

Chapter 4

The Relationship Among Military Expenditure, High Technological Product Exports, and Economic Growth: An Econometric Analysis for Selected Economies

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ABSTRACT

In this chapter, the effects of military expenditure (MEXP) on high-tech exports (HTX) and GDP per capita (GDPPC) of G7 and new industrialized countries (NIC) are analyzed for period 1988-2015 by panel data analysis. The causality relationships between the series are examined by Dumitrescu and Hurlin test. In G7 countries, one-way causality relationship from HTX to MEXP and two-way causality relationship between MEXP and GDPPC have been identified. Also, in NIC countries, two-way causality relationship between HTX and MEXP and one-way causality relationship from GDPPC to MEXP have been determined. Cointegration relations are tested by Pedroni test and the series are found to be cointegrated. It is seen that in the G7 countries, 1% increase in MEXP during the period of 1988-2015 increased HTX by 0.71% and GDPPC by 0.98%. In NIC countries, the 1% increase in MEXP increased HTX by 1.7% and GDPPC by 0.96%. The effect of MEXP on HTX is found much higher in NIC countries.

INTRODUCTION

The resources that may be spent on education, health and other infrastructure is directed to military expenditures, which covers a major part of public spending of many countries. Do the countries do a great job by this? Are the resources allocated to military expenditure compatible with rationality behind

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efficient usage of scarce resources? Is military expenditure a waste? Or does it have an incentivizing impact on new inventions, technology and economic growth?

Main discussions of the economists on military expenditure, which has both national and international effects, focus on its relationship with economic growth. Beginning with Benoit's studies (1973, 1978), many different evidences have been found in the analysis that military expenditure increases (Brumn, 1997) or decreases (Lim, 1983) economic growth. Benoit (1978), using data from the 1950-1965 period, has examined the relationship between military spending and economic growth in 44 less developed countries and has found that the increased military spending in these countries accelerates economic growth.

The main factors determining the direction of the effect of military expenditures on the country's economy are: the ability of countries to produce technology, the number of qualified technical personnel they have, whether military expenditures are made in productive areas (TUBITAK, 2003), whether the defense industry products are produced in the country. If a country directly imports military goods, it will not be possible to accumulate technological know-how in the country where military spending is high and to spread that information to other sectors over time.

In production of defense products more R&D activities and resources are required. Generally thinking, it is accepted that there exists a strong relationship between military spending and economic growth, however, different results has been reached about its nature. Some economists claim that increased economic growth would increase military expenditure (Kollias, Naxakis & Zaranga, 2004), while some others state that higher military expenditure leads to higher economic growth (Tian, Fleurant, Wezman & Wezman, 2017). On the other hand, claiming the opposite of the relationship, there are some economists that expecting less military expenditure, when economic growth is high, because of the fact that increased economic growth leads to a political power removing the war and terror threats and reduce the need to that spending (Churchill & Yew, 2017), while some others declares that military expenditure is a dead investment and has no impact on improving social welfare, that is increased military expenditure negatively impacts economic growth (Kollias, Paleologo, Tzeremes & Tzeremes, 2017). For example; Ucan, Basaran and Akyildiz (2016) examine the relationship between defense spending and economic growth in Turkey under the globalization and changing balance of power using data from the period 2006-2015 and found a two-way causality relationship between economic growth and defense spending. Destek (2016) has also found that the feedback hypothesis for the United States and the growth hypothesis for Canada, UK, Italy and Norway have been supported in a study that examines the relationship between military spending and economic growth in the NATO countries by panel data analysis under horizontal section dependency.

While neoclassical economists (Dunne, Nikolaou & Vougas, 2001) point out that defense spending will affect economic growth from the supply-side (modernization of production techniques, positive externalities of the infrastructure, dissemination of information and technology), Keynesian economists express that the demand side effects of defense expenditures in the economy (investment, education, export, health sector) are stronger (Karagol & Palaz, 2004). In general, while Neoclassical economists argue that defense spending increases economic growth (Ozsoy, 1996), Keynesian economists point out that defense spending tends to reduce economic growth (Gorkem & Isik, 2008). Shieh, Lai and Chang (2002) have found that military spending supports sustainable economic growth, in the study of effects of defense spending on national income, taking into account the supply and demand aspects.

The relationship between military expenditure and export of high-tech product is a relatively new subject in the literature. It is estimated that military expenditure is part of R&D activities in the country, and that the information gained here contributes too many other fields, primarily medicine and engineer-

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