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MINIMUM WAGE AND ITS RELATION TO UNEMPLOYMENT IN SLOVAK REGIONS[*]

The aim of the paper is to present several aspects of minimum wage problems in the regional framework of Slovak Republic. Tried to confirm or reject its relationship to employment using the variables such as minimum wage, living wage, unemployment allowances and the number of people claiming unemployment allowance.

Keywords: *minimum wage; average wage; region; employment; unemployment.*

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МІНІМАЛЬНА ЗАРОБІТНА ПЛАТА ТА ЇЇ ВПЛИВ НА БЕЗРОБІТТЯ У РЕГІОНАХ СЛОВАЦЬКОЇ РЕСПУБЛІКИ

У статті висвітлено деякі аспекти проблематики мінімальної заробітної плати в регіонах Словаччини. Зроблено спробу підтвердити чи спростувати наявність її впливу на зайнятість населення за допомогою таких даних як мінімальна заробітна плата, прожитковий мінімум, допомога з безробіття та кількість людей, що претендують на цю допомогу.

Ключові слова: *мінімальна заробітна плата; середня заробітна плата; регіон; зайнятість; безробіття.*

Табл. 1. Рис. 3. Літ. 14.

Вера Влчкова, Даниэла Палащакова

МИНИМАЛЬНАЯ ЗАРАБОТНАЯ ПЛАТА И ЕЁ ВЛИЯНИЕ НА БЕЗРАБОТИЦУ В РЕГИОНАХ СЛОВАЦКОЙ РЕСПУБЛИКИ

В статье рассмотрены некоторые аспекты, связанные с проблематикой минимальной заработной платы в регионах Словакии. Предпринята попытка подтвердить или опровергнуть наличие влияния на занятость населения, используя такие данные как минимальную заработную плату, прожиточный минимум, помощь по безработице и количество людей, претендующих на эту помощь.

Ключевые слова: *минимальная заработная плата; средняя заработная плата; регион; занятость; безработица.*

Introduction

Determination of the minimum wage[3] issue solution has been the frequent object for many economic discussions. Therefore, the influence of minimum wage on unemployment has become the target problem of many scientific studies. Some of them confirm the influence of minimum wage on unemployment, others contradict it.

Generally speaking, minimum wage decreases employment of several employment groups (e.g., women, teenagers) or employment in specific labour market fields (agriculture, fastfood chains etc.), as it was shown in such studies as Currie & Fallick (1993), Gallasch (1975), Gardner (1981), Peterson (1957), Peterson & Stewart (1969) etc.

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[3] The term "minimum wage" equals gross minimum wage, unless defined otherwise in the paper.

From the historical point of view, the negative impact of minimum wage on employment was not questioned. Its proponents argue that, in the end, it results in better situation for less effective employees. In other words, the consequence of minimum wage is that employed higher income groups compensate unemployed lower income groups (www.house.gov).

The positive influence of minimum wage on employment , even though only under certain specific conditions, is mentioned by Immervoll (2007) in his paper "Minimum Wages, Minimum Labour Costs and the Tax Treatment of Low-Wage Employment". He states that with unchanged fringe benefits, higher wages improve employment stimuli and they can increase employment in such labour market segments where performance is hindered by weak labour supply. In case of the generally balanced system, additional wage income has the tendency to increase consumption, especially among low income households, and this can have positive effect on aggregate demand as well as on employment (Immervoll, 2007).

Therefore the following questions are crucial: Is minimum wage as important as it is presented by its proponents? Is there any clearly valid answer?

The target of our paper is to clarify the issue of minimum wage from the unbiased perspective and either to confirm or to reject its relation to employment. We will do it on the basis of the obtained results and graphic comparison of variable value development in time as well as on the basis of hypotheses testing. Thus we want to motivate further discussions and deeper research in the relevant field.

Minimum wage in the regional framework of Slovakia

Minimum wage on the EU level is not determined but its member countries can define it on the basis of their own consideration. 20 EU countries established certain form of a minimum wage – either given by state standards or based on national collective agreement (Barosova, 2008).

Slovakia belongs to the countries with established minimum wage. Throughout the year 2010 it was set to the level of 307.70 Euros (after rounding it up to further 10 Eurocents it represented 4.1% growth in comparison with 2009, when the minimum wage level was 295,50 Euros). The remaining 4% (11,80 Euros) which create the original proposal by the Ministry of labour of social affairs and family (MPSVaR) for the year 2010 (8,1% growth to 319,50 Euros) were to be postponed to the year 2011[4]. If there was no agreement between social partners, then the minimum wage for the following year would have to be calculated as a composition of the amount of 307,70 Euros plus average wage growth index for the year 2009 in comparison with the year 2008 and increase it by the above mentioned 11,80 Euros (www.epi.sk).

In Table 1 we show the comparison of average wage in 2010 in the SR regions as well as its relation to minimum wage in these regions. We used data valid for the year 2010 because at the time of our research into this issue there were no available data about the average wage and unemployment for the year 2011. We do not consider the data for 2010 less valid because we wanted to point out the differences in various regions related to minimum wage / average wage occurring in case of flat application of minimum wage. Whatever period we cover, it does not reflect the existing differ-

[4] (319,50 - 307,70 = 11,80; 11,80/295,50 = 0,0399 => 4%)

ences in average wage level in the regions. With great probability, the data we used would lead to different percentage proportions but it will not change the fact we wanted to prove (differences in proportions of minimum/average wages).

Table 1. **AW & MW data in 2010 and their mutual ratio**

Regions of SR	Average wage per employee a year 2010 (Euros)	MW in 2010 (Euros)	MW / AW (%)	Unemployemnt rate 2010 (%)
Bratislavsky	991	307,7	31,05%	6,1
Trnavsky	705	307,7	43,65%	12
Trenciansky	657	307,7	46,83%	10,2
Nitriansky	636	307,7	48,38%	15,4
Zilinsky	686	307,7	44,85%	14,5
Banskobystricky	635	307,7	48,46%	18,6
Presovsky	594	307,7	51,80%	18,6
Kosicky	716	307,7	42,97%	18,3
SR total	769	307,7	40,01%	14,4

Source: Self-processes data based on Statistical Office of SR, www.profesia.sk.

As we can see from Table 1 in the year 2010, the highest average wage was in the Bratislava region followed by the Kosice region. The lowest average wages were in Nitra, Banska Bystrica and Presov regions – the regions that show long-lasting highest unemployment rate. Kosice region is a sort of paradox because it was on the second place within the framework of the SR regions with an average wage, in spite of the fact that it had one of the highest unemployment rates (18,3, i.e. the third highest in 2010). Kosice region had one of the highest unemployment rates also throughout the previous years – in the years 1998, 1999, 2000, 2001, and in 2005 it was even the highest. On the contrary, the Bratislava region unemployment rate in 2010 was the lowest within the SR framework.

From this point of view we can see that the regions with the lowest average wages reach the highest values. The highest ratio of minimum wage to average wage is reached by the region with the lowest average wage, i.e. Presov region. The lowest ratio of minimum wage to average wage is in the Bratislava region. The values of Kosice region are the closest to the average wages given for the whole territory of Slovakia as well as to the ratio minimum wage to average wage for the whole territory. Kosice region with its average wages is still below the average wage level set for the SR. The only region that exceeds (inadequately) average wages set for the SR is Bratislava region.

Results

Following the issues mentioned above we determined two hypotheses:

H1: There is an indirect relation (indirect linearity) between the ratio of minimum wages / living wage and the number of unemployment benefit receivers (i.e. the higher the percentage with minimum living wages was covered by minimum wages, the lower the number of unemployment benefit receivers will be).

H2: There is an indirect relation (indirect linearity) between the ratio minimum wages / unemployment benefit level and the number of unemployment benefit receivers (i.e. the higher growth of unemployment benefit level should cause an increase of unemployment benefit receivers).

We therefore assume the existence of significant statistical dependence between the variables:

1. Proportion of minimum wage (MW) / living minimum (LW) and the number of people claiming unemployment allowances (UB).

2. Proportion of minimum wage (MW) / amount of unemployment allowances (UB) and the number of people claiming unemployment allowances (UB).

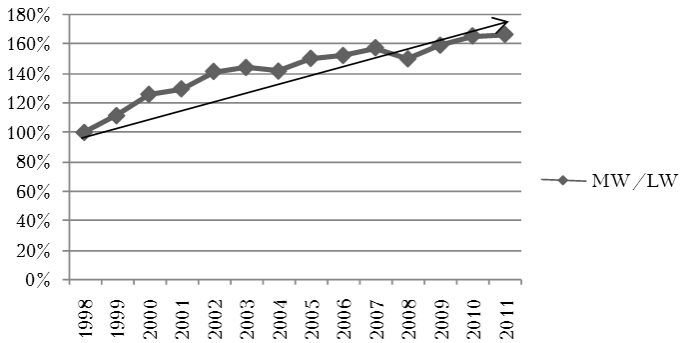
The established hypotheses were verified in two ways. The first one was based on graphic comparison of the level development of individual variables in time. The data were processed graphically in Microsoft Excel in the form of line graph in order to get the best illustration of the observed variables development in time.

As it is evident that the first method is not sufficient enough to show the relevant relation, we use another method. This one verified the relation of the relevant pairs of variables by Pearson's correlation index (r)[5]. Verifying the established hypotheses was done via SPSS 18 program (PASW Statistics 18). We demonstrate just a selection from our results as the material we collected has a significant volume.

The results of graphic comparison of the development level of individual variables in time

When comparing the ratio of minimum wage (further in the graphs "MW") and that of living wages (further in the graphs "LW") (Graph 1) and also taking into consideration the number of unemployment benefit (further "UB") receivers – (Graph 2), then ceteris paribus (because unemployment is influenced also by economic cycle, inflation etc.) the result should show an indirect proportion; i.e. the higher was the percentage of living wages formed by minimum wages in a given year, the higher the motivation of unemployed to work should be and thus, the number of people receiving unemployment benefits should be reduced.

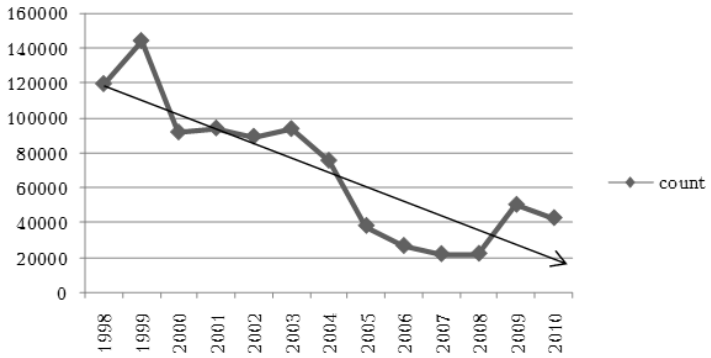
If we ignore short-term digressions, so from the long-term perspective this hypothesis is confirmed. Figure 2 showing the development of the number of unemployment benefit receivers in the period between the years 1998 to 2010 had mostly declining tendency, Figure 1 demonstrating the percentage ratio of minimum wage to living minimum was in this period growing. Hypothesis 1 is therefore confirmed.



Source: Self-processed data from www.profesia.sk.

Figure 1. **Percentage ratio MW/LW (1998–2011)**

[5] Pearson correlation index (*r*) is a non-dimensional parameter (irrespective of values in which the variables are measured) and its value has an interval from (-1;1); while the correlation becomes higher when the absolute value of this parameter comes closer to 1. In case of small samples, medium relations may falsely fail to show some importance. On the contrary, in case of large samples, small relations can falsely demonstrate their importance. For more details see Hudec, O. a kol. (2008). Statisticke metody vo financnictve.

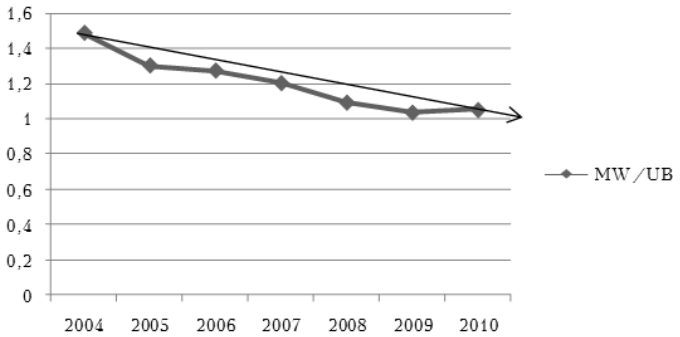


Source: Elaboration based on the data from www.socpoist.sk.

Figure 2. **Development of people claiming UB (1998–2010)**

If people should be motivated, then there must be some guarantee that the reward for their work in the form of minimum wage must be more advantageous than the pay in the form of unemployment benefit. In other words, we presume that with the growing tendency in Figure 1 – the minimum wage ratio to average level of social unemployment benefits (i.e. higher growth of minimum wages in comparison with the unemployment benefit growth, reducing of unemployment benefits with untouched minimum wages etc.) the number of unemployment benefit receivers should decline. The other way round, with declining tendency in Graph 3, the number of unemployment benefit receivers should grow.

But since 2004 absolute reverse conditions could be monitored. Figures 2 and 3 demonstrate that with the reducing ratio of minimum wage to unemployment benefit (Figure 3) there is a declining number of unemployment benefit receivers (Figure 2). Hypothesis 2 is therefore not confirmed.



Source: Elaboration based on the self-processed data from www.profesia.sk, www.socpoist.sk.

Figure 3. **MW ratio to the average amount of UB, 2004–2010**

Results of the hypotheses testing

We first examined the ratio of minimum wage to living wages and the number of unemployment benefit receivers. The index r in Table 2 is $0.848 < 0$, thus we can assume there exists an indirect linearity between both variables. For r is valid that: $0.5 < |r| < 0.9$, it means there is a high correlation (closeness) between the ratio indices of minimum wage to receivers of UB which were observed in the period between the

years 1998 and 2010. When Sig (2-tailed) = 0.000 < 0.05, we can consider the relation between the two given variables to be statistically significant (not only based on the level of importance $\alpha = 0.05$ on which this relation was primarily tested but even on the level of importance $\alpha = 0.01$, when Sig. = 0.000 < 0.01). We can conclude that the growth or decline of one variable is related significantly with the growth or decline of the other one. H1 is therefore confirmed.

The second examined relation was that of the ratio between minimum wage / unemployment benefit level and the number of unemployment benefit receivers. The index r is 0.472 < 0, thus we can assume there exists a direct linearity between both variables. For r is valid that: $0.3 < |r| < 0.5$, it means there is a moderate correlation (closeness) between the ratio indices of minimum wage to unemployment benefit level and the number of unemployment benefit receivers. When Sig (2-tailed) = 0.285 > 0.05, we can assume there is no statistically significant relation (on the level of importance $\alpha = 0.05$). We can conclude that the growth or decline of one variable is not significantly related with the growth or decline of the other one. Hypothesis 2 is therefore not confirmed (we reject it).

For demonstration of the relationship between the selected pairs of variables, we used two different methods based on which we wanted to prove this relationship, while the other method would bring more accurate results when all necessary rules would be complied. Whereas we had abstracted from several factors that can significantly affect the relationship (e.g. time shift) in confirmation of the given relationships. The research results are only indicative and should be treated with caution. If we compare the results of both methods, we can see that they are confirmed by the correlation for H1 and not confirmed for the case of H2. It means that we had demonstrated significant statistical relationship (indirect) between the variables MW/LW ratio and the number of unemployment benefits recipients, in reverse rejected the hypothesis assuming indirect relationship between the variables MW/amount of UB and the number of UB recipients. These conclusions only enhance the fact that, despite the use of the two different methods, identical results were achieved.

Conclusions and discussion

It should be borne in mind that the level of minimum wage is not the only determinant of unemployment progress. Equally, the ratio between minimum wage and unemployment benefits or the ratio between minimum wage and living wage (parameters used when testing our hypotheses) are not the only ones; and maybe they are not the most important determining factors of unemployment in the regions. Therefore it is essential to make conclusions about the relations between unemployment and minimum wage with the utmost care.

Thus, it is no surprise that one of our testing hypotheses was not confirmed. We rather managed to prove ambiguity of the relation minimum wage to unemployment. If we suggested this ambiguity at the beginning of our paper, here we just have to underline it.

The impact of minimum wage at labour market is regionally significantly differentiated. The minimum wage factor influences regional unemployment along with such factors as employer's sales opportunity, demographic progress, harmony/disharmony structure of labour force demand and structure of its supply, or cross-border

labour force mobility (or other factors). It is difficult then to expect that e.g. decreasing of minimum wage (which does not occur in Slovakia) will lead to higher employment and lower unemployment. Other factors may hinder it (e.g., negative perspective of employers, sales opportunities). It can also happen that the parameters of employment and unemployment will stay insensitive to the change of minimum wage in the given period (Antosova, 2010).

Let us get back to the questions we asked in the introduction of this paper: "Is minimum wage as important as it is presented by its proponents?" or "Is there any clearly valid answer?". We assume that there is no clearly distinct answer. Both the relation between minimum wage and unemployment as well as the labour market in Slovakia are regionally significantly differentiated. Minimum wage is more a way of employee protection than a way of unemployment solution.

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