

THE IMPACT OF FISCAL AND BUDGETARY POLICIES ON THE UNEMPLOYMENT RATE IN THE EU MEMBER STATES

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Abstract

The tax system is one of the main tools by which a State exercises sovereignty through the collection, allocation and redistribution of revenues in a given territory. This paper aims to highlight how the characteristics of tax systems, in the Member States of the European Union, affect the unemployment rate.

To achieve this goal, indicators for the 28 Member States of the European Union for the period 2004-2012 where used in the study. Starting with an analysis of panel data models, developed using a range of indicators specific for tax systems (budget revenues, budget expenditures, public investment, direct taxes, indirect taxes and social contributions), as exogenous variables and the unemployment rate, as an endogenous variable. The results show that the fiscal and budgetary policies of EU Member States can play a positive role in reducing unemployment, provided that their application and use will meet certain standards and performance criteria and do not harm business.

Keywords: *fiscal policy, unemployment rate, budget expenditures, budget revenues, direct taxes, indirect taxes.*

JEL classification: *H30, H71*

1. Introduction

The public financial system has always been on the borderline between political and economic aspects in the regional integration process. The tax system, in the European Union, is a reflection of the level of separation between economic integration emphasized by the existence of the single market and creation of a stronger political union (Simovic, 2007) [5]. The coordination of tax systems has a very important role in ensuring finality of the integration process and it is absolutely necessary for the development of Member States and society. In addition to the rules mentioned above, the tax system aims to: creating similar conditions in terms of tax competition between Member States and the redistribution of budgetary funds to reduce interstate disparities (Talpoș I., 2001) [6.].

Evaluation of various factors contributing to lower unemployment was and continues to be one of the most important concerns of economists everywhere. The role of fiscal policy in providing frameworks for economic development is also highly debated and the states are trying to find balance between generating public revenues and stimulating economic growth, because the increase in tax rates has a negative effect on the profitability of investments. However, economists such as John Maynard Keynes, in the first half of the last century, or Paul Krugman, today, found that there is an indisputable role of public investment in economic growth and lower unemployment (Krugman P.,2001) [3.].

In economics, supply and demand of public goods, provided through government investments, have the capacity to ensure growth, at least in the short term, and reduce the unemployment rate. Moreover, the effects the public investments produce on the economy have the ability to create a virtuous circle, with benefits that can be felt on long term. However, implementation of investment projects and the observation of their results require relatively long periods of time, and governments often choose, especially in times of crisis, to obtain immediate results by increasing other expenditures (e.g. staff costs) and reducing or delaying investment programs (Poilon, 2008) [4.].

The impacts of the budget policies on the real economy are multiple and complex, taking in consideration that the budget can reduce the unemployment rate. The state contributes directly to optimize labor occupancy by streamlining the accumulation of production factors, investing in both physical capital (infrastructure, communication networks, technologies) and human capital (providing services for education, training, health). Also, through social spendings, the state has the duty to contribute to the fairness of the population.

2. Econometric models

The economic field studies processes and phenomena, based on the idea that they are not carried out randomly, but based on their own laws, relatively stable and relatively repeatable, seeking to identify and, where possible, to influence. Starting from the basic idea that economic phenomena are most often measured (although there are situations where a quantitative analysis of a qualitative phenomenon can affect the results), the economy resort to mathematics, statistics and econometrics (Jacob & Tănăsioiu, 2005)[2.] to show how certain factors influence the economic situation of a company, a region, a country or group of countries.

The paper uses a fixed effects model, presupposes that the endogenous variable is influenced by exogenous variable, changed over time. The relationship between exogenous variable (or variables) and endogenous variable within an entity (state, company, etc.) was analyzed, taking out that certain individual characteristics of the endogenous variable may have an impact on predictors.

The equation model with fixed effects is as follows:

$$Y_{it} = \beta X_{it} + \alpha_i + \varepsilon_{it}, \quad (1)$$

Where: Y_{it} = dependent variable (i = entity, t = time);

β = coefficient of the independent variable;

X_{it} = independent variable;

α_i = constant;

ε_{it} = residual variable.

This type of econometric modeling has the attribution to remove from the equation errors that are not due to changes in exogenous variable, but could be considered systemic errors, constant in time. It follows that any change in the values recorded by the endogenous variable is not the result of errors, constant over time, but the influence exercised by exogenous variable. This provides an estimate of the "net" impact, that the explanatory variable has on the dependent variable, but those, over time constant characteristics of the explained variable cannot be taken in consideration.

To have an optimal model, it was used the Hausman test or an m-statistic, for testing the statistical hypothesis regarding estimator bias or inconsistency. In addition to the Hausman test, the assumptions of normal distribution of the residual series and autocorrelation and heteroscedasticity conditions of errors will be tested. If these conditions are not met, simple estimates will be performed, to resolve any inconsistencies.

3. Selection of variables and data processing

The econometric model proposed takes into account the data analysis for the 28 EU state members, between 2004 - 2012. The endogenous variable is the unemployment rate. Exogenous variables are: the ratio of direct and indirect taxes in GDP, the ratio of social security contributions in GDP, the ratio of budget revenues and expenditures in GDP and the ratio of public investment to GDP. In accordance with the European System of Accounts (Eurostat, 2013)[1.], these variables are defined as follows:

Unemployment rate = percentage of the active population that does not have a job, but is in the process of searching for a job.

Direct taxes are current taxes on income, wealth, etc., and involves all mandatory, unrequited payments from taxpayers, in cash or in kind, levied periodically by central government and/or, having as income tax base the income and the patrimony of entities. Also direct taxes includes some periodic taxes, for which the taxable matter is not an income or personal patrimony.

Indirect taxes are taxes on goods and services. These are amounts due per unit or quantity of a particular good or service produced or transacted. A tax can be a fixed amount of money or can be calculated as a percentage of the unit price or value of goods and services produced or traded.

Social contributions are actual or imputed contributions made by individuals or corporate contributors to social insurance schemes, in order to create provisions for social benefits to be paid.

Budgetary revenues are the proceeds from taxes, social contributions, income from economic activities undertaken by companies in which the state is a shareholder, revenues from concessions and royalties, and the revenue generated by current transfers and capital transfers.

Budgetary expenditure is the cost of: intermediate consumption, gross capital formation, compensation of employees, other taxes on production, subsidies, rents, current taxes on income, wealth, social benefits, some social transfers, other current transfers, some adjustments, capital transfers and transactions on non-produced assets etc.

Public investment are summarizing expenditures made by central and local government bodies (or regional) for gross fixed capital formation.

4. Results

Table 1. Impact of the fiscal and budgetary policy on the unemployment rate

	Model 1			Model 2		
<u>b/se</u>	p	t	<u>b/se</u>	p	t	
ChBug	0.493*** (0.04)	0.000	11.542			
VBug	-0.086 (0.09)	0.347	-0.942			
InvPub	-2.409*** (0.22)	0.000	-10.717			
ImpDir				-1.072*** (0.19)	0.000	-5.727
ImpInd				-0.073 (0.13)	0.565	-0.577
ConSoc				1.240*** (0.28)	0.000	4.498
<u>Const.</u>	-2.379 (4.11)	0.563	-0.580	8.362 (4.26)	0.051	1.964
R-squared		0.504			0.216	
F		74.843			20.291	
N observations		252.000			252.000	
Wald						

* p<0.05, ** p<0.01, *** p<0.001

GLS Regression

OLS Regression

Note: The standard errors are in pharanteses

Source: Preparation in Stata 12.0

Model 1: The influence of budgetary spending, budgetary revenues and public investment on the unemployment rate

$$\text{Equation model: } \ln RtSomCap = \alpha + \beta * ChBug + \gamma * VBug + \delta InvPub + \varepsilon(2)$$

As it can be seen in Table. 1, the main results from the development of the Model 1 were as follows:

- With a probability of about 100%, a 1% increase in the share of public spending in GDP will increase the unemployment rate with about 0.5%;
- With a probability of about 65%, a 1% increase in the share of budgetary revenues in GDP will cause a reduction in the unemployment rate with 0.086%;
- With a probability of about 100%, a 1% increase in the share of public investment in GDP will generate a decrease in the unemployment rate with about 2.4%;

From the above data it is pointed out that, in order to reduce the unemployment rate, the share of public investment in GDP should increase, this result confirms the Keynesian theory that highlights the beneficial role the economy can play, especially in times of crisis, respectively during periods of decreasing of the aggregate demand.

In terms of public revenues, they have a positive role in reducing unemployment, while budget expenditures negatively affect fewer people looking for a job. This could be explained by the fact that an increase in budgetary expenditure involves often an increase in taxes paid by companies and in particular by employers, which are thus more reluctant to hire additional labor.

Model 2: The influence of direct taxes, indirect taxes and social contributions on the unemployment rate

Equation model: $\ln RtSomCap = \alpha + \beta * ImpDir + \gamma * Implnd + \delta * ConSoc + \varepsilon(3)$

After processing the data for model 2, which analyzes the influence of taxes and social contributions on the unemployment rate, the main results obtained were:

- With a probability of about 100%, a 1% increase in the share of direct taxes in GDP will have a positive impact on the unemployment rate, leading to its decline with 1.07%
- With a probability of 45%, a 1% increase in the share of indirect taxes in GDP will also have a positive impact on the unemployment rate, leading to a decline with 0.073%;
- With a probability of about 100%, a 1% increase in the share of social contributions in GDP will have a negative impact on unemployment, leading to an increase with 1.24%.

According to the above data, the fiscal policy exerts a dual role on unemployment. On the one hand, indirect taxes such as, in particular, direct taxes lead to a reduction in the unemployment rate in the event that they are contributing to a more efficient redistribution of resources within an economy. On the other hand, as in the previous model, social contributions have a negative impact on the economy and increase the unemployment rate, most likely because these contributions are generated by employers and they refuse to hire more people.

5. Conclusion

First, subsequently the literature review, it appears that the fiscal policy and the budgetary policy of a state have a particularly important role in defining the characteristics of the economic environment and, consequently, to provide a certain level of development for their citizens. Therefore, fiscal sovereignty continues to be, even in a complex system such as the European Union, one of the defining characteristics of the nation-state. Supranational bodies only serve to coordinate certain policies and ensure that there are no major imbalances in terms of macroeconomic stability. Efforts are made for effective distribution of powers in tax matters between supranational, national and subnational institutions and it shows that the problem of harmonization and coordination of tax legislation in the European Union is topical, the solutions envisaged so far still awaits their effects, while other reforms are being developed or implemented in all Member States.

As regards to the effectiveness of fiscal policy by introducing specific principles and econometric analysis, it was intended to assess the impact of direct taxes, indirect taxes and social contributions on the unemployment rate. The results show that there is a significant potential to increase the efficiency of taxation in all Member States of the European Union, since there are differences between national tax policies, but also the result for the groups of states or for the entire Union. The results indicate that the way in which taxes and social contributions are laid and levied should be rethought with regard to new economic realities and intergovernmental fiscal relations.

The fiscal policy, evaluated in econometric models in relation to the income levels of budget spending and public investment, particularly highlights the important impact they have on the level of unemployment. This is reflected to a large extent in EU budgetary policy that directs much of its income for investments (especially by investing in research and development and infrastructure). States should allocate larger sums to areas that can generate increasing of the employment and not only focus on covering the actual expenses of the public administration and payment of social benefits.

Therefore, starting with the tax system, the most important implication that the comparative approach and econometric bases of economic processes and phenomenon is becoming aware of the influence the tax system has on the development of a state and/or a group of states, that are interconnected. Consequently, strategies that involve the collaboration of all stakeholders should be adopted by both national and supranational bodies and by companies or citizens in order to increase the efficiency of fiscal and budgetary policies, the degree of cohesion and last but not least, the degree of development of each country and, especially, of each individual.

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