 | 1564.0 | n* | n* | n* | n* | n* |
| Spain | 1376.1 | 1429.9 | 1484.9 | 1528.7 | 1566.0 | 1617.3 | 1671.1 | |
| Italy | 1949.4 | 2003.8 | n* | n* | n* | n* | n* | n* |
| Lithuania | 310.7 | 336.9 | 349.4 | 363.4 | 397.4 | 462.0 | 561.6 | |
| Luxembourg | n* | n* | n* | 3646.1 | 3767.5 | 3880.4 | 4029.0 | 4159.1 |
| Netherlands | 2683.3 | 2810.0 | 2945.8 | 3015.6 | 3056.0 | n* | n* | n* |
| Portugal | 995.6 | 1046.9 | 1100.8 | 1157.4 | 1206.6 | 1253.9 | 1298.8 | 1346.4 |
| France | 2285.9 | 2323.7 | 2363.2 | 2472.0 | 2543.9 | 2593.4 | 2677.2 | 2767.7 |
| Finland | 2375.1 | 2494.5 | 2611.9 | 2668.9 | 2816.4 | 2873.8 | 2951.6 | 3122.7 |
| Sweden | 2584.0 | 2708.3 | 2868.4 | 2889.2 | 2932.8 | 2989.7 | 3095.2 | n* |
| Germany | 2675.4 | 2736.3 | 2811.2 | 2863.6 | 2897.1 | 2939.0 | 2985.2 | n* |

*Source: calculated by the authors of the work referring to the data of comparative weight of expenditures on one employee and the part of wages in general labour expenditure presented by EUROSTAT. n* – cannot calculate data due to the lack of it.*

According to the data presented in Table 1, the average monthly gross wages during the period of 2001-2007 in Lithuania increased by 251 euros, in Denmark by 1242.3 euros, and in Finland by 576.6 euros. We may consider that the growth of wages in Lithuania during the analysed period could be determined by the factors of labour demand and supply. In 2004-2008 with the growth of Lithuanian economy the country's enterprises rapidly expanded production and labour demand was increasing. However, labour supply was reduced by emigration and shortcomings of education system in a broad sense. Due to ineffective preparation of specialists deficit of labour force was felt not because of quantitative reasons (shortage of people) but more because of qualitative ones (deficit of people possessing necessary qualification and skills). However, we must not forget that growth of wages was one of the main reasons stimulating not to emigrate or even increasing remigration possibilities.

Despite a rapid growth of average monthly wages calculated in euros in 2007 in Lithuania wages were lower than in Luxemburg (7.2 times), Denmark (7.1 time), United Kingdom (6.2 times). In Lithuania wages were the least different from Portugal (2.3 times), Spain (3 times), Belgium and Austria (approx. 5 times) comparing with old EU countries.

If we compare labour productivity calculated GDP per person expressed in PPS, the performed calculations show that in 2008 in Lithuania it was lower than in Luxemburg (4.2 times), Denmark (2 times), United Kingdom (1.9 times), Portugal (1.3 times), Spain (1.7 times), Belgium (1.9 times), Austria (2 times) (Lithuanian statistics chronicle, 2009). Table 2 presents indexes (ES-27=100) of real volume of labour productivity calculated as GDP per capita, expressed in PPS.

Table 2

**Labour productivity in Lithuania and EU-15 countries in 2001-2008**

| Year | | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 |
|---|---|---|---|---|---|---|---|---|---|---|
| Indexes of real volume of labour productivity (EU-27=100) | Lithuania | 41 | 44 | 49 | 50 | 53 | 55 | 59 | 62 | 53 |
| | EU-15 countries | 115 | 114 | 114 | 113 | 113 | 112 | 112 | 111 | 111 |

*Source: Eurostat databases.*

Looking at the data presented in Table 2 we can see that labour productivity in Lithuania (when expressed in PPS) in 2008 lagged only two times from the average of EU-15 countries. The purchasing power of euro in Lithuania and EU countries definitely differs but we can explain such a lag in wages neither by labour productivity nor by purchasing power differences.

In order to evaluate changes in wages and labour productivity more precisely it is necessary to calculate the changes in ***real*** wages and real GDP per worker. The calculations rely on the assumption that real GDP per capita is a valid indicator of labour productivity. Practically it is an ordinary and convenient assumption (see Rodrik, 1999 or Flagman, 2006), because GDP per worker is calculated not in all countries. We know that GDP per capita is not a perfect labour productivity indicator, therefore, comparison of labour productivity in different countries according to GDP per capita sometimes may be not quite accurate. However, ***change*** in GDP per capita much more precisely reflects changes in labour productivity over time. The ***change*** in real wages indicates whether the purchasing power of wages varies with regard to time. Although nominal wages in Lithuania during the investigated period kept growing rather rapidly, but real upturn of life quality was not so obvious because negative impact on the growth of real wages[2] was made by accelerating inflation processes. The changes in real wages and real labour productivity in Lithuania in 2001-2009 calculated by GDP per capita, determined by the authors, are presented in Figure 1.

[2] In order to estimate growth in real wages first of all we calculate real wages by dividing nominal wages by the consumer price index and then apply the formula:

$$GR_t = \left( \frac{RW_t}{RW_{t-1}} - 1 \right) \cdot 100,$$

where: $GR_t$ – the growth in real wages in year t; $RW_t$ – the level of real wages in year t; $RW_{t-1}$ – the level of real wages in year t-1.

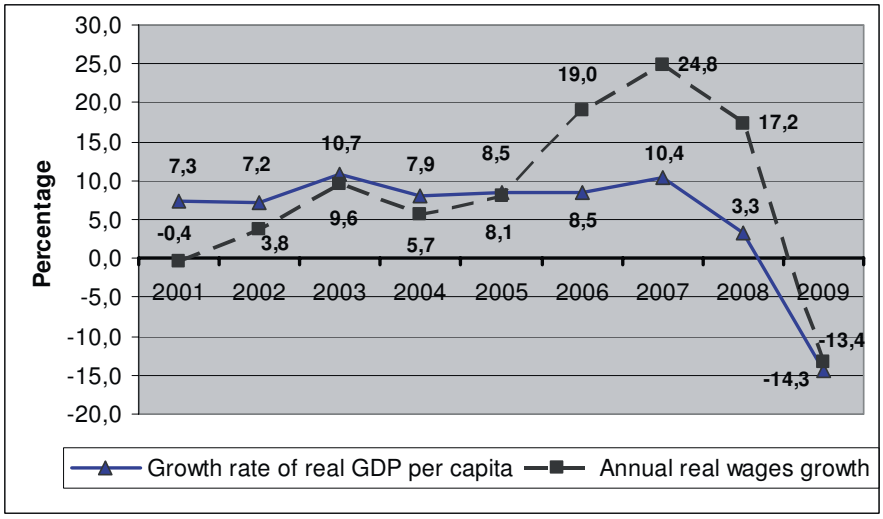


**Fig. 1.** Growth rate of real wages and real GDP per capita in Lithuania in 2001-2009

*Source: composed by the authors with reference to the data presented by the Department of Statistics Lithuania.*

Till 2008 the growth of Lithuanian GDP was mainly influenced by the increase in domestic demand – household consumption and enterprises' investments were growing. At the same time it became obvious that till 2005 the change in GDP per capita was bigger than the change in real wages, but from 2005 the changes in real wages were bigger than the changes in GDP per capita.

In the global wage report ((2008/09); hereinafter – Report) the change in average real wages and real GDP per capita in 2001-2007 in different countries is presented. Referring to the data presented in the Report, the scheme (see Figure 2) has been composed which presents the relationship between the change in average annual real GDP per capita and real average annual wages in 2001-2007 in the old EU-15 countries.

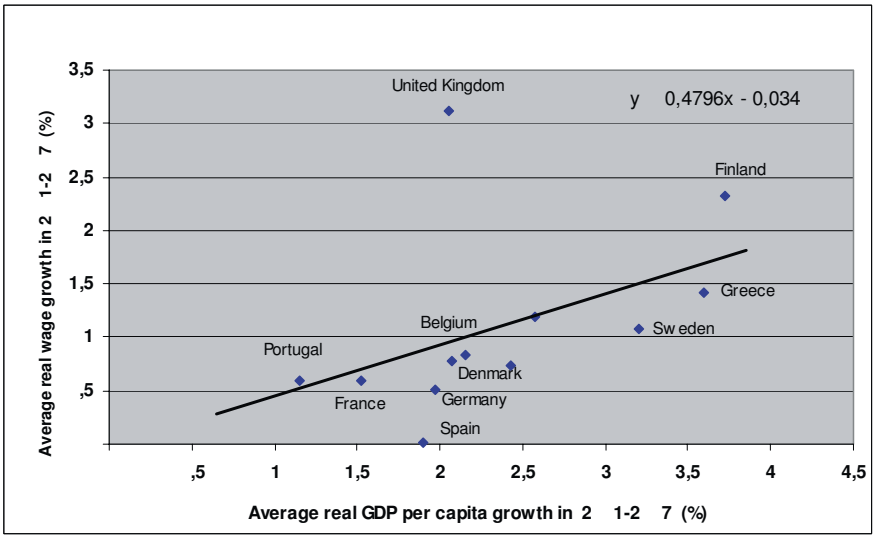


**Fig. 2.** Relationship between growth of real GDP per capita and real wages, 2001-2007

*Source: composed by the authors with reference to the Global Wages Report 2008/2009.*

The slope of regression line[3] presented in this figure may be called the "wages elasticity to GDP" (or in short, "wages elasticity"). It shows percentage change in real wages when real GDP per capita increases by 1%. If GDP per capita and real wages increased at the same pace, the slope would be equal to 1, but the performed analysis shows that wages elastici-

[3] Regression line is shown by an equation: real wages growth $= a + b \cdot GDP$ per capita growth (where GDP per capita is used as a proxy for productivity change).

ty in the old EU-15 countries is about 0.48. This specifies that during the period of 2001-2007 the real wages averagely increased slower than labour productivity calculated by the real change in GDP per capita. With 1% increase in real average GDP per capita, real wages increased, on average, by 0.48%.

Calculations carried out by the authors with reference to the data presented in the Report indicate that "wage elasticity" in Lithuania during that period was equal to 0.82. These results show that during the recent years the growth of real wages lagged from the growth of labour productivity in Lithuania and the old EU countries.

If average real wages increase more rapidly than GDP per capita, the wage share increases and smaller share of the economic gains is directed to profits. The wage share is an indicator of the so-called "functional" distribution of income between wages and profits. It is usually calculated as a share of employees' compensation to total GDP. This share is often considered a part of GDP that is distributed to employees and not allocated to accumulation of profit. When the growth of real wages lags behind the general growth of economy and labour productivity, the employees usually receive a decreasing share of general economic pie (i.e. GDP)[4]. In economy the part of created value added which workers receive is discussed in scientists' debates (see Krueger, 1999 and Luebrek, 2007), the distribution of national incomes among wages, profits and rent is analysed (Atkinson, 2009; Bentolila and Saint Paul, 2003; Gollin, 2002; Serres et al, 2001; Feldstein, 2008).

Naturally, wage share is important as an indicator of "fair share" with the employees. The decreasing wage share usually means that a greater part of economic benefit goes to profit. This might be not only considered unfair, but also may have a negative impact upon economic growth in future. Since marginal propensity to consume is higher for labour income than for capital income, it is usually considered that an increase in wage share has a positive impact upon economy.

Researches carried out in Europe show that when wage share increases by 1%, GDP increases by 0.17% (Stockhamer, 2008). On the other hand, decreasing wage share does not mean decrease in purchasing power. Subject to rapid economic growth, decreasing wage share may simply reflect the fact that wages grow slower than profit. In this case purchasing power increases but not as much as expected.

[4] This happens when the proportion of employed people and population number is stable in the course of years as it usually is. When employment rate increases rapidly, wage share may remain steady even when the growth of average wages lags behind the growth of GDP per person.

Many national, regional and international organizations investigate the changes in wage share in GDP and their reasons (ILO, 2007; IMF, 2007a,b; OECD, 2007). Although different evaluation procedures and analytic schemes are used in the researches, they indicate that the decrease in wage share till 2009 was a dominant tendency.

Alternation of wage share in Lithuania and old EU-15 countries during 2001-2008 is presented in Figure 3. During the analysed period this share decreased on average by 1.4 percentage points in EU countries. Considering all old EU countries, wage share decreased the most in Luxemburg (by 5.1 percentage points), Germany (by 4.1 percentage points), and Sweden (by 3 percentage points) (as we can see below, in 2009 in many countries wage share in GDP increased).

Although in Lithuania wage share increased by 6% during the period of 2001-2008, but this share in 2009 comprised only 45.5% of total produced product and was 4.9% lower than the average in EU-15. Comparing wage share in GDP of Lithuania and other countries in 2009 it is obvious that (see Fig. 4) comparing to all old EU countries only in Greece, Italy and Ireland this share was lower than in Lithuania. The greatest share of produced product in 2009 went to the employees in Denmark (59.1%), Great Britain (55%), Sweden (54.9%), Belgium (52.9%) and in EU (27) countries the share that went to work comprised 49.7%, among them in Estonia – 52.2%, Slovenia – 54.5%, Latvia – 89.9%.

In all countries governments carry out wage policy correcting market shortcomings and striving for socially desirable, morally acceptable results corresponding to the country's perception of social justice. We would consider that Lithuanian government must implement active wage policy: it must stimulate agreements among social partners and ensure that the part of income going to wages would increase, that the total income is impartially distributed among the employees and employers.

In the mentioned Report it is emphasized that till 2008 in the world the general tendency was that the real wages were increasing slower than GDP per person. In many countries the decrease in the share of national income that goes to wages was recorded indicating the lag between the growth of labour productivity and increase in wages. In many countries the inequality of wages increased – the salaries of employees receiving the highest wages increased faster than the salaries of employees receiving the lowest wages. It has been determined that in the countries where collective agreements involve more employees the decline in wages is lower.

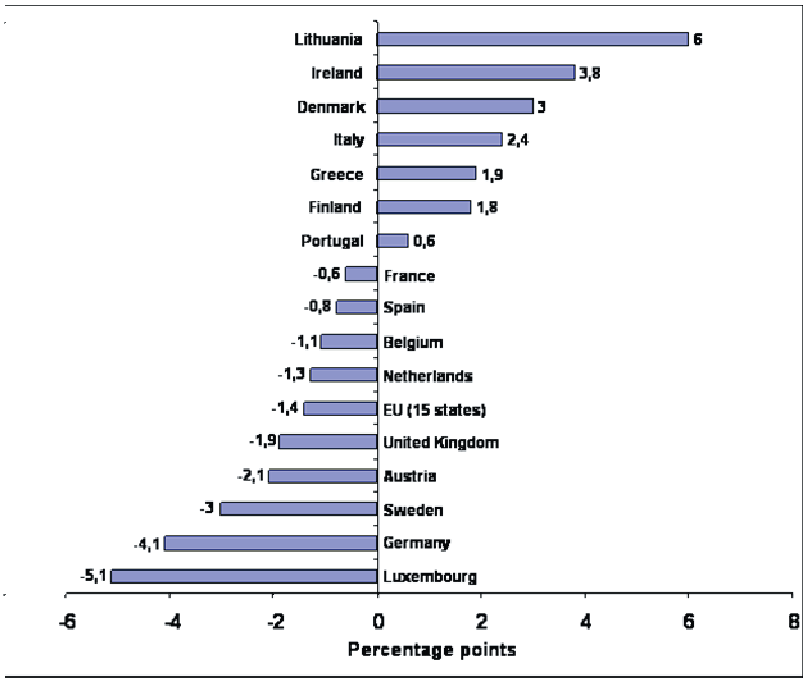


**Fig. 3.** Change in wage share in GDP in 2001-2008 (percentage points)

Source: composed by the authors with reference to Eurostat data.

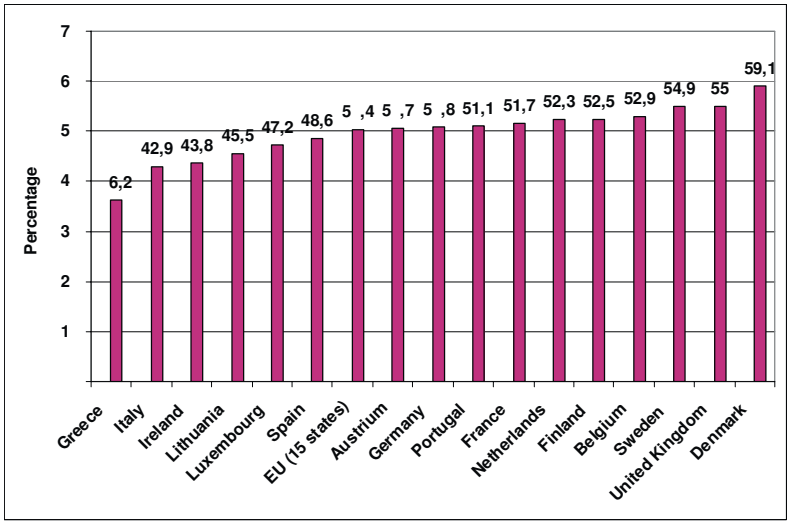


**Fig. 4.** Wage share in GDP in Lithuania and EU-15 countries in 2009

Source: composed by the authors with reference to Eurostat data.

Foreign scientists and international organizations distinguish three main reasons for decrease in wage share in GDP in the world in 2009. First, it is argued that the wage share decreased due to weakening of trade unions. Second, it is considered that technical progress determined the decrease in wage share in comparison with profit. This explanation is supported by IMF (see IMF, 2007a,b). Third, analysis performed by other scientists shows that quite a big role in this process was served by globalization.

Till 2009 economies of Lithuania and other countries were rapidly growing, but in 2009 they experienced recession first of all because of construction of residential buildings and financial crisis in the USA, but there were other reasons as well. Recession highlighted two problems related to wages (see Stiglitz, 2009; International Labour Organisation, 2008). On one hand, there was global imbalance in distribution of pre-crisis profit and wages. Increase in profit before crisis contributed to high liquidity of finan-

cial markets and low interest rates, whereas stagnating wages in comparison with the increase in labour productivity together with growing inequality of wages limited opportunities of majority of households to increase consumption in any other way than borrowing. These conditions provided an incentive for unequal consumption when borrowing too much. On the other hand, the problem related to salaries is a widely discussed shortcoming of unrestricted markets determining the salaries of managing (responsible) heads (Global Wages Report. Update, 2009). Multifunctional wages systems and too high bonuses distorted the structure of incentives in financial sector and contributed to crisis.

Analysis of statistical data presented in the Report indicates that positive wage policy has an important positive impact upon the results of wages: collective agreements reduce general wage inequality and ensure a stronger relationship between economic growth and increase in the average wages. Researches carried out by foreign scientists during the recent years show that collective agreements do not have a great negative impact upon general employment or economy (Tzannatos, 2008; Cahuc, Zylberberg, 2004; Manning, 2003), and reduce inequality of wages (Machin, 2008). It has been determined that a positive relationship between collective agreements and wage elasticity exists. In the countries where collective agreements are not an important wage determining tool, wage elasticity is equal to 0.65 (when GDP per capita increases by 1%, average real wages increase by 0.65%). In the countries where collective agreements are an important tool when determining wages, its elasticity coefficient is equal to 0.87 (Global report 2008/2008).

Naturally, the state cannot interfere in labour market by directly determining wages but it also cannot remain a passive observer and wait till the market itself will solve these problems. There is no doubt that Lithuanian government must pursue active wage policy: the latter must stimulate agreements among social partners and ensure that general incomes would be impartially distributed among employees and employers.

**Conclusions**

In the article it is motivated that it is necessary to strengthen state's role when optimizing the whole wage policy including the distribution of general income between work and capital in order to bring wages closer to their objective level in Lithuania. Wage is an economic category – it is not any amount of money paid to an employee referring to his work load and quality, it ensures the realization of all his functions at a socially necessary level i.e. it ensures normal reproduction of labour force pursuant to employee's qualification level. Otherwise wage would assume irrational expression, i.e. adequate to it economic relations would be expressed only with regard to the form. Thus, wages like any other economic category have objective qualitative and quantitative parameters. Ignorance of the latter in economic practice destructively influences dialectal unity of wages content and form and conditions many negative circumstances not only in distribution stage but also in other stages of social reproduction.

There is a direct relationship between wages and labour productivity. It is based on the fact that firstly, higher real wages increase alternative costs of the loss of a job that may stimulate greater work efforts in order to avoid redundancy (an efficiency-wage type hypothesis). Secondly, with increase in real wages average labour costs also increase which forces companies to change labour to capital that increases labour marginal efficiency as well as labour productivity. Labour change to physical capital when reacting to inexorable increase in wages determined economic growth during recent decades.

Although the average monthly pay during the period of 2001-2007 in Lithuania increased by 251 euros, in Lithuania pay still remains one of the lowest among the EU countries (calculated in euros). In 2007 it was lower than in Luxemburg (7.2 times), Denmark (7.1 time), United Kingdom (6.2 times). In Lithuania the wages were the least different from Portugal (2.3 times), Spain (3 times), Belgium and Austria (5.1 times) comparing with old EU countries. It is worth to mention that labour productivity calculated in GDP per person expressed by PPS in 2008 in Lithuania during the analyzed period was only two times lower than the average of EU-15 countries. The purchasing power of euro in Lithuania and EU countries definitely differs but such a lag in wages can be explained neither by labour productivity nor by purchasing power differences.

Wage elasticity calculated by the authors with regard to GDP in EU-15 countries in 2001-2007 was equal to 0.48% and in Lithuania to 0.82%. In Lithuania when real GDP per person increased by 1%, average annual real wage increased by 0.82%. This indicates that wages growth lagged behind GDP growth in EU countries and in Lithuania. This lag determined that in 2001-2008 in EU countries the economy pie's share for work decreased by 1.4% (this contraction was the highest in Luxemburg (5.1%), Germany (4.1%), and Sweden (3%)).

Foreign scientists distinguish three main reasons for decrease in wage share in GDP in 2009: first, weakening of trade unions, second, technical progress, third, globalization also played a part in this story. Global imbalance in distribution of pre-crisis

profit and wages had impact upon global crisis. In Lithuania during the period of 2001-2008 wages share in GDP increased by 6% but it comprised only 44.5% of total produced product and was even 4.9 percentage points less than the average of EU-15. In the world the size of wages is determined not only by the market, but also by institutional leverages. It is recommended for the government to implement active wage policy: it must stimulate agreements among social partners and ensure that the total income is impartially distributed among the employees and employers.

**References**


1. Alexander, C. O. (1993). The changing relationship between productivity, wages and unemployment in the UK. *Oxford Bulletin of Economics and Statistics,* 55, 87-102.
2. Atkinson, A. B. (2009). Factor shares: the principal problem of political economy? *Oxford Review of Economic Policy*, 2 (1), 3-16.
3. Bentolila, S., Saint Paul, G. (2003). Explaining Movements in the Labor Share. *Contributions to Macroeconomics*, 3, article 9.
4. Bildirici, M., Alp, E. A. (2008). The relationship between wages and productivity: Tar unit root and Tar cointegration approach. *International Journal of Applied Econometrics and Quantitative Studies*, 5, 93-110.
5. Broughton, A. (2009). *Darbo užmokesčio formavimas ES*. Available online at http://www.eurofound.europa.eu/eiro/studies/tn0808019s/index.htm&prev=/translate_s%3Fhl%3Dlt%26q%3DLatvijos%2Bdarbo%2Bapmokejimo%2Bsistema%26sl%3Dlt%26tl%3Den.
6. Cahuc, P., Zylberberg, A. (2004). Labor economics. Cambridge, MA, MIT Press.
7. Feldstein, M. S. (2008). Did wages reflect the growth in productivity? *NBER Working Paper,* 13953.
8. Flanagan, R. (2006). Globalization and labor conditions: working conditions and worker rights in a global economy. New York, Oxford University Press.
9. GDP per capita in PPS. Available online at http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tsieb010&plugin=0.
10. *Global wages report 2008/09*. Minimum wages and collective bargaining. Towards policy coherence. Available online at http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_100786.pdf.
11. *Global Wages Report. Update 2009.* International Labour Office: Geneva.
12. Gollin, D. (2002). Getting income shares right. *Journal of Political Economy*, 110, 458-74.
13. Gordon, R. J. (1987). Productivity, wages, and prices inside and outside of manufacturing in the US, Japan and Europe. *European Economic Review*, 31, 685-739.
14. Hall, S. G. (1986). An application of the Granger and Engle two-step estimation procedure to United Kingdom aggregate wages data. *Oxford Bulletin of Economics and Statistics*, 48, 229-239.
15. Hondroyiannis, G., Papapetrou, E. (1997). Seasonality cointegration and the inflation, productivity and wages growth relationship in Greece. *Social Science Journal*, 34, 235-47.
16. International Labour Office (ILO). (2007). ESP paper GB/298.11 (rev.), Mar. (Geneva).
17. International Labour Organisation. (2008). *A global policy package to address the global crisis.* Policy Brief International Institute for Labour Studies, Geneva.
18. International Monetary Fund (IMF). (2007a). *The globalization of labor, in World Economic Outlook: spillovers and cycles in the global economy.* (April 2008). Washington, DC.
19. International Monetary Fund (IMF). (2007b). *Globalization and inequality, in World Economic Outlook: globalization and inequality*. (October 2008). Washington, DC.
20. Krueger, A. (1999). Measuring labor's share. *American Economic Review*, 89, 45-51.
21. Kumar, S., Webber, D. J., Perry, G. (2009). Real wages, inflation and labour productivity in Australia. *MPRA Paper* No. 19293, posted 14. December. Auckland University of Technology. Available online at http://mpra.ub.uni-muenchen.de/19293/.
22. *Lietuvos statistikos metraštis* (2009). Statistikos departamentas. Vilnius.
23. Luebker, M. (2007). Labour shares, ILO Technical Brief No. 1 (Geneva, ILO).
24. Machin, S. (2008). An appraisal of economic research on wages inequality. *Labour*, 22, 7-26.
25. Manning, C. (2003). Monopsony in motion: Imperfect competition in labor markets. Princeton, NJ: Princeton University Press.
26. Martinkus, B., Sakalas, A., Savanevičienė, A. (2006). *Darbo išteklių ekonomika ir valdymas*. Kaunas: Technologija.
27. Monthly labour costs. Available online at http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tps00174&plugin=1.
28. Mora, T., Lopez-Tamayo, J., Surinach, J. (2005). Are wages and productivity converging simultaneously in euro-area countries? *Applied Economics*, 37, 2001-2008.
29. Narayan, P. K., Smyth, R. (2009). The effect of inflation and real wages on productivity: new evidence from a panel of G7 countries. *Applied Economics*, 41, 1285-1291.
30. Organisation for Economic Co-operation and Development (OECD). (2007). Employment Outlook (Paris).
31. Rodrik, D. (1999). Democracies pay higher wages. *Quarterly Journal of Economics*, 114 (3), 707-738.
32. Serres, A. de, Scarpetta, S., Maisonneuve, C. D. (2001). Falling wages shares in Europe and the United States: how important is aggregation bias. *Empirica*, 28, 375-400.
33. Smith, A. (2004). *Tautų turtas.* Vilnius: Margi raštai.

34. Stiglitz, J. (2009). The global crisis, social protection and jobs. *International Labour Review*, 148 (1-2). ILO.
35. Stockhammer, E. (2008). Wages flexibility or wages coordination? Economic policy implications of the wages-led demand regime in the Euro area. *Working Paper No. 160*. Political Economic Research Institute: Amherst, MA, University of Massachusetts.
36. Strauss, J., Wohar, M. (2004). The linkage between prices, wages and labour productivity: A panel study of manufacturing industries. *Southern Economic Journal*, 70, 920-41.
37. Šileika, A., Blažienė, I., Gerikienė, V., Grigoras, V. (2004). *Darbų ir pareigybių vertinimo metodika.* Vilnius: Darbo ir socialinių tyrimų institutas.
38. Total wages and salaries (% share of total labour costs). Available online at http://epp.eurostat.ec.europa.eu/tgm/table.do?tab=table&init=1&language=en&pcode=tps00113&plugin=1.
39. Tzannatos, Z. (2008). The impact of trade unions: what do economists say? In: J. Berg, D. Kucera (Eds.), *In defence of labour market institutions: cultivating justice in the developing world.* (pp. 150-191). Geneva, ILO and New York: Palgrave Macmillan,
40. Verbic, M., Kuzmin, F. (2009). Coefficient of structural concordance and an example of its application: labour productivity and wages in Slovenia. *Panoeconomicus*, 56 (2), 227-240.
41. Wakeford, J. (2004). The productivity-wages relationship in South Africa: An empirical investigation. *Development South Africa*, 21, 109-32.
42. Xavier Sala-i-Martin, Blanke, J., Drzeniek Hanouz, M., Geiger, T., Mia, I. (2010). The Global Competitiveness Index 2010–2011: Looking Beyond the Global Economic Crisis. In: K. Schwab (Ed.), *The Global Competitiveness Report 2010–2011*. (pp. 14-80). World Economic Forum: Geneva, Switzerland.

Šileika A., Tamašauskienė Z., Bartelienė N.

**Darbo užmokesčio ir darbo našumo lyginamoji analizė Lietuvoje ir kitose Europos Sąjungos (15) šalyse**

Santrauka

Darbo užmokestis yra pagrindinis dirbančių žmonių pajamų šaltinis, tiesiogiai veikiantis jų gyvenimo lygį, pagrindinis visuminės paklausos komponentas ir šalių ekonominės veiklos veiksnys. Darbo našumas ryškiausiai parodo darbo jėgos panaudojimo rezultatyvumą. Augant darbo našumui, didėja per tą patį laiką pagamintos produkcijos apimtis, visuomenė turtingėja. Kylant darbo našumui, verslo subjektai, nedidindami kainų, gali didinti darbo užmokestį, dividendus akcininkams bei plėsti gamybą. Darbo našumas ir darbo užmokesčio lygis turi neabejotiną ryšį su konkurencingumu tiek mikro-, tiek makrolygyje. Šiandieninė konkurencinė aplinka lemia, kad dirbantysis būtų ypač suinteresuotas darbo našumo kėlimu, o tai galima pasiekti tik jo atitinkamu materialiniu skatinimu, vadinasi, moksliškai grįsto darbo užmokesčio lygio nustatymu. Visa tai reikalauja ir atitinkamos šių procesų Lietuvoje lyginamosios analizės su kitomis Europos Sąjungos (ES) šalimis. Lietuvos apsisprendimas integruotis į ekonomines ir politines Europos struktūras taip pat suponuoja neišvengiamą poreikį integracijos kontekste derinti darbo užmokestį, kartu ir darbo našumą. Esant dabartinei situacijai pastebimas žymus skirtumas tarp darbo užmokesčio ir darbo našumo Lietuvoje ir kitose ES šalyse.

**Straipsnio tikslas** – išanalizuoti ir palyginti darbo užmokesčio ir darbo našumo priklausomybę Lietuvoje ir kitose ES (15) šalyse, nustatyti jų kitimo tendencijas. Straipsnyje motyvuojama, kad būtina stiprinti valstybės vaidmenį optimizuojant visą darbo užmokesčio politiką, taip pat ir bendrųjų pajamų paskirstymą tarp darbo ir kapitalo, turint tikslą darbo užmokestį Lietuvoje priartinti prie jo objektyvaus lygio.

Darbo užmokestis kaip ekonominė kategorija – tai ne bet koks darbuotojui pagal jo darbo kiekį ir kokybę mokamas pinigų kiekis, o toks, kuris užtikrina visų jo funkcijų realizavimą visuomeniškai būtinu lygiu, t. y. užtikrina normalų darbo jėgos reprodukavimą atitinkamai su darbuotojų kvalifikaciniu laipsniu. Priešingu atveju darbo užmokestis įgautų iracionalią išraišką, t. y. jam adekvačius ekonominius santykius išreikštų tik pagal formą. Taigi darbo užmokestis, kaip ir kitos ekonominės kategorijos, turi objektyvius tiek kokybinius, tiek kiekybinius parametrus. Pastarųjų ignoravimas ūkinėje praktikoje griaunančiai veikia dialektinę darbo užmokesčio turinio ir formos vienybę ir lemia nemažai negatyvių pasekmių ne tik paskirstymo, bet ir kitose visuomeninės reprodukcijos stadijose.

Ekonomistai nuolat stebi priklausomybę tarp darbo užmokesčio ir darbo našumo, ją nagrinėja daugelyje straipsnių, taikydami skirtingus požiūrius ir tyrimo aspektus. Tyrėjai kuria modelius, siekdami nustatyti priklausomybę tarp darbo užmokesčio ir darbo našumo. Mokslinėje literatūroje nustatytas tiesioginis ryšys tarp realaus darbo užmokesčio ir darbo našumo. Pagal efektyvaus darbo užmokesčio teoriją didesnis realus darbo užmokestis didina darbo netekimo alternatyviąsias sąnaudas, kurios gali skatinti didesnes darbo pastangas siekiant išvengti atleidimo iš darbo. Tačiau, didėjant realiam darbo užmokesčiui didėja vidutinės darbo sąnaudos, verčiančios firmas keisti darbą kapitalu, o tai didina ribinį darbo produktyvumą.

Darbo užmokestis yra pagrindinis dirbančių žmonių pragyvenimo šaltinis. Nors per pastaruosius metus vidutinis mėnesinis darbo užmokestis Lietuvoje augo sparčiau nei kitose ES (15) šalyse (2004–2008 metais Lietuvoje jis padidėjo 77,5 proc., o ES (15) šalyse – 10,6 proc.), tačiau darbo užmokestis Lietuvoje vis dar išlieka vienas mažiausių ES. 2008 metais jis buvo 4,4 kartus mažesnis nei senosiose ES (15) šalyse, nors darbo našumas, skaičiuoja-

mas pagal bendrąjį vidaus produktą (BVP), tenkantį vienam gyventojui, apskaičiuotu pagal perkamosios galios standartus, buvo tik du kartus mažesnis.

Norint tiksliau įvertinti darbo užmokesčio bei darbo našumo kitimą būtina apskaičiuoti realaus darbo užmokesčio ir realaus BVP 1 gyventojui *pokyčius*. Realaus darbo užmokesčio *pokytis* rodo, ar darbo užmokesčio perkamoji galia kinta laiko požiūriu. Nors nominalus darbo užmokestis nagrinėjamu laikotarpiu Lietuvoje augo gana sparčiai, tačiau realus gyvenimo kokybės gerėjimas buvo ne toks akivaizdus, nes realaus darbo užmokesčio augimui neigiamos įtakos turėjo spartėjantys infliaciniai procesai. Vertinant apskaičiuotus realaus darbo užmokesčio *pokyčius* Lietuvoje 2001–2009 metais išryškėjo, kad iki 2005 metų realaus BVP, tenkančio 1 gyventojui, pokytis buvo didesnis nei realaus darbo užmokesčio pokytis. Tačiau nuo 2005 metų realaus darbo užmokesčio pokyčiai buvo didesni nei BVP, tenkančio 1 gyventojui, pokyčiai. Žinoma, skiriasi eurų perkamoji galia Lietuvoje ir ES šalyse, tačiau tokio darbo užmokesčio atsilikimo negalima paaiškinti nei darbo našumo, nei perkamosios galios skirtumais.

Atlikta analizė rodo, kad senosiose ES (15) šalyse 2001–2007 metais realus darbo užmokestis didėjo lėčiau nei darbo našumas, skaičiuojamas realiu BVP pokyčiu 1 gyventojui, darbo užmokesčio elastingumas vidutiniškai buvo lygus 0,48. Straipsnio autorių atlikti skaičiavimai rodo, kad per tą patį laikotarpį Lietuvoje darbo užmokesčio elastingumas buvo 0,82. Remiantis rezultatai galima teigti, kad pastaraisiais metais realaus darbo užmokesčio augimas atsiliko nuo darbo našumo augimo Lietuvoje ir senosiose ES šalyse. Realaus darbo užmokesčio augimui atsiliekant nuo bendro ekonomikos ir darbo našumo augimo, darbuotojams tenka mažėjanti bendro sukurto ekonomikos pyrago, t. y. BVP dalis. Darbo užmokesčio dalis yra svarbi kaip „teisingos dalies“ darbuotojams rodiklis. Mažėjanti darbo užmokesčio dalis dažniausiai reiškia, kad didesnė ekonominės naudos dalis tenka pelnui. Tai gali būti laikoma ne tik neteisinga, bet ir gali turėti neigiamą poveikį ekonomikos augimui ateityje. Analizuojamu laikotarpiu vidutiniškai ES šalyse ši dalis sumažėjo 1,4 procentinio punkto. Darbo užmokesčio dalis BVP per 2001–2008 metus iš senųjų ES šalių labiausiai sumažėjo Liuksemburge – 5,1, Vokietijoje – 4,1, Švedijoje – 3 procentiniais punktais (2009 metais daugelyje šalių darbo užmokesčio dalis BVP padidėjo). Nors Lietuvoje darbo užmokesčio dalis BVP 2001–2008 metais padidėjo, tačiau 2009 metais ji sudarė tik 45,5 proc. viso sukurto produkto ir buvo 4,9 procentiniais punktais mažesnė nei ES (15) vidurkis.

Užsienio mokslininkai darbo užmokesčio dalies mažėjimą BVP aiškina profesinių sąjungų silpnėjimu, technine pažanga ir globalizacija. 2009 metais pasaulio recesijai turėjo įtakos ir pelno bei darbo užmokesčio pasiskirstymo disbalansas. Pelno didėjimas prieš krizę prisidėjo prie aukšto finansų rinkų likvidumo ir žemų palūkanų normų, kai stagnuojantis realus darbo užmokestis, lyginant su darbo našumo padidėjimu – ir kartu su augančia darbo užmokesčio nelygybe – ribojo daugelio namų ūkių galimybes didinti vartojimą kitaip nei skolinantis. Šios sąlygos sudarė paskatas netolygiam vartojimui perdaug skolinantis.

Suprantama, kad valstybė negali kištis į darbo rinką tiesiogiai nustatinėdama darbo užmokestį, tačiau ji negali būti ir pasyvi stebėtoja ir laukti, kol pati rinka tas problemas išspręs. Pasaulyje darbo užmokesčio dydį lemia ne tik rinka, bet ir instituciniai svertai. Neabejotina, kad ir Lietuvos vyriausybei būtina vykdyti aktyvią darbo užmokesčio politiką: pastaroji, šalia viso kitko, turi skatinti susitarimus tarp socialinių partnerių ir užtikrinti, kad bendrosios pajamos būtų nešališkai skirstomos tarp darbuotojų ir darbdavių.

**Pagrindiniai žodžiai:** darbo užmokestis, darbo našumas, darbo užmokesčio dalis BVP, darbo užmokesčio elastingumas.

The article has been reviewed.
Received in September, 2010; accepted in October, 2010.