NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

FACTORS INFLUENCING DEFENSE EXPENDITURES
– A HUNGARIAN PERSPECTIVE

by

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June 2000

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REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE June 2000	3. REPORT TYPE AND DATES COVERED Master's Thesis

4. TITLE AND SUBTITLE: Factors Influencing Defense Expenditures – a Hungarian Perspective	5. FUNDING NUMBERS
6. AUTHOR(S) Attila Balla	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A	10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES

The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense, the U.S. Government, the Hungarian Ministry of Defense, or the Hungarian Government.

12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.	12b. DISTRIBUTION CODE

13. ABSTRACT *(maximum 200 words)*

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The level of defense expenditures is a function of at least two variables: how threatened a government (or a society) feels and how much security that government (or country) can afford. Therefore, the determinants of defense spending stem from a combination of security policy (dealing with threats to vital national interests) and fiscal policy (the allocation of societal resources).

Economic strength is a factor contributing to the determination of military spending. Another significant driving force behind military spending is the power and leverage of the armed forces relative to other national actors. The degree of transparency in military outlays is also important. The size of the military budget is conditioned by geo-strategic concerns both at the regional and international levels. Finally, increases in military expenditures reduce the availability of funds for socio-economic development projects (guns vs. butter trade off).

14. SUBJECT TERMS Defense budget, Military expenditures, Hungary, Military alliances, NATO, Public goods, Statistical modeling	15. NUMBER OF PAGES 85
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

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FACTORS INFLUENCING DEFENSE EXPENDITURES – A HUNGARIAN PERSPECTIVE

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Submitted in partial fulfillment of the
requirements for the degree of

**MASTER OF SCIENCE IN
INTERNATIONAL RESOURCE PLANNING AND MANAGEMENT**

from the

**NAVAL POSTGRADUATE SCHOOL
June 2000**

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I. INTRODUCTION

A. BACKGROUND

The fundamental question behind the analysis of defense spending is how much money is enough for defense. The answer to this question is a function of at least two other questions: how threatened a government (or a society) feels and how much security that government (or country) can afford. Therefore, the determinants of defense spending stem from a combination of security policy (dealing with threats to vital national interests) and fiscal policy (the allocation of societal resources).

A country's allocation for defense spending –whether directly or through various budgetary instruments – is always the result of arbitrary political decisions. The personnel strength of the armed forces, weapon platforms and equipment, as well as other defense components initially rely on military doctrine. This choice, in turn, is usually based on the politician's perception of current or expected threats or on their desire to achieve designated goals by projecting the country's military and economic power. The estimated military strength of a potential enemy (if any), the country's geographical neighbors, economic constraints, end of conflicts, forced disarmament (Iraq), and severe political changes also have to be taken into consideration. In Russia and Germany, for instance, economic constraints were the driving forces for further defense cuts. In China, the defense reduction process began before the end of the Cold War, and was due to changes in policy, which stated that overall economic modernization was required first.

B. OBJECTIVES

The subject of this thesis is the dynamics of national military spending, and specifically focuses on the determinants of military spending. It analyzes the factors determining defense expenditures in general, and in particular for the case of Hungary.

Special emphasis is given to the factors related to the membership in military alliances, since the costs of joining NATO is the most significant issue and main driving force in Hungarian defense expenditures.

In the pursuit of national security countries dedicate a large share of their resources to the purpose of enlarging and maintaining the defense sector. It seems valuable to investigate in detail the determinants of these spending levels to explain why such a substantial proportion of the limited national resources is often spent on defense. Several factors will be hypothesized as explanatory determinants of the defense budget and its changes over time. The potential factors have been deduced and constructed from various national and international studies of defense spending.

Debates about the reform of the Hungarian armed forces and Hungary joining NATO, tend to attach primary importance to (a) the financial consequences of the political and military decisions (i.e. the level of defense expenditures) and (b) what happens to taxpayers' money. The purpose of the part of my thesis dealing with Hungarian defense expenditures is twofold. First, it presents and discusses the basic facts and figures of Hungary's defense spending during 1975-1999. For analytical reasons it seems necessary to begin with a selective description of the military and economic background. Second, we will discuss some considerations on the future prospects of Hungarian defense spending, particularly in the wake of the recent NATO accession.

C. THE RESEARCH QUESTIONS

This thesis attempts to answer the following research questions:

1. What is a reasonable measure of the level of defense expenditures?

2. What are some of the significant independent variables influencing defense expenditures?

3. Are the tendencies observed in Hungary comparable to the rest of the world?

4. What are the Hungarian specifics?

5. How might NATO membership influence Hungarian defense expenditures?

D. SCOPE, LIMITATIONS AND ASSUMPTIONS

All types of studies of military spending are limited by the availability of information, and would benefit from an upgrade in the quality and comprehensive coverage of the data on which they are based. During the 1980s and 1990s, multilateral institutions have been striving for more transparency, accuracy and availability of military expenditure data worldwide. The results so far are not promising. Institutions like the US Arms Control and Disarmament Agency (USACDA), the International Institute for Strategic Studies (IISS), the Stockholm International Peace Research Institute (SIPRI) and the International Monetary Fund's Government Finance Statistics have been producing military expenditures series for about the last thirty years. However, they themselves have often recognized the very uneven quality of their data.

Researchers consistently employ one series or another, stating that the absolute military expenditure figures and tendencies between series are approximately the same. This is clearly false on both counts. Tendencies vary between series (except when they use one another's data), and the absolute expenditure figures can often vary as much as 300% between sources for a given country. Because the developers of data sets on military expenditures use different definitions, criteria, estimation procedures, and reporting resources, one can obtain very divergent analytic results from these sets. For instance, Deger and Smith (1983) found that the defense outlays estimated by the USACDA and SIPRI can produce significantly different findings. For African countries, the negative impact of defense spending on GNP growth was about four times greater according to the USACDA data than according to the SIPRI data. Similarly, whereas the USACDA data showed that defense spending had a negative impact on the GNP growth of Latin American countries, the SIPRI data indicated a positive impact. Another example of the discrepancy of data is that both Israel and Egypt in the early 1970s devoted up to 40 percent of their GDPs to the military according to SIPRI. Estimates from USACDA, however, are about half as large. (Leontief and Duchin 1983, p.41)

In the case of Hungary, one faces particular difficulties trying to find a reliable, comparable long-term time series of defense expenditures data, because of significant changes in statistical and accounting methods, and the structure of the state budget. Moreover, the true extent of the Hungarian defense budget was, as in all other Warsaw Pact states, a closely guarded secret, deliberately confusing running costs with equipment, procurement and hidden subsidies. Furthermore, the officially concocted Ministry of Defense (MOD) figure sometimes contradicted the data available from the Ministry of Finance (MOF.).

With respect to our forecast of Hungarian defense expenditures (see Chapter 5), it should be noted that estimates could be examined under two scenarios: using current policies, or using alternative policies. The forecast in the thesis explicitly assumes stability of the fundamental tendencies over time. If there are major changes, such as diplomatic realignments, outbreak of new conflicts, or a sudden change in ideological make-up of governments, relationships will probably change and the results of the forecast will no longer match actual future levels of defense spending. The following quote from 1989 hopefully demonstrates the unpredictability of the events:

> The Hungarians know that talk of leaving the Warsaw Pact is still out of the question. Anyway, in legal terms, such an action cannot be undertaken until one year before the Pact's official expiry, which is 2004. (Eyal, 1989, p.482)

Two years later, in 1991, the Warsaw Pact dissolved, and in 1999 Hungary joined NATO...

E. METHODOLOGY

The overall purpose of this thesis is to analyze the determinants of military spending at the macro-level. No single approach was selected, but the overall emphasis is empirical and qualitative.

The primary technique utilized in this thesis is descriptive analysis of historic trends. The study contains references to models found in the literature using basically to

types of quantitative techniques: (1) regression analysis and (2) over-time trend analysis. There are basically two general approaches applied by scholars to derive the models for estimation (regression or trend equations). One of them uses tight theoretical specifications, deriving the equation from constrained maximization of welfare functions. This approach is very characteristic to the scholars of the public choice school. The other, more empirical, approach involves beginning from very general equations, which allow for a variety of functional forms, dynamic effects, economic and strategic influences and political factors; then searching for restricted versions.

Regression analysis and trend analysis, however, are not the only techniques applied to analyze the relationship between military spending and other political and economic variables. Leontief and Duchin (1983) analyzed the impact of alternative levels of defense expenditures on individual regional economies and on the world economy as a whole using an input-output (or inter-industry) model. Another methodological approach can be found in Deger and Sen (1990). Examining India's and Pakistan's defense expenditures they try to model an arms expenditure process between two adversaries using a differential game model.

F. ORGANIZATION OF STUDY

This thesis consists of five chapters following the introduction. Chapter 2 gives an overview of the literature of defense expenditures. Chapter 3 examines the dependent variable, defines defense expenditures, and gives a list of possible acceptable measures. Chapter 4 examines in detail the independent variables, i.e. the factors influencing defense expenditures. Chapter 5 contains a qualitative forecast of the Hungarian defense expenditures. Chapter 6 summarizes the findings of the thesis and suggests some recommendations for follow on research.

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II. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Defense economics is a relatively new and expending branch of economics, and involves the application of both macro- and microeconomic theory to the broad issues of defense, disarmament, and peace. A large literature exists on the determinants of military spending. While we will not attempt a comprehensive and exhaustive review of every single study, we will mention and discuss the main studies in each area.

There are many competing theories and approaches that try to explain the dynamics of defense spending. However, most analysts have relied on one of four general approaches: the arms race approach, the incremental approach, the public choice approach, and finally, the political-economic approach. Each approach is now discussed separately.

A. THE ARMS-RACE APPROACH

The oldest approach to describe and determine military expenditures has existed since the early 1960s and focuses on external conditions to the country. It has been called the arms-race approach and originates with a set of equations derived by Richardson (1960). Other scholars in this area have been Ostrom (1977), and Ward (1984).

At the core of the arms race model is the idea that nations react to changes in the behavior (usually military) of a rival country or countries. For example, when Weidenbaum (1974) examined U.S. and USSR military expenditures between 1950 and 1962, he found that almost half (48 percent) of the variation of annual military spending levels for one country was explained by the spending levels of the other country (p.6). One obvious example of the superpower arms race is the US over-reaction to uncertainty at the time of the so-called 'missile gap' in 1960s that led to the massive growth of the US missile forces (end consequently the increase of defense expenditures) during the succeeding decade. Fisher and Kamlet (1984, p.366), using the 'Competing Aspiration Levels Model', also found evidence to the effect that marginal changes in Soviet defense

spending influenced American military spending decisions in a way consistent with the Richardson action-reaction model.

The findings of the scholars following the arm race approach can be found in the subchapter dealing with the effect of external threat on defense expenditures.

B. THE INCREMENTAL APPROACH

The incremental approach is based on the work of Wildavsky (1964). The incrementalists suggest that in the military, like any organization, the most important factor in the analysis of defense expenditures is the legacy of previous spending levels. Gillespie et al. (1977) concludes that US military expenditures are not well explained by Soviet spending levels, but are rather the product of incremental process.

According to the incremental model, budgetary policy makers rely heavily on the record of past expenditures, with only marginal adjustments of previous appropriations. Budgetary calculations proceed from the previous year's base, while policy makers focus only on a narrow range of increases and decreases which are supposed to be distributed fairly among various programs. (Wildawsky 1964) The followers of this incremental approach conclude that:

> ...because of the budget's complexity, the time constraints imposed on budget reviewers, and the technical expertise required from them, the budget is almost never reviewed as a whole every year. Instead, budgetary decisions ... take the form of marginal adjustment to an existing allocation pattern. (Mintz 1992, p.3)

C. THE PUBLIC CHOICE APPROACH

Public choice theorists apply the classical economists' individual profit maximization approach to the public realm. Their main thesis is that collective action can be explained as nothing but the result of individuals (or individual organizations) seeking to maximize their utility or their wealth. According to the public choice model, public

servants are willing to increase or decrease the budget for their own interest maximization. Hewitt (1991, p.121) specified that the primary assumption of his public choice model of demand for military expenditures is that:

> ...leadership selects policies with the goal of maximizing its own welfare, subject to national economic and political constraints. This assumption does not imply that the political leadership is necessary ... uninterested in the welfare of its citizens; any consideration can enter into the welfare calculation of the leadership.

The public choice model of defense spending examines the institutions that exert pressure in the budgeting process, their institutional interests, and their relative importance in terms of influence. The dominant tendency here is to focus on bureaucratic and organizational politics schemes as frameworks for accounting for the movement in defense spending.

Nelson and Silberberg (1987, p.20) analyzed US Senate voting on general defense expenditures and specific weapons systems. They concluded that political interest affected the voting on specific bills (while ideology affected voting on general bills), since the specific appropriations bills had a greater impact on a senator's constituency than did the general bills.

Some scholars (Murdoch, Sandler, and Hansen, 1991 and Dudley and Montmarquette, 1981) extend the median voter paradigm of the public choice theory to analyze the provision of defense (a public good) in military alliances, and to study defense expenditures in NATO. McGuire (1990) examines mixed public-private benefit and public good supply also with application to the NATO alliance.

The observations of these scholars are detailed in the subchapters analyzing the effect of military alliances, and political factors on defense expenditures.

D. POLITICAL ECONOMIC APPROACH

The last approach to the study of defense spending integrates the fields of national security and political economy (see e.g. Cusack and Ward 1981, Griffin et al. 1982,

Mintz and Hicks 1984). These scholars make an attempt to advance beyond the traditional two-dimensional analysis of defense economics and defense politics to the political economy of defense, giving an insight to a special interface among economics, politics and defense: the defense expenditures.

This school sees defense-spending policy not as a by-product of the arms race, incremental processes, or summary of individual interests, but also as a result of political and economic processes. Their starting point is that the state is situated within the domestic and global economies, and its national security policy is typically shaped not only by security considerations, but also by domestic political and economic factors.

In recent years, theoretical and empirical work has increasingly focused on this last approach. Rasler and Thompson (1988) have examined the impact of systemic factors on patterns of military spending. Mintz and Ward (1989) have studied the impact of the military-industrial complex, electoral cycles, and corporate profits on the evolution of Israel's military spending. Many scholars studied the role of the military-industrial complex (e.g. Rosen 1973), the popularity of the government (Mintz and Russett 1992), and the security-prosperity dilemma (Heo 1999). Other studies detail the role of electoral cycles in military spending and political interference in military spending policy (Nincic and Cusack 1979)

E. LITERATURE ON EASTERN EUROPEAN AND HUNGARIAN DEFENSE SPENDING

For a long period of time, Thad Alton's work on military expenditures has constituted the only long-term effort with respect to the levels and trends of resource extraction for defense in Eastern Europe. Later on, the RAND Corporation executed a project analyzing military spending in Eastern Europe (Crane, 1987). Nelson (1990 and 1991) give a more analytical overview of the Eastern European (Warsaw Treaty Organization) military effort.

In Hungary, similarly to other countries, a remarkable amount of the available resources is taken up by defense expenditures. Although the economic impact of this spending is considerable, and despite the fact that providing defense capability is a noticeable burden to the Hungarian society, the economic discussion of defense issues (and in particular the analysis of defense spending) is rare. Most problems in the economic debate of defense expenditure in Hungary remain untouched.

More literature can be found about the Hungarian security policy, force structure, and the country's NATO accession. Dick (1994) gives a historic overview of Hungary's security policy, while Wright (1998), Gorka (1997), and Bunten (1997) analyze the contemporary security considerations. Gorka (1998), Starr (1997) and Kemp (2000) examine the impacts of NATO accession on the Alliance and on the Hungarian security.

From the economic side, LeLoup et al. (1998) give an excellent overview of the Hungarian budget reform and its consequences for the defense budget.

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III. THE DEPENDENT VARIABLE

A. INPUT VERSUS OUTPUT MEASURES OF DEFENSE CAPABILITIES

This thesis applies an input measure (defense expenditure) to estimate defense capabilities. However, using output measures may also be an adequate way of evaluating the military strength of a country. As stated by Looney and Mehay (1990, p.13):

> ... it is debatable whether measures of input (i.e. expenditures) are superior to measures of output, such as readiness or performance, in gauging a nation's broad defense capabilities.

Dr. Istvan Gyarmati, former Hungarian Deputy State Secretary of Defense for Integration, stressed that defense spending should not be the only measure of Hungary's military effort. He argued that:

> If you look at the Hungarian peacekeepers in SFOR or in Sinai or on Cyprus, or those in joint exercises - if you look at the reforms we have introduced and which have been highly praised by NATO people, that gives a good perspective. (Bunten, 1997, p.22)

An interesting approach to compare different countries defense expenditures was followed by the US Central Intelligence Agency to estimate Soviet defense spending in the cold war period (see Marra and Ostrom 1992, p.264). Referred to as 'building block method,' this technique is based upon the estimation of what it would cost to duplicate one country's defense effort in the other country. In other words, the tangible elements of the military establishment (e.g. tanks, aircraft, etc.) are counted up and then multiplied by some figure which represents the relative value of those items in the other country's terms. Manpower expenditures are also adjusted by factors representing the other country's compensation rates. The obvious problem with this method is the classical index number problem: it takes into account only the price structure of one of the two countries referred.

As suggested by Olvey et al. (1984, p.365):

> ... it would be very useful if an index could be devised to measure the overall size and effectiveness of the defense output .... What is needed for this purpose is a price or weighting scheme in which the weights reflect military effectiveness.... Unfortunately such effectiveness weights are not available. ... In the face of our inability to measure the output from defense spending, the standard approach is to fall back upon estimates of the input as the next best alternative.

In summary, lacking theoretically meaningful output measures, an estimate of defense expenditures, the level of a particular input of national defense, can be a convenient summary measure, which provides information as to the capabilities, goals, and commitments of that nation.

B. DEFINITION OF DEFENSE EXPENDITURES

In order to ensure consistency in a comparative analysis, the collection of defense expenditure data should be done following a widely accepted definition. In very general terms, defense expenditures include the direct costs to the national government to produce defense service. A possible breakdown, proposed by Scheetz (1998) may be done as follows:

1. All labor costs of both military and civilian personnel working for the armed forces.
2. Operations and Maintenance.
3. Acquisition of all materiel, military R&D.
4. Military construction (including special housing).
5. Military pension funds (including veterans' benefits).
6. Expenses incurred by military attaches & secret accounts.
7. International contributions to military institutions.
8. Civil defense, when run by the armed forces.
9. Military public relations programs.
10. Military health and education institutions.

11. Military intelligence.
12. Military aid allotted.
13. Dual use programs where defense characteristics predominate (e.g., a radar system used principally by the air force, or a nuclear program with a heavily military thrust).

A source of confusion to those who analyze defense spending may be the multiplicity of the ways in which defense spending is measured and reported. Weidenbaum (1974, p.14) lists five significantly different ways of measuring U.S. military spending:

- Measure 1: the expenditures of the defense Department
- Measure 2: the expenditures of national defense (all government activities, regardless of the department involved)
- Measure 3: the amount of new defense appropriations enacted by the Congress in a given year (an important indicator of future trends in defense spending)
- Measure 4: amount of obligations incurred (new contracts awarded and other commitments entered into for future expenditures)
- Measure 5: federal purchases of goods and services for national defense (from the National Income and Product Accounts)

The respective figures for 1972 were as follows:

- Measure 1: $75 billion
- Measure 2: $78 billion
- Measure 3: $75.4 billion
- Measure 4: $77.1 billion
- Measure 5: $72.8 billion.

As one can see, there is more than 7 percent difference between the lowest and the highest figures even in the U.S., the country having one of the most transparent budgetary systems.

Looney and Mehay (1990), studying U.S. defense expenditures, measured military spending as the amount of purchases of newly produced goods and services for military purposes (equivalent to Measure 5 above), rather than the budgetary outlays of the defense department. Their reason for choosing the earlier and ignoring the latter was that:

> DOD outlays include military pensions, which have become the fastest growing segment of the budget. Also, some defense related purchases originate in government departments other than DOD. (Looney and Mehay 1990, Note 10, p.38)

It is hard to debate that military pensions, although included in most definitions of defense spending, have very limited direct impact on national security.

Some scholars argue that the indirect costs of defense (mainly opportunity cost) should also be included in the figure on the price tag of national defense. Weidenbaum (1974, p.28) goes even further proposing that:

> ...the real cost of military activities should be measured in human and natural resources and in the stocks of productive capital absorbed in producing, transporting, and maintaining weapons and other military equipment (and personnel).

C. THE NOTION OF DEFENSE EXPENDITURES IN HUNGARY

When the Hungarian defense expenditures are analyzed we should note that the MOD annual budget, the only spending figure we have for a sufficiently long period of time, covers partially different elements than the definition above. The MOD budget does not contain e.g.: the expenditures of the Border Guard (supervised by the Ministry of Interior Affairs) and the pensions of the retired military personnel (handled centrally by the Social Security Fund). Due to these differences, the total defense expenditures are estimated to exceed the MOD budget by about 15 %, or about 0.2% of the GDP.

We should also note that the MOD budget figures for 1995-1998 did not include hardware procured for the army or air force from Russia; Russia was paying off the debts

it had incurred during the Cold War by shipping military equipment to Hungary. In 1996 alone the hardware received in this fashion was valued at over $60 million. (Gorka, 1991, p.198)

D. MEASURES OF DEFENSE EXPENDITURES

There are different options to choose from and different decisions to make about the measurement of the dependent variable: defense expenditures. We can examine (1) the level of defense spending or (2) changes in defense spending, or in another dimension, the (3) absolute or (4) relative indicators of defense expenditures.

1. Level or change

Examining levels of defense expenditures has the drawback of auto-correlation, i.e. previous levels of spending largely determine future spending. That is an unattractive feature of any model, although it can be remedied through advanced statistical techniques.

Explaining changes in defense spending can be a superior dependent variable. Auto-correlation is no longer built into the model and competition between budgetary winners and losers can be evaluated in the contest of the competition for claims on societal resources. The question of what determines defense expenditures can be answered by assessing annual changes primary in security policy (have threats increased or decreased) and economic policy (do available resources permit more or less spending).

2. Absolute or relative measures

One can argue for the absolute amount of defense expenditures (in case of a comparative analysis in common currency), or different relative measures.

The primary advantage of measuring the absolute level of the defense expenditures is that it demonstrates the actual sum a country spends for defense related matters. This is the way to determine the distribution of the world's defense expenditures

by countries. This measure is also important when the countries' military potential is analyzed.

The absolute measure however has numerous deficiencies, e.g. it ignores the size and economic capacity of the country. In case of a comparative study of different countries, the exchange rates in use cause an additional problem. The conversion of the military expenditures of different countries into comparable units remains a significant challenge. The official exchange rates may be very biased for different (economic, political) reasons and, because of differences in purchasing power, a dollar in one nation may buy a higher 'real' level of defense than in another. The real question is 'what do such expenditures buy?' As it is suggested in Balla (1999), a possible solution can be the use of a purchasing power parity (PPP) measure, either on GDP level or a specialized defense sector PPP. Based on the same logic, inflation in defense spending models is often operationalized as the annual percentage change in the GDP deflator. It is an economy-wide summary of price change and therefore more representative of the distribution of defense purchases in the economy than the consumer price index (see e.g. Domke 1991).

Despite of the deficiencies above the absolute level of defense expenditures is used by Kennedy (1979), Gonzalez-Mehay (1990), Looney-Mehay (1990) and others.

Relative defense expenditures (i.e. absolute defense expenditures compared to another variable) are more frequently used than absolute measures. The three most commonly used measures of relative defense effort are:

- defense as a share of Gross National Product (GNP) or Gross Domestic Product (GDP)
- defense as a share of central government expenditures,
- armed forces per capita.

Although there is no universal agreement among researchers on the best burden measure, the most commonly used measure is military expenditure expressed as a percentage of GDP.

This measure is useful as a way to roughly divide countries into two broad groups of high and low defense spenders. According to Looney and Frederiksen (1988), however:

> the classification is all too often ambiguous: some countries may indicate low defense shares of GNP on the one hand but large allocations of the central budget on the other hand.

As Franco (1994) observed, an increase in the defense expenditures relative to GDP could occur, when in a period of an economic crisis the GDP declines in a greater extent than the military expenditures. That was the case for example in most countries in Latin-America in the mid-1980s.

The 'defense expenditure as a share of central government expenditures' measure may also be biased by the size of the central government budget. As observed by Murdoch and Sandler (1990, p.153), Norway's apparently greater relative burden, as compared with Sweden and Denmark (in terms of the military expenditure to central government expenditure ratio), is partly due to the relatively smaller central government budget in Norway.

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IV. INDEPENDENT VARIABLES

A. GENERAL MODEL

The broad conceptual model behind the variables listed in Chapter 4, is one in which military spending is largely a positive function of two types of variables:

1. Internal and external conflicts threatening nation-states and
2. The level of their wealth or economic resources.

Such a model, however, is far two simple to account for all types of military spending. Technological advances in weapon systems, national moods, the attitude of opinion leaders and pressure groups, alliance structures, and policies of government leaders are among the many variables that could increase the model's complexity.

The initial list of independent variables used in this thesis to explain the variance of defense expenditures is a modified version of that suggested in O'Leary and Coplin (1975). Concentrating in Hungarian defense expenditures in particular, the following factors are analyzed as ones that might influence defense-spending patterns:

- Economic condition of the country
- Military alliances
- External threat
- Internal political factors
- Military/strategic factors

B. ECONOMIC CONDITION OF THE COUNTRY

Defense is not a free good: like all expenditures, it involves sacrifices of other goods and services, raising controversies about military versus social-welfare spending, and whether defense is a benefit or a burden to an economy.

It is widely accepted that the allocation of resources to defense in peacetime is driven primarily by economic factors. Although:

> military planners mostly ignore economics when devising strategies and determining appropriate force requirements, ... a nation's current real income and future economic growth set important constraints on the fulfillment of basic military strategies. (Looney and Mehay 1990, p.15)

Looney and Frederiksen (1988) used time series data to examine the economic determinants of defense expenditures for ten Latin American countries. Their main finding was that much of the variability in defense expenditures could be explained by economic variables: the overall constraining GDP and fiscal funding variables.

1. Growth, tradeoffs and stability

Defense expenditures are fairly discretionary: can be postponed or speeded up as the economic need arises. The so-called 'Military Keynesianism' effect, as described by Whynes (1979) is one of the major relationships between defense expenditures and the economy as a whole. Since defense is one item of the budget over what the government may have considerable discretionary control, expenditures on the military can often be used as an economic stimulus to advance growth or to stabilize the economy. Defense expenditures can be employed as a counter-cyclical fiscal instrument by the government. These expenditures may increase during periods of downturn, providing additional demand for the depressed economy and decrease when the economy would be otherwise overheated. However, when military expenditures are increased to promote economic objectives, they are usually rationalized in terms of national security.

Scholars found significant relationship between defense expenditures and the level of economic growth. In the absence of other factors, defense is expected to increase most when the economy is growing. Domke (1991) studied the relationship between economic growth and change in defense spending in five advanced industrial democracies (including the U.S., United kingdom, France, Germany, and Sweden). In case of French and Sweden, the relationship was positive, in the U.K. there was no

systematic relationship, while in the U.S. and Germany he found negative relationship. For the latter two countries defense exempted from the constraints of poor economic performance, and had a tendency to rise in periods of poor growth, arguably as a part of fiscal policies designed to stimulate the economy. (Domke 1991, p.30) Frederiksen and Looney (1983) found that defense spending and economic growth are negatively correlated for those developing countries with serious financial difficulties, whereas they are positively correlated for other developing countries that are less constrained financially.

The gun vs. butter trade off, i.e. the trade off between social and defense expenditures is also of great concern. Most people believe there is a tradeoff between spending on defense and spending on welfare, but as a number of scholars (e.g. Domke et al. 1983, Russett 1982) have shown, the existence of such a tradeoff is difficult to establish empirically. Domke et al. (1983, p.33) in their study of the post-1945 U.S. defense expenditures pointed out that

> ...defense and welfare expenditures appear ... to be driven by separate sets of determinants which do not require one to be systematically sacrificed for the other.

This seems to imply either that no subcategory of defense expenditure affects welfare spending, or that subcategories of defense spending having positive and negative impacts essentially canceling one another out. While allocations to DOD capital-intensive programs are hypothesized to take resources away from welfare programs (tradeoff), allocations to labor-intensive programs may ease the task of the government's health and education sectors and compensating for the tradeoff effect of the capital-intensive programs.

Mintz (1992) dug deeper by examining tradeoffs between welfare spending and specific kinds of defense expenditures (military personnel, military procurement, operation and maintenance, and research and development). His disaggregated analysis generally reinforced the above conclusion. Specifically, his analysis revealed the

existence of tradeoffs between investment in the development and production of weapon systems and spending on education in the Reagan years.

Using a simultaneous equation model, Deger (1985) estimated that if defense allocations were cut by 15%, education would increase by approximately 1.9% in her sample of 50 countries. However, in another study, which included several Latin American countries, Looney (1986) found a negative tradeoff between defense and other government expenditures for one set of countries and a positive tradeoff for another group of countries.

As observed by Assmus and Zimmermann (1990) economic stability is also a variable influencing the volume and composition of defense expenditures. In particular, fiscal constraints, caused by instability and accompanied by growing budget deficit, increase the political readiness and economic necessity to reduce or redistribute defense spending.

2. Peace dividend

The relationship between decreasing defense expenditures after the end of the cold war (the so-called 'peace dividend') and welfare is particularly ambiguous. Proponents of the peace dividend phenomenon argue that after he end of the cold war and the political, economic, and military restructuring of Eastern Europe the threat lessened, and that the World can expect to realize a 'peace dividend' within a relatively short period of time. Such a dividend might then be spent on social programs. A more cautionary approach fears a period of instability on the European continent (especially in the Balkans). This view holds that a more prudent policy would be to resist massive cuts in military forces and defense spending until the situation stabilizes.

The Bonn International Center for Conversion (BICC) commissioned ten case studies to explore the peace dividend process. The cases come from countries at different development stages and with high and quite moderate military burdens. Instead of selecting case studies randomly they included countries according to the best - and worst

- case in terms of peace dividend results since the worldwide peak in defense spending in 1987. The countries observed were grouped as follows (see Table 1):

Table 1: Grouping of the observed countries based on the existence of the peace dividend

	Decreasing military expenditures	**Increasing military expenditures**
Increasing welfare	South Africa Nicaragua, El Salvador Ethiopia, Egypt Israel, Germany Hungary, USA	Japan, Pakistan India, China Indonesia, Turkey Brazil
Decreasing welfare	Poland, Argentina Bulgaria, Russia	Algeria Nigeria

Source: Brömmerhölster (1997)

3. Other economic variables

Many other economic factors were found to be significant in different studies. One of them is the existence of sizable central government budget deficit, the most likely direct source of fiscal constraints. Defense is expected to absorb more when government produces a surplus of revenues. In the presence of a deficit however defense should grow less or even decline. This relationship assumes that sizable deficits constraint spending, and that defense would be included in an austerity program. Defense spending, like any other form of public expenditure, however is the result of political bargaining, and it is not necessary that defense be included in broad-scale budget limitations. The experience of the 1980s shows that defense has been largely exempted from government austerity programs in most nations. Domke (1991) found defense growth going hand in hand with budget deficit in the U.S., France, the Netherlands, and Sweden. Defense spending contributed to the size of the deficit, and there was no fiscal constraint influencing the level of defense expenditures in the form of central government budget deficit. He goes so far as suggesting that for the U.S., in the 1955-1985 time period, tension and war involvement far outweighed the impact of economic variables and one can not find fiscal

constraints on defense spending. (Domke 1991, p.30) During wartime nations must mobilize a significant share of the nation's scarce resources for military activities. Both the U.S. in 1944 and Iraq in 1986 devoted over 41 percent of GNP to military purchases. (Looney and Mehay 1990, p.15)

The condition of a sizable negative trade imbalance may also serve as a constraint on public spending, including defense expenditures. This is especially likely for the smaller industrialized nations (like Hungary), where the export sector is of central importance to the economy. Political and/or military considerations however may overrule the constraining effect of a negative trade balance on defense spending. Moreover, defense itself may be part of the problem in foreign balances (in case of significant arms import).

Looney and Mehay (1990) used the rate of unanticipated inflation (the difference between expected and actual inflation), the federal budget deficit, and on the revenue side, deviations from the trend in real federal revenues to model U.S. defense spending.

Domke (1991) found changes in defense expenditures to be strongly related to price change in all the six advanced industrial democracies he observed. Regression coefficients for the GDP deflator in each country were positive and statistically significant, however the variation in the coefficients indicated interesting differences across the six nations. The Dutch coefficient suggested that the Netherlands' budget system did well in compensating for inflation. In the U.S. and France, defense spending has lagged somewhat behind inflation. In Sweden, the defense sector has been significantly under-compensated. In Germany and the United Kingdom defense has more than kept up with rising prices. (Domke 1991, p.28)

A high degree of international economic dependence may contribute to the level of defense spending. The protection, for example, of the international resources (see e.g. the Gulf War), or trade routs during crisis is costly and increases the demand for defense outlays.

According to a study of Maizels and Nissanke (1986), availability of foreign exchange to purchase arms from abroad, the level of the foreign capital investment and

the concentration of the arms industry (lobbying power of the military-industrial complexes) are relevant determinants of defense expenditures. The influence of a domestic arms industry, which may develop persuasive power to influence decision-makers to agree to additional military expenditures is another frequently mentioned factor.

Grilli and Beltratti (1989) concluded that significant relationship exists between the US military expenditures and the course of the dollar in the monetary market.

Waste in spending also can be a significant determinant of the level of defense expenditures. As suggested by Brömmerhölster (Brömmerhölster, 1997):

> In some countries, peace dividends appear when there is less waste and corruption in defense spending-as in the cases of Nigeria and Pakistan.

In countries where the economy is dependent in one product, the price of this product can be a very important factor determining government expenditures in general, and defense expenditures in particular. A model of the Iraqi – Iranian military spending (Abolfathi, 1978) discovered the existence of a close relationship between oil revenues and defense spending. In the same study, a systematic examination of the ratios of military spending to oil revenues for eight Persian Gulf oil-exporting nations found a remarkable stability for each country's ratio over time. (Abolfathi 1978, p.18)

Military expenditures are becoming a sensitive issue for the international community, in particular for major lending institutions like the World Bank and the IMF. However, there is still much more bilateral donor activity than multinational initiative to reduce military expenditures.

4. Economic determinants of Hungarian defense spending

For Hungary, the economics of defense spending in the cold war period was out of the scope of researchers and decision-makers. The Soviet hegemony obviated choices that might have been made upon the size of the defense budget. Hungary was able to exercise choice only to very limited degrees on specific issues, and choices were made at

the margins of foreign and defense policy. The politically and economically forced defense policies produced relatively high levels of military effort that, in turn, evoked substantial burdens (i.e. social, economic and political costs).

The Soviet Union and the six other Warsaw Pact States (Hungary among them) maintained very high commitments of national resources to the military for decades. (see Table 2)

Table 2: Extractive military effort: ME/GNP (per cent) in the Warsaw Pact countries (1975-1985)

	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Soviet Union	13.7	13.3.	13.0	12.8	12.9	13.0	12.9	12.7	12.6	12.6	12.5
Bulgaria	7.9	7.7	7.9	7.4	7.0	7.3	7.2	7.8	8.0	7.8	8.0
Czechoslovakia	5.9	5.7	5.5	5.5	5.3	5.4	5.5	5.8	5.9	5.7	5.8
Poland	5.7	5.3	5.2	5.0	5.1	5.3	5.5	6.3	5.7	5.8	6.0
East Germany	6.0	6.0	5.9	5.9	5.8	5.8	5.9	6.3	6.3	6.3	6.4
Romania	5.7	5.3	5.2	5.0	5.1	5.3	5.5	6.3	5.7	5.8	6.0
Hungary	4.7	4.4	4.8	4.2	4.1	4.4	4.4	4.3	4.2	4.0	4.4

Source: Nelson (1990), p.46

These countries' accumulation of military capabilities had a decidedly political purpose. When compared with other parts of the World using 1985 data (according to USACDA calculations) the Warsaw Pact, as a region, was second only to the Middle East in its overall defense expenditures to GNP ratio. (see Nelson 1990, p.45) Of 144 states for which USACDA reported 1985, Hungary fell into the fourth decile with ME/GNP rank of fifty-third. But even Hungary, which devoted the smallest (in the WTO) proportion of its GDP to military effort, maintained an active duty force level (active duty/population) in the highest fourth of all nation states. (see Nelson 1990, p.47)

Among Non-Soviet Warsaw Pact nations however military effort was seen by party and state leaders as an additional impediment to improved economic performance. As reported for example by Nelson (1991), in 1978 the Soviet Union made a concerted effort to extract greater contributions from its six East European allies for their own armed forces and for joint training. The response from Hungary and Poland was decidedly unenthusiastic – and ultimately, non-compliant. The Hungarian foreign minister stated that additional spending would be too much for the country's fragile economy. This sensitivity to the economic effects of allied military effort became more

prominent by the mid-1980s as economic slowdown hit Hungary. In 1985, Hungary's Defense Minister reportedly declared that Hungary would meet Warsaw Treaty Organization (WTO) commitments only to the degree that its economic conditions would allow it. (Nelson 1991, p.45) It is worth mentioning that Hungary devoted a much lower proportion of its GDP and central government budget to defense than e.g. Bulgaria, which country had the dubious distinction of having the highest level of military effort relative to its economy and population among WTO nations. Nelson (1990, p.50) observed that

> The Soviets judged their divisions in Hungary to be least critical and/or beneficial. At the very least, the record of WTO exercises suggest far less emphasis on maintaining readiness of Hungarian forces, and Soviet troops stationed in Hungary, than that of Northern Tier states (east Germany, Czechoslovakia, Poland and the Western Military District of the USSR)

In terms of the political effect of this relatively lower defense expenditures, he also argued, that

> Hungary's restrained military efforts must be considered when explanations are sought for the maintenance of a 'Kadarist consensus' in social and political terms even when economic performance began to diminish in the early 1980s. ... Lower defense commitments may have contributed to Kadar's ability to hold on as long as he did. (Nelson 1990, p.51)

Consistently with other countries' results, defense spending in Hungary also appears driven by available national resources. Economically, Hungary experienced a series of shocks during the last two decades. In many countries the defense sector is well protected while social sectors (health, education, rural development, etc.) are vulnerable. Hungary, however experienced the opposite – the defense budget seemed to be the less painful to cut. As declared by Looney and Mehay (1990, p.15):

> Ideally, foreign policy objectives are established first, then a military strategy and a force structure are designed to meet those objectives. The cost of this force structure determines the defense budget, at which point the economic environment and budget priorities enter the picture.

In the 1990s Hungary, however, this ideal sequence was completely reversed. In this scenario, economic constraints and budgetary ceilings were declared first, dictating the feasible and acceptable force-structure options. The prominent role of the MOF in budgetary planning, and its direct involvement in planning defense expenditures made for a situation where outcomes followed the outlines of MOF intentions.

A fact of the Hungarian public expenditures in the late 1980s, early 1990s was the losing position of the defense expenditure group compared to other expenditure groups. The defense budget had to bear the main burden of the budgetary redistribution essentially in favor of social security, healthcare and public safety. While the share of GDP spent on defense has declined from 2.5 per cent in 1990 to 1.7 per cent in 1994, the decline in real value has been even more dramatic. In real terms, Hungary's defense expenditures in 1994 were only about half the outlays of 1989. The ratio between development and maintenance funds has shifted from roughly 1:4 in 1990 to 1:12 in 1993.

To understand the outcome of the Hungarian defense budget process in that period it is necessary to understand the institutions, which exerted pressure, the institutional and political interests, and their relative importance in terms of influence. The domestic policy objectives of the Hungarian government led to a set of budgetary considerations. Macroeconomic objectives and the resulting macroeconomic strategy, implemented by means of fiscal and monetary policy, determined the overall share of the national product, which was allocated towards public consumption. The resources, which were available for public consumption for domestic policy needs, were simultaneously determined by the budgetary activities of non-defense government agencies. From a domestic policy planning perspective the defense budget was viewed as the residual between the overall allocation of resources for public consumption and the non-defense portion of the budget. In other words, the MOF, relatively early in the budget cycle, provided guidance to the MOD the size of the defense budget, which they thought was economically and politically feasible for the next fiscal year. This figure was usually arrived at by simply estimating the government's total revenues then deducting fixed

payments (such as interest on the national dept), and the estimated costs of non-defense domestic programs. Whatever 'remained' was than allocated to the military.

As a result of painful austerity measures Hungary seems to be embarked on the path of sustainable economic development. Some of the results of this process are as follows:

- 75% of the Hungarian economy is now in private hands.
- Direct foreign capital investment amounting to a total of 17 billion USD has flowed into the country to take advantage of a business-friendly environment and legislation. It continues to flow in at a rate of 1.5-2 billion US dollar per year.
- Hungary's economic growth in 1997 and thereafter is forecast at around 5%. International debts are being considerably reduced, and inflation rates are continuously decreasing.

From 1996, the changed economic trend and the steady growth rate are accompanied by a significant increase both in the real value and the GDP share of the defense expenditures. This is driven by two factors: a pent-up demand for modernization after a decade of restraint and strong political pressure from the military for an increasing share. Hungary's participation in the first round of NATO enlargement significantly contributed to the increasing bargaining power of the military. In 1997, under the pressure of the NATO accession talks, an agreement was reached between the MOD and the MOF. Based on this agreement, Hungary promised to increase its defense expenditures to GDP ratio by 0.1 percentage point annually, until it reaches 1.8 percent (in 2001). This agreement, however, constitutes another extreme: some percentage of the federal budget is simply allocated to defense, and the MOD could then attempt to create the most effective possible posture out of those resources. Moreover, the agreement makes the national rate of growth for the forthcoming period a decisive variable in regard to defense expenditures.

Some changes in the defense budget planning process may also be observed. From 1998, the new government recognized that:

> ...defense as a sector needs to be driven by task-orientated strategies, which will determine the nature of forces fielded. This contrasts with the behavior of the two post-1990 administrations, which repeatedly looked at financial constraints first and last, subsequently tailoring existing forces to ever-decreasing financial assets. (Gorka, 1998, p.4)

Hungary bases its future defense spending - the ability to meet NATO's expectations - on optimistic forecasts of what has been healthy economic growth. However, the governments' pledges of increased defense spending likely will come under pressure over the next several years, as all three countries try to obtain membership in the European Union. Besides, the fact that money for the military is now 'real' money and that food, clothing, housing (as well as hardware) must be acquired at fair market values still places stringent limits on what can be accomplished.

C. MEMBERSHIP IN MILITARY ALLIANCES

Many scholars (Murdoch, Sandler, and Hansen 1991, Murdoch and Sandler 1984, and Dudley and Montmarquette 1981) analyzed the impact of a country's membership in military alliances on its defense expenditures. Their analysis primary focuses on the complementary character of defense spending in military alliances and the free riding behavior of some members.

As stated by Maizels and Nissanke (1986):

> ... relations with the global power blocks ... appear to be major determinants of government decisions in regard to military expenditures. (Maizels and Nissanke,1986)

1. Contributions to the common funds

Membership in a political-military alliance can influence defense expenditures in many ways. Responsibilities as a member (contribution to common funds, administrative expenses, multinational combined exercises, other combined initiatives) may cause

significant increase in defense expenditures. As observed by Cusack (1992, p.110), between 1950s and 1980s:

> Countries within NATO have carried, on average, larger [defense] burdens (between one and a half and two times as large as non-NATO industrialized democracies).

In NATO the contributions to common funded budgets represent the smaller part of membership's financial responsibilities. One should keep in mind that the major common funded budgets (the Civil Budget, the Military Budget and the NATO Security Investment Program (NSIP)) used to manage the Alliance's financial resources, taken together, represent less than half of one per cent of the total defense expenditures of NATO countries.

In the military pillar of NATO, apart from a limited number of permanent headquarters and small standing forces, the vast majority of military forces and assets belonging to NATO member countries remain under national command and control (in peacetime and in non-Article 5 missions), and are financed nationally. The forces of NATO countries contributing to the SFOR or KFOR missions are thus assigned to NATO temporarily in order to fulfill the Alliance's peace keeping mandate, but are trained, equipped, maintained and financed by the individual defense budgets of member nations.

The costs of maintaining and staffing their national diplomatic and military delegations and military missions are also a national responsibility, financed in accordance with the different accounting principles and practices of each country.

The two examples given above - the costs of maintaining military forces and the costs of civil and military representation in Alliance forums - illustrate expenditures which would have to be taken into account in any analysis of the total cost to each nation of its NATO membership.

Such expenditures, however, would have to be offset by a similar analysis of the economic benefits obtained by each member country as a result of its participation in the Alliance. As suggested by the NATO Handbook (1998, p.198):

> ... the rationale for NATO membership extends far beyond the confines of a financial balance sheet drawn up on the above basis and embraces political, economic, scientific, technological, cultural and other factors which do not lend themselves readily to translation into financial terms. Moreover, to arrive at a meaningful conclusion each member country would have to factor into the calculation the costs, which it would have incurred, over time, in making provision for its national security independently or through alternative forms of international cooperation.

2. Free riding

In alliances the public good attribute of defense and differences in members' military strength may create free-riding behavior by smaller alliance members. A nation is said to free ride or rely on others for its defense when an increase in other nations' military expenditure (activity) induces the alleged free rider to reduce its own military expenditure (activity).

In 1970, the United States accounted for 74 percent of NATO military expenditures, while the Soviet Union bore 89 percent of the defense burden in the Warsaw Pact. (Leontief and Duchin 1983, p.4) It is often argued that the large defense effort by the U.S., relative to its formal and informal allies, represents a form of free riding by the latter or exploitation by the latter of the former. A Pentagon study, cited by Calleo (1987), asserted that more than half of the American defense effort represented a direct subsidy to the West European allies for military burdens they were unwilling and yet able to sustain.

Others, however, consider these arguments misleading and self-serving. They argue that:

> America has played the role of hegemon within the world system for the decades since World War II. Its military apparatus plays a significant role in retaining American domination. ... the benefits it derives are proportionate to its efforts, and those efforts ... are likely to be proportionate to its relative strength in the international political economic system. (Cusack 1992, p.111)

Analysts, have also observed that the variance of weapon systems in the degree of their publicness,

> ...may induce complementary behavior by allies rather than the substitution effect. (Looney and Mehay 1990, p.31)

Sandler (1988) indicates that during most of the 1950s and into the 1960s (in the era of nuclear deterrence doctrine in NATO), the European NATO countries were able to free-ride on the U.S. deterrence capability. Since the early 1970s, however, a decline in the role of nuclear deterrence and the implementation of the 'flexible response' doctrine has shifted the burdens toward European countries.

The membership in military alliances may also result in an increase of the allies' financial support. The Clinton Administration's Warsaw Initiative program has been a key tool in financing some initial improvements. It provides $100 million a year to assist Partnership for Peace (PfP) nations in participating in the program of training and exercises. Around $40 million is administered annually by the Pentagon's Joint Staff to fund the expenses of PfP participation. The balance allows the nations to buy non-lethal equipment, including funding requirements under the Regional Airspace Initiative (RAI), which determines airspace management needs in Central Europe. Another key financing mechanism in the USA is the 1996 NATO Enlargement Facilitation Act, which authorizes $20 million in Foreign Military Financing (FMF) to cover up to $242 million in loans to Poland, Hungary and the Czech Republic. (Starr 1997, p.16)

3. Hungary in NATO

Hungary, the Czech Republic, and Poland became the first former Soviet bloc members to join NATO March 12, 1999. With this step Hungary accepted the Alliance as a community funded by countries that share similar values, making it an organization where every country contributes to security and defense but also profits from it.

Contrary to previously published estimates (CBO, 1996), the costs of NATO enlargement will not be of an unacceptable magnitude to either old or new members of the Alliance. NATO officials announced that they have endorsed the findings of a study indicating that the cost of expanding the 16-member alliance to include Hungary, the Czech Republic, and Poland, will be $1.3 billion substantially less than first expected. Officials said some $315 million will be allocated to help Hungary prepare for NATO admission, and $700 million and $266 million will be spent on assisting Poland and the Czech Republic, respectively.

A sharp distinction should be made between what Hungary will have to spend in order to modernize and reorganize its armed forces in general, and the costs directly connected with joining the Alliance.

The largest portion of new members' direct NATO enlargement expenses will have to be spent for the purpose of making their armies compatible with NATO forces and to achieve an acceptable level of interoperability. Interoperability pertains to the capacity of separate structures of the Alliance to cooperate in peacetime and in combat, the cooperation involving uniform command and control procedures and communication systems. It does not primarily require technical modernization of the armed forces in the short-term, rather the harmonization of the strategic planning systems, standards and tactical operating procedures, improvement of the foreign language skills. Fortunately, efforts made in these areas can result in major progress at relatively low cost.

No one can deny that all post-communist countries including Hungary badly need to modernize their weaponry and military equipment. However, the need to improve obsolete equipment is not directly related to Hungary's newborn NATO membership. Modernization of the army is an objective problem Hungary would have had to solve in any case, even if it had decided to build its own defense system. The same applies to the very costly modernization of the air defense system. Here, too, substantial spending is needed, but only a relatively small portion (i.e. the cost of increasing interoperability with NATO air defense system) can rightly be put under the heading 'NATO enlargement cost).'

The original CBO estimate of NATO enlargement costs (CBO, 1996) even more seriously misinterprets the costs of modernizing Hungary's broadly defined infrastructure. Although the fact that railway and road networks in Hungary are inferior to those in the more developed NATO countries has significant military implications, it is completely unjustified to handle these modernization expenditures as defense spending (and especially in the category of NATO enlargement costs).

Apart from its well-known political-military aspects, the enlargement of NATO will also have considerable economic impact, bring with it a 'peace dividend' as it is defined in the study of Dommen and Loukakos (1995), i.e. the 'return of confidence and the consequent rise in investment following the establishment of peace'.

The admission of Hungary and the other two Central European countries brings about a significant enlargement of the area of democracy and predictability and a well-rooted market economy. There are potential advantages for both sides. By joining NATO, the countries hope to cement cultural ties with the West and join the European Union, with its trade and financial benefits. For NATO, adding new members to the east means some assurance of stability in what has always been an unstable region.

In purely economic terms, the enlargement will enable all countries to expand their trade and investment opportunities. It will also facilitate a two-way flow of technology, capital and labor. Moreover, stability in Central Europe may influence the neighboring regions in the sense of promoting democracy and economic order in Eastern and Southern-Eastern Europe.

A high official of the US administration summarized the long-term dispute with the following bon mot:

> NATO enlargement would cost as much, or as little, as the Alliance decides to spend for this purpose.

At the same time, NATO membership is no substitute for what every NATO member has to produce for itself: a credible national defense force and defense policy.

Together with trying to assess the cost of joining NATO Hungary calculated the immense amount of money necessary to implement the second option, i.e. to build a self

reliant security system based solely on national resources and capable of providing a level of security comparable to that guaranteed by a collective defense system. These costs would be definitely much higher.

Although alliances always provide 'value-added' to the nations own solutions, security is not a function of the quality of 'security systems', but of the qualities of the states comprising them. NATO's ability to support Hungary depends on Hungary's ability to think through and articulate its own vulnerabilities and its own perception of trade-offs.

D. EXTERNAL THREAT

Interstate conflicts, rivalry, tension, and external threat often are singled out as one of the most important determinants of defense expenditures. Domke (1991, p.25) defines threat as:

> ...a perception of danger or loss to vital interests, and suggests that threat is necessarily an ambiguous concept. Since it is a subjective evaluation, there can be no direct measurement. There are indirect indicators of threat and perceived danger, but they are not easily applied across nations and, more problematically, among the variety of domestic political actors who are able to determine security policy and spending.

Assmus and Zimmermann (1990) suggest an interesting relationship between economic strength (discussed in 5.2) and external threat. They argue that the defense share is positively correlated with per capita income, because the higher a country's level of income, the greater the threat of an enemy's attack.

As stated by Abolfathi (1978, p.4):

> It is difficult to advocate disarmament for any single nation-state as long as other nations continue to maintain or increase their military forces. ... There seems to be little doubt that regional disarmament is a possibility in regions of the world where interstate hostilities are low and ... rivalries and conflicts of interest are minimal.

From the viewpoint of individual nation states, or more correctly their leaders, elites, and citizens, the main function of military forces and the funds spent on their maintenance is to deter other nations or hostile parties from threatening national interest and sovereignty. There is considerable statistical support for a positive relationship between defense spending and conflict. The analysis of regional ratios of military spending to GDP clearly indicates that regions with the greatest amount of interstate conflict (e.g. the Middle East) have experienced the highest levels of military spending, while regions with the lowest conflict (e.g. Latin America) have experienced relatively low spending.

Rival's defense expenditure is the most commonly used indicator of interstate rivalry and threat. Other indicators however may be only weakly correlated with rival's defense expenditure, meaning that one cannot select rival's military spending as the indicator representing all other rivalry and conflict variables.

Different authors suggest different indicators of external violence, rivalry and tension. Abolfathi (1978) uses Border Dispute (potential, settled, passive, low level active, and high level active dispute), and Intensity of Rivalry (potential, passive, active, intense but peaceful, limited and violent, intense and violent, and large scale and violent rivalry). Modeling Swedish defense spending, Domke (1991) used a count of foreign submarine incidents in Swedish territorial seas as an indicator for external threat. Interestingly, the indicator was not related to changes in Swedish military expenditures.

A high or even rapidly increasing level of military spending does not necessarily mean more security. As observed by Weidenbaum (1974, p.8), when the technological advances occur in offensive weapons (such as Inter-Continental Ballistic Missiles – ICBMs, or missile carrying nuclear submarines):

> ...the 'damage limitation ability' per dollar of expenditure appears to be declining. Thus, although the military power of countries ... may be rising in an absolute sense, their basic sense of national security may not be increasing proportionately or may even be declining.

Scheetz (1990) observed a paradoxical effect in three Latin American countries (Argentina, Chile and Peru). He argued that the more they spend on security the less they have.

> For these three countries at least internal (and quite possibly external) security has a negative functional relationship to military expenditure. (Scheetz 1990, p.228)

The dimensions of security have changed radically since the bipolar world order ceased to exist; the structure of relatively easy to identify political and military opposition has been replaced by local, regional conflicts. The end of the bipolar opposition characterized by the static situation of high risk/high stability has been replaced by the extremely dynamic state of low risk/low stability. The notion of security and threat have been expanded into further dimensions, making them more complicated than before.

In 1996 and 1997 several of the Central European region's well-rehearsed anxieties have receded. The more reassuring landscape has arisen thanks to:

- the Hungarian-Romanian Friendship Treaty (September, 1996) and the Romanian elections (November, 1996)
- the survival of the Dayton coalition and 'peace-enforced' stability in Bosnia-Herzegovina
- the (temporary) re-emergence of vigorous reforms in Russia (March, 1997), NATO-Russia Founding Act, the Russia-Ukraine Treaty of Friendship and Black Sea fleet accords (May, 1997)
- the distinctive partnership between NATO and Ukraine (July, 1997).

However, there are a number of interlocking risks that argue against allowing the Hungarian decision-makers' anxieties to recede very far. Although no country is considered an enemy according to Hungary's new military doctrine, the absence of a directed and clearly defined threat does not mean that the military component of security can be relegated to history. In the absence of natural borders, the worst-case scenario for Hungary would be a coordinated offensive by all neighboring countries.

Some other potential threats to Hungary's national security are also listed below.

1. The regional sub-culture's dynamics will be influenced by the dynamic (or halting) of the Euro-Atlantic integration process in general and NATO enlargement in particular. Romania's change of direction in 1996 (and Slovakia's in 1998) is dramatic, but not necessarily deep, thanks to the fact that the center-right victories in these countries have left a polarized (deeply nationalist) electorate in its wake. The realization that there might not be a 'second wave' of NATO enlargement might be the germ that re-consolidates these forces.
2. In Russia, the new favorable linkage between internal and external policy is contingent upon the intra-elite correlation of forces and, indeed, success. Today's vigorous efforts to resolve dispute with neighbors and formal Eastern European allies - under the pressures of internal fragmentation – reflect the need for breathing space to revive the economy and consolidate the Federation. The worry, at this indistinct stage, is that even the right kind of reform could fail – and where the armed forces and defense-industrial complex are concerned, exceed the permissible threshold of pain. If the worry is borne out, Hungary and the other countries of the region could find themselves facing a more chaotic, 'multi-voiced' Russia: at worst, a Russia threatening (in the perception of Eastern and Central Europe) and frightening (in the perception of the West).
3. If Ukraine were forced to abandon its 'balanced policy' – whether as a result of internal incapacity, Western disillusionment or Russian pressure – the implications could be profound.
4. In a region where national communities have been literally put at risk there is an obvious desire to dissuade neighbors from endangering the security of Hungarian minorities on their territories. No matter how compelling the provocation against Hungarian minorities – and no matter how moderate Hungary's policy - this concern is bound to be seen by neighbors as offensive rather than defensive. It would be reason enough for this burden to be lifted

from the shoulders of Hungarian national defense policy and assumed by European structures (if they will assume it).

This catalogue is enough to suggest that a balanced national security policy for Hungary is still inevitable: a point, which is not weakened, but reinforced by NATO membership.

As the former Commander in Chief of the Hungarian Defence Forces, General Ferenc Vegh (1998, p.312) stated:

> The security of Hungary can be influenced primarily by threats in our environment and not in differences resulting from an imbalance in existing military assets. Hungary's intention to join NATO is not a response to some sort of military threat, but instead is an expression of the fact that we are interested in maintaining and expanding European and regional stability and security.

According to the Hungarian strategic concept the Hungarian armed forces should be strong enough to face military challenges resulting from local conflicts or limited-scale regional conflicts. In case of a more serious threat allied assistance may prove necessary. Such assistance, however, will not be the result only of NATO security guarantees extended to new members, but will also be driven by the interest of the other NATO countries in overcoming serious threats to European security.

E. INTERNAL POLITICAL FACTORS

Defense spending has to be evaluated not only according to its economic impact, but also with respect to its political impact. While the level of defense spending certainly depends on economic factors, viewing the budgetary process solely from an economic perspective ignores the constraints that domestic issues place on defense decision-makers. Therefore another set of variables for the explanation of the determinants of defense expenditures involves the political factors.

The cost of defense probably has been a major political issue ever since the early primitive social groups began to organize more complex communal defenses for

protection against other groups. Despite the new trends toward increasing economic and political cooperation, most nations still maintain armies and devote large amounts of their revenues to defense.

The level of funding a country allocates for defense spending -whether directly or through various budgetary instruments - is always the result of arbitrary political decisions. The personnel strength of the armed forces, weapon platforms and equipment, as well as other defense components initially relies on military doctrine. This choice, in turn, is usually based on the politician's perception of current or expected threats (external and internal) or on their desire to achieve designated goals by projecting the country's military and economic power. The estimated military strength of potential enemy (if any) and the country's geographical neighbors is also taken into account.

1. General political considerations

In the cold-war era, the existence of a clearly recognizable threat made it easier to argue for relatively high defense budget. Today, after the disappearance of the former rivalry between two mutually opposed geopolitical blocks, lacking an obvious threat and not knowing for sure the future threats to prepare for, political and economic considerations more strongly impact the cost debate.

In 1986, worldwide figures for military expenditures began to decline. The former Soviet Union and Eastern Europe have had major cutbacks, but not in Asia or the Middle East. From this, one can draw at least two generalizations. First, the major force behind the size of the military budget was the Cold War. Second, there seems to be a relationship between political factors and military expenditure.

Political variables like the structure of the government (bi/multiparty democracy, monarchy, and military dictatorship) or the ideology of the ruling elite (socialist, conservative, liberal, communist; etc.) may be significant determinants of defense expenditures.

Assmuss and Zimmermann (1990, p.129) argue that:

> Whether a country's government is generally dominated by a leftist or by a conservative party provides an important hint to the relative degree of change in the size and structure of the defense budget. In the Federal Republic [of Germany], like the United Kingdom, there are differences in the parties' attitudes against and preferences for expenditures on military and non-military goods as well as in their attitudes toward allies, international pressure or commitments, military strategy, disarmament negotiations, or even the up-dating of weapons.

As Keman (1982) has pointed out, it is possible to entertain a set of diverse hypotheses with respect to the influence that party preferences and dominance have on military spending. The general anti-militaristic stance of the leftist parties in capitalist societies may act as a constraint on the military burden that governments would impose on the economy, while the rightist parties are heavily oriented toward security concerns. On the other hand, there is another, so-called 'strategic' hypothesis that

> ...leftist parties when in power would view it as in their interest to support the military establishment in an effort to be perceived as sound and legitimate in the eyes of the middle-class electorate. Relative to the rightist parties, then, leftist parties in government would tend to opt for higher military burdens, other things being equal. (Cusack 1992, p.113)

There is also a third argument that the 'decline of ideology' has led to a convergence between parties at different end of the left-right continuum even in security matters and the ideology of the ruling party does is not a significant determinant of military expenditures. Cusack (1992), based on the results from regression analysis of cross sectional military expenditure data in 1980 found that left dominance of government would appear to invoke a 'strategic' response to the problem of allocating resources to the military. Left dominance of the government increased the overall defense expenditures, and the estimated coefficient was significant.

In the US, because of the system of checks and balances, it is difficult to model systematically which political party is responsible for the increase or decrease in defense spending. Both the President and the Congress - often having majority from other than the President's party - have significant role in determining defense spending, and it is difficult to separate their impact. Even within one party, there can be significant

differences. During the Reagan years, the Republican controlled Congress reduced Secretary Weinberger's defense requests by average of 7 percent, more than any previous Secretary of Defense (Korb 1987, p.168).

Political variables may also be adequate to detect the effect of a political transition (like one in Central and Eastern Europe at the end of 1980s, beginning of 1990s). Domestic factors, particularly the need perceived by ruling elite to repress internal opposition groups, also appear to be major determinants of government decisions in regard to military expenditures.

2. Political context and the elections

There are powerful domestic political-economic forces shaping the defense budget, in particular the tendency to rely on it as a tool of fiscal policy and to exploit it for electoral purposes.

Domestic political context of decisions for defense is a theoretically meaningful explanation of military spending. Political debates and decisions that surround security policy and the defense budget are very important to determining the level of defense spending. Therefore, models analyzing the determinants of defense expenditures must also take into account the domestic political context of defense debates as the important linkage between security and fiscal policy. Both the security and fiscal elements of defense spending may have a quite distinct impact in specific political context. As stated by Domke (1991, p.25):

> Electoral strategies (what it takes to win votes), coalition strategies (what it takes to make policy), and career strategies (what individual politicians seek) are constantly changing and will always serve to prevent simple answers to the question of how much is enough (for defense).

In a competitive democracy, a high level of military effort over a prolonged period is not without domestic political consequences. Increasing doubts about the wisdom of bloated military expenditures can be voiced in the public political sphere. Until the end of 1980s, however, matters of national security and military doctrine were

entirely excluded from the public arena in WTO states. After the political changes, there was a rapid escalation of public antagonism toward the extraction of manpower and material resources for what was perceived as unnecessary level of armed forces, trained and maintained to serve other than recognizable national interests.

One should not forget, however, that one method of inducing a pre-election economic boom, thereby aiding incumbent politicians in their bid to retain public confidence, is through intensification of defense spending. (Nincic and Cusack, 1979) Increased level of military spending may help to create the illusion of a flourishing economy before election, serve as a counter-cyclic economic device to combat growing unemployment, and contribute to increased profitability of giant monopolistic firms.

The political aspects are undoubtedly present in the level of the U.S. military expenditures. Zuk and Woodbury (1986) explains this fact by emphasizing that a large portion of defense budget is not mandated by law, so the political authorities (the President and the Congress) have wide latitude formulating the defense budget. In their analysis, however, they found no support for an electoral-defense spending cycle in the post war U.S. history. They conclude that defense spending in the U.S. is not used on a systematic basis by the President or the Congress as a macroeconomic policy instrument and, by extension, for the purpose of winning the election.

Mayer (1991, p.17) had somewhat contradictory results. He suggested that there is

> ...little doubt that defense contracting activity increases immediately before elections, both to stimulate the economy and advance the interests of incumbent legislators.

Mintz and Ward (1991, p.135) found that

> ...even in a security-conscious society such as Israel, the military budget is being used, at the margin, to manage the economy and provide a convenient climate for reelection. As for the relationship between electoral cycles and military spending ..., the domestic defense budget in Israel grows as elections approach.

In regard to the way the elections influence defense spending, they later conclude that:

> Elections influence the timing of increases in military spending more than magnitude of military spending. (Mintz – Ward 1991, p.151)

3. Public opinion

Although all defense planners always define potential threats to justify their estimates of necessary defense spending, these considerations become vague and diffuse once they enter the arena of politics. In politics, the defense question seldom enjoys a nonpartisan analysis. It generally enters as a governmental request for an increase or decrease in the next fiscal year's defense budget. Depending on the legislature's decision, it leaves the political stage as nearly intact as proposed, or with substantial changes.

The decision of the legislature in any democracy has to reflect – at least dimly – the prevalent public opinion.

> In a democratic society electoral competition normally ensures that in the long run some correlation exists between what the public wants and what the governments provide. (Looney and Mehay 1990, p.26)

Since, however,

> ...few democracies can be called perfect, the situation often involves the power and attitude of opinion leaders and special interests and the intensity of their lobbying efforts. (Abolfathi 1978, p.127)

Looney and Mehay (1990), studying U.S. military spending, observed a somewhat lagged relationship between public opinion favoring cuts or increases in defense spending, and actual authorized spending. They concluded that spending began to recover after the so-called 'Vietnam syndrome' (a strong popular opinion favoring smaller defense expenditures)

> ... well before those favoring increases began to outnumber those favoring cuts. However, the plurality favoring more spending peaked in early 1980, about 5 years before total authorizations peaked. Indeed the Reagan administration (and Congress) continued to increase total authorized allocations for about 3 years after the public shifted back to favoring less defense spending. (Looney and Mehay 1990, p.27)

In all countries, public opinion favors strong defense ..., but in most cases the public does not happily pay for it. Military spending is viewed as a necessary evil. Like accident insurance premiums, it has no immediate and perhaps no future benefit but could be of great value in the event of war. However, the goals of military spending are not only defense or offense. There are many more complex reasons why statesmen support unproductive military spending.

Attitude structures of the general public and the political leaders towards the military and their perception of external threat may also encourage or inhibit military spending. Elite and expert opinion on national security is many cases are far more influential than actual threats to national security. Opinion leaders frequently are capable of generating interest in even relatively minor threats and create far more concern than appears reasonable to more objective observers.

Not only the threatening events that were occurring in the real world, but also some domestic developments and especially media releases have major impact on the public perception of external threat. (see figure 1) The information easily accessible to the public on its major adversaries is usually distorted, so the changes in actual external threat cannot be expected to have a very close direct relationship to the changes in public perception of external threats. A study examining the impact of the external threat and the public opinion on the U.S. military spending suggests that public opinion frequently had no relationship to the more objective indicators of external threat (e.g. media hysteria about Sputnik had more impact on public perception of external threat than the actual developments of Soviet missile technology) (Abolfathi 1978, p.21).

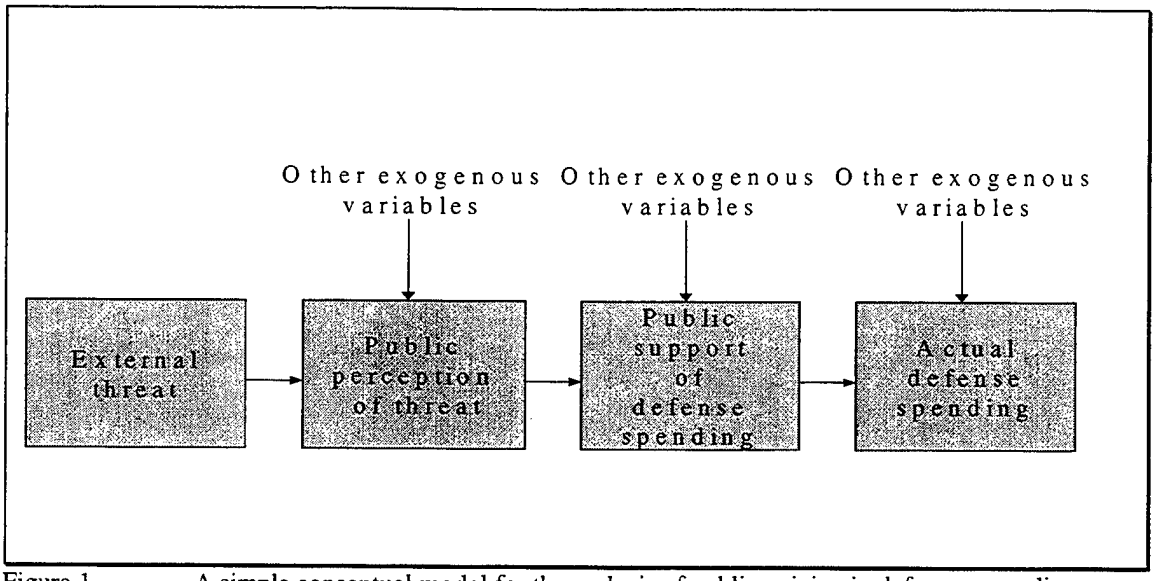

Figure 1 A simple conceptual model for the analysis of public opinion in defense expenditures (Source: Abolfathi 1978, p.20)

The questions concerning what degree public opinion can perceive external threats and to what degree this can generate public support for defense spending are of extreme interest in analyzing the determinants of military expenditures. In analyzing the public perception of external threat Abolfathi (1978) found that in the U.S. during certain periods when the alarms were high the public did respond in the expected directions: public perceptions of threats (whether real or imaginary) increased concern for U.S. security and led to support for greater defense spending. At other times, the public usually became unconcerned with defense and supported lower military spending.

4. Other political factors

Internal violence may also be significant determinant of defense expenditures. The difficulty of collecting appropriate, valid, and reliable indicators of internal violence however may encumber the observation of this relationship. Abolfathi (1978) uses the following indicators (among others) to measure interstate violence:

- Ethnic and linguistic fractionalization
- Number of deaths from domestic violence.

Abolfathi (1978, p.37) concluded that domestic violence seldom affects military spending except when it approaches extreme levels, such as an extended civil war. He explains this observation by suggesting that

> ...most countries have enough weapons and manpower in their military stocks to deal with most small-scale civil conflicts.

The traditional wisdom suggests that alternative forms of government cause higher defense expenditures compared to multiparty liberal democracies and the highest defense expenditures can be observed in monarchies. Hewitt (1991) compares the defense expenditures of multiparty democracies to other forms of government and concludes, that alternative forms of government cause higher defense expenditures. The highest expenditures were observed in monarchies.

Some countries however provide surprising results. Franco (1994) observed that over the 1972-1988 period (an era of military rule in a wide array of Latin nations) the percentage of GDP allotted to military expenditure was less than in any other region of the world.

The political strength of the military establishment is a relevant civil-military factor when the defense expenditures are determined. Latin-America again provides an outstanding example: defense expenditures, as a percentage of GNP, increased during the mid-80s economic crisis in Latin-America because the military establishment was able to maintain the absolute value of their budget during periods of economic decline.

In Hungary, with the end of the Cold War, the collapse of the Soviet Union and fairly consolidated foreign relations within the region it became increasingly difficult for the military to claim additional resources for its traditional role of combating an external enemy. The power of the military to claim scarce resources compared to the bargaining power of competing interest groups significantly declined.

The public credibility of the military could also be a determining factor of the defense expenditures. As suggested by Abolfathi (1978, p.3):

> From the viewpoint of individual nation states, or more correctly their leaders, elites, and citizens, the main function of military forces and the funds spent on their maintenance is to deter other nations or hostile parties from threatening national interest and sovereignty.

In Argentina, for example, the decline of defense spending in the mid-80s was precipitated by the military's loss of public credibility following the Malvinas-Falklands War (1982).

Participation in war and warlike activities usually increase defense expenditures. Both rich and poor countries in times of crisis temporarily increase their military outlays, sometimes to unsustainable proportions of the national product. For example, both Israel and Egypt in the early 1970s devoted up to 40 percent of their GDPs to military purposes according to the SIPRI estimates.

In many cases outlays fall once the immediate crisis is past. The proportion of GDP allocated to military spending in different countries and regions of the world can be expected to rise and fall periodically in response to the development of interstate or regional crisis as well as the overall level of worldwide tension. Interestingly, Domke (1991, p.28) did not find any relationship between changes in French defense spending and operational activities in Algeria and Suez, nor in the British defense spending and military actions in Suez and the Falklands. In the same study, however, he found that for the U.S., in the 1955-1985 time period, tension and war involvement far outweighed the impact of economic variables and one can not find fiscal constraints on defense spending. (Domke 1991, p.30)

In the cold-war era the relationships (economic and military ties) of Third World countries with the superpowers (the United States and the Soviet Union) were also frequently cited as a major factor in the military spending.

Domestic (sometimes merely parochial) political concerns may also limit reductions in military spending, as evidenced by the US congressional resistance automatically generated by any effort to close military bases in the United States.

Other special historical/political factors may also affect a countries defense spending. As observed by Assmus and Zimmermann (1990, p.124):

> The basic limit to Germany's defense spending is by all means the special nature of its recent history. Naturally the prospect of rearmament provoked suspicion and emotional conflicts among the future allies, and an ambivalent attitude among the German people itself.

5. Summary of political variables

The level of defense expenditures is a measure not only of a country's military strength but also the social role of its military establishment and the public opinion about the military. The defense budget is the most important tool in the hands of politicians to exercise the civilian control over the military. The decision to allocate resources for military end use is essentially political and not economic.

Many studies were published about the political factors influencing the level of military expenditures. These studies address the new role of the military in democracy within the constraints of shrinking public resources and the uncertain shape of contemporary security threats.

Debates about the distribution of the so-called peace dividend tend to attach primary importance to the financial consequences of the political and military decisions (i.e. the level of defense expenditures) and to what happens to taxpayers' money.

F. MILITARY/STRATEGIC VARIABLES

1. Military/strategic factors in general

A decisive influence on the demand for military expenditures derives from the military factors themselves. The principal dynamics behind the determination of the defense sector's endeavor for an optimal spending level is the evaluation of the state's security position. This position reflects a favorable or unfavorable balance between the perceived 'threat' on one side, and the country's own capabilities in combination with the spill-in effects of allies on the other.

Military strategies involve a plan to meet an objective by the use of military resources, and therefore necessarily involve the examination of various specific force alternatives. From a military/strategic point of view the level of defense expenditures will mainly depend on the level of deterrence capability the country consider necessary in order to remain credible. The military goals of nations with worldwide military presence have always been more complex than of nations with more limited capability.

> Spain and Portugal during the seventeenth century, Britain and France during the eighteenth and nineteenth centuries, and the United States and the Soviet Union during the twentieth century have had far broader and more complex goals than those of other nations. (Abolfathi, 1978, p.10)

Military objectives are best understood if they are viewed as the means for achieving or pursuing the more general foreign policy goals. However, Abolfathi (1978, p.5) observed that military policies sometimes become ends in themselves after having served their purpose in the pursuit of some former foreign policy objective.

Each country must independently decide how the army is to be raised, trained, and financed. Even in NATO there are essentially nineteen different systems of enlistment, training, career development, weapons procurement and budgeting, not to mention nineteen different ways of structuring and equipping military forces.

It is also very unlikely that the military goals of any country will remain unchanged for an extended period of time. As interests and capabilities change, military force requirements will change. When military force requirements increase numerically or become more complex, military budgets generally increase.

However, there may be some general military goals, which stay unchanged for a significant timeframe. More specifically with respect to the United States, Abolfathi (1978, p.6) listed the following major military goals:

- The national security of the territory of the United States and the U.S. overseas possessions;
- The safety of U.S. citizens and the security of U.S. –owned properties abroad;

- The protection of U.S. commercial activities on the high seas, such as fishing and shipping.

In addition he identified a number of secondary goals:

- The stability of governments friendly to the United States;
- Cooperation with the military allies of the United States;
- Cooperation with the governments of countries that are of strategic value to the U.S. security.

Although this list was written more than 20 years ago the basic principles seem to be unchanged.

One can also identify some other military/technological variables affecting defense expenditures. Factors, like the increase in price of modern weapon systems, increase in wage rate of military manpower, and investment requirements of new technology and increasing complexity of modern weapon systems can inflate military expenditures.

2. Military determinants of Hungarian defense spending

Hungary's joining NATO coincides with long-needed reforms, which should have taken place without the accession. However, integration into the Euro-Atlantic Alliance from the very beginning helps the modernization of the HDF.

In its 31 March 1999 report the UK House of Commons Defence Committee observed:

> The efforts of NATO's three latest members to enter the Alliance as producers, rather than mere consumers, of security have been commendable and more substantial than we might have expected in the time available. The Czech Republic, Hungary and Poland ... have changed force postures and deployments, reformed systems of training and education and made substantial progress in producing the legislative framework required to make democratic, civilian control a reality. (Kemp 2000, p.1)

Integrating three former Soviet satellite states into the NATO military alliance will take more than buying new planes, tanks and other equipment. It will mean undoing nearly five decades of Soviet military culture that penalized innovation and initiative and left the armed forces of the three countries more accustomed to taking orders than giving them. Poland, Hungary and the Czech Republic not only are burdened with aging Soviet weapons, trucks and other gear for which there are now few parts or replacements, they also are struggling against training and tactics once dictated by Moscow that are at odds with Western practice. Changing the military culture - raising and training government advisers skilled in defense policy along with officers and sergeants able to lead troops independently in battle - will take time. Replacing Soviet equipment and repairing the scores of military airfields, warehouses and barracks across Central Europe will take money.

The organizational changes facing the Hungarian defense forces with the accession are just as dramatic. The imbalance inherited from the HDF's Warsaw Pact membership was both geographical and structural. After the end of the Cold War, the concentration of forces in the western and southern parts of the country necessitated a redeployment of the military forces. Other inherited structural imbalances have been the oversized command structure, the disproportionate size of the combat units, and the excessive number of logistical and training units. The Hungarian Army was the first former Warsaw Pact member to introduce a corps/brigade structure in place of the Soviet regimental system. Moreover, restructuring had to reflect a shift from an offensive to a defensive orientation for the HDF. In line with NATO procedures the HDF will be organized to comprise immediate reaction forces, rapid reaction forces and territorial defense forces. Rapid reaction forces must be able to act independently at home or as a member of a NATO-led operation abroad.

One large problem, with which some other NATO countries also struggle, is that almost half the budget is still being spent on personnel. Starting in the mid-1980s with almost 150,000 active personnel, the armed forces are planned to total 45,000 at the end of 2001. The HDF's peacetime strength will be roughly 0.45 per cent of the overall

population of 10.3 million inhabitants. This corresponds to the lower end of the norm of other European countries (0.5-0.9 per cent) and is far below the troop ceiling of 100,000 allowed under the CFE1a agreement of July 1992. Streamlining is accompanied by efforts to enhance the performance and to raise gradually the share of professional soldiers. Thus, the proportion of professional and contract soldiers for handling highly sophisticated weapons systems has been increased. Conscripts now serve nine months, which may fall to six, and their numbers have fallen to 40 per cent of the total. According to the plans, a further decrease of conscripted military personnel will happen in the medium term. This quantitative trend is reinforced by the fact that an increasing number of operational units are composed of professional soldiers. The long-term goal of a fully professional army has been confirmed by political and military leaders, but it seems quite remote in the current financial situation. (Although some attempts to apply a cost benefit analysis to compute the opportunity cost of conscription demonstrate that the economic argument in favor of the cheapness of conscription is not undebatable.)

During the course of the transformation process, Hungary shall rethink and redefine the missions of the Hungarian Defense Force (HDF). There are three tasks that await the HDF:

- the protection of territorial integrity, sovereignty, population and material assets of the nation
- participation in crisis management operations led by international organizations
- contribution to the collective defense efforts of NATO Alliance.

The HDF has two services: the ground forces and the air force. The forces are grouped into two main areas: reaction forces and main defense forces. It is envisaged that the reaction forces in the future will only have professional or contract soldiers (i.e. no conscripts), while the conscript service will be kept at list in the mid-term to carry out the basic tasks of the main defense forces. The planned ratio is 60% professional and 40% conscript force.

The geographic position of Hungary relative to its allies (i.e. the distance separating it from the armies of NATO countries) has also crucial importance.

The level of Hungarian defense expenditures also depends upon the military doctrine and philosophy of the enlarged, reformed NATO Alliance. As observed by General Vegh:

> Mass use [of force] was the philosophy of the Warsaw Pact. NATO has quality. The Warsaw Pact had quantity. Quality is really the solution because with quality you can get less injury and less death on the battlefield and you can fulfil the task more efficiently. (Wright, 1998, p.3)

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V. A FORECAST OF THE HUNGARIAN DEFENSE EXPENDITURES

The previous chapters have provided a set of theoretical and empirical analysis of the causes and effects of defense expenditures during the cold war and in the decade following it. That is, their conclusions are based on the past. The intent of this chapter is more speculative: based on the findings of the previous chapters, it is aiming to summarize the factors working to increase and to decrease Hungarian defense expenditures in the near future, and to provide a mainly qualitative forecast of the Hungarian defense spending.

Considering the findings of the previous chapter, Hungarian defense spending faces a critical period. In this era of uncertainty, on thing is certain: the political battle over the size and shape of the Hungarian defense forces, and defense budget will be no less intense in an era of economic change. There will be a significant political and military pressure from our NATO allies (particularly from the United States) to increase financial contribution to the common security infrastructure, expressed in terms of the level of military expenditures. Contrary to the external political and military demand, however, there will be a growing internal economic and political pressure to reduce the defense burden. This pressure reflects the almost classical guns-versus-butter issue, but in addition, it represents the public perception of a decreasing external military threat in a generally warming Eastern European climate. It is more and more difficult to explain to the public the logic behind military preparedness or the necessity and rationale for an expansion of military spending.

Soviet and Eastern European defense commitments were, relative to world standards, enormous. Although the variation of military effort in the WTO states was real and important, even Hungary and Romania extracted more resources and performed more military-related activity than the most nation-states. Some of the social and economic consequences were

> ...diminished social spending, depleted human and material resources, and stunted technological innovation or diffusion outside the defense industries. (Nelson 1990, p.66)

The post cold war Hungarian security policy has been dominated by a renewing need to adapt to the changing geo-political situation. The process of adaptation was not smooth. There was deep ambivalence about the appropriate relationships to Europe, to the NATO and to Russia in particular. Economic performance was also a constant constraint on security and defense policy.

One should keep in mind that the future Hungarian defense budgets will be formed and used in qualitatively different context. Some of these changes are already in place, like the changes:

- in external threats
- in membership in military alliance (by the NATO membership)
- national economic performance
- escalating costs of advanced weapon systems.

Other changes are still ahead of the country, but will probably happen in the near future, like:

- further domestic economic modernization
- substantial participation in the Western European economy (membership in EU)
- further improvement of the regional stability and international confidence.

A. FACTORS WORKING TO INCREASE THE DEFENSE EXPENDITURES

Hungary's new responsibilities as a NATO member work to increase the country's defense expenditures. In that regard, politicians can rely on the popular support expressed by the fact that in a referendum held in November 1998, more than 85% of those who voted backed Hungary's candidacy for NATO membership.

As accepted by Hungary in the letter of intent at the NATO accession:

> The Republic of Hungary undertakes to allocate sufficient budget resources for the implementation of its commitments upon accession to the Alliance.

Most technical equipment and installations of the HDF have become obsolete, and the circumstances of the country's military personnel have continuously deteriorated. The forces of Hungary will have to undergo an especially thorough and expensive modernization process to make up for their obvious obsolescence, caused primary by long-term neglect, but also by shortages of funds in the early stages of the political transformation. As observed by Gorka (1997):

> After fuel has been bought for aircraft and vehicles and the essential work has been done to keep them running, very little money remains for activities such as R&D. (Gorka, 1997, p.198)

Eastern Europe's defense industry is reaching a critical point in its 10-year battle against declining defense budgets, strong competition from Western Europe and the USA, and requirements which need to be NATO-compatible. However, there are already relatively minor procurement programs in the Hungarian military, such as replacing the defense force's 17,000 non-combat vehicles, the order for which will probably go to a Hungarian vehicle maker (Raba). The military orders can strengthen the Hungarian defense industry, and it can also lobby to increase the level of military spending.

Further down the line, the air force will need to replace its aging Mig-21fighters with around 30 more modern aircraft, although it is unclear how the Ft 400bn ($ 1.84bn) bill for new fighters will be met, despite the commitment, to raise defense spending by 0.1 per cent annually.

The structure of the armed forces needs to be adapted to the existing military threats in the contemporary security situation in such a way that it meets the minimum requirements for defense, financing and NATO accession. Reform does not simply mean a reduction in numbers, but also a regrouping of forces and assets, an adaptation to the new security situation and new international tasks. The objective of the reform is to bring about an armed force that is in line with the load-bearing capability of the country, one that has a credible deterrent force, can be integrated into NATO, and is smaller but more

modern. The troop levels and degree of readiness of the HDF have to be adequate for deterring armed aggression by rendering its outcome hazardous to any potential aggressor. This means contemplating the prospect of failure and also of defending the country effectively, involving counter-attacks when necessary, if deterrence should fail. On the other hand, the HDF's defense potential has to be in keeping with international agreements, such as the CFE and CFE1a treaties.

With no foreign troops stationed on its soil and no immediate threat, Hungary is in a relatively secure position. Nevertheless, Hungary has long been at the crossroads between east and west and subject to invasion. Moreover, the country borders former Yugoslavia, the scene of the bloodiest conflicts in Europe since the Second World War.

B. FACTORS WORKING TO DECREASE THE DEFENSE EXPENDITURES

In the cold-war era, the existence of a clearly recognizable threat made it easier to argue for relatively high defense budget. Today, after the disappearance of the former rivalry between to mutually opposed geopolitical blocks, lacking an obvious threat and not knowing for sure what future threats to prepare for, political and especially economic considerations more strongly impact the cost debate.

The probability of an unexpected large-scale attack against the territory of Hungary is very small, given the current level of confidence building contacts and agreements and the technical means including airborne surveillance to detect major trop movements. Moreover, the dissolution of the Soviet Union has resulted in a decline in the military potential of the Central and Eastern European region. Any changes within this zone would provide a clear warning, allowing enough time for necessary preparations.

Moreover, as opposed to a military standpoint, from a budgetary point of view the time factor has crucial importance, since not the total cost, but rather the level of annual expenditures, which is of primary significance.

In conclusion, it seems likely that Hungarian defense policy will continue in the same mode, reactive rather than directed; dominated by the need to respond and adapt to changing external circumstances and requirements (economic, geopolitical, technological

and military), and to changing internal constraints. Moreover, social welfare programs are so closely linked with social peace and the stability of the newborn democratic order that they are almost sacrosanct. The ruling center-right coalition, although winning electoral success by its strong commitment to fundamental reforms of the welfare infrastructure, is not willing to make major reductions in social benefits.

Under these circumstances the pressure from the social-economic side will not leave any room for a significant increase of the defense spending in real terms during the next decade. Moreover, even military strategist should take into consideration that higher defense burden will not necessarily benefit security if it denudes the country of resources that might be used to consolidate economic transformation.

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VI. CONCLUSION

A. SUMMARY

Most analysts operationalize the concept of defense burden by dividing a country's total defense budget by its GNP. There is, however, no shortage of alternative measures, such as defense spending per capita, defense spending as a percentage of the government's total budget, the rate or amount of change of defense spending. Naturally, the impact of economic, political, and other variables on defense spending (even the ranking of the countries according to their defense burden) is quite different, depending on which of these measures is used in an analysis.

Defense expenditures are determined by a combination of economic, political and military variables. The economic factors are the obvious starting point in most studies on public expenditures. The national income and its growth rate represent important determinations of defense spending.

Evidence suggests that economic strength is a factor contributing to the determination of military spending, but not the only one. Another significant driving force behind military spending is the power and leverage of the armed forces relative to other national actors. Countries with powerful armed forces tend to spend heavily on the military. The degree of transparency in military procurement, outlays, and other budgetary considerations is also important. The more transparent this process becomes the less likely the military budget will be inflated. The size of the military budget is conditioned by geo-strategic concerns both at the regional and international levels. Finally, increases in military expenditures reduce the availability of funds for socio-economic development projects. In short, increased military spending seems to adversely affect efforts for economic development and thus should be contained.

Both rich and poor countries in times of crisis temporarily increase their military outlays, sometimes to unsustainable proportions of the national product. In many cases

outlays fall once the immediate crisis is past. The proportion of GDP allocated to military spending in different countries and regions of the world can be expected to rise and fall periodically in response to the development of interstate or regional crisis as well as the overall level of worldwide tension.

Several factors contributed to the decline of Hungarian defense expenditures in late 1980s and early 1990s. With the end of the Cold War, the collapse of the Soviet Union and fairly consolidated foreign relations within the region, it became increasingly difficult for the military to claim additional resources for its traditional role of combating an external enemy. Things went so badly for defense budget that some experts stated that the training of pilots was no longer sufficient to guarantee even their own safety. The power of the military to claim scarce resources compared to the bargaining power of competing interest groups significantly declined.

In addition to these political factors, economy has been the primary force driving Hungarian defense expenditures. It was found that during the 90s defense expenditures were expanded and shrank in line with the general trends of the economy.

As declared by the National Assembly of the Republic of Hungary:

> The invitation [to NATO] represents a recognition of Hungary's achievements in the fields of democratic transformation, social and economic development, the establishment of a market economy and of creating stability in the region of Central and Eastern Europe.

The ongoing reform of the Hungarian Defense Forces is aimed at creating a modern national defense force. The military reform must address the new role of the military in democracy within the constraints of shrinking public resources and the uncertain shape of contemporary security threats.

The reform is being carried out in compliance with the requirements of interoperability with NATO forces. Hungary is able and willing to take its fair share of the Alliance's common burdens through allocating the financial resources necessary to that end as well. The country's forecast sustainable economic growth and the planned increase in the ratio of defense expenditure to GDP provide the solid foundation for fulfilling this commitment.

In summary, however, due to the internal economic and political pressure on defense spending, remarkable real increase in Hungarian defense budgets are most unlikely and should not be part of any considerations on future defense strategies. Moreover, there are few grounds to believe that the force improvement and upgrading in Hungary, apparently dictated by external pressure and internal need, will exceed any minimal sufficient level. Some limited savings can be achieved by cutting small amounts from a range of programs and postponing dates for development and/or deployment. There may be some efficiency savings (particularly in the procurement), but identifiable savings are small relative to the size of the modernization needs.

B. RECOMMENDATIONS

The end of the Cold War marked an increase in interdependence and transnational relations. The challenge is two-fold: how to acquire more responsibility for global defense as part of increased participation in international economic relations; and how to manage national defense without reversing the movement towards regional integration. In sum, the World should build a cooperative regime. These agreements will soon include issues like cooperative defense in order to reduce military spending and collective production costs. As suggested by Dr Istvan Gyarmati:

> We think that Hungarian national defense can be provided at a much lower cost and that security and stability in the region can be better ensured if it is provided in a co-operative manner. (Bunten, 1997, p.21)

The general modernization of Hungary's defense system would involve costs far exceeding the current budget of the MOD. Even planned significant increases will not alter this fact. Therefore a long-term program has to be adopted to solve the financial dilemma: either to increase the budget of MOD radically (the political support for this step is at least questionable), or else to create a special central budget to finance the army's modernization. The ongoing process of introducing a fully democratic political and military order in Hungary can be completed by the end of the first decade of the 21st

century. When these crucial tasks are finally implemented, Hungary's defense expenditures may take a downward trend, providing more room for other governmental initiatives, and the country will be able to enjoy the resulting peace dividend.

Although the criticisms concerning military reform in Hungary have often been truthful and appropriate, it is easy to forget that the task, faced Hungary and other Eastern-European countries is historically almost unprecedented. It is therefore unwise to expect progress in defense reform to exceed the progress made in general democratic and economic reform. Even so, it appears that Hungary, has done a lot in the short time since 1990 to demonstrate its true will and has convinced NATO that it will not be simply a security user but also a contributor.

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