

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/325723999>

# Defense Expenditures and Economic Growth Relationship: A Panel Data Approach for NATO

Chapter in Contributions to Economics · June 2018

DOI: 10.1007/978-3-319-78494-6\_6

CITATIONS

0

READS

160

4 authors:



**Guldenur Cetin**

Istanbul Ticaret University

7 PUBLICATIONS 6 CITATIONS

SEE PROFILE



**HASAN HUSEYIN Yildirim**

Balikesir University

38 PUBLICATIONS 15 CITATIONS

SEE PROFILE



**Ayben Koy**

Istanbul Ticaret University

37 PUBLICATIONS 37 CITATIONS

SEE PROFILE



**Cihat Köksal**

Istanbul Ticaret University

5 PUBLICATIONS 13 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Markov Regime Switching Models Applications in Finance [View project](#)



Determination of Relation Between Renewable Energy Investments and Economic Growth For Development Countries [View project](#)

# Chapter 6

## Defense Expenditures and Economic Growth Relationship: A Panel Data Approach for NATO



Güldenur Çetin, Hasan Hüseyin Yıldırım, Ayben Koy, and Cihat Köksal

**Abstract** One of the rules of being successful in the international competition is having technology-intensive manufacturing areas. The investments made in the defense industry, and the recognition of the products that are being produced in this area as *technology-intensive* products, are increasing the importance of the defense expenditures and the economic growth relationship. Increases in defense spending cause greater investments in industrial sectors. Secondly, economic growth affects the competitiveness of the countries prominently. Thirdly, public expenditures can lead to an increase in investments and growth. This study brings to light the relationship between military expenditures and economic growth for NATO member countries. In the period from 2000 to 2015 for 27 NATO member countries, the two-way direction of the relationship is found by using panel data techniques.

### Introduction

Today, the level of international competitiveness is based on the technology-intensive manufacturing. Especially, the investments made in the defense industry, and the recognition of the products that are being produced in this area as *technology-intensive* products, are increasing the importance of the defense expenditures (DE) and economic growth (EG) relationship. This relationship is among the mostly studied and econometrically analyzed topics in the economy literature.

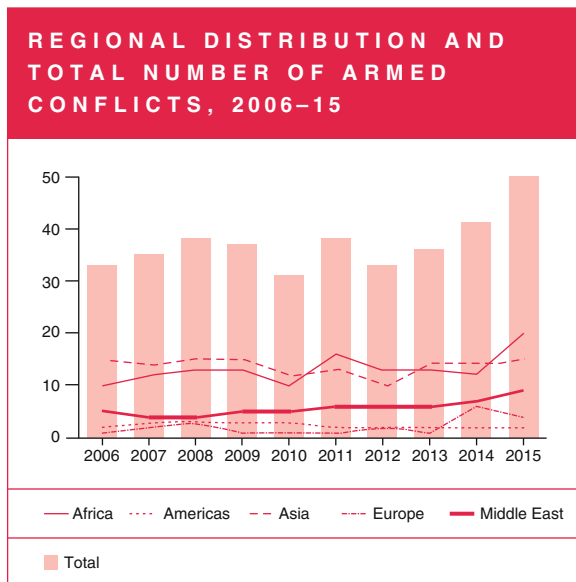
Manufacturing of defense industry goods not only allows the country to gain higher monetary benefits but also allows the countries to dominate the structure of the defense industry goods importing countries which are dependent on the exporting ones. Exportation of the technology-intensive products has a considerable

---

G. Çetin · A. Koy (✉) · C. Köksal  
İstanbul Ticaret University, İstanbul, Turkey  
e-mail: [gadiguzel@ticaret.edu.tr](mailto:gadiguzel@ticaret.edu.tr); [akoy@ticaret.edu.tr](mailto:akoy@ticaret.edu.tr); [ckoksal@ticaret.edu.tr](mailto:ckoksal@ticaret.edu.tr)

H. H. Yıldırım  
Balıkesir University, Balıkesir, Turkey  
e-mail: [hhyildirim@balikesir.edu.tr](mailto:hhyildirim@balikesir.edu.tr)

**Fig. 6.1** Total number of armed conflicts and the regional distribution 2006–2015. Source: SIPRI Yearbook (2016)



impact on the balance of payments of the countries and plays an important role for their EG. Export productivity of the defense industry is not enough to consider. Relationships with other countries, effects on the other country's approaches, and totality of the country are some other factors that cannot be ignored. Moreover, EG affects the competitiveness of the countries prominently (Hämäläinen 2003; Porter et al. 2001). However, there is not a compromise on the effects of DE on economy.

How important is the DEs in the twenty-first century? It can clearly be seen in Fig. 6.1, 2016 as a dark year. There were many terrorist attacks in Middle East and Europe. By the increasing number of armed conflicts, many people left their home country. As a result of the wars in Iraq and Syria, 4 million Iraqi and 12 million Syrian refugees are mostly hosted by Jordan, Lebanon, and Turkey. In addition, active armed conflicts increased to 50 in 2015, substantially related with enlargement activities of the Islamic State (IS) into new territories in 12 countries. One of the conflicts occurred between India and Pakistan; however, the rest of the conflicts were between the states and concerned government, territory, or both of them. Eventually, peace is not rising in the twenty-first century. On the contrary, armed conflicts and total DEs have got a widespread outlook (Figs. 6.1 and 6.2).

In this study, from the above-mentioned viewpoints, relationship between the DEs and the EG of the North Atlantic Treaty Organization (NATO) member countries has been analyzed. NATO has the power to guarantee the freedom and security of the member countries. This is enabled via their military and diplomatic acts. NATO also has the ability to take over crisis-management operations if diplomatic efforts fail. From The Washington Treaty (North Atlantic Treaty) 1949, which forms the basis of NATO, it commits members to protect each other.

27 NATO member countries and 432 annually observations are used in the study. The analyzing period is beginning from 2000 to 2015. When the top ten countries,

- Pedroni, P. (2004). Panel cointegration: Asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis. *Econometric Theory*, 20(3).
- Pesaran, M. H., Ullah, A., & Yamagata, T. (2008). A bias-adjusted LM test of error cross section independence. *The Econometrics Journal*, 11(1), 105–127.
- Pieroni, L. (2009). Military expenditure and economic growth. *Defence and Peace Economics*, 20(4), 327–339.
- Porter, M., Sachs, J., & McArthur, J. (2001). Executive summary: Competitiveness and stages of economic development. *The Global Competitiveness Report, 2002*, 16–25.
- Ram, R. (1986). Government size and economic growth: A new framework and some evidence from cross-section and time series data. *American Economic Review*, 76, 191–203.
- Sezgin, S. (2000). A casual analysis of Turkish defence-growth relationships. *Ankara Üniversitesi SBF Dergisi*, 55(2).
- Shahbaz, M., Afza, T., & Shabbir, M. S. (2013). Does defence spending impede economic growth? Cointegration and causality analysis for Pakistan. *Defence and Peace Economics*, 24(2), 105–120.
- SIPRI Yearbook. (2016). <https://www.sipri.org/yearbook/2016>
- Stockholm International Peace Research Institute. <https://www.sipri.org/>.
- Stroup, M. D., & Heckelman, J. C. (2001). Size of the military sector and economic growth: A panel data analysis of Africa and Latin America. *Journal of Applied Economics*, 4(2).
- Taş, S., Örnek, İ., & Aksoğan, G. (2013). Türkiye’de Savunma Harcamaları, Büyüme ve Gelir Eşitsizliği, 1970-2008: Ekonometrik Bir İnceleme. *Gaziantep University Journal of Social Sciences*, 12(3).
- Tatoğlu, F.Y. (2012). Panel veri ekonometrisi: stata uygulamalı. *Beta Basım Yayın*.
- Tuncay, Ö. (2017). Finansal Serbestleşme Sonrası Dönem Savunma Harcamalarının Ekonomik Analizi. *Uluslararası Ekonomik Araştırmalar Dergisi*, 3(1).
- United Nations Conference on Trade and Development. [unctad.org](http://unctad.org).
- Yang, H., Hong, C., Jung, S., & Lee, J. D. (2015). Arms or butter: The economic effect of an increase in military expenditure. *Journal of Policy Modeling*, 37(4), 596–615.
- Yılcı, V., & Özcan, B. (2010). Yapısal kırılmalar altında Türkiye için savunma harcamaları ile GSMH arasındaki ilişkinin analizi. *CÜ İktisadi ve İdari Bilimler Dergisi*, 11(1), 21–33.
- Yıldırım, J., & Sezgin, S. (2003). Military expenditure and employment in Turkey. *Defence and Peace Economics*, 14(2), 129–139.
- Yıldırım, J., Sezgin, S., & Öcal, N. (2005). Military expenditure and economic growth in middle eastern countries: A dynamic panel data analysis. *Defence and Peace Economics*, 16(4), 283–295.