

## TAX AND LEVY BURDEN OF WAGES IN THE CZECH REPUBLIC

<sup>a</sup>MICHAL KRAJŇÁK

VSB-Technical University of Ostrava, Faculty of Economics,  
Department of Accounting and Taxes, Sokolská třída 33, 702 00  
Ostrava  
email: <sup>a</sup>Michal.krajnak@vsb.cz

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**Abstract:** The article deals with evaluating the influence of the tax and levy burden of wages on employment and tax revenue. The high tax and levy burden on wages is not favourable for the economy. The analysis results show that the increase in the tax and levy burden of wages has a negative effect on employment. When evaluating the effect of the tax and levy burden on tax revenue, the effect is different from the scope of used deductions. However, the long-term problem of the Czech Republic in comparison with other countries is not the tax burden on labour, but the related levy burden, which increases the price of labour and thus has a negative effect on the labour market from its transnational perspective. The analysis confirms that the Czech Republic remains among the countries with a high levy burden. To achieve the paper's objectives, methods of description, comparison, analysis, synthesis, and regression and correlation analyses are used. The added value and uniqueness of this article is, among other things, the fact that these indicators – effective, respectively, implicit tax rates on labour are calculated depending on the distribution of wages.

**Keywords:** Effective Tax Rate; Nominal Tax Rate, Personal Income Tax; Implicit Tax Rate, Tax Reform, Social Security Contributions, Wage.

### 1 Introduction

The article deals with analysing the tax and levy burden of income from dependent activity in the Czech Republic in the period 2003-2020 in several areas. First of all, it analyses how this tax and levy burden affects employment. The next part of the research analyses the impact of this tax and levy burden on the share of total tax revenue of the Czech Republic. One of the problems reducing the competitiveness of the Czech labour market is the high levy burden (Teplická and Daubner, 2013). Whether and how this levy and tax burden in the Czech Republic develops and changes in the mentioned period is the central topic of the last part of this research study.

The article's main objective is to analyse how effective tax rate and implicit tax rate on labour affect employment and whether implicit tax rate on labour affects the share of personal income tax to the total tax revenue. Another goal is to evaluate the development of effective tax rates and implicit tax rates on labour and determine whether there is dependence between the development of the values of these indicators.

The tax burden is represented by personal income tax, the levy burden by social security contributions, including public health insurance and social security premiums, and the contribution to the state employment policy.

The nominal income tax rate has been linear in the Czech Republic since 2008. However, it does not say much about the actual tax burden, and it is more appropriate to use the effective tax rate (hereinafter ETR) to assess the tax burden. The indicator of the implicit tax rate on labour (hereinafter  $ITR_L$ ) is then used to express the total tax and levy burden of labour. Despite one nominal rate for social security contributions (hereinafter SSC), and since 2008 also for personal income tax, the tax burden is not the same for all taxpayers. The research question of this article is whether this burden affects employment and the share of personal income tax from dependent activity to the total tax revenue in the Czech Republic. The mentioned  $ITR_L$  and ETR indicators are used to analyse this research question. The uniqueness and added value of this article are that these rates (ETR and  $ITR_L$ ) are calculated according to the distribution of wages in the Czech Republic as weighted averages. Another uniqueness of this text is the scope of the research period of 18 years, as studies analysing these factors in the conditions of the Czech Republic in relation to the distribution of wages and such a long period have not yet been conducted.

The article's introduction is followed by an outline of the theoretical background with a focus on the personal income tax. The following section is focused on the characteristics of the methods (regression and correlation analysis) and input data used. A linear regression model is used to analyse selected dependences. Further, the analysis is the main part of the text. The last part of the paper summarises the article's results and describes the limits of the analysis.

### 2 Literature review

The tax and levy burden of wages is the subject of research in the Czech Republic and abroad. One of the factors influencing the tax and levy burden on labour is the level of employment. According to Dalenberg and Partridge (1995) the high tax burden on labour negatively influences employment. Similar findings that a high tax burden does not positively influence employment were found by Mark et al. (2000); Kosi and Bojnc (2006).  $ITR_L$  or ETR are widely used to express the tax burden on labour. More about these indicators, e.g. Mankiw et al. (2009); Glday and Madl (2018).

Grace (2018) states that the probability that a company will employ labour is 1.18 percent higher when current tax rates increase by one percentage point. Other studies (Cutler et al., 2018; Burda and Weder, 2016) state that personal income tax on employment cannot be determined unambiguously and depends on the sensitivity to the income tax rate. For this reason, employment may rise despite rising tax rates.

There is a trend towards higher SSC and lower tax rates on personal income (Michaelis and Birk, 2006). In addition to personal income tax, payments for SSC are a significant factor influencing the amount of personnel costs (Teppererová, 2019; Prammer, 2019; Goudswaard and Caminada, 2015). The study Bauer and Riphahn (2002) analysing payroll and employment taxes in Germany, states that the employment rate is not negatively affected by the personal income tax but by SSC. According to the results of Bronchi and Burns (2001), the tax system of the Czech Republic is recommended by lowering SSC and increasing the reliance system on the personal income-tax system. Adam et al. (2019) mention that reducing the levy burden will positively affect employment. High personnel costs reduce the performance and competitiveness of companies. More about the performance of companies Knápková et al., (2014); Belas et al., (2020).

The amount of the tax burden affects employment and the state's total tax revenue. In the Czech Republic, personal income tax has significantly shared the state's total tax revenues, approximately 20% of the total tax revenue. Throughout the existence of income tax, there has been no significant volatility in this share, as in the USA (Garrett, 2009). Another important direct income tax is also corporate income tax (Konečná and Andrejovská, 2020; Moravec et al., 2019).

On the contrary, Chernick and Reimers (2019) claim that indirect taxes show a more stable share of tax revenue than direct taxes. According to Yilmazkuday (2017), the non-recommendation to increase income tax burden from dependent activities also follows. Rather, it is recommended to increase indirect or property taxes. More about property taxes e.g. Široký et al., (2015). Tax revenue is significantly affected by the constructional elements of taxes, so each tax reform changes the share of tax to the total tax revenue and the total amount of tax revenue (Mahdavi, 2008; Sanz-Sanz, 2016). The Laffer curve defines the theoretical relationship between tax rates and tax revenues. According to Lin and Jia (2019) in China, it is recommended to set the tax rate at 35% to maximize tax revenue. In determining the tax burden, the tax rate should be taken into account and the amount of the taxpayers' income or social status (Jordaan and Schoeman, 2015).

While the personal income tax burden is generally lower for families with children, mandatory payments on the SSC often do not take these factors during calculating these payments (Alvarez-Martinez and Polo, 2014). The already mentioned problem of the Czech Republic is the persistently high levy burden of labour (Kramer et al., 2016; Lyková, 2015).

The overview of studies shows that studies evaluating the impact of ETR, resp. ITR<sub>L</sub> on employment, resp. tax revenue, as well as the analysis between the development of ETR and ITR<sub>L</sub> have not yet been performed under the conditions of the Czech Republic. This demonstrates the certain uniqueness and added value of this article.

### 3 Methodology

A linear regression function generally determined (1) is used to model the dependence of the share of personal income tax from dependent activity to the total tax revenue according to the value of effective and implicit tax rates (1),

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon, \quad (1)$$

where  $Y$  is the dependent variable expressing the share of tax revenue of the personal income tax from a dependent activity to the total tax revenue of the Czech Republic, the values  $X_1$  to  $X_6$  are the average values of the indicator ITR<sub>L</sub>, resp. ETR calculated as a weighted average according to the empirical distribution of wages in the relevant year. Specifically,  $X_1$  expresses the ITR<sub>L</sub> for the case where only the deduction per taxpayer is applied,  $X_2$  the situation where, in addition to the deduction per taxpayer and the deduction per child are also used to reduce the tax liability,  $X_3$  when the deduction per taxpayer and deduction for two children are used. The structure of indicators for ETR is similar, specifically  $X_4$  expresses ETR if only the deduction per taxpayer is applied,  $X_5$  cases where the deduction for taxpayer and for one child and  $X_6$  when the deduction for taxpayer and for two children are used. ETR is generally determined by (2), ITR<sub>L</sub> according to (3),

$$ETR = \frac{T}{Y}, \quad (2)$$

$$ITR_L = \frac{T + SSC_E + SSC_I}{Y + SSC_E}, \quad (3)$$

where  $T$  is the tax liability,  $Y$  the taxpayer's income,  $SSC_E$  is the social security contributions paid by the employer,  $SSC_I$  is the social security contributions paid by the employee.

According to data from income tax returns by individuals are deductions per taxpayer and children the most used deductions, specifically for the year 2020 the relief for the taxpayer was applied in 99% of tax returns, a tax credit for children in approximately 30% of tax returns (Financial Administration, 2022a). Compared to other tax deductions, these two are used by taxpayers for tax optimization the most often. A limiting aspect of this model may be the fact that non-taxable parts of the tax base are not taken into analyses, which do not affect SSC, but influence the tax base and the taxpayer's tax liability. Tax statistics of the Ministry of Finance of the Czech Republic (Financial Administration, 2022b) show that the most used non-taxable parts of the tax base for 2020 were deductions for private life insurance and amount of trade union contributions (approximately 20% of tax returns). However, no information is available on the average applied values of these non-taxable parts. For this reason, it is abstracted from non-taxable parts of the tax base. On the contrary, the uniqueness and added value of the study is the fact that effective, resp. implicit tax rates in the regression model are calculated as weighted values according to the percentage of employees in the bands of gross wages.

In addition to the analysis of factors influencing the share of personal income tax to the total tax revenue another such indicator is the motivation to work, which is expressed by the employment rate (Rick et al., 2018). According to Reiss and Schuster (2020), this indicator significantly affects ITR<sub>L</sub>. Based on the above, relation (4) is formulated,

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon, \quad (4)$$

where  $Y$  is the employment rate,  $X_1$  to  $X_3$  express the average values of the ITR<sub>L</sub> ( $X_1$  for the case if the deduction of only the taxpayer is applied,  $X_2$  per taxpayer and one child,  $X_3$  per taxpayer and two children).

As follows from the part dealing with the theoretical background, one of the factors weakening the competitiveness of the Czech tax system isn't the high tax but the levy burden. Regression lines will be constructed to examine whether the spread between the tax and levy burden decreases or increases.

The angle between the regression lines is formed by two selection linear regression lines expressing the dependence between the characters  $y_1$  and  $y_2$  (Marill, 2004).  $Y_1$  is a variable expressing the tax burden on wages (ETR),  $y_2$  is a variable expressing the tax and levy burden on wages (ITR<sub>L</sub>). The angle  $\cotg \varphi$  is formed according to Toka et al., (2019) by (5),

$$\cotg \varphi = \frac{|r_{xy}|}{1 - r_{xy}^2} \left( \frac{s_y}{s_x} + \frac{s_x}{s_y} \right), \quad (5)$$

where  $r_{xy}$  is the correlation coefficient,  $r_{xy}^2$  is the coefficient of determination,  $s_x$  is the variance of the values of the character  $x$ ,  $s_y$  the variance of the values of the character  $y$ .

According to the aim of the paper, the following research hypotheses were formulated:

- as the tax burden increases, the tax revenue increases,
- the tax and levy burden of labour negatively affects employment,
- the difference between the tax and levy burden of work doesn't change in the Czech Republic.

For analysis of the interdependencies between the selected indicators, the following resources have been applied:

- tax revenue of the personal income tax from a dependent activity in the Czech Republic from 2003 to 2020 were sourced from Financial Administration (Financial Administration, 2022c),
- employment rate and shares of employees in the bands of gross monthly wages were sourced from the Czech Statistical Office (Czech Statistical Office, 2022a and Czech Statistical Office, 2022b),
- for calculation of ETR and ITR<sub>L</sub> Act. No. 586/1992 Coll. on Income Taxes, Act. No. 48/1997 Coll. on Public Health Insurance and Ac. No. 589/1992 Coll. on Premiums for Social Security and Contribution to the State Policy of Employment.

About the availability of data, the period 2003–2020 is analysed. The year 2020 is the last year for which data are available. The shares of employees in the gross wage bands have been published in the database of the National Statistical Office (Czech Statistical Office, 2022a) since 2003.

## 4 Results

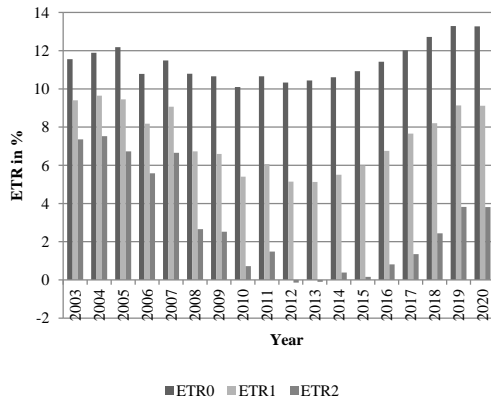
Before the analysis of the dependence of the employment rate, resp. the share of personal income tax to the total tax revenue in relation with effective or implicit tax rates, the basic characteristics of each variable are performed using the tools of descriptive statistics.

### 4.1 Characteristic of input data

The weighted average effective, resp. implicit tax rates are graphically captured as one of the analysis's input data in Figures 1a and 1b. These values are calculated according to the distribution of wages in the Czech Republic in the period 2003–2020 for each analysed year in cases where only the basic deduction per taxpayer (ETR<sub>0</sub>, ITR<sub>L0</sub>), deduction per taxpayer

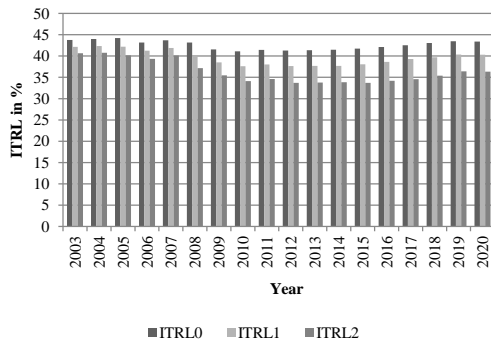
and one child ( $ETR_1$  and  $ITR_{L1}$ ) and deduction per taxpayer and two children ( $ETR_2$ ,  $ITR_{L2}$ ) are applied.

Figure 1a. Effective Tax Rate (in %)



Source: own research

Figure 1b. Implicit Tax Rate on Labour (in %)



Source: own research

In addition to the weighted average of ETR and  $ITR_L$ , the input database for the analysis is also formed by the values of the employment rate in the Czech Republic (EMP) and the share of personal income tax from the dependent activity to the total tax revenue (TR). For each variable, the minimum and maximum values, the mean and the median are indicated in Table 1.

Tab. 1: Overview of the Data Used in the Regression Analysis

Variable	Minimum	Maximum	Mean	Median
Y - TR	18.98	24.08	21.45	21.27
Y - EMP	64.23	76.90	68.62	66.56
$X_1$ - $ITR_{L0}$	41.12	44.20	42.59	42.80
$X_2$ - $ITR_{L1}$	37.62	42.33	39.63	39.49
$X_3$ - $ITR_{L2}$	33.69	40.76	36.35	35.43
$X_4$ - $ETR_0$	10.09	13.29	11.39	11.17
$X_5$ - $ETR_1$	5.12	9.64	7.39	7.20
$X_6$ - $ETR_2$	-0.14	7.52	2.98	2.47

Source: own research

#### 4.2 Correlation analysis

As follows from the development of ETR and  $ITR_L$ , the tax burden does not follow the same trend and differs according to the applied deductions. In general, it can be said that taxpayers without the application other deductions than for taxpayer increase the tax burden on labour, the opposite trend can be observed for taxpayers with children. In some cases, the ETR is even in negative values. The share of personal income tax to the total tax revenue is not wholly constant it clearly does not show an increasing or decreasing trend. Is the change in the share of tax revenue related to the development of ETR or  $ITR_L$  values? Does the level of employment affect the tax burden on labour? Does SSC in the Czech Republic significantly increase the tax burden on labour? The following analysis attempts to answer these questions.

Tab. 2: Correlation Analysis. Source: own research

	TR	EMP	$ITR_{L0}$	$ITR_{L1}$	$ITR_{L2}$	$ETR_0$	$ETR_1$	$ETR_2$
TR	1							
EMP	-0.034	1.000						
$ITR_{L0}$	0.559	-0.170	1.000					
$ITR_{L1}$	0.546	-0.335	0.970	1.000				
$ITR_{L2}$	0.470	-0.524	0.889	0.970	1.000			
$ETR_0$	0.759	0.425	0.713	0.571	0.380	1.000		
$ETR_1$	0.737	-0.154	0.952	0.945	0.864	0.778	1.000	
$ETR_2$	0.583	-0.491	0.894	0.970	0.988	0.466	0.911	1

Source: own research

Table 2 presents the results of the correlation analysis. According to the results, a statistically significant positive correlation was indicated between  $ITR_{L2}$  and  $ITR_{L1}$ , between  $ETR_1$  and  $ETR_2$ , between  $ITR_{L2}$  and  $ETR_2$  or between  $ITR_{L1}$  and  $ETR_2$ . In general, the dependence between  $ITR_L$  and  $ETR$  is positive. If the tax burden increases for one group of taxpayers, the tax burden usually increases for the others. However, some moderately positive correlations, such as between  $ETR_0$  and  $ETR_2$ , suggest that this tax burden may not increase equally. In this case, the reason is the already mentioned increase in the amount of tax credits for children. A negative correlation was found only between the employment rate indicator and the  $ITR_L$  or  $ETR$  indicators. A more detailed evaluation of the effective tax rate, resp. the implicit tax rates on tax revenue (Model A) or the employment rate (Model B) are provided in the regression analysis in Table 3.

**4.3 Regression analysis**

The results of Table 3 show that both models have a high determination index  $R^2$ . In the case of model A and B this means that more than 95% of the variance is due to the character  $X_N$  and less than 5% due to random deviations. There are also no autocorrelation according to the results of the Durbin-Watson test (more about the Durbin-Watson test Ali, 1987; Turner, 2019). According to the outcomes of the F-test, both regression models are statistically significant at 5% level of significance. This level of significance is recommended according to Yalcinkaya et al., (2017).

Tab. 3: Regression Analysis

Variable	Model A		Model B	
	Signif.	Coefficient	Signif.	Coefficient
$X_1 - ITR_{L0}$	0.017	-4.713	0.689	-0.876
$X_2 - ITR_{L1}$	0.096	2.865	0.008	7.396
$X_3 - ITR_{L2}$	X	X	0.000	-5.016
$X_4 - ETR_0$	0.006	3.841	-	-
$X_5 - ETR_1$	0.076	-2.125	-	-
$X_6 - ETR_2$	0.035	0.649	-	-
Constant	0.000	78.582	0.009	-5.379
Observation	18		18	
$R^2$	0.957		0.952	
Signif. F	0.000		0.000	
DW	2.304		2.144	

In the case of model A, which is generally formalized by (1), the regression coefficient  $X_2$  and  $X_5$  are statistically insignificant. The same situation is with regression coefficient  $X_3$ , which is excluded from the model. After removing insignificance variables, model A has a form (6),

$$Y = -4.713 X_1 + 3.481 X_4 + 0.649 X_6 + 78.582 \quad (6)$$

The negative parameter  $X_1$  of the model in equation (6) shows that the employment rate would increase if the labour tax burden decreased. On the contrary, the positive parameters for  $X_4$  and  $X_6$ , which express ETR, mean that even with the growth of the tax burden, an increase in the employment rate can be expected.

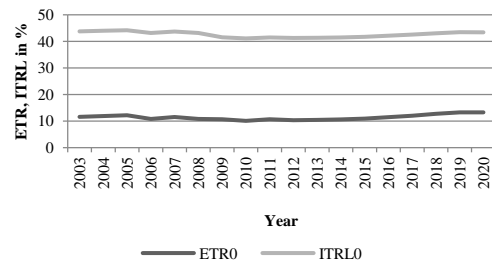
The extent to which the tax burden on labour affects the share of personal income tax from dependent activity to the total tax revenue is modelled in Model B in Table 3. For Model B, the explanatory variable  $X_1$  is insignificant. The final form of the model is shown by (7).

$$Y = 7.396 X_2 - 5.016 X_3 - 5.379 \quad (7)$$

This equation illustrates that with a higher tax burden represented by  $ITR_{L2}$  it is possible that the personal income tax from dependent activities also has a higher share of tax revenue. However, as the tax burden on taxpayers decreases with applying the deduction for children, parameter  $X_3$  is negative.

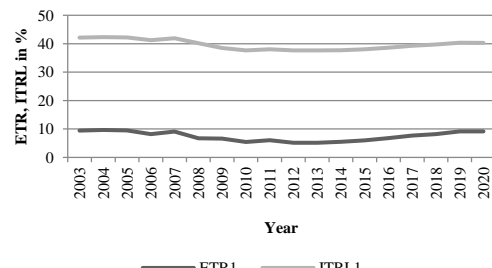
Using the angle between the regression linear lines, generally determined (5), the dependence between the development of ETR and  $ITR_L$  from 2003 to 2020 is examined in cases where the employee applies a deduction per taxpayer (Figure 2a), per taxpayer and one child (Figure 2b) and taxpayer and two children (Figure 2c). As in the previous analysis, this study's uniqueness and added value are that the ETR and  $ITR_L$  are weighted averages calculated for the wage distribution. The value of the *coig*  $\varphi$  angle enclosing the linear regression lines is shown in Table 4.

Figure 2a. Situation  $S_0$



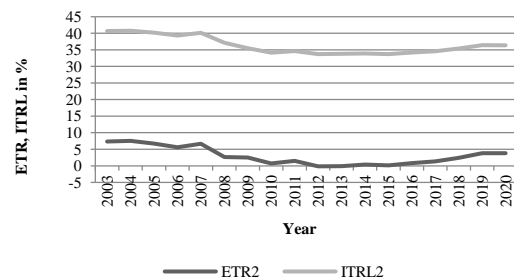
Source: own research

Figure 2b. Situation  $S_1$



Source: own research

Figure 2c. Situation  $S_2$



Source: own research

Tab. 4: Angle of Linear Regression Lines

Situation	Cotg
$S_0$	$\cotg \varphi_0 = \frac{0.712}{1-0.507} \cdot \left( \frac{0.87}{1.05} + \frac{1.05}{0.87} \right) = 18^\circ 79'$
$S_1$	$\cotg \varphi_1 = \frac{0.945}{1-0.893} \cdot \left( \frac{1.60}{1.75} + \frac{1.75}{1.60} \right) = 3^\circ 22'$
$S_2$	$\cotg \varphi_2 = \frac{0.988}{1-0.976} \cdot \left( \frac{2.70}{2.66} + \frac{2.66}{2.70} \right) = 0^\circ 69'$

## 5 Discussion

Figure 1 shows that the tax burden decreases with increasing deductions. Compared to the first analysed year (2003), the ETR decreased in cases where the deduction for children is applied due to the frequent valorisation of the values of this tax credit. On the contrary, the taxpayer's relief has not been increased, and so with the gradual increase in wages in the national economy, the tax burden is also growing. The trend of a gradual increase in the tax burden on labour since 2009 is also confirmed by the  $ITR_L$ . The results of Michaelis and Birk (2006) confirm that compulsory SSC influences the most significant tax burden on labour. This trend continues although the rate of SSC paid by the employee has decreased from 8% of the assessment base since 2009 to 6.5%, the rate of SSC paid by the employer from 26% to 25% since 2009, resp. to 24.8% from 1 July 2019.

Based on the results, it can be concluded that labour taxation impacts the employment rate. However, when analysing the effects and possible changes in the reduction or increase of the tax burden, it is also necessary to consider the declining stability of the legal environment, which affects both supply and demand for labour (Kotlán et al., 2019). Compared to labour markets in North America, these changes are less flexible (Nickell, 1997). The results also partially confirm the main findings of the study Kosi and Bojnec (2006), Goudswaard and Caminada (2015) or Tepperová (2019), which states that labour taxation has a negative impact on employment as a high tax burden increases labour costs.

Results Figure 2 confirms Mahdavi (2008) that tax reform can significantly change the tax burden and thus the share on tax revenues. In all analysed cases, the tax burden decreased between 2007 and 2008.

The results of model (6) confirm the conclusions of Hájek (2003). One of the ways to achieve a lower tax burden on labour is to transfer the tax burden from direct taxes to indirect taxes, which was partially done during the reform of public finances in the Czech Republic between 2007 and 2008. More about the analysis of selected indirect taxes e.g. Krzikallová and Střílková, (2016); David (2019).

Negative parameter  $X_3$  in relation (7) follows that if the state goal is to increase the share of personal income tax from the dependent activity to the tax revenue, this increase can be achieved mainly through taxpayers who apply a deduction for one child or do not apply the deduction at all. Otherwise, it is more advantageous to recommend a change in the structural elements of the tax - for example, adjustments to the amounts of deductions for children or changes in the method of tax base construction. These changes subsequently affect tax progressivity, as Koskela and Schob (2009) stated. Another problem with changes in personal income taxation is long-run elasticities for wage tax (Havránek et al., 2016).

In addition to personal income tax,  $ITR_L$  also includes SSC paid by the employer and the employee. In the Czech Republic, the SSC paid by the employer enters the tax base and, according to Prammer (2019), increases personnel costs. This factor influences the share of personal income tax to the total tax revenue. Despite the nominal reduction in selected SSC rates, as shown by the  $ITR_L$  in Figure 1, SSC represents the highest component of the tax and levy burden of wages.

The closer the value of  $\cotg \varphi$  is to zero, the higher dependence between the pairs of analysed values. In situation  $S_0$ , where only the deduction for a taxpayer is applied, the degree of dependence

between ETR and  $ITR_L$  is the lowest.  $ITR_L$  ranges from 40 to 45%. If the high levy burden increased, the difference between the ETR and  $ITR_L$  values would decrease, which is not the case here. For this reason, the results of the Bronchi and Burns (2001) study on the high disparity between the tax and levy burden of labour are also confirmed. Therefore, a high levy burden on labour remains a problem. A slight decrease in the tax burden occurred only during 2005 and 2006 when the non-taxable part of the tax base was replaced by relief, and between 2007 and 2008, when the nominal progressive tax rate changed to a linear rate. The levy burden on wages decreased only between 2008 and 2009 with a decrease in the rate of social security premiums and contributions to the state employment policy paid by both the employee and the employer. In this case, there are partial identical conclusions of Adam et al. (2019) that reducing SSC has positive effects on labour costs. The rate of SSC was also changed during the year 2019, but due to positive economic growth and rising wages in the economy, this did not reduce the price of labour. This high levy burden can then lead employers to shift the burden of compliance with SSC back to employees in lower wages (Nielsen and Smyth, 2008).

A higher dependence between ETR and  $ITR_L$  exists when, in addition to the deduction per taxpayer, the deduction for children is also applied. This leads to a decrease in ETR values, leading to a reduction in  $ITR_L$ . Even in this case, the SSC is no longer graded according to, for example, the number of children supported by the taxpayer, which could be a criterion for determining the amount or rate of SSC (Alvarez-Martinez and Polo, 2014). The main factor reducing the tax burden on labour, especially in the middle of the analysed period, was the increase in tax credits for children, resp. replacement of non-taxable parts of the tax base by a tax advantage. As in the situation of  $S_0$ , the average labour costs and the average effective tax rate have increased in recent years. Employers bear wage costs and related SSC in their costs (Tachibanaki and Yokoyama, 2008).

## 6 Conclusion

The article aimed to evaluate whether ETR resp.  $ITR_L$  affects employment and whether  $ITR_L$  affects the share of personal income tax from the dependent activity to the total tax revenue. Another goal was to evaluate the development of ETR and  $ITR_L$  rates. The analysis was performed under the conditions of the valid legislation of the Czech Republic in the period 2003–2020. The period for analysis is limited by the availability of data on the distribution of wages based on which the weighted average ETR and  $ITR_L$  were calculated. The analysis of dependencies with weighted averages of these values is one of the added values of this study.

The ETR and  $ITR_L$  rates were calculated for the three most frequent situations that arise in the Czech Republic for the taxation of income from dependent activities, i.e. the taxpayer applies the deduction only to himself, to the taxpayer and one child or the taxpayer and two children. The analysis was abstracted from the use of non-taxable parts of tax bases, which may be a limiting factor in this study.

The main results of this study include the finding that the tax and levy burden on wages has a negative impact on employment. If the connection of employment only with the effective tax rate were analysed, the partial opposite effect was found. The analysis examining the dependence between the share of personal income tax from the dependent activity to the tax revenue to  $ITR_L$  shows that to evaluate the impact of the share of tax revenue, it is necessary to analyse whether and how many deductions are used the taxpayer to reduce tax liability. Especially in tax levies in connection with personal income tax, the tax burden is in some cases zero, resp. negative. This is confirmed by the analysis results examining whether the levy and tax burden on labour is decreasing. This highest tax burden decrease occurred in connection with the reform of public finances in 2008. However, the share of SSC to the total tax and levy burden changes only minimally and thus, the high levy burden of income from dependent activity remains a problem.

This study has some limitations. First of all, is the fact that research was done under the condition of the Czech Republic. The analysis results can't be generalized to all European or world countries. The second limitation is data availability, especially wage distribution from the year 2003. This is the reason why analysis started this year. Finally, the third limitation is that tax burden calculation is abstracted from non-taxable parts.

The topic for further research in this area may be comparing these results with a similar analysis in another country, extending the period's length according to the availability of data, or considering changes in income taxation from dependent activity in future years.

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