

THE INFLUENCE OF FISCAL POLICY ON UNEMPLOYMENT RATE IN TÜRKİYEAsst. Prof. Sevgi COŐKUN YILMAZ (Ph.D.)* **ABSTRACT**

In the context of ongoing economic discussion, the connection between government actions and economic performance remains an important issue. There exist diverse opinions and arguments regarding how fiscal policy affects the unemployment rate from both empirical and theoretical perspectives. The objective of this research is to explore the response of unemployment rate to fiscal policy shocks, namely government expenditure and tax revenue shocks. To achieve this goal, we gather annual data spanning from 1990 to 2021 for Türkiye employing the recursive Structural VAR model. The results show that a tax revenue shock, corresponding to a one standard deviation change, has an initial influence of reducing the unemployment rate that exhibits statistically significant behavior in the first two periods but it positively affects the unemployment rate in subsequent periods. Furthermore, the reaction of the unemployment to a government spending shock follows a hump-shape pattern but this pattern is not statistically significant.

Keywords: Unemployment, Fiscal policy, Recursive Structural VAR.

JEL Codes: C32, E62, F62.

TÜRKİYE'DE MALİYE POLİTİKASININ İŐSİZLİK ORANI ÜZERİNDEKİ ETKİSİ**ÖZET**

Devam eden ekonomik tartışma bağlamında, hükümet eylemleri ile ekonomik performans arasındaki ilişki önemli bir konu olarak kalmaktadır. Maliye politikasının işsizlik oranı üzerindeki etkisi hakkında, empirik ve teorik açıdan farklı görüşler ve argümanlar mevcuttur. Bu makalenin amacı, işsizlik oranının maliye politikası şoklarına (yani hükümet harcamaları şoku ve vergi geliri şoku), nasıl tepki verdiğini arařtırmaktır. Bu amaca ulaşmak için, Türkiye için 1990-2021 yılları arasındaki yıllık zaman serisi verilerini kullanarak rekürsif Yapısal VAR modeli uygulanmaktadır. Sonuçlar, bir standart sapma deęişikliğine karşılık gelen vergi geliri şokunun işsizlik oranını başlangıçta istatistiksel olarak anlamlı bir şekilde azaltıcı bir etkisinin olduğunu göstermektedir, ancak sonraki dönemlerde işsizlik oranını olumlu etkilemektedir. Ayrıca, kamu harcamalarında meydana gelen şokun işsizlik üzerindeki

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etkisi hörgüç (hump-shape) şekli sergilemektedir fakat işsizlik oranının tepkisi istatistiksel olarak anlamlı değildir.

Anahtar Kelimeler: İşsizlik, Maliye Politikası, Rekürsif Yapısal VAR.

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1. INTRODUCTION

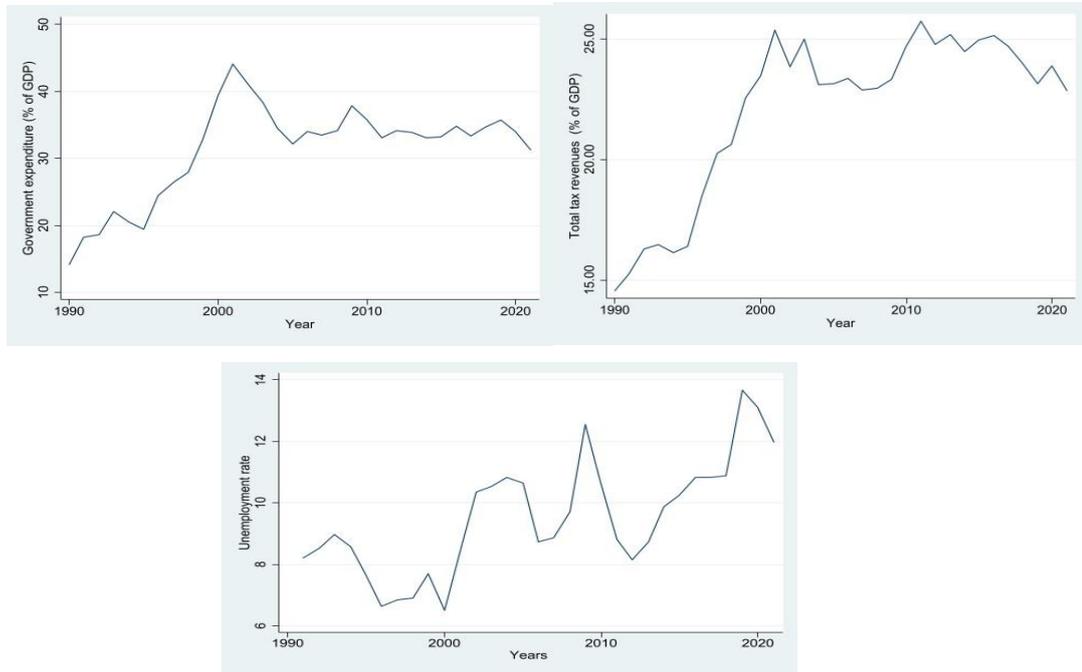
The principal emphasis of the literature has been the impacts of fiscal policy on macroeconomic indicators like GDP growth and consumption (Gali et al., 2007). However, relatively little focus has been given to analyzing the influence of fiscal policy on unemployment rate until 2007-2008 financial crises. Before the crisis, the consensus among academic and policy institutions was that monetary policy is responsible for stabilizing the economy while fiscal policy should mainly depend on automatic stabilizers. However, this belief has faced growing obstacles, especially as central banks in some countries have encountered difficulties in accomplishing full employment (Hjelm and Stockhammar, 2016). The occurrence of a high unemployment rate was one of the significant consequences of the crisis. The global unemployment rate prior the financial crisis was estimated at around 170 million, and this figure has increased to about 197 million in subsequent years. Therefore, both the United States and European governments implemented fiscal stimulus to handle the job crisis (Unal, 2015). Simultaneously, the focus of literature has shifted towards investigating how fiscal policy supports output and handles an increasing unemployment rate (Bova, 2014).

There are differing opinions and arguments regarding how fiscal policy influences the unemployment rate from the empirical and theoretical perspectives. Some empirical studies believe that higher labor taxes have a tendency to rise unemployment rates (Nickell, 1997). However, the results of other studies are not as conclusive (Nunziata, 2002). In addition, from a theoretical standpoint, Real Business Cycle (RBC) model suggests that a rise in public spending results in the crowding out effect and a reduction in the real wage. The reason is that the induced wealth effect causes an expansion in labor supply and production while consumption and the real wage decrease. Conversely, Keynesian models predict that there will be a rise in labor demand, resulting in higher real wages and output (Pappa, 2009). Furthermore, the different identification approaches have been studied in empirical research to analyze the influences of fiscal policy shocks, namely the recursive approach by Fatás and Mihov (2001), the Structural VAR framework by Blanchard and Perotti (2002) and the sign restriction method by Uhlig (2005). In this research paper, we delve into the influence of government expenditure and tax revenue as a fiscal policy tool on the unemployment rate employing the recursive SVAR approach in Türkiye. For this analysis, we use the data for government expenditure (% GDP), tax revenue (%GDP), unemployment rate and real GDP from 1990 to 2021. Then, we explore how unemployment rate responds to the public expenditure and tax revenue shocks together with real GDP. The results of this

paper will provide valuable insights the efficacy of fiscal policies in decreasing unemployment rate in Türkiye.

In Figure 1, we can observe that government expenditure, tax revenue and the unemployment rate differ over time in Türkiye from 1990 to 2021. The government expenditure was almost 15% in 1990 and increased significantly, reaching 40% in 2001. After 2001, it started decreasing until 2005 and has fluctuated between 30-35% from 2005 to 2021. For tax revenue, it was 15% in 1990 but it increased significantly until 2001, reaching 25.36%. It ranges between 22-25% from 2001 to 2021. Furthermore, according to the estimated by International Labor Organization (ILO), the unemployment rate stood at 8.89% in 2007 but in the subsequent years, it increased and reached 12.55% in 2009.

Figure 1. Government Expenditure, Tax Revenue and Unemployment Rate in Türkiye



Source: Calculations of the author. Note that the data is taken from IMF (Government expenditure), OECD (Tax Revenue) and ILO (Unemployment Rate).

Unemployment plays a vital role by influencing both the demand and supply channels of the economy. People who are capable of working but unable to find a job cannot make a contribution to the production process of country. As a result, these people cannot demand enough consumption goods due to being unable to earn income. Therefore, unemployment influences negatively the economies through both the production and consumption channels (Pata, 2020). In addition, inter-temporal and intra-temporal substitution effects influence the dynamics of labor supply. However, the specific effects on employment and real wages remain uncertain, contingent upon the elasticity of labor supply. Additionally, a rise in public expenditure results in a decline in savings, a rise in the real interest rate, and diminishes investment, consequently impacting the capital stock and labor demand in the medium term (Tagkalakis, 2013).

This study is organized as following: the existing literature is briefly explained in the following section. Section 3 exhibits the data and methodology of the study. Section 4 demonstrates the outcomes and section 5 draws the conclusion.

2. RELEVANT LITERATURE

Fiscal policy is a political instrument that uses government expenditure and taxation to shape and influence the economy. Governments often implement fiscal policy with the aim of combating poverty and reducing inequality as well as maintaining a strong and sustainable economic growth. Unemployment is one of the problems that should be addressed while aiming a long-lasting economic growth. Many researchers have performed considerable studies on the influence of fiscal policy on the labor market indicators. In specific, in the subsequent to the 2007-2008 global financial crisis, there has been a notable rise in the literature to inquire into the macroeconomic influence, especially for unemployment rate, of fiscal policy both theoretically and empirically.

Omran and Bilan (2020) employed annual data from 1976 to 2018 and utilized the Structural VAR approach with an impulse response function to search the impact of fiscal policy on unemployment in Egypt. The findings exposed that public spending has a detrimental influence on unemployment rates but tax revenues have a positive long-term impact. Consequently, this study recommends the implementation of an expansionary fiscal policy by the Egyptian government to decrease unemployment rates in the country. Tagkalakis (2013) highlights the considerable impact of government expenditure reductions, particularly in the areas of public consumption and, to a smaller degree, public investment, on both unemployment and economic growth. It is also found that tax increases have unfavorable effects, particularly when combined with increased implicit tax rates, which lead to decreased output and increased unemployment. The study specifically highlights that, in contrast to the years prior to the crisis, the influence of fiscal policy on production and unemployment rate has intensified recently. Furthermore, both production and unemployment exhibit a longer-lasting response to fiscal policy adjustments. Bassanini and Duval (2006, 2007) conducted research on OECD economies and discovered that elevated taxes on labor, with or without taxes to consumption, results in a rise in unemployment.

On the other hand, studies conducted in the US by Fatás and Mihov (2001) and Burnside et al. (2004) found that a public spending shock influences the employment positively (also see the study of Cavallo, 2005). In accordance with a study conducted by Monacelli et al. (2010), they used a vector autoregressive approach to search how fiscal policy affected crucial labor market indicators in the US. The authors explore that one percent rise in public spending relative to GDP results in production and unemployment multipliers of approximately 1.3 and 0.6, in turn. This shows that about 1.2 million jobs will be created for every percentage point increase in GDP. Additionally, the study notes that both hours worked and employment levels have increased noticeably in reaction to a shock in public spending. Also, Saraireh (2020) aimed to determine the effect of public expenditure on unemployment rate in Jordan

from 1990 to 2019. Employing the ARDL co-integration analysis, this paper discovered a one percent rise in public spending as a proportion of GDP led to a corresponding reduction of approximately 0.43 percentage points in the unemployment rate within the same year. Additionally, findings indicated that in the short term, public expenditure impacts positively and significantly the unemployment rate. Kuo and Miyamoto (2014) conducted a comprehensive empirical analysis that reveals a noteworthy connection between public expenditure and the unemployment. Their findings indicate that when government spending increases, it leads to a higher rate of job placement and a lower rate of separation, ultimately resulting in a decline in the overall unemployment rate.

The study carried out by Ünal et al. (2015) looked into how unemployment rates were affected by fiscal policy in the Netherlands. The findings of this work show that a fiscal contraction, characterized by a decrease in public expenditure or a rise in net taxes, causes a rise in unemployment. On the other hand, a fiscal expansion, involving an increase in public spending or a decrease in net taxes, is related to a decrease in unemployment. Additionally, the study reveals that a rise in public expenditure is linked to higher output levels, while an increase in total net taxes is associated with a decline in output. A research undertaken by Murwirapachena et al. (2013) focuses on public spending in South Africa and its relation with unemployment. The analysis revealed public consumption spending influences the unemployment rate positively, indicating that higher levels of such spending were associated with increased unemployment. Conversely, this work explored that a negative effect of government investment on unemployment, suggesting that higher levels of public investment were related to a decline in unemployment levels in South Africa. In their study, Bova et al. (2015) conducted a search for OECD economies to explore how the fiscal policy impacts the employment rate in the short-run in these economies. Their results demonstrated that discretionary expenditure on goods and services had a greater significant effect on employment rate compared to subsidies. Rising government spending in goods and services was found to acquire a stronger influence in boosting employment levels, while the impacts of subsidies on employment were relatively weaker.

In addition, in political economics, there are some studies conducted to investigate how fiscal policy affects the unemployment rate in economies with different political ideologies, namely left-wing governments and right-wing governments. For example: Pettersson-Lidbom (2008) explore that left-wing governments demonstrate a propensity to engage in a fiscal policy characterized by a spending and taxation pattern that is approximately 2-3% higher than that of right-wing governments. Also, empirical findings demonstrate that left-wing governments generally experience lower unemployment rates, with a disparity of around 7%. This phenomenon can be attributed, at least in part, to the fact that leftist governments tend to hire around 4% more workers by comparison to their rightist counterparts.

Yousef (2023) examines how fiscal policy impacts unemployment rate in Jordan from 1986 to 2019 using the ARDL estimation. The results have revealed that in case there is a rise in aggregate public expenditure, there will be a decrease in unemployment rate in both the temporary and permanent period

while a rise in tax revenue raises unemployment in both the temporary and permanent period. Pappa (2009) examines the impact of fiscal policy disturbances on the labor market indicators by applying a SVAR model. Her analysis is based on the premise that disturbances to public consumption, investment and employment should result in increased output and deficits. She explores that shocks to public consumption and investment results in simultaneous rises in wages and employment. Caldara and Kamps (2008) explain that VAR approach has emerged the primary econometric tool for analyzing the effect of shocks to both monetary and fiscal policies. They also mention that there is a common ground concerning the empirical impacts of monetary policy shocks but there is no common ground concerning the influence of fiscal policy shocks, namely public spending and tax revenue shocks. Hence, in their study, they demonstrate that by explaining the variations in the specification of the reduced for VAR method, some of the disagreements in the existing literature diminish. They find that significant differences in the results concerning the influence of tax revenue shocks, based on the identification method employed. They also explore that after public expenditure shocks, real GDP, private consumption and real wage exhibit a substantial rise but employment does not show a noticeable reaction. On the contrary, they find divergent results regarding the effect of tax shocks.

For Turkey, Berument et. al. (2006) assess the distinct influences of different policy shocks related to macroeconomy, on unemployment rate across various levels of education using recursive VAR method. They demonstrate that the influence of monetary policy on unemployment, categorized by educational attainment and gender, in Türkiye is not significant. Conversely, it is suggested that income policies, including fiscal measures, along with the state of unemployment itself, may be the primary elements affecting the reaction of overall unemployment rate. Büyükbasaran et al. (2019) examine the relation among monetary policy and fiscal policy in Türkiye using a Bayesian Structural VAR method with sign and zero restrictions in Türkiye. Their focus lies in analyzing the response of fiscal and monetary policy indicators to diverse macroeconomic shocks. They find that the nature of shocks has a high importance when considering the interplay among monetary and fiscal policies. Cebi and Culha (2013) examine the effect of public expenditure shocks on the real exchange rate and the balance of foreign trade in Türkiye from 2002 to 2012 employing a structural VAR method. They find that a favorable stimulus to public expenditure results in an improvement in the real currency exchange rate and affects the trade balance negatively.

3. METHODOLOGY

Within this research, we gauge the influence of fiscal policy on unemployment in Türkiye. For this analysis, the annual data is utilized during the period from 1990 to 2021. The government expenditure data (% of GDP) is derived from International Monetary Fund (IMF). The data for total tax revenue (% of GDP) and GDP (constant 2015 US\$) is gathered from the OECD database and unemployment (% of total labor force) data is collected from International Labor Organization (ILO).

Note that we use the logarithm of real GDP during the analysis. To achieve our objective, we employ the recursive VAR method as presented by Blanchard and Perotti (2002)'s paper. To evaluate how fiscal policy influence economic performance in the United States during the post-war period, they chose a combination of government expenditure and taxation as a fiscal policy tool. They demonstrate that while positive shocks to taxes affect the output negatively, positive shocks to government spending influence it positively. By gathering the endogenous indicators into the vector with k - dimensions Y_t , the VAR's reduced model can be written as follows:

$$Y_t = \phi_0 + \phi_1 t + B(L) Y_{t-1} + \varepsilon_t \quad (1)$$

Where ϕ_0 is a constant term and t is a linear time trend. $B(L)$ represents the lag polynomial and ε_t shows the disturbances in reduced model. After we multiply the aforementioned equation with the $(k \times k)$ matrix B_0 , we obtain the structural model as follows:

$$B_0 Y_t = B_0 \phi_0 + B_0 \phi_1 + B_0 B(L) Y_{t-1} + X \mu_t \quad (2)$$

Where the matrix B_0 stands for the contemporaneous link between the indicators gathered in the vector Y_t . $X \mu_t = B_0 \varepsilon_t$ represents the relation among the structural shocks μ_t and the reduced form shocks ε_t . Note that structural shocks are independent of each other, indicating that the variance-covariance matrix of the shocks is diagonal. The approach we use is the recursive approach, where X is constrained to the matrix and B_0 is constrained to a lower triangular form as in Blanchard and Perotti (2002). This constraint leads to the analysis of the variance-covariance matrix. The Cholesky decomposition is utilized to obtain this decomposition. In this work, to evaluate the impacts of public expenditure on unemployment, we order the indicators in the given sequence: government expenditure (GE) comes in first, followed by unemployment (UR), real GDP (GDP) and tax revenue (TR). Furthermore, to explore the influence of tax revenue on unemployment, we order the indicators in the following order: tax revenue comes first, followed by unemployment, real GDP and government expenditure. Note that the choice of ordering is based on the research question and the theoretical framework of the study.

4. RESULTS

The level of integration of variables plays a vital role when utilizing time series for estimation. Before incorporating nonstationary variables into the model, we need to difference them to achieve stationarity. To evaluate stationarity, we carry out the Augmented Dickey-Fuller (ADF) method with a significance level of 5%. This test's null hypothesis assumes the existence of a unit root, showing non-stationarity in the variables. Conversely, the alternative hypothesis contends that there is no unit root, showing a stationarity in the indicators. From the Table 1, all indicators are non-stationary in their original levels at a 5% level of significance but these indicators become stationary after performing the first differencing at a significance level of 5%. Furthermore, we perform the Phillips-Perron test. In

Table 2, the test results indicate strong evidence against the null hypothesis of a unit root, signifying that unemployment, GDP, tax revenue and government expenditure is stationary in first differences.

Table 1. ADF Statistics

VARIABLE	Statistical values	Table values	P-VALUE	UNIT ROOT	STATIONARY
LEVELS					
UR	-3.563454	-3.568379	0.0511	YES	NO
GDP	-0.609810	-3.568379	0.9709	YES	NO
TR	-1.129126	-3.568379	0.9069	YES	NO
GE	-2.056006	-3.568379	0.5475	YES	NO
FIRST DIFFERENCE					
ΔUR	-4.600311	-3.574244	0.0051	NO	YES
ΔGDP	-4.530612	-3.574244	0.0060	NO	YES
ΔTR	-5.933111	-3.574244	0.0002	NO	YES
ΔGE	-3.790200	-3.574244	0.0318	NO	YES

Source: Calculations of the author. Note that UR, GDP, TR and GE represent unemployment rate, log of real GDP, tax revenue and government expenditure, respectively.

Table 2. Phillips-Perron Test

VARIABLE	Statistical values	Table values	P-VALUE	UNIT ROOT	STATIONARY
LEVELS					
UR	-2.162958	-3.568379	0.4918	YES	NO
GDP	0.281464	-3.568379	0.9976	NO	YES
TR	-1.140031	-3.568379	0.9048	YES	NO
GE	-1.375928	-3.568379	0.8475	YES	NO
FIRST DIFFERENCE					
ΔUR	-7.408153	-3.574244	0.0000	NO	YES
ΔGDP	-5.581222	-3.574244	0.0005	NO	YES
ΔTR	-5.924235	-3.574244	0.0002	NO	YES
ΔGE	-3.848926	-3.574244	0.0280	NO	YES

Source: Calculations of the author. Note that UR, GDP, TR and GE represent unemployment rate, real GDP, tax revenue and government expenditure, respectively.

To find the proper lags of this study, Table 3 presents the outcomes of various statistical analysis, including the log-likelihood (LogL), likelihood ratio (LR), final prediction error (FPE), akaike's information criterion (AIC), schwarz bayesian information criterion (SBIC) method and Hannan–Quinn information criterion (HQIC) method are used. Given a range of possible values for the data, the preferred option is the two that keep the LR, FPE, AIC, SBIC and HQIC values at the lowest level, which always suggests the best lag length to be chosen in model.

Table 3. Lag Determination

Lag	LogL	LR	FPE	AIC	SBIC	HQIC
0	-944.4873	NA	3.11e+24	67.74909	67.93941	67.80727
1	-821.0435	202.8005	1.47e+21*	60.07454	61.02611*	60.36544*
2	-810.3737	14.48050	2.33e+21	60.45526	62.16810	60.97889
3	-785.5904	26.55349*	1.54e+21	59.82789*	62.30198	60.58424

Source: Calculations of the author.

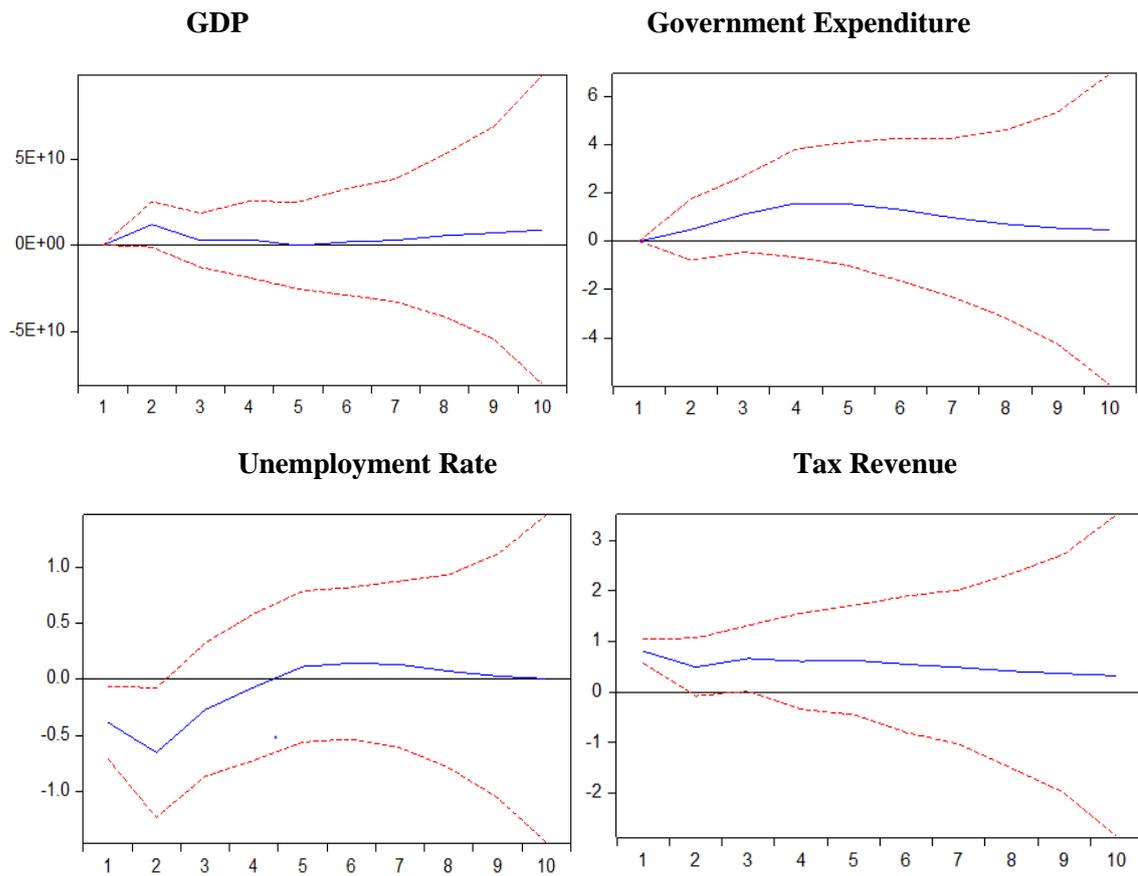
To ensure the validity and reliability of our analysis, we conduct a series of diagnostic tests summarized in Table 4. The outcomes of the serial correlation test (Breusch-Godfrey Lagrange multiplier test of residual serial correlation), heteroskedasticity test (Breusch-Pagan-Godfrey test of heteroscedasticity), stability test and normality test (Jarque-Bera residual normality test) indicate that our model does not display any problems. More specifically, the outcomes for serial correlation LM test shows that the statistical test result yields 0.518704 with a p-value of 0.7716, which proposes no evidence of residual serial correlation in our model. Also, the results of residual heteroskedasticity test displays a value of 3.163583 and a corresponding p-value of 0.3671, which indicates no significant evidence of residual heteroskedasticity in our model. Furthermore, our model satisfies the stability condition as no root lies outside the unit root circle, which suggests that the model is stable. For this, the eigenvalues are analyzed and their magnitudes are calculated. We observe that all eigenvalues have moduli that are approximately equal to 0.466836. Moreover, the normality test results suggest that the test statistic is 1.052966 with a p-value of 0.590679. This demonstrates that the residuals of the model follow a normal distribution. The outcomes of all tests provide into the validity of our analysis and enhances confidence in the results obtained.

Table 4. Summary of Diagnostic Tests

	Test Stat.	Prob. value
Serial Correlation	0.518704	0.7716
Heteroskedasticity	3.163583	0.3671
Stability	VAR meets the stability condition	No root exceeds the unit circle
Normality	1.052966	0.590679

Figure 2 presents a visual representation of the outcomes stemming from the impact of a one-standard-deviation shock in tax revenue on the variables under consideration. The impulse response functions (IRFs) were derived utilizing a ten-year time frame. Upon an examination of how real GDP responds to a tax revenue shock, it is evident that a one-standard-deviation shock to tax revenue initially induces a temporary upsurge in real GDP. However, commencing from the second period, real GDP experiences a gradual decline, eventually reaching zero by the fifth period. Beyond this point, it registers a positive trajectory. This outcome underscores that a positive shock to tax revenue exerts a positive influence on real GDP, yet the effect of tax revenue on real GDP appears to be relatively subdued.

Figure 2. Dynamics of Tax Revenue Shocks



Turning our attention to the reaction of unemployment to a tax revenue shock, our analysis reveals that a tax revenue shock, equivalent to one standard deviation, initially leads to a reduction in the unemployment rate, albeit temporarily and it is observed that the response of the unemployment rate

during the initial two periods exhibits statistically significant behavior. Nevertheless, commencing from the second period, the unemployment rate embarks on a gradual ascent, ultimately reaching zero by the fourth period. Subsequently, it reverts to a positive trajectory. Consequently, we can infer that a positive shock to tax revenue has a positive impact on unemployment. Furthermore, an examination of Figure 2 reveals that government expenditure exhibits a positive response to a tax revenue shock equivalent to one standard deviation. Tax revenue experiences an initial decrease but subsequently trends in a positive direction.

Figure 3. Dynamics of Government Expenditure Shocks

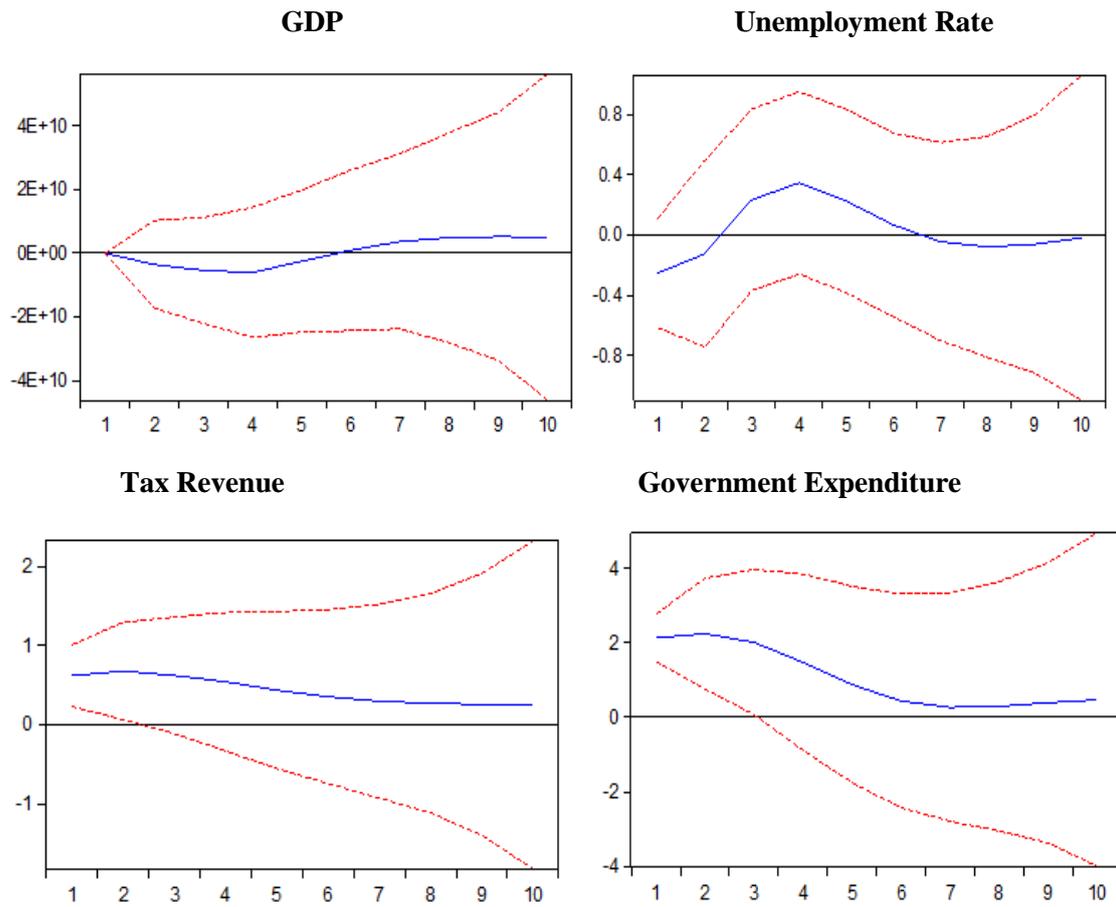


Figure 3 shows the results the influence of a one standard deviation shocks in government expenditure on our variables. When we look at the reaction of the real GDP to a shock in a public expenditure, we observe that real GDP initially decreases but after period four, it starts to rise until it reaches zero in period six. After that, it continues to rise, implying that real GDP reacts positively and permanently after one standard deviation disturbance in government expenditure.

The reaction of unemployment to a government expenditure shock exhibits a characteristic hump-shaped pattern. This pattern denotes an initial upsurge, reaching zero unemployment in the second period, followed by a peak and a subsequent decline until it reverts to zero once more by the sixth period. Beyond this juncture, it exhibits a persistent negative trend. Consequently, it can be inferred that a

government expenditure shock induces a transient increase in the unemployment rate, followed by a modest reduction after the seventh period. Note that the observed response of the unemployment rate to a government expenditure shock is not statistically significant. Moreover, Figure 3 reveals noteworthy dynamics in response to a government expenditure shock. Initially, it elicits a positive reaction in government expenditure itself and tax revenue; however, this response diminishes in magnitude post the sixth and third periods, respectively.

5. CONCLUSION

The connection among public actions and economic performance is a significant topic that remains subject to ongoing discussion in the field of economics. In our study, our aim is to explore the impacts of fiscal policy on the unemployment rate in Türkiye utilizing the annual data from 1990 to 2021. As fiscal policy tools, we use the data for public expenditure and tax revenue. To assess the impact of public expenditure and tax revenue disturbances on unemployment rate, we employ the recursive VAR model studied by Blanchard and Perotti (2002). In this study, we structure our variables in the following order to evaluate the impacts of public spending on unemployment rate: government expenditure as the first variables, unemployment rate as the second variable, real GDP as the third variable and tax revenue as the fourth variables. Furthermore, to investigate the impacts of tax revenue on unemployment, we arrange the variables as follows: tax revenue as the first variable, unemployment rate as the second variable, real GDP as the third variable and government expenditure as the fourth variable. Before we apply the SVAR, we verify if the indicators are stationary or not by applying ADF and PP tests. We observe that our variables are stationary after taking the initial differentiation. Then, LR, FPE, AIC, SBIC and HQIC are used to define the appropriate the number of lags, According to this, we choose the best lag length in the model as 2. Later on, in order to ensure the accuracy and dependability of our analysis, we perform a range of diagnostic tests such as LM test, heteroskedasticity test, stability test and normality test. We find that our model exhibits no issues related to normality, autocorrelation, stability or heteroscedasticity.

Based on the Structural VAR outcomes, we demonstrate that a positive tax revenue shock has a positive influence on real GDP in Türkiye, although the impact is relatively weak. When we analyze the reaction of the unemployment to a tax revenue disturbance, it is evident that the tax revenue shock temporarily reduces the unemployment in the short run and its response is statistically significant in the initial two periods but it has a positive influence on unemployment in subsequent years in Türkiye. Analyzing the reaction of real GDP to a government expenditure shock, it is observed that there is a temporary decrease in real GDP but the reaction of real GDP to a one standard deviation shock in government spending is positive in the following years. Also, we explore that the reaction of the unemployment to a public expenditure shock follows a hump-shape pattern. Hence, we can conclude

that a government expenditure shock initially raises the unemployment but causes a slight decline later periods. However, this pattern is not statistically significant.

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