

THEORETICAL ASPECTS OF LABOUR TAXES AND THEIR EFFECTS ON THE LABOUR MARKET

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Abstract. Labour taxes compose a part of the business environment, leaving potential impact on labour costs, net wages, employment, and unemployment rate. The aim of the present paper is to ascertain the effects of changes in the burden of labour taxes on the labour market seeking the answer to the question what form it could take and what could be the scale of this effect. To assess the effects of changes in the burden of labour taxes, the scientific literature was analysed and various research findings were examined and compared in the paper. The present research found that labour taxes can affect wages, the extent of engagement of employees in the labour market, the number of hours worked and labour costs, and the rates of unemployment and employment in the country. However, research works of many authors give evidence that changes in labour taxes may have different effects depending on the particular situation. It mainly depends on the approach in what way the burden of labour taxes (the average or marginal rate) is reduced and how powerful are non-governmental agents.

Key words: labour taxes, employment, labour costs.

JEL codes: E24, E62, J21

Introduction

The European Union is an area of relatively high taxes, in which taxes as a percentage of GDP reach almost 40% (General Tax Policy, 2013), of which labour taxes compose a significant share. For the average wage earner in Latvia, labour taxes account for 44.2% of total labour cost paid by the employer, which is more than in the EU Member States on average where the burden of labour taxes is equal to 43.7% (SEB Baltic Household..., 2013). **In Lithuania and Estonia, however, the burden of labour taxes is 40.7% and 40.1%, respectively.** Given the fact that labour taxes can significantly affect businesses, which are the basis for the development of the national economy, the present research analysed the **literature on effects of labour taxes on a country's economic indicators.** Besides, employment is one of the key aspects in rural areas, thus, labour taxes directly affect the balanced development of the country.

According to the informative report "Personal Income Tax Reliefs" by the Ministry of Finance of the Republic of Latvia, labour force taxes are defined as a set of taxes and payments, which includes **employee's mandatory state social insurance contributions (MSSIC) and personal income tax (PIT)**, taking into account the non-taxable minimum and tax exemptions for dependents (Informative Report on..., 2011). However, labour taxes are a set of taxes and payments that include both the employer's and

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the employee's MSSIC and PIT, taking into account the non-taxable minimum and tax exemptions for dependents.

The effects of changes in the labour taxes are little researched in Latvia. The Ministry of Finance has developed an informative report (2011) on the effects of personal income tax reliefs from the aspects of effectiveness and tax administration. In 2012, the Economic Forecasting Centre prepared an expert **evaluation on the required changes in the labour tax policy (Changes in the Labour Tax..., 2012)**, whereas A. Nipers and I. Dovladbekova (2008) published a research in which they analysed economic interrelationships regarding tax effects on unemployment and wages based on the data of developed countries. Moreover, there are a few quantitative research works on the effects of labour taxes in Latvia; thereby, foreign research papers and methodologies for estimating tax effects are described as well.

A number of scientists suggest that labour taxes primarily affect labour costs and wages of employees (Brunello G. et al., 2002; Alesina A., Perotti R., 1997; Padoa-Schioppa F., 1992) and these effects may be of short- and long-term (Arpaia A., Carone G., 2004). Other researchers analyse the effects of labour **taxes on incomes of individuals (The Role and..., 2011) and labour supply (Brewer M. et al., 2006; Disney R., 2000; Blundell R. W., 1995; Bovenberg L., 2003)** as well as on the number of hours worked. A number of other authors analyse the effects of labour taxes on unemployment and employment (Berger T., Everaert G., 2010; **The role and..., 2011; Arpaia A., Carone G., 2004; Disney R., 2000; Planas C. et al., 2007; Daveri F., Tabellini G., 1997; Boehringer C. et al., 2004; Bovenberg L., 2003; Parmentier A., 2006**), which also relate with the economic growth both in a country as the whole and in individual its **regions. It has to be noted that scientists' opinions of the burden of labour taxes, its extent, and relation to the unemployment rate vary.**

Several studies have been conducted to identify the effects of labour tax reliefs on certain social strata, mainly socially sensitive ones – single parents, families with children (Brewer M. et al., 2006; **Ribao-Cano C., McNown R., 2005; The Role and..., 2011; Blundell R. W., 1995; Fougere M. et. Al., 2012; Dolenc P., Laporsek S., 2012**) – to whom labour tax reliefs most often apply.

Given the fact that labour taxes can affect the labour market, the following hypothesis is set: the labour taxes may have differentiated effects on the labour market. The research aim is to ascertain the effects of changes in the burden of labour taxes on the labour market – what form it could take and what the scale could be of its effect. To achieve the aim, the following research tasks were set:

- 1) **to examine the effects of labour taxes on the nation's economic indicators;**
- 2) to describe the methods and indicators for examining labour tax effects.

Research materials and methods. The present paper analysed research works of scientists to identify the effects of labour taxes on the labour market and examined methodologies for estimating tax effects. The monographic and descriptive methods were employed to make a theoretical discussion and interpret research results based on scientific findings and theories regarding labour tax effects on economic indicators.

Research results and discussion

1. Effects of the labour taxes on the nation's economic indicators

After examining the effects of labour taxes in the scientific literature, one can conclude that changes in labour taxes primarily affect labour costs (Padoa-Schioppa F., 1992) and net wages of employees

(Arpaia A., Carone G., 2004; Alesina A., Perotti R., 1997; Brunello G. et al., 2002; Ziliak J. P., Kniesner T. J., 2005). By using statistical analysis methods, A. Alesina and R. Perotti (1997) found that a 1% increase in labour taxes raised labour costs by 0.15% on average. In her mathematical model, F. Padoa-Schioppa (1992) discovered that raising the tax wedge by 1% led to a 0.14% rise in labour costs on average. However, it has to be stressed that any tax-push differs across countries and over various periods as well as because of tax policies of the particular countries.

In this context, an approach proposed by A. Arpaia and G. Carone (2004) may be considered logical and theoretically justified, as it suggests dividing the effects of changes in labour taxes into short- and long-term effects. In a short-term, the effects are made both on labour costs and on the net wage level. In a long-term, in contrast, there are no effects of changes in labour taxes on labour costs, thus, effects become apparent through the net wage level of employees. According to the calculations made by researchers, a 1% increase in labour taxes simultaneously causes a 0.1% increase in real labour costs.

The mathematical calculations performed by Brunello et al. (2002) also reveal that labour taxes considerably affect the pre-tax wage. Besides, there are significant differences among various age groups. F. Daveri and G. Tabellini (1997) point that higher labour taxes raise gross wages; however, it takes place only in the countries of Continental Europe rather than in the UK and the USA. A research performed by E. Koskela and J. Vilmunen (1994) provides findings different from other scientific research works. Namely, an increase in labour taxes reduces wages and increases employment. This research was based on three well-known models of trade union behaviour: monopoly union, "right-to-manage", and the efficient bargain model.

Changes in labour taxes can also affect the number of hours worked and the engagement of employees into the labour market (labour supply). To identify the effect of labour taxes on these economic indicators, the scientific literature mainly focuses on socially sensitive social groups, i.e. single parents, families with children (Brewer M. et al., 2006; Ribao-Cano C., McNown R., 2005; *The Role and...*, 2011; Blundell R. W., 1995; Disney R., 2000) to whom labour tax reliefs most often apply. R. W. Blundell (1995) has researched married women and single parents, as married women compose a social group that significantly react on tax incentives, while special tax reliefs often apply to single parents, besides, they have limited opportunities to gain other kinds of income. Employing the method of modelling, the present research found that a few of the labour tax reforms implemented fostered the engagement of individuals into the labour market (for instance, changes in the welfare system), while other reforms lead to even more active employment (income tax reductions). A research performed by M. Brewer et al. (2006), in which the second degree polynomial expansion was employed, evidenced that a tax relief reform implemented in Great Britain (*Working Families' Tax Credit – WFTC*) made a positive effect on the labour supply, especially in relation to single-parent families. In the result of the reform, the employment of single mothers rose by 5.11 percentage points, compared with the previous programme (Family Credit) period. It was more difficult to identify an effect of WFTC in relation to two-parent families. The WFTC programme slightly reduced the employment of mothers from two-parent families (by 0.57 percentage points), and slightly increased the employment of fathers, by 0.75 percentage points. Given both kinds of families, the programme affected approximately 81 000 employees, of which 2/3 were women. The research also considered other kinds of tax relief that affected families with children in an opposite way – reduced the engagement of parents into the labour market. The researchers found that

the overall effect caused by labour tax reliefs was as follows: the employment of single mothers rose by 3.72 percentage points and the employment of both parents (men and women) decreased (by 0.40 and 0.49 percentage points, respectively). Taken as a whole, it corresponded to an increase in employment by 22 000 individuals (1/4 of it was the effect of WFTC).

Labour taxes can also affect the rates of unemployment and employment in a country. A number of research works evidence that there is an association between the burden of labour taxes and the rates of unemployment and employment (Brunello G. et al., 2001; Berger T., Everaert G., 2010; Koskela E., Viilmunen J., 1994; Planas C. et al., 2007). Several authors point that labour taxes affect unemployment to a relatively greater extent in the countries with medium centralisation regarding negotiations on wages (Daveri F., Tabellini G., 2000). T. Berger and G. Everaert (2010) agree with this assertion, pointing that labour taxes and unemployment depend on the institutions determining wages in any given country.

It has to be emphasised that the opinions of various authors on the effects of labour taxes on the rates of unemployment and employment are controversial. M. Lehmus (2013), analysing the labour taxes in Finland in the period of 1996-2008, applied the dynamic general equilibrium model, which was adapted **to Finland's economy, especially to its labour market, and used micro data. He found that the reforms of labour taxes in the period of 1996-2008 contributed to an increase in employment by 1.4% which corresponded to a 8.5% rise in the overall employment in that period. Therefore, one can conclude that although the reduction of labour taxes contributed to employment, yet, the overall contribution of tax reforms in the final result was insignificant or modest.**

C. Planas et al. (2007), after analysing the effects of labour taxes on unemployment in the euro area countries by employing econometric methods (in the period from 1970 to 2002), concluded that the rates of labour taxes had increased by almost one half (40%) since 1970, which was a cause for increases in **unemployment. According to the authors' calculations, the tax elasticity of unemployment was equal to 0.32, and a reduction of labour taxes might lead to a decrease in the unemployment rate in the countries of Continental Europe.** The OLG growth model developed by F. Daveri and G. Tabellini (1997) showed that the burden of labour taxes was for more than 50% a cause of the rise in unemployment in the West European countries. Besides, the unemployment elasticity of labour tax burden was approximately 0.43.

The calculations performed by A. Arpaia and G. Carone (2004) reveal that the unemployment rate is not always high in the countries with a high burden of taxes, however, in most instances, it tends to be higher after an increase in labour taxes. Like in research works performed by other authors, the present research found that the burden of taxes did not affect unemployment in a long-term. T. Berger and G. Everaert (2010) also point that the effects of labour tax reductions on unemployment should not be overestimated, as other significant factors affect it as well. They believe that reducing of labour taxes for decreasing the unemployment rate may be useful in the countries with strong trade unions and decentralised wage systems, though, the effect should not be overestimated. A researcher M. Hoel (1990), who employed a mathematical model in his research that was based on the efficiency wage model with taxes, agrees that reducing of labour taxes not always leads to decreases in unemployment. **The author's calculations showed that in a situation when marginal tax rates were reduced but the average rates of labour taxes remained constant, wages and the unemployment rate would increase.** C. Boehringer et al. (2004) has also found that labour taxes minimally affected the unemployment rate. The reason why higher labour taxes can reduce employment according to various research works

performed by economists is often associated with the effect of tax policies on labour supply – wages will decrease owing to higher taxes and part of employees will quit their job.

It is important to stress that some researches (Lockwood B., Manning A., 1993; Koskela E., Vilmunen J., 1994; Roed K., Strom S., 1999) highlight the positive effect of a progressive tax system on employment. It may be explained by the fact that wages are determined in negotiations rather than it is a result of equilibrium of labour supply and demand (Koskela E., Vilmunen J., 1994).

The scientific literature stresses that changes in labour taxes can contribute to employment, which leads to economic growth in a country as a whole and in individual its regions, which is best characterised by GDP. After analysing the effects of labour taxes and welfare system on employment, unemployment, and economic growth in the OECD countries, R. Disney (2000) concludes that the effects of high labour taxes on economic growth are different. In measuring the effects of tax policies by using the approach **“differences of differences”** and the structural labour supply estimation, he found that direct labour taxes affected employment and unemployment only if the supply of labour was inelastic or the labour market was not competitive.

In their research, F. Daveri un G. Tabellini (1997) have concluded that a rise in labour taxes is associated with a slowdown in economic growth. It is evidenced by case studies in Germany and France for the periods of 1965-1975 and 1976-1991 when the labour taxes were increased by 8% and 10% in the respective periods. It led to a decline in GDP per capita (by approximately 0.4%) and a rise in the unemployment rate by about 3-5%. In Europe as a whole, a 10% rise in labour taxes leads to a 4% increase in unemployment and a 0.4% decrease in GDP per capita.

2. Methods and indicators for assessing the effects of labour taxes

The effects of changes in the labour taxes on various indicators of labour market and national economy as well as the research methods employed are summarised in Table 1.

Table 1

Characteristics of the effects of labour taxes on economic indicators

Scientists, researchers	Research methods employed	Economic indicators affected by labour tax changes	Characteristics of effects
Universita Bocconi, Centre for Research on the Public Sector (2011)	<ul style="list-style-type: none"> ● descriptive statistics ● regression analysis 	<ul style="list-style-type: none"> ● rates of unemployment and employment, ● individuals' engagement (inactivity) in the labour market, ● number of hours worked, ● poverty and income inequality 	Effects of a labour tax policy on the rate of unemployment, the rate of employment, inactivity in the labour market, and changes in the number of hours worked per week are very weak
A. Arpaia, G. Carone (2004)	<ul style="list-style-type: none"> ● descriptive statistics (period 1980 – 2000) ● econometric methods 	<ul style="list-style-type: none"> ● labour costs ● net wages of employees ● rates of unemployment and employment 	<ul style="list-style-type: none"> ● a 1% increase in labour taxes leads to a 0.1% rise in real labour costs ● in a long-term, the burden of taxes does not affect unemployment
R. W. Blundell (1995)	modelling (simulation)	<ul style="list-style-type: none"> ● number of hours worked ● individuals' engagement in the 	Some labour tax reforms motivate individuals to engage in the labour market (changes in the welfare system), while other reforms lead to even more active employment (income tax reductions)

		labour market	
T. Berger, G. Everaert (2010)	Maddala and Wu panel unit root tests and co- integration tests	<ul style="list-style-type: none"> • rates of unemployment and employment 	<ul style="list-style-type: none"> • effects of labour taxes on unemployment are statistically significant only in European countries. • reducing labour taxes with the purpose of decreasing the rate of unemployment may be useful in the countries with strong trade unions and decentralised wage systems, yet, the effect should not be overestimated
A. Alesina, R. Perotti (1997)	statistical analysis	<ul style="list-style-type: none"> • labour costs 	a 1% increase in labour taxes leads to a 0.15% rise in labour costs on average
F. Padoa-Schioppa (1992)	mathematical model – a theoretical microeconomic model is created, from which a macroeconomic model for wage changes caused by changes in a labour tax is derived	<ul style="list-style-type: none"> • labour costs 	a 1% increase in the tax wedge leads to a 0.14% rise in labour costs on average
C. Planas, W. Roeger, A. Rossi (2007)	econometric methods based on the Philips curve equation	<ul style="list-style-type: none"> • unemployment rate 	<ul style="list-style-type: none"> • an increase in the labour tax rate leads to a rise in the rate of unemployment • the tax elasticity of unemployment is equal to 0.32, and a reduction of labour taxes may lead to a decrease in the unemployment rate in the countries of Continental Europe
F. Daveri, G. Tabellini (1997)	an economic growth model in which equilibrium unemployment is affected by monopolistic trade unions	<ul style="list-style-type: none"> • unemployment rate • GDP 	<ul style="list-style-type: none"> • the unemployment elasticity of labour tax burden is approximately 0.43, and the burden is more than 50% cause of the rise in unemployment in West European countries • higher taxes increase gross wages • a rise in labour taxes also causes a slowdown in economic growth. In Europe, a 10% rise in labour taxes leads to a 4% increase in unemployment and a 0.4% decrease in GDP per capita a year

Source: author's calculations based on scientific literature analysis

According to the information in Table 1, the changes in labour taxes can influence the labour market by affecting such economic indicators as labour costs, wages of employees, and rates of employment and unemployment. However, the calculations performed by scientists lead to different findings, which are mainly determined by the methodology chosen in any given research; it has to be taken into consideration when performing particular calculations for Latvia.

Conclusions

1. Over the recent decades, a number of scientists have researched the effects of labour taxes on various economic indicators in countries revealing different research findings, which have mainly been determined by the applied methodology. The different effects of labour taxes in a country are determined by several factors, i.e. how the burden of labour taxes (the average or marginal rate) is reduced and how strong are the non-governmental agents.
2. Labour taxes can affect wages of employees, the extent of their engagement in the labour market, the number of hours worked, and labour costs. Besides, changes in the labour tax policy can lead to considerable corrections in the rates of employment and unemployment, which, in their turn, affect economic growth both in the country as a whole and in its regions.
3. In the scientific literature, a number of research works are available focusing on the effects of labour tax reliefs on certain social groups, mainly socially sensitive ones, i.e. single parents, families with children, and old employees, to who labour tax reliefs most often apply in the

context of labour tax policy. In research works, it has been found that changes in a labour tax can significantly affect the engagement of these social groups into the labour market as well as wages.

4. In the research on the effects of labour taxes, various methods of statistical analysis have been employed (the descriptive method, regression analysis etc.), and econometric methods as well as mathematical models have been developed, which has led to different findings on the effects of labour taxes on the labour market in any particular country.

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