

Defence spending as main Source of Defence Requirements and financing Needs

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Measuring Military Expenditures

Abstract

"Military expenditures" (or defence expenditures) is a term that has been loaded with broad usage. Military expenditures are basically a measure of the money spent on salaries of military personnel and other staff working for the regular armed forces of the given country, expenses connected with the purchase of specific types of goods by the armed forces, and services bought from the civilian sector during specified period (usually one year).

Key Words

Armed Forces, Defense Capability, Defense Expenditures, Economic Growth, GDP, Military Budget, Military Burden, Military Expenditures.

1.1 The Notion and Importance of Military Expenditures

If we relate military expenditures to other aggregated economic measures, we can use them as a measure of the consumption of the military sector. It is also possible to view the military inputs costs as lost opportunity costs with respect to expenditures in other (civilian) sectors. Because agencies providing data on military expenditures work with different definitions, assessment methods and sources of information, analysts working with different data sources may arrive at different result.

Since there is no easily available indicator of military power, it is measured by military expenditures.

The use of military expenditures as a measure of military power is especially frequent in international comparisons. Military expenditures are used to measure the "contribution" of individual countries to the common goal.

The levels and structure of military expenditures are often treated as a state secret, and that holds also for countries with open political and parliamentary systems. Large portions of the military budget are not accessible to public control. The access to the military budget data is very limited in countries with autocratic regimes and in countries located in areas of conflict.

There is no authoritative source providing complete international statistic data on military expenditures; instead, there are number of separate institutionalised agencies that publish various military data series.

Individual governments can basically define the concept of "military expenditures" the way it suits their purposes. The choice of definition is then reflected in the size of the military budget of the country in question.

We need to aggregate military expenditures by separate military functions, such as deterrence, defence or warfare. Unfortunately, governments structure their budgets by other criteria. The structure of government budget thus need not coincide with functionally defined boundaries. For example non-military armed forces may be included in the budget of the Ministry of the Interior, military assistance in the budget of the Ministry of Foreign Affairs, and acquisition in the budgets of the Ministries of Engineering or Industry. Non-transparency of military expenditures is characteristic especially of less developed countries.¹

Budgets basically reflect direct expenditures. Sometimes they also include indirect expenditures such as compensations for damages caused during exercises - if they are paid by MoD. What is not reflected in the MoD budget is for example

¹ *Handbook for Defense Economics*. Elsevier 1995, p. 46.

the use of the civilian infrastructure by the armed forces. On the other hand, civilian sector does not cover costs connected with the use of military equipment, personnel or infrastructure. For instance, military aircraft are used to provide support to VIPs. A specific case of indirect costs is connected with the practice of universal conscription. No country includes into the budget the lost opportunity costs connected with the use of cheap conscript manpower instead of military professionals. But, since the practice of conscription leads to the reduction of labour force, it burdens the economy with indirect costs. It is very difficult to assess the lost opportunity costs per one conscript, especially in countries with high rates of unemployment in the corresponding age categories.

Generally speaking, functional approach ignores pensions, veteran benefits etc, and debts incurred in consequence of past wars. But the usual practice in many countries is that these pensions and benefits are provided by the military. As a result, we can find two different explanations of what military expenditures are:

Military expenditures represent only that part of defence expenditures which does not include the above mentioned payments; and

Defence expenditures including all the expenses that are not directly related to the armed forces.

Let us turn now and look in the opposite direction: functional accounting of the expenditures extending into the future should take into account the depreciation stream. It concerns especially procurements and debt service for them. But in accounting practice such things are very often ignored.

Table 1: Definitions of Military Expenditures

Possible items of military expenditures	Items ^b in definitions issued by
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	NATO	IMF	UN
Expenditures for military forces and their support			
1. Pay to soldiers, officers	X	X	X
2. Salaries to technicians, bureaucrats etc. within armed forces or connected to military organisation	X	X	X
3. Medical services, tax benefits, social benefits to above (including relatives)	X	X	X
4. Pensions	X	-	X
5. Military schools, hospitals etc.	X	X	
6. Current procurement expenditures on weapons (incl. arms imports)	X	X	X
7. Infrastructure construction, housing etc.	X	X	X
8. Operation and maintenance	X	X	X
9. Procurement and other goods	X	X	X
10. Military research and development	X	X	X
Other expenditures with military/defence/strategic purpose			
11. Stockpiling of strategic goods	X ^c	-	-
12. Mothballing of weapons, production lines, etc.	X ^c	X	-
13. Arms production subsidies/conversion subsidies		-	-
	X		
14. Military aid to other countries	X	X	X
15. Contribution to international organisations (military alliances, UN peacekeeping, etc.)			
16. Civil protection	-	X	X
<i>Expenditures for past military forces/actions</i>			
17. Veteran benefits, etc.	-	-	-
18. Service of war debts	-	-	-
Expenditures on other forces			
19. Paramilitary/Gendarmerie	X ^d	X ^d	X ^d
20. Border/Custom Guards		X ^d	X ^d
	X^d		
21. Police	X ^d	-	-
Chargeable to other accounts			
22. Humanitarian/disaster relief	X	-	-
23. UN Peacekeeping	X	X	-
<i>Incomes from</i>			
24. Military schools, hospitals, companies	Y	Y	Y
25. Civil use of military infrastructure	Y	Y	Y
26. VIP transport	Y	Y	Y
27. Sale of patents, know-how	Y	Y	Y
28. Repayment of production subsidies	Y	Y	Y
29. Military aid from other countries	-	-	X ^e
Obligations for future spending			
30. Procurement on credit	X	X	-

Source: Handbook for Defence economics. Elsevier 1995, pp. 48 – 49.

Legend:

^b Symbols: X, should be included in military expenditures; - , should not be included in military expenditures; Y, should be budgeted as income.

^c If managed and financed by defence organisation.

^d *When judged to be trained, equipped and available for military operations.*

^e *Double-counting has to be considered before aggregations.*

It is very difficult to obtain data on military expenditures in times of war or local armed conflict. Names of warring countries traditionally absent from the lists of data on military expenditures. Countries often change their accounting procedures and this causes immense difficulties in attempts at comparisons of time series.

Standard definitions of military expenditures have been suggested by international organisations engaged in data collection (Tab. 1). There is a widespread use of three definitions that have been introduced by the following organisations: NATO, International Monetary Fund (IMF),² and United Nations Organisation (UN).³ The NATO definition is a comprehensive measure of financial burden by military forces.

The UN definition has been designed specifically for the purposes of international comparisons. A detailed reporting scheme has devised in which all the main components of military expenditures and force groups are specified. If we look at Tab. 1, the differences between the three definitions do not seem very big, but they can lead to very different data results.

1.2 Military Expenditures Specifics

Military expenditures are mostly spent in national currencies. As a consequence, international comparisons must cope with the problem of determining exchange rates between different national currencies. The most frequently used exchange rates for military expenditures of all countries are

² *International Monetary Fund International Financial Statistics*. Supplement on Exchanges Rates, No. 9, Washington, DC, 1985.

³ *World Development Report*, New York 1997.

average annual market exchange rates. These rates basically reflect the relative value of international economic transactions. Different methods are used to cope with the problems presented by differing exchange rates. Where statistical yearbooks are available in complete series and all of them use the same method of conversion of military expenditures according to selected criteria, statistical error of random selection of conversion indicators is eliminated. Some statistical yearbooks give data on military expenditures both in national currencies and in one international currency, usually in USD.

If one method of conversion is used consistently for all national currencies in the statistical set, the degree to which the error is significant (or non-significant) does not vary in the set. The use of alternative conversion rates between national currencies can result in different sets of data on international military expenditures.⁴

One of the methods used to avoid the above mentioned problems of inter-temporal and international comparisons is based on the use of fractions indicating relations of military expenditures to other financial aggregates.⁵

The most frequently used relative measure of military effort is the fraction expressing military expenditures as a share of GNP or GDP. Since this measure indicates the relative significance of military sector in the consumption of national income, it is often referred to as "military burden measure". This measure makes it easier to compare small countries with big ones, as well as rich countries with poor ones.

Another relative indicator is based on the revision of GDP data and on the assertion that the use of the "military burden measure" leads to a certain distortion when comparing poor and rich countries, because in poor countries

⁴ *Handbook for Defense Economics*. Elsevier 1995.

⁵ KRČ, M., et al.: *Military Expenditures During and After the Cold War*. Praha 2000, p. 6.

a disproportionately larger part of GDP corresponds to subsistence production and therefore cannot - or at least should not - be used to finance military expenditures.

There are also relative measures that put more emphasis on military power, defence capability, etc., but none of them has gained universal acceptance. Military expenditures per square km, per km of the length of borderline, per capita, etc. - all these measures can throw some light on specific aspects of international comparisons, but none of them can cope successfully with the basic problem of determining military expenditures as a measure of military power. Such scales are far being able to tell us anything objective about military power.

For the sake of accuracy, it is necessary to give data in constant prices. Military expenditures as share of government spending can serve as a good indicator of the relative significance of the military sector in the given country.

The most useful document out of all publications providing data on military expenditures is *World Military Expenditures and Arms Transfers*, published annually by US ACDA.⁶

The Stockholm International Peace Research Institute (SIPRI)⁷ collects information on military expenditures from a number of publicly accessible sources. The preferred definition is a simplified version of NATO definition. The data are presented in national currencies and constant prices. The International Institute of Strategic Studies (IISS) (in London) provides data on military expenditures in its publication called *The Military Balance*. As a rule, the data contained in the publication are expected budgetary expenditures in the current fiscal year, supplied to IISS by governments of individual countries.

Economic theory often approaches the analysis of defence expenditures as a standard optimisation problem. The government chooses such combination of

⁶ *World Military Expenditures and Arms Transfers*. 1978. 1994.

⁷ *World Armaments and Disarmaments. SIPRI Yearbook 1998*, Oxford: Oxford University Press.

military and civilian goods that, given the limits of available economic resources and efficiency of their use, maximises the welfare of the society. This approach includes elements both of demand and supply side, and can be related to the political model that highlights political, strategic and economic determinants of military expenditures.

The demand for military expenditures is influenced by the preferences of the society, and the willingness of the society to pay for defence expenditures is influenced by its perception of security threats and by political composition of the government. Irrespective of the whole process through which foreign policies and military programs are linked together, the limits on what is possible in attempts to implement key military strategies are ultimately set by the size of the present GDP and future economic growth.⁸

Although there are big differences between individual countries in terms of the proportion of GDP devoted to defence, high-level defence efforts, generally speaking, can only be sustained in the long run on the condition that a long-term economic growth is sustained too. Economic theory can be used to highlight various aspects of economic impacts of military expenditures in society:

- Percentage of GNP (GDP) devoted to military purposes.
- Military burden of per capita income:
 - Public expenditures (comparisons of military expenditures; with expenditures for education, health, infrastructure, etc).
 - Financial losses.

⁸ ŠELEŠOVSKÝ, J., ŠEVČÍK, V. *Financování vojenských výdajů (Funding of Military Expenditures)*. Bratislava: 1979.

- Growth of military expenditures in historical perspective.⁹

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⁹ KRČ, M.: *Klasifikace vojenských výdajů (Classification of Military Expenditures)*. In: KRČ, M., KAMIŇSKI, T., et al. *Ekonomika obrany - obranné hospodářství (Economics of Defence - Defence Economy)*. Brno: Vojenská akademie v Brně, 1996.