THE EFFECTS OF FISCAL POLICY ON UNEMPLOYMENT AND ECONOMIC GROWTH: EVIDENCE FROM THE REPUBLIC OF NORTH MACEDONIA

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Abstract: For fulfilling the objectives of the economic growth, policy makers mostly rely on the effects of fiscal policy measures and instruments, to strive for its improvement and harmonization. In this regard, the main aim of this paper is investigation of the interrelationship and connection between the fiscal policy and its impact on the unemployment rate and economic growth, focusing the analysis in the Republic of North Macedonia. Since there is no universal model for the application of measures and instruments of fiscal policy and their combination, this paper highlights the application of the measures of these policies in developing countries such as the Republic of North Macedonia, in order to achieve financial stability. By applying the VAR technique, this paper analyzes the effects of the public revenues and expenditures on the unemployment rate and GDP growth in the Republic of North Macedonia for the time period 2000q1 – 2022q4. Finally, the results imply that fiscal policy has a significant effect on the economic growth of the Republic of North Macedonia, while there is no evidence for a significant nexus between unemployment rate and public revenues and expenditures in the Republic of North Macedonia.
Keywords: public revenues, public expenditures, unemployment, economic growth, VAR

1. INTRODUCTION

Fiscal policy represents a set of government measures to manage budget spending and taxation, which uses appropriate expenditure and revenue programs to achieve the desired, avoiding side effects on national income and employment. Moreover, fiscal policy represents a desirable instrument of economic policy in the hands of the state, which is used for interventions in the economy, with the aim of managing the economic activity of the national economy. In addition, there should exist a coincide between the fiscal policy and the society goals of one economy, so that the ultimate goal is to increase the welfare of the population. Fiscal policy can be defined as a part of economic policy which, with its measures and instruments, i.e. shaping taxes and public expenditures (public works) or expenditures, neutralizes the effects of various economic cycles, with the intention of making an adequate contribution to the realization of the main economic goals of a given economy, that is, maintaining the growth of full employment in the given economy, with price stability and without inflationary burdens (Babic, 1998). Numerous theorists equate fiscal policy with the stabilization function of the fiscal system. The well-known author of fiscal policy, R. A. Musgrave, points out three fundamental functions of fiscal policy (Alijagic, 2015): distribution function; stabilization function and redistributive function. On the other hand, Roller (2003) defines two main basics effects of the fiscal policy as: expansionary - used when the state believes that the economy is not growing fast enough or that unemployment is too high; and restrictive - used when high inflation is present because it reduces the amount of money available in the economy for new purchases, thus reducing consumption (or demand) while putting pressure on prices. The stabilization function, as a special dimension of fiscal policy according to Atanasovski (2004), consists in combined action through public revenues and public expenditures on economic flows in order to achieve stabilization goals (Atanasovski, 2004). On the other hand, by applying fiscal policy instruments, such as progressive tax rates, various exemptions and reliefs for direct taxes, differentiated taxation of separate parts of income, etc., income redistribution can be influenced; differences in the amount of income can be reduced, which would lead to the establishment of more socially acceptable differences between individuals in society. Thus, a greater percentage burden will be borne by those whose economic power is greater. Furthermore, the redistribution of funds can be achieved through fiscal policy measures, and regional development can be affected (Yoga and Datrini, 2021).

The fiscal policy of developing countries differs from developed economies. The need to find appropriate instruments and conduct a fiscal policy, especially in the countries of the Western Balkans, is a necessary condition not only for achieving economic growth and reducing unemployment, but it is also a condition for the entry of these countries into the European Union. A country's development orientation depends on the indicators of the macroeconomic policy and on the standard of living and the business operations of the economy. The goal of this research is to point out the importance of conducting a fiscal policy that will aim to achieve general economic growth in the future with an emphasis on reducing unemployment, especially in developing countries such as the Republic of North Macedonia. In this regard, analytical methods will be used to analyze the relevant scientific and professional literature related to this nexus of fiscal policy, employment and economic growth as well as

econometric approach will be utilized to define the effects of the fiscal policy on unemployment and growth of the economy of the Republic of North Macedonia for the time frame 2000 – 2022.
This paper structure is organizes in the following: the first part defines the objectives and highlights main focus and hypothesis of the paper, the second part is dedicated to the discussion of the relevant literature review regarding the relationship between fiscal policy, unemployment and economic growth, third section represents the research methodology of the paper, while the fourth section deals with the empirical findings and discussions regarding the effects of the fiscal policy on the unemployment rate and economic growth in the Republic of North Macedonia. Last, but not least, the final section is dedicated to the conclusions and recommendations that came from this empirical research.

2. LITERATURE REVIEW

In the existing economic literature there exist plenty of empirical papers that have been dealing with the effects of fiscal policy on the level of unemployment and economic growth in both developed and developing countries, yet the findings are mixed and no consensus is reached regarding the effects of fiscal policy in these two important macroeconomic instruments.
High and persistent levels of unemployment require a multifaceted fiscal policy response that is usually based on labor market reform, but also includes a field of other economic policies. Although fiscal policy cannot replace structural labor market reform, fiscal policy instruments can help support job creation in a number of ways, both in the short and long term. However, the impact of fiscal policy on labor market outcomes depends on country circumstances, including the state of the economy, the existence of labor market rigidities, and the interaction with other macroeconomic policies (Cottareli, 2012).
The design of fiscal consolidation matters for labor market outcomes. There is a well-founded debate in the economic literature about the growth and employment impact of expenditure-based versus revenue-based consolidations. There are relatively many factors that influence the choice of how fiscal policy will predict which choice to make: the specific nature of the revenue or expenditure measures; country specific characteristics; and starting conditions etc. As Deskar-Škrbić (2020) states, in developed economies, tax-based consolidations seem to be associated with a more negative effect on jobs in normal times (Deskar-Škrbić, 2020). However, the whole situation can change if the starting point of the adjustment is a prolonged recession, then when the expenditure adjustment has a larger short-term negative effect on employment.
The highlight of the importance of the fiscal policy for employment and growth have been crucialy noticed after the period of the pandemic Covid – 19, where the report from the OECD (2021) states that the objective of fiscal policy, especially in a crisis such as that produced by Covid-19 and the current economic crisis caused by the military conflict between Russia and Ukraine, is to improve access to employment for certain particularly vulnerable groups, that is to enable them to preserve their connection with the labor market, make it easier for them to find work and increase the likelihood of their retention in the world of work (OECD, 2021).
In some earlier papers of Fatas and Mihov (2001) amd (Uhlig, 2005), by using SVAR approach have been analyzed the effects of public revenues and expenditures on the level of unemployment and economic growth. Simialr methodogy have been used by Coskun Yilmaz (2023) by using the recursive SVAR approach to analzye the effects of public expenditures and tax revenues on the level of unemployment and growth for the case of the Republic of Turkiye. The results imply than in the short – run tax revenues decrease the unemployment rate, while in the long run they have positive effects on the unemployment rate.
Furthermore, in their study Omran and Bilan (2020) by utilizing annual data for the time period 1976 - 2018 analyzed the impact of fiscal policy on the rate of unemployment for the case of Egypt by using the Structural VAR approach. Their findings suggested that public expenditures have a crucial impact on the unemployment rate while tax revenues have a positive long-term impact on the level of unemployment. In addition, Ünal et al. (2015) investigated the effects of unemployment rates on fiscal policy in the Netherlands. Their findings imply that a fiscal contraction, followed by a decrease in the public expenditure or net tax increase, will causes the level of unemployment to increase. In another study, Yousef (2023) investigates the effects of fiscal policy on unemployment rate in Jordan for the time period 1986 to 2019 by using the ARDL approach. His findings revealed that in case of a rise in the aggregate public expenditures, a decrease in unemployment rate in both the short run and long run period will occur, while tax revenues have positive effect on the level of unemployment in both short-run and long-run period.
Having into consideration the mixed results regarding the empirical analysis of the effects of the fiscal policy on the economic growth and unemployment rate, this paper will try to contribute to the exisiting literature rather than to solve the exisiting debate regading this nexus.

3. RESEARCH METHODOLOGY

In this paper, it is analyzed the impact of the fiscal policy on the level of unemployment and economic growth for the case of the Republic of North Macedonia for the time period 2000q1 – 2022q4. In this regard, the quarterly data about public revenues and public expenditures, unemployment rate and GDP growth rate have been collected from the National Bank of the Republic of North Macedonia.

Initially, the data have been investigated regarding their stationarity by utilizing the Augmented Dickey Fuller test, to check if they are stationarity in their level, if not if they become stationarity in their first difference. Later, co-integration approach it has been applied, where it is analyzed if there exist a long run significant relationship between fiscal policy, unemployment rate and economic growth in the Republic of North Macedonia for the time spin 2000q1 – 2022q4.

Finally, Vector Autoregression model technique is employed to determine the associations between public expenditure, public revenues, unemployment rate and economic growth in the Republic of North Macedonia.

The relationship between fiscal policy, unemployment rate and economic growth it is a highly explored nexus, although no consensus has yet been reached both in developed and developing countries. Having into consideration the existing debate on this nexus, this paper tries to examine the relationship between fiscal policy, unemployment rate and economic growth for the case of the Republic of North Macedonia, for the time period 2000q1-2022q4, by using the following basic regression model:

$$Unemp_t = \beta_0 + \beta_1 rev_{t-1} + \beta_2 exp_{t-1} + \beta_3 GDP_{t-1} + \varepsilon_t \quad (1)$$
$$GDP_t = \beta_0 + \beta_1 rev_{t-1} + \beta_2 exp_{t-1} + \beta_3 unemp_{t-1} + \varepsilon_t \quad (2)$$

where:
Unemp – unemployment rate
Rev – public revenues
Exp – public expenditures
GDP – GDP growth rate

Initially, the following table shows the variables included in the models and their abbreviations used in the empirical analysis.

Table1. Variables and their abbrevation.

VARIABLES	ABBREVATION
Unemployment rate	Unemp
Public Revenues	rev
Public Expenditures	exp
Real GDP % growth	GDP

Source: author's source.

4. EMPIRICAL FINDINGS

The paper tries to investigate the relationship between fiscal policy, unemployment rate and economic growth for the case of the Republic of North Macedonia, for the time spin 2000q1 to 2022q4., by utilizing the Vector Autoregression approach, known as VAR methodology.

The following table shows the descriptive statistics for the variables included in the analysis of the relationship between fiscal policy, unemployment rate and economic growth for the case of the Republic of North Macedonia. In the table as it can be noticed it is shown the value of the number of observations, the value of the standard deviation, the mean value of the variables and minimum and maximum value of each variable.

Table2. Descriptive statistics

variables	Nr. of obs	mean	Stnd.dev	min	max
GDP	92	2.02e+07	1.94e+08	-12.72352	1.86e+09
unemp	92	31.53487	4.058186	23.36548	38.67781
rev	92	27080.27	11525.59	8596	43807
exp	92	29344.74	13153.99	8605	49313

Source: authors calculations.

For ordering the model of this empirical analysis and to determine how variables captures the inherent characteristics of its time series, we determine the level of lag structure in the time series using the FPE, AIC, SBIC and HQIC criteria. Their results are shown in the following table, where based on the Akaike criterion, we can conclude that the number of lags in this model is set to be four.

Table3. Lag structure order

Lag	FPE	AIC	HQIC	SBIC
0	4.3e+32	86.4982	86.5435	86.6108
1	2.4e+30	81.3214	81.5482*	81.8844*
2	2.2e+30	81.2047	81.613	82.2182
3	2.6e+30	81.3746	81.9643	82.8384
4	2.2e+30*	81.1829*	81.9541	83.0972

Source: authors calculations.

In order to determine the relationship between fiscal policy, unemployment rate and economic growth in the Republic of North Macedonia, the Vector Autoregression model has been conducted and the results of the model are illustrated in the table below. As it can be seen, there exist a strong positive relationship between public revenues and unemployment rate, where by increasing the tax revenues the unemployment rate in the North Macedonia will also increase. On the other hand, there is also a significant positive effect of the public expenditures in the unemployment rate of the Republic of North Macedonia for the time period 2000q1 – 2022q4. As for the effects on the economic growth, there exist a significant negative relationship between public revenues and economic growth of the republic of North Macedonia, while positive effects of public expenditures on growth is evident from the empirical analysis from the established VAR model.

Table4. Vector Autoregression results (VAR)

Vector Autoregression				
Sample: 2001q1 - 2022q4			Number of obs = 88	
Log likelihood = - 3504.048			AIC = 81.1829	
FPE = 2.17e+30			HQIC = 81.95413	
Det (Sigma_ml) = 4.53e+29			SBIC = 83.09721	
Unemp (dependent variable)	Coef.	Std. Err.	z	P>|z|
Unemp L4	.0859	.111684	0.77	0.442
GDP L4	-4.90	4.28	-1.15	0.252
rev L4	.0000923	.0000379	2.43	0.015
exp L4	-.0000623	.0000281	-2.21	0.027
cons	2.3442	1.4178	1.65	0.098
GDP (dependent variable)				
GDP L4	-.0633046	.1027513	-0.62	0.538
rev L4	-29328.52	10053.91	-2.92	0.004
exp L4	17492.78	6533.866	2.68	0.007
unemp L4	-3778901	2.68e+07	--0.14	0.888

cons	-6.01e+07	3.40e+08	-0.18	0.860

Source: authors calculations.

5. CONCLUSIONS AND RECOMMENDATIONS

There is no doubt about the crucial and vital role of the fiscal policy for achieving the most important macroeconomic goals of every country. The most often emphasized goals of fiscal policy refer to the optimal distribution of resources, fair distribution of income, economic stabilization and economic growth. In conditions imposed by the pandemic caused by COVID-19, the possibility of timely action was called into question, due to the limited possibility of predicting economic cycles, the existence of the problem of delaying the effects of fiscal policy, as well as the action of a crowding-out effect, the use of fiscal policy for stabilization purposes was not recommended, especially not in academic circles, in contrast to the importance of automatic stabilizers which has already been emphasized.

Having into consideration the importance of the fiscal policy on the economic growth and development of both developed and developing countries as well as the important role on the reduction of the level of unemployment, this paper tries to investigate the effects of the fiscal policy on the unempleyment rate and economic growth in the Republic of North Macedonia for the time period 2000q1 – 2022q4. In addition, the Vector Autoregression model has been employed to determine such nexus, and the results imply a strong and positive relationship between the tax revenues and unemployment rate, and negative significant relationship between public expenditures and unemplyment rate. Furthermore, public expenditures have positive and significnat impact on the GDP growth rate, while public revenues negatively impact the economic growth of the Republic of North Macedonia.

Such results imply that there exist a strong realtionship between fiscal policy, unemployment rate and economic growth in the Republic of North Macedonia for the last almost three decades. Thus, having into consideration such results, they can serve as a string recommendations for the policymakers of the country, emphesizing as a priority goal of the fiscal policy in the coming period to be the stability of public finances tha should be additionally ensured as well as the continuation of the fiscal adjustment and fiscal consolidation in order to ensure long-term fiscal sustainability. In addition, the choice of various instruments of the chosen policy that affect economic growth should be entrusted to professional economic creators and at the same time exclude political influence. And finally, as last but most important recommendation is the transparency which represnts the basis of every economy in terms of which instruments are used in relation to the fiscal policy to reduce unemployment as a pressing problem and economic growth.

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