

RELATION TO THE LEVEL OF WORK EFFICIENCY FROM MINIMUM WAGE IN VISEGRAD GROUP COUNTRIES

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ABSTRACT

The social idea of determining the minimum wage level seems to be the right of employees to an appropriate level of remuneration, which would be able to provide them and their families with a decent standard of living. Determination of the minimum wage level should be based on the economic conditions of a given country, taking into consideration the general level of wages and living costs, but also the requirements of the economic development of the state in a given period should be taken into account. For this reason it is so significant, that the possible increase in this size was accompanied by an increase in the minimum wage. The starting point for reflections in this work is the statement, that high work efficiency directly affects the development of enterprises, and thus contributes to the growth of prosperity in the economy. The article attempts to analyze the dependence of work productivity growth in relation to changes in the minimum wage level. The countries examined are Poland, the Czech Republic, Slovakia and Hungary, the countries that are part of the Visegrad Group. The research period is 2005–2016. In order to formulate final conclusions, a linear regression analysis was used to determine how high the relationship between the two values is. It was also identified how this relationship is shaped at the level of individual countries.

Key words: work efficiency, minimum wage, Visegrad Group, linear regression analysis.

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1. Introduction

Effective use of production resources is nowadays one of the basic factors determining the competitive capabilities on the international and global scale. Particularly important in this case is effective use of labor resources, that is, obtaining high work efficiency, which is widely recognized as one of the most important development parameters of economies, since it leads to a reduction in costs, increasing the supply of cheaper goods and services, dynamizes the market and leads directly to an increase in the purchasing power of societies, their wealth and competitive ability. It is one of the basic factors determining the well-being of society (Gołaś, Kozera, 2008).

Labor productivity is widely recognized as one of the most important parameters, which determines the development of economies. It leads to a reduction in costs, an increase in the supply of cheaper goods and services (Gołaś, 2011).

Labor productivity is generally considered an indicator, which in a synthetic way illustrates the efficiency of using labor resources. In empirical research, the indicator construction is most often used. It is based on the relation of sold production to the number of employees (Ikeda, Souma, 2008). Due to the fact, that just after marketization of the economy in many enterprises there was the problem of overstaffing. In the initial phase of transformation, the above-mentioned indicator assumed relatively low values. In subsequent years as a result of restructuring, based on rationalization of employment, a process of systematic increase in work efficiency was observed (Adamczyk, 2007).

The purpose of the following study is to analyze the dependence of labor productivity growth in relation to changes in the minimum wage level. Such analysis may be important especially for those responsible for shaping social policy. It is very significant to take all actions aimed at improving the economic situation of individual households, thus they did not pose a threat to the economic competitiveness of a given country. In order to compare this phenomenon in the countries of the Visegrad Group, in the article the research methods such as comparative analysis, regression method were used, and the source of empirical materials was data published by OECD and EUROSTAT.

2. The second section

2.1. The importance of work efficiency on the background of concepts such as productivity, efficiency and effectiveness of work

Analyzing the concept of work efficiency in an enterprise, first of all it is worth to examine the definition of work efficiency. It could be defined as the ratio of work effects to widely understood labor inputs. In economic literature,

in principle, there is no definition of effectiveness as an independent concept. Economists consider efficiency in relation to resource allocation, distribution of goods and services, and the functioning of business entities. Efficiency of management is a concept referring to the assessment of the rationality of actions in the field of solving the problem of allocation of limited resources between alternative applications (Wasilweski, Wasilewska, 2007).

The reference of the size of the effects to the human work unit is referred as work efficiency, while the measure of human work is usually the amount of time spent devoted to achieving effects, but it could also be the number of employees, although due to the different dimensions of time in which employees can be employed, it is not a precise meter (Skowron-Mielnik, 2009). Labor productivity is, therefore, a concept referring to human resources in the case of other company resources not really used. In relation to capital, energy, fixed assets, the determination of productivity is used, with the so-called general productivity of the enterprise occurs, identified with work efficiency, labor productivity (Sułkowski, 2013). However, it should be noted that there is a difference in the input meter, namely in labor productivity, we refer the results to work time, possibly the number of employees, and in productivity they can also be labor costs, which is not used in work efficiency (Skowron-Mielnik, 2009).

Productivity can be applied to systems of various degrees, for example: national economy, branch, sector, economic region, enterprise, departments, branches, and even to individual workplaces. Systems, and especially production systems, can be separated from the environment and defined in various ways (Kosieradzka, 2012).

The aim of productivity in the enterprise is to dynamize the efficiency of management, achieve the necessary competitive advantage on domestic and international markets, and above all to contribute to taking into account the needs of the employee. The main subject of productivity is man, his creative potential for the continuous innovation of products or services, production processes, organization and work culture (Donarski, 1999).

Analyzing the above definitions, it is also worth mentioning the time which is the effectiveness of work. In contrast to earlier dates, effectiveness is identified with purposefulness. Efficiency can therefore be defined as the relation between the obtained result of the completed action and the goal set for this activity. At the same time the goal is understood as the state of reality, to which the entity wants to lead through action. The difference between purposefulness and effectiveness concerns the moment of considering the result of the action. In the case of effectiveness, the assessment is made after performing the activity, if the concept of purposefulness is used, it concerns the planned activities (Skowron-Mielnik, 2009).

2.2. Measures and factors determining the increase in work efficiency

Productivity is a category that reflects the efficiency of operations in an enterprise, therefore it has a significant impact on its competitiveness. Such an analysis of the increase or decrease in the level of productivity can be carried out at various levels, starting from individual departments in the enterprise, ending with the performance study at the level of the entire economy. The purpose of this article is to determine the relationship between the increase in the minimum wage and the increase in labor productivity in the Visegrad Group countries, therefore, the focus was only on the analysis of labor productivity characterizing the entire economy of individual countries.

Labor productivity is one of the two main, partial measures of productivity, used in the process of assessing economic performance, relativizing the resulting output of production to a single factor of production. Labor productivity is used to illustrate the efficiency of the economic system, which transforms work into an economic result. It is expressed as the ratio of the measure of the production volume to the workload (Wąsowicz, 2003).

In order to measure work efficiency for the entire economy, one of the measures that can be used in this case is the Gross Domestic Product ratio to the workload. The workload should be understood as the total number of hours worked by all persons involved in production. The second indicator is the nominal value of work per person employed. This indicator was defined by Eurostat and aims to provide a general presentation of the productivity of national economies expressed in relation to the average of the European Union (UE28). If the country indicator is higher than 100, the country's GDP per person employed is higher than the EU average and vice versa. The increase in gross domestic product (GDP) per capita is another measure of labor productivity. The value of this indicator is characterized by two variables: GDP growth per hour worked and changes in the use of labor force (measured as changes in hours worked per inhabitant). Therefore, a possible increase in labor productivity may mean both increased capital use and overall productivity growth and innovation, and even a decline in employment of low-productivity workers.

Currently, in the case of the majority of Polish enterprises, there are two main reasons for the increase in individual work efficiency. The first one, of a short-term change nature, consists in decreasing the number of employees, which in a direct way assuming appropriate trends in terms of sales revenues causes an increase in work efficiency per one employee. This phenomenon significantly impedes the formulation of conclusions regarding the nature of changes in work productivity over time. The second cause is a much harder to determine is a set of factors resulting from changes in production processes of a technological nature and business management processes (Batóg et al., 2002).

Table 1. Measures of work efficiency

Efficiency measure	Description
Gross domestic product per hour worked	It measures how efficiently labor input is combined with other factors of production and used in the production process. Labor input is defined as total hours worked of all persons engaged in production. Labor productivity only partially reflects the productivity of labor in terms of the personal capacities of workers or the intensity of their effort. The ratio between the output measure and the labor input depends to a large degree on the presence and/or use of other inputs
Nominal labour productivity per person employed	GDP per person employed is intended to give an overall impression of the productivity of national economies expressed in relation to the European Union (EU28) average. If the index of a country is higher than 100, this country's level of GDP per person employed is higher than the EU average and vice versa. Basic figures are expressed in PPS, i.e. a common currency that eliminates the differences in price levels between countries allowing meaningful volume comparisons of GDP between countries.
Growth in gross domestic product per capita	Growth in gross domestic product (GDP) per capita can be broken down into growth in labor productivity, measured as growth in GDP per hour worked, and changes in the extent of labor utilisation, measured as changes in hours worked per capita. High labor productivity growth can reflect greater use of capital, and/or a decrease in the employment of low-productivity workers, or general efficiency gains and innovation.

Source: Own study based on definitions used by OECD and EUROSTAT.

Many natural, technical, organizational, economic and other factors influence the level of work efficiency. In the case of natural factors, they are very important in the mining and agri-food industry, where climatic, soil and other conditions are of great importance here. The influence of technical progress on the increase of work efficiency is also significant, which, thanks to the use of new technologies, significantly reduces the time needed to perform the existing tasks. The organization of work and organizational progress, to which we can include the proper internal division of labor, the proper level of production preparation and efficient inter-departmental cooperation also testify to the essence of continuous improvement of work efficiency in the enterprise. Economic factors also contribute to the increase in work efficiency, which include a fair pay system, an appropriate attitude to work, rational and fair promotion of employees, as well as providing them with safe and hygienic working conditions (Dębski, 2009).

The basic factors affecting individual work efficiency include, among others: gender, age, seniority, level of education, qualifications held, length of the production series. In the literature you can meet the description of the impact on performance of other phenomena, such as equipping workers with machines and

devices, staff turnover and organization of the workplace, the existence of an additional source of income, time to travel, type of pay system (Batóg et al., 2002).

Employees are the most important part of any organization, and the success of the organization depends on their work and capabilities that should be supported by appropriate motivation. The skills and qualifications alone can not be enough to ensure the company's success. The motivation is an indispensable factor leading to the effective use of skills possessed by employees (Mazur, 2013). There are two approaches in the subject literature regarding the motivational role of remuneration. According to one view, motivating employees through remuneration is the most effective method. Representatives of the second view argue that money does not motivate people to work (Leśniewski, Berny, 2012).

Regardless of which theory has the support of more supporters, it can be said that the level of pay always affects the involvement of employees to a greater or lesser extent and translates into the effects of their work. On the other hand, such differences in the level of wages may have various social and economic consequences, considered in the context of social justice.

2.3. Comparative analysis of the dependence of labor productivity growth and minimum wage in the Visegrad Group countries

In the market economy, the income of social groups should be determined mainly by the productivity of work as an added value, while the institutional (policy) factor can only have a meaningful meaning (Sobczyński, 2010). Therefore, the question arises to what extent the minimum wage set and annually increased by currently governing politicians correlates with the increase or decrease in the level of labor productivity in individual countries. It is worth mentioning that for the employer it is the remuneration that is one of the most important components of labor costs, therefore he is interested in achieving the highest possible productivity, that is, maximizing the effect in relation to the costs incurred. Therefore, the rate of change in labor productivity changes should be the basis for determining the level of remuneration. Their increase at a rate exceeding the changes in labor productivity contributes to the increase of unit costs. However, on the other hand, the current level of remuneration must take into account changes in the prices of consumer goods and services, so that wages at least maintain their purchasing power (Adamczyk, 2007).

The analysis of the dependence of labor productivity growth and the level of the minimum wage should start by examining the dynamics of labor productivity in the countries of the Visegrad Group. The graph below shows the dynamics of the productivity level over the eleven-year period (2005-2016) in relation to the average European Union countries, and the measure of efficiency in this case is the Gross Domestic Product per employee. Slovakia is the country characterized by the highest rate of labor productivity growth. From 2007, Slovakia was also a country where the labor productivity indicator was at the

highest level. The second country in terms of the level of labor productivity compared to the EU countries is the Czech Republic, which in 2016 achieved a level of efficiency of 81% of the EU average, which is slightly lower than in Slovakia. In the case of Poland, it is worth saying that in 2005 it was the country of the lowest labor productivity in the Visegrad Group, however, the dynamics of the growth rate of this value was the highest. Hungary is the only country characterized by a decline in labor productivity.

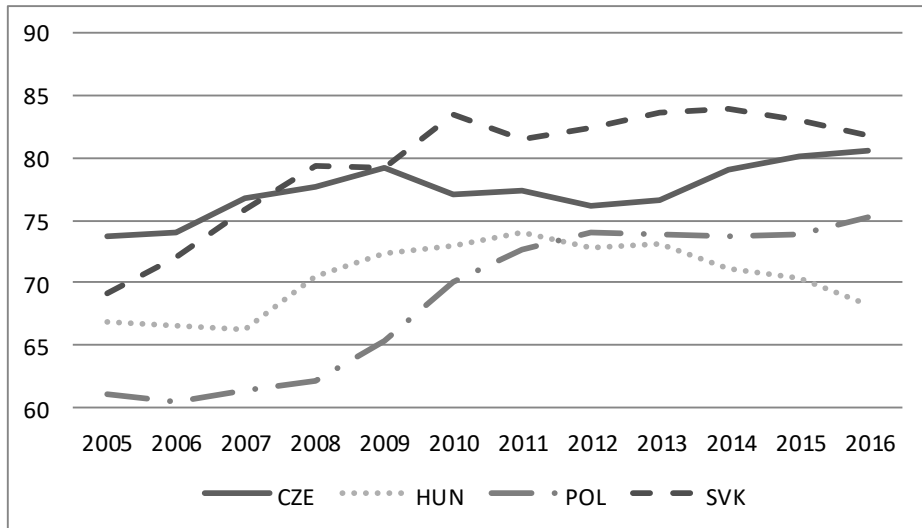


Figure 1. Labor productivity expressed in GDP per one employed in relation to the average of the European Union (UE28 = 100 for each year)

Source: Own elaboration based on Eurostat data.

To determine the relationship between the increase in labor productivity and the amount of the minimum wage in each of the four countries of the Visegrad Group, in the article a linear regression analysis that allowed to determine the regression line was used. In all four cases, the relationship between the explained variable and the explanatory variable is positive (positive correlation), which means that the increase in the minimum wage level is always accompanied by an increase in labor productivity. In none of the analyzed cases there is a situation in which the value of the minimum wage grows faster than the work efficiency. Although it is obvious that the minimum wage is designed to achieve various goals of social policy and not be directly dependent on the effectiveness of work, however, the situation in which the minimum wage grows much faster than the labor productivity of employees in a given country could be extremely difficult for entrepreneurs and contribute to the emergence of a gray area in the economy.

In the analyzed case, countries can be divided into two groups. The first one is characterized by the fact that labor productivity grows much slower than the minimum wage level. This group includes Hungary and Poland. As shown in Chart 2 and Table 2 below, the increase in the minimum wage by 1 percent for Hungary corresponds to an increase in labor productivity by 0.05 percent, and in the case of Poland, this increase is 0.02 percent. In all cases described, labor productivity is measured by an increase in GDP per hour of work.

Slovakia and the Czech Republic are the second group of countries in which labor productivity grows much faster than in the case described above. It is true that here, too, there is a faster increase in the minimum wage than the productivity level, but this disproportion is much smaller. In the Czech Republic, an increase in the minimum wage by one percent is accompanied by an increase in the level of labor productivity by 0.23 percent. In the case of Slovakia, an increase in the minimum wage by 1 percent means an increase in labor productivity by 0.28 percent. This is the highest increase in the countries included in the Visegrad Group.

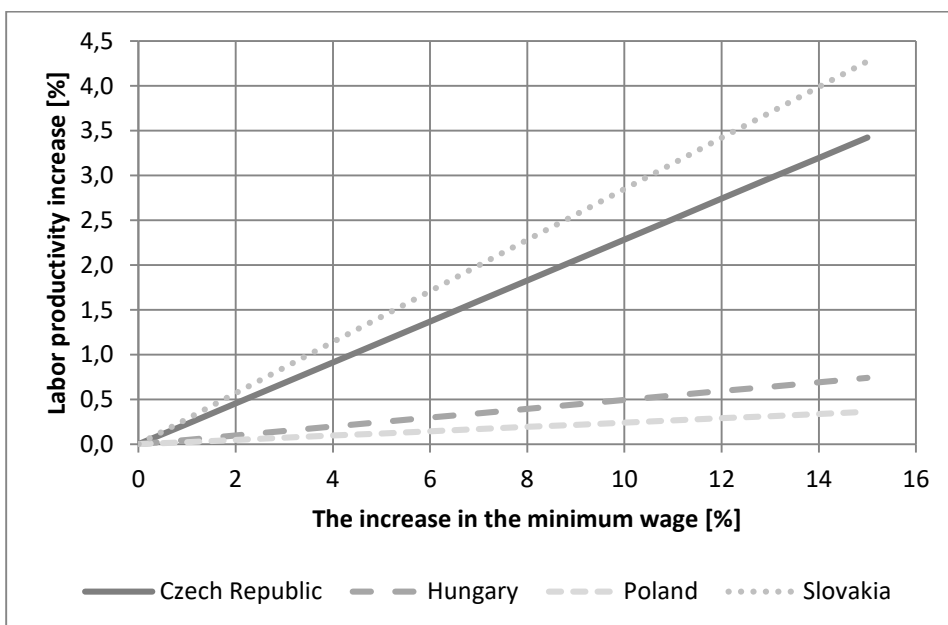


Figure 2. The relationship between the increase in labor productivity and the increase in the minimum wage in 2000–2016

Source: Own elaboration based on OECD and Eurostat data.

Table 2. The relation between the level of labor productivity growth and the level of minimum wage growth in the Visegrad countries in the years 2000–2016

The increase in the minimum wage [%]	Efficiency increase [%]			
	Czech Republic	Hungary	Poland	Slovakia
1	0,23	0,05	0,02	0,28
2	0,46	0,10	0,05	0,57
3	0,69	0,15	0,07	0,85
4	0,91	0,20	0,10	1,14
5	1,14	0,25	0,12	1,42
6	1,37	0,30	0,14	1,71
7	1,60	0,35	0,17	1,99
8	1,83	0,40	0,19	2,28
9	2,06	0,44	0,22	2,56
10	2,28	0,49	0,24	2,85
11	2,51	0,54	0,27	3,13
12	2,74	0,59	0,29	3,42
13	2,97	0,64	0,31	3,70
14	3,20	0,69	0,34	3,99
15	3,43	0,74	0,36	4,27

Source: Own elaboration based on OECD and Eurostat data.

3. Conclusions

Minimum wage is an important tool of social policy. It is worth emphasizing its important role in compensating differences in the level of remuneration on the labor market. Raising it may contribute to improving the material conditions of individual households and reduce economic inequalities (mainly income-related). Analysis of the minimum wage growth in relation to the dynamics of labor productivity in the economy could be useful for people who are responsible for shaping it. When determining the minimum wage level, it is worth remembering that excessive increasing it may also have a negative impact on the labor market and should not displace other more effective tools of social policy to eliminate excessive differences in the amount of incomes achieved by individual

households, such as establishing tax relief in income taxes or increasing spending on public education. Labor productivity can be analyzed from different points of view. It's worth having awareness that the human factor influences it in a significant way. Both growth, as and the decline in this efficiency translates into the quality of life of employees and employers (Weisskopf, 1987).

Analysis of the cases of the Visegrad Group countries showed that in each of them there is a situation in which an increase in the minimum wage is always accompanied by an increase in labor productivity. The relation of these two variables is not a direct proportional relationship, however, two countries (Hungary and Poland) are characterized by much lower productivity growth than the other two (Slovakia and the Czech Republic). Long-term maintenance of such a tendency may have negative consequences for such an economy. This may lead to a gradual loss of competitiveness of individual entities operating on the markets of these economies in the international arena, and in particular within the countries of Central and Eastern Europe.

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