IS THE SIZE OF PUBLIC SECTOR DETERMINING IN ACHIEVING MACROECONOMIC STABILITY? THE CASE OF TURKEY

Ahmet KÖSTEKÇİ[1]
Turgay CEYHAN[2]
Samet GÜRSOY[3]

Geliş Tarihi: 07/09/2021
Kabul Tarihi: 21/09/2021

ABSTRACT

It is argued that the economy model, in which public sector is predominant provides more advantages than the economy model in which market economy is effective in the process of ensuring macroeconomic stability, and this is a requirement of the welfare state understanding. From this basic view, the relationship between the economic size of public sector and macroeconomic stability was examined in the study, in which Turkey's data for the period 1980-2019 was used. According to the causality test results of Toda and Yamamoto (1995), it was concluded that there is a causal relationship from public expenditures to economic growth and inflation, but there is no causality relationship to unemployment. These results provide important evidence that changes in the size of the public sector are the cause of changes in economic growth and inflation.

Keywords: The Size of Public Sector, Public Expenditure, Macroeconomic Stability, Causality Test.

[1] Dr. Öğr. Üyesi, Fırat Üniversitesi İktisadi ve İdari Bilimler Fakültesi, Maliye Bölümü, akostekci@firat.edu.tr, ORCID: 0000-0001-8485-887X

[2] Dr. Öğr. Üyesi, Mehmet Akif Ersoy Üniversitesi, Bucak İşletme Fakültesi, Ekonomi ve Finans Bölümü, tceyhan@mehmetakif.edu.tr, ORCID: 0000-0001-5225-297X

[3] Dr. Öğr. Üyesi, Mehmet Akif Ersoy Üniversitesi, Bucak Zeliha Tolunay Uygulamalı Teknoloji ve İşletmecilik Yüksekokulu, Gümrük İşletme Bölümü, sametgursoy@mehmetakif.edu.tr, ORCID: 0000-0003-1020-7438

Makroekonomik İstikrarın Sağlanmasında Kamu Sektörünün Büyüklüğü Belirleyici mi? Türkiye Örneği

ÖZET

Kamu sektörünün ağırlıklı olmuş olduğu ekonomi modelinin, makroekonomik istikrarın sağlanması sürecinde piyasa ekonomisinin etkin olduğu ekonomi modeline göre daha fazla avantaj sağladığı ve bunun refah devleti anlayışının bir gereği olduğu savunulmaktadır. Bu temel görüşten hareketle Türkiye'nin 1980-2019 dönemine ait verilerin kullanıldığı çalışmada, kamu sektörü ağırlığı ile makroekonomik istikrar arasındaki ilişki incelenmiştir. Yapılan Toda ve Yamamoto (1995) nedensellik testi sonuçlarına göre kamu harcamalarından ekonomik büyüme ve enflasyona doğru nedensellik ilişkilerinin olduğu, ancak işsizliğe doğru bir nedensellik ilişkisinin olmadığı sonucuna ulaşılmıştır. Bu sonuçlar, kamu sektörü ağırlığındaki değişimlerin, ekonomik büyüme ve enflasyondaki değişimlerin nedeni olduğu noktasında önemli kanıtlar sunmaktadır.

Anahtar Kelimeler: Kamu Sektörü Büyüklüğü, Kamu Harcamaları, Makroekonomik İstikrar, Nedensellik Testi.

INTRODUCTION

Stability policies and structural reforms put into practice to eliminate the imbalances that arise due to economic instabilities experienced in certain periods in countries and to ensure economic development are of vital importance for economies. Macroeconomic stability is an important indicator in terms of directing economic policies and providing fiscal and monetary support to economic actors in the country. Undoubtedly, the success of fiscal reforms, policies based on economic growth, employment and inflation, and all programs aimed at improving the economic structure depends on the existence of macroeconomic stability. Therefore, there is an important relationship between the level of economic development and macroeconomic stability (Karimi et al., 2016: 31).

Instability that may arise in the economy can be prevented by sound and balanced functioning of the market system which allows goods and services ensuring the continuity of the economic system to be freely produced and consumed by the economic units. In this context, one of the important duties of the government is to provide the necessary order in the economy to maintain national and global competition. In the 18th and 19th centuries when classical economic thought was strongly prominent, crises in countries' economies were thought to be temporary deviations from the full employment level of output. But the persistence of these crises over time has led to the questioning of the market-oriented economic ideas of classical economists. Already with the Great Depression of 1929, it was obvious that the free market system was ineffective in stabilizing European economies. With the Great Depression, the significant decrease in industrial production in developed countries such as the USA, France, England, and the unemployment of the majority of the world population revealed that the classical economic policies were not very effective in overcoming recessions (Dinler, 2017: 331).

Public expenditures, which became important in building economic balances as a result of the Keynes revolution that emerged after the Great Economic Depression, is an active and powerful component of macroeconomics and fiscal policies. With the emergence of Keynesian economic thought, the view that public policies are important in achieving

macroeconomic stability has gained great importance. In this sense, Keynes attached special importance to public expenditures which is an important constituent of fiscal policy and emphasized that these expenditures are important tool in bringing economy with underemployment to full employment equilibrium level.

Financial crises and different external demand shocks can lead to the loss of production and high unemployment by causing serious fluctuations in the economy. In countries where the size of the public sector in the economy is relatively low, production decreases are higher. For example, the total loss of production was 10% between 2008 and 2009 in countries such as Hong Kong, Mexico, Taiwan and China where the share of public expenditures in national income is around 18-20%. On the other hand, in Norway and France where the share of public expenditures in national income exceeds 40% and 50%, the decrease in output was at the level of 2% and 1%, respectively. These developments have shown that public size in economy affects the depth of recessions in economies in different ways (Mohanty and Zampolli, 2009: 55). In order to overcome the global crisis, many developed and developing countries have implemented Keynesian activist aggregate demand policies to stimulate their economies.

With the Keynesian government policies implemented extensively throughout the world during the 1940-1970 period, the welfare state was institutionalized, public revenues and expenditures increased, social policies and social welfare services such as education, health, housing, social security, full employment, income distribution were developed (Kaya, 2014: 139). The stagflation crisis experienced in the 1970s initiated the search for a new world order, and neo-liberal policies were brought to the agenda in the 1980s. Particularly, the structural adjustment programmes imposed on developing countries revealed efficient use of resources and production policies based on the incentive of private enterprises to make more profit. For half a century, increasing international competition often works to the benefit of capital owners. This situation causes unfair profits, loss of public income, decrease in investments, poverty and low employment, and fluctuations in the general level of prices in the economy. Therefore, the macroeconomic instability caused by the global crisis that started in the USA in 2007 and then spread to many countries has once again demonstrated the

importance of public economy and Keynesian policies (Akan et al., 2008: 110-111; Tokucu and Sarıdoğan, 2010: 79).

Governments can control inflation, and increase investment, output and employment with certain fiscal policy tools such as public expenditures and transfer payments. Achieving economic development is only possible by establishing a strong financial infrastructure and producing efficient goods and services. An increase in public expenditures created by the government in times of crisis will enable economic growth by expanding the volume of economic activities. Therefore, reducing government saving in times of recession is an appropriate choice for governments aiming at economic stability.

The government can increase or decrease business cycles by making discretionary changes in fiscal policy and using automatic stabilizers. The fact that the growth in the public sector increases the economic fluctuations is due to the poor management of public expenditures and the lack of coordination regarding the policies implemented. Indeed, the success of countries with stable economies is largely related to the proper coordination of government policies and the optimal adjustment of the public sector's size in the economy. A stable structure of public expenditures will be effective in reducing fluctuations in output and national income level. Therefore, it is of great importance to take countercyclical economic measures to prevent business cycles and to minimize the effects of macroeconomic instability (Afonso and Furceri, 2008: 10). Based on these information, the basic assumption that the economic size of the public sector is determinant on macroeconomic stability has been tested. In order to test this basic assumption, in the first part, the relationship between the economic size of the public sector and macroeconomic stability is discussed in a theoretical framework. In the second part, empirical literature review is included. In the third part, the data set and the method are explained and econometric analysis is made. Finally, the study is completed with the conclusion and policy recommendations.

1. THEORETICAL FRAMEWORK

The government which is one of the important economic actors can take an active role in economic management and production from time to

time in accordance with the understanding of minimal government intervention, and contributes to real economic development. Therefore, the government can positively and negatively affect investments, growth and total output through public expenditures. As public spending is related to the GDP, the issue of what the reasonable role or size of the public should be in the economy has raised ambitious debates among various economists (Doessel and Valadkhani, 2003: 5-6; Karimi et al., 2016: 32).

Classical economists explain the issue of economic stability with the concept of invisible hand. It is known as the market or price mechanism. According to the classical economists, even if there are occasional deviations from the full employment, the economy will return to the full employment equilibrium level thanks to the properly functioning price mechanism. In the case of full employment; aggregate output, employment and national income will reach the highest level in the economy. The government should only be obliged to operate the competition in the market effectively and to provide services such as defense, justice and public works. If the government assumes any other role, it may destabilize the economy and lead to crises (Dinler, 2017: 330).

Keynes, on the other hand, emphasizes that leaving economies to market conditions will cause business cycles and the government should take necessary measures to prevent these fluctuations or to minimize their effects. In this regard, Keynes proposes that the government should intervene in the economy through monetary and fiscal policies. In the Keynesian doctrine, although monetary policy has a role in maintaining economic balances; a more special importance is attached to fiscal policy, especially public expenditures. The problematic of the public sector's size in the economy in ensuring macroeconomic stability emerges at this point (Şen et al., 2018: 2-4).

According to Keynes, an increase in public expenditures raises the level of aggregate demand and output (Corsetti et al., 2016: 7). Hence, increasing public expenditures in times of recession will be effective in stimulating the economy (Amuka et al., 2016: 1931). While Keynes suggests increasing aggregate demand through open budget policy (increasing public expenditures) in times of recession; it proposes to reduce expenditures in

cases where aggregate demand is greater than aggregate supply, that is, overemployment occurs.

Musgrave (1958), in his book The Theory of Public Finance, argued that Keynes' thesis that the main purpose of the government is only to ensure economic stability is insufficient, and he explained the functions of the government in the economy in a broader perspective. Musgrave's approach formed the basis of statist policies that started to prevail around the world in the 1960s. According to Musgrave, economic stability can only be achieved by ensuring efficiency in resource allocation and fairness in income distribution (Kaya, 2014: 133).

Today, industrialized countries strengthen the welfare society depending on the importance of the government in the economic development of the country while developing countries adopt state-controlled development strategies. In the development of the country, it is of great importance to develop the economic and social infrastructure services adequately. Social services such as education, health, social security, transport, and housing which are pure public goods can be easily marketed (Kaya, 2014: 132-134). Therefore, in order to prevent any loss of rights in the provision or distribution of these services especially in developing countries, it is necessary to determine their optimal size and distribute them in a balanced manner to all layers of the society. This is undoubtedly possible by increasing the government's share in the national income and by ensuring economic stability by public policies.

Galbraith (1958) explaines the active role of government in the economic system with the "Theory of Social Balance". In this theory, it is emphasized that optimal distinction must be made between the public and private sector so that economic resources can effectively allocate private and public needs. According to Galbraith (1958), the instability problem in the economy can be overcome by eliminating the social imbalances in the society. For that purpose, the government should reduce income inequality as much as possible and to reduce the rate of poverty and unemployment, ensure that all lower income groups in the society benefit widely from social services. While the government fulfills these duties, it should increase public expenditures in favor of these groups.

Two other important studies that raised the interest in the relationship between public expenditures and macroeconomic stability, and why the size of the public in the economy should increase were done by H.C. Adams and A. Wagner. Adams (1898) states that public expenditures and output always increase at the same rate. On the other hand, Wagner (1958) argues that public expenditures will increase at a higher rate than the level of output. He states that the increase in the public sector's activities is a result of social and economic progress, and therefore public expansion is inevitable. According to this view, the scope of the public should be expanded as long as the progress made in the society doesn't stop. The production of social services, defense services and other public services necessary for the proper functioning of the economy must be permanent (Peacock and Wiseman, 1961: 17; Amuka et al., 2016: 1931).

According to the Development Model created by Rostow (1960) and Musgrave (1969), public expenditures vary in line with the stages of economic growth and development. Public expenditures are assumed to be a function of economic growth in the model. For this reason, public expenditures occur at high levels in the early stages of economic development in order to activate the necessary infrastructure investments to accelerate industrialization. According to this theory, public expenditures will decrease as the economy moves into the next phase. In the second phase where growth accelerates, the mobility of private savings no longer becomes a major problem. Hence, government's activities decrease as the activities of the private sector expand. Finally, public expenditures are increased to complete the activities carried out by the private sector in the phase of high consumption and income level (Amuka et al., 2016: 1931).

Supply-side economists are of the opinion that the main reason for economic instabilities is the inadequacy of supply and output. So they argue that the government should reduce social expenditures as much as possible, increase the money supply at a constant rate and arrange tax policies to encourage savings and investments. In particular, an output and supply-oriented program based on cutting public expenditures, reducing income and corporate taxes, and implementing legal-institutional liberalization policies will provide high productivity, high growth rate and low inflation (Aktan, 2009: 42).

Proponents of supply-side economics attribute the cause of economic depressions to the insufficient operation of the market economy. Hence, they advocate that the main purpose of the government's economic policies should be to take measures to make the market mechanism work more effectively and to ensure that economy reaches its potential growth rate. The government's intervention in all areas and the excessive growth of the public sector are inconvenient in terms of the productivity, growth and accumulation dynamics of the capitalist system. If the government undertakes the role of both producing public goods and services and redistributing income through the tax burden, it may result in economically inefficient outcomes. It is only the private sector that will increase competition and ensure stable economic growth in open markets (Doğan, 2006: 255).

Tinbergen (1952, 1956) believes that economic growth cannot be achieved through the free market mechanism. The idea that structural problems such as imperfect information, existence of monopolistic markets and market rigidities in underdeveloped and developing countries would not allow the free market mechanism to function fully was influential in the development of the Tinbergen's theory. Tinbergen emphasizes the importance of government planning in the processes of efficient allocation of resources and fair distribution of national income. Reforms planned for economic growth and development will be successful with systematic institutional policies (Mıhçı, 1996: 69-70).

Tinbergen, known for his work in welfare economics and development planning, mentions the role of public economic institutions in ensuring macroeconomic stability. The government has gained the opportunity to fulfill the objectives of the public economics through the public economic institutions which emerged in the form of nationalization of many private enterprises in European countries after World War II. The government both produces private goods and manages the market economy through these institutions. According to Tinbergen, countries with a large share of the public sector in the economy are more successful than countries where the market economy is predominantly adopted in ensuring economic stability and preventing cyclical fluctuations (Şener, 2014: 106).

2. LITERATURE REVIEW

There are many studies dealing with the economic size of the public sector and macroeconomic stability. Among these studies based on panel data analysis and time series analysis, there are limited studies on Turkey as well as causality analyzes are seen to be limited. In this sense, filling the gap in the literature for Turkey and carrying out this with causality analysis has been an important feature that distinguishes this study from others.

Scully (1989), in his study for the USA, obtaines important evidence that the public's economic size increases employment. In another similar study, Lindauer and Velenchik (1992) examine EU countries and according to the results of their analysis, it is determined that the size of the public in economy is related to macroeconomic stability. Kandil (2001) analyzes the asymmetric effects of government expenditure shocks in USA. In the research it is found that an increase in public expenditures causes interest rates to rise, reducing private consumption and investment expenditures and consequently lowering the level of output and inflation. Fan and Rao (2003) investigate the relationship between agriculture, education and health expenditures and macroeconomic stability using the cross-section method for 43 developing countries. The research findings show that expenditures in the field of agriculture and health in Africa; expenditures on education and agriculture in Asia and only health expenditures in Latin America affect the economic growth positively. Ezirim et al. (2008) reveal that an increase in public expenditures boosts inflation in USA within the framework of cointegration and granger causality test.

Han and Mulligan (2008), in their time series analysis with the data of 1870-1995 for the USA and 1721-1990 for the UK, find evidence that the increase in the public's economic size (increase in defense expenditures) during the war periods destabilizes the economy by increasing inflation while the increase in public expenditures except defense spending decreases inflation. Feldmann (2009), using data of 58 developing countries between 1980-2003, states that in countries where the share of the public sector in the economy is higher than that of the private sector, labor markets lose their flexibility and their employment creation potential decreases. In another similar study, Wang and Abrams (2011) examine 20 OECD countries with panel data method and conclude that the increase in the size of the public

sector increases unemployment rates. Authors suggest that unemployment and public health insurance payments, compensation payments and private insurance programs funded by government increase the motive of employees to quit and reduce their incentive to search for a job.

Attari and Javed (2013) find that the increase in public expenditures slows economic growth in Pakistan. Amuka et al. (2016) investigate the relationship between public expenditures and inflation rate using the VAR model for Nigeria and state that the main reason for inflation is the capital expenditures of the government for economic services. Similarly, Samanipour et al. (2016) find that the small government regime affects inflation negatively while the large government regime affects it positively applying threshold regression approach for the Iran. Garry and Valdivia (2017) conclude that the increase in the size of the public sector boosts the national income in their studies on the basis of the 1990-2015 period for Mexico, Central America and the Dominican Republic. Monjazeb and Pati (2017) find that the expansion in the public's economic size lowers the inflation rate in their study performed by panel data analysis for 34 developing countries. Kovacı et al. (2018), in the study they conducted for 28 EU countries with the dynamic panel data analysis, determine that public's economic size has a statistically significant and positive effect on unemployment. On the other hand, they find that the negative impact of public's economic size on employment is confirmed in 15 EU countries, and that this effect is not significant in 13 EU countries.

In another study conducted by Holden and Sparrman (2018) on the effect of the economic size of the public on unemployment with panel data analysis for 20 OECD countries, it is determined that a 1% increase in public expenditures reduces the unemployment rate by 0.3%. Onuaho and Agbede (2019), in their studies within the framework of the data for the period 2000-2017 for 20 African countries using the GMM method, find that infrastructure and education expenditures reduce the unemployment rate while defense and health expenditures increase it. Nguyen (2019), using VECM technique for the period 1970-2010, determines that the increase in the share of public expenditures in national income decreases inflation in China, but it increases inflation in Indonesia and India.

Özer (2020) examines the relationship between the unemployment and public sector's economic size in Turkey applying the Fourier-Shin cointegration test and Toda and Yamamoto causality test. According to the results of the study, a one-unit increase in public expenditures increases the unemployment rate by 0.45 units. Sağdıç and Yıldız (2020) examine 26 development regions in Turkey with the panel ARDL bounds testing approach. The results of the study show that public expenditures affect the unemployment rate positively in the short-term and negatively in the long-term. Kutasi and Marton (2020), in their studies for 25 European Union countries with the GMM method, set forth that social protection expenditures negatively affect economic growth while health and education expenditures affect it positively. Nepram et al. (2021) conclude that the public sector's economic size increases the unemployment rate in their study with the panel data analysis for India. Afonso et al. (2021), using the panel cointegration and causality test for a sample of 8 developing countries, reveal that the public sector's economic size is positively associated with both unemployment and inflation.

3. ECONOMETRIC ANALYSIS

3.1. Dataset and Method

In this study, the effect of the public sector's economic size on macroeconomic stability is examined. In the analysis, the variable from the period of 1980-2019 which consists of Turkey's annual data was used. Variables used as macroeconomic stability indicators; inflation (%), unemployment (%) and economic growth (%). One of indicators of the economic size of the public sector and the variable used to explain macroeconomic stability is the share of public expenditures in GDP. Data on variables were obtained from the World Bank database and the Ministry of Treasury and Finance of the Republic of Turkey. In the study, the relation of public expenditures (EXP) with inflation (INF), unemployment (UNEMP) and economic growth (EG) in Turkey was analyzed with the help of the Toda and Yamamoto (1995) causality method. In the first stage, the Augmented Dickey-Fuller (ADF) (1979, 1981), Zivot-Andrews (1992) with one internal structural break, and Lee-Strazicich (2003) which considers two internal structural breaks unit root tests are used to determine the integration orders of the series. In the second stage, the causality relation between public

expenditures with inflation, unemployment and economic growth was investigated.

3.2. Unit Root Tests

In time series analysis, it is great importance to perform the unit root test of the series in order to estimate the relationships between the examined series (Göv and Salihoğlu, 2020). Toda and Yamaoto (1995), with the appropriate delay of the vector autoregressive model (VAR) used for causality analysis, it is necessary to determine the maximum integration levels of the variables whose causality relationship is investigated. Because of this reason, ADF (1979, 1981), Zivot-Andrews (1992) and Lee-Strazicich (2003) unit root tests were used to determine the maximum integration levels of the variables examined in the study.

The selection of the lag length in the ADF unit root test is a main problem. Determining the appropriate number of delays in autoregressive processes is critical and this is done with several methods in this sense. However, AIC and SIC information criteria are used more in determining the appropriate delay length in practice and AIC and SIC information criteria should have a minimum value in order to determine the appropriate delay. Because if the selected delay is larger than necessary, the estimates will be sloped (Akyüz, 2018: 184).

In the ADF test, the null hypothesis (H_0) indicating that there is a unit root in the series is tested against the alternative hypothesis (H_1) stating that the series is stationary. As a result of the estimation of ADF models, the calculated t-statistics for the unit root test are compared with Dickey-Fuller's (1979) critical table values or MacKinnon's (1996) table values. If the calculated test statistic is less than the table value, H_0 is rejected, otherwise H_0 is accepted.

Table 1. ADF Unit Root Test Results

	Fixed Model		**Fixed ve Trending Model**	
Variable	**Test Statistic**	**Probability Value**	**Test Statistic**	**Probability Value**
EG	-6.82991 [0]	0.0000*	-6.73244 [0]	0.0000*
INF	-1.59959 [1]	0.4730	-2.77821 [0]	0.2134
∆INF	-6.58186 [1]	0.0000*	-6.51144 [1]	0.0000*

UNEMP	-0.82158 [0]	0.8017	-2.76164 [1]	0.2195
ΔUNEMP	-4.81704 [1]	0.0004*	-4.8992 [1]	0.0018*
EXP	-1.05399 [0]	0.7240	-1.74692 [0]	0.7108
ΔEXP	-6.07171 [0]	0.0000*	-5.99108 [1]	0.0001*

Note: Δ indicates first-order difference operatör, * indicates stationarity at 1% significance level. The values in square brackets are the optimal lag lengths calculated according to the Akaike information criterion (AIC).

The results of the ADF unit root test are given in Table 1. According to the analysis results of this test, *EG* series were found to be stationary in level values at 1% significance level and *INF*, *UNEMP* and *EXP* series were found to be stationary in first difference values at 1% significance level. In other words, it was determined that *EG* series were I(0) and *INF*, *UNEMP* and *EXP* series were I(1). Therefore, while the hypothesis for the *EG* series H_0 was rejected, the H_0 hypothesis for the *INF*, *UNEMP* and *EXP* series could not be rejected.

In the time series analysis conducted for Turkey, both internal and external shocks were experienced in the relevant period and changes were made in the use of fiscal and economic policy tools. The shocks experienced in this process affected the public expenditures variable showing the economic size of the public and also had the power to significantly affect macroeconomic stability variables. Therefore, considering the period and variables examined in the study, it was thought that the application of unit root tests that take into account structural breaks was necessary for the nature of the study. Within the scope of this requirement, Zivot-Andrews (1992) and Lee-Strazicich (2003) unit root tests considering structural fractures were also applied in the study.

In the three models developed by Zivot-Andrews (1992) test, single structural break is determined internally. Among these models, Model A examines breakage in constant, Model B examines slope breakage and Model C examines structural breakage in constant and slope (Zivot and Andrews, 1992: 254). Although Zivot-Andrews (1992) included all three models in their study, Model A, which takes into account constant fracture in practice, and Model C, which takes into account fracture in constant and slope, are used (Arı and Özcan, 2015: 32). In this study, where the same model estimation can be made for other series, the following models of the Zivot-Andrews test for the *EXP* series were estimated:

$$\text{Model A: } \Delta EXP_t = \alpha EXP_{t-1} + \mu + \beta t + \theta DU_t(\lambda) + \sum_{i=1}^{k} c_i \Delta EXP_{t-i} + \varepsilon_t \qquad (1)$$

$$\text{Model C: } \Delta EXP_t = \alpha EXP_{t-1} + \mu + \theta DU_t(\lambda) + \beta t + \gamma DT_t^*(\lambda) + \sum_{i=1}^{k} c_i \Delta EXP_{t-i} + \varepsilon_t \qquad (2)$$

The dummy variable indicating the change period in the average of the $DU_t(\lambda)$ series in Equation (1) - (2) and the $DT_t(\lambda)$ dummy variable indicating the change in the slope of the series in Equation (2). The t statistics of the α coefficient calculated in the application of this test are compared with the critical values in the study of Zivot and Andrews (1992). If the calculated test statistic is less than the critical values, the H_0 hypothesis that the series is unit-rooted is rejected. In this case, the H_1 hypothesis that the series is stationary under a single internal structural break is accepted. The results of the unit root test conducted to investigate whether there are structural fractures in the series are shown in the table below.

Table 2. Zivot-Andrews (1992) Unit Root Test Results

	Model A		**Model C**	
Variable	**Test Statistic**	**Break Date**	**Test Statistic**	**Break Date**
EG	-5.47312* [3]	2003	-5.32095** [3]	2003
INF	-4.75591 [4]	2000	-3.25162 [4]	2000
Δ*INF*	-9.54836* [1]	1998	-9.42073* [1]	1998
UNEMP	-3.87234 [1]	1993	-4.51388 [1]	2000
Δ*UNEMP*	-5.16086** [1]	2000	-5.79886* [1]	2009
EXP	-4.07503 [0]	1995	-4.30788 [0]	1995
Δ*EXP*	-8.36045* [0]	2001	-8.37446* [0]	2001

Note: Δ indicates the first-order difference operator, * and ** indicate stationarity with a single internal structural break at 1% and 5% significance levels, respectively. The values in square brackets are the optimal lag lengths calculated with the t-statistic. The critical values for Model A at the 1% and 5% significance level are -5.34 and -4.80, respectively. Critical values for Model C at the 1% and 5% significance level are -5.57 and -5.08, respectively. The critical values are got from the study of Zivot-Andrews (1992).

The results of the Zivot-Andrews (1992) unit root test for the examined time series are presented in Table 2. When the test statistics in this table were examined, it was concluded that *EG* is stationary under a single structural break in the level values, but the *INF*, *UNEMP* and *EXP* series

were stationary under a single structural break in the first difference values. In other words, it was determined that *EG* series were I(0) and *INF*, *UNEMP* and *EXP* series were I(1). Therefore, while H_0 was rejected for the *EG* series, H_0 could not be rejected for the *INF*, *UNEMP* and *EXP* series.

In the unit root test of two structural break Lagrange Multipliers (LM) developed by Lee and Strazicich (2003), the LM test of Schmidt and Phillips (1992) was rearranged to include two structural breaks. This test was developed as an alternative to the two structural break unit root tests (LP) developed by Lumsdaine and Papell (1997). Lee and Strazicich (2003) criticized the H_0 hypothesis that the series is unit-rooted without structural breaks (Yılancı, 2009: 329). Therefore, in the Lee-Strazicich (2003) test, the H_0 hypothesis is established as serial unit root under structural fracture (s). The alternative hypothesis is that the series is stationary under structural breaks. The following model was used in the Lee-Strazicich (2003) test:

$$y_t = \delta' Z_t + e_t, \quad e_t = \beta e_{t-1} + \varepsilon_t \tag{3}$$

Here, the Z_t is external variables vector and $\varepsilon_t \sim iid(0,\sigma^2)$. In the Lee-Strazicich (2003) test, Model AA for the unit root test of allowing two structural breaks at level is obtained by writing $[1, t, D_{1t}, D_{2t}]'$ instead of Z_t in Equation (3). Model CC is defined for the unit root test that allows for two structural breaks at the level and slope. Model CC is obtained by writing $[1, t, D_{1t}, D_{2t}, DT_{1t}, DT_{2t}]'$ instead of Z_t in Equation (3). Two structural break LM unit root test statistics of the Lee-Strazicich (2003) test are obtained as a result of the estimation of the following model:

$$\Delta y_t = \delta' \Delta Z_t + \phi \tilde{S}_{t-1} + u_t \tag{4}$$

Here, it is in the form of $\tilde{S}_t = y_t - \tilde{\psi}_x - Z_t \tilde{\delta}$ for $t = 2,...,T$ and $\tilde{\delta}$ shows the regression coefficients. The results of the Lee-Strazicich (2003) structural fracture unit root test for the examined series are presented in the Table 3.

Table 3. Lee-Strazicich (2003) Unit Root Test Results

	Model AA			Model CC		
Variable	**Test Statistic**	**Break Date**	**Critical Value (%5)**	**Test Statistic**	**Break Date**	**Critical Value (%5)**
EG	-6.6275* [0]	2007, 2010	-3.842	-7.1928* [3]	1999, 2012	-5.73
INF	-3.2509 [0]	1987, 2002	-3.842	-4.7207 [0]	1994, 2003	-5.67
Δ*INF*	-5.7327* [0]	1994, 2008	-3.842	-9.0501* [0]	1996, 1999	-5.67
UNEMP	-3.3958 [1]	1989, 1995	-3.842	-5.3703 [1]	1994, 2009	-5.65
Δ*UNEMP*	-4.6588 [0]	2003, 2010	-3.842	-6.5986* [2]	2008, 2014	-5.73
EXP	-2.8051 [3]	1990, 2000	-3.842	-4.8300 [1]	1991, 2002	-5.67
Δ*EXP*	-6.9592*[0]	1994, 2001	-3.842	-8.8451* [4]	2000, 2007	-5.74

Note: Δ indicates the first-order difference operator, * and ** indicate stationarity with a single internal structural break at 1% and 5% significance levels, respectively. The values in square brackets are the optimal lag lengths calculated with the t-statistic. Critical values at the 5% significance level are taken from Lee and Strazicich's (2003) study.

According to the results obtained in the study, it was concluded that *EG* was stationary under two structural breaks in the level values, and the *INF*, *UNEMP* and *EXP* series were stationary under two structural breaks in the first difference values. In other words, it was determined that *EG* series were I(0) and *INF, UNEMP and EXP* series were I(1).

3.3. Toda and Yamamoto (1995) Causality Test

The causality approach developed by Toda and Yamamoto (1995) to test Granger causality relationships between time series is based on the estimation of VAR models with increased latency. Whether there is a cointegration relationship between the stationarity levels of the variables examined and the variables does not affect the validity of the Toda and Yamamoto (1995) test (Yılancı and Özcan, 2010). In the Toda and Yamamoto (1995) test, first of all, the appropriate lag length (k) of the VAR model is calculated, in which the level values of the variables whose causality is investigated are included. Then, the largest degree of integration (d_{max}) of these variables is determined. After the k and d_{max} values are determined, the parameter restrictions in the $VAR(k + d_{max})$ model to be

estimated for the causality test are tested. The $k + d_{max}$-length VAR model has the χ^2 distribution of the Wald test with k degrees of freedom (Toda and Yamamoto, 1995). The following $VAR(k + d_{max})$ model is estimated for the causality analysis of Toda and Yamamoto (1995):

$$EG_t = c_1 + \sum_{i=1}^{k+d\max} \delta_{1i} EG_{t-i} + \sum_{j=1}^{k+d\max} \beta_{1j} EXP_{t-j} + u_{1t} \quad (5)$$

$$EXP_t = c_2 + \sum_{i=1}^{k+d\max} \delta_{2i} EXP_{t-i} + \sum_{j=1}^{k+d\max} \beta_{2j} EG_{t-j} + u_{2t} \quad (6)$$

In the above VAR model u_{1t} and theu_{2t} error terms are considered to be independent of each other. In Equation (5), the null hypothesis $H_0: \beta_{1j} = 0$ stating that there is no Granger causality from EXP to EG is tested against the alternative hypothesis $H_1: \beta_{1j} \neq 0$ stating that there is a Granger causality from EXP to EG. A similar process can be specified for Equation (6). The results of the Toda and Yamamoto (1995) test applied in the study to investigate the causal relationships between EXP and the other variables in question are presented in the Table 4.

Table 4. Toda ve Yamamoto (1995) Causality Test Results

Causality Direction	Lag Length	χ^2 Statistic
EXP → EG	$k = 4 + (d_{max} = 1) = 5$	13.38679 (0.0095)*
EG ↛ EXP	$k = 4 + (d_{max} = 1) = 5$	8.887302 (0.0640)
EXP → INF	$k = 3 + (d_{max} = 1) = 4$	8.743378 (0.0329)**
INF → EXP	$k = 3 + (d_{max} = 1) = 4$	12.8027 (0.0051)*
EXP ↛ UNEMP	$k = 1 + (d_{max} = 1) = 2$	0.454104 (0.5004
UNEMP → EXP	$k = 1 + (d_{max} = 1) = 2$	4.139212 (0.0419)**

Note: * and ** indicate causality at the 1% and 5% significance level. *k* represents the appropriate lag length of the VAR model and *d_max* represents the maximum degree of integration between variables. → indicates that there is a causal relationship in the direction and ↛ indicates that there is no causal relationship. The appropriate lag length was calculated using the Akaike information criterion (AIC).

According to the results of the Toda and Yamamoto (1995) causality test in Table 4, it was concluded that there is a one-way causality relationship from *EXP* to *EG*, there is a two-way causality relationship

between *EXP* and *INF*, and there is no causality relationship from EXP to *UNEMP*. Based on the findings obtained, it can be said that the size of the public economy had an effect on economic growth and inflation during the period examined in Turkey, but had no effect on unemployment. In other words, it was concluded that changes in the size of the public sector were the cause of changes in economic growth and inflation, but not cause of changes in unemployment.

The size of the public sector affects the total demand, output and general level of prices. As a matter of fact, many results have been obtained in the literature indicating that the size of the public sector affects economic growth and inflation. Fan and Rao (2003), Attari and Javed (2013), Garry and Valdivia (2017), Kutasi and Marton (2020) concluded that the public sector's share in the economy affected economic growth. However, Kandil (2001), Ezirim et al. (2008), Amuka et al. (2016), Monjazeb and Pati (2017), Nguyen (2019), Afonso et al. (2021)'s studies revealed that the size of the public sector has an effect on inflation. However, the findings we have reached regarding the effect of the size of the public sector on unemployment do not show parallelism with the studies in the literature. The results in the literature suggest that changes in the size of the public sector change unemployment rates. On the other hand, in this study, it was determined that the size of the public sector was not the determinant of the change in employment. It can be argued that the primary objective of public policies in Turkey is not to regulate the employment market, so it is insufficient to affect the dynamics of the labor market. It can be said that the fact that the public sector fulfills its function not in terms of creating production and employment in the economy, but in order to revive the total demand, ultimately creates changes in inflation through its accelerating mechanism. In the failure of government policies to increase production and create employment, investments are not shifted to efficient areas, optimal selection of production factors cannot be made, effective resource distribution cannot be made, and as a result, the efficiency of the private sector decreases (Oktayer and Susam, 2008: 148).

The failure to achieve price stability in the economy and to reach the desired level in production and employment are related to the fact that there is not a completely good total demand management and the production

capacity is not fully utilized (Alkınoğlu, 1999: 307). In addition, when we consider that the size of the public sector triggers changes in growth and inflation and this is shaped in the axis of rational policies, we can say that the size of the public sector may be good for sustainable growth and a low inflationary trend. As a matter of fact, the share of the public economy is high in developed countries today, and price stability and wider employment volume can be mentioned with sustainable growth in these countries. However, in developing or underdeveloped economies, the size of the public sector is low and at the same time, price instability, unstable growth and employment volume are low.

The disproportionate liberalization process that started in the Turkish economy as a result of neo-liberal policies in the post-1980 period increased economic vulnerabilities and structural problems. However, the failure to take measures to solve these problems and political instability caused Turkey to constantly face crises and weakened the macroeconomic performance of the country (Kanca and Bayrak, 2014: 38-44). In addition, the inefficiency and poorness of public spending has been another important reason for not achieving the desired economic goals. However, the existence of the informal economy in our country and the inadequacy of taxes cause the inefficiency of public expenditures and as a result, the public sector's economic size in the national economy remains at very low levels (Sandalcı and Sandalcı, 2016: 414-419). The low share of the public sector in the national economy can significantly affect macroeconomic performance negatively as well as render the policy development and implementation process necessary for a successful macroeconomic performance dysfunctional.

CONCLUSION

It is argued that the economy model, in which public sector is predominant, provides more advantages than the economy model in which market economy is effective in the process of ensuring macroeconomic stability, and this is a requirement of the welfare state understanding. In other words, it is stated that the changes in the size of the public sector are the cause of the changes in the macroeconomic stability indicators and there is a relationship between the economic size of the public sector and macroeconomic stability. Based on this basic view, the relationship between

the economic size of the public sector and macroeconomic stability was examined in the study, in which Turkey's data for the period 1980-2019 was used. According to the causality test results of Toda and Yamamoto (1995), it was concluded that there is a causal relation from public expenditures to economic growth and inflation, but there is no causality relation to unemployment. These results provide important evidence that changes in the size of the public sector are the cause of changes in economic growth and inflation, but not changes in unemployment.

In order to ensure macroeconomic balances and maintain stability in Turkey, which has an institutionalized economic and democratic structure, the activity areas of the government must be well defined and public policies must be implemented at an effective level. In this context, it is possible to bring economic growth to a sustainable level and to keep inflation at moderate levels by optimally adjusting the public's share in the economy. The fact that the growth in the public sector can reduce economic fluctuations and be effective in ensuring macroeconomic stability depends on the stability and good management of public expenditures. Production of efficient goods and services is the main condition for a rational growth. Accordingly, domestic resources should be used to increase the development and welfare of the country, and public expenditures should be directed to productive areas.

Aggregate demand management applied to ensure full employment can increase inflation after a certain level. Hence, demand management is a necessary, but not sufficient condition for achieving full employment. As soon as inflation starts to rise, supply-side policies should also be introduced. Accordingly, common action should be taken in the determination of wages and prices, heavy investments should be made in sectors with high unemployment and productive capacity should be increased (Tokucu and Sarıdoğan, 2010).

The increase in public expenditures increases the production of goods and services in the short-term; but when these expenditures are used irrationally and unplanned, it can lead to low growth and high inflation in the long-term. For this reason, populist policies should be avoided and attention should be paid to the implementation of public policies in a way that will ensure the development of the country in the long-term. Governments should

develop countercyclical policies when they decide to implement discretionary public policies. In the struggle against both recession and inflation, economic growth should be obtained in line with the productive capacity of the country. With the regulation of public policies (especially public expenditures), the aggregate production of goods and services in the economy will be able to respond to the aggregate demand instantly and more easily. In an economy where the aggregate demand-aggregate supply equilibrium is achieved, employment will already be at the anticipated and targeted level.

REFERENCES

ADAMS, Hanry Carter, "The Science of Finance: An Investigation of Public Expenditures and Public Revenues", 1898, Henry Holt.

AFONSO, Antonio, FURCERI, Davide, "Government Size, Composition, Volatility and Economic Growth", ECB working paper series, 2008, No. 849.

AFONSO, Antonio, ŞEN, Hüseyin, KAYA, Ayşe, "Government Size, Unemployment and Inflation Nexus in Eight Large Emerging Market Economies", Review of Public Economics, V. 236, 2021, p.133-170.

AKAN, Yusuf, ARSLAN, İbrahim, KAYNAK, Selahattin, "Türkiye'de Ekonomik İstikrarı Sağlamada Maliye Politikası Uygulamaları (Bir Ampirik Çalışma: 1980-2006)", Sosyoekonomi, V. 7, N. 7, 2008, p.107-116.

AKTAN, Coşkun Can, "Arz-Yönlü İktisat Teorisi ve Haldun-Laffer Etkisi", Ekonomi Bilimleri Dergisi, V. 1, N. 2, 2009, p.40-54.

AKYÜZ, Hayriye Esra, "Vektör Otoregresyon (VAR) Modeli ile İklimsel Değişkenlerin İstatistiksel Analizi", Uluslararası Mühendislik Araştırma ve Geliştirme Dergisi, V. 10, N. 2, 2018, p.183-192.

ALKINOĞLU, Lale, "Türkiye'de Uygulanan İstikrar Politikaları ve Sonuçları", Erciyes Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, V.15, 1999, p.307-319.

AMUKA, Joseph I, EZOKE Miracle O, ASGOWA, Fredrick O, "Government Spending Pattern and Macroeconomic Stability: A Vector

Autoregressive Model", International Journal of Economics and Financial Issues, V. 6, N. 4, 2016, p.1930-1936.

ARI, Ayşe, ÖZCAN, Burcu, "Tüketim-Gelir Oranının Durağanlığı: Türkiye Örneği", Hacettepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, V. 33, N. 3, 2015, p.23-46.

ATTARI, Muhammad Irfan J, JAVED, Attiya Y, "Inflation, Economic Growth and Government Expenditure of Pakistan: 1980-2010". Procedia Economics and Finance, V. 5, 2013, p.58-67.

CORSETTI, Giancarlo, DEDOLA, Luca, JAROCIŃSKI, Marek, MAĆKOWIAK, Bartosz, SCHMIDT, Sebastian, "Macroeconomic Stabilization, Monetary-Fiscal Interactions, and Europe's Monetary Union", ADEMU Working Paper Series, 2016, 58.

DICKEY, David A, FULLER, Wayne A, "Distribution of the Estimators for Autoregressive Time Series With a Unit Root", Econometrica, V. 49, 1981, p.1057-72.

DICKEY, David A, FULLER, Wayne A, "Distribution of the Estimators for Autoregressive Time Series With a Unit Root", Journal of the American Statistical Association, V. 74, 1979, p.427-431.

DİNLER, Zeynel, "İktisada Giriş", Ekin Yayınevi, 2017.

DOESSEL, D. P, VALADKHANI, Abbas (2003). "The Effect of Government on Economic Growth in Fiji", University of Wollongong Faculty of Commerce Papers, Austria, 2003.

DOĞAN, Seyhun, "Keynesyen Teori'ye Bir Tepki: Arz Yanlı İktisat", Selçuk Üniversitesi İİBF Sosyal ve Ekonomik Araştırmalar Dergisi, V.6, N. 12, 2006, p.253-272.

EZIRIM, Chinedu., MUOGHALU, Micheal, ELIKE, Uchenna, "Inflation Versus Public Expenditure Growth in the US: An Empirical Investigation" North American Journal of Finance and Banking Research, V. 2, N. 2, 2008, p.26-40.

FAN, Shenggen, RAO, Neetha, "Public Spending in Developing Countries: Trends, Determination, and Impact", EPTD Discussion Paper, 2003, 99.

FELDMANN, Horst, "Government Size and Unemployment: Evidence From Developing Countries", Journal of Developing Areas, V. 43 N.1, 2009, p.315-330.

GALBRAITH, John Kenneth, "The Affluent Society", Houghton Mifflin Co, 1958.

GARRY, Stefanie, VALDIVIA, Juan Carlos, "An Analysis of the Contribution of Public Expenditure to Economic Growth and Fiscal Multipliers in Mexico, Central America and the Dominican Republic, 1990-2015", ECLAC Studies and Perspectives Series, 2017, 173.

GOV, Abdullah, SALIHOGLU Esengül, "Türkiye'de Ekonomik Göstergeler ve Para Arzının Bireysel Kredi Kartı Kullanımına Etkileri" The Journal of International Scientific Researches, V. 5, N. 1, 2020, p.50-63.

HAN, Song, MULLIGAN, Casey, "Inflation and the Size of Government", Louis Review, V. 90, N. 32, 2008, p.245-267.

HOLDEN, Steinar, SPARRMAN, Victoria, "Do Government Purchases Affect Unemployment?", CESifo Working Paper, 2018, 3482.

KANCA Osman Cenk, BAYRAK, Metin, "Kamu Kesiminin Ekonomik Büyüklüğüne Türkiye ve OECD Ülkeleri Açısından Bir Bakış. Sayıştay Dergisi, V. 95, 2014, p.29-48.

KANDIL, Magda, "Asymmetry in the Effects of US Government Spending Shocks: Evidence and Implications", The Quarterly Review of Economics and Finance, V. 41, N. 2, 2001, p.137-165.

KARIMI, Keyvan, GHASEMZADE, Rahebe, KHODAEI, Payam, ABDI, Payam, "The Effect of Government Spending on Macroeconomic Stability", Accounting, V. 2, 2016, p.31-36.

KAYA, I. Gökçe, "Türkiye'de Kamu Sektörünün Optimal Büyüklüğü", Maliye Finans Yazıları, V. 28, N. 101, 2014, p.32-57.

KOVACI, Süreyya, BELKE, Murat, BOLAT, Süleyman, "Kamu Büyüklüğünün İşsizlik Üzerindeki Etkisi: Avrupa Birliği Ülkelerinden Kanıtlar", Uluslararası Sosyal Bilimler ve İnovasyon Kongresi, 2018, Antalya.

KUTASI, Gabor, MARTON, Ádam, "The Long-Term Impact of Public Expenditures on GDP-Growth" Society and Economy, V. 42, N. 4, 2020, p.403-419.

LEE, Junsoo, STRAZICICH, Mark C. "Minimum Lagrange Multiplier Unit Root Test With Two Structural Breaks", The Review of Economics and Statistics, V. 85, N. 4, 2003, p.1082-1089.

LINDAUER, David L, VELENCHIK, Ann D, "Government Spending in Developing Countries: Trends, Causes, and Consequences", The World Bank Research Observer, V. 7, N. 1, 1992, p.59-78.

LUMSDAINE, Robin L, PAPELL, David H, "Multiple Trend Breaks and the Unit Root Hypothesis", The Review of Economics and Statistics, V. 79, N. 2, 1997, p.212-218.

MACKINNON, James G, "Numerical Distribution Functions for Unit Root and Cointegration Tests", Journal of Applied Econometrics, V. 11, N. 6, 1996, p.601-618.

MIHÇI, Hakan, "Kalkınma: Bir Terim Neyi Anlatır?" Ekonomik Yaklaşım, V. 7, N. 23, 1996, p.65-86.

MOHANTY, Madhusudan, ZAMPOLLI, Fabrizio, "Government Size and Macroeconomic Stability", BIS Quarterly Review, Bank for International Settlements, 2009.

MONJAZEB, Mohammadreza, PATI, Mohsen Mahmoodi, "Government Size and Inflation in Developing Countries: A Panel Data Approach", Journal of Economic Modeling Research, V. 7, N. 26, 2017, p.65-87.

MUSGRAVE, Richard, "Fiscal Systems", Yale University Press, 1969.

NEPRAM, Damodar, SINGH, Salam Prakash, JAMAN, Samsur, "The Effect of Government Expenditure on Unemployment in India: A State Level Analysis", Journal of Asian Finance, Economics and Business, V.8, N. 3, 2021, p.763-769.

NGUYEN, Tai Dang, "Impact of Government Spending on Inflation in Asian Emerging Economies: Evidence from India, China, and Indonesia", The Singapore Economic Review, V. 64, N. 5, 2019, p.1171-1200.

OKTAYER, Nagihan, SUSAM, Nazan, "Kamu Harcamaları-Ekonomik Büyüme İlişkisi: 1970-2005 Yılları Türkiye Örneği", Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi, V. 22, N. 1, 2008, p.145-164.

ONUAHO, Favour C, AGBEDE, Moses Oyeyemi, "Impact of Disaggregated Public Expenditure on Unemployment Rate of Selected African Countries: A Panel Dynamic Analysis", Journal of Economics, Management and Trade, V. 24, N. 5, 2019, p.1-14.

ÖZER, Mustafa Orhan, "Kamu Harcamaları ve İşsizlik Oranı Arasındaki İlişki: Abrams Eğrisinin Türkiye İçin Sınanması", Karadeniz Teknik Üniversitesi Sosyal Bilimler Enstitüsü Sosyal Bilimler Dergisi, V. 10 N. 20, 2020, p.307-322.

PEACOCK, Alan, WISEMAN, Jack, "The Growth of Public Expenditure in the United Kingdom", Princeton University Press, 1961.

ROSTOW, Walt Whitman, "The Stages of Economic Growth: A Non-Communist Manifesto", Cambridge University Press, 1960.

SAGDIÇ, Ersin Nail, YILDIZ, Fazlı, "Bölgesel Düzeyde Kamu Harcamalarının İşsizlik Düzeyi Üzerindeki Etkisi: Türkiye Örneği", Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, V. 64, 2020, p.208-226.

SAMANIPOUR, Hassan, ABOUNOORI, Esmaiel, NADEMI, Younes, "Inflation and Government Size in Iran: Threshold Regression Approach", QJER, V. 16, N. 4, 2016, p.107-125.

SANDALCI, Ulvi, SANDALCI, İnci, "Kamu Kesimi Ekonomik Büyüklüğü ve Kamu Etkinlik Düzeyi İlişkisi", Pamukkale Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, V. 25, N. 1, 2016, p.413-429.

SCHMIDT, Peter, PHILLIPS, Peter C. B, "LM Tests for a Unit Root in the Presence of Deterministic Trends", Oxford Bulletin of Economics and Statistics, V. 54, N. 3, 1992, p.257-287.

SCULLY, Gerald W, "The Size of the State, Economic Growth and the Efficient Utilization of National Resources", Public Choice, V. 63, N. 2, 1989, p.149-164.

ŞEN, Semih, TABAR, Çağlayan, TOKATLIOĞLU, Mircan, "Küresel Krizde Devlet Müdahalesi ve Maliye Politikası", İş ve Hayat, V. 4, N. 8, 2018, p.1-16.

ŞENER, Orhan, "Kamu Ekonomisi", Beta Basım, 2014.

TINBERGEN, Jan, "On the Theory of Economic Policy", North-Holland, 1952.

TINBERGEN, Jan, "Economic Policy: Principles and Design", North-Holland, 1956.

TODA, Hiro Y, YAMAMOTO, Taku, "Statistical Inference in Vector Autoregressionswith Possibly Integrated Processes", Journal of Econometrics, V. 66, 1995, p.225-250.

TOKUCU, Erkan, SARIDOGAN, Ercan "Kriz ve Maliye Politikalarının Geri Dönüşü Çerçevesinde Fonksiyonel Maliye: Bir Literatür Taraması", Marmara Üniversitesi İİBF Dergisi, V. 29, N. 2, 2010, p.77-98.

WAGNER, Adolph, "Three Extracts on Public Finance, in Classics in the Theory of Public Finance", Richard MUSGRAVE and Alan PEACOCK (Eds), 1958, Macmillan, p.119-136.

WANG, Siyan, ABRAMS, Burton, "The Effect of Government Size on the Steady-State Unemployment Rate: A Dynamic Perspective", University of Delaware Department of Economics Working Paper, 2011, No.11-12.

YILANCI, Veli, "Yapısal Kırılmalar Altında Türkiye İçin İşsizlik Histerisinin Sınanması", Doğuş Üniversitesi Dergisi, V. 10, N. 2, 2009, p.324-335.

YILANCI, Veli, ÖZCAN, Burcu, "Yapısal Kırılmalar Altında Türkiye İçin Savunma Harcamaları ile GSMH Arasındaki İlişkinin Analizi. C.Ü. İktisadi ve İdari Bilimler Dergisi, V. 11, N. 1, 2010, p.21-33.

ZIVOT, Eric, ANDREWS, Donald, W.K. "Further Evidence of the Great Crash, the Oil-Price Shock and the Unit Root Hypothesis", Journal of Business and Economic Statistics, V. 10, N. 3, 1992, p.251-270.