

# Economic Growth and Military Expenditure

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## Abstract

This research draws upon the studies by Aizenman and Glick (2003) and Collier and Hoeffler (2004) to test empirically the relationship between economic growth and military spending.

The link between growth, security and military expenditure brings two important questions; firstly, if security is a pre-condition for a stable environment, which is important for economic growth to be triggered and sustained, how do countries ensure this condition is met?

Secondly, to be able to provide security within the nation one needs to identify the threat being posed to the nation's sovereignty. How do we identify the threat and what is the relationship between military expenditure and threat?

Once the threat is identified then the country can take possible actions to deal with it. This leads to a demand for military expenditure which may differ for each country due to each country's current position; i.e. geo-political and regional location, ethnic minorities, multi-linguistics, democracy level, relations with neighbouring countries, historical and political disputes as well as the level of development.

We use the Aizenman and Glick (2003) study to set our growth equation. They model economic growth on military expenditure and threat assuming a non-linear relationship; any hostile action (internal/external) will potentially put the country's security at risk; therefore the degree of security is related to level of threat and as a result high level of military expenditure is expected. However the threat variable defined does not take into account internal disputes/wars. We first revisit their study for more recent data to see whether their results still hold. Although the same methodology was followed the results show there are some important differences.

Having considered possible extension of this model we identify the following;

- Demand for military expenditure need to be investigated empirically to analyse control variables for military expenditure; we use the Collier and Hoeffler (2004) study, in which they look at the determinant of military expenditure.
- In the context of economic growth, military expenditure may have an adverse effect on other economic variables (especially investment and education) that are proven to be the main determinants of economic growth. The complex interaction between these variables makes it difficult to use a single equation framework. Therefore we employ a simultaneous equation model with panel data estimators. There are two equations and the model is as follows;

## The Model:

$$g = mil + mil * thr + thr + democracy + \ln y + gpop + s + ledu$$

$$mil = int\ war + civilwar + thr + NME + \ln y + \ln pop + Israel + (1995 - 2000)$$

Where;

- 'g' is real GDP per capita growth,
- 'mil' is military expenditure as share of GDP,
- 'thr' is estimated by adding up the years being at civil/international war in the previous period,
- 'mil\*thr' is the interaction term between *mil* and *thr* to account for non-linear relationship,
- 'intwar' is a dummy variable taking a value of one if the country experienced international war for the time period considered,
- 'civilwar' is a dummy variable taking a value of one if the country experienced civil war for the time period considered,
- 'Israel' is a dummy variable taking value of one for Israel,
- '1995-2000' is a dummy variable taking value of one for the period of 1995-2000,
- 'democracy' is an index measuring the extent of democracy in each country,
- 'NME' is neighbouring countries' military expenditure,
- 'lny' is natural logarithm of initial income,
- 'gpop' is the population growth
- 'lnpop' is the natural logarithm of population,
- 's' is the share of real investment in real GDP,
- 'ledu' is the total number of years of schooling in secondary and higher levels for males and females aged 25 and over.