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Defence-Growth Relationship: Case Study on Turkey

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Outline

- **Overview**
- **Background and Literature Review**
- **Defense-growth Relationship**
- **Difficulties in Defense Studies**
- **Turkish Defense Expenditures**
- **Conclusion**

Purpose

To find the relationship, if any, between defense spending and economic growth for Turkey.

In the sense of being one of the largest defense spenders within both the countries that make up the Middle East and NATO, it is very crucial for Turkey's future economic and political situation.



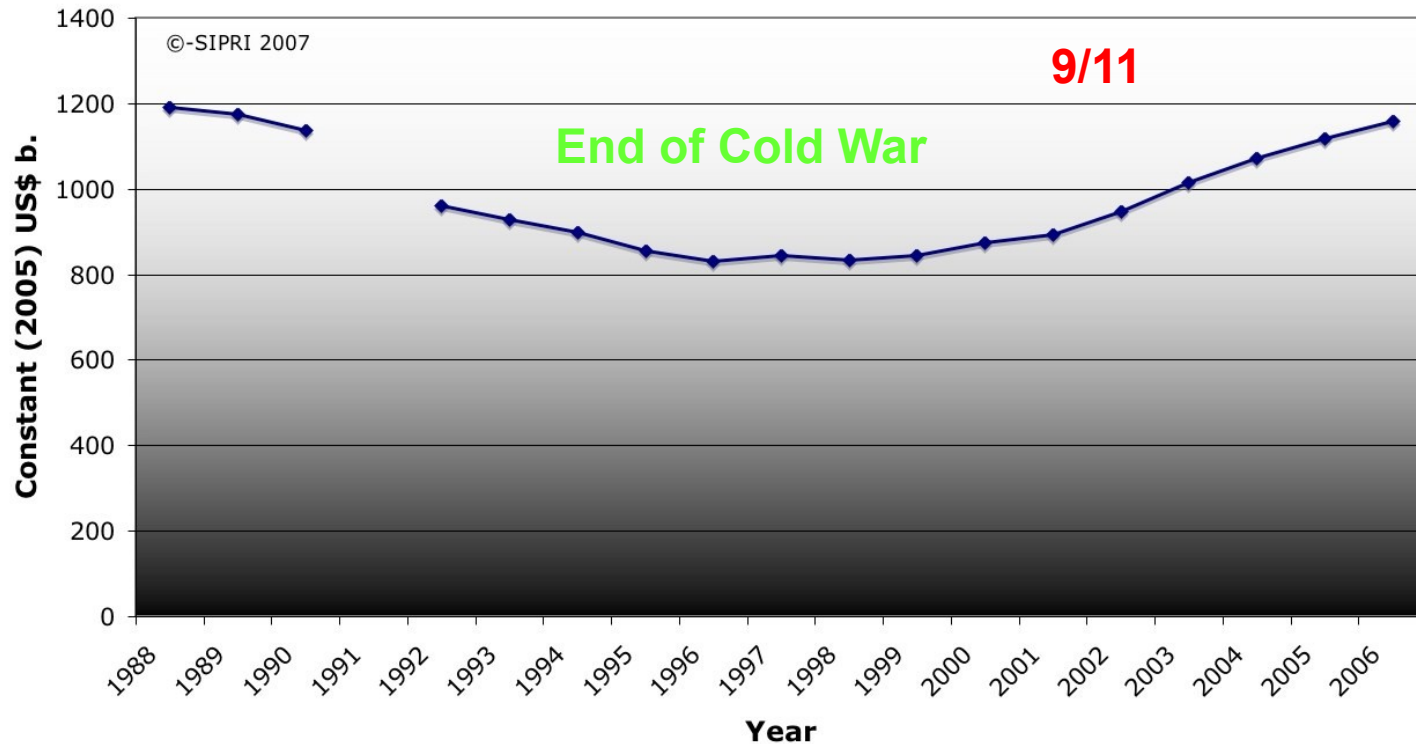
Overview

Defense Expenditure

If a good is *nonexcludable* and *nonrival*, it is called as *pure public good*

National defense is a *nonexclusive* good because it provides benefits for all citizens and no one can be excluded from enjoying it. It is also a *nonrival* good in that additional consumers may use it at zero marginal costs

World Defense Spending



Copied from : SIPRI Yearbook 2007, World Military Spending, Table 8A.1

Note: Some countries are excluded because of lack of data or or consistent time series data. World totals exclude Angola, Benin, Cuba, Equatorial Guinea, Guyana, Haiti, Iraq, Myanmar (Burma), North Korea, Qatar, Somalia, Trinidad and Tobago and Viet Nam.

Defense Spending by Countries

TABLE 1 Military Expenditure as Percentage of Gross Domestic Product (GDP)

Country	USA	China	Japan	France	Germany	Russia	Turkey	Greece	Syria	Iran	Israel	Bulgaria
1988	5.8	..	4.1	3.6	2.9	[15.8]	2.9	5	[6.9]	3.4	13.2	..
1989	5.6	2.8	4	3.5	2.8	[14.2]	3.1	4.5	[7]	3.1	12.3	[4]
1990	5.3	2.7	3.9	3.4	2.8	[12.3]	3.5	4.5	[6]	2.9	12.3	[3.5]
1991	4.7	2.5	4.1	3.4	2.2	..	3.8	4.2	[9.1]	2.5	14.8	[2.8]
1992	4.9	2.7	3.8	3.3	2	[5.5]	3.9	4.4	[7.9]	2.2	10.8	[2.7]
1993	4.5	2.1	3.5	3.3	1.9	[5.3]	3.9	4.3	[6.4]	2.3	10.6	[2.4]
1994	4.1	1.9	3.3	3.3	1.7	[5.9]	4.1	4.3	[6.5]	3.1	9.7	[3.6]
1995	3.8	1.8	3	3	1.6	[4.4]	3.9	4.2	[6.2]	2.4	8.6	[2.6]
1996	3.5	1.8	2.9	2.9	1.6	[4.1]	4.1	4.4	[5.2]	2.6	8.6	2
1997	3.4	1.7	2.7	2.9	1.5	[4.5]	4.1	4.5	[5]	2.9	8.5	2.1
1998	3.2	1.9	2.6	2.7	1.5	[3.3]	4.4	4.7	[5.1]	3.2	8.4	2.3
1999	3.1	2	2.5	2.7	1.5	[3.4]	5.4	4.8	4.8	4.1	8.3	2.5
2000	3.1	2	2.4	2.5	1.5	[3.7]	5	4.7	5.5	5.4	8	2.5
2001	3.1	2.2	2.4	2.5	1.5	[4.1]	5	4.4	5	5.7	8.1	2.7
2002	3.4	2.3	2.5	2.5	1.5	[4.3]	4.4	4.2	4.7	3.8	9.2	2.7
2003	3.8	2.3	2.7	2.6	1.4	[4.3]	3.8	4	5.6	4.4	8.5	2.6
2004	4	2	2.7	2.6	1.4	[3.9]	3.1	[3.9]	6.4	4.5	8.3	2.4
2005	4.1	2	2.7	2.5	1.4	[4.1]	2.8	[4.1]	5.1	5.8	9.7	2.4

.. = Data not available or not applicable

[] = SIPRI estimate

Source: SIPRI Yearbook 2007, Military expenditures. *Facts on International Relations and Security Trends*

Top Five Military Spenders

TABLE 2 Top Five Military Spenders in 2006 in Market Exchange and PPP Terms

Military expenditure in MER dollar terms						Military expenditure in PPP dollar terms*		
Rank	Country	Spending (\$b.)	Spending per Capita (\$)	World Share (%)	Spending Population	Rank	Country	Spending (\$b.)
1	USA	528.7	1756	46	5	1	USA	528.7
2	UK	59.2	990	5	1	2	China	[188.2]
3	France	53.1	875	5	1	3	India	114.3
4	China	[49.5]	[37]	[4]	20	4	Russia	[82.8]
5	Japan	43.7	341	4	2	5	UK	51.4
Sub Total Top 5		734.2		63	29	965.5		
World Total		1158	177	100	100			

MER : Market Exchange Rate; PPP : Purchasing Power Parity; [] : Estimated figures

*The figures in PPP dollar terms are converted at PPP rates (for 2005), calculated by World Bank based on comparison of GNP

Sources : **Military Expenditure:** SIPRI Yearbook 2007 Appendix 8A
PPP Rates: World Bank World Development Report 2006: Equity and Development

Background and Literature Review

Important Contribution of Emile Benoit

- Benoit (1973, 1978) stated that expenditures may lead to growth by “providing education and medical care, decreasing unemployment rate, engaging in variety of public works, scientific and technical innovations.”
- A number of empirical studies have been undertaken to reveal a relationship, if any, between defense expenditures and economic growth. However, there is still controversy about whether defense expenditures cause a higher or lower growth rate.

General Framework of Literature Review

- One group supports the neo-classical approach that argues defense expenditures deter economic growth.

(Değer & Smith, 1983; Lim, 1983; Deger, 1986; Kwaben, 1989; Heo, 1999; Shieh et al 2002).

General Framework of Literature Review

- A second group argues that the net effect of defense expenditures on growth is positive.

(Benoit, 1978; Ateşoglu & Mueller, 1990; Ateşoglu, 2004).

General Framework of Literature Review

- A third group argues that the relationship between defense expenditures and economic growth varies, as it could be positive or negative.

(Biswas & Ram, 1986; Looney & Frederiksen, 1986b; Looney, 1988b, 1988a; Heo, 1998; Chowdhury, 1991; Karakul & Palaz, 2004).

Grouping Studies

Grouping the literature reviews is possible in various ways, such as:

- Depending on correlation results between defense expenditures and economic growth,
- Methods imposed, data and sample used,
- Significance of results.

Grouping Countries

Some authors have grouped countries dependent upon their commonalities, such as:

- non-conflict and conflict states (Looney, 1988b),
- dependence on geography (Dunne & Perro, 2003; Kwabena, 1989),
- regional sensitivity (Heo, 1996; Kollias, 1994, 1995; Kollias & Makrydakis, 1997; Öcal, 2002),
- organization (Hassan *et al*, 2003),
- being high/low growth or developed/developing countries (Benoit, 1978; Lim, 1983; Biswas & Ram, 1986; Değer, 1986; Dakurah *et al*, 2001),
- countries that are experiencing foreign-exchange constraints, and countries which are well-endowed with resources (Looney & Frederiksen, 1986b).

Turkish Literature Review

The effects of defense expenditures on economic growth have been studied extensively in Turkey as well. Various methodologies were used to analyze the relationship between defense spending and economic growth. However, the findings of each study also differed from one another e.g;

Sezgin (1997, 2000, 2001), Özsoy (2000), Dunne et al. (2001), Yildirim and Sezgin (2003), Karagöl and Palaz (2004), Yildirim and Sezgin (2002), Günlük-Şenesen (2003),

Turkish Literature Review

Brauer (2002) found four major topics within defense economics literature regarding Greece and Turkey. He stated these four major topics in his study as follows:

(a) is there, or was there, an arm race between Turkey and Greece?

(b) what determines the demand for military expenditure;

(c) what is the impact, if any, of military expenditure on economic growth in Turkey and Greece; and

(d) what is the nature, extent, and impact of indigenous arms production in these countries?

Defense Growth Relationship

Linkages between Defense Spending and Output

The vast literatures on the economic effects of military expenditures suggest a number of different linkages between defense spending and output. They can be broadly grouped into

- supply-side effects,
- demand-side effects, and
- security effects.

The Supply-side Effects

The supply-side approach focuses on the opportunity cost of scarce resources. In the latter case, defense spending diverts scarce resources away from more productive uses; this, in turn, causes a reduction in civilian consumption and lowers the well-being of the society because of the reduction in civilian and public savings and investments.

Although these arguments often suggest an adverse effect of defense on growth, some positive linkages can also be involved as spinoff and spillovers.

The Demand-side Effects

Keynesians focus on defense spending as a component of aggregate demand. The Keynesian perspective generally assumes idle resources (i.e., labor and capital) are available in the economy. In an economy with unemployment, higher military spending increases aggregate demand which leads to increased national output and higher employment.

Security Effects

Another positive side of military expenditures is a safe environment for members of the society. Security from domestic and foreign threats is crucial for investment and innovation. A safe environment encourages both foreign and domestic investments, and therefore stronger economic growth (Benoit, 1973; Deger, 1986).

A strong military will also provide a stronger position for national leadership in negotiating with other countries in economic, trade or security matters (Ram 1993 as cited in Heo 1998).

Difficulties of Military Expenditure Studies

Difficulties of Military Expenditure Studies

Major difficulties in the collecting and processing of statistical data on military expenditures studies;

- conceptual (definition),
- methodological, and
- practical (collecting) difficulties

Conceptual (definition) problems

“The definition of military expenditures may vary considerably from one country to another due to differences in classification and accounting and in the way in which the state budget is drawn up” (Herrera, 1994, p.14).

Each country is free to define its military expenditures on behalf of its benefit; hence there is no standard definition (Brzoska, 1995 as cited in Lebovic, 1999).

Conceptual (definition) problems

There are three basic standardized definitions of military expenditures;

- The North Atlantic Treaty Organization (NATO),
- The International Monetary Fund (IMF),
- The United Nations (UN)

Methodological Problems

Inflation and domestic currency vary from one country to another over time; thus, some methodological problems are revealed in statistical studies which include data over time and by country. Therefore, ***choosing an appropriate deflator and conversion factor*** are the two important methodological problems encountered in comparing military expenditures.

Practical (collecting data) Problems

- The secret nature of the military expenditures creates a significant data confidence problem.
- Secrecy is preferred over opaqueness because it prevents information for existing or potential opponents.
- There may be some missing military data for some countries for some periods.



Difficulties of Military Expenditure Studies

The reliability problem should be taken under consideration before making any predictions or implications by the researchers, since the usage of misleading measures creates bias and error. All of these differences add up to very large error margins.

Primary Source of Information on Military Expenditures

The best known organizations;

- *the U.S. Arms Control and Disarmament Agency (USACDA or ACDA),*
- *the Stockholm International Peace Research Institute (SIPRI),*
- *the International Institute for Strategic Studies (IISS),*
- *the International Money Fund (IMF),*
- *the United Nations (UN), and*
- *the Central Intelligence Agency (CIA).*

TABLE 3 Organizations and Their Publications Related to Statistical Data on Military Expenditures

Organization	Title of Publication
IMF	Government Finance Statistics
UN	Report of the Secretary General
SIPRI	World Armament and Disarmament
USACDA	World Military Expenditures and Arms Transfers
IISS	Military Balance
CIA	World Factbook

Note: Titles of publications are collected from each organization's official web page

Measures of Defense Expenditures

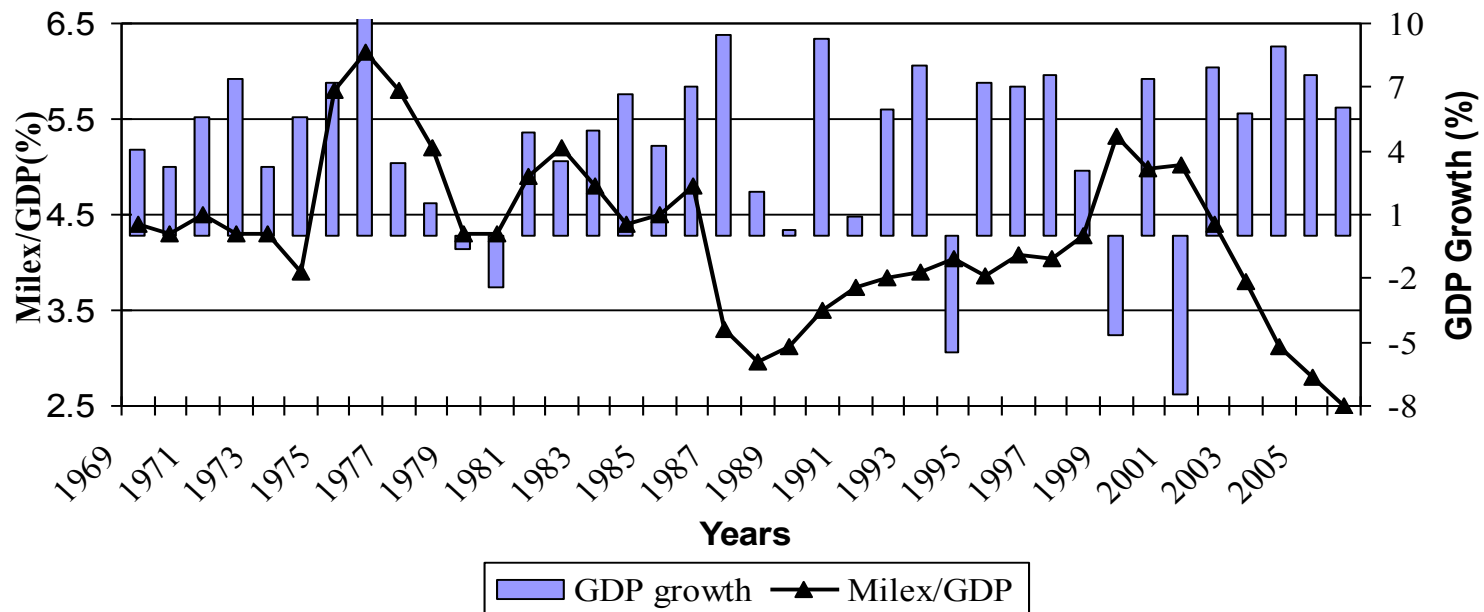
Absolute and ***relative*** measures are commonly used
The most common relative indicators are as follows:

- *Armed forces per person*
- *Military expenditure as a percent of GDP (i.e., defense burden)*
- *Military expenditures as a percent of governmental expenditures (i.e., budget ratio)*
- *Military expenditures in dollars per capita*
- *Military expenditures per military member*

Turkish Defense Eependitures

Turkish Defense Burden

**FIGURE 2 Turkish Defense Burden Ratio versus Annual GDP Growth
1969-2006**



Data Source: GDP growth, World Bank; Milex/GDP, SIPRI
 GNP data for the year 2006 is taken from Ministry of Finance database

Turkish Defense Burden

FIGURE 3 Turkish Defense Burden Ratio versus GDP 1988-2006

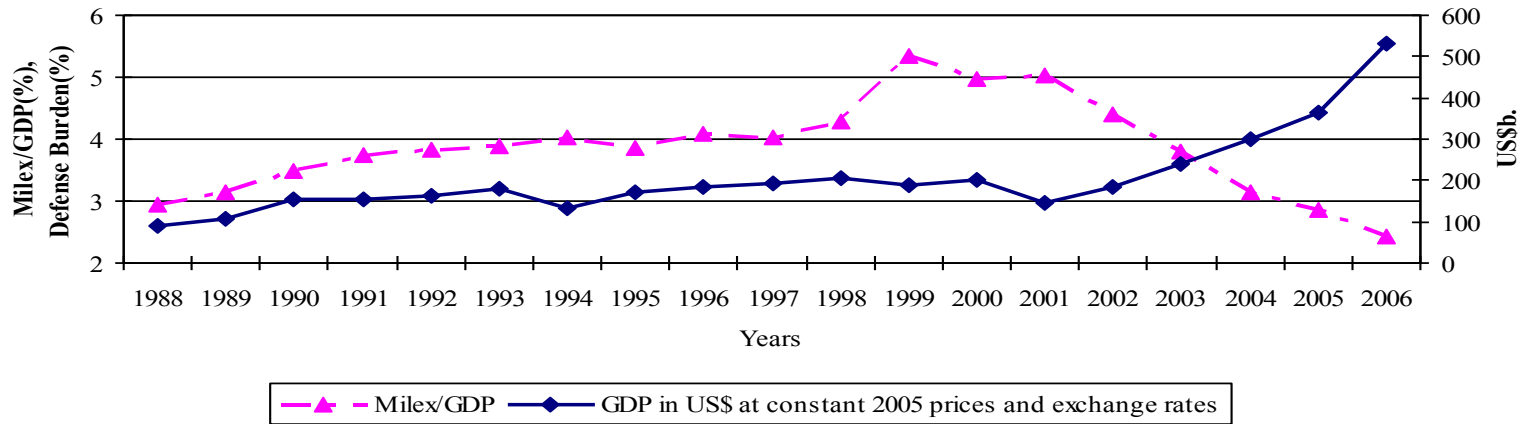
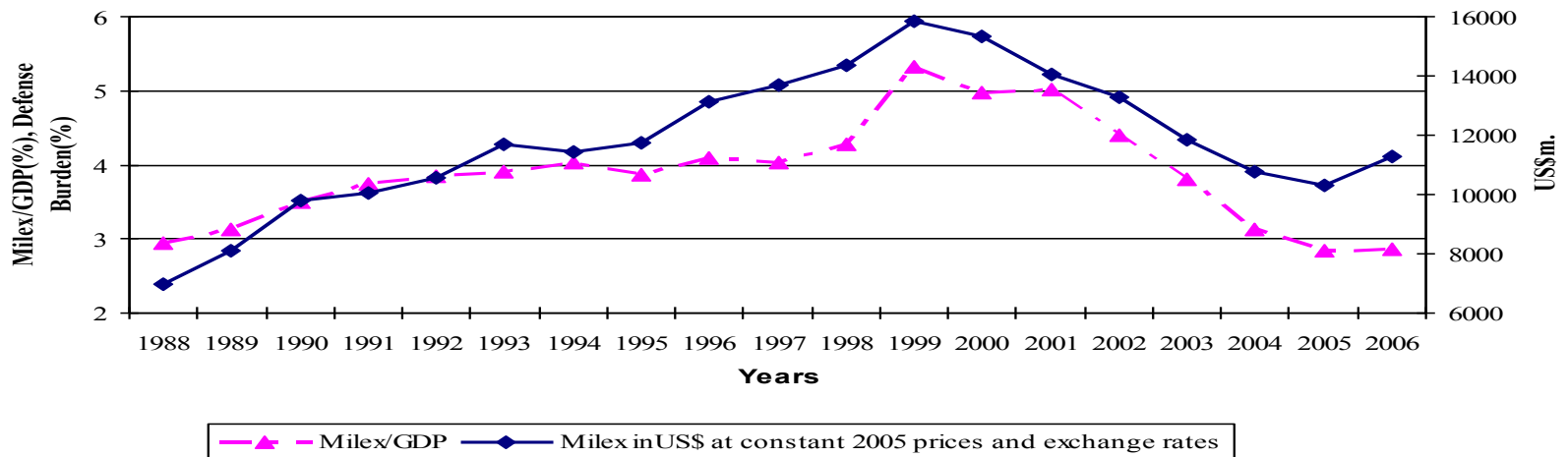


FIGURE 4 Turkish Defense Burden Ratio versus Military Expenditures 1988-2006



Data Source: SIPRI Yearbook



Current Situation in Turkish Defense Expenditures

Turkey's military procurement consists almost exclusively of imports. The majority of weapons, including advanced systems, are imported from the major arms producers. According to the Stockholm International Peace Research Institute (SIPRI) database, Turkey was one of the world's fifteen major military spenders in 2006. Also, Turkey had the second largest defense budget (after Saudi Arabia) in the Middle East ("Middle East politics," 2007).

Major Reasons for High Milex

Factors that are predicted to be major reasons for the high military expenditures:

- *strategic factors,*
- *conflict with PKK terrorism,*
- *disputes with Greece,*
- *the military modernization program,*
- *the economic environment of Turkey.*
- *other factors*

Strategic Factors

Historical, religious, ethnic, economic, and political cooperation make Turkey a Mediterranean, Middle Eastern, Eastern European, Caucasian and Black Sea country.

The consequences based off of the end of the Cold War and the 9/11 attack shape the security environment of Turkey today.

PKK Terrorism

The Kurdistan Workers' Party (PKK) is an armed terrorist organization which was placed on the list of Foreign Terrorist Organizations established by the U.S. Government, on the United Kingdom's list of Proscribed Groups Concerned in Terrorism, and on the list of the European Union illegal terrorist entities. Conflict with the PKK has exacted a high financial drain on the national treasury.

PKK Terrorism

By mid-1995, – 15,000 civilian and military personnel had been killed by PKK violence.

The conflict with the PKK has exacted a high financial drain on the national treasury – costs about \$10 billion per year.

Turkish tourism in 1994 causing a \$700 million decrease in revenue from the previous year.

Overall, 3,600 schools were closed in the region, leaving nearly an estimated 100,000 children uneducated

PKK Terrorism

By mid-2007 around 3,500 PKK terrorists were believed to be based in Iraq (“Kongra-Gel,” 2008).

The Turkish General Staff declared on its official webpage that total armed militants captured during year 2007 was 653 (315 dead, 229 live, 109 amnesties).

PKK Terrorism

Abdulkadir Aksu, the Turkish Minister of Internal Affairs, declared that Turkey spent \$100 billion for the prevention of terrorism up until end of year 2006.

Terror creates an extra burden of about \$6 billion per year to the Turkish economy (“Terör faturası,” 2006).

When the socio-cultural and cultural externalities are added to this number, the overall cost of terror to the Turkish economy becomes bigger.

PKK Terrorism

Increased Defense Spending due to Terrorism and its Effect on Economic Growth

... causing detrimental effects on various areas, ranging from the tourism industry to economic infrastructure and educational institutions of the Turkish Republic.

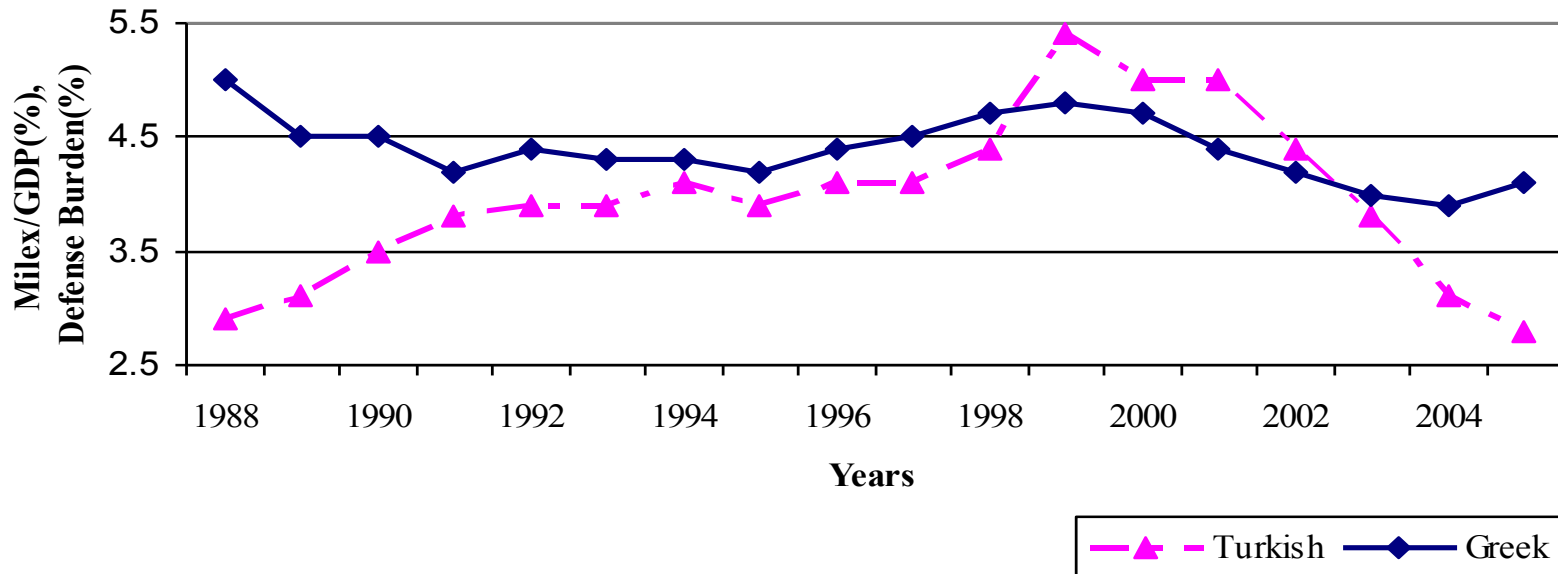
Existence of the Turkish Armed Forces in this region provides positive externalities in the education and health areas. In addition to that, this lengthy existence accelerates infrastructural investments which are also used by civilians. The long time armed conflict with terrorism associated with PKK has made the Turkish Armed Forces more dynamic (Sezgin, 2003).

Disputes between Turkey and Greece

From the 1970s and onwards, besides the Cyprus problem there have been disputes over

- *the boundary of territorial waters in Aegean,*
- *airspace, continental shelf rights, and*
- *Greek militarization of certain Aegean islands.*

FIGURE 5 Turkish vs Greek Defense Burden 1988-2005



Data Source: SIPRI

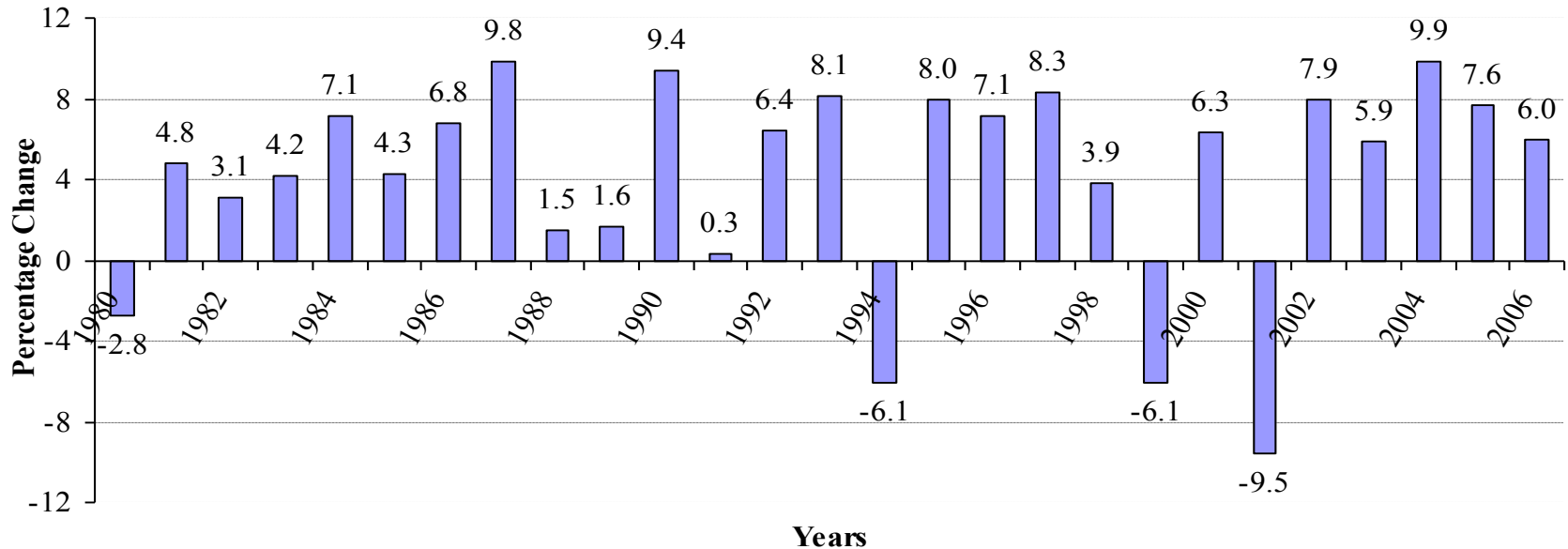
In comparative terms both countries have allocated a greater share of their national income to defense.

Military Modernization Program

Turkey officially announced a military modernization program in 1996 that mainly consisted of procuring high technology equipment and upgrading older systems, which was expected to total \$150 billion within 30 years (Valasek, 1999). A further revision of a 10-year \$20 billion bill was included in early 2000 to overcome the bottleneck in the modernization plan (Günlük-Şenesen & Sezgin, 2003). This plan made Turkey one of the most active buyers of weapons in the world after the post-Cold War era.

Economic Environment

FIGURE 6 GNP Percentage Change at 1987 Prices 1980-2006



Data Source: TURKSTAT, SPO

GNP data for the year 2006 is taken from Ministry of Finance database

Other Factors

- *Internal political factors*
- Peace support operations
- The Baku-Tbilisi-Ceyhan crude oil pipeline
- Turkey's immediate environment
 - Iran, Syria, post-Soviet Turkic countries, Arab states and Israel, the Caucasus countries, and the Balkan countries*
- EU Membership
- Kurdish and Islamist question
- Aftermath of the Iraq operation

Conclusion

*The Turkish Republic's defense policy, since its foundation, has been guided by **Ataturk's proverb of "peace at home, peace in the world."** However, sustaining a peaceful environment has required a high level of military expenditures. Accordingly, the efficient and effective allocation and use of scarce defense resources and budget should be the main objective for the military establishment.*



References

Please read the notes of this slide for the references.



Thank You

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