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AN INVESTIGATION ON THE EFFECT OF DEFENSE EXPENDITURE ON ECONOMY IN TURKEY[1]

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ABSTRACT

Defense expenditure, made to sustain sovereignty of a country and permanence of national existence and an increasing function of threat against national integrity, is the share allocated from national income despite welfare loss. Despite peace treaties made after the second world war, global defense expenditures have been increasing to up to now because of developments in chemical and biological weapon technology, terrorism and petroleum war and still one of the biggest share allocated from budgets of countries if for defense expenditures.

Although defense expenditure has a crucial place in the budget share of a country it may vary from country to country depending on political structures, geopolitical location and socio-economic conditions of the country. The variety of these factors creates difficulties in terms of defense expenditures particularly in international comparisons.

In this context the purpose of this study is to investigate the impact of defense expenditure on the economy. In this paper, the level of defense spending in Turkey and its possible effects on the economy, the correlation between defense spending and inflation, foreign trade, economic growth and employment will be examined.

Keywords: Defense Expenditure, Correlation, Method of Least Squares.

TÜRKİYE'DE SAVUNMA HARCAMALARININ EKONOMİYE ETKİSİ ÜZERİNE BİR ARAŞTIRMA

ÖZET

Ülkelerin egemenliğinin ve ulusal varlığının devamının sağlamak için yapılan ve ülke bütünlüğüne yönelik tehditlerin artan bir fonksiyonu olan savunma harcamaları, refah kaybı olasılığına rağmen ülkelerin milli gelirlerinden ayırdıkları paydır. Dünyada savunma harcamaları İkinci Dünya Savaşı sonrası yapılan barış antlaşmalarına rağmen kimyasal ve biyolojik silah teknolojilerinin gelişmesi, terörizm ve petrol savaşları gibi nedenlerle günümüze kadar artma eğilimi göstermiş ve ülkelerin bütçelerinden ayırdıkları en büyük paylardan biri olmaya da devam etmektedir.

Savunma harcamaları ülkelerin bütçelerinde önemli bir yere sahip olmasına rağmen ülkelerin siyasi yapıları, jeopolitik konumları ve sosyo-ekonomik durumlarına bağlı olarak ülkeden ülkeye farklılık göstermektedir. Bu faktörlerdeki farklılık savunma harcamaları açısından özellikle uluslararası karşılaştırmalarda güçlük yaratmaktadır. Askeri gücün bir göstergesi olarak alternatif kullanım alanlarından çekilen savunma harcamalarının ekonomi üzerine etkisini değerlendirmek ülkeler için oldukça önemlidir. Bu bağlamda çalışmanın amacı, savunma harcamalarının ekonomi üzerindeki etkisini araştırmaktır. Çalışmada, Türkiye'deki savunma harcamalarının düzeyi ve Türkiye ekonomisi üzerindeki olası etkileri; savunma harcamaları ile enflasyon, dış ticaret, ekonomik büyüme ve istihdam arasındaki korelasyon incelenecektir.

Anahtar Kelimeler: Savunma Harcamaları, Korelasyon, En Küçük Kareler Yöntemi.

[1] This study was compiled from the text that was delivered as a verbal statement at the International Davraz Congress between 24th and 27th of September 2009.

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1. INTRODUCTION

In the most general sense, defense expenditure is the share a country allocates from its national income for its defense in order to ensure its national and international security (Tüğen, 1989:12). Basically the countries are free to determine the defense expenditure in accordance with their own wishes and goals. This freedom enables each country to plan its defense expenditure in accordance with its socioeconomic structure and sometimes the countries use it as a diversion and sometimes as a result of a certain tradition (Brzoska, 1995:45-67). Consequently there is no worldwide consensus about which items defense expenditure should be composed of. However, there are attempts to categorize defense expenditure in accordance with the definitions from NATO, IMF and UN in general (Giray, 2004:184-185).

The absence of a standard definition of defense expenditure makes it hard to carry out a comparative study regarding this subject. Despite this difficulty, when we look at the defense expenditure trend of the countries, we observe that the defense expenditure kept increasing steadily after the World War II, started decreasing as the Cold War ended and the superpower struggles declined and that it started increasing again after 1998. The reason behind this increase is the change in economic, political and technological trends in the countries of Middle East, Eastern Europe, North America and Eastern Asia (SIPRI Yearbook 2002:10). The increase in the defense expenditure may gain pace worldwide in the future.

Many countries allocate a significant share of their total public expenditure and GNP (Gross National Product) for defense services, which have both national and international effects. Hence the resources allocated for defense expenditure are being withdrawn from the alternative areas of utilization that could have utmost importance for the economy and they are transferred to the defense industry. In other words, defense expenditure creates an opportunity cost against the productive economy. (Değer and Sen, 1995: 294) Therefore the societies have to make some decisions regarding the allocation of scarce resources among the defense services and other goods and services. More defense service could only be achieved by making sacrifices from other goods and services. This fact sets the ground for studying the effect defense expenditure on the economy.

Although the economic effect of the countries' defense expenditure has been discussed frequently, very few researchers studied the defense expenditure. Therefore the objective of this study is to assess the effects of defense expenditure on the national economy in terms of main criteria, and to survey the effects of Turkey's defense expenditure on the economy using the annual data for the 1990-2010 period by correlation analysis in the light of the defense policies that have been adopted since 1980s.

2. THE DEFENSE EXPENDITURE IN TURKEY AND IN THE WORLD

The defense expenditure of the world countries kept increasing steadily after the World War II. The defense expenditures reached its peak during the Cold War era and especially in 1987 and began declining since that year. The impression that the Cold War was over as the Soviet Union fragmented and the economic problems of the underdeveloped countries were influential for the decline in the expenditures (Uçar, 2003:4). This short-lived decline in the defense expenditure was replaced by an increase trend again after 1998. This increase was primarily a result of the economic, political and technological changes in the Middle East and Eastern Europe countries, North America and Eastern Asia. The mentioned increase was approximately 7 percent in real terms until year 2001. The defense expenditure increase for the 2002-2004 period is about 6 percent on the average. The reason for the increase in the defense expenditures during this period is the Afghanistan and Iraq operations that United States of America (USA), which is the country that affects the global averages most, started after the 9/11 attacks (SIPRI Yearbook, 2002:10). In 2007, the number of countries that consider defense expenditure important and the increase in the amount that the countries allocate for the defense expenditure are significantly larger than the ones in recent years and this increase in the defense expenditure could possibly be larger in the future. In general, the factors that accelerate the increase in the defense expenditure in the world are the foreign policy objectives of the countries, the real and perceived threats, armed conflicts and the policies ensuring contribution to the multinational peacekeeping operations (SIPRI Yearbook, 2010:11).

Table 1. Military Expenditure, by Region, 2010

Region	Spending ($ b.)*	The Rate of Change (2001-2010) (%)
World Total	1630	50
Africa	30	64
Americas	721	76
Asia ve Oceania	317	64
Europe	382	12
Middle East	111	35

*The spending figures are in current (2010) US dollars.
Source: http://www.sipri.org/research/armaments/milex/factsheet2010, p.8.

Total global military expenditure in 2010 is estimated to have been $1630 billion. This represents an increase of 6 percent in real terms compared to 2009, and of 50 percent since 2001. Military expenditure comprised approximately 2.8 percent of global gross domestic product (GDP) in 2010. All regions and subregions saw an increase in 2010, except the Middle East. The global economic crisis had little impact on world military spending in 2010, as most major economies boosted public spending to counteract the recession, postponing deficit reduction. While military expenditure was not a major feature of economic stimulus packages, it was not generally cut either (Table 1) (SIPRI Yearbook, 2010:10).

The increasing/decreasing trends in the world defense expenditure also brought about the differences between the defense expenditure levels of the countries (Table 2).

Table 2. The 15 Countries with the Highest Military Expenditure in 2010

Rank	Country	Spending (MER $b.)	Change (2001-2010) (%)	Share of GDP (%)	World Share (%)
1	USA	698	81.3	4.8	43
2	China	[119]	189	[2.1]	[7.3]
3	UK	50.6	21.9	2.7	3.7
4	France	59.3	3.3	2.3	3.6
5	Russia	[58.7]	82.4	[4.0]	[3.6]
6	Japan	54.5	-1.7	1.0	3.3
7	Sudu	45.2	63.0	10.4	2.8
8	Germany	[45.2]	-2.7	[1.3]	[2.8]
9	India	41.3	54.3	2.7	2.5
10	Italy	[37.0]	–5.8	[1.8]	[2.3]
11	Brazil	33.5	30	1.6	2.1
12	South	27.6	45.2	2.8	1.7
13	Australia	24.0	48.9	2.0	1.5
14	Canada	[22.8]	51.8	[1.5]	[1.4]
15	Turkey	[17.5]	-12.2	[2.4]	[1.1]

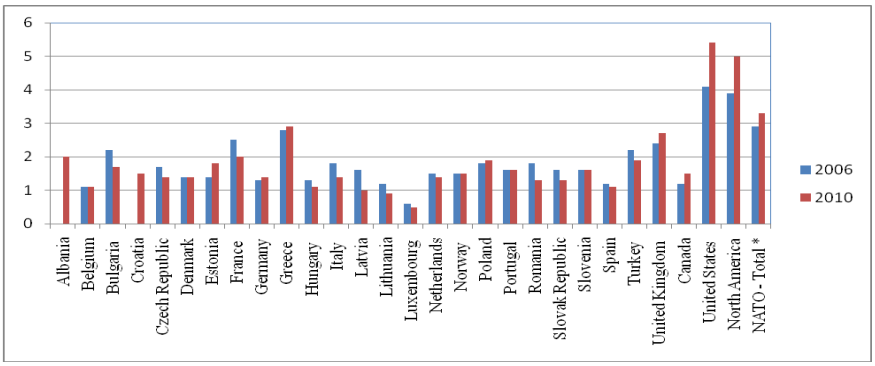
[ ] = Estimated Figure, Market Exchange Rates (MER).
Source: http://www.sipri.org/research/armaments/milex/resultoutput/15majorspenders
http://www.imf.org/external/pubs/ft/weo/2010/02/weodata/index.aspx.

Turkey does not go through such a process despite the fluctuation in the world defense expenditure. On the contrary, Turkey was affected by the global arms race since the 1960s and placed due to emphasis on the arms industry. The defense expenditure has progressively increased especially since the 1970s. The arms embargo imposed by USA on Turkey during the Cyprus Operation in 1974 was also an important factor contributing to this increase during the 1970s.

Despite the prevalent expectation that there would be a significant global decline in the defense expenditure after the arms race between the blocks and the Cold War ended, Turkey had to keep its defense expenditure at a certain level taking into consideration the characteristics of the region it's located in, the decreasing foreign aids, the terrorist activities and the variety of possible threats from its surrounding enemies. This made Turkey one of the countries with the highest defense expenditure among the member countries of NATO (Sezgin and Yıldırım, 2002:121-122).

Figure 1. 2006 and 2010 Defense Expenditure of the NATO Countries

(% Share in the GDP)



Source: http://www.nato.int/cps/en/SID-755CF964-7BBAEF62/natolive/news_64221.htm

According to the data from NATO (Figure 1), the share of the defense expenditure in GDP of Turkey decreased by 0.15% in 2010 in comparison to 2006. It stands out that all NATO countries decreased the share they allocated from their GDPs for defense expenditure during this 4-year period. Among the NATO member countries, USA has the highest defense expenditure, followed by United Kingdom, Greece, France and Turkey.

The position of the defense expenditure within the budget is as important as its total amount. Although the defense budget in Turkey has enjoyed a significant increase since 1960s, the share of the defense budget within the consolidated budget has gradually decreased.

Table 3. The Share of Ministry of National Defense (MSB) Budget in the GDP

Years	GDP (Current)	Consolidated Budget (Thousand TL)	Budget of MSB (Thousand TL)	Budget of MSB / GDP (%)	Budget of MSB/ Consolidated Budget (%)
2000	166.658	51.344	4.136	2,5	8,1
2001	240.224	86.972	5.396	2,2	6,2
2002	350.476	119.604	8.234	2,3	6,9
2003	454.78	141.248	10.209	2,2	7,2
2004	559.033	152.093	10.889	1,9	7,2
2005	648.931	159.687	10.977	1,7	6,9
2006	758.39	178.126	11.887	1,6	6,7
2007	843.178	204.068	13.052	1,5	6,4
2008	950.534	227.031	13.272	1,4	5,9
2009	952.558	268.219	14.405	1,5	5,4
2010	1.103.749	294.359	15.058	1,4	5,1

Source: http://www.bumko.gov.tr/TR/Genel/BelgeGoster.aspx? and Ministry of National Defense (MSB) 2010 Annual Report.

As Table 3 shows, the defense expenditure's share in the consolidated budget was 9.2% in in 2000 and this ratio decreased to 5.1% in 2010 despite the small increases in 2002 and 2004. This observation contradicts with the observation that the defense expenditure increased in time. However, the denominator is magnified since the consolidated budget inflates due to the interests and ignoring this fact leads to a severe fallacy. Therefore, when the noninterest budget (the primary budget) is taken into account for the assessment, it is seen that the share allocated from the budget for the defense expenditure doesn't reflect a similar decrease in the share allocated from the consolidated budget (Günlük and Şenesen, 2002:20).

However, although the expenditure of Ministry of National Defense (MSB), Gendarmerie General Command (JGK) and Coast Guard Command (SGK) is within the scope of the central budget, another part of the defense expenditure that is made by the Defense Industry Support Fund (SSDF) and SSM (Undersecretaries for Defense Industry) and that corresponds to 14% of the total is excluded from the central budget and this makes the share allocated for the defense expenditure seem lower than it really is.

3. THE EFFECT OF THE DEFENSE EXPENDITURE ON THE ECONOMY

The effects of the defense expenditure on the economy varies depending on the components and types of expenditure, the conjunctural factors, the administrative structures of the countries and the differences between the analysis techniques and data utilized to measure these effects. Therefore, the relation between the defense expenditure and economic growth, unemployment, inflation and foreign trade, which imposes a limit on making comparisons among the countries, is a topic that has been discussed constantly.

Although the researchers that survey the effects of the defense expenditure on the economy have carried out lots of studies that identifies the direction and magnitude of the effect since 1970s, the researchers mostly focused on the relation between the defense expenditure and the economic growth in these studies and very few of those studies mention the relation between the defense expenditure and inflation, labour force and balance of payments. Some of these studies suggest that the defense expenditure has a positive effect; some claim it has a negative effect, while others say it has no effect on the economy.

3.1. The Effect of the Defense Expenditure on the Balance of Payments

The defense expenditure may affect the external deficit of a country in different ways. Firstly, the defense expenditure may exert some pressure on the budget revenues and increase the borrowing requirement. There is an indirect effect if this borrowing requirement is met by the international financial markets. The second effect is a direct effect that occurs when the country that acquires weapons and other military equipment for defensive purposes is an arms importer and if it provides the necessary funds through foreign resources (Karagöl, 2005:117).

The defense expenditure of the developing countries are more import-oriented than its other public expenditure. Therefore, the defense expenditure mostly has a negative effect on the balance of payments (Chan, 1985:34).

When we look at the course of the defense expenditure in Turkey, a part of weapon hardware upgrades within the scope of Turkey's modernization program are provided from within the country, and a larger part is provided from abroad. Moreover, although the domestic production capacity keeps growing, the amount of imported resources utilized for the domestic weapon production is still significant. According to the estimates (based on the date for year 2000 and previous years), Turkey was obliged to pay from 776 million USA $ to 990 million USA $ annually on the average for military equipment. And this corresponds to 4-6 % of the total import entries. On the other hand, the military equipment exportation rate has been significantly lower therefore the foreign trade and current accounts deficit has been growing due to the military transactions.

3.2. The Effect of the Defense Expenditure on the Employment

Although the defense expenditure has a cost for the societies, it also provides advantages in terms of employment. The single most important characteristic of the defense industry is the utilization of advanced technology. Due to this characteristic, the work force employed by the companies operating in the field of the defense industry is highly qualified. Therefore, the defense expenditure has a positive effect on employment.

In the studies of Sweezy and Baran on the relation between the defense expenditure and employment, the status of the capitalist system before and after the World War II was surveyed and they deduced that defense expenditure creates a significant amount of employment in USA (Sweezy, 1975:121).

Smith's study, which was based on 8 industrialized countries in 1973, concluded that there was a high correlation coefficient between the defense expenditure and employment. On the other hand, Chester's study, which used the same data but excluded USA, inferred that there is not a significant correlation between the defense expenditure and employment (Türk, 2007:41-42).

Although Turkey is a country that has the numerically largest military power in Europe, and the second largest military power (following USA) among the NATO member countries, the simple regression of Turkey's defense expenditure & unemployment concluded that there was an inverse correlation between the defense expenditure and unemployment (Uçar, 2003:48-49).

3.3. The Effect of the Defense Expenditure on the Economic Growth

Quite a number of studies on the correlation between the defense expenditure and economic growth have been carried out up to the present day. (Table 4) However, these studies couldn't provide consistent results due to the utilized analysis methods, the differences stemming from the corresponding periods, conjunctures and countries.

Although it's generally accepted that an increase in the defense expenditure is added to the total demand and therefore stimulates the economy, some analysts claim that the defense industry wastes resources that could be used to increase the production capacity or productivity of the work force. The studies that employ the rank correlation analysis method conclude that the countries that allocate too much share from their output for defense tend to allocate less for investment and have lower economic growth rates.

The simulation studies utilize input-output and econometric models in order to estimate the economic effects of alternative future scenarios of the defense expenditure. A great number of this kind of studies shows that if the defense expenditure is high the output share or in other words the growth rate, investment and GNP decrease (Adams, 1990:154).

Table 4. The Studies That Survey the Effects of Defense Expenditure on the Economy

RESEARCHERS	MODEL/SAMPLE/PERIOD	RESULTS
Alexander (1990)	Feder Type 4-sector model, 9 developed country, 1974-1985	Doesn't affect growth.
Adams, Behrman, Boldin (1991)	Feder Type 3-sector model, developing country, 1974-1986	Doesn't affect growth.
Chowdhury (1991)	Granger Causality Tests, 55 developing country, time series data	There is no causality between the defense expenditure and growth for most countries.
Ward, Davis (1992)	Feder Type 3-sector model, USA, 1948-1996	Its effect on externality is positive, its net effect on growth is negative.
Biswas (1993)	Traditional and Feder Type 2-sector models, 74 developing country, 1981-1989	Its effect on growth is positive and significant.
Mueller, Ateşoğlu (1993)	Feder Type Model, USA, 1948-1990	Its effect on growth is small and positive.
Mintz, Stevenson (1995)	Feder Type 3-sector model, 103 country, 1950-1985	It doesn't have a significant correlation with growth.
Ram (1995)	Traditional and Feder Type 2-sector models, 71 developing country, 1965-1973, 1973-1980, 1980-1990	Its effect on growth is negative in the traditional model. Its effect isn't significant in Feder type model.
Roux (1996)	Traditional 4 EDM, South Africa, 1960-1990	Its effect on growth is negative.
Macnair (2001)	Feder Type Model, 10 NATO Countries, 1951-1985	It doesn't have a significant correlation with growth.

THE STUDIES CARRIED OUT FOR TURKEY		
Çelik (1995)	Simple Regression, 1980-1995	Its effect on growth is strong and positive, its effect on unemployment is negative, its effect on investment and inflation isn't significant.
Karaçay (1995)	Multiple Regression, 1971-1989	Its effect on growth is positive. However, it isn't significant.
Özmucur (1995)	Panel Data, 1981-1991	Its effect on growth is negative.
Kollias, Makrydakis (1996)	Granger Causality Analysis, 1954-1993	It doesn't have a causality relation with growth.
Sezgin (1997 and 2001)	Feder Type Supply Side Model, 1950-1993 Value Type 4 EDM, 1956-1994	Its effect on growth is positive, its effect on savings and foreign trade balance isn't significant.
Sezgin (200)	Time Series Analysis	The effect of equipment expenditure within the scope of defense expenditure on growth is positive in the short and long term.
Yıldırım, Sezgin (2002)	SUR (Seemingly Unrelated Regression) 1927-1996	There is a negative and positive tradeoff between the defense expenditure and health and education expenditure.

Source: UÇAR, İbrahim, "Savunma Harcamalarının Ekonomiye Etkileri ve Savunma Harcamaları - Büyüme İlişkisinin Ekonometrik Modellenmesi (The Effects of Defense Expenditure on the Economy and the Econometric Modelling of Defense Expenditure-Growth Relation)", Master Thesis.

3.4. The Effect of the Defense Expenditure on the Other Public Expenditure (Trade-off)

The input cost in the defense field could be considered as an opportunity cost for the expenditure in the civilian sectors. In other words, defense expenditure creates an opportunity cost against the productive economy. Therefore the societies have to make some decisions regarding the allocation of the scare resources among the defense services and other good and services. More defense service could only be achieved by making sacrifices from other goods and services (Giray, 2004:186; Harris, 1988:173-174; Yıldırım and Sezgin, 2002: 578-579; Günlük and Şenesen, 2002:32).

4. ECONOMETRIC METHODS AND DATA SET

4.1. Econometric Methods

Since time series data were used in this study primarily data set should be tested for stationarity. When time series analysis are used in econometric analysis you can encounter dummy regression problems occurring in instable time series put forward by Granger and Newbold (1974). There can be significant correlation between series due to strong tendencies in the same way or same trend. To understand whether this correlation is real or dummy the level of stationarity of the series should be determined. There are different test methods for unit root test, however stationarity properties of the series has been researched with Augmented Dickey-Fuller (ADF) (1979-1981) unit root test used commonly in application. ADF in general is stated as follows in the following form (Sevüktekin and Nargeleçekenler, 2007: 321-323):

$$\Delta Y_t = \beta_0 + \beta_1 t + \delta Y_{t-1} + \sum_{i=1}^{n} \beta_i \Delta Y_{t-i} + u_t \qquad (1)$$

In the related equation, ΔY_t denotes first difference of the variable, t general tendency variable, ΔY_{t-1} lagged difference term. The basic reason of taking into consideration the lagged difference terms to provide consecutive independency of the error term. Accordingly, to obtain a reliable result by ADF test and not to cause consecutive dependency problem in the estimated variable AIC was utilized to determine the optimal lagging number denoted by "n" in the equation (Lutkepolh, 1990: 53-78).

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Depending on ADF test result if the series are not stationary at the same level they are made stable at the same level by taking their differences. Next step is to the relation between the defense expenditure and the dynamics of the economy, for this purpose is used the correlation matrix and the classic least squares method.

The method of least squares is a geometric principle of curve fitting. The unknown parameters of a function are calculated in such a way that the sum of squared differences between function values and measurements gets minimal. Examples are given for a linear and a nonlinear curve fitting problem. Consequences of model linearizations are explained.

4.2. Data

The simultaneity relation between the defense expenditure and the balance of payments, labour force, economic growth and other public expenditure (education and health) surveyed econometrically in the study. Turkey's annual time series data during the 1990-2010 period has been used in order to make an estimate regarding the mentioned relation. The definition of the time series used in the study is given in Table 5.

Table 5. Variables Used in the Model

Dependent Variable	
DE	Defense Expenditure (Thousand TL)
Independent Variables	
H	Healty Expenditure (Thousand TL)
E	Education Expenditure (Thousand TL)
L	Labour Force (Thousand Person, 15+ age)
G	GDP (Current Prices, Thousand TL)
B	Balance of Payment (Thousand TL)

The statistics from the Ministry of Finance, Ministry of Development and Turkish Statistics Institute (TÜİK) in order to compile the data used in the study. The variables utilized in the study were made real by the GDP deflator. The econometric program called Eviews 5.0 was employed in order to estimate the model.

4.3. Empirical Results

When the correlation matrix that reflects the relation between the defense expenditure (dependent variable) and the dynamics of the economy: A strong and positive relationship exists between the defense expenditure and labour force and a strong negative relationship between the defense expenditure and health expenditure is seen. Furthermore, the presence of a negative relationship between the defense expenditure and the economic growth, balance of payments and education expenditure are visible. (Table 6)

Table 6. Correlation Matrix

	DE	**L**	**E**	**B**	**G**	**H**
DE	1	0.88	-0.36	-0.19	-0.031	-0.89
L	0.88	1	-0.27	-0.32	-0.36	-0.81
E	-0.36	-0.27	1	0.067	-0.42	0.37
B	-0.19	-0.32	0.067	1	0.49	0.39
G	-0.031	-0.36	-0.42	0.49	1	0.31
H	-0.89	-0.81	0.37	0.39	0.31	1

All the variables in this study are tested for stationarity using the Augmented Dickey-Fuller test statistics. The results are presented in Table 7. Table 7 shows that all variables are non-stationary in their original levels of series, but stationary in their first difference level of the series at 5% level of significance.

Table 7. Augmented Dickey-Fuller Unit Root Tests for Turkey

Variables	ADF Test Statistic		Result
	Level	1st Difference	
DE	-1.1235 (0)	-5. 9447 (1)	I(1)
L	-2,6479 (4)	-7. 6380 (1)	I(1)
E	-3. 2587 (0)	-5. 1275 (1)	I(1)
B	-2. 9752 (3)	-6.1331 (0)	I(1)
G	-1.6493 (1)	-5.8181 (0)	I(1)
H	-2.6493 (0)	-6.0192 (3)	I(1)

Note: Significance level at 5% and 1% critical values are respectively -5.45 and -3.35 Lag lengths are given in parentheses.

The results indicate that all variables chosen for the purpose of this paper are stationary of I (1). The next step is to check the optimal lag length, for this purpose the Akaike information criteria is used. The optimal lag length is turned to be one. According to the optimum lag lengths are determined. The other step involves applying classical least squares method to check whether stationary variables are relationship.

According to the following regression equation:

$$\hat{DE} = -9.12 + 0.0173G - 0.0055B + 0.0073E - 0.0271H + 0.0532L \qquad (2)$$

1 percent increase in the defense expenditure causes 5 percent increase in labour force, 0.7 percent increase in the education expenditure and 1 percent increase in economic growth; 0.5 percent decrease in the balance of payments, 2 percent decrease in the health expenditure. Despite this relation, statistically (R^2=%82) the defense expenditure affects the labour force positively and it affects the health expenditure negatively.

5. CONCLUSION

The defense expenditure is the share the countries allocate from their national revenues directly proportional to the threats against the unity of the country despite the possibility of welfare loss in order to ensure the continuity of their sovereignties and national existence. The defense expenditure has kept an increasing trend till the present day due to the reasons such as the advent of chemical and biological weapon technologies, terrorism and oil wars despite the peace treaties signed after the World War II and it is still one of the items that receives the largest share from the national budgets.

In this study, the relation between the defense expenditure and the dynamics of the economy was analyzed in the light of the annual data for the 1990-2010 periods. Firstly, it has been determined whether the variables are constant or not. It was concluded that the series aren't constant but are first degree integrable. Secondly, the relation between the defense expenditure and the dynamics of the economy by employing the correlation matrix. Finally, the relation between the variables was analyzed by using the classic least squares method. Hence, the results of this study are in parallel to the other empirical studies carried out in Turkey.

The fact that Turkey is near the top of the worldwide list regarding defense, but at the near the middle-bottom in the health and education field is an indicator that the public resources aren't utilized in the areas that would directly increase the welfare level of the society. Although it's claimed that the defense expenditure has a positive effect on the education expenditure, it's also known that it has a negative relation with the health expenditure. Moreover, the defense expenditure has the effect of increasing the budget and foreign trade

deficit. The reason behind this situation is that Turkey's defense expenditure also includes the health and education expenditure, the membership fees paid to the international institutions such as NATO and the scholarships granted to the students that are from the Turkic Republics in addition to the weapon and equipment procurement.

Turkish Armed Forces helps the regional development depending on the military deployment and it acquires the majority of the weapons and equipments procured from abroad from ASELSAN, HAVELSAN, ROKETSAN and MKE (Machinery Chemistry Institute). This situation relieves the negative effect on the balance of payments, boosts the domestic market and increases the labour force rate.

In conclusion, despite the negative effects of the defense expenditure on the dynamics of economy, setting the defense expenditure policies in accordance with political and strategic objectives rather than based on economic reasons since Turkey has long been a country that has a highly alert threat perception due to its geopolitical location.

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