Taxation of labor in the European Union

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Abstract: The paper deals with one of the institutional aspects of the labor market – taxation of labor. When taxes on labor are introduced the tax wedge between labor costs paid by employer (gross wage) and net wage received by employee appears. The paper is focused on characteristics of taxation of labor and its effects on the labor market, the level of employment or unemployment especially. The paper also analyzes and compares total tax wedge in European Union countries (original EU-15 Member States and Visegrád Group countries – Czech Republic, Hungary, Poland and Slovakia). We found that EU Member States could be classified into two groups of countries – with high tax wedge or low tax wedge.

Key-Words: Labor market, Taxation of labor, European Union, Visegrad Group

1 Introduction
The most pressing economic problem in the European Union (EU) is apparently endless surge in unemployment. High labor costs are often blamed for being responsible for this situation. So there exist some calls for reducing labor costs by restructuring taxes and particularly by reducing them. However, this reduction can be accompanied by a fall in government revenues. This paper explores the link between tax policy and labor market performance. The tax wedge is the difference between what employees take home in earnings and what it costs to employ them. In some countries, the tax wedge increases as employee income increases. This reduces the marginal benefit of working therefore employees will often work less hours than they would if no tax was imposed. Some argue that the tax wedge on investment income will also reduce savings, create less innovation, and ultimately lowers living standards.

The objective of this study is to assess the size of the tax wedge in the EU countries as well as to analyze the impact of the tax wedge on employment and/or unemployment.

The paper outline is as follows. Section 2 presents overview of relevant literature. Section 3 looks at the empirical evidence, and Section 4 concludes the paper.

2 Theoretical concept and literature review
Taxes on employment refer to both sides on labor market – labor supply (labor force pay income taxes) on the one hand and labor demand (employers, who pay payroll taxes) on the other side. Economists created so-called tax wedge which expresses overall taxation of labor (see Figure 1).

![Figure 1: The tax wedge](http://www.opf.slu.cz)

Labor taxation extends the wedge between employer’s costs and employee’s income [4]. If taxes are transferred on employers then employment costs rise and eventually is that labor demand will fall. If firms compensate this additional costs by lower wages than the wage/price of product ration will not change. Indeed, the consumption wage/price of product ratio declines. Then more households can obtain social benefits and their incentive to work is reduced. Hence, rising labor taxes have a negative impact on employment. Daveri and Tabellini [5] controvert this argumentation on the basis of Scandinavian countries – they ask why unemployment is so low while high labor taxation evokes high unemployment in continental Europe. One possibility how to make clear this contrast is connectedness of high degree of centralization and co-ordination, which can reduce wage claims.

According to [2] the tax wedge means that real take-home pay is lower than pre-tax real wage. If that tax wedge increases, than implicitly consumption grows more slowly. Authors make reference to tax wedge changes may affect not only the bargaining stance of unions but also individual labor – supply decisions. This holds if generous unemployment benefits exist.
Some authors argue that (i) the impact of taxation on employment appears stronger than the impact on the labor force; and (ii) the impact of labor taxation on unemployment is smaller because the reduction in the labor force partially offsets the decrease in employment [7]. Employment taxes do not appear to have any long-term effect on unemployment and are borne entirely by labor. There may be some short-term effects, but it is not clear that there would be any fall in inflationary pressure if taxes on polluting products were raised at the same time as taxes on employment were lowered [9].

If taxes are progressive, then the labor force with higher incomes will pay proportionately higher taxes than the low-income labor force. It also seems that the progressive tax system has wage-moderating effects, thus stimulating employment. It is generally suggested, that progressive taxation can be justified by reason of income equality (which is followed by redistribution of income). For this reason, there exists a trade-off between equality and efficiency of labor taxation. In imperfect competitive labor markets, however, progression also increases the efficiency of the working of labor markets so that from the society point of view it may be justifiable even without income distribution considerations [10]. Moreover, increasing tax progression has a positive effect on employment because it reduces incentives to increase wages [12]. The positive employment effects of progressive taxation in imperfectly competitive labor markets stands in sharp contrast to the effects in perfectly competitive labor markets where progressive taxes distort labor supply decisions and reduce employment [13].

Justification of the suitability of progressive taxation in imperfect competitive labor markets is based on the idea that it's just second-best solution: additional distortion in the economy can mitigate the harmful effects of existing distortions. This argument does not support [1], which shows that the optimal tax progression depends on the incentives underlying the choice of work hours. The argument also becomes weaker if the union is able to directly affect the hours of work. The reason is that if the union chooses the hours of work for its members, it will recognize that an increase in the hours of work tends to reduce employment.

Changes in labor taxation should be extended in relation to income during work and income while unemployed, where an individual has access to sources of income which are not taxed, or because there are important leisure values associated with unemployment – than equilibrium unemployment is altered with changes in labor taxation. Koskela [10] suggests these conclusions: (i) the tax-revenue neutral rise in labor tax progression – either in terms of income tax rate or in terms of payroll tax rate – will moderate negotiated wages, decrease the outside option for workers and thereby lead to lower equilibrium unemployment; (ii) in terms of employment effects of income taxation levied on workers, what matters is the relative tax rates of income employed and unemployed, respectively. If the tax rates are the same, tax rate changes will have no wage effect, so that equilibrium unemployment will remained unchanged, but government budget deficit will increase; (iii) the structure of labor taxation matters as well. By shifting taxation towards narrower tax base due to tax exemption will increase total tax progression and will thereby boost employment.

Bell and Nickell [3] in their paper reflect on the issue of reducing taxation of unskilled labor force and job creation subsidies for this group of workers. The aim of these measures is mainly increasing demand. This potentially leads to a reduction in unemployment in this group, the net wage increases and, ultimately, these actions have an impact on reducing total unemployment.

**Fig. 2: Simple demand and supply model**

![Simple demand and supply model](image)

Source: [8]

Figure 2 presents a simple demand and supply model of the labor market which depicts the potential effects of payroll taxation. The horizontal axis measures the level of employment; the vertical axis measures the wage. The upward-sloping relationship $S_0$ represents the supply of labor by workers in a world without taxation; the downward-sloping relationship $D_0$ represents the demand for labor by firms in the no-taxation world. The no-tax equilibrium is achieved at $E_0$, $W_0$. A payroll tax levied on the firm reduces the demand for labor by raising the after-tax cost of employees. The demand curve shifts to $D_1$, reducing the wage that workers are paid to $W_1$, and reducing employment to $E_1$. This is the disemployment cost highlighted by opponents of payroll taxation. The magnitude of the disemployment affect will be a function of the elasticities of labor demand and supply. But we have to take into account that payroll tax revenues are often used to finance programs which benefit workers only, such as retirement benefit or compensation for workplace injuries. It means that the tax is buying them some benefits. Workers are therefore
willing to work harder for a given money wage, shifting labor supply outwards to $S_1$. As a result, employment falls only to $E_2$, while the wage falls further to $W_2$; there is more shifting to wages. That is, since workers value the benefits that they are buying with their payroll taxes, they will accept lower wages, and this leads to a smaller net rise in compensation costs and thus less disemployment.

### 3 Empirical results

We used OECD data for an analysis. We have narrowed the group of EU Member States from 27 to 16 countries, which shows the distribution of two key groups: (i) the original Eurozone members (12 countries); and (ii) the new Member States (four countries) that joined the EU in 2004 and they are also members of the informal Visegrád group.

Table 1 represents total tax wedge and its components. The tax wedge is expressed through the use of percentage rate of overall labor costs. The individual components of tax wedge differed significantly – V4 countries had the lowest income taxes (except Hungary) and its percentage rate was almost half in comparison with EU-15 average (12.3%). In V4 countries with historically low income from employment, the high cost of social protection offsets the lower tax income [11].

<table>
<thead>
<tr>
<th>Country</th>
<th>Total tax wedge (1)</th>
<th>Income tax (2)</th>
<th>Employee social security contributions (3)</th>
<th>Employer social security contributions (4)</th>
<th>Labor costs (5)</th>
</tr>
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<tr>
<td>Luxembourg</td>
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<td>12.7</td>
<td>10.9</td>
<td>10.3</td>
<td>58 358</td>
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<td>11.4</td>
<td>14.0</td>
<td>22.6</td>
<td>57 954</td>
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<td>Germany</td>
<td>50.9</td>
<td>17.3</td>
<td>17.3</td>
<td>16.3</td>
<td>57 207</td>
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<td>21.1</td>
<td>10.7</td>
<td>23.3</td>
<td>56 816</td>
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<td>15.1</td>
<td>13.8</td>
<td>9.1</td>
<td>56 487</td>
</tr>
<tr>
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<td>9.9</td>
<td>9.6</td>
<td>29.7</td>
<td>51 325</td>
</tr>
<tr>
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<td>18.6</td>
<td>5.1</td>
<td>18.7</td>
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<td>12.9</td>
<td>6.0</td>
<td>9.7</td>
<td>47 026</td>
</tr>
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<td>7.1</td>
<td>12.5</td>
<td>21.9</td>
<td>43 533</td>
</tr>
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<td>10.3</td>
<td>4.9</td>
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<tr>
<td>Italy</td>
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<td>15.0</td>
<td>7.2</td>
<td>24.3</td>
<td>40 691</td>
</tr>
<tr>
<td>Portugal</td>
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<td>9.1</td>
<td>8.9</td>
<td>19.2</td>
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</tr>
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<td>8.3</td>
<td>8.2</td>
<td>25.4</td>
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<tr>
<td>Hungary</td>
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<td>12.8</td>
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<td>5.6</td>
<td>15.5</td>
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<td>Slovak Republic</td>
<td>37.6</td>
<td>6.3</td>
<td>10.6</td>
<td>20.8</td>
<td>20 480</td>
</tr>
</tbody>
</table>

Note: Data for a single individual without children at the income level of the average worker
* dollars with equal purchasing power
Source: OECD Taxing Wages 2009

Eurozone countries like Finland, Germany or Belgium had the highest income tax. We can see significant differences in the percentage rates of social security contribution too - workers in Germany, Poland, Netherlands or Austria paid the highest amounts while workers in Ireland, Spain or Finland paid remarkable lower amount. If we look at employer’s social security contribution rates, employees in France, the Czech Republic, Hungary, Italy and Spain had the highest rates among analyzed countries. The lowest contributions existed in Ireland or Netherlands (see Table 1).

We can find some comparative advantage in the last column. This column represents labor costs in US dollars with equal purchasing power. The tendency is that labor costs in new Member States convergence to EU average. It is evident that this comparative advantage will not last forever. We have to look at other indicators to determine the potential of joint taxation, which was introduced in Poland and Slovakia had significantly lower total tax wedge in comparison with EU average (42.3%). Hungary had remarkably higher total tax wedge (53.4%). We argue that foreign investors can make decision on the basis of the total tax wedge (because total labor costs of EU new Member States converge in long-term period) which it may subsequently end in that they can prefer countries with lower rate of the total tax wedge.

If we look at V-4 countries we can see, except Hungary, minimal differences between two observed groups. If we look more precisely we find out some differences between countries – e.g. Czech Republic applied notably higher level of employer’s social contribution rates, but in Poland employees paid higher contributions than employer.

The tax unit is the individual in the Czech Republic. The possibility of joint taxation, which was introduced in 2005, has been abolished since 2008. Moreover, a progressive system of taxation was replaced by a single rate of 15% in this year. Compulsory contributions of 11% (health insurance 4.5% and social insurance 6.5%) of gross wages and salaries are paid by all employees into government operated schemes. As seen from Figure 3 slight reduction in taxation of labor has occurred in the Czech Republic.

The tax unit is, in all cases, the separate individual in Hungary. Hungary is the OECD country that levies the highest taxes and social security contributions on the labor income of married couples. Also single taxpayers are taxed at very high rates. Single taxpayers at average earnings take home less than 47% of what they cost to their employer (“total labor costs”); taxpayers at high earnings take home even less than 42% (see Figure 4).
Figure 3: Tax wedge development (in % of labor costs) - Czech Republic

<table>
<thead>
<tr>
<th></th>
<th>2000</th>
<th>2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lone parent</td>
<td>13.2</td>
<td>15.0</td>
</tr>
<tr>
<td>Two-earner couple 2 children</td>
<td>22.7</td>
<td>20.5</td>
</tr>
<tr>
<td>Two-earner couple 2 children 100%</td>
<td>36.5</td>
<td>33.3</td>
</tr>
<tr>
<td>Single 67% of average wage</td>
<td>41.4</td>
<td>41.9</td>
</tr>
<tr>
<td>Single average wage</td>
<td>54.6</td>
<td>42.7</td>
</tr>
<tr>
<td>Single 167% of average wage</td>
<td>59.4</td>
<td>44.6</td>
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</tbody>
</table>

Source: OECD Taxing Wages 2009

Figure 4: Tax wedge development (in % of labor costs) - Hungary

<table>
<thead>
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</thead>
<tbody>
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<tr>
<td>One-earner couple 2 children</td>
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<td>43.7</td>
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<tr>
<td>Two-earner couple 2 children 100%</td>
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<td>46.7</td>
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<tr>
<td>Single 67% of average wage</td>
<td>54.6</td>
<td>53.4</td>
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<td>Single average wage</td>
<td>58.4</td>
<td>58.4</td>
</tr>
<tr>
<td>Single 167% of average wage</td>
<td>53.0</td>
<td>58.4</td>
</tr>
</tbody>
</table>

Source: OECD Taxing Wages 2009

Figure 5: Tax wedge development (in % of labor costs) - Poland

<table>
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<th></th>
<th>2000</th>
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</thead>
<tbody>
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<td>28.4</td>
</tr>
<tr>
<td>Two-earner couple 2 children</td>
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<td>29.3</td>
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<tr>
<td>Two-earner couple 2 children 100%</td>
<td>37.7</td>
<td>32.0</td>
</tr>
<tr>
<td>Single 67% of average wage</td>
<td>37.3</td>
<td>32.7</td>
</tr>
<tr>
<td>Single average wage</td>
<td>37.0</td>
<td>34.0</td>
</tr>
<tr>
<td>Single 167% of average wage</td>
<td>38.2</td>
<td>34.9</td>
</tr>
</tbody>
</table>

Source: OECD Taxing Wages 2009

Figure 6: Tax wedge development (in % of labor costs) - Slovak Republic

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<td>Two-earner couple 2 children</td>
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<td>22.7</td>
</tr>
<tr>
<td>Two-earner couple 2 children 100%</td>
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</tr>
<tr>
<td>Single 67% of average wage</td>
<td>40.5</td>
<td>34.3</td>
</tr>
<tr>
<td>Single average wage</td>
<td>41.7</td>
<td>37.8</td>
</tr>
<tr>
<td>Single 167% of average wage</td>
<td>46.0</td>
<td>46.1</td>
</tr>
</tbody>
</table>

Source: OECD Taxing Wages 2009

4 Conclusion

In the case of labor taxation as one of the institutional aspect, which has an influence on labor market performance, it is very difficult to follow evidence of this causality: high labor taxation increases unemployment. According to the author, in this case similar to those of the EPL – the high tax wedge increases the rigidity of the labor market, thereby increasing labor costs and force employers to weigh the pros and cons of creating a new job. Moreover, it is necessary to look at this institutional aspect from an international perspective. If employers’ decision about creation new jobs is based on minimizing production costs, then the high tax wedge plays a negative role in this process. It can mean both the brain domestic employers abroad, as well as reducing the inflow of foreign direct investment and, implicitly, it can cause a decrease in employment. This institutional aspect is also one of the most complex aspects, particularly due to its close linkages with the government budget and the social system. The reform is usually contingent on a number of...
partial system changes, which are unrelated to the labor market at first sight. The observed data shows that labor taxation among Visegrad group countries was highest in Hungary. OECD generally recommends reduction of tax burden in this area and to focus on other types of taxes. The next step should be reduction of tax burden on the low-wage labor force, both the employee and the employer contributions. Considerable modifications of this institutional aspect will be but very problematic. To a large extent this relates to the state of public finances, but requires a sustainable position. It is clear that reducing the total tax wedge is more likely for high-income groups of the population, which consists of fraction of the total labor force. Even so, it will be interesting, as they become available international statistics in the future to make further analysis on labor and to assess the position of the Visegrad group countries within the EU and within the limits of tax competition.

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References: