The Relationship Between Defense Expenditures, Budget Deficit and External Debt After the Financial Liberalization Period: The Case of E7 Countries

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Abstract:

In the 1980s, with the effect of globalization, in some developing countries, with the implementation of financial liberalization policies, it is seen that there was a tendency to external financing resources. Financial liberalization is seen as a financing tool for external debt. The burden of countries' defense expenditures on their budgets and financing of defense expenditures are among the problems of developing countries. A budget deficit occurs as a result of insufficient financing of defense expenditures with tax revenues. In case budget deficits cannot be financed with domestic resources, external borrowing need arises. While the relationship between defense expenditures and many macroeconomic variables is discussed in the literature, its relation with foreign debt and budget deficit remains at a restricted level. In this study, the relationship between defense expenditures, budget deficit and external debt for E7 countries is examined for the period 1980-2019, also known as the post-financial liberalization period in the literature. For the analysis of study developed by Taylor ve Sarno (1998) MADF panel unit root tests and Gengenbach et al. (2016) GUW cointegration test were applied and for the causality relationship between variables, panel causality test developed by Emirmahmutoğlu and Köse (2011) was applied. As a result of the causality analysis findings of the study, it was concluded that there is a one-way causality relationship from budget deficit to foreign borrowing and defense expenditures to foreign borrowing for the panel in general in E7 countries.

Keywords: Defence Expenditures, Budget Deficit, External Debt, Panel Data Analysis

JEL Codes: H50, H62, H63, C33

INTRODUCTION

With the financial liberalization period, countries turned to foreign financing instruments and resources. The concept of financial liberalization is defined as the abolition of state control over the markets and leaving the market mechanism to its functioning, and the liberalization of financial capital movements at domestic and international levels. With the consensus of protectionist and interventionist financial policies as the source of economic crises, the free market system and financial liberalization process started in the 1970s.

With the of Benoit (1973)'s work, the economic dimension of defense expenditures has been examined theoretically and empirically. However, the relationship between defense spending and borrowing is Brzoska (1983), Looney, (1989), Karagol and Sezgin (2004), Kollias et al. (2004), Dunne et al. (2004a, 2004b), Günlük-Senesen (2004), Karagöl, (2005), Narayan and Narayan (2008), Narayan and Smyth (2009), Wolde-Rufael (2009) and Shahbaz et al. (2013)'s (Sheikh, Chaudry and Faridi, 2013: 159, 160) is discussed with very few studies.

In times of high defense spending, foreign borrowing is required. Defense spending can be expected to contribute to foreign debt through three channels. First, military expenditures are a budget item that must be financed. If taxation is not enough to finance military spending, a budget deficit will occur. If the means to finance the budget deficit domestically are limited, the budget deficit may create a need for external borrowing and consequently an accumulation of debt. Second, a component of military expenditure can be allocated to arms imports that require foreign currency. If there is no foreign exchange in the country, it will have to borrow from outside to contribute to the foreign debt. Third, domestic arms production can cause an increase in foreign currency demand in the form of high-tech imported intermediate inputs and machines (Smyth and Kumar Narayan, 2009: 239).

In the post-financial liberalization period, the defense expenditures of the countries with undeveloped defense industry are covered by the import of weapons, and the budget deficit creates the need for foreign borrowing as a result of financing the defense expenditures of the countries' budgets by importing weapons. Arms import increases the foreign currency need of countries and may cause countries with limited foreign exchange reserves to choose foreign borrowing. As stated by Symth and Narayan (2009), if defense equipment and equipment are produced domestically, importing high technology inputs creates a demand for foreign exchange and it may be possible to meet the foreign currency requirement through foreign borrowing (Gözler, 2016: 50).

While presenting the economic dimension of defense expenditures in the literature, its relation with many macroeconomic indicators such as economic growth, current account balance, inflation, tax revenues, unemployment, interest rates, etc. has been analyzed. However, the examination of the relationship of defense expenditures with foreign debt and budget deficit remains at a more limited level. Therefore, the aim of this study is to examine the relationship between defense expenditures, budget deficit and external debt for E7 countries in the period 1980-2019, in the period after financial liberalization and financial liberalization. When examining the relationship between defense expenditures and external debt, Sezgin (2004), Smyth and Narayan (2009), Georgantopoulos and Tsamis (2011) and Shahbaz et al. (2011) 's studies have been benefited.

1. Defense Expenditures, Budget Deficit and External Debt Relation

In times when countries' capital accumulation and international capital inflow are insufficient, they may prefer foreign borrowing in order to achieve their economic development goals. Among the reasons for foreign borrowing of the countries, the domestic capital market is not sufficiently developed, the financing of large-scale investments, the import of raw materials, intermediate goods and investment goods and technical information, meeting the balance of payments deficits as well as financing the increasing defense expenditures, maintaining the price stability, financing the budget deficits. etc. can be sorted. According to Kim (2009), it is stated that the foreign borrowing demands of the countries are also dependent on political and military preferences (Ipek and Esener, 2014: 70).

According to Roux (2007), it is defined as the type of expenditure affecting external debt due to the high opportunity cost of defense expenditures. The relationship between defense expenditures and external debt is considered in two ways: Defense expenditures, which are the first aspect of the budget expenditure item, put pressure on budget revenues and increase the public borrowing requirement. Internal and external borrowing can be chosen for borrowing, but the public authority prefers to borrow from external sources directly or indirectly through the financial system. The second aspect of the relationship between defense expenditures and foreign debt is related to the fact that countries are importers of weapons or that foreign borrowing is a source that affects the exchange rate in cases where foreign currency revenues cannot meet their imports. Capital-intensive defense spending by using technical resources reduces the foreign borrowing of countries. Countries' foreign borrowing also increases when defense expenditures are used in labor-intensive industries. Brzoska (1983) expresses defense expenditures as a factor increasing public debt (Işık and Kılınç, 2015: 27, 28).

Defense expenditures are generally financed by taxation, but when tax revenues are insufficient, a budget deficit occurs in the country. Dunne et al. (2004) stated that the relationship between defense expenditures and external debt develops in two ways (Şentürk, 2020: 95): “Defense expenditures, as a budget item, create a need for financing. If the increase in defense spending cannot be financed through taxation, it creates a deficit that can be financed in four different ways: (i) coin (printing) money, (ii) using foreign currency reserves, (iii) borrowing from abroad, or (iv) borrowing domestically. However, each of these methods has some limitations and implications that are widely discussed in the literature and are related, although interrelated, with certain macroeconomic imbalances. Especially when the means and opportunities to finance deficits in the country are limited, high public sector deficits compared to GDP potentially create a need for external borrowing and external debt accumulation” (Dunne et al., 2004: 181; Şentürk, 2020: 95).

The relationship between defense expenditures and foreign debt is examined by Brzoska (1983) for the first time in the literature. It is stated that defense expenditures in developing countries affect foreign debt directly or indirectly in three different ways. First, the increase in defense expenditures puts pressure on budget revenues. If public revenues and defense expenditures cannot be financed, a budget deficit will be encountered. In this case, if the national financing resources are limited, external borrowing will be made. Secondly, in case of defense spending by importing weapons, the need for foreign currency increases and foreign borrowing can be used if the foreign currency reserves of the countries are insufficient. Third, if weapons and defense equipment are produced domestically by following an import-substitution policy, there is an increase in the import of high-tech inputs and the choice of foreign borrowing due to the increase in foreign exchange demand causes an increase in foreign debt requirement (Günlük-Şenesen and Sezgin, 2002: 2; Günlük-Şenesen, 2004: 146, 147; Smyth and Narayan, 2009: 239; Karakurt et al., 2020: 276, 277).

Foreign borrowing is explained in the literature with Classical view, Keynesian view and Neoclassical view. According to the classical view, as borrowing can be obtained more easily compared to tax revenues, it may cause an increase in public expenditures and inefficient use of borrowing revenues. The classics view borrowing favorably with limited borrowing in extraordinary situations such as war and natural disaster. According to the Keynesian view, with the economic recession with the 1929 Great Depression, borrowing has become a method of financing not only in extraordinary situations but also in ordinary situations. According to neoclassics, going into borrowing to finance increasing public expenditures and investments will cause an increase in interest rates and a contraction of private sector investments, resulting in the crowding-out effect (Tuna, 2019: 14-16).

Budget deficit is seen as the source of the problems faced by developing countries. The preference of borrowing in the financing of budget deficits has started to be examined in the literature with the "Ricardian Equivalence Theorem" of Barro (1975) (Temiz, 2008: 23).

“The basic suggestion of the Ricardian Equivalence Hypothesis is that financing the budget deficit with borrowing as a result of the government reducing taxes by keeping public expenditures constant or increasing public expenditures by keeping the taxes fixed will not affect the private sector expenditures. Because the taxes that will arise for the principal and interest payments of the debt in the future due to public borrowing are fully perceived by individuals” (Küçüksucu, 2012: 2).

In the Neo-Classical approach, the concept of budget deficit is explained with Barro. According to Barro, if the public expenditure level is kept constant and the public expenditures are financed by borrowing instead of tax revenues, the real interest rate will not affect the investments and the level of GNP. According to Keynesian economists, it is stated that the budget deficits seen due to the increase in public expenditures increase the profitability of private investments up to a certain interest rate. In other words, in the case of underemployment, nominal money deficits in the economy have an increasing effect on real and nominal money demand up to the level of full employment (Direkçi, 2006: 17). In the monetarist approach, they are interested in the method of financing the budget deficit. They want the role of the state to be limited to monetary policy (Küçüksucu, 2012: 22).

The budget balance is the difference between the state's tax revenues and its expenditures. A negative budget balance is defined as a budget deficit, while a positive budget is defined as a budget surplus. In order to overcome the budget deficit, governments may decide to increase taxes or prefer domestic and foreign borrowing in addition to monetarization. Developing countries to choose foreign borrowing can be listed as insufficient domestic savings, insufficient financing for industrialization and growth, foreign dependency due to imports of industrial production intermediate goods, and insufficient foreign exchange reserves to finance foreign trade and balance of payments deficits (Çeliköz and Yukacı, 2016: 479 , 489).

“The relationship between defense spending and external debt continues to be an important issue for emerging economies where the rapid expansion of military spending has both security and economic consequences. Many developing economies are faced with increasing fiscal deficits due to excessive public spending, also caused by military spending. In developing countries where an adequate level of tax revenue cannot be collected due to problems in the tax system, foreign borrowing is frequently used. Initially, the flow of financial resources produces immediate benefits that strengthen the economy, but in the long run, when continuous borrowing, rescheduling of external debt expands fiscal deficits and this causes debt to rise excessively, it can put a serious burden on the country's economy” (Azam and Feng, 2017: 551).

“The role of military spending in foreign debt is important due to the potential negative effects of external debt on economic performance. These negative effects of foreign debt accumulation can be attributed to the deterioration in terms of foreign trade, the overvaluation

of the national currency and the slowdown in economic growth" (Smyth and Narayan, 2009: 235). "There are three main channels through which defense spending affects foreign debt. First, arms consumption causes a decrease in available resources, which can be directed to imports of intermediate and investment goods, which will encourage long-term growth, especially in developing countries with a shortage of foreign exchange. Second, military spending that exceeds state revenues causes budget deficits. And if the country lacks internal financing opportunities, these budget deficits should be financed by foreign borrowing. Finally, domestic arms production may create demand for high-tech imported intermediate inputs and machinery and thus increase the demand for foreign currency to consume these products" (Smyth and Narayan, 2009: 239; Dunne et al., 2004a: 181). "According to (Ahmed, 2012: 491), defense expenditures can create positive externalities by contributing to modernization, causing technological diffusion effects, creating physical infrastructure and supporting the modernization of health services. Through these positive externalities, defense expenditures can contribute to productivity" (Esener and İpek, 2015: 617).

Literature review

The defense-borrowing relationship is one of the controversial issues in the field of defense economics. There are few empirical studies on this field in developing and developed countries, the little focus on defense expenditures, and the relationship between defense expenditures, external borrowing and budget deficit for the period 1980-2019 defined as the post-financial liberalization period is examined in the literature. It is aimed to contribute.

A pioneering study to investigate the defense-debt relationship was conducted by Brzoska (1983). The findings of the study reveal that defense spending is the main cause of foreign debt in developing countries. According to the findings of Brzoska's study, defense expenditures increased foreign debt from 20% to 30% (Sheikh, Chaudhry and Faridi, 2013: 160).

The literature is also available for a limited examines for Turkey, the relationship between defense spending and foreign debt. A common conclusion could not be drawn from the analysis findings of the existing studies in the literature. While Şenesen and Sezgin (2002) did not find a meaningful relationship between defense expenditures and foreign borrowing for the analyzed period, Sezgin (2004) found a negative relationship. Kollias et al. (2004), Dunne et al. (2004), Karagöl (2005, 2006) for Turkey between defense spending and foreign debt it has reached the conclusion that there is a positive relationship.

Examining the defense spending external borrowing relationship, Dunne et al. (2004a), Kollias et al. (2004), Karagöl, (2006), Smyth and Narayan, (2009), Wolde - Rufael, (2009), Ahmed, (2012), Alexander, (2013), Anfofum et al. (2014), Azam & Feng, (2017), Dunne et al. (2019), Çolak and Özkaya, (2020) studies are also available in the literature.

For example Karagöl to Turkey (2006), Narayan and Narayan (2008) for Fiji, Wolde -Rufael (2009) for Ethiopia, Shahbaz et al. (2013) for Pakistan, Alexander (2013) for high-income NATO countries found a positive relationship between external debt and defense expenditure relation (Karakurt et al., 2020: 275).

3- Econometric Analysis

In this study, the causality relationship between defense expenditures, budget deficit and debt (external borrowing) using annual data for the period of 2000-2019, was analyzed by using Taylor ve Sarno (1998) MADF unit root test, Gengenbach, Urbain ve Westerlund (2016) cointegration test and Emirmahmutoğlu-Köse (2011) panel causality analysis methods for E7 (China, Turkey, India, Brazil, Russia, Indonesia and Mexican) countries. In the analysis used variables are taken from the World Bank Database. Econometric analysis applied using Gauss 10 and Stata 12 econometrics programs.

Before proceeding to econometric analysis, making analyzes regardless of cross-sectional dependency between series affects the analysis findings to be obtained (Breusch and Pagan, 1980; Pesaran, 2004). Whether there is a cross-sectional dependency between the series is decided by the Berusch-Pagan (1980) CDLM1 test if the time dimension is greater than the cross-section dimension (T> N). In addition, the second generation panel unit root test, which takes into account the cross-sectional dependency, is used for unit root analysis (Yıldırım et al., 2013: 86-88).

After examining whether there is a cross sectional dependency for variables, it is important that the series are stationary. The use of non-stationary series in the analysis causes the problem of spurious regression (Bayrakdar and Soyyiğit, 2020: 50). The MADF unit root test, which is the second generation panel unit root test developed by Taylor and Sarno (1998), can also be used for data where the time dimension is greater than the cross-section dimension (T>N) for panel data (Brooks, 2014: 547).

Another important point is to determine whether the series are homogeneous or heterogeneous with the Delta test developed by Peseran and Yamagata (2008). Most of the panel data applications assume that the series are homogeneous. However, this assumption is not very realistic (Yapraklı and Kaplan, 2015: 18).

Gengenbach et al. (2016) test, one of the second generation panel cointegration tests, was used to examine the cointegration relationship between variables. In addition to allowing heterogeneity, this test was preferred because it can be used in unbalanced panels and with different delay lengths (Tatoğlu, 2017: 207). After examining the cointegration relationship, the long-term coefficients of the variables were estimated (Alancıoglu and Sit, 2020: 1115).

Emirmahmutoğlu and Köse (2011) is a second generation approach based on the heterogeneity of coefficients. Toda and Yamamoto (2015) is the time series analysis adapted to the panel. In the causality test Emirmahmutoğlu and Köse (2011), as in Toda and Yamoto tests, the stationarity levels (unit root) and whether the variables are cointegrated do not matter (Emirmahmutoğlu, 2011: 3). Also, in this test, the causality relationship can be examined by explaining the heterogeneity of each country for each section. On the other hand, it can be used in the case of horizontal section and not having a horizontal section (Torusdağ, 2019: 74).

Table 1. Cross Section Dependency in Variables

Variables:	**Defence Expenditure**		**Budget Deficit**		**Debt**	
Tests	**Statistic**	**P-Value**	**Statistic**	**P-Value**	**Statistic**	**P-Value**
CDLm1 (Breusch, Pagan 1980)	104.630**	0.000	50.924**	0.000	50.765**	0.000
CDLm2 (Pesaran, 2004 CDlm)	12.904**	0.000	4.617**	0.000	4.593**	0.000
CDLm (Pesaran, 2004 CD)	-2.465**	0.000	-2.329**	0.000	-2.467**	0.000
Bias-adjusted CD test	3.068**	0.000	6.187**	0.000	3.375**	0.000

Note: ***, **, * indicate significance levels of 10%, 5% and 1%, respectively.

Table 1 indicates the horizontal cross section dependency test results for the defense expenditure, budget deficit and debt variables. CDLm1 (Breausch, Pagan 1980) is important interpretation of horizontal cross section dependency when T>N. According to CDLm1 (Breausch, Pagan 1980), CDLm2 (Pesaran, 2004 CDlm) tests, 'no horizontal cross-section dependence', the H_0 hypothesis was rejected, so there is a horizontal cross-section dependence on defense expenditures, budget deficit and debt variables.

Table 2. Testing for Homogeneity in Models

Tests	**Model 1**		**Model 2**	
	Y: Defence X: Debt		**Y: Debt X: Defence**	
	Test Stat.	**Prob.**	**Test Stat.**	**Prob.**
Delta_tilde	2.708**	0.003	3.668**	0.000
Delta_tilde_adj	2.938**	0.002	3.978**	0.000
Tests	**Model 3**		**Model 4**	
	Y: Debt X: Budget		**Y: Budget X: Debt**	
	Test Stat.	**Prob.**	**Test Stat.**	**Prob.**
Delta_tilde	1.721**	0.043	0.532	0.297
Delta_tilde_adj	1.866**	0.031	0.577	0.282
Tests	**Model 5**		**Model 6**	
	Y: Defence X: Budget		**Y: Budget X: Debt**	
	Test Stat.	**Prob.**	**Test Stat.**	**Prob.**
Delta_tilde	5.036**	0.000	5.880**	0.000
Delta_tilde_adj	5.462**	0.000	6.377**	0.000

Note: ***, **, * express heterogeneity according to significance levels of 10%, 5% and 1%, respectively.

In Table 2, homogeneity test results are indicated, the hypothesis of H_0 is was rejected in the all of models. The βi slope coefficients of the variables used in the model are heterogeneous. For all models, where the variables is taken as a dependent variable respectively, the hypothesis H_0 could not be rejected because the p-value is greater than 0.05, ie for all models is not homogeneous that is heterogeneous.

Table 3. Taylor ve Sarno (1998) MADF Unit Root Test

Variables	**MADF**	**Lag**	**Critical Value (%5)**
Debt	75.451	1	41.700
Budget	52.129	1	41.700
Defence	54.734	1	41.700

Note: ***, **, * indicate 10%, 5% and 1% significance levels, respectively. Defence: Defence Expenditure, Debt: External Borrowing, Budget: Budget Deficit.

In Table 3, since the MADF test statistic value for each of the variables of budget deficit, foreign borrowing and defense expenditures is greater than 5% critical value, it is seen that the series do not contain unit root and become stagnant when the first-degree difference of the series is taken.

Table 4. Gengenbach, Urbain ve Westerlund (2016) Cointegration Test Results

	d.y	**Coef**	**T-bar**	**P-val***
Model1:Defence = f (Debt, Budget)	y(t-1)	-0.789	-2.963	**<=0.05****
Model2: Debt =f(Defence,Budget)	y(t-1)	-0.584	-2.167	>0.1
Model3: Budget =f(Debt, Defence)	y(t-1)	-0.582	-2.059	>0.1

Note: ***, **, * indicate 10%, 5% and 1% significance levels, respectively. Defence: Defence Expenditure, Debt: External Borrowing, Budget: Budget Deficit.

The results obtained from table 4 indicate that the H_0 hypothesis cannot be rejected at 5% significance level and there is a long-term cointegration relationship from debt (external borrowing) to defence expenditures and budget deficit to defence expenditures in model 1, where defence expenditures is taken as a dependent variable.

Tablo 5. Long Term Coefficient

Modeller	Değişkenler	Coef.	Std. Err.	z	P>z
Model1: Defence=f(Debt, Budget)	Debt	0.0112	.01724	0.65	0.022**
	Budget	0.0574	.04466	-1.29	0.030**
Model2: Debt=f(Defence, Budget)	Defence	2.616	7.260	0.36	0.719
	Budget	-2.42	1.558	-1.56	0.119
Model3: Budget=f(Debt, Defence)	Debt	-.1713	.1518	-1.13	0.259
	Defence	.0074	5.040	0.00	0.999

Note: ***, **, * indicate 10%, 5% and 1% significance levels, respectively. Defence: Defence Expenditure, Debt: External Borrowing, Budget: Budget Deficit.

In Model 1, in which defence expenditures data is taken as dependent variable in table 5, the first model is statistically significant (p: 0.022≤0.05), and a positive and significant relationship was found between external debt and defence expenditures in the long run. One unit increase in external debt increases defence expenditures by 0.011 units. In addition, (p: 0.03≤0.05), there is a positive relationship between budget deficit and defence expenditures variables in the long term. While one unit increase in budget deficit increased defence expenditures by 0.057 units.

Table 6: Emirmahmutoğlu ve Köse (2011) Panel Causality Direction Result

Causality Direction	Panel Fisher	p-val
Budget → Debt	38.155	0.000**
Debt → Budget	18.894	0.165
Defense Expenditures → Budget	5.381	0.980
Budget → Defense Expenditures	9.242	0.815
Defence Expenditures → Debt	24.642	0.038**
Debt → Defence Expenditures	8.892	0.838

Note: ***, **, * indicate 10%, 5% and 1% significance levels, respectively. Defence: Defence Expenditure, Debt: External Borrowing, Budget: Budget Deficit.

In table 6 indicate the results of Emirmahmutoğlu and Köse (2011) panel causality analysis for panel generally. A bidirectional relationship was found from budget deficit to debt, and defence expenditures to debt.

Table 7. Emirmahmutoğlu ve Köse Panel Causality Test Results for Countries

Countries	**Y: Debt X: Budget**			**Y: Budget X: Debt**		
	Lag	**Wald**	**P-val**	**Lag**	**Wald**	**P-val**
China	1.000	0.215	0.643	1.000	1.643	0.200
Turkey	3.000	2.350	0.503	3.000	4.205	0.240
India	2.000	24..460	0.000**	2.000	1.096	0.578
Brazil	1.000	0.004	0.951	1.000	0.215	0.643
Russia	2.000	7.625	0.022**	2.000	5.619	0.060**
Indonesia	1.000	0.903	0.342	1.000	2.404	0.121
Mexican	1.000	0.554	0.457	1.000	0.310	0.577
Panel Fisher : 38.155 Probability value : 0.000**				Panel Fisher : 18.894 Probability value : 0.165		
Countries	**Y: Budget X: Defence**			**Y: Defence X: Budget**		
	Lag	**Wald**	**P-Val**	**Lag**	**Wald**	**P-val**
China	1.000	0.011	0.915	1.000	0.860	0.354
Turkey	1.000	0.092	0.761	1.000	0.640	0.424
India	1.000	0.031	0.861	1.000	0.034	0.853
Brazil	1.000	0.458	0.499	1.000	0.049	0.824

Russia	1.000	1.158	0.282	1.000	0.147	0.701
Indonesia	1.000	0.014	0.905	1.000	0.861	0.354
Mexican	1.000	0.019	0.889	1.000	0.781	0.377
Panel Fisher : 5.381 Probability value : 0.980				Panel Fisher : 9.242 Probability value : 0.815		
Countries	**Y: Debt X: Defence**			**Y: Defence X: Debt**		
	Lag	**Wald**	**P-Val**	**Lag**	**Wald**	**P-val**
China	1.000	0.215	0.643	1.000	0.236	0.627
Turkey	4.000	8.262	0.082**	4.000	1.231	0.873
India	4.000	10.012	0.040**	4.000	6.831	0.145
Brazil	1.000	0.903	0.342	1.000	0.038	0.846
Russia	1.000	1.329	0.249	1.000	0.591	0.442
Indonesia	1.000	3.885	0.049**	1.000	0.075	0.784
Mexican	1.000	0.446	0.504	1.000	0.447	0.504
Panel Fisher : 24.642 Probability value : 0.038**				Panel Fisher : 8.892 Probability value : 0.838		

Note: ***, **, * indicate 10%, 5% and 1% significance levels, respectively. Defence: Defence Expenditure, Debt: External Borrowing, Budget: Budget Deficit.

In table 7, when the causality relationship from budget deficit to debt (external borrowing) is analyzed by countries, when the panel is appreciated in general ($p = 0.000 < 0.05$), statistically significant. For India and Russia (5%), it is seen that there is a causal relationship budget deficit to debt. The causality relationship debt to budget for Russia (5%) there is a unidirectional causality relationship budget deficit to debt (external borrowing). In Table 7, when the causality relationship from defence expenditures to debt (external borrowing) is analyzed by countries, when the panel is appreciated in general ($p = 0.000 < 0.038$), statistically significant and then for Turkey, India and Indonesia (5%), it is seen that there is a causality relationship from defence expenditures to debt.

RESULT

Along with the financial liberalization process, macroeconomic indicators have brought about some changes in the budgets of the countries and led the countries to choose the way of foreign borrowing. Among the reasons for foreign borrowing of developing countries, due to use foreign borrowing in order to ensure economic growth, balanced regional development, employment increase, as well as to protect price stability and to close the balance of payments deficits. It is aimed to provide additional resources to the economy and to provide a source of payment to the country in foreign currency by borrowing from external sources. Another determining factor among the reasons for foreign borrowing of countries is the financing of defense expenditures. However, external borrowing to meet public expenditures can have an inflationary effect. This is because foreign exchange inflows obtained through foreign borrowing may cause an increase in foreign exchange emission and total demand in the country. However, the use of foreign exchange revenues obtained through foreign borrowing in financing imports may reduce the effect of inflationary pressure by causing an increase in supply. The determining factor in the borrowing path of developed countries is periodic external borrowing, as it does not stem from structural and cyclical problems.

In this study for the period of 2000-2019, the causality relation between defense expenditures, budget deficit and debt (external borrowing), analyzed with Taylor ve Sarno (1998) MADF unit root test, Gengenbach, Urbain ve Westerlund (2016) cointegration test and Emirmahmutoğlu-Köse (2011) panel causality analysis methods for E7 (China, Turkey, India, Brazil, Russia, Indonesia and Mexican) countries. According to the result of Gengenbach, Urbain ve Westerlund (2016) cointegration test, in the long run positive relationship between

defence expenditures and external debt was found. So one unit increase in external debt increases defence expenditures by 0.011 units. In addition in the long term, there is a positive relationship between budget deficit and defence expenditures and one unit increase in budget deficit increased defence expenditures by 0.057 units.
According to the results of Emirmahmutoğlu and Köse (2011) panel causality analysis, there is bidirectional relationship was found from budget deficit to debt, and defence expenditures to debt. Emirmahmutoğlu and Köse (2011) panel causality analysis, causality relationship is analyzed on a country basis, it is seen that there is a causality relationship between budget deficit to external debt for India. For Russia, there is a bidirectional causality relationship between external borrowing and budget deficit. For Turkey, India and Indonesia seen from defense spending to external debt there is unidirectional causality.

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