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SPAIN AND NATO: THE PRICE OF AN ALLIANCE

by

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WEST EUROPE REPORT

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SPAIN AND NATO: THE PRICE OF AN ALLIANCE

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[Second edition (September 1981) of the book "OTAN y Espana: El Precio de una alianza" by Angel Lobo Garcia, a career officer in the Calvary, a Command and Staff graduate from the United States Army, a Ph.D. in economic sciences and a professor of econometrics at the Autonomous University of Madrid; it is based on his doctoral thesis ("Economic Consequences of NATO Membership," July 1980), which was deemed "outstanding cum laude"]

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[The nine annexes included in the original have not been translated]

Introduction: Purpose of This Study

"The gauging of force is determined by the government, and military action begins with this determination, because it is an essential and completely strategic matter." (Von Clausewitz, "On War," 1831)

Spain finds itself at a crucial juncture in the determination of its future security system, a system that must be commensurate with the direct and indirect threats to national security, with its geostrategic location in the context of international security and with the interests of a foreign policy that is in keeping with the political role that Spain would like to play in the world. In light of this situation, the various security models that we could consider can be summarized in three distinct options: Spain could choose to continue its bilateral security relations with the United States, based on the 19 July 1974 Hispano-American Declaration of

Principles and on the 24 January 1976 Friendship and Cooperation Treaty between the United States and Spain; or it could decline to renew this treaty and pursue a policy of neutrality, or finally, it could decide to join a multilateral collective security alliance.

The appropriate national authorities must analyze the advantages and disadvantages of each option and choose the one that insures the highest level of security compatible with national sovereignty and the country's economic potential. Therefore, economic considerations are additional factors to be analyzed in the decision-making process.

The European security balance, or perhaps more accurately the security balance between the United States and the Soviet Union, in an alliance with certain European nations that benefit from it, rests on the existence of two blocs, the Atlantic Alliance and the Warsaw Pact. Inserted physically between the two blocs is a belt of neutral nations, which running from north to south are Finland and Sweden, Austria and Switzerland and Yugoslavia and Albania. This does not mean, however, that there is no border contact between the blocs: Russia with Norway in the north, East Germany and Czechoslovakia with West Germany in the central zone and Russia and Bulgaria with Turkey and Greece in the south.

Spain lies to the west of this belt or hinge and, therefore, on the side of the Western bloc and in the rear guard of the zone that this bloc forms in Europe. Therefore, both because of its geographic location and its political and economic system, it stands to reason that in looking at the option of joining a multilateral collective security alliance, Spain should consider the possibility, among others, of becoming part of the Atlantic Alliance. By keeping Spain within the framework of the West, this would enable it to maintain security relations in a much broader and more heterogeneous context than the current exclusive bilateral relations with the United States, which are imbalanced because of Spain's clear-cut military inferiority to the American superpower.

The Democratic Center Union (UCD), the party now in power, has advocated joining the Atlantic Alliance as the best option for national security. It has stated this officially at its two national congresses, in October 1978 and February 1981, and in its government program submitted to the Congress of Deputies by its presidential candidate, Adolfo Suarez, before he took office.

We feel, therefore, that it is of interest to analyze the economic component that this option would entail.

Sanchez-Gijon, a Spanish specialist in security matters, refers to this economic factor in his book "Spain in NATO" and states: "An alliance ought to be joined, above all, to serve the interests of the State. What this entails is defining Spain's membership in terms of enhancing national security at the lowest possible cost, albeit as a contribution to enhancing stability, which Spain is also interested in."

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Gen Manuel Diez-Alegria, who is today the president of the Institute of International Issues, has also referred to the economic component involved in joining the Atlantic Alliance. In statements to DIARIO 16 in connection with Spain's potential entry into NATO, he said, among other things: "It has an economic facet, inasmuch as membership is going to cost money."²

How much would it cost to join the Atlantic Alliance? The issue is worth considering, and we hear widely diverging opinions on it. According to newsman Felix Ortega, "authorized spokesmen, such as the minister of foreign affairs in 1970, Gregorio Lopez Bravo, have pointed out that joining NATO would mean doubling Spain's budget,"³ and the same journalist, after a brief analysis, reaches the conclusion that joining NATO would require "more than a doubling of military spending." In his analysis he notes that Ruth Leger Silvard pointed out in "World Military and Social Expenditures" in 1974 that NATO military spending averaged about three times higher than Spain's military expenditures.

Moreover, in his book "Spain in NATO?" Alvarez de Castro⁴ asserts: "If Spain were to join NATO, in addition to having to double its general budgeting for defense, it would be forced to make an initial and immediate outlay of \$600 million in order to place its status on a comparable footing with the rest of the allies. I do not have to stress how burdensome it would be in the current economic crisis to make investments that would not enhance our defensive system, not be channeled at all towards our real national defense needs and represent further overseas borrowing and indebtedness to add to our existing dependency."

The magazine LA CALLE, whose ideology is well-known, has written that "Spain would have to spend 750 billion pesetas to get its defense spending up to the level of the other organization member states," adding later that "contributing to the NATO infrastructure and to maintaining Spanish units stationed in northern and central Europe would be a terribly onerous burden for the national economy."⁶

Two well-known Spanish Socialists have gone on record as follows: Felipe Gonzalez asserts that Spain's membership in NATO would entail "too onerous an economic burden,"⁷ and Mugica Herzog has written that membership "would entail an increase in spending that, given the current economic crisis and the many needs to be met with scant resources, we would be unable to manage."⁸

GRIP, a Belgian group of mainly Socialist students and newsmen, contends that if Spain were to join NATO, it would have to modify its Armed Forces organizationally and technically and spend some \$800 million to transform its infrastructure, plus \$40 million a year on maintenance.

Nevertheless, Sanchez-Gijon says: "Contrary to what is being said and believed, Spain's incorporation into NATO does not necessarily entail any increase in defense spending,"¹⁰ and former Foreign Affairs Minister Marcelino Oreja, in a speech on the administration's foreign policy, told the Senate on 9 March 1978: "A country does not necessarily have to make an economic contribution

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to the (Atlantic) Alliance; in the event that Spain should join NATO, it would not necessarily have to make an economic contribution nor, in general, any expenditure not for its own national defense system. There is a great deal of talk about how much it would cost Spain to join the Atlantic Alliance. This is something that we would have to take an accurate look at, because there has been some degree of flippancy in comments, statements and approaches."

These examples clearly illustrate the differences of opinion on the issue, reaffirming why it is important to delve carefully into it and analyze in depth the economic component actually entailed in joining the Atlantic Alliance.

This economic component is usually approached from the standpoint of the economic obligations that Spain would contract, in other words, the rise in spending that would result from membership in the Atlantic Alliance. How much does NATO "cost"? often seems to be the sole economic concern related to membership. But the economic factor involved in membership does not necessarily have to be considered solely and a priori from the standpoint of increased spending, because there could be economic implications of a different kind. The title of this book could thus be "Economic Consequences of Joining NATO," because it seeks to analyze, in addition to the expenditures that joining the alliance would entail, the other economic consequences, both advantageous and disadvantageous, although we will try to circumscribe them mainly to the defense sector, which is preponderant in NATO.

There are consequences in other fields, and in theory they could be major ones, if we are to go by Article 2 of the North Atlantic Treaty, which says: "(The parties) will seek to eliminate conflict in their international economic policies and will encourage economic collaboration between any or all of them." The reality has been quite a bit different, however, as was made obvious at the outset of the oil crisis in the 1970's, when the attempts at coordination in developing a joint policy failed, and each country pursued a policy towards the OPEC countries that was to its own individual advantage and that it felt best safeguarded its own economic interests.

There is a desire to settle economic differences that might have political or strategic repercussions that are damaging to the alliance. A clear example of this was the outcome of the dispute between Great Britain and Iceland, the so-called "Cod War," in which the Atlantic Council exerted pressures in favor of Iceland, the weaker party. Participation in the various NATO forums undoubtedly facilitates an understanding in all spheres of diplomacy and, therefore, in economic matters, as can be seen in the desire of Greece, Portugal and Spain to join the EEC, all of whose member states belong to NATO, except Ireland. Greece has already joined the EEC, and Portugal could get in before Spain, according to the forecasts of the European Commission as outlined in the publication EUROPE (February 1981).

Moreover, the Atlantic Alliance is definitely interested in seeing its economically backward members progress, although attempts are not made, accordingly, to organize economic development assistance programs within NATO. Rather, the Alliance's interest is reflected in a desire for information on the

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development programs that each country is pursuing, programs that NATO analyzes from the standpoint of their compatibility with the Alliance's common interests.

There are also economic consequences from the scientific and technical cooperation organized within the Alliance. NATO has a scientific committee whose function is to promote programs of cooperation in the areas of high scientific priority. To this end it makes use of fellowships for research cooperation, meetings and conferences of experts, visits, etc. We can get an idea of the extent of these activities from the estimate that some 100,000 persons have taken part in the so-called NATO Science Program, which has an approximate annual budget of \$9 million, broken down into science fellowships, research grants and programs at institutes of advanced studies. But despite the general interest of these activities, their economic consequences for each individual country are of very limited scope, and we consider them insignificant in comparison to the consequences of the defense sector, the main facet of NATO.

This book does not, furthermore, seek to address the most remote consequences for the country's general economy. Such consequences, which are predominantly political, can hardly be treated in a study that is primarily economic in its approach. General Haig has stated in connection with the possibility of Spain's joining NATO that there is a correlation between military security and economic development, and therefore Spain's membership in the Atlantic Alliance would have a favorable impact on Spanish stability and be an incentive for foreign investors. This judgment involves a different sphere, outside the aims of the present work.

We will try to analyze here the economic obligations that Spain could contract by joining NATO and the consequences that membership could entail in terms of defense spending and military logistics.

We are now going to analyze the available Atlantic Alliance membership "statuses" so that we can thus employ one of them as a working hypothesis for Spain.

The North Atlantic Treaty or the Treaty of Washington, which established the Atlantic Alliance, was signed in 1949 by Belgium, Canada, Denmark, France, Great Britain, Holland, Iceland, Luxembourg, Norway, Portugal and the United States of America. Greece and Turkey joined in 1952, and West Germany in 1955. The 15 nations have signed the same treaty, the essence of which can be summarized as their pledge to consult each other if the security of one of the parties is threatened and to consider an armed attack against one of the member countries as an attack on them all, in which case each one would undertake the action that "it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area," according to Article 5 of the treaty.

Not all of the countries are members of the Alliance under the same conditions, however. There are different situations within the framework of the joint pledge, because certain countries maintain a peculiar status that differentiates them from the others. In principle, the economic commitments that would

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stem from signing the North Atlantic Treaty depend on the manner in which membership is proposed.

France is the most unusual case, ever since it decided in 1964 that its Armed Forces would withdraw from the Alliance's integrated military command. We often hear that France belongs to the Atlantic Alliance today but not to NATO, which is not true, though even authorized spokesmen are heard to say it. Nevertheless, this is at times merely a simplified, imprecise way of referring to France's peculiar "status."

It bears clarifying that the 15 member countries belong to the Atlantic Alliance and to NATO. The "Atlantic Alliance," or more precisely the North Atlantic Alliance, is an "alliance" or "entente" among 15 countries that have set forth their commitment to an alliance in a written pact called the North Atlantic Treaty. Article 9 of this treaty provided for the creation of a council and the subsidiary bodies needed to establish and develop the agreed upon alliance. The group of bodies that were set up make up the "North Atlantic Treaty Organization" (OTAN and NATO being the French and English acronyms). Hence, NATO is merely the organizational structure of the alliance. The 15 countries have ambassadors and permanent missions to the organization and are full-fledged members of NATO at its highest level, the Atlantic Council.

France's peculiar status is that it participates only as an observer within the organization of the integrated military command, which is subordinate to NATO's highest body, the Atlantic Council, which is civilian.

Therefore, France's Armed Forces do not in any way come under the NATO military command in peacetime, nor are any of its units scheduled to take orders from this command in the event of an emergency, as is the case with other nations. Moreover, French territory is excluded from any permanent assignment of areas of responsibility in NATO preparations and planning. But France is present in almost all civilian bodies (though conspicuously absent from the Defense Planning Committee), is subject to all of the provisions of the North Atlantic Treaty, continues to take part in numerous agencies financed under the so-called NATO Military Budget and maintains observers and liaisons in the organizations of the joint military command.

In the wake of its armed combat with Turkey on the island of Cyprus, Greece withdrew also from the Defense Planning Committee in 1974 and rescinded its Armed Forces commitments to NATO in peacetime, although it kept its representative to the military command organization and still contributed to the so-called "Military Budget." After heavy pressure, mainly from the United States, it has fully rejoined NATO. Because it has no Armed Forces, Iceland is not part of the military organization.

Germany differs from the other countries in that all its maneuver troops are forces "assigned" to NATO, while other countries merely place a given number of units at the disposal of the Alliance command. Norway and Denmark have a special arrangement whereby they do not allow the permanent stationing of foreign troops or the deployment of nuclear weapons on their territory.

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of foreign troops or the deployment of nuclear weapons on their territories. Great Britain, the United States and Canada have placed the responsibility for planning the defense of their territories outside NATO.

Thus, each country individually and sovereignly determines its status of membership in the Alliance, a status that can be reviewed depending on the circumstances, as was the case with France and Greece. Logically, NATO can in theory decide whether or not to accept the status that each country wants, but in practice the general principle of an alliance against a common threat prevails, and therefore this is great flexibility and pragmatism in accepting a wide range of approaches.

Hence, one of NATO's hallmarks is complexity, a complexity that stems from a joint effort to bring together 15 sovereign and independent nations without a supranational authority to impose general rules. This complexity translates into a wide range of agencies and exceptions that are a source of frequent ambiguities and that lend themselves to all sorts of variations and nuances that are hardly suited to simplification. Therefore, signing the North Atlantic Treaty will always be compatible with certain special arrangements for participation in its various bodies.

As far as the economic thrust of this book is concerned, if we leave aside the atypical case of Iceland, only France's status, in fact, entails economic consequences that are to an extent different from the ones that apply to the other countries that belong to NATO.

In this study, therefore, we will build on the hypothesis that Spain would join NATO with a status similar to the general arrangement and we will analyze its economic consequences without delving into the potential nuances that could arise if certain special membership arrangements were agreed upon. Such arrangements would, in any case, entail an in-depth familiarity of the general arrangement, based on which we would deduce the potential differences that could result from the special arrangements, which would be of no great economic consequence.

We will systematize this study by grouping the economic consequences of NATO membership into three major categories, which are:

- Direct repercussions on defense spending;
- Indirect repercussions on defense spending;
- Economic consequences of NATO logistics.

Based on these three distinguishable categories, we will reach certain overall conclusions.

With regard to direct repercussions we will look into the obligations that Spain would contract in the form of a two-pronged annual contribution. The first contribution is to the annual NATO budget for the operations of the Alliance's agencies. The other is the financing of the so-called common NATO infrastructure, which consists of installations for use in the event

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of war, that are of joint interest to the member countries and whose construction and financing are mutually agreed upon by the potential users as part of the general planning of NATO infrastructure.

With regard to indirect impact on defense spending, we will analyze the joint planning system for overall Alliance force levels, which could give rise to commitments relating to the structure of our national forces, and the repercussions that this would have on military spending. This will lead us to compare the economic cost of Spain's defense efforts with other Alliance countries', inasmuch as a significant gap could lead to pressures from other countries to put our defense effort on a comparable footing with theirs. This chapter will also take up the possibility of receiving military assistance or aid to meet the force goals agreed upon in joint NATO planning.

Finally, a separate chapter will be devoted to an analysis of the Atlantic Alliance's logistics and of its consequences for the economies of the member countries, focusing examination of this important aspect on NATO's attempts to rationalize the military hardware of the member country forces and the potential impact of this on their national military industries.

The sought-after quantification is not always possible in an economic study like this. In some cases it is hindered by the confidentiality accorded these kinds of numbers in NATO circles, which precludes access to all of the data we need to conduct a thorough analysis of the magnitudes under study. In other instances, a priori quantification is impossible because it depends on the specific commitments that a nation would contract and on the projects and programs that it would take part in. Nevertheless, there is enough of a data base in some spheres to deduce figures that can serve as reference points for ascertaining the approximate amount of the nation's funds that might have to be allocated. In other areas in which quantification is not possible, we can describe and analyze the characteristics and peculiarities of the issue at hand and thus get an idea of its economic significance or at least forestall potential unsound interpretations that at times lead to distortions in assessing more or less well-founded economic consequences. In any case, we have sought out all of the available figures in these various matters, which will be set forth herein, even if just to indicate the amount of money involved.

In surmounting these difficulties, which at times seem to invalidate the purposes of this book, we have been encouraged by our own perception of the usefulness of delving into this controversial and superficially addressed topic and by the existence of an extensive team of Spanish experts who are well-versed and well-trained in European Community issues, in stark contrast to the lack of economists who are experts in the complexities and problems of NATO and in the consequences of membership in it. This is the time to mention the facilities that Spain's ambassador in Brussels, Aguirre de Carcer, provided the author of this study, thus enabling him to conduct interviews and work sessions at the headquarters of the NATO International Secretariat with Organization officials who are experts in the various topics that will

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be broached herein. It is to these experts' credit that they honored our requests for information and were at all times cooperative and understanding in light of the difficulties involved in providing access to the inner workings of NATO to a person who does not belong to the Organization and is a citizen of a country that is not a member country of the Alliance.

In conclusion, before delving into the study proper, we would like to briefly clarify certain questions of language. NATO documents often refer to the European member countries of the Alliance under the generic term Western Europe or simply Europe, even though this leaves out countries that are not members of the Alliance, such as Sweden or Spain, but that are European and that have economic and political systems which are characteristic of the Western world. For the sake of brevity, this book will use the same generic term whenever the context offers no doubts as to the countries referred to in this abbreviated, incomplete description.

We would also like to note in advance that we will often, for simplicity's sake, use the expression "Alliance" to mean the Atlantic Alliance and the acronym NATO to refer to the North Atlantic Treaty Organization, which we also at times simply call the "Organization," as it is officially referred to in the Alliance, as set forth in the provisions of the "Accord on the Status of the North Atlantic Treaty Organization, National Representations and International Secretariat," dated 20 September 1951, which states in Article i, Section "a": "The Organization means the North Atlantic Treaty Organization, composed of the Council and its subsidiary bodies."

As far as the terms Atlantic Alliance and NATO are concerned, they will be used as synonymous because they are. Some people at times wish to make the subtle distinction that the Atlantic Alliance could be regarded as the political side or the political act, the signing of the North Atlantic Treaty, whereby a country takes on the commitment of an alliance with the rest of the member countries within the context of adherence to common ideals as set forth in the preamble to the treaty, whereas NATO is the military side or the embodiment of the alliance's defensive aim. This misconception has caused Giscard d'Estaing himself to say: "We are not part of the joint peacetime organization, in other words, NATO," when France is a full-fledged member of NATO, as has been previously explained.

We are stressing this because, as has been stated, the North Atlantic Treaty Organization is merely the organizational structure of the Atlantic Alliance and as such encompasses all of the Alliance's civilian and military bodies, including the Atlantic Council, the number one political organ and the supreme embodiment of the political commitment that the member countries have made. Therefore, the preponderantly defensive purpose of the Atlantic Pact is applicable both to the Atlantic Alliance and to NATO. They are, hence, synonymous expressions and will be used as such in this text.

With respect to the quantitative facets of the study, we have attempted to work with confirmed data, not with estimates, and therefore we will employ primarily statistics from the latter half of the 1970's. Whenever possible, we have expressed numerical conclusions in percentages, so that they can be compared to the present.

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FOOTNOTES

1. "Spain in NATO," Antonio Sanchez-Gijon, 1978, Ediciones Defensa.
2. DIARIO 16, 30 May 1979.
3. ARRIBA (daily paper), 3 May 1978.
4. "Spain in NATO?" written by a group from the Spanish Labor Party under the pseudonym Alvarez de Castro, 1978, Manifiesto Editorial.
5. LA CALLE, Issue 118, 24 June 1980.
6. LA CALLE, Issue 132, 30 September 1980
7. EL SOCIALISTA, Issue 183, December 1980.
8. SISTEMA 38-39, REVISTA DE CIENCIAS SOCIALES, October 1980.
9. L'Espagne face a l'OTAN," Cesar Garcia, Dossier No 28, 27 November 1980.
10. EL PAIS, 12 May 1976.
11. A concept expanded upon in Chapter II.

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Chapter I: Direct Impact of Membership in NATO on Defense Spending

Cooperation within NATO, which involves mainly security and to a lesser extent covers the political, economic and scientific fields, as well as others of minor importance, necessitates an administrative organization to prepare for and subsequently implement the decisions made by NATO's policy-making body, the Atlantic Council, which is a multinational, collective entity. This, in turn, requires subordinate bodies with thousands of officials, who are civilian or military depending on their missions. There are, in addition, other kinds of joint installations that NATO regards as necessary to accomplish its defense goals, such as airports, oil pipelines, means of communication, etc, as well as a group of agencies that handle specific, specialized tasks.

This conglomeration of human and material resources requires financing, and the funds come from contributions of varying percentages from the various countries that belong to the Alliance. There is no "membership fee," nor is any initial contribution required to balance the outlays made previously by other member nations. Neither was required of any of the three countries, Greece, Turkey and Germany, that joined the Alliance after it was formed.

NATO member countries pledge to make economic contributions that can be classified as follows:

- Operating expenditures for the NATO structure
- Funds to finance NATO's common infrastructure

Let us now look in detail at how the needs stemming from each of these categories are financed.

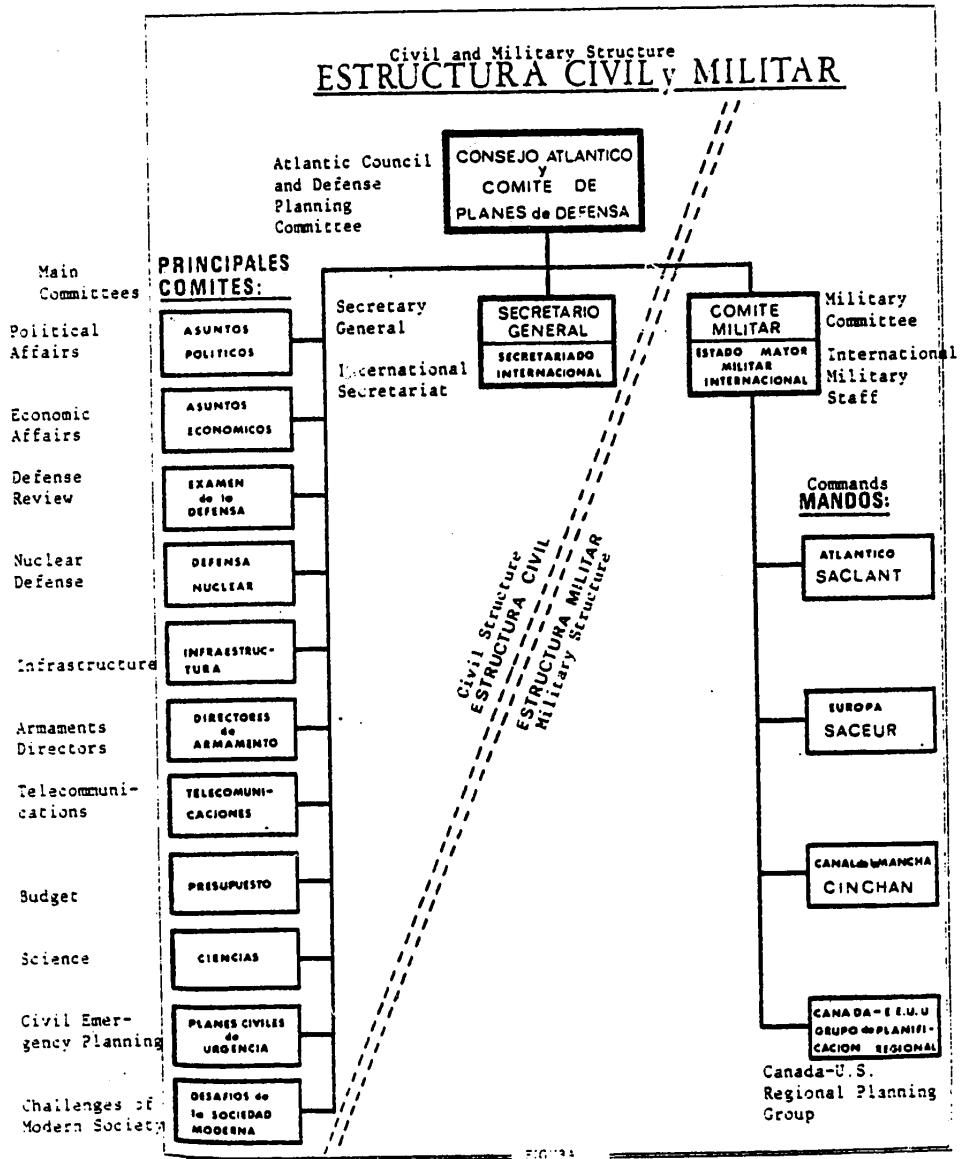
1. Operating Expenditures of the NATO Structure

1.1 Description of the NATO Structure

The Alliance's supreme body is the Council of the North Atlantic, which is composed of ministers from all member countries, usually the foreign affairs and defense ministers, although ministers from other branches of the administration can sit on it also. It normally meets twice a year. The Council has its permanent headquarters in Evere (Brussels), where the 15 allied nations keep permanent representative ambassadors, who meet two or three times a week.

Each ambassador has at his disposal a mission from his country as an auxiliary working group.

Ever since France withdrew from the joint military organization in 1966, the Council has not normally dealt with specifically defense-related matters. As a result, the Defense Planning Committee (DPC is the English acronym) was formed; it is made up of the defense ministers of the remaining nations



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and convenes at the same level as the Council and generally with the same frequency. As we have already mentioned, in 1974 Greece also expressed its desire to withdraw from the joint military organization, as a result of its dispute with Turkey, but its absence was never as clear-cut as France's, and it reassumed full-fledged participation after almost 6 years in the former status.

The Military and Civil Structures come under the Council and the Defense Planning Committee (See Figure 1).

The Civil Structure is composed of the International Secretariat, 15 main committees and a series of task forces. Four of the 15 main committees deal with financial matters, which is what concerns us in this chapter. They are: the Civil Budget Committee, the Military Budget Committee, the Infrastructure Committee and the Infrastructure Payments and Progress Committee. In all, the Civilian Infrastructure comprises some 1,200 employees.

The Military Structure is composed of the Military Committee, which brings together the chiefs of staff of the member countries, the International Military Staff, the headquarters of the supreme commanders (SACEUR or the European Command, SACLANC or the Atlantic Command and CINCHAN or the Channel Command), the North American Regional Planning Group committee (Canada and the United States) and the headquarters of the Subordinate Commands. The Military Structure employs some 4,000 civilian workers, in addition to military personnel from each nation.

The Military Committee is the supreme military authority in NATO and has a permanent military representative from each country (Iceland and France are not normally represented, although the latter maintains a large liaison staff). The chiefs of staff of the various countries usually meet twice a year, but the committee functions continuously at the level of the permanent representatives at the International Secretariat's facilities in Evere (Brussels).

"Eurogroup" was organized in 1968 and it included the defense ministers of the European countries in the alliance, except those of France, Iceland and Portugal. Portugal joined later. It is an unofficial consulting body that usually meets informally at the same time as the Defense Planning Committee to analyze, bolster and coordinate Europe's military contributions to the alliance.

NATO's supreme commanders are responsible to the Military Committee but can have direct access to the Council and the national government presidents.

1.2 Financing NATO's Structure

The above bodies, which make up NATO's structure, need funds for their continued operations.

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As we have mentioned previously, these funds come from contributions by the various member countries. These international funds must be managed, monitored and allocated, and the organization has the appropriate tools to do so.

The highest authority in this sphere, as in the rest of NATO's areas of responsibility, is the Council. The determination of the necessary funding is done in budgets submitted to the Council for its approval by the corresponding Budget Committees. There are two Budget Committees, the Civil Budget Committee and the Military Budget Committee. The financial controls over the NATO structure's operating expenses are complemented by the Board of Auditors and auditing by financial supervisors.

1.2.2 The Civil Budget

The Civil Budget takes care of funding needs for the operations, furnishings, equipment, upkeep and other activities connected with the International Secretariat in Brussels. The secretariat makes annual estimates of its funding needs and presents them to the Civil Budget Committee, which is made up of representatives from all the countries. The committee examines the budget, revises it if necessary and submits it to the Council for approval.

Each country contributes a percentage of the total funds. The percentages are determined by agreement among all the countries involved, as we will describe later.

The Civil Budget is drafted in Belgian francs, and each country converts its percentage or share into its currency at the going exchange rate. The agreed annual amounts are delivered to the Central Treasury in the national currency of each country in three instalments during the year.

The cost-sharing for each country is determined by percentages that were initially agreed upon in 1951 and later revised twice, first in 1952 when Greece and Turkey joined and then in 1955 when West Germany joined.

The following is the list of current percentage shares:

1. United States	24.20
2. United Kingdom	19.50
3. France	17.10
4. Germany	16.10
5. Italy	5.96
6. Canada	5.80
7. Belgium	2.86
8. Holland	2.85
9. Denmark	1.65
10. Turkey	1.65
11. Norway	1.15
12. Portugal	0.65
13. Greece	0.39
14. Luxembourg	0.09
15. Iceland	0.05
Total	<u>100.00</u>

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These percentages were not obtained by means of a mathematical formula. They were arrived at in the aforementioned years after tough negotiations in which the capacity and willingness of each country to contribute were taken into account. In determining the respective capacities they must have unquestionably taken into account the various macroeconomic aggregates for each country (GNP, population, balance of payments situation, etc), as well as various other factors indicative of their potential, among which consideration was doubtless given to the military capabilities of each country.

The determination of these percentages was so unscientific that Lord Ismay, the secretary general of NATO in 1953, described the decision-making process as follows:

"They suddenly dropped the problem into my lap. I called in the three adjunct secretary generals, and each of us drew up his own list and estimated what the various cost-sharing percentages ought to be. Then we figured out the average of all of them. I could not say on what exactly I based my conclusions, except that I tried to take all sorts of factors into account, such as the capacity of each country and the benefits that would derive from constructions erected and the money invested. We then brought it to the Council meeting in April 1953, and everyone around the table thought it was a magnificent apportionment except for their own country, which they considered too high an amount. In any case, we worked around the table and finally arrived at an agreement to accept what we had proposed, with a spread of 1.8 percent of the total. This is the explanation of these strange percentile cost-sharing amounts."

This paragraph clearly shows how the agreement was more a result of logical considerations than mathematical techniques, but obviously the economic indicators of each country, as well as other political considerations, were major factors in determining the percentages.

Deciding on these percentages was such an arduous job that they have gone unchanged so as not to shatter the agreement that was reached. In fact, the experts regard them today as almost axiomatic numbers and are surprised when someone asks whether they think that they ought to be updated, inasmuch as the relative economic situation and military capabilities of England, Germany and France, for example, have changed so much since 1955.¹²

Someone might ask why we have included the Alliance's Civil Budget in the chapter "Direct Impact on Defense Spending." This chapter is the proper place to broach this inasmuch as according to the NATO definition of defense spending, which we will analyze later, it includes all of the expenses of participating in the Alliance, even if they are accounted for in the foreign affairs budget. The Civil Budget is a small fraction of the total expenses of membership. It represents less than one-fifth of the total civil and military budgets, and these budgets are small in comparison to what normally has to be contributed for infrastructure, as we will now see.

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1.2.2 The Military Budget

The Military Budget covers the expenses of:

- The International Staff
- The three Headquarters of the Supreme Commands (SACEUR, SACLANT and CINCHAN)
- The Headquarters of the two levels of Subordinate Commands
- The specialized agencies
- Certain aspects of NATO military exercises and maneuvers

These expenses are classified in two categories: operating expenditures and capital expenditures.

The operating expenditures comprise expenditures for the salaries of civilian employees in the components of the military structure, telecommunications, transportation and travel expenses, exercises and maneuvers expenditures and expenses for representatives and relations. They also include expenses for everything used in connection with operations, such as office supplies, electricity, spare parts, etc. The salaries of military personnel assigned to NATO posts are not included in the Military Budget. Instead, each country directly pays its own military personnel, though there are some, albeit few, exceptions in which NATO's Military Budget is charged.

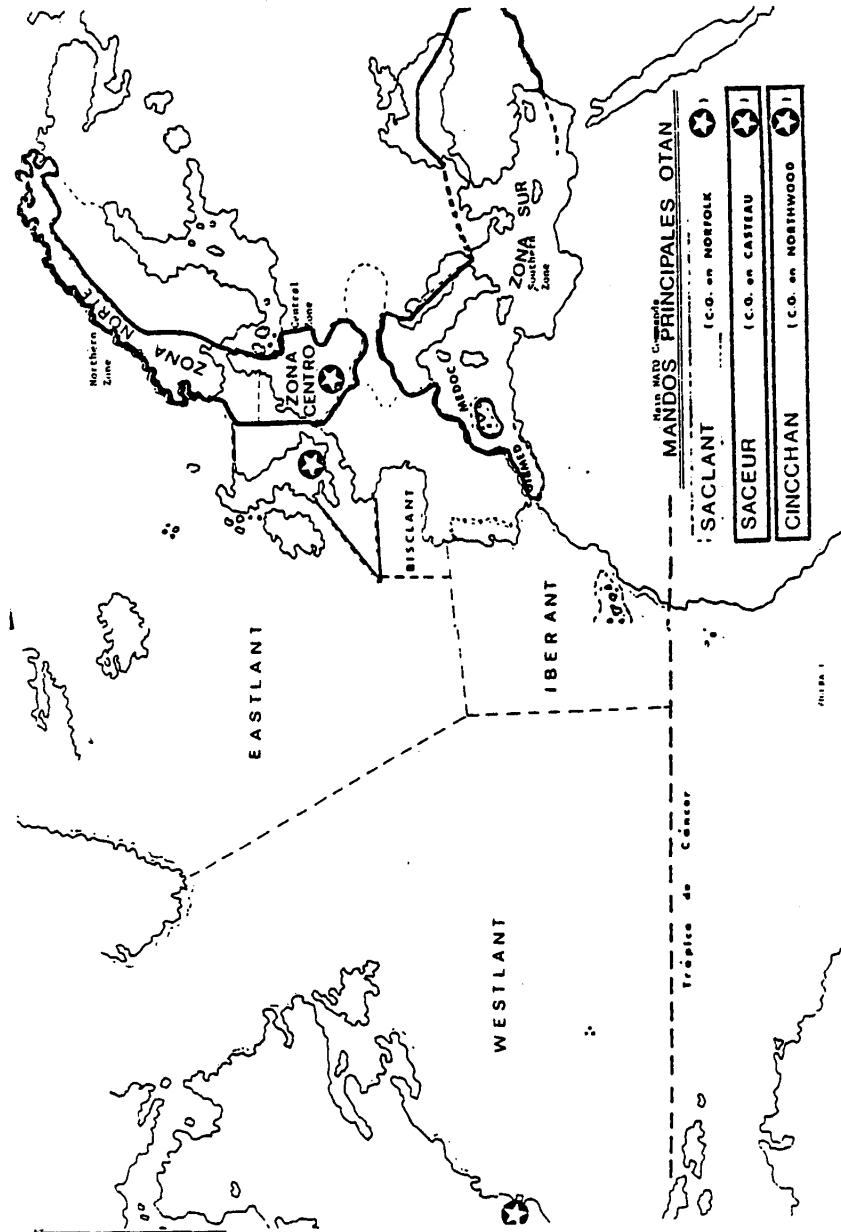
The capital expenditures are expenditures for construction, furnishings and equipment. We have to make an important clarification, however, regarding what is constructed under the Military Budget. This is one of the many complex issues that make NATO an organization whose inner workings are somewhat confusing to the uninitiated because of the variety of situations and nuances that have to be differentiated in its structure. There is, in fact, another fund for constructions. As we will see later on, this fund is for the so-called "NATO Infrastructure" or wartime facilities, such as an airport, a telecommunications center or a oil pipeline network. All of this is financed under the infrastructure budget, which we will look at later, whereas what is constructed under the Military Budget is not specifically for wartime (peacetime facilities), such as troop quarters, housing for the families of the personnel that take care of a wartime facility, general warehouses, etc.

In addition, the aforementioned operating expenditures under the Military Budget encompass the everyday needs of all military facilities in general, regardless of whether they are war- or peacetime facilities.

Another of the complexities of the Military Budget is that it is actually made up of two separate budgets: the 15-Nation Budget, which includes France, and the 14-Nation Budget, which excludes France.

In general, the 14-Nation Budget is slightly larger than the 15-Nation Budget. The former is about 60 percent of the total Military Budget, and the latter, therefore, about 40 percent.

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The budgeting procedure is as follows. Around May the various bodies financed under the Military Budget (more than 40) send the Military Budget Committee the estimates of their funding needs for the following year, in their respective national currencies. We should point out that the Military Budget Committee is part of NATO's civilian structure and has representatives from all countries except Iceland. The committee studies each individual budget, coordinates them all, makes the necessary revisions and submits two separate budgets, the 15-Nation Budget (to the Council) and the 14-Nation Budget (to the Defense Planning Committee), noting in both cases what each of the 40-odd organizations requesting funding proposed and what the committee is proposing after its review. The Council and the DPC approve the budgets at their year-end meeting.

Unlike the Civil Budget and, hence, as one more complexity of the system, a NATO-established monetary unit, the accounting unit, is used for the centralized Military Budget accounting. This unit was created as a result of the multiplicity of currencies that were employed in the budget. Thus, each country does its budget accounting locally in its own currency, and NATO does so centrally in accounting units.

The independent agencies have their own particular financing procedure, which is another of the organization's peculiarities. Here we have to distinguish between civilian and military agencies.

Civilian Agencies:

- Central Europe Pipeline System (CEPS)
- NATO Air Defense Ground Environment System (NADGE)
- NATO Hawk Production and Logistics Organization (NHPLO)
- NATO Maintenance and Supply Organization (NAMSO)
- NATO Multi-Role Combat Aircraft Development and Production Management Organization (NAMMO)
- NATO Integrated Communications System Organization (NICSO)
- Agency handling the Airborne Early Warning Program (NAPMA), in the process of being organized to develop the AWACS system.

Military Agencies:

- Allied Communications Security Agency (ACSA)
- Allied Long Lines Agency (ALLA)
- Allied Naval Communications Agency (ANCA)
- Allied Tactical Communications Agency (ATCA)
- Allied Radio Frequency Agency (ARFA)
- Advisory Group for Aerospace Research and Development (AGARD)
- Military Agency for Standardization (MAS)
- The NATO Defense College (NDC)
- SACLANT Anti-Submarine Warfare Research Center (SACLATCEN)
- SHAPE [Supreme Headquarters Allied Powers Europe] Technical Center

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France is a member of some of these agencies but not of others, this being the reason for the difference between the 14 and 15 nation budgets.

With regard to agency financing, the development phase of each agency is supported by the various countries that participate in it, and it is viewed as a multinational organization, not as an organization of the Alliance as a whole. The agencies thus develop under contract with the participating countries, but when the development of the agencies stops and their service phase begins, they are then financed under the Military Budget.

There are exceptions, however, such as the Central Europe Pipeline System, which is headquartered in Paris and functions as an autonomous organization.

The Military Budget also helps to finance part of the cost of NATO military exercises and maneuvers conducted jointly with the armies of member countries.

The expenditures connected with the military forces and personnel involved in the exercises and maneuvers can be classified as:

--National expenditures: the ones that each country makes to support its own national forces.

--Bilateral expenditures: the ones connected with the military forces and personnel of each country for the services and supplies received from another country.

--Common expenditures: the ones stemming from the international implications of integrated forces and that are charged to NATO international funds, for example, the temporary assignment of civilian personnel to exercises, computer services, joint facilities and telecommunications and the renting of supplementary civilian transport facilities.

The expenditures in each category are determined in accordance with NATO financial directives.

Cost-sharing in the Military Budget, as in the Civil Budget, is determined on the basis of percentages that were initially agreed upon after arduous negotiations in 1951 and revised when Greece and Turkey and, later, Germany, joined the Alliance. Adjustments were later made between the costs of the Infrastructure Program and the Military Budget, because the decision was made that expenditures would be charged to the Military Budget up to a certain ceiling, beyond which they would become infrastructure expenses. We will take a look at this later on.

The current percentages are the ones agreed upon in 1966, the year that France withdrew from the joint military organization. At this point, the budgets were divided into the 14-Nation Budget for the bodies that France withdrew from and the 15-Nation Budget for the others financed under the Military Budget, in which France, in spite of its new status, continued to participate and which account for about 40 percent of the total budget.

To adjust the percentages in the 14-Nation Budget, each nation agreed to add to its previous percentage a portion of the 17.1 percent that France was no longer contributing. As we have already stated, Greece continued under the 14-Nation Budget during the 6 years that it made good its decision not to sit on the Defense Planning Committee and to cease "assigning" its forces to the integrated military command.

Budget expenditures are apportioned among the countries according to the percentages listed below, in a system similar to the weighted contributions to the Civil Budget.

The following are the agreed upon percentages:

15-Nation Budget

United States	25.00
United Kingdom	18.22
France	17.10
Germany	16.10
Italy	6.12
Canada	5.80
Belgium	2.95
Holland	2.94
Denmark	1.74
Turkey	1.65
Norway	1.20
Portugal	0.65
Greece	0.39
Luxembourg	0.09
Iceland	0.05
	<u>100.00</u>

14-Nation Budget

United States	30.16
United Kingdom	21.98
Germany	19.42
Italy	7.38
Canada	6.99
Belgium	3.56
Holland	3.55
Denmark	2.10
Turkey	1.99
Norway	1.45
Portugal	0.78
Greece	0.47
Luxembourg	0.11
Iceland	0.06
	<u>100.00</u>

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What was said previously about the percentages of the Civil Budget also applies to this apportionment. It did not result from scientific studies, but rather from complex negotiations in 1953 that took a wide range of factors into account. This agreement had to be upheld subsequently as the basis for any revision. In fact, when France withdrew from the integrated military organization in 1966, thus giving rise to the 14-Nation Budget, the organization did not take advantage of the opportunity to adjust the percentages to the economic situation of each country at the time. For example, Germany had a stronger economy than Great Britain and could therefore make a larger military contribution to NATO. Instead, France's 17.1 percent annual share was simply divided up among the 14 remaining nations in proportion to the percentages hammered out in 1953.

Each country makes its contributions to the Military Budget in three approximately equal installments during the year. Each country makes the necessary conversion from its own currency to accounting units at the Central Treasury.

1.3 Spain's Potential Share in the Event It Joins NATO

In the event that Spain were to join the Atlantic Alliance with a normal participation status in both the civil and the military structure of the organization, it would have to help defray the costs of the common bodies, which the corresponding Spanish personnel would be joining.

In April 1978 in Ditchley Park (at Enstone, near Oxford, Great Britain), the Ditchley Foundation, in conjunction with the Washington-based Institute for the Study of Conflicts, organized a conference on "Spain, NATO and the Defense of the West." At this conference, U.S. Secretary of State General Haig, who was then supreme commander of the Allied Forces in Europe, said that Spain's share in the operating expenditures of the NATO structure could be estimated at some \$10 million a year for the Military Budget, plus another \$2 million for the Civil Budget, and that Spain would have to spend about \$40 million on common NATO infrastructure (we will analyze these expenses later).

The UCD's position paper "Defense and Military Policy" at its Madrid congress in October 1978 put Spain's total contribution to structure and infrastructure expenditures at 5 billion pesetas a year. The figure that General Haig mentioned converts to 4.94 billion pesetas at the prevailing exchange rate at the time. The similarity of the two estimates suggests that the UCD calculation was NATO-inspired, given the close relations between NATO circles and Ambassador Javier Ruperez, UCD's secretary of international relations.

In ascertaining Spain's share, NATO would look at its GNP, defense spending and population as the main indicators of its economic and defense capabilities and then compare them to the figures for the Alliance members.

The figures for the NATO countries in 1977, which were apparently the ones used for the above estimates, are as follows:

<u>Country (1)</u>	<u>GDP(2)</u>	<u>DS(3)</u>	<u>Population(4)</u>
1. United States	1,883.6	104.250	216.817
2. Great Britain	244.5	12.103	55.919
3. France	380.7	13.666	53.084
4. Germany	513.9	17.130	61.400
5. Italy	196.0	4.730	56.446
6. Canada	197.2	3.348	23.331
7. Belgium	79.4	2.476	9.830
8. Holland	106.4	3.716	13.853
9. Denmark	43.2	1.085	5.059
10. Turkey	44.8	2.652	42.135
11. Norway	35.6	1.130	4.043
12. Portugal	17.0	.545	9.773
13. Greece	25.8	1.328	9.268
14. Luxembourg	2.6	.029	.357
15. Iceland	1.9	--	.221

- (1) Countries in order of their percentage share, from largest to smallest.
 (2) GDP in billions of dollars. Source: OECD Economic Report, 1979. The GDP is used instead of the GNP because this is the aggregate that NATO usually employs, as we will see later.
 (3) Defense spending in billions of dollars. Source: 1978-79 Military Balance Sheet from the London Institute of Strategic Studies.
 (4) Population in millions of inhabitants. Source: OECD Economic Report, 1979.

We can see at first glance that the GDP and DS ranking, in absolute values, is similar to the order of percentage shares listed in Section 1.2. Any differences are due, in general, to the economic development of countries after the percentages were determined in 1955 and up to 1977, the year to which the above numbers refer.

In Spain, these aggregates show the following numbers in 1977:

	<u>GDP</u>	<u>DS(5)</u>	<u>Population</u>
Spain	115.6	2.154	36.672

- (5) Estimate in the General State Budget. There are certain differences in the NATO definition of defense spending that we will be analyzing later on. This estimate can be regarded as sufficiently representative for the purposes that concern us.

We can see from these figures that Spain is seventh place in GDP, between Italy and Holland; in 10th place in defense spending, behind Belgium, and also in seventh place in population, between Turkey and Canada. This places Spain in an intermediate position in terms of economic strength and a lower position in terms of defense spending. Based on these statistics, we can deduce that NATO would assign Spain an averaged percentage of the intermediate region consisting of Italy, Canada, Belgium and Holland, which contribute the following percentages of each budget:

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<u>Country</u>	<u>Civil Budget</u>	<u>15-Nation Military Budget</u>	<u>14-Nation Military Budget</u>
Italy	5.96	6.12	7.38
Canada	5.80	5.80	6.99
Belgium	2.86	2.95	3.56
Holland	2.85	2.94	3.55

The NATO estimates at the aforementioned Ditchley Park seminar would, therefore, presumably approximate 3.5 percent for the 15-Nation Civil and Military Budgets and 4.5 percent for the 14-Nation Military Budget. Indeed, if we apply these percentages to NATO's 1978 Civil and Military Budgets, we obtain approximately the figures given at Ditchley Park.

In order to advance well-founded arguments in the negotiations that Spain would have to engage in, should the opportunity arise, in connection with its specific percentage shares, we could conduct a more rigorous analysis to lend solid support to a Spanish negotiating position. Annex IV outlines a study based on statistical techniques. We can deduce from it that Spain can argue for the following approximate shares:

Civil Budget	2.63 percent
15-Nation Military Budget	2.68
14-Nation Military Budget	3.20

As we can see, we have arrived at percentages for Spain that are slightly lower than Belgium's.

The 1981 NATO structure financing budget looks approximately like this:

--Civil Budget: \$75 million
--Military Budget: \$350 million

The Military Budget can be split in practice into 40 percent for the 15-Nation Budget, \$140 million, and the rest, \$210 million, for the 14-Nation Budget.

The contribution percentages arrived at here for Spain would yield the following shares, assuming that Spain joined NATO this year:

<u>Budget</u>	<u>Percent</u>	<u>Share (in millions of dollars)</u>
Civil Budget	2.63	1.972
15-Nation Military Budget	2.68	3.752
14-Nation Military Budget	3.20	6.720

Adding up these amounts, we get \$12.444 million that Spain would have to contribute to defray the expenditures of the NATO structure. This is somewhat less than the \$12 million mentioned at the Ditchlet Park seminar as the share for 1978, inasmuch as the NATO budget has risen 25 percent from 1978 to 1981.

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At an average exchange rate of 85 pesetas to the dollar, the \$12.444 million are equivalent to 1.05774 billion pesetas, which comes to 0.31 percent of Spain's defense budget for 1981.

The inclusion of Spain's share would necessitate a revision of the shares of the other member countries. This could be done as it was when France withdrew from the integrated military structure, in other words, by simply altering the percentages as a result of Spain's inclusion. This opportunity could also perhaps be taken to update the percentages, which, as we have mentioned, are far out-of-step with the current economic situation of various countries. As we have seen, however, so far it has been NATO's policy not to alter the basic apportionment initially hammered out, given the difficulties of arriving at an agreement on the shares and inasmuch as the amounts involved are minor.

2. Financing of the Common Infrastructure

According to the Alliance's official publication "NATO, Facts and Figures," in the organization's lexicon, NATO "common infrastructure" or "infrastructure" for short is defined as those fixed installations needed for the deployment and operations of the NATO Armed Forces in wartime ("wartime facilities") and for their instruction in peacetime, examples of which are headquarters, airfields, transmission facilities, pipelines, radar stations, missile launching sites, etc. To these we must add certain mobile facilities, such as the mobile elements connected with missile launching systems, telecommunications satellites, the mobile command units of the headquarters, etc.

We already mentioned in the section on the Military Budget that the concept of infrastructure does not include the general facilities not intended for wartime use, in other words, the ones that are not specifically designed to support NATO forces during war operations. These are called "peacetime facilities," for example, troop quarters, housing for the families of personnel in charge of the facilities, general warehouses, etc.

The definition of NATO infrastructure is not inflexible, however. It allows for a broad interpretation, albeit in the realm of exceptions. Thus, when many NATO facilities located in France had to be transferred to other countries as a result of France's withdrawal from the integrated military structure, the new quarters for U.S. troops that were previously in French territory were paid for, as an exceptional case, with infrastructure funds.

If the facilities are for the exclusive use of domestic forces, then they belong to the "national infrastructure" and are financed under the respective national budgets.

"Common infrastructure" is constructed at the request of NATO's international commands if it is going to be used by two or more member countries or if, even though it is to be used by only one country, it is of major common interest. The facilities that are part of the "common infrastructure" are the ones that we will be dealing with in this book.

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The need for a common infrastructure arose for the first time in 1950, when as a result of the Treaty of Brussels, the Western European Union, which consisted of Belgium, France, Holland, England and Luxembourg, was created. These nations decided to build, mainly in France and Holland, a series of airfields and telecommunications systems for their shared use, apportioning the cost of this project among the allied countries. This project was later called the "first slice" in the organization's lexicon.

NATO later adopted the same system of common infrastructure, taking charge of the infrastructure that had already been initiated by the Western European Union. The following project, now being developed by NATO, was thus called the "second slice."

Thirty successive slices had been programmed as of 1979, slices that were gradually tailored to the times and to circumstances. The initial phases or slices aimed at establishing an infrastructure to serve as a foundation and support for the military aid that Europe was receiving from the United States under the Military Defense Assistance Program. Later, the common infrastructure system helped to build the facilities that extended past the borders of a single country, such as the oil pipeline network.

When Western Europe began its economic recovery, the United States gradually included in the NATO infrastructure programs many of the projects of American forces based in the European zone of the Organization.

In 1951, NATO had only a few airfields at its disposal, and thus the initial infrastructure efforts were mainly directed towards the construction of such airfields. There are currently 220 of them, and they can be used by all of NATO's Air Forces. All of the airfields were built according to common standards.

Work also began very quickly on the construction of a complex pipeline system to obviate the difficulties involved in supplying fuels by traditional means of transport (tank cars, tank trucks, etc). Networks of pipelines allow for the mass transport of fuels from ports on the Atlantic and Mediterranean to a great many airfields and to the depots from which combat vehicles are supplied. There are now 10,000 kilometers of pipelines, with a capacity of close to 2 million cubic meters.

The networks of pipelines were built according to regional criteria, the most complex being located in Central Europe, with smaller ones in Norway, Denmark, Italy, Greece and Turkey, which have not been linked up for geographic and financial reasons.

The need for a common telecommunications network also arose at the outset. A complex integrated system of telecommunications has been set up, but it is still regarded as very inadequate today.

When France announced in August 1966 that it intended to withdraw from the integrated military organization, NATO had to construct new facilities to replace the ones located on French territory. This included the transfer of the headquarters of the Council and the International Secretariat to Evere (Brussels); the Supreme Headquarters Allied Powers Europe (SHAPE) to Casteau near Mons (Belgium), and the Defense School to Rome. Nevertheless, France continued to participate in some of the infrastructure programs, for example, the NADGE.

In 1970, the European nations set up Eurogroup, which we will analyze later, and agreed on a "European Defense Improvement Program" (EDIP), committing themselves to expenditures totaling \$1 billion over 5 years.

Some of these expenditures would go for expanding and improving materiel, but \$400 million were earmarked for the enhancement of the common infrastructure, especially the construction of additional underground shelters for tactical aircraft and to continue the development of the aforementioned NATO Integrated Communication System (NICS).

The above is a historical outline of how the common infrastructure was developed in accordance with the needs that arose.

The NATO common infrastructure system is unique among alliances in the world today and is regarded in Organization circles as one of the best examples of how the Atlantic Alliance has met its commitment to defense cooperation.

The facilities that can be included in the NATO common infrastructure projects are grouped into the following categories:

- a) Headquarters: stationary and mobile.
- b) Airfields: airfields and shelters for tactical aircraft.
- c) Telecommunications: military networks; links with the governments of member countries; satellite communications.
- d) Fuels: pipelines and depots for 30-day aircraft fuel supply.
- e) Naval bases: depots for fuel, munitions, etc; shops and piers.
- f) Navigation aids: joint-use air and naval aids.
- g) Radar installations: air and naval detection.
- h) Instruction: firing ranges for tanks, aircraft and missiles.
- i) Surface-to-Air Missiles: Nike and Hawk sites.
- j) Surface-to-Surface Missiles: Mace and Pershing sites.
- k) NADGE: integrated land-based detection system for air defense.
- l) Others: In order for other kinds of facilities to be included, they have to be considered on a case-by-case basis and agreed upon specifically as exceptions to the rule.

The infrastructure that had been constructed as of 1979 can be outlined as follows:

- The main and subordinate allied headquarters (See Annex II).
- 220 modern airfields, many of them with underground shelters for tactical aircraft.

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- 31,000 miles of land-based and underwater cables.
- NATO satellite communications system.
- 6,300 miles of pipeline.
- Depots with a total capacity of 2 million cubic meters.
- 104 Nike sites.
- 108 Hawk sites.
- NADGE.
- In the planning or development process: the modernization and automation of the integrated telecommunications system (NICS).

2.1 Cost-Sharing. Criteria for the Determination
of the Percentages

Thirteen countries are involved in financing all of the Alliance's common infrastructure, inasmuch as France cooperates only in specific projects, and Iceland is not part of this system.

The common infrastructure facilities can be used jointly by the forces of several countries. On the other hand, because of their geographic location, some countries have to have more facilities on their soil than others. For these two reasons the principle was established that the host country, the country in which the facilities are being built, should not bear the total cost of the project, which should instead be shared among all the potential users.

It was the Western European Union, in what was later called the First Slice, that agreed on the principle of cost-sharing. This system was later adopted by NATO for the subsequent phase, which although it was the first slice that was financed collectively by the Organization's countries, was called the Second Slice.

The shared financing is based on a system of percentages that are decided on by common agreement among the member countries. What was said in connection with the apportionment for the Civil and Military Budgets also applies here, in that the shares of infrastructure financing are not determined according to scientific formulas but are instead worked out in difficult negotiations in which each country can put forth a wide range of criteria, political criteria included.

There are, however, certain fundamental criteria on which the negotiations can be based and which can be outlined as follows:

- The capacity of each country to contribute
- The benefits that potential user countries might gain from the facilities
- The economic benefits accruing to the host country

The capacity of each country to contribute is estimated mainly as a function of its Gross National Product.

The benefits that user countries might gain from the facilities depend on the extent to which their forces will utilize them, should the opportunity arise, with each country having to contribute in proportion to this potential use.

The economic benefits accruing to the host country could be significant, such as the use of local manpower in the construction work, foreign exchange inflows, the expansion or enhancement of the communications network, the enhancement of the national system of pipelines or telecommunications, etc, but these benefits have to be compared with the increased costs for the host country, which, as we have said, has to defray the costs of acquiring the land and take care of arranging for access roads and providing electricity, water and other necessary public utilities.

In the beginning NATO's military authorities would submit each year for the approval of the Council the annual infrastructure program, accompanied by the agreed upon percentages for the shared financing. Thus, the percentages had to be negotiated annually.

Precisely to avoid such ongoing negotiations, the Atlantic Council decided that the programming would cover several years and include a rough estimate of the total cost, plus the share percentages for this period. Thus, in 1954 the first overall estimate for a 3-year period was made, along with the agreed upon percentages for the period. However, the military authorities had to continue submitting the programs and detailed cost estimates for each annual phase to the Council. There was a shift later to 4-year estimates, and in 1966 5-year programming was established.¹³

The percentages set for the successive stages are given in the following table:

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Table of Percentages by Nation
 I II-VII VIII-XI XII-XV XVI-XXV XXVI-XXX (1) XXXI-XXXX

Slices	Year in which the share was approved	1950		1957 (3)		1961		1966		1975		1979	
		I	II-VII	VIII-XI	XII-XV	XVI-XXV	XXVI-XXX	XXXI-XXXX	(with France)	(without France)	(with France)	(without France)	(with France)
Belgium	13.18	5.462	4.39	4.24	4.61	5.30	5.520	4.8215	5.5912	4.624	4.624	5.5912	4.624
Canada	--	6.021	6.15	5.51	5.48	6.31	6.3132	5.4825	6.3578	5.504	5.504	6.3578	5.504
Denmark	--	2.767	2.63	2.87	3.07	3.54	3.7012	3.2142	3.7273	3.082	3.082	3.7273	3.082
France	45.46	15.041	11.87	12.00	13.16	--	--	13.1580	--	13.212	13.212	--	13.212
Germany	--	--	13.72	20.00	21.86	25.18	26.3585	22.8902	26.5446	21.953	21.953	26.5446	21.953
Greece	--	0.750	0.87	0.67	0.65	0.76	0.7932	0.6888	0.7932	0.658	0.658	0.7932	0.658
Italy	--	5.681	5.61	5.97	6.58	7.58	9.9313	6.8877	7.9873	6.606	6.606	7.9873	6.606
Luxembourg	0.45	0.155	0.17	0.17	0.18	0.20	0.2115	0.1837	0.2130	0.176	0.176	0.2130	0.176
Holland	13.64	3.889	3.51	3.83	4.23	4.87	5.1026	4.4312	5.1386	4.250	4.250	5.1386	4.250
Norway	--	2.280	2.19	2.37	2.59	2.98	3.1197	2.7092	3.1417	2.599	2.599	3.1417	2.599
Portugal	--	0.146	0.28	0.28	0.30	0.35	0.3701	0.3214	0.2011	0.201	0.201	0.3214	0.201
Turkey	--	1.371	1.75	1.10	1.10	1.26	1.3238	1.149	J.8045	0.802	0.802	J.8045	0.802
United Kingdom	27.27	12.758	9.88	10.50	10.42	12.00	11.9950	11.9950	12.0797	10.460	10.460	12.0797	10.460
United States	--	43.679	36.98	30.85	25.77	29.67	27.2279	23.6452	27.4200	25.873	25.873	27.4200	25.873

(1) The inclusion of a special program during these slices reduced the U.S. share to 21.56 percent. Moreover, certain European nations agreed to undertake the supplementary program called the European Defense Improvement Program (EDIP), which was mainly concerned with the NATO Integrated Communications System (NICS).

(2) These percentages replaced after the fact the ones that had been agreed upon every year for each slice.

(3) Includes a subslice of Slice VII for facilities on German soil that were 50 percent financed by Germany.

(4) In English alphabetical order

The United States' share in the infrastructure budget for the 1975-79 period, which had previously been almost 30 percent, dropped to 21.56 percent, as mentioned in footnote (1), if we do not take into consideration the special expenditures generated by the American forces in Germany which had previously been financed under the U.S. defense budget and which during this 5-year period were included in the common infrastructure budget. If these special expenditures are figured in, the U.S. share comes to 27.2279 percent, as listed in the table for the programs without French participation. Similar considerations apply to the slice that began in 1979.

In general, NATO neither maintains nor manages the infrastructure funds. Rather, it employs a special system that operates like a clearing bank or clearinghouse in which all countries participate in accordance with the agreed upon percentages. The Organization audits the system and authorizes payments, as we will see later in the project drafting and development process.

France's withdrawal necessitated a refiguring of the percentages approved in 1966, and the share that it no longer contributed was divided up and a new apportionment agreed upon, as can be seen in the table of percentages.

In addition, in order to compensate the other countries for their having to replace the common infrastructure on French soil, France was obliged to gradually pay off what the other countries spent on these projects. This is a result of the clearinghouse system that governs the common infrastructure, under which if a country retires officially committed facilities, it must pay out what the other countries would have contributed. Thus, the common infrastructure does not entail a permanent mortgage, because each country can exercise its sovereignty and recover, if it so desires, ownership of the common facilities built within its borders.

2.2 Total Cost of Common Infrastructure

Infrastructure expenditures were initially stated in pounds sterling. As of the 1970-74 5-year program, which encompassed the slices XXI to XXV, expenses began to be quoted in Infrastructure Accounting Units (IAU). An IAU is equivalent to a pound sterling before the 1967 devaluation. At the beginning of 1979, an IAU was worth about \$4.50.

The following was the total cost of the various "classes" for the 1951-1980 period (in millions of dollars):

<u>Classes</u>	<u>Programmed</u>	<u>Authorized</u>	<u>Difference</u>
Airfields	2,889	1,693	1,196
Telecommunications	1,535	1,461	74
Fuels	1,132	902	230
Naval Bases	646	553	93
Warning facilities	993	415	578
Instruction	137	115	22
Headquarters	929	322	607

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Surface-to-Air Missile Sites	401	296	105
Surface-to-Surface Missile Sites	83	50	33
Munitions Depots	977	204	773
NADGE	320	320	0
Others	525	422	103
Total	10,567	6,753	

We can deduce from the column of differences the programs that have been completed or almost completed and the others that are fully under way.

The following is the total cost of the in-place infrastructure in each country during the 1951-1980 period (in millions of dollars):

<u>Country</u>	<u>Programmed</u>	<u>Authorized</u>	<u>Difference</u>
Belgium	307	197	110
Canada	37	34	3
Denmark	276	180	96
France	744	743	1
Germany	3,234	1,408	1,826
Greece	691	384	307
Italy	909	658	251
Luxembourg	13	13	0
Holland	192	167	25
Norway	587	425	162
Portugal	114	95	19
Turkey	1,224	783	441
United Kingdom	1,151	444	707
Common and others	1,394	1,170	224

About \$5 billion has been budgeted for the 1980-84 5-year period, which is about 85 percent more than for the 1975-79 slice.

One of the new features of the 1980-84 program is the start of the Long-Term Defense Program (LTDP), which was agreed upon in 1978. Its aim is to develop common defense efforts throughout the 1980's, including more than 120 separate improvements of NATO's defense capabilities. In view of this, and because of today's high inflation rate and the bid by the United States to hasten the programs for recovering the financing funds that it contributes, the Americans have pressed for a sizable enlargement of the joint fund for the 1980-84 period, the goal being some 1.5 billion IAU's, which is equivalent to some \$6.7 billion. Due to the high inflation rate, the current budget might have to be increased by one-half.

On top of the program for 1980-84, NATO will have to tackle the AWACS program (Airborne Early Warning and Control System). This is a complex system of radar detection on board U.S. Boeing aircraft, and it was approved by the Defense Planning Committee in December 1978. It will cost \$1.8 billion, to be apportioned in accordance with percentages that have nothing to do with the infrastructure programs. These percentages are as follows:

<u>Country</u>	<u>Percentage</u>
United States	41.0
Germany	28.0
Canada	9.5
Italy	7.0
Holland	3.7
Belgium (reluctant to take part)	3.3
Other nations	7.5

This apportionment is based on complementary, but not yet definitive commitments for the multinational coproduction of the necessary hardware and for other matching war materiel.

The program has not arisen within the normal process of common infrastructure preparation nor as a result of forces planning. Instead, it has been pushed marginally by the United States under the category of "new programs." Neither Great Britain (which has opted for its own domestically produced Nimrods) nor Portugal is involved in the program, which is another example of the many exceptions to the already complex system for the general planning of infrastructure needs. It was the United States that persistently advocated the need for this costly program, seeking in participation by NATO and Iran the economies of scale that would cut the cost of production. The withdrawal of Iran's orders in the wake of the change of regime there will boost the scheduled \$1.8 billion cost for NATO, and thus it will presumably be necessary to revise it or try to find other purchasers, such as, for example, Saudi Arabia. During the German defense minister's visit to Washington in October 1979, he made Germany's contribution conditional on the United States' honoring the commitment to have part of the hardware manufactured in the Federal Republic. The 18 airborne radar units will begin arriving in Europe in 1982. The deliveries will conclude in 1985 at the latest.

2.3 Process of Developing and Building the Common Infrastructure

The estimates in the 5-year programs, which are the basis for the apportionment of fund contributions, are drafted in detail for each slice throughout an 18-month long cycle, which lasts from the time that Supreme Command issues the initial directive in the fall until approval by the Defense Planning Committee (or the Council if France is involved) two springs later. The timetable for this cycle is currently being revised to adapt it to national cyclical planning, but even if the length of the process is altered, the current sequence will be maintained.

The cycle begins in the fall (See Figure 2), with a directive from the Supreme Allied Command consistent with the NATO forces planning that we will look into later on and directed to the host country, which at the same time receives the project request from the potential user country. The host country drafts its own project ("Type A Estimate," in NATO terminology), in conjunction with the project submitted by the users. NATO standards for the development of projects vary widely. Thus, there are established standards that must

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be adhered to for air base projects or projects to improve an existing base, whereas there are no established standards for incorporating a naval base into NATO's infrastructure inventory.

Once the project has been drawn up, it is submitted to the corresponding Allied Subordinate Command, which after reviewing it sends it to the Supreme Command with a description of the needs, a justification and the estimated budget.

The NATO supreme commanders, each in his own jurisdiction, analyze the common interest of the proposals, as well as priority in relation to other proposals, and then decide what will be included in the development phase. They then send the proposed program to the defense ministers of the countries involved for their review. The defense ministers, through their representatives, contact the Supreme Allied Command in question to discuss the modifications stemming from the national-level review.

This part of the process requires about a year. Thus, by the following autumn the supreme commanders have the accepted proposals in front of them and draft the annual program for constructions and the priorities thereof, which they send in duplicate to the Military Committee and to the Council's Infrastructure Committee.

Within the Military Committee, the Standing Group studies the projects and their priorities from the military standpoint in general and from the standpoint of how they fit in with the joint strategic plan in particular. It then submits the projects to the higher level of the Military Committee for its consideration. In addition, the Infrastructure Committee looks into the technical and financial aspects of the projects and their potential for joint use.

The studies by the two committees, which reflect the military and civilian viewpoints, are conducted in the spring. The nations involved are represented on the committees, and they have the opportunity to make their views known. Once the observations and recommendations of the corresponding committee have been included, the projects are submitted to the Defense Planning Committee (or to the Council), which normally approves them.

The approved projects constitute a new slice of the infrastructure; then begins the implementation cycle, which becomes the responsibility of the host country, which must prepare the plans and estimates for the development of the project (type B estimate, in the NATO terminology). The host country must determine, in conjunction with NATO authorities, the precise sites of the facilities. It then proceeds to purchase, at its own cost, the necessary pieces of land and to contract out the projects to be built. The bidding can be national or international, depending on the financial scope of the project.

Once the work contract has been arranged, it is submitted, with a detailed budget, to the "Infrastructure Payments and Progress Committee," which must approve the necessary funds. The host country then begins to withdraw funds from NATO and starts the project.

The supreme commanders and the international secretary, along with the host country, monitor work on the project. Once it is completed, the host country conducts a final inspection for the Organization, after which the Payments and Progress Committee includes the facilities in the NATO inventory. At the same time, the Board of Auditors starts its audit to determine whether the funds have been used properly.

As we can see, this is a slow process in which all the interested parties take part. Although it seems to be a complex process, it is, nevertheless, simple in its approach and purpose, and it has turned out to be an effective system that enables the principle of national sovereignty to be reconciled with common interests.

2.4 Spain's Potential Contribution

The shares in the financing of NATO's structures (Civil and Military Budgets) are subject to negotiation, as we said in addressing this issue, but logically, a greater or lesser contribution is unavoidable, inasmuch as we are dealing here with the financing of common bodies in which all of the nations participate. Moreover, these shares are very small in relation to national budgets.

The financing of common infrastructure, however, which involves much higher amounts of money, allows for a much more flexible approach to the member countries' share. The principle of cooperation in a joint effort undoubtedly prevails, however, and thus Canada, which has on its soil only 0.01 percent of the total value of common facilities and which limits its forces in Europe to a 2,800-man brigade and an Air Group of 60 fighters, normally pledges to contribute 5 to 6 percent in the apportionment of the financing of the common infrastructure. In comparison, the facilities in the region of Greece and Turkey amount to about 20 percent of all projects, despite which Greece's share is only about 0.7 percent and Turkey's 1.2 percent. In other words, all countries must cooperate to a greater or lesser extent in accordance with their very diverse circumstances.

As we mentioned before, General Haig, speaking at the seminar in April 1978 on Spain's possible participation in NATO, estimated Spain's contribution to infrastructure expenditures at some \$50 million a year. Let us assume that this amount pertains to the infrastructure slice planned for the 1980-84 5-year period, during which time, as we said previously, \$5 billion will be spent, in other words, \$1 billion a year. Thus, the \$50 million a year that General Haig estimated for Spain comes to 5 percent of the total. This is about the same percentage contributed during the previous 5-year period by Belgium and Holland, below the shares of Canada and Italy and higher than those of Denmark, Norway, Portugal, Greece, Turkey and Luxembourg, as we can see in the Table of Percentages by Nation several pages ago.

There are several basic criteria, as we mentioned before (each country's capacity to contribute, the advantages for the user countries, the economic benefits for the host country), for determining the respective shares, but these criteria could be outweighed by a wide range of others, including those of a political nature.

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An econometric study of Spain's potential share cannot be undertaken a priori on the basis of the percentages assigned to other countries, as was done in our analysis of the financing of NATO's infrastructure, because we cannot restrict an estimate of the percentages to their relationship to certain macroeconomic aggregates. As we have already pointed out, the cost-sharing depends very much on each specific facility under consideration, on how interested certain countries are in using it and on the advantages that could accrue to the host country, plus political considerations.

If it were to join NATO, Spain would have to devote particular attention to its potential commitments to the financing of the common infrastructure projects that are on the drawing board. It would have to analyze in detail not only the aforementioned basic criteria but also a wide range of factors involved in each project, especially the benefits that would accrue to it from the infrastructure projects to be built in other countries and how interested the Organization would be in putting certain facilities in our country, weighing all this in conjunction with the national interest in the facilities and thus determining Spain's share in the common infrastructure program.

Therefore, we will begin by taking a look at the potential facilities on Spanish soil that could represent its contribution to the NATO infrastructure. We should clearly state in advance, however, that there is no obligation to construct certain facilities. Even if the NATO common strategic plan were to recommend certain facilities, the principle of national sovereignty would clearly prevail over any other consideration. Thus, for example, in the hypothetical case that there were powerful strategic reasons for NATO to have bases in the Canaries archipelago, if Spain, for obvious political reasons, wanted to exclude the islands from such a commitment, signing the North Atlantic Treaty would entail no obligation restricting sovereign decision-making in this regard.

The mere geographic contribution that Spain would make by joining NATO would already be a major factor in assessing its share, but the Organization's plans would unquestionably later propose taking advantage of the peninsula, and thus negotiations would ensue on preparing, adapting or improving our national infrastructure in accordance with NATO's plans.

Spanish territory is an important complement to Portugal and to the strategic base on Gibraltar in the creation of a naval air platform, a base of operations for antisubmarine surveillance and the protection of traffic in the Atlantic and the western Mediterranean by means of peninsula-based sea and air patrols.

At present, NATO has the following commands bordering on Spain's territorial waters (See Figure 3): a naval command headquartered in Lisbon with jurisdiction in the IBERLANT [Iberian Atlantic Area] zone, which surrounds the Canary Islands; another lower-level command in the BISCLANT zone, which includes the Bay of Biscay; a command in the Mediterranean zone, MEDOC, which surrounds the Balearic Islands (this command's status was left up in the air when France withdrew from NATO's military command, and it had to be transferred

to Naples, and, finally, a smaller command in the Strait of Gibraltar zone, resulting from the unusual circumstance of the British base on the strait.

If Spain joined NATO, it would probably necessitate the overhauling of this command structure. The MEDOC Command, which used to be in France, might be installed in Spain; the IBERLANT jurisdiction would, logically, be reassessed, and the GIBMED zone would probably be modified because the base at Gibraltar would no longer play the leading role that it does today. Gibraltar as NATO's only support point on the strait is not the same as Gibraltar with the entire Spanish coastline available to the Alliance. The British base itself would probably be affected. THE DAILY TELEGRAPH has already mentioned the possibility that if Spain joined NATO, Great Britain would agree to a joint British-Spanish command at the Gibraltar base, which would make it a NATO base, and then try to transfer to the Alliance the heavy costs entailed in its much-needed modernization.

From the standpoint of NATO infrastructure, which is what concerns us in here, all of this would mean setting up certain headquarters on Spanish soil and incorporating them into the Organization's telecommunications systems.

But in addition to the restructuring of commands consistent with Spain's potential membership in the Alliance, NATO has to appreciably bolster its reinforcement capacity. The not too distant experience of the 1973 Arab-Israeli conflict made it quite clear that in modern warfare, nuclear weapons aside, the rate at which costly and complex conventional war materiel is destroyed is very high, and hence the importance of rapid and safe supply lines by sea and, especially, by air. The Iberian Peninsula offers almost unique opportunities for the reinforcement and replacement of human and material resources in the European theater. The much-talked-about theory that Belgian Gen R. Close set forth in his book "L'Europe sans defense," a controlled surprise attack by the Soviet Union in Central Europe that would reach the Rhine in 48 hours, confirms the importance of the Iberian platform. The logistic importance of the Iberian Peninsula is even greater, if that is possible, if we do not take as pessimistic a view as General Close's.

Spanish security affairs expert Sanchez-Gijon asserts in his book "Spain in NATO" that: "The platform of the peninsula could make an inestimable contribution in this regard. Because of the need to monitor, bring in and send off this traffic, the idea of Spain as an aircraft base would have to be complemented by the idea of the peninsula as a servicing station." He backs up this view by citing the data furnished by U.S. Defense Secretary Harold Brown in his annual report on the Department of Defense budget for fiscal year 1979, which states: "By the close of fiscal year 1983, our plans and programs will have considerably increased the speed with which U.S. Army and Air Force reinforcements can reach Europe. At present, we could expand our in-place land forces by one or two divisions in 10 days after a decision to reinforce. By the end of fiscal year 1982, we plan to be able to deploy five reinforcement divisions in the same period of time. At present, we could perhaps send 40 air squadrons from the United States

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to Europe in a week; by the end of fiscal year 1982, we plan to be able to transfer 60 squadrons in those 7 days."

As we will see later, NATO's Long-Term Defense Program (LTDP) aims precisely at bolstering the potential for rapid reserve reinforcements and for safeguarding logistics deliveries to the theater of operations. The Iberian Peninsula is in a special position in this regard, and thus in this respect as well Spain, should it join NATO, would come under study from the standpoint of the infrastructure needed for these plans.

The Friendship and Cooperation Treaty between Spain and the United States, signed in 1976, grants the United States the right to use certain bases and facilities on Spanish soil for military purposes and specifies how they are to be used "in the event of an outside threat against or attack on the security of the West."

We can assume, therefore, that in carrying out the aforementioned reinforcement plans, the United States will have at its disposal the series of installations (bases, telecommunications centers, pipeline systems, depots, etc) that it has built in Spain under the successive agreements signed by the two countries and to which the United States has certain rights under the treaty.

We thus have the paradox that Spain, which is outside the NATO planning and decision-making forums, nevertheless contributes by way of its geography to the Alliance's plans. Thus, should Spain join the Organization, from Spain's standpoint nothing would be better suited to incorporation into NATO's infrastructure than the series of facilities that the United States has the right to use.

Under the Spanish-American Treaty, as published by the Foreign Affairs Ministry, these facilities are:

- The Rota Naval Base
- The Torrejon Air Base
- The Zaragoza Air Base
- The Moron Air Base
- The Bardenas Reales Firing Range
- The Cadiz-Zaragoza pipeline, with pumping stations and depots for the four bases above
- Other facilities designated as "minor," mainly warehouses and communications stations, some as important as the troposcatter communications network around Spain. Annex V contains a complete listing of these "minor" facilities.

Taking as our source of information the transcript of the U.S. Senate Foreign Relations Committee hearings (the Subcommittee on Foreign Agreements and Commitments), which deals with the agreements and commitments with Spain in Part 11 (11 May 1969), we can see that the construction cost of the above facilities in 1967 dollars, according to Senator Fulbright's statement, was \$1.008 billion.

If we compare this amount with the current estimate of the total value of the "common infrastructure" facilities in the countries bordering the Mediterranean (Greece, \$384 million; Italy, \$658 million, and Turkey, \$783 million), we can see that the series of facilities designated "for joint Spanish-American use" constitute a significant part of NATO's common infrastructure in these countries.

Another way to assess the relative importance of infrastructure projects constructed under the Spanish-U.S. agreements is to compare the Spanish pipeline system with others that the Alliance has built in Europe. NATO's complex Central Europe Pipeline System, which runs through five countries (Germany, Belgium, France, Holland and Luxembourg) and takes care of the military and civilian needs of eight countries (the above five plus Canada, the United States and England), is a network of 5,800 kilometers. Spain's Cadiz-Zaragoza pipeline is 800 kilometers long, in other words, more than 12 percent of the pipeline length laid in Central Europe for eight countries. Although the Central Europe pipeline is a complex system with more than 100 pumping stations and depots, we can still see that the Spanish pipeline is a major infrastructure component. Planned to serve the U.S.-built bases, it could serve as the hub for future feeder lines that would round out its potential for the role that Spain would play if it were to join NATO.

We have mentioned these facilities as potential Spanish contributions to the common infrastructure because, first of all, they are facilities to which a foreign power, the United States, already has major use rights, stemming from a Friendship and Cooperation Treaty, not a defensive alliance such as NATO. Thus, these rights do not entail a joint defense commitment between Spain and the United States, which is the case with NATO, under Article 5 of the treaty.

Since the treaty with the United States is fundamentally political, because as we will see later on, the economic component could be described as negligible, when the time comes to renegotiate the treaty before its expiration in 1981, we can assume that Spain will take an objective look at its options and evaluate whether the mortgage involved in ceding the use of these facilities does not offer greater advantages under NATO than under the bilateral treaty with the United States.

Without delving into this kind of political decision, which goes beyond the scope of this book, we would, however, point to the assessed value of the aforementioned facilities and note the possibility that if Spain joins the Alliance, they will be considered for inclusion into the NATO common infrastructure, instead of being kept exclusively under American mortgage.

Consideration of Spain's potential contribution to the NATO infrastructure would not, of course, be limited to these facilities. Rather, it could extend to other exclusively Spanish facilities, in which case we would have to analyze expanding their capacity and enhancing their operating procedures, increasing the potential for the use of containers, building fuel, munitions

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and war materiel depots, overhauling access roads and communications, pipeline linkups, etc.

The facilities that could be incorporated into NATO's common infrastructure would undoubtedly include the semiautomatic air defense system (SADS), which was developed under the so-called "Grand Combat" program. It was initially budgeted at \$70 million, with the possibility of an additional \$50 million. Its final cost might have exceeded the sum of these two. The hub of this system is at Torrejon, and it stretches through much of Spain with a series of operations centers, radar sites, telecommunications centers and microwave networks to transmit the radar-detected data to the operations centers. If Spain were to join NATO, it could lead to the total automation of the Spanish system and its inclusion in the NADGE system, possibly through France's STRIDA system; such coordination is already provided for in the current situation. The NADGE system, which extends in a wide arc from northern Norway through Germany, Italy and Greece to the eastern tip of Turkey, was built at a total cost of \$320 million. Thus, the incorporation of the SADS system, the cost of which we cited above, has to be considered relatively important in terms of the infrastructure's economic value, even if we take into account that \$100 in 1976, the year that the SADS project was built, are equivalent to \$68.40 constant dollars in 1970, when the NADGE system was completed.

Another sector that Spain could not remain outside of is the joint NATO telecommunications system. NATO has an integrated communications system (NICS) that takes care of most of its telecommunications, including the Satellite Communications System. One of the main efforts in the common infrastructure program is to improve the NICS system at a scheduled cost of \$500 million, plus other telecommunications projects that are not part of NICS, such as the mobile radio links between headquarters and tactical forces, which are expected to cost another \$500 million. This bespeaks NATO's great interest in enhancing the efficiency and operability of its telecommunications. After Spain joins the NATO integrated telecommunications system, it could contribute the Spanish Army's Telecommunications Network. This up-to-date system would then have to be taken into consideration as another major economic contribution to the NATO infrastructure.

How much would it cost Spain and the other countries to carry out these projects? What would Spain's contribution be to the general NATO infrastructure programs? An a priori quantification is not possible. In the event that Spain joins the Organization, we would have to take a look at the plans and projects that would be gotten under way and the priorities thereof, and once Spain's representatives were part of the team drafting the infrastructure programs, with the previously analyzed criteria as the basis for determining shares, Spain could then negotiate the respective percentages with the rest of the member countries.

In order to develop a bargaining position in the negotiations, we should construct a simple model of NATO infrastructure financing, similar to what we did with the percentage shares in the Alliance's civil and military structures.

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The variables that we would try to introduce into this model would be the capacity of each country to contribute, the advantages for the potential user countries and the economic benefits that would accrue to the host country. These have been considered the basic criteria for determining the respective contributions.

But in order to do this, as we have stated, we would first need to know which specific Spanish facilities NATO plans to include in its infrastructure, the programming and priorities in building or handing over these facilities, and the NATO infrastructure in other countries of which Spain would be regarded as a potential user. Therefore, under current circumstances, we cannot proceed any further with this, but we would make note here of the econometric analysis that could be done when the time comes.

The figure of \$50 million a year that General Haig quoted for Spain and that, as we have seen, is equivalent to 5 percent of the total, must have been calculated on the basis of Spain's GDP and defense spending in comparison to those of the other NATO countries.

Let us take a look at these figures:

	<u>Percentage(1)</u>		<u>GDP(2)</u>	<u>DS(3)</u>
	<u>(With France)</u>	<u>(Without France)</u>		
1. United States	23.65	27.23	1,883.6	107.770
2. Germany	22.89	26.36	513.9	13.760
3. France	13.16	--	380.7	11.720
4. Great Britain	10.42	11.99	244.5	10.880
5. Italy	6.89	7.93	196.0	4.640
6. Canada	5.48	6.31	197.2	3,610
7. Belgium	4.82	5.55	79.4	1.820
8. Holland	4.43	5.10	106.4	3.360
9. Denmark	3.21	3.70	43.2	1.080
10. Norway	2.71	3.12	35.6	1.120
11. Turkey	1.15	1.32	44.8	2.650
12. Greece	0.69	0.79	25.8	1.100
13. Luxembourg	0.18	0.21	2.6	0.025

(1) Percentages for Slices XXVI-XXX, rounded off to the second decimal point.

(2) In billions of dollars. According to the 1979 OECD Economic Report.

(3) Defense spending in 1977 in billions of dollars. According to the 1978-79 Military Balance Sheet.

As we can see, there is a correlation between a nation's share and its GDP and defense spending. Spain had a GDP of \$115.6 billion and spent \$2.154 billion on defense in 1977, and thus according to these figures, its share would be between Canada's (5.48 percent) and Denmark's (3.21 percent). We could estimate it initially at around four percent, since Spain is closer to the Belgian than to the Canadian magnitudes.

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If we use "per capita" amounts, however, as we did in our estimate of NATO structure financing, Spain is in 13th place in per capita GDP, between Italy and Greece, and in 14th place in per capita defense spending, between Turkey and Portugal.

In the infrastructure slice in question these four countries have the following per capita percentages (in the normal case, with France participating):

<u>Country</u>	<u>Per Capita Percentage</u>
Italy	0.12
Turkey	0.03
Greece	0.07
Portugal	0.03

The average per capita percentage of these four countries, weighted in accordance with their populations, is 0.076, which when applied to Spain's population of 36.672 million, is equivalent to an absolute percentage of 2.29.

We feel that the per capita values are more representative of each country's economic realities. Rounding out the 2.79 percent to a rough reference number, we could thus conclude that Spain's share ought to be around 3 percent. This would mean that of the \$1 billion in annual expenditures for the 1980-84 period, Spain would contribute about \$30 million a year to the financing of NATO's common infrastructure. At the average exchange rate of 85 pesetas to the dollars, this would come to 2.55 billion pesetas in 1981, which is equivalent to 0.76 percent of Spain's Defense Budget in 1981.

This 0.76 percent estimate would, we emphasize, be dependent on whatever specific programs were undertaken and on Spain's involvement in them. Moreover, any initial evaluations would have to give serious consideration to the potential infrastructure contributions that Spain would make upon joining NATO and that we have examined previously, especially the facilities that are available today to the United States Armed Forces and whose relative economic value we have outlined above.

FOOTNOTES

12. In "Burden Sharing in NATO" (Holmes and Meier Publishers, Inc, New York, 1979), Gavin Kennedy analyzes the problem of balanced participation and proposes theoretical methods for achieving it, which as far as we know, NATO has not incorporated.
13. Our main source in connection with the problems inherent in financing the common infrastructure has been the "General Accounting Report to the Congress: How the U.S. Finances Its Share of Contribution to NATO," 23 February 1973.

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Chapter II: Potential Indirect Impact on Defense Spending

In the previous chapter we analyzed the economic commitments that a country could contract by joining NATO, commitments consistent with the need to finance the Alliance's organizational structure and shared infrastructure.

Now then, the attempt to resolve the national security problem by joining the Atlantic Alliance could also have an indirect impact on defense spending.

A hypothetical membership in NATO, with a status similar to that of most member countries, entails participation in a "common planning" of forces. Such planning takes into account what each country can contribute to the joint effort; recommendations are made to the various countries in a bid to achieve several common goals, and at times certain types of aid or economic assistance might be given to some members, if deemed opportune, all of this subordinate to the principle of national sovereignty that applies to any commitment contracted with this multinational organization.

We will therefore study in detail the common planning process within the NATO agencies and the influence that it might have on the amount and pattern of defense spending of a member country.

Since such common planning requires an analysis and comparison not only of the funds that each country contributes but also of the overall corresponding defense expenditures, we will later conduct an econometric analysis of national defense spending in relation to the defense spending of the NATO countries.

3. Possible Influence of NATO Membership on National Defense Budgets

We will begin by stating clearly that membership in the Atlantic Alliance does not entail any commitment to achieve a given level of budgeted defense spending nor to earmark such funds in one way or another.

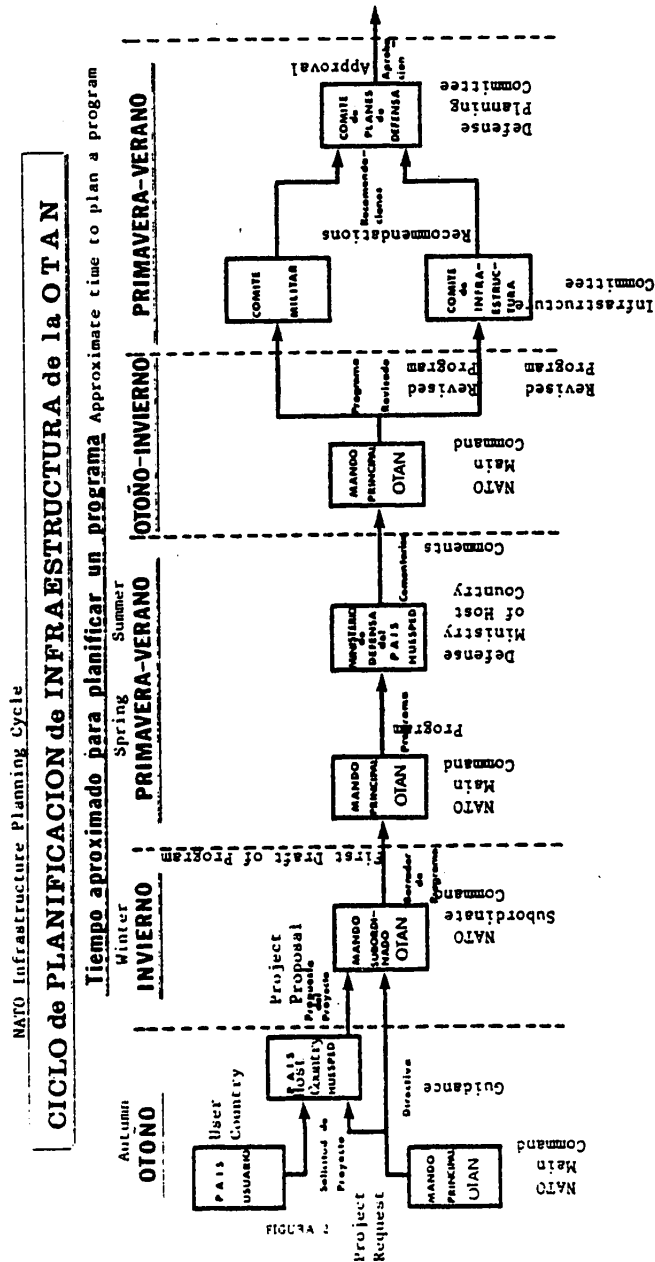
There are two basic principles in NATO planning, and to a certain extent they are contradictory or at least liable to cause differences of opinion. On the one hand, the Organization's higher authorities determine the necessary levels of common forces with which it must counter the combat potential that threatens its security. On the other, each nation has absolute sovereignty over and responsibility for its contribution to the common defense.

It is not easy to reconcile the NATO-determined needs and the capabilities of each country. As we will see later on, the Organization undertakes a process of jointly analyzing these needs and capabilities, thus giving rise to recommendations to the member countries, recommendations that have in the past taken into consideration the potential of each country; thus, they have been, in general, very realistic.

3.1 NATO Planning of the "Force Goal"

The Division of Defense Planning and Policy of the International Secretariat, the International Military Staff and the Superior NATO Commands cooperate

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closely in planning for the forces that are deemed necessary, and this translates into a force goal or level to be achieved. The planning is based on the threat to the Alliance's security posed by the arsenal of the Warsaw Pact in comparison to the potential of the NATO forces.

The joint force level to be achieved must be reconciled with the capacity of member countries to furnish the required funds. Over time, NATO tries to minimize the gap that usually arises between the force needs and the capacity of the member countries, so that the Alliance's actual defense capability squares with the military potential deemed necessary to meet the hypothetical threat.

The first time that an attempt was made to reconcile these two factors (needs and capacities) was in 1951. A committee of 12 members (representing the 12 countries that made up the Organization at the time), plus 3 secretaries, Averell Harriman, Edwin Plowden and Jean Monnet (they came to be called "the 12 Apostles" and "the 3 Wise Men") drafted a report to be submitted at the ministerial meeting in Lisbon in 1952. The report set forth the principle that "joint defense must rest on a firm, solid economic and social base of the members, and none of them must be called upon to bear a military burden that exceeds its capacity." It thus established a defense program in accordance with the economic capabilities of the Alliance's components.

As a result of this report, the Atlantic Council decided at its session in Lisbon in 1952 that each year there would be a "determination of needs" to keep NATO's essential defense capabilities up-to-date.

Thus arose the so-called "annual review," whose procedures are similar to those that an individual nation has to follow in determining its own defense budget. For the first time in history, however, this was being done at a multinational level, which entailed a much more complex process than for an individual country and that required a detailed exchange of confidential information on military arsenals and budgets, as well as the economic capabilities of each country.

This process also required the establishment of common definitions in NATO for the various categories and classes of forces, as well as some degree of harmonization of defense budgets to enable spending in the various national programs to be compared.

Given the complexity of the process and in order to enhance the effectiveness of the annual review, a triennial review was instituted in 1961. Since every defense program requires a relatively long period of lead time, the feeling was that the planning period had to be lengthened. Nevertheless, since no democratic government can make a firm commitment for a period of time that exceeds the established duration of its national legislature, it was decided that the review would analyze the objectives to be achieved during the ensuing 3 years but that the governments would be asked only to make firm commitments for the first year. Thus, the plans for the following 2 years would only be tentative.

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The objectives to be achieved were thus classified into three categories:

- "Firm" objectives, to be achieved the year following the review.
- "Scheduled" objectives, intended to be achieved in the second year.
- "Possible" objectives, presented as desirable for the third year.

The Annual Review thus became an ongoing process. The "scheduled" objectives that had been established during the previous Annual Review were modified in the following review as a function of experience and the developments of events. The "possible" objectives were confirmed or adjusted during this second year so as to constitute "scheduled" objectives for the current year, and new "possible" objectives arose for the third year.

This provided ongoing guidelines for the defense effort that enabled NATO authorities to undertake their planning flexibly and consistently.

3.2 5-Year Planning

For reasons similar to those that made the 3-year review advisable, the ministerial session in Ottawa in 1963 adopted 5-year planning based on the procedure instituted in the United States by Robert McNamara and which had been adopted subsequently by several NATO member countries with modifications in keeping with their own particular situations.

Under this procedure, force planning is analyzed periodically to determine the joint force level to be achieved, which is called the "Force Goal" within the framework of a 5-year plan.

This procedure enables future force plans to be modified in accordance with a more complete and farsighted assessment of the situation than the previous 3-year system. Moreover, it provides the member countries with a solid basis for estimating their contributions.

The planning process has to reconcile the military strategy that has been worked out for the Organization, the force requirements and the resources available to meet these requirements, resources that ultimately pose an economic problem. Therefore, force goal planning must theoretically take an economic approach to see to it that the available resources are sufficient to carry out the approved defense programs, through the most rational possible use of these resources, based on a criterion of profitability or cost-effectiveness and, moreover, see to it that the apportionment of financial burdens among the various countries is as equitable as possible.

The process begins (See Figure 4) with the "Situation Assessment" that the Military Committee does of potential threats during the 7 ensuing years. It analyzes the Warsaw Pact's arsenal and deployment in comparison to the Atlantic Alliance's and tries to introduce into its analysis all elements that might affect this situation: available weaponry, level of training, technological developments, demography, etc.

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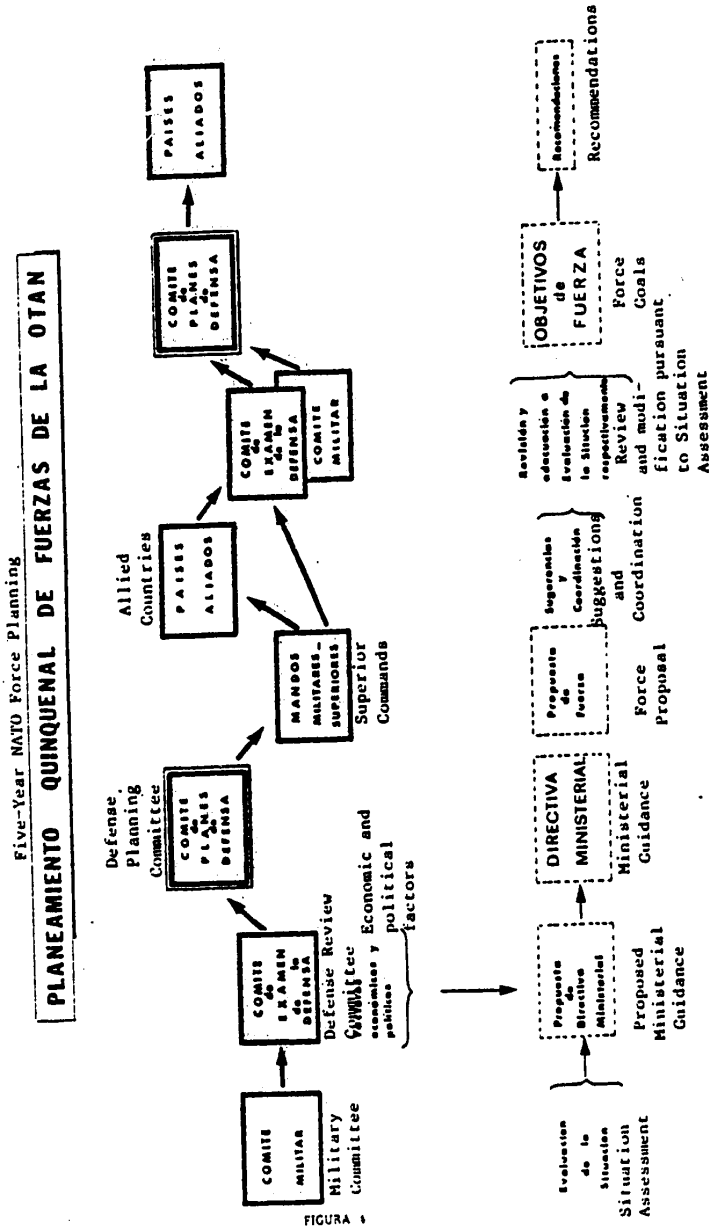


FIGURA 1

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The Defense Review Committee then enters the picture; it is chaired by the assistant secretary general of Defense Planning and Policy and comprises representatives of each member country and of the various NATO supreme commanders.

The studies to be conducted are based on the assessment of the military situation done by the Military Committee, plus the economic and political factors that could affect the capacity of each country to contribute to the defense effort. A wide range of indicators are taken into account, such as GNP, per capita income, the balance of payments, demographic factors (especially available manpower), the percentage of industrial capacity use, investment needs, the tax burden and any other economic indicators that might serve as terms of reference for an equitable apportionment of the defense effort burden and for the best utilization of the funds available for defense.

Taking all these elements into account, the Defense Review Committee drafts the proposed "Ministerial Guidance" on the force levels to be achieved. The "Ministerial Guidance" is submitted to the Defense Planning Committee (DPC) for its consideration; the committee promulgates it at its spring session of ministers and sends it to NATO's highest military authorities.

The supreme military commanders submit the Ministerial Guidance to the various countries, along with the "Force Proposal" stating the level of forces that they feel each country ought to contribute during the period under consideration.

In the event that the force levels advocated by NATO are at odds with the defense plans of a country, the international civil and military authorities, the representatives of the supreme military commanders and the authorities of the countries involved hold trilateral talks in a bid to coordinate their plans. The conclusions of these talks are again sent to the Defense Review Committee, which proceeds to assess them along with the representatives of all countries and of the supreme commanders. At the same time; the Military Committee examines whether the new approach to force planning can continue to meet military needs in accordance with NATO's strategy.

The results of these reviews and further coordination are submitted as definitive proposals to the Defense Planning Committee. The ministers of each country analyze these proposals and determine whether they are consistent with the military needs determined by the Military Committee, with the overall balance being sought and with the feasibility of their being carried out by each country. The 5-year plan is approved at the ministerial session in the spring after the one in which the first Ministerial Guidance was issued. This 5-year force plan becomes the "Force Goal" to be achieved during the ensuing 5 years. The "Force Goal" is broken down and submitted as "recommendations" to the ministers of the countries represented on the Defense Planning Committee. It must be adopted as the basis for national defense planning for the ensuing 5 years and as firm commitments by each country for the first of those 5 years.

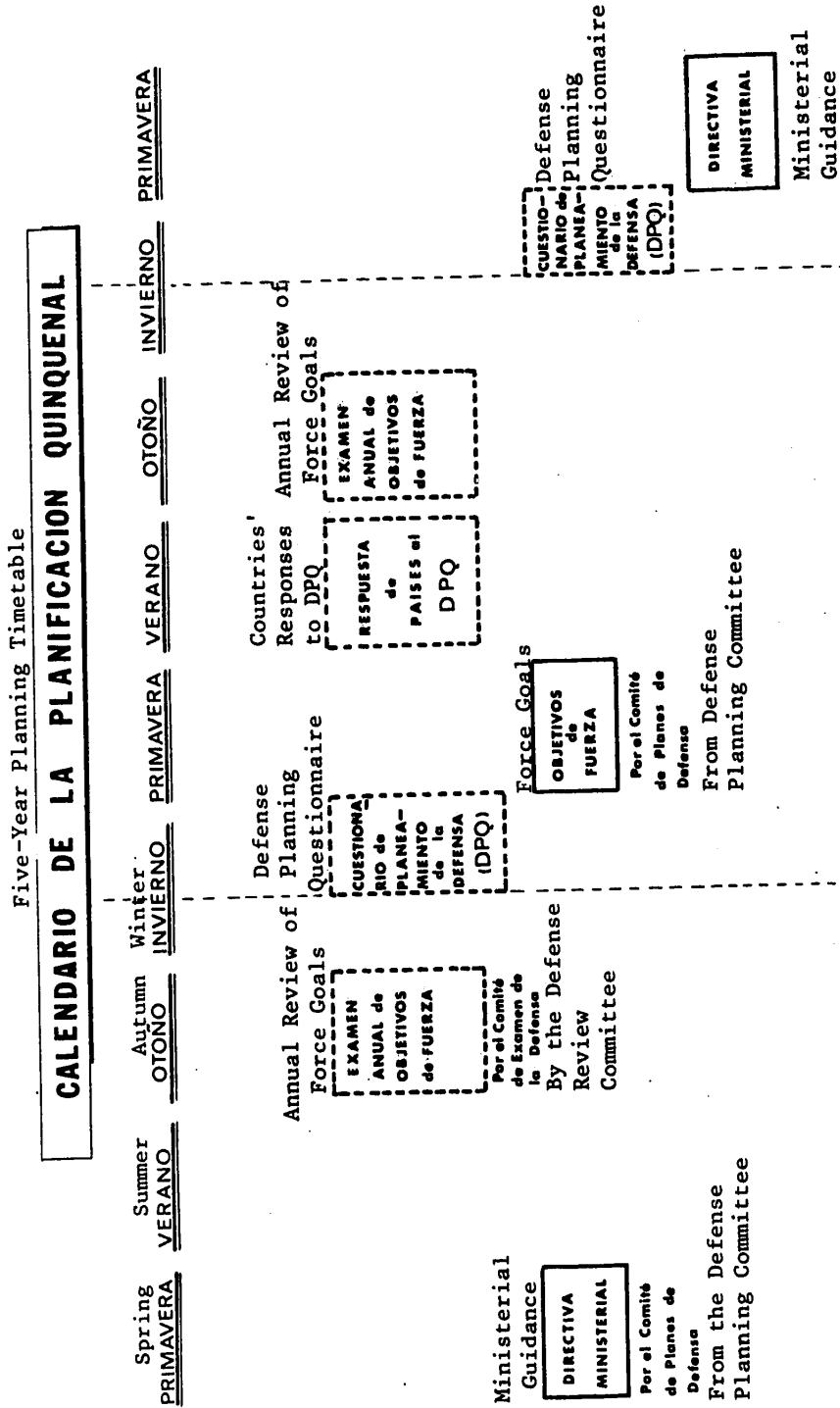


FIGURA 5
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Thus, what began with a Ministerial Guidance issued in the spring of a given year does not become a "Force Goal" for a 5-year period until the spring of the following year. Hence, the process for a 5-year plan requires 6 years. A new Ministerial Guidance is not issued until 2 years after the previous one, thus beginning a new 6-year cycle for another 5-year plan (See Figure 5).

In addition, at the beginning of each year the countries receive a Defense Planning Questionnaire (DPQ), containing questions about their annual defense budgets and longer-range financial projects and plans. The nations fill out the questionnaire before autumn. Since the "Force Goal" is determined every 2 years, there are two DPQ's for each "Force Goal."

Furthermore, every autumn the Review Committee conducts a Defense Review. It analyzes nation by nation the force goals that have been achieved and those that have not been and prepares a draft annual report for the Defense Planning Committee.

Under the forces commitments that a country makes to the Organization, these forces' tie-in with or subordination to the NATO command can be placed in the following categories or classes:

a) Forces under the command of NATO:

These are the forces that are under the supreme commanders of NATO in peacetime. This applies specifically to the antiaircraft defense based in Europe, which is under SACEUR, in view of the immediate reaction required of these forces in the event of an alert. Also under the NATO command is a group of forces from various countries that is called the Allied Mobile Force. Though small and mainly symbolic, its mission is to transfer rapidly by air to one of the deployment flanks in the event of an imminent threat. Other forces under the NATO command are the Atlantic Naval Forces, which come under SACLANT (Supreme Allied Commander Atlantic), which are practically all from the United States, except for a small group of vessels from other nations that symbolize their participation. The use of these forces in any instance must be authorized by the corresponding national authority.

b) Forces "assigned" to NATO:

These are forces that remain under national command in peacetime but that would come under the NATO command in the event of an alert, on the dates and for the periods agreed upon. This status applies, for example, to the units that other countries (except France, which is under a different system) have stationed in Germany, as well as other major units that although located on national soil, have been previously committed to this "status" of "assigned" forces.

c) Forces "reserved" for NATO:

These are forces that are under domestic command in peacetime and that in the event of war are scheduled to be placed under NATO command, but without

any time periods having been stipulated in advance for this change of command. Naval forces usually have this status.

d) National forces:

These forces are not involved in NATO's joint strategic plans because their mission is to defend national territory and because they are under the exclusive orders or the corresponding domestic military command.

The commitment status of each of these units to the NATO command can be confirmed or changed in an annual reconsideration.

The units under NATO command and the units assigned to NATO normally have to maintain the preparedness levels advocated by the NATO command and must take part in maneuvers with other allied armies, which entails certain expenditures that could be avoided by not belonging to the Alliance.

As we have pointed out, NATO planning begins in the spring. Thus, the countries whose fiscal years begin in July, as is the case with the United States [sic], feel that it would be a good idea to change the planning timetable so that domestic budget planning is done before common forces planning. There is disagreement over this, however, because others feel that it is more advantageous for NATO force planning to precede each country's budget process.

Another weak point in 5-year planning of forces is that weaponry planning, especially for complex weapons systems such as aircraft, missiles, etc, normally require longer periods (from 10 to 15 years), and thus the two are hard to reconcile. This is one of the reasons for the current trend towards longer-range planning, as we will now see.

3.3 The Long-Term Defense Program

At the summit meeting of heads of state or government in 1977, President Carter submitted to the Organization a long-range planning program that would go beyond 5-year planning and that would allow for a better coordination of national defense plans by having the Organization's sights set on long-term planning that would facilitate a suitable response to the ever-increasing offensive might of the Warsaw Pact.

As a result of the U.S. initiative, the Washington summit meeting in May 1978 approved the startup of the so-called "Long-Term Defense Program" (LTDP). This program examines the weaknesses in the Alliance's arsenal in relation to the Warsaw Pact, especially the latter's superiority in so-called conventional forces (in other words, nonnuclear weapons) and the general improvements that NATO ought to make in its military capability over 10 to 15 years to make up this gap.

The LTDP focuses on a series of specific issues to boost operational capacity in certain priority areas (task forces).

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The areas initially selected for the 1980's are:

1. Level of preparedness
2. Reinforcement capacity
3. Mobilization of reserves
4. Naval capability
5. Air defense
6. Command, control and communications
7. Electronic warfare
8. Rationalization
9. Logistics
10. Theater nuclear forces

This long-range planning project is still in its initial phase of development, inasmuch as the agencies that will carry it out are just now being organized. They will conduct detailed studies of the levels to be achieved, develop timetables for the subprograms and their phases, determine their cost and define priorities and procedures for the execution and monitoring of ministerial decisions.

The LTDP sets concrete objectives in each of the above areas, which under the current LTDP are broken down into 120 specific measures. The long-term program sets intermediate objectives that coincide with NATO's 5-year planning, which is reviewed every 2 years; thus, the 5-year plan is coordinated with the LTDP. Long-range planning is regarded as more political than 5-year planning because it better identifies the intentions and trends of the various member countries.

In the words of U.S. Defense Secretary Harold Brown in his 1979 report to Congress: "We are working with our allies to move forward together in this regard. One of the main accomplishments in the LTDP process has been the growing feeling of solidarity in the Alliance and the pride in each particular nation's effort to revitalize and strengthen the Alliance... We recognize that the biggest effort must be made during the startup phase of the LTDP..." This project is thus in its infancy, but it is a clear sign of the intention to work towards increasingly long-range common objectives. The annual planning begun in 1951 gave way to 3-year planning and then to 5-year planning. Now the goal is 10-15 year planning, an ambitious aim, though it is limited to very specific fields, mainly logistics, infrastructure or the utilization of forces and is not designed to replace the 5-year planning of force goals. No doubt, however, it will influence such planning by setting longer-range objectives.

3.4 NATO Data Bank

Long-term planning has made it even more obvious that NATO needs to have duly systematized and processed information at its disposal.

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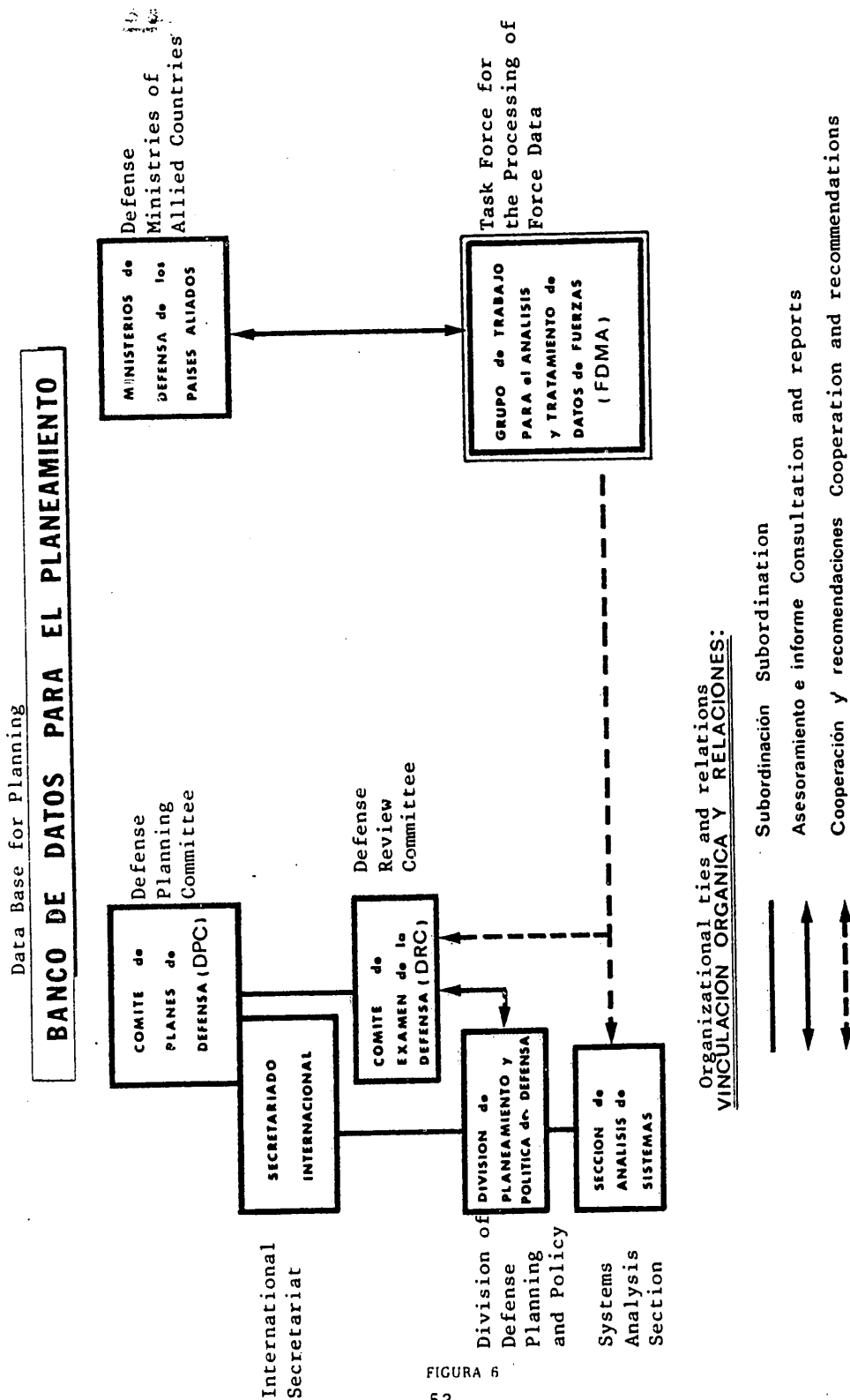


FIGURA 6

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The Systems Analysis Section (SAS), a branch of the NATO International Secretariat, took charge of meeting this need. The section has organized the NATO Force Planning Data Base (NFPDB), which is in the final testing stage and could soon be fully operational.¹⁴

The Systems Analysis Section began its work in the early 1970's with the objective of preparing accurate information for NATO talks with the Warsaw Pact on the possible reduction of forces by both blocs (Mutual and Balanced Force Reductions or MBFR, in NATO terminology). The Defense Review Committee found this computerized information file very useful and asked the SAS to develop the system further. Thus, in 1975 the Task Force for the Processing of Force Data (FDMA) was set up; it is made up of representatives from the International Secretariat, the International Military Staff, the NATO supreme commanders and the member countries.

The FDMA's goal is to set up "the main automated storehouse of data on NATO Forces" in order to:

- Develop mathematical models to analyze armed forces
- Conduct comparative studies on military capabilities
- Compare weaponry systems to facilitate their standardization and inter-operability,¹⁵
- Support the drafting of documents for NATO planning.

To this end, the FDMA coordinates the definitions used by various countries, thus avoiding different interpretations of the same word (which, like headquarters, combat unit, support unit, etc, can vary according to the nation and branch [army, navy or air force]), and catalogues and updates the data on NATO and Warsaw Pact troops and unit status. The FDMA Task Force's organizational links are shown in Figure 6. It meets twice a year for 1 week. Data are updated at least annually and in some cases up to four times a year. The NFPDB's key file is the catalogue of military units according to their "primary function," independently of the branch to which they belong. Contained here is the available information on the name, nationality, status and garrison location of each unit, its troops, weaponry, equipment and hierarchy, as well as all sorts of technical specifications as to the performance and cost of its weaponry and equipment, all of this in accordance with the following outline:

Unit:

-- Identification

Name
Number
Nationality

--Organizational linkage:

Army, navy or air force
Degree of coordination
Subordination

--Status:
NATO Subordination
Force level
Level of preparedness

--Location:
Name
Nation
Geographic coordinates

--Troops:
Class
Number

Weaponry:

--Equipment stores
Class
Number

--Characteristics:
Technical data
Performance parameters

--Programs:
Research and development
Production

--Costs:
Research and development
Procurement
Maintenance

The following could be users of this data bank:

--The Defense Review Committee
--The Military Committee
--The NATO supreme commanders
--The Conference of National Armaments Directors
--The Defense Ministries of the member countries

To obtain access to the information, the users go to the NFPDB through the "data bank administrator," who belongs to the Systems Analysis Section and is responsible for safeguarding the security of the stored data, in accordance with previously stipulated criteria. Respect for national sovereignty is guaranteed because each country has control over the information concerning it and over the use that can be made of it. The approval of the Defense Review Committee is required to obtain combined information on several countries.

We should stress that the NFPDB is an automatic intelligence processing system, not an information system for the tactical command. Its purpose is to systematize data that might be of interest for planning, not to process

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operational data for command purposes. The various NATO commands have more or less complex systems of technical and command information, but none is as sophisticated or automated as the NFPDB.

3.5 Consequences of Joint Planning

There is obviously no relationship between the number of units committed to the NATO command and a country's economic and military capabilities. The fact is that each nation has a different commitment, for quite different reasons. Germany has all of the land units of its maneuvers army "assigned" to the NATO command, with only its territorial defense units under national command. At the other extreme, during Salazar's regime Portugal had only one brigade "assigned" to NATO, and this was more theoretical than real, inasmuch as it ignored its commitment to NATO when colonial wars required the bulk of its Armed Forces. Portugal has now again agreed to assign one brigade. The remaining European countries have committed varying levels of forces, but not in relation to their total respective capabilities.

The Task Force at the Georgetown University Transatlantic Policy Center has published a study called "Allied Interdependence" in which it emphasizes that: "Europe provides most (of the forces available to NATO)...contributing 90 percent of the land forces, 80 percent of the naval forces and 75 percent of the tactical air forces," even though the United States has an overall military machine that is much larger than all of Europe's.

If there were any explanation for the level of forces that a country assigns to NATO, it would be the greater or lesser extent to which it is in the forefront of the European theater, plus its economic and military strength. In any case, each nation is a case apart, and a wide range of economic and political considerations, as well as location in a potential theater of operations, influence these commitments. Ultimately, however, this is a national decision.

Something similar could be said about the overall makeup of a nation's Armed Forces. The organization of the Armed Forces into three branches (land, sea and air) and a further breakdown into the various specialties (sections and services) are the exclusive jurisdiction of each nation. Economics are the main conditioning factor, though tradition and inherited situations, which take time to adapt to the needs of the moment, also carry great weight. Now then, if the organization, equipment and makeup of a nation's Armed Forces are dependent on domestic defense policy, when a nation decides to resolve its security problem not through isolation or neutrality but by joining an alliance, the structure of its Armed Forces will unquestionably tend to accommodate itself to the missions that are assigned to them within the alliance, and they will thus be able to devote less attention to tasks that other members of the alliance handle for the group as a whole.

NATO has advocated and pushed for the specialization of defense efforts in accordance with the tasks that are assigned to each nation in the joint planning, and although there has been little progress in this regard, the

fact is that the Alliance, by its very existence, influences the security decisions of each country. For example, the nuclear and naval arsenal of the United States enables Germany to focus its defense resources on its land army and on air support for these land forces, which does not mean that each nation does not have to be concerned about potential threats to national security other than a collective threat to the Alliance. A clear-cut example of this was the fighting between Greece and Turkey, when the two countries earmarked their defense efforts to respond to the threat posed by each other, though they are neighbors and allies.

With regard to the economic consequences of joint planning on the total expenditures that each country allocates to defense, since national governments and parliaments are ultimately the ones that decide on defense spending, there is no reason to think that NATO tries to impose specific criteria for defense spending percentages on the various member countries.

Let's take a look at the following list, which shows defense spending as a percentage of the GNP. This percentage can be taken as a simple and valid indicator of a nation's defense effort, although we will later see that when considered in isolation this indicator has major limitations:

<u>Country(1)</u>	<u>Defense Spending as a Percentage of GNP(2)</u>
United States	6.0
Germany	3.4
France	3.6
Great Britain	5.0
Canada	1.8
Italy	2.4
Holland	3.6
Belgium	3.4
Turkey	5.7
Denmark	2.5
Norway	3.1
Greece	5.0
Portugal	3.5
Luxembourg	1.1
Iceland	0.0

(1) In order of largest to smallest GNP

(2) According to 1978-79 Military Balance Sheet of the London Institute of Strategic Studies

The above figures clearly show the differences in defense spending among NATO nations, due to each allied nation's independence in determining its own defense effort. Nevertheless, although NATO cannot try to impose criteria for this effort, membership does require some degree of accomodation or at least attention to NATO criteria in determining national defense budgets.

Thus, the countries that have tended to reduce their defense spending as a percentage of the GNP have been pressured by NATO authorities not to. In its "Defense White Book" of 1977 Great Britain announced a 200 million

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cut because of its economic situation. This prompted a letter from the NATO secretary general, Luns, to the British defense minister, in which he stated that the latest indicators pointed to a recovery of the British economy, adding: "Therefore, it is essential not only to bring the defense sector up to the levels set for Great Britain in the (NATO-conducted) defense review, but also to reallocate the funds of which it has been deprived, excessively in our judgment, for economic purposes. The United Kingdom, which has cut its defense spending in real terms year after year, should again undertake the positive policy that it pursued in the past to take part in the effort required by the allies, in view of the activities of the Warsaw Pact."

Although the British Defense Ministry's response argued that the country still earmarked almost five percent of its GNP to defense, which was "clearly higher than the average of the European members of the Alliance," in 1978 the British Government announced that defense budgets for the 1979-80 and 1980-81 fiscal years would be increased three percent in real terms. Mr Luns then stated that this move "was regarded by the allies as a positive reaction to the appeal issued in the 1977 NATO Ministerial Directive calling for such increases."

As of 1975 Italy also informed NATO of its plans to reduce its troop strength for economic reasons, albeit under a modernization program in which the cut in troops would make possible better equipment for the units. This prompted the Organization to express its concern over the Italian plan, inasmuch as its 2.6 percent of the GNP earmarked for defense was already one of the lowest in the Alliance. Italy later stated that in order to meet its commitments to NATO, it had requested special credits totaling more than 3 billion liras and that, in addition, starting with the 1976 budget, the benefits paid to veterans, which were being raised by an average of 500 million liras, had been transferred to the Treasury, which would make extra funds available for the national defense budget.

Denmark, which by law has a 4-year budget planning system, set its defense budget at the equivalent of 2.4 percent of its GNP for the 1976-1980 period. Three days after the budget had been passed, Mr Luns wrote to Denmark's defense minister that the budget was not "what NATO had hoped for nor what it judged necessary." He also referred to the goals set forth in the NATO defense review, according to which "in order for Denmark to achieve these goals, it had to boost its defense spending by about three percent a year in real terms."

In addition, Canada has begun an ambitious program to reoutfit and modernize its forces, and according to the defense director in the Foreign Affairs Department, this initiative is in response to the pressures by the European members of NATO, although he concedes that at the same time it is an attempt to ease the mounting discontent in Canadian military circles.

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Therefore, we can state that in spite of the wide range of percentage defense spending and the autonomy of each country to determine it, the environment in NATO is one in which nations justify their spending and respond to criticism by NATO authorities when their defense effort is not in keeping with the goals set forth in the NATO review.

NATO countries recently agreed for the first time to boost annual defense budgets by about three percent in real terms during the 1979-1986 period. This kind of agreement was proposed in 1977 and adopted in 1978, although there is an additional provision that states that "economic circumstances will influence the chances of reaching the agreed upon three percent." We should emphasize that the various members were not being asked to boost their defense spending in a bid to achieve equilibrium in their respective defense burdens; they were simply being asked to approve a percentage increase in the spending level that they had freely decided on. According to official NATO sources, the defense budgets submitted in early 1979 for analysis by NATO showed that six countries were meeting the three percent goal; they were West Germany, Belgium, Norway, Luxembourg, Great Britain and the United States.

In 1980, only two countries kept up the agreed upon three percent boost. Germany, which was planning an increase of just 1.5 percent, had to listen to the complaints not of NATO authorities but of the U.S. Government, given Germany's leading role in the Alliance. This prompted a trip to Washington by the German defense minister, Hans Apel, to explain to his American counterpart, Harold Brown, Germany's reasons for not meeting the goal. The Reagan Administration has been quick to point out that in view of the prevailing economic crisis, it would not be a good idea to pressure countries into agreed upon three percent boost, but at the May 1981 meeting of the Defense Planning Committee it managed to have the commitment maintained.

Based on statistics from the U.S. Arms Control and Disarmament Agency (ACDA), the aforementioned study by the University of Georgetown, entitled "Allied Interdependence," has analyzed the NATO defense effort. The following paragraphs from the study are of interest to us: "The ratio of the GNP's of the two regions, North America (United States and Canada) on the one hand, and Europe on the other, is 56 to 44 percent." With this ratio in mind, the study goes on to say: "The ACDA data also show the proportion of European and North American defense spending in 1976, in constant 1975 dollars:

North America, \$89 billion (61 percent of NATO)
Europe, \$56.5 billion (39 percent of NATO)

"Although it has been thought that Europe does not contribute its share in allied defense spending, the fact is that it has increased its share considerably over the past decade, from 71/29 in 1968-69 to 61/39 in 1976. Today, military spending in Europe is just 5 percentage points below the 56/44 ratio that reflects the respective GNP's."

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We have cited these paragraphs because they clearly show how, even though the contributions to the common defense are nationally determined and vary widely among the member countries, the United States is moving more and more towards economic grounds in the search for an equitable apportionment of the burdens, at least in the above regional aspect. Also, although the principle of national sovereignty that prevails in commitments to the Alliance prevents it from imposing common criteria or a specific proportionality in contributions, there is increasing talk in the Alliance of an equitable apportionment of cost burdens, and in justifying the apportionment, economic arguments are advanced.

In conclusion, the complex procedure for joint NATO planning, which is designed to determine the forces needed to assure the defense of the Alliance and to channel national defense efforts towards the interests of common defense, manages at least to closely coordinate the Alliance's military authorities and International Secretariat with the representatives of the countries involved. As we mentioned previously, this gives rise to frequent exchanges and multilateral consultation, in which the defense efforts of the various member countries are compared, taking into consideration their different characteristics and economic situations and any other political and structural factors that would be pertinent in seeking an equitable apportionment of contributions. One of the main accomplishments of common defense planning has been to make it obvious over the years what is desirable and what is feasible. Moreover, it has promoted the systematic exchange of specific, detailed information on the military programs of the various countries, thus clarifying their economic potential and facilitating an understanding of common problems and difficulties and a critical examination of their respective programs.

There is no lack of those who criticize the system for not having achieved actual results commensurate with its complexity. We must recognize, however, that for the first time in history a group of free and sovereign nations have agreed to submit their defense programs to a critical examination by their allies. This multinational review at the very least brings strong moral pressure on them to cooperate in the common defense effort, even though the ultimate decision to follow the recommendations that stem from the joint planning is up to the appropriate authorities (governments and parliaments) in the countries that have chosen on their own to participate in the Alliance.

4. Analysis of Spain's Defense Effort Within the Context of NATO

There are many valid indicators in assessing a country's military might, such as statistics on troop strength, available ordnance (number of guns, tanks, aircraft, warships, nuclear weapons and their delivery vehicles, etc), facilities and military bases, active and reserve troops, the industrial capacity to produce combat materiel, etc. To these can be added other, nonquantifiable factors, such as the quality of the ordnance, geographic and strategic factors, the level of unit training and even the moral values and motivations of a combatant, which a military command values so highly in assessing a unit's capacity.

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But if we wish to analyze a nation's defense effort so as to compare it with that of others or to determine the combined defense effort of allied countries so as to compare it with the offensive might of another bloc, then we have to find sufficiently representative numbers that can lucidly summarize an overall defense capability.

How can a country's financial effort towards defense be gauged? Defense spending is unquestionably the basic macroeconomic magnitude in analyzing such an effort. We will therefore devote special attention to this magnitude.

4.1 Defense Spending. Problems of Quantification and Comparison with Other Countries

A country's level of defense spending is reflected mainly in its defense budget, but because different criteria are used in drafting defense budgets, the numbers for different nations are hard to compare. The amount of defense spending varies depending on whether or not certain categories are included in it. Among the categories that are apt to be interpreted in various ways, we will mention the cost of paramilitary forces, the pensions of Armed Forces retirees and of civilian employees of the Armed Forces, military research and development costs, military aid and assistance to other countries, civil defense budget, etc.

In addition, an international comparison of defense expenditures quoted in different currencies requires conversion to a common currency, which introduces further difficulties, especially when dealing with countries with very different economic systems.

A clear-cut example of the wide range in estimates of defense spending are the marked differences in calculations of Soviet defense spending by various sources. In 1975, for example, they included:

<u>Institution</u>	<u>Billions of dollars</u>
Stockholm International Peace Research Institute	61
"Soviet Defense Spending" ¹⁶	97 to 133
ACDA	119
CIA	120
International Institute of Strategic Studies, London	124

In the case of the USSR and of the other countries of the Warsaw Pact, which have centrally planned economies, an assessment is, of course, complicated by its being based on prices and wages that are not determined freely in the marketplace and because the official exchange rate of the ruble is not valid for comparison purposes. Thus, for example, the CIA has estimated Soviet defense spending at U.S. market prices, in order to obtain a basis for comparison to American spending for defense.

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In studying the NATO countries and, in general, most of the OECD nations, the problem is less complex because they have free market economies, and most of them belong to the Western World, which means that the statistics and estimates are more readily comparable.

4.2 Econometric Analysis of Defense Spending

As we mentioned previously, defense spending is usually accepted as the main indicator of a country's defense effort, but the trend is not to consider this figure as an absolute value but rather in relation to other economic magnitudes. If we take the Gross National Product (or the Gross Domestic Product) as the number that best represents a country's economic strength, defense spending as a percentage of the GNP (or GDP) will be the relative indicator we use. If we take the national budget as an indicator of the public sector's economic strength, then we use defense spending as a percentage of this budget. Per capita defense spending is also used to indicate a country's relative defense effort.

None of these indicators can be regarded as more representative than the others, and looking at one in isolation can lead to different conclusions. The following examples of the relative figures for Great Britain and Germany in 1976 should suffice:

<u>Indicator</u>	<u>Great Britain</u>	<u>Germany</u>
Defense spending as a percentage of GNP	5.1	4.2
Defense spending as a percentage of government spending	11.0	20.6
Per capita defense spending (in U.S. dollars)	190.0	242.0

Which of these figures is the best gauge of a defense effort? Each undoubtedly reflects one facet of this effort. If the GNP is the best reflection of a country's economic strength, then the percentage of it earmarked for defense will be an accurate measure of the defense effort. But isn't the percentage of its spending that a government allocates to defense a good indicator too, and what about the average contribution to defense by each citizen?

The ratio of defense spending to the government's budget entails an additional difficulty that we must point out. As we know, a government's budget does not include all public sector spending, and thus the conclusions that can be drawn from this ratio might be of little meaning since the content of a government's budget varies from one country to another. Spain is a good example. Social Security funds are not part of the General State Budgets. Nevertheless, these funds now exceed $1\frac{1}{2}$ trillion pesetas, approaching the amount of the overall State Budget. There are, moreover, autonomous agencies that work with figures much higher than in the State Budget. For example, the Spanish Agriculture Ministry had a budget in 1978 of 63 billion pesetas, whereas the autonomous agencies in the field of agriculture worked with 356.8 billion. Hence, the General State Budget for 1978, which totaled

1.433 trillion pesetas, amounted to just 49.3 percent of the consolidated budget of the Public Administrations, which came to 2.906 trillion pesetas.

This is the reason why experts come up with widely varying conclusions when they use one or another relative figure as an indicator of a country's defense effort. Econometric techniques enable us to analyze defense spending in terms of several magnitudes simultaneously. This further enables us to get around the limitations to which the above indicators are subject, in that they merely state the relationship between defense spending and one of the macroeconomic magnitudes.

The attempt to do a regression analysis of defense spending as a function of the main magnitudes that indicate a nation's economic strength and public sector spending suffers from the major drawback that the variables in general are closely correlated. This clear-cut problem of multicollinearity has led some people who have tried to create a defense spending model based on regression techniques to reduce the model to simple relations between spending and a single potential variable.¹⁷ Thus, they do not succeed in comparing the defense effort of various countries by taking into consideration different macroeconomic magnitudes simultaneously as variables in the defense spending level. Moreover, if we wish to analyze quite a few variables together, the size of the sample can be relatively small, which leaves few degrees of freedom for econometric treatment.

One way to avoid the drawbacks of multicollinearity among variables and few degrees of freedom is to resort to a factor analysis of principal components.¹⁸ We will employ this technique in our initial comparative study of various countries because without prior consideration of the linear dependence of the variables, it enables us to move on to orthogonal factors and at the same time reduces the dimensionality of the reference space, thus increasing the degrees of freedom.

4.2.1 A Sampling

Although this study concerns Spain's prospective membership in NATO, our attempts to compare Spain with the Organization's member countries have indicated that very few of these countries offer macroeconomic characteristics comparable, on the whole, to Spain's. It was thus advisable to initially broaden the sample so that by bringing together a larger number of countries with certain characteristics, we can, through factor analysis, determine subgroups of related countries. We will thus be able to place Spain in the proper group within a broader context than the NATO members.

Our initial analysis, therefore, is of all the OECD countries and the Warsaw Pact nations, 31 in all. Once we have placed Spain within this grouping of 31 countries, we will focus our econometric study on a limited sampling of NATO member countries so as to compare Spain's defense effort with theirs exclusively.

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4.2.2 Econometric Analysis of 31-Country Sampling

The 31-country sample of OECD and Warsaw Pact nations is as follows, in alphabetical order:

1. Australia
2. Austria
3. Belgium
4. Bulgaria
5. Canada
6. Czechoslovakia
7. Denmark
8. Finland
9. France
10. German Democratic Republic
11. Federal Republic of Germany
12. Greece
13. Hungary
14. Ireland
15. Italy
16. Japan
17. Luxembourg
18. Holland
19. New Zealand
20. Norway
21. Poland
22. Portugal
23. Romania
24. Soviet Union
25. Spain
26. Sweden
27. Switzerland
28. Turkey
29. United Kingdom
30. United States of America
31. Yugoslavia

We have selected the following variables for our comparative study of these countries:

- X_1 = Per capita defense spending (PCDS)
- X_2 = Per capita GNP (PCGNP)
- X_3 = Per capita government spending (PCGS)
- X_4 = Trade balance/population (TB/P)
- X_5 = Labor force/population (LF/P)
- X_6 = Armed Forces strength/population (AF/P)

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As we can see, in addition to the variable of defense spending as a measure of the defense effort, we have included the GNP, which reflects a country's economic strength and potential, as well as government spending, because since the funds for defense come from the coffers of the Treasury, government spending is another major variable in determining the capacity for a defense effort. We have added "trade balance/population" because it illustrates economic activity in a country and its strength in competition with others. With regard to human factors, we will consider the labor force, which represents a nation's potentially productive human resources (this being of unquestionable economic significance), and overall Armed Forces strength as a complementary indicator of the defense effort. All of these magnitudes are expressed in relation to the total population, which is thus also included as a relative factor in our econometric analysis.

As sources of data for this initial sample of 31 countries, we have used the statistics from "World Military Expenditures and Arms Transfers 1967-1976" (a publication we have already mentioned by the U.S. ACDA, dated July 1978), the OECD's "Labor Force Statistics 1965-1976" (dated 1978) and the 1978 "Yearbook of Labor Statistics" from the International Office of the International Labor Organization. All of these statistics are recognized as reliable.

The year 1976 has been taken as the period under study because all of our data pertaining to it have been confirmed; the figures for the monetary magnitudes are "current" for that year.

The figures for the aforementioned categories of statistics are from the following sources. The defense spending of Atlantic Alliance countries is based on the NATO definition; the estimates of the Soviet Union's military spending are based on the studies by the U.S. Congress and the CIA, which calculate the detailed cost of Soviet forces, weapons programs and military activities in U.S. market prices, which, as we mentioned before, can give rise to not insignificant but hard to avoid errors; for the other members of the Warsaw Pact we have used the studies of Thad P. Alton in "Defense Expenditures in Eastern Europe 1965-1976" as our main source, and for the remaining countries what each has stated as its official defense budget has been taken as its military spending.

The GNP represents what citizens of the country have produced, regardless of the country in which it is produced, and the value of the output of goods and services is stated in the market price paid by the ultimate consumer. The GNP's of the countries that do not belong to the Warsaw Pact come from the IBRD. The GNP's of the Warsaw Pact nations come from the estimates in the CIA publication "Handbook of Economic Statistics" and from the aforementioned study by Thad P. Alton.

Government spending consists of the expenditures of the central government of each country, including both overall capital and current expenditures and net borrowing. Our main source in this regard is the Agency for International Development (AID), complemented by data from the "UN Statistical Yearbook, 1976" and from the "Economic Reports of the OECD," in addition to Thad P. Alton's study on the Warsaw Pact countries.

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The trade balance represents the difference between exports and imports of goods and services. For the noncommunist countries we have used the statistics of the National Accounting System of the United Nations, as published by the International Monetary Fund in "International Financial Statistics." The numbers for communist countries come from the "Handbook of Economic Statistics," published by the CIA, which broaches the problem of evaluating these balances in dollars.

Armed Forces strength comprises military personnel in active service and the personnel of paramilitary forces whose organization, equipment, training or mission are similar to those of military forces. Reservists are not included.

The figures on total population and the labor force have been taken from the aforementioned "Labor Force Statistics 1965-1976" (OECD) for its member countries and from the ILO's "Yearbook of Labor Statistics" for the Warsaw Pact nations. The labor force does not include, in general, students, women engaged solely in homemaking activities, pensioners, those who live on income from investments and persons who are completely dependent on others. It does, however, include persons who are unemployed but seeking gainful employment.

Based on these statistics, but without initially introducing variable X_4 we have analyzed the main components of the sample and come up with the results contained in Annex VI (first part), results that enable us to draw the following conclusions:

Figure 7, from Annex VI, is a graph of axes F-1 and F-2, which represent two so-called "synthetic" variables, because each of them is a combination of several of the variables that represent the various macroeconomic magnitudes and the military strength under consideration (these magnitudes are placed within rectangles in Figure 7 to differentiate them more easily from the symbols of the countries).

We can deduce from this figure that the projections of the variables X_2 =PCGNP and X_3 =PCGS are grouped very close to the extreme right of the F-1 axis near the circle drawn on Figure 7 with a radius equal to unity. This enables us to say that the F-1 axis represents the synthetic variable "Gross National Product-Per Capita Government Spending." Hence, this factor can be regarded as representative of the "economic strength" of a nation because it simultaneously reflects the influences of national productivity and of the economic resources utilized by the government.

In addition, straddling the F-2 axis and in its upper portion, though not as close to the axis but near the circle with radius equal to unity, are the projections of the variables X_1 =PCDS and X_5 =LF/P. We can thus assume that this factor represents the synthetic variable "per capita defense effort," inasmuch as it reflects the influence of a country's defense spending and troop strength.

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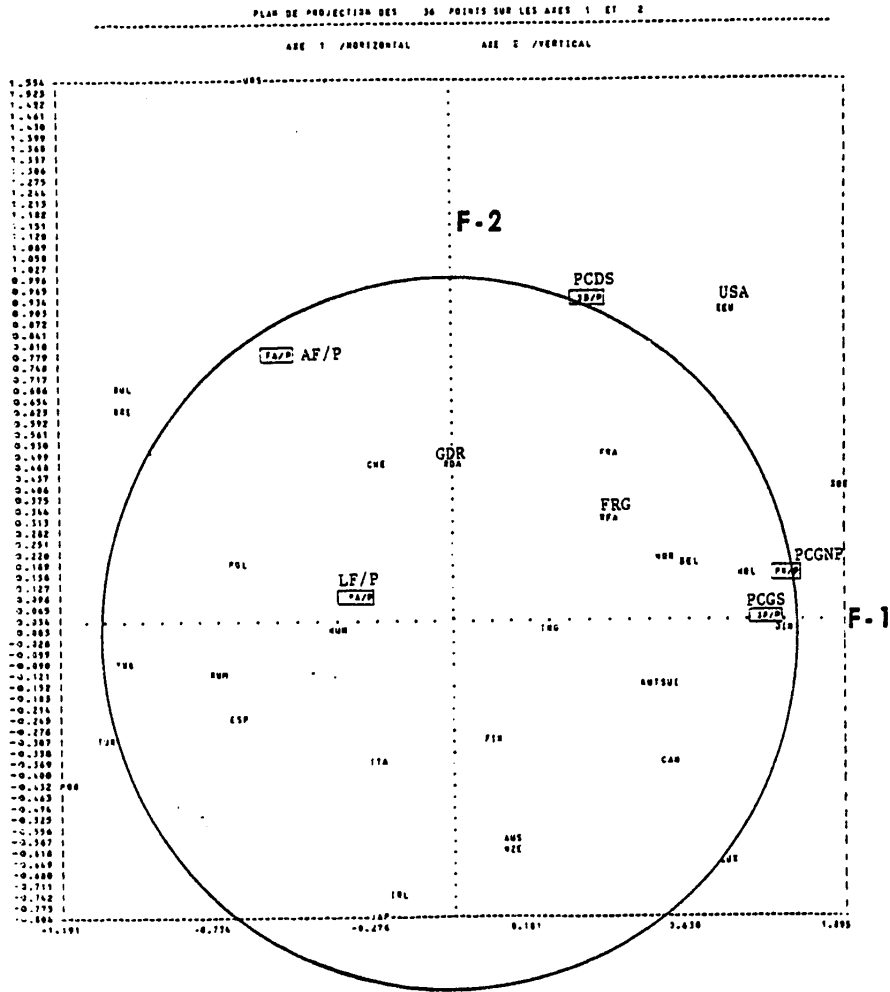


FIGURA 7

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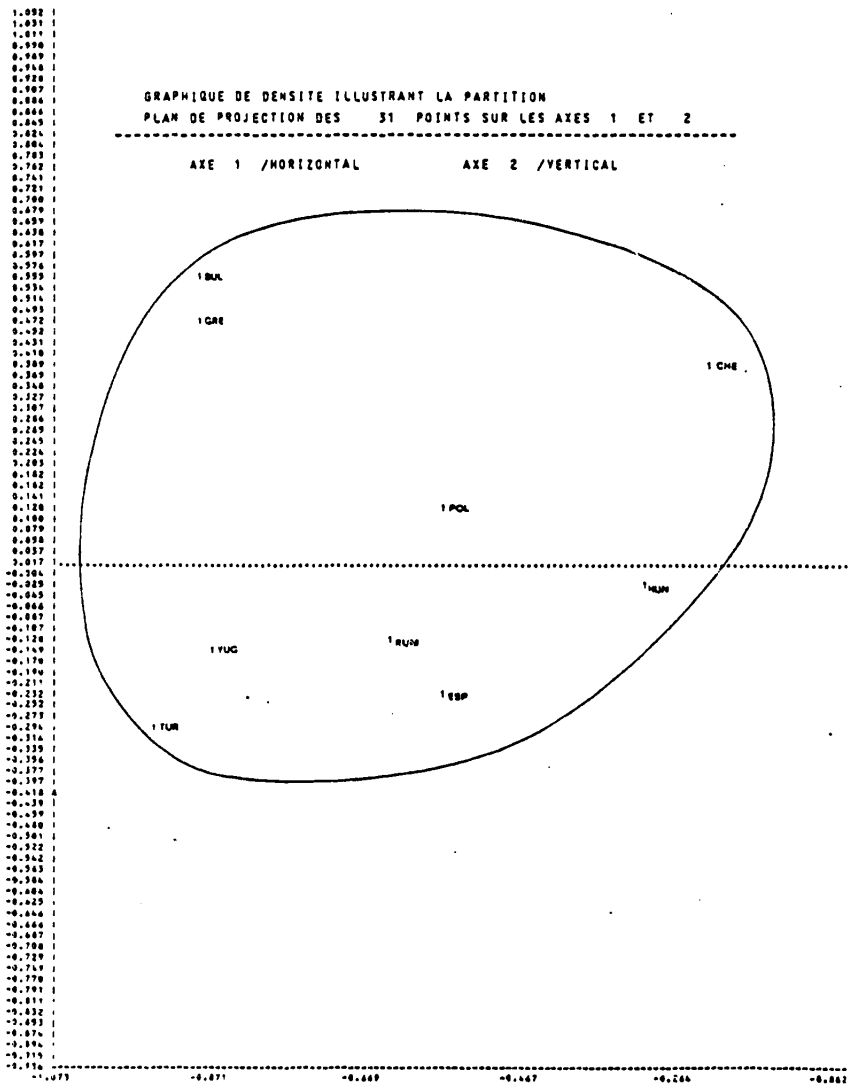


FIGURA 3

The projection of the variable $X_5 = LF/P$ near the intersection of the two axes indicates that there is little correlation between the labor force and the above two factors.

We can see in Figure 7 how the countries with strong economies are situated astride the right tip of the horizontal axis (synthetic variable F-1). The countries with a larger "defense effort" are located more towards the upper part of the graph (represented by the synthetic variable F-2 or vertical axis), while the countries marked by a smaller defense effort are more towards the lower part. Towards the left tip of the horizontal axis are the countries with less strong economies, in their relative positions; the significance of this with respect to the synthetic variable "defense effort" is similar to what we stated for the F-2 axis.

In interpreting the graph, we must bear in mind that the variable "economic strength" is influenced by the PCGNP and the PCGS and that the variable "defense effort" reflects the influence not only of "per capita defense spending" but also the influence of total troop strength in relation to total population. We should also remember that the projections on the multidimensional graph of the points that represent the variables and countries are more reliable the closer they are to the circumference with radius equal to unity while the farther away the projections are, the more distorted they are.

One of the interesting possibilities in this analysis is to group together the countries under study by virtue of their affinity in terms of the variables under consideration. We have employed the following procedure. First we make a random selection of four countries. Then, within the multidimensional space we proceed to calculate the distances of each of these four with respect to the others, grouping together the countries that are the least far removed from the four initially chosen at random. Once these four groups have been determined, we calculate the center of gravity of each group and then establish four new groups consisting of the countries that are at the smallest distance from each center of gravity. We then once again find the centers of gravity of the four new groups and once more form groups using the same criterion of minimum distance from these other centers of gravity (each of these three phases is enhanced with three successive repeats). Thus, we have grouped 31 countries in "classes" and determined the "class" of countries that have, on the whole, the characteristics that are most comparable to Spain's. This group consists of the following nine countries:

- Bulgaria
- Greece
- Czechoslovakia
- Poland
- Hungary
- Romania
- Yugoslavia
- Spain
- Turkey

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Figure 8 shows these nine countries plotted around axes F-1 and F-2. Appearing in Annex VI (part two), it was derived from the computer printout called "Division of 31 Individuals Characterized by Six Cartesian Coordinates."

We should point out that of these nine countries, the four that belong to the OECD, Greece, Yugoslavia, Spain and Turkey, are precisely the ones excluded from the category "developed" according to the classification of the OECD's Economic Aid Committee, which includes these four in the "developing" class.

We thus see that when we analyze Spain's defense effort in relation to its economic capabilities and in comparison to other countries, it has to be compared, within the context of NATO, mainly to Greece and Turkey, the only countries that belong to NATO among the nine nations that we have found to have similar overall characteristics. The rest of the NATO countries are in a different realm of capabilities, and not even Italy ought to be used as primary reference term in the event that in its joint forces planning NATO tries to compare Spain's defense spending with that of the other member countries of the Alliance.

4.2.3 Econometric Analysis Based on NATO Countries

We have excluded the United States and Canada from the analysis of just the NATO countries. The United States is a superpower with worldwide responsibilities, which forces it to maintain a level of military strength that far exceeds the rest of the allied nations of NATO. Canada has also been excluded from this sample because it takes a highly individual approach to its security problem, an approach largely derived from its unusual situation on the North American continent, and this has resulted in a unique kind of Armed Forces. The advantage of excluding Canada and the United States is that the remaining countries of the Atlantic Alliance are all European; thus, the study on this second sample will be genuinely European. Since Iceland does not maintain Armed Forces, the sample will be of 12 NATO countries, plus Spain when deemed appropriate for comparison purposes.

The 12 countries are:

- | | |
|------------------|---------------|
| 1. West Germany | 7. Holland |
| 2. Belgium | 8. Italy |
| 3. Denmark | 9. Luxembourg |
| 4. France | 10. Norway |
| 5. Great Britain | 11. Portugal |
| 6. Greece | 12. Turkey |

Our previous analysis was of a 31-country sample, and it served as an initial general approach for orientation purposes. This sample of 12 countries, limited to the members of NATO for comparison with Spain as a prospective member, will be analyzed more deeply than the previous one. Thus, we will examine in detail the variables to be included in the study and, based on the previous variables, further

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describe the ones that we have chosen and the reasons why, our reference being the economic indicators used by the NATO Defense Review Committee for its 5-year force planning.

Defense Spending According to NATO's Definition

To allow for a comparative analysis of the military or defense expenditures of the NATO member countries, the Organization has adopted a common definition of "defense spending" to obviate the aforementioned drawback of discrepancies in the content of each country's defense budget.

NATO's specific definition and classification of defense spending could not be furnished to the author of this study because they are confidential and access to them is authorized only for those who belong to the Organization. We can, however, ascertain the main principles of this definition. The "General Report on Economic Aspects of Atlantic Security," published 19 in November 1978 by the Economic Committee of the North Atlantic Assembly, contains the following standard definition of "defense spending" for the NATO countries:

"National military expenditures are the current and capital expenditures to meet Armed Forces needs. They include military aid to other countries and the military components of nuclear, space, and research and development programs." The report adds: "In traditional accounting systems, national military budgets customarily exclude expenditures in the form of veterans benefits, interest on war debts, civil defense and industrial stockpiling for strategic purposes. The addition of these categories to regular defense budgets would greatly increase total annual government spending of a military nature, but sufficient information is not currently available to accurately determine to what extent these costs have an impact on the spending of various countries and their worldwide total. There are also sizable off-budget social expenditures; thus, personnel expenditures are undervalued because of the existence of a national service, and military hardware enjoys tax exemptions. Since the military budget accounting systems of different countries are not the same, adjustments must be made to adapt national figures to the standard concept." This paragraph does not attempt a precise classification, and we have transcribed it because it illustrates the difficulty of applying a general definition to the various member countries.

According to the report "World Military Expenditures and Arms Transfers 1967-1976" by the Arms Control and Disarmament Agency, the NATO definition of "defense spending" is governed by the following criteria:

--It includes military expenditures contained in the budgets of other ministries.

--It excludes civil expenditures contained in the budget of the Defense Ministry.

--It includes military aid grants, which are added to the defense spending of the country that awards them.

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--Credit purchases of military hardware are entered in the books in the year in which the debt is contracted, not in which payment will be made.

In light of these criteria and of the additional information that the author has obtained, we should specify regarding NATO accounting of defense spending that:

--The following items should be added to defense budgets, even though they are contained in the budgets of other ministries:

-Budgets of paramilitary forces, as long as they are not exclusively police forces and if by their organization, equipment, training and status they are designed for, in addition to peacetime police missions, tactical use in the event of war in a manner similar to military units.

-Pensions of retirees, both retired military personnel and civilian employees of the military. There are countries in which a percentage of these pensions come from employee contributions, which are deducted from their wages and salaries. This percentage is not included in total defense spending. In the United States, for example, employees contribute 30 percent of the pension fund, and therefore only the remaining 70 percent can be included as defense spending.

-Expenditures for research in a specific field of military hardware that are included in other budgets.

-Expenditures for military services that were regularly rendered by civilian groups or agencies.

-Expenditures for participation in NATO. These expenditures involve mainly the net outlays for contributions to the common infrastructure and the contributions to finance NATO's military structure. There is no uniform yardstick for gauging each country's contribution to the operations of the civil portion of NATO's structure, but such contributions are but a small percentage of the two previous items. In the United States the civil portion is not explicitly included in the assessment of defense spending, according to the NATO definition. In Belgium on the other hand, the item that appears in the Foreign Affairs budget as "expenses of participation in NATO" is added to defense spending.

--The following items should be excluded if they appear in defense budgets:

-Outlays for civil defense and other civil services regularly rendered by groups and agencies included in a Defense Department, as well as the cost of public works constructed with military equipment.

-Pensions for former combatants and war veterans and war indemnities.

In any case, defense spending in NATO is calculated on the basis of actual expenditures, not budgeted or programmed allocations.

In accordance with the above criteria, major differences arise between the national budget of a Defense Department and the NATO estimate of defense spending. In Belgium, for example, the Defense Ministry's 1976 budget was 59.215 million Belgian francs, whereas NATO's estimate of its defense spending totaled 79.445 million. In other words, its defense budget was just 74.5 percent of its defense spending according to the NATO definition. It is 96 percent in the United States.

We should not assume, however, that because there is a NATO definition of "defense spending" countries tend to channel their defense budgets according to that definition. Nothing could be further from the truth. Each country determines its defense budget according to its own criteria; for example, as we mentioned before, Italy recently transferred veterans pensions from the defense budget to the Treasury budget, contrary to NATO's defense spending criterion, because this was in the interest of its budget policy.

Other Variables Included in the Analysis

In addition to defense spending, we will consider the following variables:

Gross Domestic Product (GDP)

The statistics of international organizations often use the Gross Domestic Product instead of the Gross National Product. The GNP measures what citizens of the country in question produce, regardless of where it is produced. The GDP measures what those living in the country produce, independent of their nationality. In general, the GDP is a more accurate gauge of economic activity than the GNP in the countries in which there is major foreign investment and dependency. There are extreme cases in which the GNP of a country is more than 30 percent higher than its GDP, and vice-versa. This is not the case with the economies of Western Europe, in which, in general, the remittances of multinational corporations to their home offices are limited; thus, a major percentage of their profits remains in the country of residence. As far as the specific countries in our sample are concerned, the differences between the GNP and GDP are very slight, as we can see from the following list:

<u>Country</u>	GNP(1)	GDP(1)	GNP/GDP
Germany	467.7	445.9	1.05
Belgium	68.3	65.9	1.09
Denmark	38.9	38.5	1.01
France	371.0	346.8	1.07
Great Britain	242.6	219.2	1.11
Greece	23.7	22.0	1.08
Holland	96.3	89.5	1.08
Italy	183.6	170.8	1.07

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Luxembourg	2.3	2.2	1.04
Norway	30.8	31.3	0.98
Portugal	17.0	15.7	1.08
Turkey	41.5	41.1	1.01

(1) Figures for 1976 in billions of dollars at current prices and exchange rates.

In this study, which is limited to the NATO countries and Spain, we will use the GDP, because this is the usual magnitude in OECD statistics and, therefore, in NATO statistics.

Although the GDP is regarded as a very representative gauge of general economic activity, there are drawbacks to using it as the main magnitude in comparing defense spending. In the first place, the GDP is a much larger figure than defense spending. For example, in NATO defense spending averages 3.3 percent of GDP. We can thus deduce that a major shift in military spending in absolute terms would have very little impact in relation to the much larger GDP. Moreover, much of the GDP comes from sectors that have little or no involvement with defense spending, inasmuch as a sizable portion of the GDP goes to providing subsistence for the population or, in general, to private consumption and has practically nothing to do with defense spending. Therefore, we feel that it is appropriate to break down the GDP into its component magnitudes and select the ones that could be of specific interest for our study, such as, for example, gross capital formation or government spending, which are more directly related either to boosting a nation's economic strength or to defense spending. Hence, these variables will be considered separately and introduced simultaneously with the GDP into the model so that their influence is specifically felt in the analysis of the principal components.

There is no drawback to simultaneously considering variables that could turn out to be "redundant," because as Dr Miguel Sanchez Garcia says in his book "Statistical Models Applied to Data Processing," "Whenever we wish to obtain information on a subject and we do not know the variables that we must observe to obtain the information and we wish to eliminate the redundant variables, we can apply the mathematical model of principal components to help us." A factor analysis of principal components enables us to include a series of variables that we know might be redundant, inasmuch as the main components will contain the synthetic variables that carry the greatest weight in the phenomenon under study, when we plot the main right-angle axes in the multidimensional space formed by all the variables under consideration, regardless of the relationship between these variables.

Gross Capital Formation

In our breakdown of GDP variables we will first mention gross capital formation (GCF), which can be included separately as a variable with particular significance for a nation's economic strength.

We should point out that GCF does not include the outlays by governments for durable goods essentially earmarked for military purposes. Defense in general is classified as a consumption expenditure for the purposes of national accounting, as funds taken out of public savings and, therefore, out of GCF financing. It is for this reason that these funds are included in the purchases of goods and services by government. This principle is common to the OECD's National Accounting System, the EEC's European Integrated Accounts System (SEC) and Spain's National Accounting System. This principle does not take into consideration, however, that heavy defense spending could be an engine of economic growth and a technological stimulus, not to mention the security umbrella that it provides for the normal pursuit of national activities.²⁰

Government Revenue

Another variable we will consider is government revenue, which makes up part of the economic resources available to the public sector in the form of direct and indirect taxes and Social Security contributions. We will include only current, not capital revenues.

Current Government Expenditures on Goods and Services

With government funds already included in the variable "government revenue," we will define that part of government spending that has the most direct impact on defense spending. Hence, we will subdivide government spending into:

- Current expenditures
- Capital expenditures

Since "direct public investment" is a major component of capital expenditures (up to three-fourths of the total) and since it is included in gross capital formation, which is treated separately as a variable, in our breakdown of government spending we can leave out public sector capital outlays and include only current expenditures.

Furthermore, we can break down current government expenditures into:

- Current outlays for goods and services
- Current transfers

"Current outlays for goods and services" include the remunerations of civil servants and the purchases of goods and services, which as we said in discussing gross capital formation, comprise the acquisition of durable goods for military purposes. Under the OECD's National Accounting System, government "current transfers" include current transfer payments proper and social benefits, such as the major item of Social Security benefits.

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Of these two main components (current expenditures for goods and services" and "current transfers"), the latter has less to do with defense spending, except for military pensions. We will thus use current expenditures for goods and services as our specific variable, because as we have explained, this heading comprises the pay of military personnel and investments for military purposes.

Trade Balance and Arms Transfer Balance

We are including the balance of trade (or the difference between exports and imports of goods and services) as another variable reflecting a country's economic activity and its competitiveness with the other countries under study. We are also considering the arms transfer balance (the difference between exports and imports of weaponry and military hardware in general). This variable shows another facet of a military industry's strength by indicating its potential to export military hardware after meeting domestic needs or, on the contrary, the need to import arms to meet the military's demand. Since imports and exports of weapons in a single year might be far from representative, inasmuch as isolated shipments in a given year could generate major distortions in relation to the normal trend in the arms transfer balance, we will use a 5-year average stated in constant 1976 prices.

Labor Force, Military Troop Strength and Total Population

As in the 31-country study, the human factor will be introduced in two facets, economic strength as a function of the labor force and military strength (our variable here being total Armed Forces troop strength). The total population is taken into account because all of these variables are expressed in relation to it.

Therefore, the following variables will be subjected simultaneously to a factor analysis of principal components:

X_1 = Per capita defense spending (PCDS)

X_2 = Per capita GDP (PCGDP)

X_3 = Per capita gross capital formation (PCGCF)

X_4 = Per capita government revenue (PCGR)

Y_5 = Per capita government current expenditures on goods and services (PCGCE)

X_6 = Trade balance/population (TB/P)

X_7 = Arms transfer balance/population (ATB/P)

X_8 = Labor force/population (LF/P)

X_9 = Armed Forces strength/population (AF/P)

These economic indicators are similar to the ones that we discussed in outlining NATO's "5-year planning" in Section 3.2. We said then that they were taken into account by the Defense Review Committee in drafting the proposed "Ministerial Guidance," based on which the Defense Planning Committee sets its "Force Goal" in the form of "recommendations" to the governments of the allied countries for developing their national defense plans over the 5 ensuing years and as firm commitments by each country for the 1st of the 5 years in question.

Statistics

Our source of data for the defense spending of the NATO countries is the Military Balance Sheet of the London Institute of Strategic Studies, which lists the figures according to the NATO definition of defense spending. The statistics in the Military Balance Sheet have been challenged at times because this publication has often subordinated accuracy to the primary goal of furnishing up-to-date information, even if it has to be based on estimates and approximations. Nevertheless, the amounts of the 1976 NATO-defined defense spending under study here are based on data furnished by the NATO countries, which corroborates their statistical validity.

For the GDP, GCF and "government current expenditures for goods and services," we will use the statistics in the OECD Economic Reports for 1978 and 1979, which provide confirmed figures for 1976, whereas some of the amounts for 1977 are still estimates or extrapolations. We will thus use 1976 as our reference period. At present, the countries of the EEC employ the European System of Integrated Current Accounts (SEC), which differs in some respects from the OECD's National Accounts System. Greece has begun using the SEC system for its national accounting, as have Spain and Portugal, but as of 1976, the year under study, there were not included in the pertinent publications.

In any case, the magnitudes that we will be handling here are not affected to any great extent by whatever system we apply. If there are any differences, which would be mainly in the public sector, they are of little consequence for the purposes of this study.

The trade balance numbers have been obtained from the United Nations National Accounting System, as published in the IMF's "International Financial Statistics." Arms transfers refer to the exports and imports of so-called conventional weaponry and other hardware produced by defense industries. They do not include nuclear, chemical and biological weapons. The figures cited here are estimates by the U.S. Arms Control and Disarmament Agency, based on official U.S. Government sources.

For the figures on labor force and total population we have also turned to the aforementioned Economic Reports of the OECD. The military troop strength numbers are from the 1978-79 Military Balance Sheet and comprise regular troops, volunteers and draftees; they do not include reservists or paramilitary forces. The latter are regarded as forces that by

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virtue of their equipment and training go beyond what is required for civil police tasks and possess an organization, command and control that indicate that they could be employed in support or instead of regular forces.

The institutions from which these statistics have been obtained are acknowledged as reliable, but their sources of information are often the governments of the countries in question. Hence, the usefulness of the numbers we are using depends a great deal on the credibility of the respective national statistics. Of the 12 countries in our sample, 9 are members of the EEC and are subject to the requirements of the Statistics Office of the European Communities (Eurostat). Eight of them, Greece excepted, have experience with the SEC accounting system, to which they adapted their national systems years ago. Thus, their statistics should be quite dependable. Of the three remaining countries (Norway, Portugal and Turkey), Norway can also be considered as keeping reliable statistics. Therefore, only 3 of the 12 countries, Greece, Portugal and Turkey, must be regarded as having as yet insufficiently developed and, hence, only partially valid statistics. Consequently, adequate statistical information predominates, which on the whole is acceptable for an econometric analysis.

Data on Spain

Our sample is composed entirely of NATO countries. Data on Spain have not been included in ascertaining the main components for the 12 NATO countries so that the findings of this factor analysis pertain exclusively to magnitudes for the countries that currently belong to the Alliance. In order to conduct the study comparing Spain with these countries, however, we have included data on Spain in the analysis section as supplementary observations. For the purposes of this direct comparison of Spain's magnitudes and those of the NATO countries, we have looked up the data on Spain in direct statistical sources and through confirmed observations.

Most of the information on the variables under study for the year 1976 has been obtained from "National Accounting of Spain Base 1970, Years 1964-1976," published by the National Statistics Institute, complemented by the reports of the OECD. We have sought out other appropriate sources for the military data. The figures on total Armed Forces troop strength are from the work entitled "Economic Analysis of Defense Spending," contained in the REVISTA AERONAUTICA of October 1979.²¹ Given the difficulty of securing direct Spanish sources, the figures on arms transfer balance and military hardware have been obtained, as for the 12 countries in our sample, from the publication "World Military Expenditures and Arms Transfers 1967-1976," which we have already cited and which offers statistics that are acknowledged to be reliable. Knowledgeable Spanish sources have told the author that the figures for Spain are sufficiently valid.

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We have devoted special attention to estimating Spain's defense spending, as outlined below.

Estimate of Spain's Defense Spending According to the NATO Definition

This magnitude for 1976, the year that concerns us in this analysis, can be estimated quite accurately as follows:

Our base figure is the Spanish Defense Budget in 1976, which is the sum of the budgets of the three branches.

<u>Branch</u>	<u>Billions of Pesetas</u>
Army	66.977
Navy	26.486
Air Force	<u>31.071</u>
Total	<u>124.534</u>

(This tally of the three branches' budgets has been included since 1978 in Section 14, which pertains to the new Defense Ministry and contains the budgets for each branch and an allocation for the central agency of the ministry.)

In accordance with the NATO definition, the following adjustments have to be made on this base figure:

a) Necessary additions:

1. Money for military pensions, budgeted in the Pensioners Section. This totaled 24.563 billion pesetas in 1976, less the amount of pension taxes, which we have estimated at about 750 million, taking into account that the veterans of the last civil war are exempt from these taxes. Thus, 23.813 billion pesetas should be added in.

To this amount we should subtract the pensions of paramilitary forces, which according to Section 2 below should not be entered in the books as defense spending. The current Spanish budget, however, does not permit a breakdown of pensions for the Civil Guard and the National Police. Since we do not have sufficient data and since it is a much smaller figure anyway, we are not adding in the pensions of retired civilians who served in the military; we would also have to subtract from it the payments of pension taxes.

2. The paramilitary forces whose budgets should be included in defense spending according to the NATO definition are, as we mentioned before, the forces whose organization, equipment, training and subordination are geared towards their tactical use as military units in the event of war.

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Are there such forces in Spain?

The NATO country whose security forces are most like Spain's is Italy. There are, however, substantial differences, which we will now look into because they are key elements in deciding which Spanish security forces ought to be regarded as components of defense spending.

Italy's security forces consist mainly of the following armed institutions:

- "Carabinieri" (troop strength=84,000)
- "Guardia di Pubblica Sicurezza" [Public Security Guard] (troop strength=70,000)
- "Guardia di Finanza" [Finance Guard] (troop strength=42,000)

We do not feel that it is correct to simply equate the Civil Guard with the Carabinieri and the National Police with the Public Security Guard, as has often been done. In both instances, the Italian forces show a higher degree of "militarization" than the supposedly equivalent Spanish forces.

The Carabinieri are much more closely linked to the Italian Defense Ministry than the Civil Guard Corps is to the Spanish Armed Forces. The Carabinieri are budgeted as an organization under the Italian Defense Ministry, and their forces constitute a formal "branch," officially regarded as the first among the "branches" of the Armed Forces.

For use in the event of wartime operations, the Carabinieri have hardware such as a mechanized brigade (with armored vehicles, including the type of tanks that the Spanish Army has, and with some of their troops consisting of reinforcements) and a battalion of paratroopers from the Army Paratroopers Brigade. It has a "staff," composed of its commanders, most of them holding diplomas from the Italian Armed Forces War School, and it has commands and units attached to the commanders in chief of the military and air regions and of the maritime departments, as well as to the various NATO headquarters.

The Civil Guard possesses none of these features. It is regarded in the Armed Forces as a corps, not a combat branch, and it has only light weapons and vehicles. No unit of the Spanish Armed Forces has a combat unit of the Civil Guard as one of its components. This corps lacks its own staff; the one that it has is made up of army commanders and officers. Members of the Civil Guard cannot even take specific army courses in working towards a staff diploma or other higher Armed Forces degrees. The Civil Guard is never attached to a headquarters as a military unit, solely in a police or security role.

The Civil Guard and the Carabinieri are similar in that their academy-graduated officers begin their careers with 2 years in the General Military Academy and then continue in the academy of their specialty.

The Carabinieri branch has the following civil missions:

--Enforcing the laws of the State (regions, provinces and municipalities) pertaining to the security, morality and health of the individual and of society.

--Maintaining the public order

--Judicial police functions

--Aid to towns and individuals in the event of natural disasters or accidents of any kind

Under current Italian law, however, its military functions take precedence:

--The exclusive military police within the Armed Forces

--Judicial police within the jurisdiction of the military

--Involvement in Armed Forces mobilization operations

--Involvement in wartime military operations

--Intelligence service

--Honor and security guards

--Garrison and courier services

The Civil Guard can be considered a corps that is less integrated into the Armed Forces than the Carabinieri and that has an organization less geared towards the use of tactical units in wartime.

Royal Decree 2,723 of November 1977, which established the organization and functions of the new Spanish Defense Ministry, stipulates that the Civil Guard Corps is organizationally subordinate to the defense minister but still comes under the interior minister (presumably in connection with security services in peacetime). Although the Civil Guard's military functions are not specified, as are the Carabinieri's, the spirit of the Civil Guard's Military Regulations is that in the event of war it would be utilized in a military campaign to perform police or security services commensurate with its particular mission, whereas its involvement in combat action against the enemy would be regarded as an exception.²²

As far as the Italian Public Security Guard is concerned, it must also be considered a more militarized body than the National Police. In a way it is closer to the Civil Guard than to the successive stages of Spain's government police (Assault Guard, Armed Police and National Police). Initially, the Public Security Guard, like the Civil Guard, came under the Interior Ministry, but its organization, discipline, uniformity and ranks were military, and it even used some draftees to fill its ranks.

It has heavy ordnance such as aircraft, helicopters, automatic machine guns, mortars and military engineering equipment. Its officers are trained at a special academy in a program similar to the Armed Forces' (though they do not attend the General Military Academy), and they have access to the Italian War School. Its units receive periods of instruction at camps designed mainly to train them for potential action in "nonconventional" war, which differentiates them from Spain's National

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Police, whose involvement in war operations or for military purposes as a tactical unit is not envisaged in any official legal provision or code of use.

In addition to its regular police and public order functions, the Italian Public Security Guard has transit, railway and border police missions, which in Spain are performed by the Civil Guard.

There is currently a definite trend, similar in a way to with the National Police, towards emphasizing the police nature of the Public Security Guard and downplaying its military status.

We will point out, in conclusion, that although the Finance Guard is a branch of the Finance Ministry, it is under the command of an army lieutenant general. In addition to its primary mission of preventing, seeking out and reporting violations of fiscal laws, it cooperates in maintaining law and order, takes part in military missions to monitor and safeguard the country's borders, participates in military operations with organized units incorporated into the army in the event of an emergency and cooperates with the navy (in addition to ground equipment and helicopters, this corps has 33 oceangoing units, 51 coastal units and almost 400 smaller units).

Now that we have described the characteristics of Italy's paramilitary forces, we should point out that NATO regards the entire Carabinieri corps but only 20 percent of the other security forces as Italian military forces (Public Security and Finance Guards), in spite of their hardware and their stated mission of collaborating with these forces in military operations. Thus, the entire Carabinieri budget but just 20 percent of the Public Security and Finance Guards' budgets are included in the Italian defense budget according to NATO.

From what we have said about Italy's security forces we can conclude that in Spain's case it would be proper to regard a major portion of Civil Guard forces as military forces according to the NATO definition. Nevertheless, we would have to leave out a somewhat significant segment: the troops that control traffic, are assigned to customshouses and perform other purely civilian activities. In contrast, as far as the National Police is concerned, if we take the Italian counterpart as our reference point, we could, at the most, consider a small percentage of its troops as military forces according to the NATO definition, which for budgetary purposes would unquestionably entail a smaller amount than what we feel ought to be subtracted from the Civil Guard budget. Given the information available to the author, we have been unable to determine accurately what percentages should be used for the Civil Guard and the National Police and we have, therefore, adopted the simple and perhaps extreme solution of including the entire Civil Guard budget and, to compensate, completely excluding the National Police budget.

Therefore, we will add to Spain's defense spending the budget of the General Directorate of the Civil Guard, which in 1976 totaled 27.537 billion pesetas.

3. We also have to add in the budget of the Superior Staff, given the military nature of the functions that this body performs. In 1976 its budget amounted to 491 million pesetas. This is a relatively small sum, because the salaries of its personnel were budgeted under the branch that they served in and because it was a relatively small body in comparison to the rest of our military institutions.

(The funds earmarked for the Superior Staff are currently included in the unified budget of the Defense Ministry.)

4. If Spain had belonged to NATO in 1976, we would have to add to its defense spending the funds that it would have had to contribute as a member of the Organization. As we saw in Chapter I, these funds are of little consequence as a percentage of the total military budget and, therefore, would have been easily incorporated into the initially budgeted defense spending.

We also have to include funds earmarked for military equipment research and development in the civil sector. The accounting for such funds is problematic in any country, as they are spent in various industrial research activities in which it is difficult to separate civil and military aspects. Nevertheless, in Spain we can assume without much risk of error that most of these activities are financed under Chapter VI of the Defense Budget, "actual investments," which finances in advance a high percentage of the contracted defense hardware programs and provides research funds for the main state-run companies (Santa Barbara, Bazan, CASA [Aeronautical Constructions, S.A.], etc) that meet these needs.

b) We should then subtract the following items from Spain's defense spending, in accordance with the NATO definition:

1. The funds for Civil Aviation, which is budgeted today under the Transportation Ministry and in 1976 was included in the Air Force Ministry budget for:

- The Undersecretariat of Civil Aviation
- The General Directorate of Airports
- The General Directorate of Infrastructure
- The National Meteorological Service

The total here is 6.631 billion pesetas.

2. From the air force budget we should also remove much of the funding for the Esteban Terradas National Institute for Aerospace Research (INTA), which totaled 1.155 billion in 1976; a high percentage of this is for civilian purposes. (The mainly civilian Airbus program started in 1977 and entails annual outlays of 420 million under the defense budget.)

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3. In accordance with the NATO definition of defense spending, we should not include payments to former combatants and war veterans in the form of military pensions. The section of the Spanish budget that largely corresponds to this item is payments to disabled servicemen, which totaled 3.591 billion pesetas in 1976.

We also have to determine which activities of autonomous defense-related agencies are civilian and which are military, which entails certain difficulties. Whatever military total we came up with would not be definitive, and this uncertainty also applies to the NATO countries under analysis.

In a nutshell, the following is a rough estimate of Spain's defense spending in 1976 according to the NATO definition:

Military Budgets

Army	66.977 billion pesetas	
Navy	26.486	
Air Force	31.071	
Subtotal	124.534	124.534

Additions

Military pensions	28.813	
Paramilitary forces	27.573	
Superior Staff	.491	
Subtotal	51.877	51.877

Subtractions

Civil Aviation	6.631	
Air Force funding for INTA	1.155	
Disabled servicemen	3.591	
Subtotal	11.377	-11.377

Grand total		165.034
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Therefore, Spain's defense spending in 1976, according to the NATO definition, was roughly 165.034 pesetas (possibly somewhat high), which at the average exchange rate that year (\$1=66.903 pesetas) equals \$2.467 billion.

The NATO definition places defense spending at 2.28 percent of the GDP, which differs from the percentage that other scholars who have written on this topic have obtained.²³

The 165.034 billion pesetas in defense spending represent per capita outlays of 4,599.61 pesetas, or \$68.75.

Spain's military budget in 1976 totaled 124.534 billion pesetas, which was roughly 75.5 percent of the defense spending figure that we have arrived at by the NATO definition.

Analysis of Principal Components

Based on the above statistics, we have done a factor analysis of principal components on 12 European NATO countries in relation to the 9 aforementioned variables, which once more are:

- X_1 = Per capita defense spending (PCDS)
- X_2 = Per capita GDP (PCGDP)
- X_3 = Per capita gross capital formation (PCGCF)
- X_4 = Per capita government revenue (PCGR)
- X_5 = Per capita government current expenditures for goods and services (PCGCE)
- X_6 = Trade balance/population (TB/P)
- X_7 = Arms transfer balance/population (ATB/P)
- X_8 = Labor force/population (LF/P)
- X_9 = Armed Forces strength/population (AF/P)

The data on Spain have been included but not accorded any weight, so that they serve only as a supplement and do not affect the determination of the main component values for the NATO members. We have, however, described Spain's position relative to these countries, which will enable us to compare them.

Annex VII contains the findings of this analysis. Figure 9 from this annex shows the graph of the synthetic variables F-1 and F-2 as the horizontal and vertical axes, respectively, and plotted around these axes is the simultaneous projection of:

- The 13 countries under consideration
- The 9 variables representing macroeconomic magnitudes and defense capabilities (So that they are more readily identifiable, the variables have been placed in boxes on the graphs)²⁴

Grouped at the far right of axis F-1 and near the circumference of the radius are the projections of the variables PCGDP, PCGR (whose projection coincides with the former's), PCGCE and PCGCF. Thus, axis F-1 can be interpreted as the synthetic variable that represents "economic strength," just as we concluded in our 31-country analysis. In this analysis of European NATO countries, however, defense spending per capita, PCDS, shows up close to the group of variables indicating economic strength. This enables us to assert that among the NATO countries defense spending correlates closely with economic strength, which was not the case in our 31-country analysis, when we obtained

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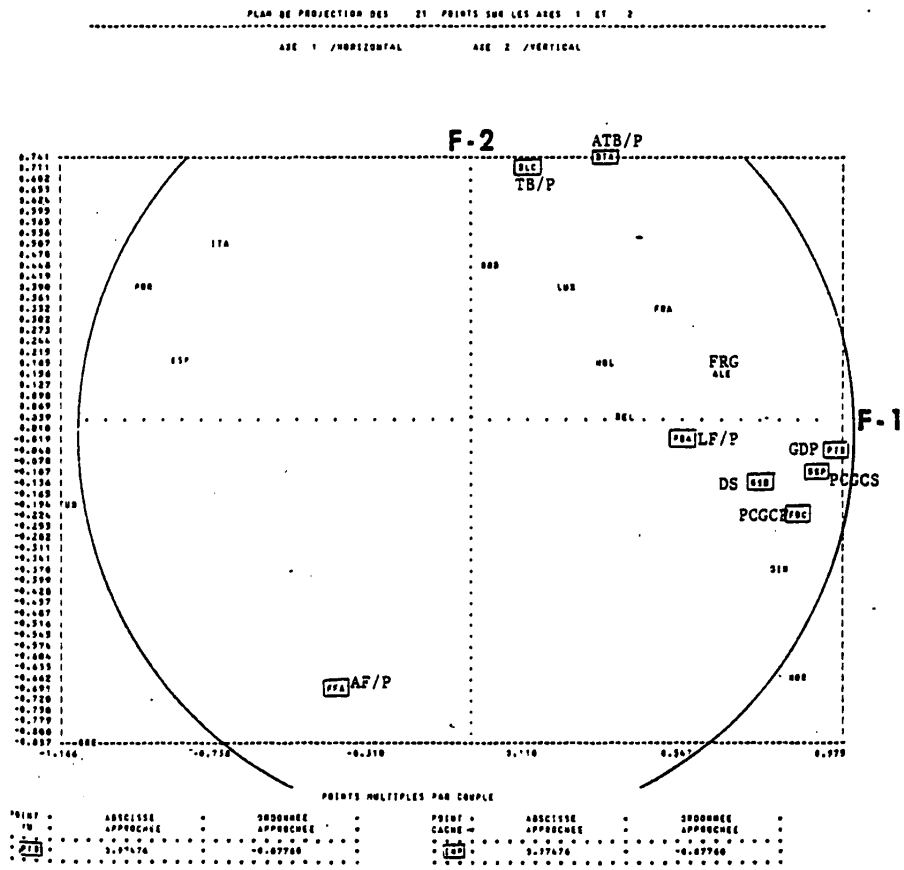


FIGURA 3

a factor representing defense effort that was perpendicular to economic strength. As we could see from Figure 7, this was because several Warsaw Pact nations, such as the USSR, above all, and the GDR, Czechoslovakia and Bulgaria, are engaged in a defense effort that, compared to other countries, is not in keeping with their economic strength.

Because of this correlation between defense spending and economic strength among NATO countries, the economically strongest countries appear on the right of the graph in Figure 9, while the countries with smaller economies and, hence, lower defense spending are on the left side.

Axis F-2 in Figure 9 shows from top to bottom the influence of a positive trade balance, both in terms of general trade and in arms transfers, while the same axis from bottom to top represents simultaneously the existence of greater or lesser troop strength. Thus, Great Britain, Luxembourg, France, Germany, Holland and Belgium show a greater export capacity (general merchandise and weaponry combined), while Greece and Turkey are characterized by their poor foreign trade competitiveness and a higher ratio of Armed Forces troop strength to their respective populations. We should bear in mind in interpreting the relative positions of the various countries around these two axes that the nine variables under study influence these positions and that the representation in the F-1, F-2 plane depicts only the two-dimensional projection of the vectors in the corresponding hyperspace; thus, a projection becomes more representative the closer it gets to the circumference resulting from the intersection of the hypersphere with the F-1, F-2 plane of projection, a circumference that is partially represented in Figure 9.

We will now analyze two other factors or synthetic variables, F-3 and F-4, because the latter allows an interpretation of interest to our study. Figure 10, which has also been taken from Annex VII, shows the graphic representation of the factors F-3 and F-4. Axis F-3 allows for no apparent econometric interpretation, but the upper part of axis F-4 contains the projected variables PCDS, AF/P and ATB/P, that is to say, the three variables most directly related to military matters. Thus, the synthetic variable F-4 can be regarded as representative of a "defense effort."

We will recall that Figure 7 showed the results of our principal components analysis of 31 countries and that its F-2 axis also represented "defense effort." There are, however, a number of differences between the projection of the 12 European NATO countries in Figure 7 and in Figure 10. These differences are due less to the slight discrepancies in statistics stemming from our search for more accurate and reliable sources for the factor analysis at hand, which is limited to the European members of NATO, than to the fact that in this second factor analysis we have taken into consideration a greater number of variables relating to these countries. With specific regard to the synthetic variable "defense effort" that we are commenting on, the reason for the differences is

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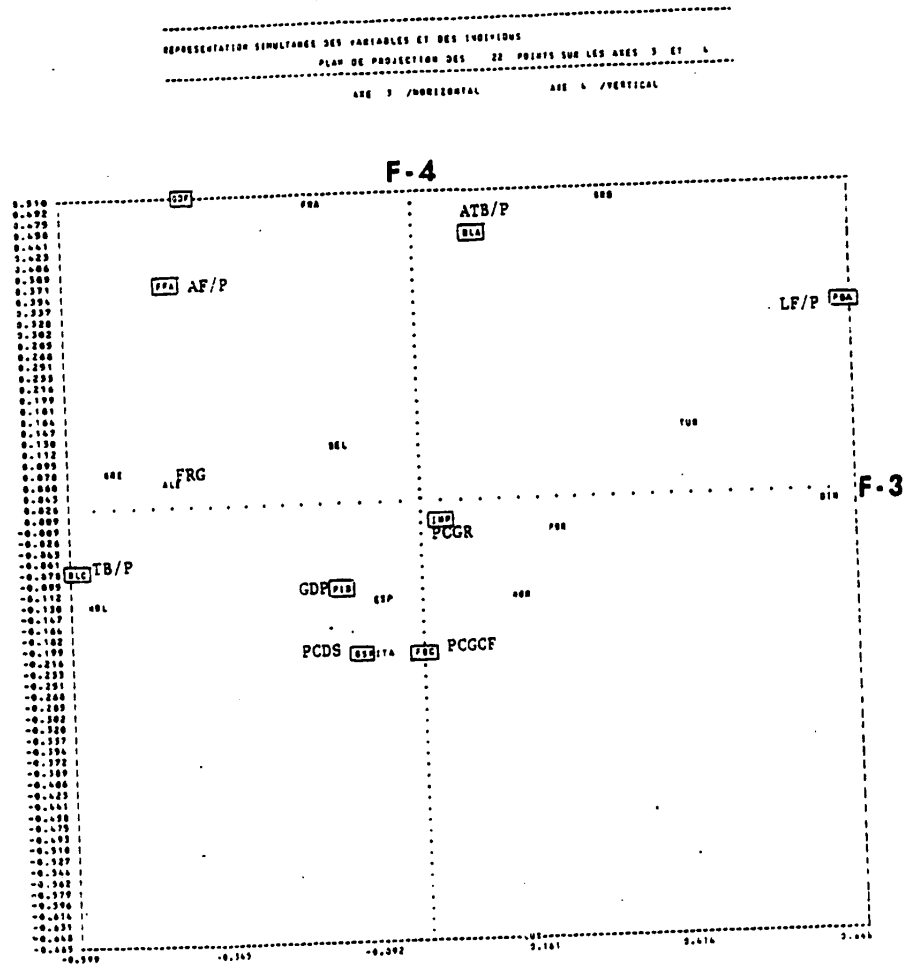


FIGURA 10

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that axis F-4 in Figure 10 includes the influence of the arms transfer balance, which was not taken into account in the 31-country analysis illustrated in Figure 7. Because of this new factor, the countries with a sizable military industry now appear closer to the upper part of axis F-4.

We should stress that although the F-4 factor comprises the three above-mentioned military aspects (defense spending, Armed Forces troop strength and the arms transfer balance, all of them in values relative to the total population), the first two, which are more representative of a defense effort, have their projections in the second quadrant (in the upper left). Therefore, we will conclude that the countries whose projections are towards the second quadrant are engaged in a larger defense effort. The F-4 axis is less representative of defense effort than axis F-2 in Figure 7, because as we can see in Figure 10, the projections of the variables PCDS, AF/P and ATB/P are farther away from the radius equal to unity (see the gauge in the margins of the graph). Without doubt, however, the graph in Figure 10 shows the position of the countries in relation to the military factor. The countries that spend the most on defense and maintain a higher troop strength than others are located in the second quadrant, and the nations whose military industries register a positive export balance are towards the upper part of the graph. Spain is in the third quadrant, near the fourth, a position that is the diametric opposite of the one that reflects the greatest weight of the military factor.

For the purposes of this study we can conclude, therefore, that as in our factor analysis of 31 countries (Figure 7), Spain shows a small defense effort in comparison with the 12 European members of NATO (Figures 9 and 10).

Consequently, our country should try to boost its military effort if its overall policies and its defense policy so dictate. However, we can assert that if Spain were to join NATO and if, as a result of the Alliance's joint planning, attempts were made to force Spain to boost its defense effort in relation to that of the other NATO members and if such a boost ran counter to national political interests, Spain could advance sound countering arguments. For example, with the exception of Luxembourg, whose unusual characteristics preclude its use as a reference point, the NATO countries with the strongest economies do not make a proportionally greater defense effort, as we can see in Figures 7 and 10. Spain's arguments would be particularly telling if it is compared with Italy. This line of reasoning is even more advantageous to us if we recall that, as we stated in our analysis of the 31-country sample, Spain belongs to the following group of countries with comparable general characteristics (See Figure 8):

--Bulgaria
--Greece

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--Czechoslovakia
 --Poland
 --Hungary
 --Romania
 --Yugoslavia
 --Turkey

Italy, for example, is not in this group and, nonetheless, does not put forth a greater defense effort than Spain, when we consider the latter in relative terms and in light of an overview of the variables that we have said are reflected in the F-2 and F-4 factors in Figures 7 and 10, respectively.

Greece and Turkey, which are in the same group as Spain, are engaged in a particularly large military effort in relation to their economies, due to the dispute that they are involved in.

We should point out that both Annex VI and Annex VII contain lists described as "aids to the interpretation of the axes," which give the order in which the projections of the "variables" (to the left of the list) and of the "countries" (to the right of the list) appear around a given axis. This complements our interpretation of the graphs here.

4.2.4 Regression of Defense Spending on the GDP

We have already outlined the difficulties that would be involved in attempting a regression analysis on several variables simultaneously when, as in this case, they are marked by a high degree of multicollinearity; it is for this reason that we have resorted to a factor analysis.

In spite of its limitations, however, it is illustrative to do at least a regression analysis of defense spending on the main economic indicator of a country, the GDP, because this magnitude is often used in isolation, especially as a variable in the level of defense spending.

We will initially measure both variables, defense spending and GDP, in absolute values, because this is usually how a comparative study of the magnitudes in question is conducted. Figure 11 shows the graph of these two variables for the 12 European NATO countries²⁵. We can see here the possibility of making a linear adjustment and we have thus proceeded to do a regression of defense spending on the GDP. Annex VIII contains the results of this regression:

The regression line we obtained is:

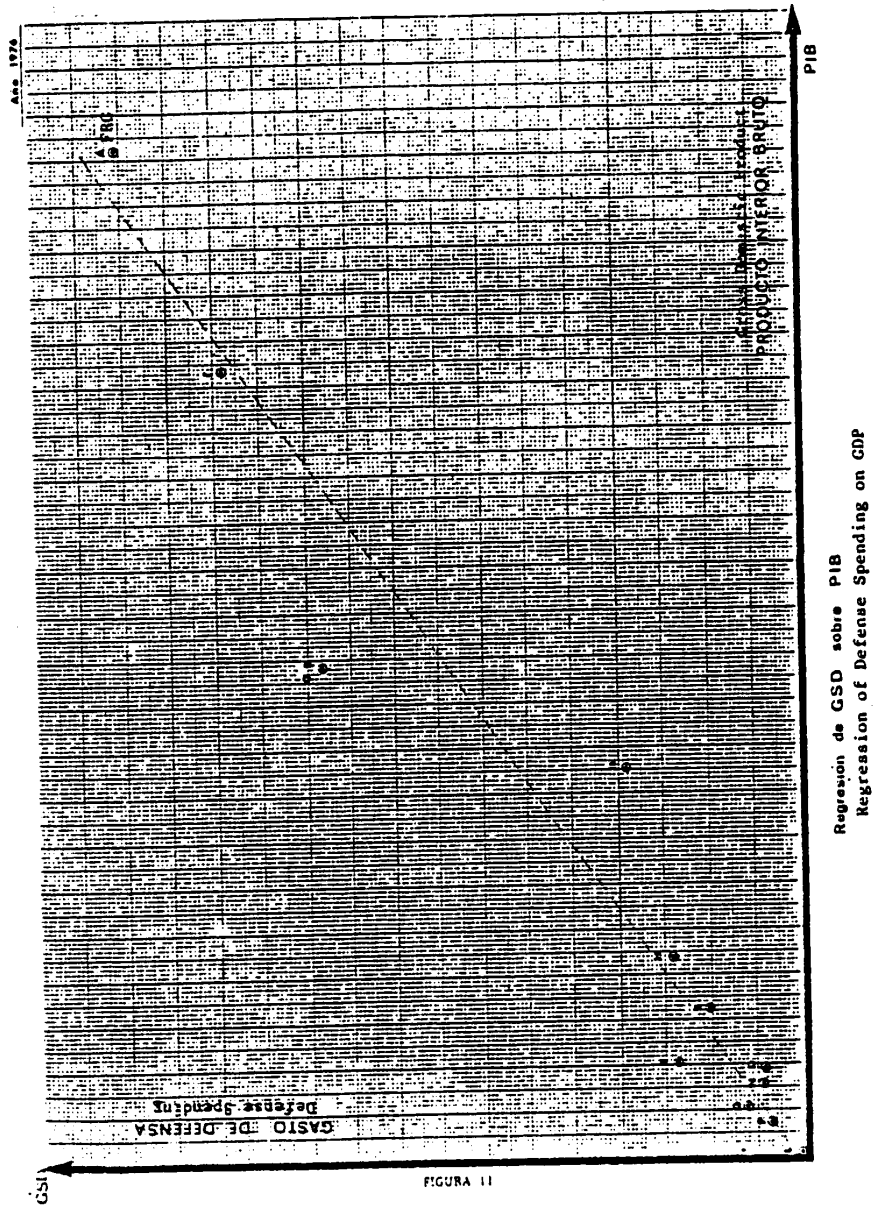
$$Y_1 = 87.07422 + 35.60078 Y_2$$

With:

$$Y_1 = \text{Defense spending}$$

$$Y_2 = \text{GDP}$$

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As was made obvious by the two above principal components analyses, in certain cases the 12 European NATO countries present very different characteristics. Hence, a regression analysis on all of them, in a bid to relate their disparate levels of defense spending and GDP, must be considered with serious reservations.

Although the graph in Figure 11 and the adjusted regression line (which has been plotted on the graph) seem to suggest that a country's level of defense spending can be explained by the size of its GDP, we should stress that these two magnitudes are subject to the typical statistical relationship that arises when an analysis is done on two simultaneous factors that are somewhat interrelated. In other words, if Germany, for example, has a much higher GDP than Belgium, then all of the macro-economic magnitudes into which the German GDP can be broken down will, in general, be larger than Belgium's. This interrelationship among the various macromagnitudes gives rise to a certain statistical tie-in that does not necessarily entail a sufficiently explanatory causal relationship.

Nevertheless, we could claim that the defense spending-GDP ratio suggested by the regression line is the theoretical ideal that the countries of the Alliance should aim for so that their efforts are proportional. There is, in fact, a tendency to argue in this manner in comparing the defense spending of various countries as a percentage of their GDP.

According to this line of reasoning, the regression line ($Y_1 = 87.07422 + 35.60078 Y_2$) indicates that in 1976 Spain, with a GDP of \$108.135 billion, should have spent \$3.93676 billion on defense ($87.07422 + [35.60078 \times 108.135]$) instead of the \$2.467 billion that we concluded Spain did spend that year according to the NATO definition of defense spending, a difference of \$1.49676 billion.

According to this approach (the regression line), the theoretical estimates of defense spending for the European countries of NATO are as follows:

<u>Country</u>	<u>Actual Defense Spending</u>	<u>Regression-Estimated Defense Spending</u>	<u>Difference</u>
1. Germany	15.220	15.96182	-.74182
2. Belgium	2.013	2.43352	-.42052
3. Denmark	.861	1.45877	-.59777
4. France	12.857	12.43200	.42500
5. Great Britain	10.734	7.89005	2.84395
6. Greece	1.249	.87172	.37728
7. Holland	2.825	3.27406	-.44906
8. Italy	3.821	6.16662	-2.34562
9. Luxembourg	.023	.16682	-.14382
10. Norway	.902	1.20138	-.29938
11. Portugal	.748	.64743	.10057
12. Turkey	2.800	1.54884	1.25116

This list is consistent with the wide variations in defense spending as a percentage of the GDP, as we mentioned in Section 3.5. If we accept the validity of the theoretical findings of this regression, that is to say, the gaps between actual defense spending and regression-estimated spending, we must conclude that a greater defense effort in relation to their GDP's is required not only of Spain, as we deduced previously, but also of Germany, Belgium, Denmark, Holland, Italy and Norway, especially Italy, which according to the estimates, ought to boost its defense spending by \$2.34562 billion. The remaining countries on the list should theoretically cut their defense spending, with the biggest reduction going to Great Britain, \$2.84395 billion.

The above is based on absolute values. Throughout this work, however, we have used per capita magnitudes as the most representative values; hence, if we want to tie defense spending exclusively to GDP, we feel that the argument should use per capita values.

This is the criterion that we have used in plotting the points on the graph in Figure 12, in which we can see two distinct groups. One consists of Germany, France, Norway, Holland, Belgium and Denmark, countries with high per capita GDP's, and the other is made up of Greece, Portugal, Turkey and Italy, with Great Britain and Luxembourg in between the two. Great Britain is characterized by its high level of per capita defense spending in relation to its per capita GDP; Luxembourg, on the other hand, stands out for its very low per capita defense spending in relation to its high per capita GDP.

If in spite of this subgroup of the cluster of points shown in Figure 12 we test the usefulness of plotting a least-squares line for the entire group of countries, excluding solely Luxembourg as a clearly atypical case, we derive the results outlined in Annex IX.

The regression line that we obtain is

$$X_1 = 51.86301 + 0.02327 X_2$$

With:

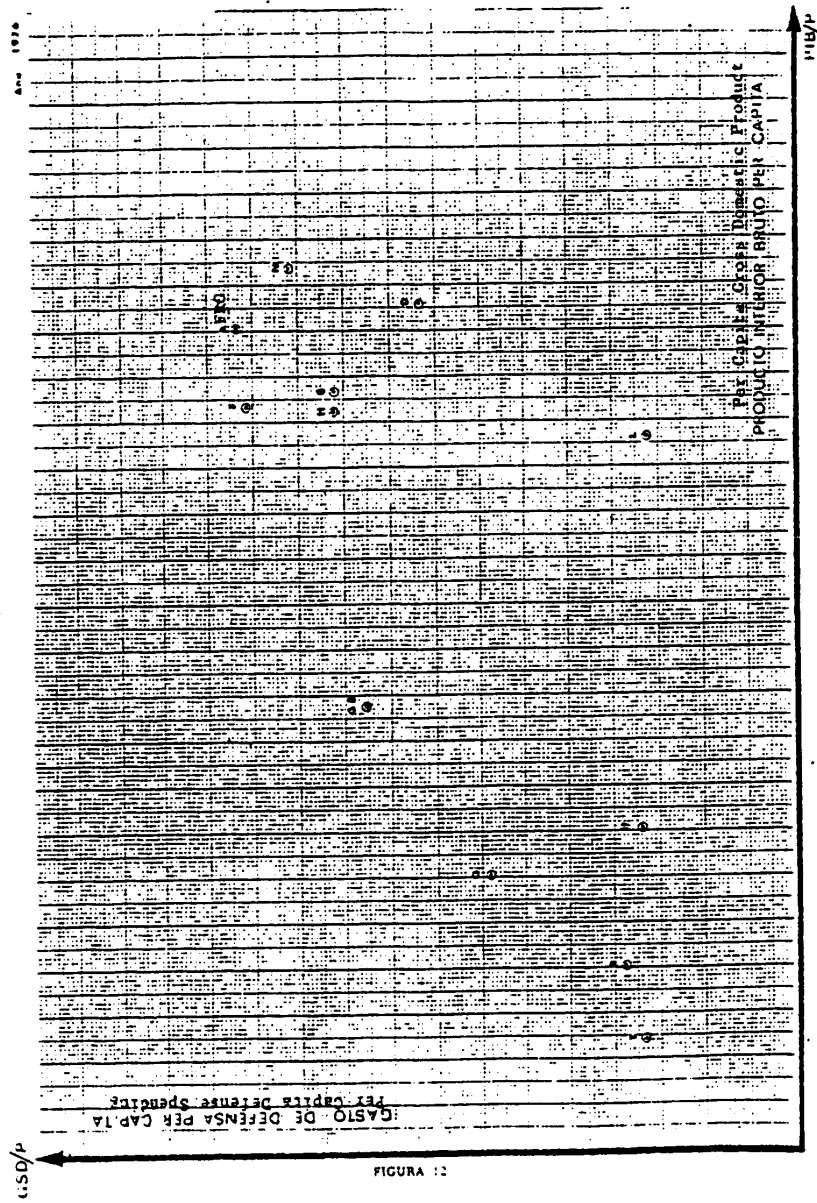
$$X_1 = \text{PCDS}$$

$$X_2 = \text{PCGDP}$$

From this we can deduce the following per capita findings:

<u>Country</u>	<u>Actual PCDS</u>	<u>Regression-Estimated PCDS</u>	<u>Difference</u>
1. Germany	247.43	220.57	26.86
2. Belgium	205.03	208.10	-3.07
3. Denmark	164.44	225.21	-58.77
4. France	242.95	204.36	38.59
5. Great Britain	191.68	142.95	48.72
6. Greece	136.28	107.83	28.45

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7. Holland	205.16	203.16	1.99
8. Italy	68.04	122.63	-54.59
9. Norway	223.99	232.75	-8.77
10. Portugal	77.40	89.77	-12.37
11. Turkey	68.02	75.08	-7.05

From the differences column we can see that Germany, France, Great Britain and Greece spend substantially more on defense per capita than they should according to the regression line, whereas Denmark and Italy (as well as Luxembourg, which was excluded from the regression) spend much less per capita on defense than they theoretically should. The rest of the NATO countries are quite close in reality to the theoretical amount indicated by the regression line. This is a good time to highlight the different conclusions that we can draw from absolute amounts and per capita amounts. We feel that the numbers obtained from the per capita regression are more realistic.

According to this second regression, Spain's per capita defense spending should theoretically be:

$$X_1 = 51.86301 + [0.02327 \times 3,013.80] = 121.99 \text{ dollars}$$

Since we have estimated that Spain's per capita defense spending, according to the NATO definition, was \$68.75, the gap is thus \$53.24; multiplied by 35.88 million Spaniards, this means that according to the regression Spain should have spent \$1.91025 billion more on defense than it did in 1976, which is equivalent to 77 percent of actually budgeted spending. This figure cannot be accorded much econometric validity, because although the regression in Figure 12 indicates the situation of the various countries in relation to an overall tendency, as we said before, the countries under consideration can be classified into two separate subgroups, which detracts from the significance of a regression done on all of them.

If we merely consider each subgroup in isolation, by virtue of the magnitude of its GDP Spain would be in the subgroup composed of Greece, Italy, Portugal and Turkey; this is not a sufficient number of countries to do a regression analysis, inasmuch as we would have only two degrees of freedom.

Furthermore, we have seen previously that only two of these four countries, Greece and Turkey, belong to the same group as Spain in the similar characteristics classification that we obtained in Figure 8, and it is precisely these two countries that are engaged in a heightened defense effort because of the tension between them. It is for this reason that we do not consider this group useful as a basis for analyzing the comparative amount that Spain should be spending on defense; moreover, such a comparison would be based solely on the GDP, which limits its econometric significance.

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To sum up, the regression analysis, both in absolute and relative numbers, indicates that Spain's defense spending is low in comparison to its GDP, but we do not regard these results as econometrically valuable. Thus, we would refer back to our principal components analyses, which although they do not lead to a quantitative estimate, do enable us to conclude, based on all of the countries in question and taking into consideration several simultaneous variables for each country, that Spain is among the countries that are making a small defense effort in comparison to the whole group.

4.2.5 Time Series Analysis of Defense Spending

Up to now our analyses of defense spending have focused on a single year, 1976. We are now going to round out our study somewhat by analyzing per capita defense spending over a period of time in order to assess the representativeness of 1976 compared to the previous and subsequent years and to compare the evolution of Spain's defense spending with respect to that of the other countries over a given span of time. We will analyze the changes in defense spending per capita over a period of 8 years, centering around 1976, which has been taken as the reference point and which was a key year in the beginnings of the major international economic crisis, stemming mainly from the energy crisis, in which national economies are currently immersed.

Beginning our series in 1972 is significant as far as Spain is concerned because it was in this year that Law 32/71 on Budget Allocations for National Defense took effect (extended and amended by Decree Law 5/77); this law brought a sharp change in defense spending in relation to previous years.

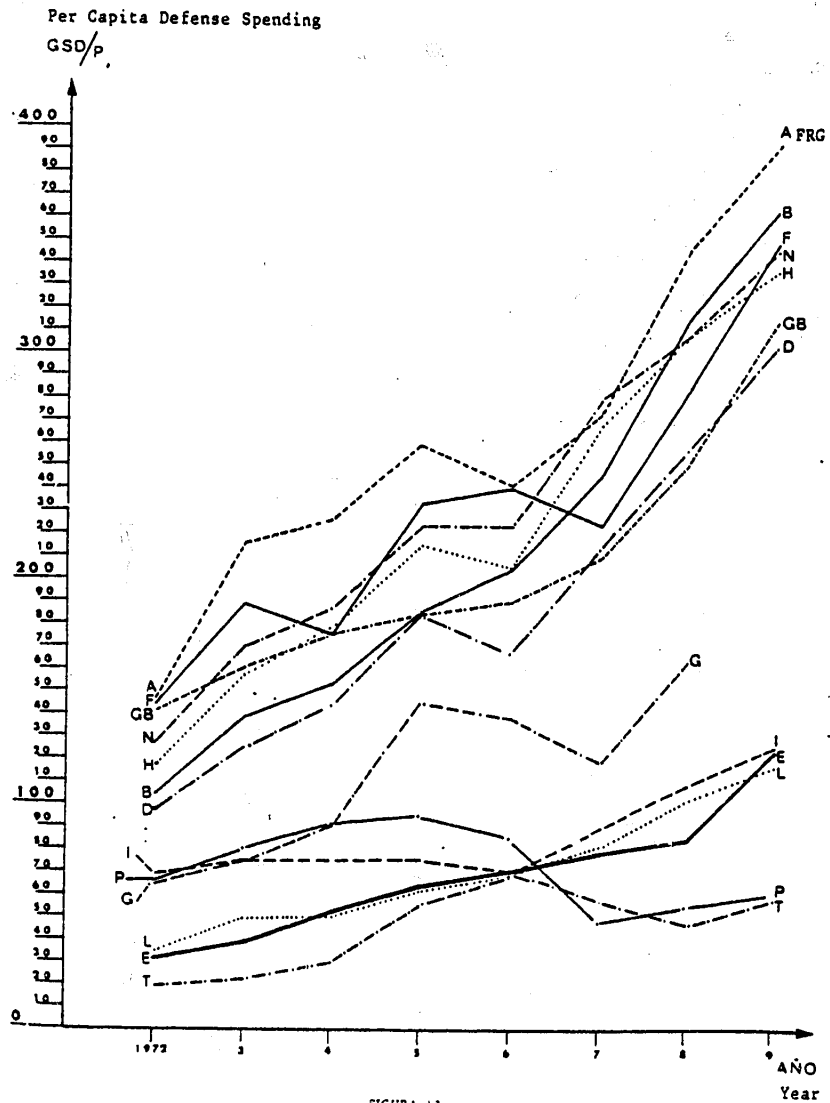
Inasmuch as the data furnished in the reports and documentation from NATO systematically exclude Greece and Turkey, the numbers we will be using here for the NATO countries are from the Military Balance Sheet of the International Institute of Strategic Studies in London. As we have seen, the sources of data employed throughout this work logically reflect certain statistical discrepancies that do not, however, invalidate the general conclusions that we have drawn based on these data, which confirms the usefulness of using various sources.

Since we found previously that Spain's defense budget in 1976 amounted to 75.5 percent of its defense spending as calculated according to the NATO definition, we have accordingly adjusted the figures for Spain from 1972 to 1979 so that we can compare them with the numbers for the Alliance countries, which have been calculated in accordance with the NATO measurement of defense spending

Based on this approach, per capita defense spending from 1972 to 1979 was as follows:

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<u>Country</u>	<u>Per Capita Defense Spending</u>							
	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Germany	146	215	226	260	242	274	347	396
Belgium	104	139	153	185	204	246	315	363
Denmark	97	125	143	184	168	213	258	303
France	142	189	175	233	241	224	285	349
Great Britain	141	161	176	184	190	210	252	314
Greece	65	74	90	144	138	119	163	--
Holland	117	157	179	215	205	269	309	338
Italy	68	75	75	76	68	90	109	124
Luxembourg	34	49	50	61	68	80	102	116
Norway	127	169	187	223	223	280	308	347
Portugal	65	80	91	95	85	48	55	60
Turkey	19	23	30	55	70	58	47	58
Spain	32	40	51	62	69	79	85	124

Figure 13 shows a graphic representation of the time series for the 13 countries in question.

As we can see from the above table and from the graph in Figure 13, Spain is always among the five countries that spend the least per capita on defense; they are: Spain, Italy, Luxembourg, Portugal and Turkey.

Spain's per capita defense spending is most often second or third to last in the series and only in 1979 did it equal Italy's, ahead of three others.

Spain's time series looks a great deal like Luxembourg's, and only Turkey comes in consistently below Spain. The figures for Portugal are significantly lower than for Spain as of 1976, and the numbers for Italy approximate Spain's as of that same year too. In 1976 the numbers for the various countries are in an intermediate range of their changes over time, which makes this year particularly well-suited to the cross-section analyses that we conducted previously.

If we find the indices for per capita defense spending in 1979 with 1972 as a base and if we arrange the countries in order by this index, we will see that Spain is in first place as far as a percentage increase from 1972 to 1979 is concerned, as this table shows:²⁶

<u>Ranking</u>	<u>Country</u>	<u>Index in 1979</u>
1	Spain	387.5
2	Belgium	349.0
3	Luxembourg	341.2
4	Denmark	312.4
5	Turkey	305.3
6	Holland	288.9
7	Norway	273.2

8	Germany	271.2
9	Greece	250.8 (1)
10	France	245.8
11	Great Britain	222.7
12	Italy	182.3
13	Portugal	92.3

(1) Index for 1976

Spain's number one ranking in percentage increase in per capita defense spending confirms the previously expressed conclusion that although Spain might have domestic political reasons for continuing to boost its relatively low defense effort, if it were to join NATO it would also have arguments that it could advance if the Alliance hypothetically were to pressure it into increasing its defense effort more than it ought to or could. Therefore, the somewhat widespread view that membership in NATO would force Spain to substantially boost its defense spending (we often hear groundless mention of a doubling of the defense budget) is not justified.

5. Military Aid and Assistance Obtainable from NATO

5.1 What We Can Expect from NATO

Article 2 of the North Atlantic Treaty says: "The Parties will contribute toward the further development of peaceful and friendly international relations by strengthening their free institutions, by bringing about a better understanding of the principles upon which these institutions are founded, and by promoting conditions of stability and well-being. They will seek to eliminate conflict in their international economic policies and will encourage economic collaboration between any or all of them."

We can see the principle of economic collaboration set forth in this article, and if this principle is observed in practice, it must include assistance to the countries most in need, thus enhancing stability, which is of benefit to the Alliance as a whole.

This principle has not been applied lavishly, but there are precedents. NATO Secretary General Luns brought up the critical economic situation in Portugal and Turkey at a meeting of the Atlantic Council in 1978, and as a result a major financial aid project was started up for Turkey, whose economic crisis continued to intensify, in contrast to Portugal, whose balance of payments began to improve somewhat.

Since NATO does not have an organization nor a fund for economic aid, such aid is arranged through other suitable international organizations, such as the World Bank, the IMF, the European Investment Bank or the OECD. By April 1980 Turkey had received around \$1.16 billion, and the finance minister of the FRG was negotiating \$3 billion in special aid for Turkey through various financing agencies.

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As far as military aid is concerned, Article 3 of the North Atlantic Treaty stipulates: "In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack." The principle of mutual aid to achieve the required defense capability is thus established.

In accordance with this principle, in 1950 the United States and France signed a "Mutual Defense Assistance Accord," which stipulated in summary that: "The Government of the French Republic and the Government of the United States of America, signatories of the North Atlantic Treaty...taking into consideration...the 1949 Mutual Defense Assistance Law, which provides for the granting of military aid to countries linked to the United States under collective security agreements...will place or continue to place at each other's disposal or at the disposal of another government with which agreement might be reached, the equipment, materials, services or any other military aid that the governments lending such aid might authorize under the terms and conditions agreed upon...in accordance... with the obligations of the parties as defined in Article 3 of the North Atlantic Treaty..." This accord is a reflection of an era that now belongs to the past. This was the period of the Marshall Plan, during which the United States poured millions into the allied nations of Europe to hasten their economic recovery and strengthen their defenses.

The situation is quite different today. Aid programs are, in general much more limited, and of course we cannot say that there is any correlation in joint forces planning between the force goals and aid for the countries that cannot achieve them. When a country cannot meet its commitments relating to planned force plateaus, it has the option of deferring the commitments. A country can, of course, request aid based on the argument that its economic problems are preventing it from achieving the desired defense capability.

This is what Portugal and Turkey did in 1976, submitting to the Defense Planning Committee their request for outside aid to implement the proposal for boosting NATO's defense capabilities. In a 1977 joint communique, the committee accepted the request from Turkey, stating that "it is of vital importance...that the military cooperation agreements connected with the southeast flank be executed immediately." Subsequently, the Defense Planning Committee stressed in the communique from its 1978 Brussels meeting that: "The ministers noted Portugal's and Turkey's urgent need for further assistance from their allies to enable them to enhance their forces in accordance with NATO's goals. The ministers agree that special efforts should be made to achieve a more positive response with the broadest possible participation of the allied countries. They noted with satisfaction that in addition to these efforts, the Alliance has considered actions, following up on the initiative of the Washington summit, to promote economic assistance for its less prosperous members."

Until 1976, military aid was negotiated exclusively as bilateral between the granting and receiving countries. In order to coordinate potential aid for Portugal and Turkey, the Ad Hoc Group for Military Aid to these two countries was set up in 1976, a group in which, for different reasons, neither France nor Greece participated.

The Ad Hoc Group tries to make the allied countries with more prosperous economies realize that military aid is needed, but it lacks the authority to arrange such aid on its own and has no funds for this purpose. This is a major shortcoming, especially in times of crisis, which demand a streamlined aid channel. In any event, the Ad Hoc Group can be regarded as relatively effective.

From 1950 to 1980, the United States granted Turkey \$5.15 billion in military assistance, and aid from Germany totaled 1 billion marks, starting in 1964. In order to surmount the problems that the U.S. arms embargo from February 1975 to October 1978 caused for Turkey's defense capability, a 5-year Defense and Economic Cooperation Agreement has now been established between the two countries. Under the agreement more than \$2 billion in aid will be granted to Turkey.²⁷ The main goal of the agreement is to develop Turkey's defense industry and to modernize its military installations.

Germany and Turkey have also negotiated an increase in military aid, with an initial pledge of 130 million marks up to mid-1981, plus technical assistance in setting up military logistic installations. Subsequently, in July 1980, the German Parliament approved an additional 600 million, earmarked especially for the modernization of the Turkish Armed Forces' armored and antitank weaponry.

As far as Portugal is concerned, as a result of joint NATO planning, Germany and the United States started up a multilateral military assistance program under which the brigade that Portugal pledged to put at NATO's disposal would be outfitted through aid from these two countries. We should stress that this does not entail a major amount of aid, although for Portugal, in relative terms, it is, because it has enabled the country to meet its commitment to NATO without removing funds from its shaky economy.

Portugal and the United States later (autumn 1980) signed an agreement on the Lajes air base under which Portugal will receive \$280 million, \$60 million in defense aid for 1980 and 1981. The agreement expires in February 1983.

Aid to Greece has been much less. In submitting the United States military aid program for fiscal year 1979, the undersecretary of state for military aid stated that with regard to Europe, the administration in Washington leaned particularly towards Turkey, Greece and Cyprus, specifying that almost \$160 million was being earmarked for Greece, of which \$1.8 million was "to indicate our support for Greece's return to full participation in the integrated military structure of the NATO command." The Rogers Plan has possibly offered greater aid, as a result of Greece's return to full participation in the Alliance.

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To sum up, although the joint NATO force goal planning does not entail obligatory assistance for meeting these goals, it is a suitable framework for looking at the needs of certain countries and the joint benefits that would be derived from the Alliance's major economic powers cooperating with the weaker allies in boosting their defense capabilities, in the knowledge that any potential aid must ultimately be negotiated bilaterally and that, therefore, the NATO force goals are not what determine the aid to be received. Any assistance would be arranged under bilateral pacts based on political and economic considerations and which would unquestionably entail some sort of quid pro quo for the country granting the aid.

Aid is also obtained indirectly from the NATO infrastructure projects involving the construction of military installations and facilities in a given country with funds provided jointly by the member countries. For example, there are \$1.2 billion worth of infrastructure projects in Greece and Turkey, 20 percent of all the SHAPE infrastructure projects; since Greece and Turkey have contributed little to common infrastructure cost-sharing, we can thus assert that they have received much more in the form of infrastructure than they have contributed.

5.2 Possibility of Spain's Obtaining Military Aid in NATO

From the above we can conclude that the chances of obtaining major amounts of military aid by joining NATO are slight, except in very extreme cases such as Turkey, which with a foreign debt of \$140 billion and a 130 percent inflation rate, was dismantling its defense and was even threatened by dangerous political instability (these circumstances led to the 1980 military coup).

Portugal's situation, though critical, has not been as worrisome as Turkey's, and thus it has not received as much aid as it would have liked from the allies.

If Spain joins NATO and is eligible for aid, it will not receive much, nor will any such aid not entail some sort of quid pro quo for the allied nation with which bilateral assistance might be arranged, even if it originated within the framework of NATO.

We might thus conclude that in deciding between bilateral security relations with the United States and multilateral ties with NATO, Spain would find it more profitable, in an economic sense, to maintain a treaty with the United States under which Spain's compensation would be some degree of economic aid.

Let us analyze the aid Spain gets under the existing Spanish-American Friendship and Cooperation Treaty, as stipulated in the text published by the Foreign Affairs Ministry.

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The total military aid granted under this treaty can be summarized as follows:

- \$600 million in the form of loans
- \$85 million in the form of grants
- \$50 million, maximum, to improve the Warning and Control Network, which serves American air units
- The planned leasing of 42 aircraft, which never came about, and sales of some small vessels

The above forms of aid are granted over the 5 years that the treaty is in effect. The \$600 million is in the form of loans (\$120 million a year, subject to approval by the Congress), which must be used specifically to purchase military hardware in the United States and which carry a normal market interest rate. Spain could secure these terms from other NATO countries interested in selling their weaponry and perhaps at lower interest rates, without having to grant use rights for military bases and installations.

Therefore, only grants can be regarded as actual military aid. Adding up the \$85 million in grants and the maximum of \$50 million for the Warning and Control Network, we get a total of \$135 million over the 5-year life of the treaty.

Spain's defense budgets over this 5-year span were:

<u>Year</u>	<u>Billions of Pesetas</u>
1976	119.222
1977	149.396
1978	188.715
1979	235.319
1980	286.248

which at the average exchange rate for each year of:

	<u>Pesetas to the Dollar</u>
1976	66.90
1977	68.60
1978	79.84
1979	67.18
1980	70.75

gives dollar-denominated Spanish defense budgets of:

1976	\$1.78209 billion
1977	\$2.17778
1978	\$2.36366
1979	\$3.50281
1980	\$4.04591

which comes to \$13.87225 billion for the 5-year period.

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Thus, the \$135 million in military aid under the Spanish-American Treaty over these 5 years was just 0.97 percent of Spain's defense budget for the period; this could be termed scant and inconsequential.

The treaty also provides for nonmilitary aid, in the form of access to a \$450 million Eximbank credit line for Spanish companies at market interest rates and about \$30 million for cultural and scientific cooperation. Such aid can be considered as a normal part of a "friendship and cooperation" treaty, but it does not necessitate nor is it the main reason for a security treaty under which bases and other military installations are transferred.

Given the current economic situation in the United States, there is no reason to believe that substantially more aid would be forthcoming under a future agreement with the United States.

Therefore, our conclusion is that it is not the economic component that justifies a bilateral security relationship with the United States and that perhaps within the framework of NATO, although there is no reason to think that we could secure more aid, we can, however, assert that we could negotiate with the United States and with other members of the Alliance in seeking aid at least comparable to and perhaps somewhat greater than we would obtain from a simple bilateral treaty with the United States.

Within NATO we would also obtain the portion of what other countries would contribute to the installation projects and infrastructure improvements that would be negotiated when Spanish territory becomes part of the European theater of NATO planning, if what we receive in this form is more than Spain would have to contribute to the overall common infrastructure. This could thus be regarded as economic aid resulting from membership in NATO, as we said was the case with Greece and Turkey.

FOOTNOTES

14. Information from the German magazine SOLDAT UND TECHNIK; translation by Lt Col Fernandez Rojo in the "Information Bulletin" of the Highest National Defense Studies Center (CESEDEN), May 1979.
15. The concepts of standardization and interoperability are dealt with in Chapter III.
16. By W.T. Lee, Schneider and Hoeber Publishers.
17. See Dr Martinez-Echeverria's doctoral thesis, "Los Gastos de Defensa," submitted to the Economics Department of Barcelona University in 1970.

18. See "Econometrics" by Dhrymes, p 53, Harper and Row Publishers, U.S.A., 1970.
19. The North Atlantic Assembly is an interparliamentary assembly of the Atlantic Alliance's member countries in which representatives of the countries' parliaments meet regularly to examine problems of common interest. Its main goal is to promote and help accomplish the Alliance's objectives. It has 172 members representing their respective parliaments, with representation proportional to the population of each country (from 36 seats for the United States to 3 for Iceland). It has five committees: Economic, Education, Cultural Affairs and Information, Military, Political and Scientific and Technical.

The assembly is independent of NATO but maintains close ties with the Organization, whose secretary general outlines the Alliance's main problems at the assembly's annual plenary session.

20. This issue is outlined in the article entitled "Análisis económico de los gastos de defensa," published in the REVISTA AERONAUTICA of October 1979. It is not relevant to our present study to delve into the matter, but we would like to call attention to it, inasmuch as in Chapter III we will analyze the economic repercussions of defense logistics.
21. An aforementioned study by Commanders Coll Quetglas and Valverde Ruiz and Lieutenants Gonzalez Iban and Campuzano Caballero, using highly reliable data.
22. Article 133 of the Civil Guard's Military Regulations reads: "Even though the Civil Guard is supposed to render in a campaign the services inherent to its particular organization and mission, if the generals of the Major Units to which it is attached deem it opportune to use the Guard for service assignments or in combat action against the enemy, the Corps will consider it a singular honor."
23. In his article "Spain and the Atlantic Alliance" in the English publication SURVIVAL (November-December 1976), Sanchez-Gijon obtains 3.7 percent of the GNP for 1975. In "El dinero de las Fuerzas Armadas" from ACTUALIDAD ECONOMICA (27 December 1977), Claudio Aguirre assigns Spain a 3.8 percent military spending/GNP ratio in 1975. The article "La Defensa Nacional necesita mas dinero" from the weekly ABC supplement (12 May 1978) puts defense spending at 2.11 percent of the GNP in 1977. In his article "Gastos defensivos y politica de armamentos" from the magazine DEFENSA (December 1978), Taibo puts this figure for Spain at 3.8 percent of its GNP. The book "El poder militar en Espana" by Vicente Fisas places defense spending at between 2.9 and 3.2 percent of GNP over the past 9 years (Laia Publishers/Paperback, 1979).

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24. In Figure 9 we have inverted the format of the program shown in Annex VII, so that the higher values of the variables under consideration appear with positive coordinates and, therefore, to the right of or above the graph, depending on the axis involved, similar to how Figure 7 is presented.
25. Abbreviations used in Figures 11 and 12: FRG=Germany, B=Belgium, D=Denmark, F=France, G=Greece, GB=Great Britain, H=Holland, It=Italy, L=Luxembourg, N=Norway, P=Portugal, T=Turkey.
26. The aforementioned Belgian group GRIP has conducted a study like this on just the NATO countries; it was published in February 1980 in the dossier "Notes et Documents," Brussels.
27. According to the magazine NATO'S FIFTEEN NATIONS (Defense-related economic cooperation and assistance within the Alliance), June-July 1980.

Chapter III: Economic Consequences of NATO Logistics

6. Extent and Significance of NATO Logistics

The great British strategist Montgomery said that war was, "grosso modo," 20 percent strategy and 80 percent logistics. The increasing complexity of Armed Forces from the last world war to the present confirms this assertion and, if possible, even accentuates the importance of logistics.

In its broadest military meaning, logistics can be defined as those military activities involved in the procurement, storage, distribution and maintenance of supplies, equipment, ordnance and munitions, the transport of troops and materiel by land, air or sea, the construction and maintenance of infrastructure and communications, and the recruitment of troops. This definition covers the demand for all of the goods and services that the Armed Forces require, a demand that is large enough to constitute a major portion of national demand.

Military demand can be broken down into demand for regular or general goods and services, which is a small fraction of a country's total demand, and demand for specifically military goods and services, which involves the procurement and maintenance of specific combat materiel (equipment, weapons and munitions) and the military's own infrastructure. This specifically military demand is the logistics that concerns us in this work and to which we will refer under the general heading of logistics. We are excluding troop recruitment, which is not germane to the aims of our study.

A work whose goal is to analyze the economic consequences of NATO membership would not be complete if it omitted the complex field of logistics. Although logistics is part of the military forces planning that we analyzed previously, it covers an even wider area, because procurement of the elements needed for the logistic support of these forces necessarily involves the realm of a nation's economic capabilities and resources and particularly its industrial and transportation capacity. Strategic transportation capabilities depend mainly on the existing infrastructure. In connection with the thesis of our study, this issue has already been dealt with in our analysis of the common NATO infrastructure. With regard to industrial capacity, the industrial output that has a direct impact on defense is the output of military industries, which will be the main topic of this chapter.

To give the reader an idea of the amount of money spent to develop and procure military materiel, suffice it to say that in 1976 the countries of the Alliance earmarked about \$120 billion for the defense sector, with the United States spending \$77 billion.²⁸ A sizable percentage of this goes for the procurement of combat materiel, as we can see in the following table published by NATO:

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Percentages of Defense Spending Earmarked for Equipment Expenditures
(Main Materiel, Excluding Investment in Buildings)

<u>Country</u>	<u>1965-1970</u> <u>(Average)</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>
Belgium	11.0	8.4	8.8	9.1	11.0	11.9	12.3
Canada	11.6	7.3	5.9	6.3	8.0	8.5	10.8
Denmark	13.6	17.2	19.3	19.0	19.4	21.8	15.7
Germany	16.1	12.1	11.9	11.8	13.2	12.5	14.2
Italy	13.0	15.2	15.2	13.9	13.1	15.3	17.2
Luxembourg	2.6	1.3	2.4	1.0	3.4	2.0	2.3
Holland	14.5	11.3	13.2	15.7	15.2	20.6	18.5
Norway	16.8	11.7	11.6	11.6	11.4	14.2	17.0
Portugal	16.9	4.5	3.1	1.9	1.9	2.1	2.4
Turkey	3.1	5.0	3.0	--	--	--	--
Great Britain	15.9	19.3	17.2	19.3	20.6	22.0	25.0
United States	27.8	18.9	18.1	17.5	17.4	17.0	17.7

As we can see from this table, in 1978 all of the countries except Luxembourg earmarked from 10 to 25 percent, and this does not include outlays for construction, which would boost the percentages appreciably.

These figures give us an idea of the size of the market that supplies this powerful consumer. Thus, the logistic facet of defense deserves a separate chapter, especially in connection with the procurement of military equipment and its maintenance and replacement.

What we are particularly interested in are the implications of NATO membership for domestic industry, because membership would entail involvement in its logistics system and adherence to the industrial cooperation agreements signed within the Organization.

The Atlantic Alliance, let us recall once again, is an association of independent and preponderantly democratic States. Along with their competitive, free-market economic systems, this gives rise to a logical diversification in the research, development and manufacture of military equipment models. Such diversification is not at all desirable from an overall operational military standpoint and is disadvantageous in comparison to the uniformity of the Warsaw Pact's standard combat materiel and logistics system. It is true, however, that competition makes industry dynamic and leads to desirable technological developments that somewhat offset the disadvantages of model diversification.

Since NATO's infancy its military command has been concerned with the Alliance's logistic rationalization, seeking mainly the standardization of weaponry and military equipment in general. How can a group of free and sovereign nations achieve this? A recent report on "European Cooperation in Weaponry Supplies," submitted by Klepsch to the European Parliament,²⁹

considered the various ways of achieving standardization, saying: "There are a number of ways of achieving standardization. First, by deciding to procure a given weapons system, in other words, direct purchase. This approach saves on research and development costs and on production base costs, as well as guaranteeing both economies of scale and standardization. It means, however, that there will be only one winner (from an economic standpoint) in a given weaponry sector and that the other countries and producers come out losing. From a political standpoint, this is manifestly unacceptable. Secondly, there is production under license, which resolves some, but not all of the economic problems, particularly the absence of a research and development base, and it entails the risks of higher costs. There is also the option of research and development concurrent with coproduction under license. This method eliminates the aforementioned economic drawbacks but inevitably entails higher costs...There is also the alternative of cooperative research and development, which is ideal in principle, but considerable difficulties arise when nations attempt to reach agreement on requirements and programs. Since we are talking about research and development that will probably take 8 to 12 years, quick results are impossible. This poses a political problem in particular, inasmuch as such periods of time are much longer than the foreseeable term of an elected administration or parliament...Finally, there is the possibility of proposing short- and long-term goals and of pursuing them concurrently; this would create a widespread group of winners that could absorb occasional losses (given that the Alliance's present-day outlays for the development and production of conventional weapons are around \$35 billion a year, it should not be at all impossible to create a group of winners)." This is the range of possibilities for cooperation. Superposed on and further complicating these possibilities are the interests of nations in protecting and promoting their own industries, interests that run counter to a multinational rationalization.

The difficulties of attaining standardization, together with the desire to protect national industries, gave rise to a new concept, interoperability, in rationalization policy. Since we will be referring frequently to the terms standardization and interoperability, before moving on we will look into how they are defined in NATO, according to NATO publication "AAP-6-NATO Glossary of Terms and Definitions for Military Use."

Standardization is defined as "the process by which member nations achieve the closest practicable cooperation among forces, the most efficient use of research, development and production resources, and agree to adopt on the broadest possible basis the use of: a) common or compatible operational, administrative and logistic procedures; b) common or compatible technical procedures and criteria; c) common, compatible or interchangeable supplies, components, weapons, or equipment; and d) common or compatible tactical doctrine with corresponding organizational compatibility." Interoperability, in turn, is defined as "the ability of systems, units or forces to provide services to and accept services from other systems, units or forces and to use the services so exchanged to enable them to operate effectively together."

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Hence, standardization has a broad meaning that ranges from the adoption of identical weapons systems or procedures to the compatibility of different systems or procedures.

Interoperability aims solely at a minimum level of coordination through intercommunication, mutual support and the joint use of consumable parts, such as the use of the same fuel, munitions of the same caliber or interchangeable spare parts. A typical example of interoperability is when a fighter aircraft landing at an airfield in an allied country is subject to the same base use procedures as in its home country, can take on the same fuel and munitions, can undergo the same repairs and can employ the same telecommunications. Interoperability thus greatly enhances the ability to operate together without possessing identical equipment.

As we will discuss later on, France emphasizes interoperability because it feels that this is sufficient to attain joint operational military effectiveness while respecting each country's industrial capabilities. In contrast, other countries, led by the United States, feel that interoperability is merely a means of achieving maximum standardization, the ultimate goal that guarantees rationalized cooperation, greater common economic benefits and greater joint operational effectiveness.

We will now analyze the slow and laborious process that NATO follows in its search for logistic cooperation. This would be the situation that a country joining the Alliance at this time would face. We will thus be able to deduce the defense-related economic and industrial advantages and disadvantages of joining or remaining outside the Atlantic Alliance.

7. NATO's Logistics System

The only reference in the North Atlantic Treaty to the need for common defense machinery is Article 3, which reads: "In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack."

Since NATO is a multinational organization of sovereign States without supranational authority and without its own economic capacity and centralized production, a unified logistics organization cannot be created. In spite of the importance of logistic coordination and interdependence, which all members recognize, the principle of "logistics is a national responsibility" prevails. This phrase is repeated over and over again by NATO authorities when this topic is discussed with them, as if by sheer repetition they were trying to overcome their realization of the major drawbacks that this principle entails for the effectiveness of a logistic system in support of a multinational joint defense mission in a single theater of operations. Nevertheless, there is a widespread feeling that standardization of weaponry is the basis for potential logistic integration.

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As British specialist Geoffrey Ashcroft asserts: "There is no way to promote logistic cooperation in NATO without a greater degree of standardization of military equipment."³⁰

The official NATO publication "NATO Facts and Figures" explains how the Organization's approach to logistics evolved and gives examples of the difficulties it has encountered in this regard. Since NATO was founded in 1949, its military command has been concerned about the lack of a centralized logistic system, mainly in connection with the outfitting of Armed Forces. During this initial period there was a great diversity of combat materiel, differing in specifications from one country to another and some of it needing replacement. Other equipment had some degree of operational value, though it too required prompt replacement. Faced with the prospect of a complete revamping, NATO tackled the problem of standardizing future equipment, which would greatly simplify logistic support and the replacement of parts. The task turned out to be a difficult one, as governments tried to shore up and help out their domestic industries, each country tended to advocate equipment specifications commensurate with its geography and climate, while the industries in the member countries were also marked by differences in production.

The Organization tried to alleviate these problems and achieve some degree of standardization through coordination in the field of military output. The Military Production Board was set up as early as 1949; it was succeeded in 1950 by the Defense Production Board, and in 1952 the Production and Logistics Division was created. Its aim is not to draw up a general plan for outfitting all of NATO's forces, which would be desirable from a cost-effectiveness standpoint but is deemed unfeasible. The International Secretariat merely wants the Division of Production and Logistics to draft coordinated programs for the production of major combat materiel, such as aircraft, ships, vehicles, artillery, light weapons, munitions, communications equipment and radar systems.

The results were poor, and the standardization that was achieved was due mainly to the fact that large amounts of hardware were furnished by a single source, the United States, in the form of aid. The logistic support for this hardware and the need for spare parts led to the creation of groups of experts from various countries to cooperate in these fields. Concrete results were obtained under joint standardization agreements for certain types of explosives and munitions (especially 7.62 caliber, which all NATO forces adopted), through the standardization of electronic equipment and other features of combat vehicles and the adoption of standardized ballistic criteria. Noteworthy results were achieved in programming the joint production of munitions and electronic equipment, and some degree of coordination was gradually achieved in procedures. There has been a major exchange of technical information (accompanied by a pact to safeguard the secrecy of inventions and patent rights), and what is particularly important, groups of experts have been formed to work together in these fields at the international level.

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The first multinational venture did not take place until 1954, when NATO prepared the specifications of a light jet fighter, and several countries decided to join together to produce it. The FIAT G-91 was finally built under a joint program in Italy and Germany. Shortly thereafter, in 1957, the NATO Defense Production Board decided on the specifications of a maritime patrol aircraft, the "Atlantic," construction of which was undertaken jointly by Germany, Belgium, France and Holland, on the one hand, and the United States, on the other.

The appearance throughout this decade of increasingly complex weapons system, mainly missiles and aircraft, necessitated the adoption of new manufacturing procedures in new installations, which significantly boosted their cost.

A second stage of NATO logistic cooperation thus began, during which the previous policy of general coordinated combat materiel production programs gradually gave way to cooperation in specific projects for building these new and complex weapons systems that present such difficult technical and financing problems. In this connection, the United States proposed to its European allies that they jointly produce certain weapons already developed in the United States, pursuant to negotiations in NATO and government-level agreement. Thus, five European firms (from Germany, Belgium, France, Holland and Italy) combined to form a multinational consortium, SETEL, to manufacture the "Hawk" ground-to-air missile. The governments of the five countries supervised the project within NATO through the Hawk Production organization, known as NHPLO. The program achieved its initial goal of manufacturing 4,000 missiles in 10 years. Subsequently, Germany, Belgium, Denmark, Greece, Holland and Portugal undertook production in Europe of the U.S.-developed air-to-air Sidewinder missile, a program that called for the manufacture of 10,000 missiles in 6 years. At almost the same time, France and Italy, together with the United States, drafted a program to produce several hundred American Mark 44 antisubmarine torpedoes, which had previously been manufactured in Canada and Great Britain.

A major development in the sphere of standardization was the multinational project to manufacture the American F 104-G Starfighter aircraft. An organization with representatives from Germany, Belgium, Holland and Italy was set up in 1960 to supervise the coordinated production program for the aircraft, and a year later it was made a NATO "agency." It has often happened that a joint production agreement is reached outside NATO and later declared a coordinated NATO program. Without doubt, however, deliberations within NATO provide guidance for and are somehow linked to any such programs decided on outside NATO. Joint production was undertaken throughout the 1960's on weapons systems such as surface-to-air and anti-tank missiles, antisubmarine torpedoes and others. Because of the need for some degree of coordination before the startup of production, the province of NATO bodies was extended to research. As a result of this reorganization, the Defense Production Board became the Armaments Committee, to which the Committee of Defense Research Directors was later added.

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In order to maintain a certain level of standardization in the multinational projects that were beginning to proliferate, NATO's military authorities decided to establish Basic Military Requirements (NBMR). These documents were to be used as guides for the execution of research and production programs stemming from the need for new equipment in the judgment of these authorities. A total of 50 NBMR's were eventually established, but only 7 were actually put into practice, wholly or partially. The NBMR system had a major drawback. NATO's military authorities were approving the "basic requirements" but did not subsequently have any power over the governments, not to mention control over the production firms, which meant that there was often a gap between NATO theory and the subsequent practice by the firms. In addition, there was some overlapping between the activities of the Armaments Committee and the Research Committee. Furthermore, the chances for a consensus were greatly reduced by the projects having to be adopted unanimously by 15 nations with very diverse characteristics. Nevertheless, the NBMR's managed to establish exchanges of information and gradually laid the groundwork for a harmonization of certain tactical concepts, which was a prerequisite for the adoption of common doctrines that would subsequently make weaponry standardization possible.

The NATO authorities obviously cannot impose rigid standards on governments or companies, because the fact of the matter is that individual interests take precedence over the Alliance's attempts at coordination, which are, moreover, somewhat subordinated to the desires of the main powers, especially to U.S. hegemony.

As a result of the unsuccessful attempt at standardization based on the NBMR's, the Atlantic Council decided to set up an exploratory group to seek a more realistic approach. Thus, in 1966 (the year in which France adopted its particular status in the Alliance, and the upper-level bodies were transferred from Paris to Brussels, which was conducive to a re-organization) a new approach to cooperation in arms production was undertaken in a third phase. The NATO Basic Military Requirements and unanimously approved programs were abolished. The basis of the new approach was that two or more countries, at the proposal of one of them or pursuant to a suggestion by NATO authorities, could decide on their own to plan a joint project, which other interested member countries could then get involved in.

The project is then submitted to NATO for approval but is executed with complete autonomy by the countries involved, which set up a "Steering Committee" of whatever form they choose. Their sole obligation to NATO is to submit an annual report on the progress of the project to its authorities.

The Defense Support Division was then created; it is part of the International Secretariat and comes directly under the Council. The Conference of National Armaments Directors (CNAD) was also organized to promote joint research and production projects through the exchange of information on operational concepts and national equipment programs.

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In order to maintain close ties with business, the NATO Industrial Advisory Group (NIAG) was also established; it brings together the appropriate government authorities and representatives of defense industries to discuss the common problems of government and industry.

A trend toward shared production began, and there were a great many bilateral projects, plus some involving more than two countries. It was during this period that the following projects were started up: the Jaguar tactical aircraft; the Lynx, Puma and Gazelle helicopters; the Seasparrow ship missile system, the Milan anti-armor system and the NATO frigate for the 1970's, as well as many others. The goal of standardization was still far off, however.

When German General Steinhoff resigned as chairman of the NATO Military Committee in 1974, in his farewell speech he described the Alliance's arsenal as a veritable "military museum," stressing the proliferation of weapons that had similar but different specifications, as well as the overlapping of research and production efforts, which ran counter to NATO's bid for standardization.

In addition, in a report to Congress in 1975, entitled "Research and Development Program, Fiscal Year 1976," the U.S. Defense Department underscored that NATO forces had:

- 23 different types of fighter aircraft
- 7 different kinds of heavy tanks
- 8 different kinds of armored personnel carriers
- 22 different types of antitank weapons
- 36 different radar systems
- 8 different surface-to-air missile systems
- 6 different surface-to-surface missile systems
- More than 20 types of over 30-millimeter guns
- More than 100 different tactical missile systems

It must be acknowledged, however, that there has been some progress in the field of joint production.

The most important joint production project during this period was the Multi-Role Combat Aircraft (MRCA) Project or "Tornado," for which there was a demand for more than 800 units. The project began in 1968, when the European members of NATO had to replace their F-104's by the late 1970's. An intergovernmental organization called NAMMO (NATO MRCA Development and Production Management Organization) was set up to carry out the project, in which Germany, Great Britain and Italy were involved (Belgium, Canada and the Netherlands withdrew during the first stage of the talks).

The governments of these countries hammered out an agreement with the British Aircraft Corporation, Messerschmitt-Bolkow-Blohm and Fiat to form an international company called Panavia to design and manufacture the fuselage, and with Rolls-Royce, MTU and Fiat to set up Turbo-Union to produce the engine.

NAMMA (the NATO MRCA Management Agency) was then set up as a branch of NAMMO. It was the framework for the international industrial complex that had been formed and was supervised by the representatives of the governments sitting on a NAMMO Steering Committee. Panavia is currently an international company with strong financial backing and is in a position to undertake other programs. This pioneering project in genuine European cooperation has not been without problems, however. It has been in existence for 10 years now, and the manufacturing program deadlines have not been met; the Rolls-Royce crisis has caused further delays, which will mean that the aircraft will not be available in quantity until 1982 and at a much higher cost (the initial target cost of \$10 million a unit will exceed \$30 million), along with the financing problems that such delays cause. Saudi Arabia has already taken steps to purchase 200 of the planes from Great Britain; a contract would require the approval of Germany and Italy.

Joint production projects have not been solely in the field of complex weapons systems such as aircraft or missiles. In 1968 Germany and Britain agreed to jointly produce a towed howitzer, the 155 millimeter FH-70. Italy joined the project in 1970. It has been a success, and the first shipment of howitzers was delivered to the Germany Army in October 1978.

Other projects, such as the attempt to manufacture a single tank model in several NATO countries, have not been as successful, although the goal has not been ruled out.

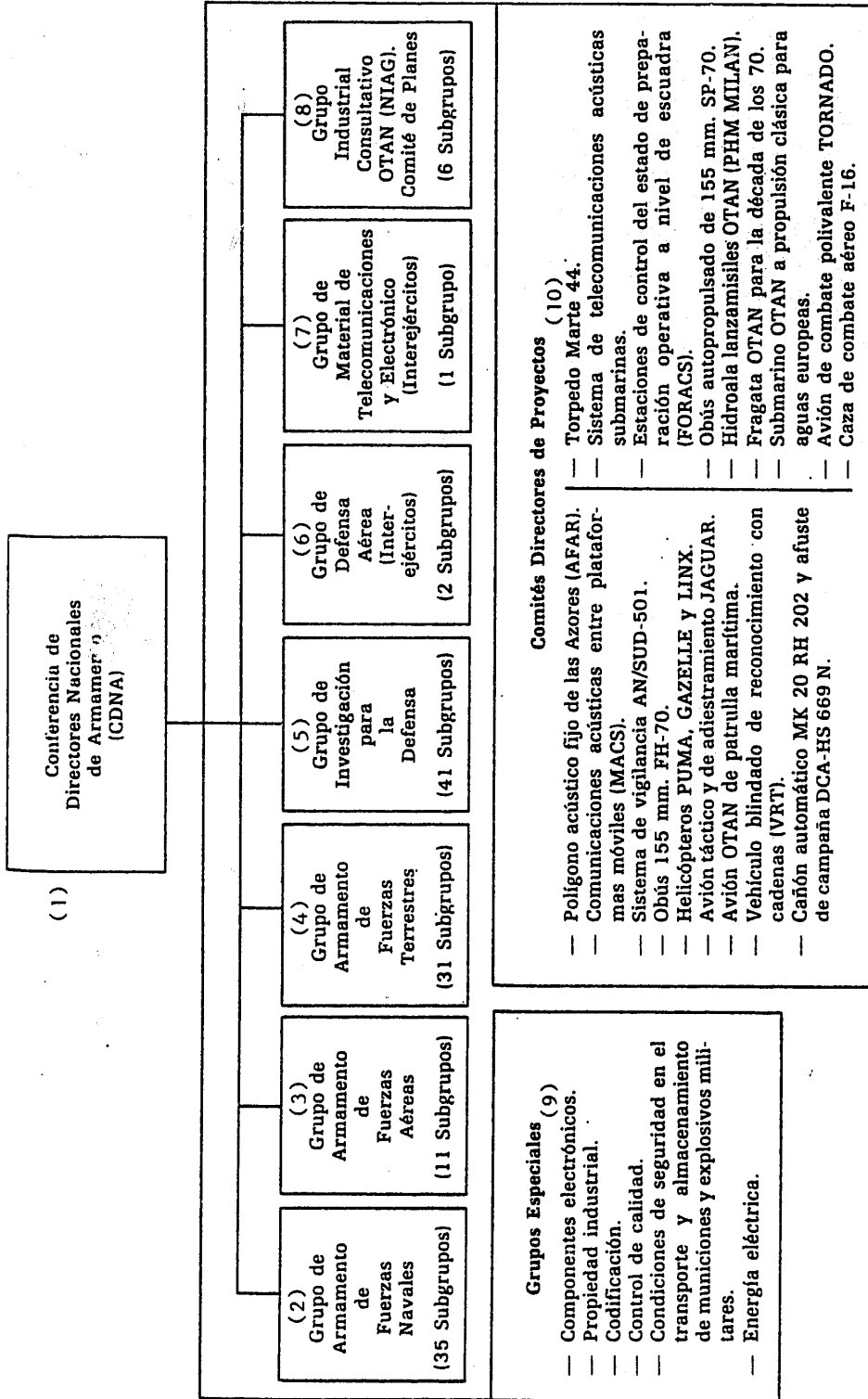
7.1 Current Institutional Situation

We have outlined the slow and difficult evolution of NATO's policy of cooperation because it is very illustrative of the difficulties and accomplishments that prompted the successive reorganizations up to the present.

The Conference of National Armaments Directors is a civil body that facilitates cooperation by guaranteeing exchanges of technical information and the development of projects. It is a high-level body directly under the North Atlantic Council. All of the member countries except France participate in it. Six main groups, in which the governments of the various countries are represented, work under its supervision. Three of the groups specialize in weaponry, one per branch (army, navy and air force), and the other three are the Defense Research Group, the Inter-Army Air Defense Group and the Inter-Army Telecommunications and Electronic Equipment Group, the latter set up in 1977.

The first three groups exchange information on national doctrines and programs and seek suitable areas for cooperation. When a certain number of countries have shown an interest in participating in a project, the appropriate working group submits the project to the CNAD for designation as a "NATO Project." After this, a Project Steering Committee is established to monitor the progress of the venture on NATO's behalf. The Defense Research Group exchanges research and technology information and identifies

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Key:

1. Conference of National Armaments Directors
2. Naval Forces Armaments Group (35 subgroups)
3. Air Forces Armaments Group (11 subgroups)
4. Ground Forces Armaments Group (31 subgroups)
5. Defense Research Group (41 subgroups)
6. Air Defense Group (Inter-Army) (2 subgroups)
7. Telecommunications and Electronic Equipment Group (pending review)
(Inter-Army) (1 subgroup)
8. Nato Industrial Advisory Group. Planning Committee (6 subgroups)
9. Special Groups:
 - Electronic components
 - Industrial property
 - Codification
 - Quality control
 - Security in the transport and storage of military ammunition
and explosives
 - Electrical energy
10. Project Steering Committees:
 - Azores Fixed Acoustic Range
 - Acoustic Communications Between Mobile Platforms
 - USD-501 Surveillance System
 - FH-70 155 millimeter Howitzer
 - Puma, Gazelle and Lynx Helicopters
 - Jaguar Tactical and Training Aircraft
 - NATO Maritime Patrol Aircraft
 - Combat Vehicle Reconnaissance (Tracked)
 - Mark 20 RH202 Rapid-Fire Gun and Anti-Aircraft Field Mount
HS 669N
 - Mars 44 Torpedo
 - System of Acoustic Communication with Submarines
 - Naval Forces Sensor and Weapon Accuracy Check Sites in Europe
(FORACS)
 - SP70 155 millimeter Self-Propelled Howitzer
 - NATO Patrol Boat Hydrofoil (Guided Missile)
 - NATO Frigate for the 1970's
 - NATO Conventional Submarine for European Waters
 - Tornado Multi-Role Fighter Aircraft
 - F-16 Fighter Aircraft

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areas of cooperation. The other two groups seek areas of cooperation in the fields that their names indicate.

Also under the CNAD's authority is the NATO Industrial Advisory Group (NIAG), which, as we mentioned before, brings together representatives of the industries in the various member countries.

These groups, in turn, are broken down into more than 120 subgroups and committees of experts in the various areas. This body's work sessions represent a total of 8,000 man-days a year, which gives us an idea of its level of activity.³¹

A country interested in taking part in a combat materiel or weapons system project observes the following procedure. The military requirements of the materiel are determined in the CNAD, and the interested governments draft a memorandum of understanding (MOU) to simplify the international legal and procedural red tape. The NIAG can become involved later by furnishing an initial study on the technical feasibility of the program in question. In any event, the industries from the participating countries come up with their own technical report on its feasibility.

In accordance with NATO's operational provisions, the participating governments draft a new MOU that outlines the stages of the project. This MOU is informal and nonbinding as far as executing the project is concerned (rarely does a cooperation agreement take the shape of a treaty between countries, as happened, for example, with the development of the Concorde). The CNAD then organizes a committee to oversee the project for NATO.

If two or more countries wish to purchase the same weapon from a third NATO country, arrangements can also be made through the CNAD.

In any event, the process is not, of course, free from industrial and even governmental pressures, because of the logical tendency of countries to protect their own military industrial complexes, which can even lead to the personal intervention of the highest national authorities. An example of all such pressures was the so-called "contract of the century," under which four countries, Belgium, Denmark, the Netherlands and Norway, agreed to replace their F-104 Starfighters with a single model for the 1980's. The transaction entailed outlays of more than \$2 billion for the purchase of 348 aircraft; more than \$60 billion was involved in the joint production market, in which tens of millions of work hours would go towards their manufacture.

The bidding competitors were the American YF-16 (General Dynamics) and F-17 Cobra (Northrop) aircraft, the French Mirage F-1 M-53 (Marcel Dassault) and the Swedish Viggen Eurofighter (Saab). The battle for the contract was marked by all sorts of pressures, especially from France and the United States, including their defense ministers, and the political infighting led to the personal intervention of Giscard d'Estaing and then President Ford. The press underscored that while this struggle was going on, the

group known as the "Bilderberg Club" held a meeting that was attended by such well-known figures as General Goodpaster, the supreme commander of the allied forces in Europe; Joseph Luns, NATO secretary general; Nelson Rockefeller; Helmut Schmidt, the German economy minister at the time, and other prominent figures from the world of politics and finance. There are those who connect the so-called "contract of the century" with the accidental death of French General Stelin, the former chief of Air Force Staff. An advocate of American industry, to which he was an adviser in his retirement, he was forced to resign from the French National Assembly as a result of the publication of his report to Giscard d'Estaing that spoke favorably of American industry and unfavorably of French industry.

These outside pressures notwithstanding, NATO drafted a detailed report comparing the four bids and focusing on the technical specifications and capabilities of each model, procurement, maintenance and operating costs, and the economic compensations being offered.

The contract was awarded to the F-16, at a price then of \$4.5 million a unit, and a joint program to manufacture 1,500 aircraft was organized (116 for Belgium, 58 for Denmark, 102 for Holland, 73 for Norway, 650 for the United States and the rest for export). A new feature of this joint production program was that each European country would manufacture certain components: Belgium, the fuselages and engines; Denmark, the ground equipment and electronic assembly; Holland, the aircraft assembly and telecommunications; Norway, the fuel tanks and advanced electronic technology equipment. When production hits 1,000 aircraft, each country will obtain 66 percent economic compensation, 88 percent if output rises to 1,500 units. This contract is regarded today as a model for joint production, the only negative point being that the European countries were not involved in the development of the prototype.

On the military side, another NATO body that facilitates the exchange of technical information is the Advisory Group for Aerospace Research and Development (AGARD), which is headquartered in Paris and under the Military Committee, which it advises in aerospace research matters. It has the following panels: aeronautical and space medicine, avionics, electromagnetic wave propagation, flight mechanics, fluid dynamics, guidance and control, propulsion and energetics, structures and materials, and technical information. In addition, AGARD brings together prominent aerospace experts from the member countries, promotes the incorporation of aerospace technology for shared use, organizes conferences and publishes reports that are widely read in NATO.

Another branch of the Military Committee is the Military Agency for Standardization (MAS), which has been headquartered in Brussels since 1970, when it transferred there from London. Its task is to promote standardization agreements (STANAG for short³²) for procedures, doctrines and the main specifications of a wide range of equipment. For example, it has established a catalogue of common ammunition for artillery, tanks or mortars; has

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standardized bomb deactivation procedures; has consolidated analytical naval warfare models; has standardized aircraft maintenance procedures and search and rescue techniques and has standardized the definitions of common military terms, among other accomplishments in this field.

MAS also puts out the Inter-Army Publications (AP), which are NATO manuals that various countries have agreed to follow and that deal with use tactics and unit doctrine. There are almost 100 AP's and more than 900 Standardization Agreements, around half of which are concerned with equipment. Many of them are becoming obsolete, however, along with the equipment they refer to, even though attempts are made to keep them up-to-date. There is no systematic approach for formulating and updating them, and not all have been agreed to by all of NATO's members.

A STANAG is not always promulgated in the MAS; some, albeit not many, come from the CNAD.

Other bodies have been created more recently to work towards coordination in defense materiel. In 1975, in response to France's desire to emphasize interoperability, the Ad Hoc Committee on Materials Interoperability was set up. A civilian branch of the International Secretariat and with representatives from all member countries, it seeks to resolve interoperability problems in specific fields, such as telecommunications, fuels, munitions for tank guns, mutual logistic aircraft support and the application of standardization agreements. In 1976, the Division of Armaments Standardization and Interoperability was created on a pilot basis under the International Staff. We should also mention the civilian Science Committee, which does not deal specifically with defense matters. Rather, it is concerned with the fields of science and technology in general; thus, it holds colloquiums, puts out publications and grants subsidies for advanced technology research, which is financed by the Alliance as a whole and contributes to technological exchanges among member countries.

There are two other highly specialized centers that we can mention in the field of logistic cooperation. One is the Antisubmarine Warfare Research Center, a branch of SACLANT and located in La Spezia (Italy); it was set up in 1962 to do research on oceanographic and submarine detection problems. The other is the SHAPE Technical Center (STC), headquartered in The Hague; it was created in 1960 to provide scientific and technical assistance to SHAPE and is especially qualified in air defense matters.

Moving on to another sphere of logistic activities, we will now analyze the NATO Maintenance and Supply Organization (NAMSO), which was established in 1957 to meet the need for spare parts for North American-made equipment in Europe. A branch of the Atlantic Council, it has its headquarters in Luxembourg, with two main operational centers elsewhere, one in Koblenz (FRG), which specializes in the F-104, and the other in Taranto (Italy) to provide logistic support for NATO's southern flank.

NAMSO has a Board of Directors, several subsidiary committees and an operating element known as the NATO Maintenance and Supply Agency (NAMSA). The Board of Directors, which is composed of one member from all member countries except Iceland, establishes the general policy of logistic support to be pursued by NAMSO and decides on financial matters.

The mission of NAMSO is mainly to facilitate logistic support (supplies of spare parts and the provision of maintenance and repair facilities) for various weapons systems that are in joint use in NATO; it also identifies, classifies and codifies parts. In addition to supplying spare parts from stocks, NAMSO also fills spare parts requisitions in the country that ordered them, both on an emergency and a routine basis. It can also provide testing, repair and technical assistance equipment "in situ" and arrange for long-term contractual maintenance services to be performed by the appropriate industry.

The weapons and materiel currently receiving logistic support from NAMSO are: the Nike, Honest John, Sidewinder, Bull Pup, Hawk, Lance and Tow missile systems; the F-104 aircraft, the satellite communications stations, the NADGE air defense system, the NATO Missile Firing Installation (NAMFI), the Mark 37/44 torpedoes and miscellaneous conventional equipment. NAMSA does not perform all of the logistic support tasks for the aforementioned materiel; rather, it comes to an agreement with the user countries on the tasks that are deemed cost-effective. The United States does not have the legal capacity to contract NAMSA support but is working on legislation so that its forces in Europe can benefit from this support. NAMSA is also scheduled to provide logistic assistance for the future NATO AWACS.

In general, centralized logistic support is furnished to all of the weapons systems that are held in common by several nations. NAMSO stocks 81,000 line items worth \$60 million.³³

The most recent NATO logistics body is the Senior NATO Logisticians Conference (SNLC), which met for the first time in 1978. It holds civil and military sessions, and its mission is to provide assistance in consumption logistics, in contrast to the CNAD, which is concerned with production logistics.

Study began in 1977 on the Long-Term Defense Program, which we referred to previously in discussing NATO force planning. This program comprises 10 task forces of particular interest to NATO in the 1980's. Task Force 8 is concerned with rationalization, in other words, the effective use of NATO resources through the standardization and interoperability of materiel in order to save money and at the same time boost military efficiency.

This issue was analyzed by the CNAD in the fall of 1978. It submitted recommendations to the member countries on how they could further develop and enhance the STANAG or at least see to it that they are observed; to this end, it set up a sort of high-level committee to coordinate national armaments planning. Moreover, the Periodic Arms Planning System (PAPS)

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is now in the planning stage; its objective is to establish a systematic procedure for identifying the Alliance's needs, which the CNAD would then seek to meet by promoting jointly developed materiel. In order to start this system up, study has begun on the links that should be established between it and NATO force planning. The so-called NATO Arms Planning Review (NAPR), which was approved in October 1979, is essentially an analysis of national timetables for materiel and a comparison of them with NATO standardization requirements, with a view towards maximum interoperability. This project could make the CNAD more effective, but it is still on its first legs, and we will have to wait and see how it develops before evaluating it.

7.2 U.S. Policy Towards the Alliance in the Area of Armaments

The predominance of the United States after the Second World War and its status as a superpower that becomes involved in conflicts from which Europe is somewhat far-removed (Korea and Vietnam) have led it to pursue a practically autarkic policy in the area of weaponry, which it is able to do because of the enormity of its domestic market. This policy is backed by the so-called "Buy American Act," under which the prices of foreign military hardware that competes with domestic materiel are subject to a 50 percent surcharge. When Western Europe experienced its economic boom in the 1960's, industry there flourished, and their armies were able to purchase weapons outside the United States. In any event, the United States still remained practically self-sufficient, and even in the isolated cases in which the Pentagon chooses European prototypes, such as the Harrier vertical takeoff aircraft or the Roland guided missile, they are manufactured in the United States under license.

After the Vietnam war, however, the United States began reassessing its armaments policy, especially in relation to its NATO allies. In this connection, the U.S. State Department financed a study by Thomas Callaghan, an armaments expert, which was later published by the Georgetown University International Center for Strategic Studies under the title of "U.S./European Economic Cooperation in Military and Civil technology." He advocated the creation of a European agency for the procurement of military hardware that would coordinate European requirements and introduced the concept of the "two-way street" in the arms market in a bid to promote sales of European-made weapons to the United States to balance out U.S. sales to allied Europe. Callaghan defended his theory before the Senate, stating: "If we manage to establish this 'two-way street' between Europe and the United States, America will benefit as much economically as Europe, in terms of both trade and jobs."

This philosophy of mutually beneficial cooperation gave rise to a political debate in the United States that was marked by opposition and misgivings on the part of some lawmakers. Nonetheless, for the first time in its history, the Senate Armed Forces Committee held a session on "Allied Cooperation and Standardization" on 31 March 1976.

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As a result of these developments, amendments were introduced into U.S. legislation to encourage standardization and joint production within the Alliance. We should make special mention of the Culver-Nunn Amendment, which was passed unanimously by the Senate and eventually passed also by the House, which for 2 years had stymied approval of the original version, which reads:³⁴ "It is the policy of the United States that equipment acquired for the use of U.S. Armed Forces personnel stationed in Europe, under the agreements of the North Atlantic Treaty, should be standardized or at least interoperable with the equipment of other members of NATO. In the pursuit of this policy, the secretary of defense should, whenever possible, initiate and execute procurement procedures that will make possible the purchase of equipment that is standardized or interoperable with that of other members of NATO...Such procedures shall take into consideration the cost, functions, quality and availability of the equipment to be purchased." It further states that:³⁵ "It is the sense of Congress that the weapons systems that are developed entirely or mainly for use in the NATO theater of operations should be consistent with NATO's requirements, in order to move towards a common doctrine and procedures and to facilitate to the utmost the standardization and interoperability of military equipment..." This piece of legislation enables the secretary of defense to rescind the preference that the Buy American Act accorded to American equipment in order to promote standardized NATO hardware, the only requirement being to so inform Congress.

This amendment officially established the "two-way street" concept, adding, however, that this will be feasible only "if the European countries act on a united and collective basis"; therefore, the U.S. Congress "encourages the governments of Europe to hasten their current efforts to achieve collaboration in European armaments among the European members of the Alliance."

As a result of the Culver-Nunn Amendment, the U.S. defense secretary is obliged to submit an annual report to Congress on the specific issue of "Rationalization/Standardization Within NATO."

Espousing a similar philosophy in the sphere of NATO cooperation, a private institution, a task force from the Georgetown University Center for Trans-Atlantic Policy, published in 1977, under the title "Allied Partnership," the findings of work sessions designed to take a business-oriented look at how the economic pressures of military spending were distributed among the allied nations. The report asserts: "Fifteen sovereign nations cannot efficiently forge a suitable military structure without a collective military-industrial effort," concluding that "the establishment of a North Atlantic Defense Market would constitute the largest political and economic cooperation effort that the Free World has ever proposed in its own defense."

Pursuant to this policy of promoting Atlantic cooperation, by the fall of 1975 the United States had already signed a Memorandum of Understanding with Great Britain on reciprocal purchases in an attempt to achieve an

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equitable balance between the two nations in their defense purchases by means of the mutual reduction of potential legal barriers and by taking a comprehensive approach to exchanges instead of having to hammer out specific agreements for each weapon. Thus, for example, Great Britain forwent manufacture of two weapons systems that were already under development for the sake of two standardizable systems: the American Harpoon surface-to-surface missile and the French-German Milan antitank missile. In exchange, the British Government expected the allied countries to adopt the helicopter-borne Sea-Skua air-to-sea weapons system that England had developed. The United States subsequently signed other similar memoranda of understanding with Germany, France, the Netherlands, Italy and Norway, and others are pending with Belgium, Canada and Denmark. They are designed to lessen the imbalance in military hardware sales between the United States and the other members of NATO, an imbalance that the following table clearly illustrates.³⁶

A) Sales to Western Europe of Military Equipment Produced in the United States (in millions of U.S. dollars; U.S. fiscal year)

<u>Country</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>As a Percentage of Total Military Purchases (1972)</u>
Belgium	9.3	6.4	0.6	7.9	6.2	7.4	5
France	15.7	12.6	25.1	12.4	15.8	3.7	1.5
Italy	29.3	50.1	50.4	50.4	50.2	41.6	6
Holland	5.7	18.2	12.6	6.4	10.2	7.5	2
Germany	309.1	156.3	207.5	226.2	333.3	430.8	27
Great Britain	156.9	270.5	369.5	221.5	118.6	79.9	3
Europe total, except Greece and Turkey	573.3	561.6	750.2	639.4	610.5	650.1	6
As a percentage of total U.S. sales	62.7	55.1	57.1	44.5	41.9	43.5	

Source: U.S. Defense Department, Security Assistance Agency, May 1973.

B) Sales to North America of European Military Equipment

The only producing country that has been able to export sizable amounts of equipment (directly or under production license) to North America has been Great Britain, as we can see from the following:

--British sales from 1972 to 1974 (in millions of U.S. dollars):

To Canada (the Blowpipe tactical missile)	28.0
To the United States (the Harrier V/STOL aircraft)	111.8
Total to North America	139.8

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The "two-way street" policy has run into problems even in Congress, which was supposed to be promoting it. The Special Subcommittee on NATO Standardization, Interoperability and Readiness (which is under the House Armed Services Committee) published a report in early 1979 that stated the following: "There are two very different ways of looking at the current 'two-way street' trade balance. One approach limits the estimate to the commercial arms flows between the United States and the European members of NATO, which yields a balance that is heavily in the United States' favor. This is the approach that Europe takes...But there is another, completely different view of the 'two-way street' if we look at the overall trade balance in military or defense-related goods and services. If we consider all defense transactions, including arms trade, then the two-way street in trade is heavily in Europe's favor, with an average U.S. deficit of more than \$1 billion a year." If this approach were to prevail in Congress, it would greatly hamper Europe's efforts to export arms to the United States.

A factor working in favor of materiel trade is that the Long-Term Defense Program that the U.S. Government has proposed to NATO is expected to yield major benefits in rationalizing the joint defense effort through the international acceptance of jointly determined weapons specifications. The U.S. undersecretary of defense said as much at the Conference of National Armaments Directors in the fall of 1979.

The U.S. move towards more balanced cooperation in NATO could facilitate other mutually acceptable pacts such as the aforementioned F-16 joint production project, which has unquestionably been more advantageous than other previous joint production programs between European industries and the powerful U.S. industry. Under the F-16 joint production contract, the firms from the European countries (Belgium, Denmark, Holland and Norway) will receive compensation practically equivalent to the total cost of the scheduled F-16's and will have access to the latest aeronautical technology; moreover, the contract makes economies of scale possible by apportioning the production so that each country will manufacture certain components for the program as a whole. This contrasts with the approach to the manufacture of the F-104's in 1960, when each country produced its own aircraft entirely on its own.

The good intentions of the United States have been questioned, however. For example, under the F-16 joint production contract, in addition to the economic compensation for the European countries for manufacturing certain components, the U.S. Government, pursuing the "two-way street" policy, pledged to purchase 16,000 MAG machine guns, worth \$30 million, from Belgium, a matching item that European NATO circles have regarded as inadequate and far from encouraging for the "two-way street" theory.

Bonn has also registered complaints with Washington, which had promised at the Atlantic summit conference in the spring of 1978 to purchase 9,000 German military vehicles as one of the matching items for the cost-sharing of the AWACS program. By the fall of 1979, the United States had purchased only 300 of the vehicles.

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These European reservations notwithstanding, the current course of U.S. policy holds out the prospect of mutual benefits for the NATO allies, in the pursuit of a common goal: the standardization of the Alliance's military hardware. In August 1980, the president of the United States signed the NATO Mutual Support Act of 1979, which removes many of the restrictions in the Defense Acquisition Regulation and Arms Control Act. This 1979 act has resolved many of the logistics problems of the U.S. troops in Europe.

If the U.S. policy described here is eventually put into practice and does not remain mere rhetoric or undergo paring back, from a domestic industrial standpoint it will entail some degree of sacrifice for U.S. industry, which will have to renounce its predominance; the reasons for such a stand would be basically political, and Europe's heterogeneous and diversified industry would then have to respond appropriately.

7.3 The European Sphere of Cooperation

The steady economic and industrial recovery of the European NATO countries after the critical phase of the postwar period further highlighted the inadequacy of their individual efforts in the field of defense in comparison with the overwhelming superiority of the United States. In order to join efforts as much as possible in a bid for efficiency and in order to show Washington a united stand, the European countries undertook a series of initiatives that were successful to a greater or lesser degree in achieving coordination in defense matters. We will now examine these initiatives, the organizations that sponsored them and their practical consequences.

The Eurogroup

Eurogroup is an informal group consisting of the defense ministers of the European members of the Alliance, except France and Iceland. It was created in 1968 (Portugal did not join until 1976) to achieve a greater coordination of their interests in defense questions. It bears noting that during the time that Greece remained outside the NATO Military Command, it continued within the Eurogroup.

The defense ministers of the Eurogroup meet informally twice a year, coinciding with the sessions of the Atlantic Council; the chairmanship rotates on an annual basis among the representatives.

Its work is conducted by groups of experts from the national delegations to NATO, because the Eurogroup lacks an administrative organization, except for a small secretariat. A Staff Group supervises any studies that are under way through subgroups that specialize in various fields. The following subgroups are currently in operation:

--EURONAD: Composed of the national armaments directors of the Eurogroup countries, it is concerned with armaments coordination and has been one of the most active subgroups.

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--EUROCOM: Promotes the coordination and interoperability of communications systems.

--EUROLOG: Tries to enhance logistic cooperation.

--EUROLONGTERM: Studies the harmonization of tactical doctrines as a basic step towards a subsequent standardization of armaments, given the obligatory subordination of armaments to doctrine.

--EUROMED: Coordinates health care services.

--EUROSTRUCTURE: Studies the various national Armed Forces organizations and their recruitment and mobilization systems for the exchange and comparison of information.

--EUROTRAINING: Tries to expand bilateral and multilateral training pacts.

Its studies are aimed mainly at promoting rationalization and standardization in the field of defense and also at harmonizing viewpoints on the political and strategic facets of Europe's defense within the Alliance.

The first four subgroups deal with questions that concern us in this chapter.

One of the Eurogroup's first accomplishments was the EDIP [European Defense Improvement Program] in 1970, which called for the investment of \$1 billion over 5 years, broken down into three main items: \$420 million for NATO infrastructure, mainly underground aircraft shelters and the development of the integrated telecommunications system (NICS), \$450 million for weapons systems purchases and \$80 million in transport aircraft that Germany provided Turkey. The EDIP was mainly an attempt to clearly show the United States the joint defense efforts that the countries of Europe were making and to make these efforts a matter of public record. In this connection, starting in 1971 the Eurogroup has published at the end of every year a document called EUROPACKAGE, which outlines the improvements made in the defense capabilities of the member countries so as to make public opinion aware of their joint contribution to Atlantic defense.

In 1975, the Eurogroup was particularly active in pushing for armaments standardization and publicly requested that the United States take specific steps in this direction. Furthermore, it called attention to the major limitations that were being imposed on the Eurogroup's standardization policy by the absence of France, one of Europe's powers in the arms industry.

The fact is that as far as major military hardware is concerned, Eurogroup's only two significant accomplishments have been coordinating the purchase of the U.S. Lance surface-to-surface missile by Germany., Belgium, Great Britain and the Netherlands, and some degree of involvement in the agreement

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between the United States and four European countries (Belgium, Denmark, the Netherlands and Norway) for the joint production of the F-16. In both cases, in other words, the Eurogroup was helping to establish an American project in Europe, and in the second instance to the detriment of a genuinely European industry, Dassault, which was offering the Mirage. The fact of the matter was that the American products were the obvious choices, because the diversified and atomized European industry was in a position of commercial inferiority, even though it could compete technologically with U.S. industry.

The Eurogroup has at least helped to encourage a spirit of European cooperation, but its practical accomplishments have been few. Four years after U.S. arms specialist Callaghan introduced the concept of the "two-way street" in inter-Atlantic weapons deals, the trade imbalance between Europe and the United States, which was 10 to 1 in 1976,³⁷ is still heavily in favor of American industry.

The Independent European Program Group (IEPG)

Seeking a solution to France's absence from European armaments cooperation efforts, the Eurogroup invited France to a special meeting devoted exclusively to such cooperation. France accepted on the condition that it be held outside NATO and the Eurogroup.

In a bid to reconcile the competitive drive of industries, especially France's, and the need to promote greater European technological and industrial cooperation, on an invitation from the Italian Government and under the chairmanship of the Italian undersecretary of foreign affairs, the undersecretaries of defense of the 10 members of the Eurogroup (Portugal was still not a member) and of France met in Rome in February 1976. Also attending the meeting were the armaments directors of these countries and other officials from their Foreign Ministries. The upshot was the creation of the European Program Group as an "independent" entity; it is regarded today as the most important European institution in the field of armaments. It is a "conference" or "forum" rather than a "body" and has no legal charter. It meets periodically at two different levels: a general political level and a technical level. At the political level, the undersecretaries of state of the member countries normally meet once a year. Italy has chaired the political level since the establishment of the IEPG, but there is move now to make the chair a rotating post. The technical meetings are run by the national armaments directors and bring together experts in various fields.

The IEPG has no secretariat or bureaucratic structure and assigns specific tasks to subgroups of experts under the chairmanship of one of the member countries.

In general, it endeavors to promote the efficient use of funds earmarked for military hardware research, development and procurement, to further the standardization and interoperability of such hardware, to consolidate

a European industrial and technological base and to strengthen Europe's position in its relations with the United States and Canada.

Three panels have initially been set up to carry out these tasks:

--Panel I, under the chairmanship of Great Britain, is concerned with military materiel planning, beginning with the drafting of lists of the equipment in use and replacement projects; these lists are kept up-to-date so as to ascertain the future arms requirements of the member countries until about 1990.

--Panel II, under the chairmanship of Belgium, coordinates the work of the 12 subgroups that look into the possibilities for cooperation in 12 specific spheres, several of which emerged from the work done by Panel I. Four of these subgroups have made significant gains in 105 millimeter ammunition for tanks, tactical support aircraft, nonremote-controlled antitank weapons and mine detectors. The other eight subgroups are still at an early stage of research into high-speed launches, light and heavy torpedoes, military helicopters, antitank weapons, surface-to-air guided weaponry, mines systems, mines for naval exercises and naval patrol aircraft.

--Panel III, under Germany's chairmanship, is concerned with the economic and procedural aspects of defense. As of now it has been broken down into five subpanels with the following tasks:

-Subpanel 1: Project design procedures; attempts to establish common procedures for new weapons systems.

-Subpanel 2: Compensation among projects; examines the problems of balanced cooperation to make sure that not only the highly industrialized countries benefit from such cooperation.

-Subpanel 3: Competition and technology transfer; examines the different national legislations pertaining to competition, technology transfers and sales.

-Subgroup 4: Industrial cooperation; tries to determine national arms production capabilities and how to rationalize this production; the chairmanship of this important subpanel has been given to France.

-Subpanel 5: Arms exports; examines the different national legislations relating to the export of arms to non-IEPG countries and to arms embargoes, noting legislative common ground in this regard.

Reports on the work done by the experts in these subpanels are submitted to the meetings of the armaments directors, who in turn inform the under-secretaries of state.

Although no specific cooperation project has yet been approved, there has been progress in the preliminary phase of administrative and procedural matters with a view towards identifying potential cooperative undertakings.

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Work is still at a very early stage, but expectations are running high about the potential of this new forum, and the members of the IEPG are convinced that it can become the body that will achieve the sought-after level of European cooperation to which so many approaches have been attempted, all with very meager results.

It is for this reason that we are devoting special attention to the IEPG in this study.

The use of the term "independent" warrants thorough analysis. In his study "The European Program Group"³⁸ British arms expert David Hey Hoe explains the introduction of the adjective "independent" as follows: "The name change between February and March 1976 from Independent Program Group (IPG) to European Program Group (EPG) illustrates the Alice in Wonderland nature of the procedure. The second title has the advantage of sidestepping the question as to what the new organization is independent of and in what sense."

The annual reports of the U.S. defense secretary to Congress on "Rationalization and Standardization in NATO" refer to it simply as the European Program Group, whereas European organizations tend to emphasize the word independent and prefer to use the French title of "Groupe independant europeen de programmes" (GIEP). NATO usually says IEPG (the English initials), maintaining the "independent," however.

The report on "A European Armaments Policy" that Dankert presented to the Western European Union³⁹ contains the following quote from French engineer and General Cauchie: "...in this group we can meet as Europeans, independent of the official structures that we are familiar with, whether they are part of NATO or of the Western European Union."

The Klepsch Report, a well documented and widely publicized study on "European Cooperation in Armaments Supply,"⁴⁰ says: "The word 'independent' means that the IEPG is independent of the Eurogroup." Expanding on this, the publication NOUVELLES ATLANTIQUES wrote later:⁴¹ "The IEPG, which is independent of NATO.../was created in 1976, totally independent of NATO, in order to include France, which does not participate in the Alliance's military structure."/ [in boldface]

No government authority has officially proclaimed that the group is independent of NATO, but it has been careful not to officially acknowledge organizational ties to or dependence with respect to the Atlantic Alliance.

After Portugal joined in November 1976, the IEPG comprised all of the European members of NATO, except Iceland, which does not maintain armed forces, and the Alliance has promoted the group because it expects that it will pursue its activities in keeping with the general interests of the Alliance as a whole. Admiral Mainini, when he was the assistant chief of the Italian Defense Staff and chairman of the IEPG at the national armaments directors level, stressed this when he stated that the member

countries will also take into consideration "relations with the countries on the other side of the Atlantic, mainly the growing and tangible American trend towards tackling standardization as an objective that can be achieved through more balanced exchanges between the two components of the Alliance (Europe and North America)."

The country that happens to be chairman of the IEPG maintains the liaison with the Alliance through its representative to the NATO CNAD. Thus, the IEPG's Panel I has submitted to NATO the national timetables for equipment replacement and has received the corresponding timetables of the United States and Canada. Furthermore, the IEPG has organized an ad hoc task force among the three panels and the national armaments directors; it is headquartered in Brussels and looks into the transatlantic dialog on the following points:

--The drafting and presentation of a list of hardware that, according to the Europeans, the United States and Canada should consider acquiring for their forces in Europe.

--A list of supplies and provisions earmarked for U.S. and Canadian forces in Europe.

--Identifying technical and legal impediments to exports of European materiel to the North American market.

--Exchange of information.

An agreement has also been reached to create a joint U.S.-IEPG task force to look into the obstacles hampering their relations. The United States and Canada also want to set up two other task forces, one to study the possibilities for rationalizing arms research, development and production, and another to look into industrial cooperation; the IEPG has not yet responded to these proposals.

The major European defense industries have set up an organization called the European Defense Industries Group (EDIG) to conduct their relations with the IEPG.

The creation of the IEPG has jeopardized the existence of the EURONAD subgroup of the Eurogroup, which brings together the national armaments directors of the European countries of NATO, except France. It has been one of the most active Eurogroup subgroups in matters of armaments cooperation, but its work now overlaps with and has been surpassed by the IEPG, and therefore consideration is being given to its possible dissolution. The only reason to keep it going would be to maintain ties with NATO, but the feeling is that this can be accomplished through the CNAD, which because it is part of NATO's civil organization, comprises all member countries, including France.

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Thomas A. Callaghan spoke on "The Macroeconomics of the Allied Countries' Arms Development and Production" at the Hans Rissen Conference in Hamburg in February 1978. He stated the following: "In the years preceding the First World War, the nations with more than 25 million inhabitants were in a position to provide what was essential for their own defense. During the Second World War and in the immediate postwar period, only the nations with 50 million inhabitants had the necessary resources to develop and produce their own materiel. But in the 1960's, nations like Great Britain, France, Germany and Italy were unable to assume the burden of developing and producing their own weapons systems...A national policy cannot aim at independence (or more precisely, nondependence) unless the country in question is willing to pay the price. The countries of the Warsaw Pact have paid the price; they have neglected civil technology, and their economies have begun to weaken. The Soviet Union has pooled its defense resources with those of the other Warsaw Pact countries. But some of these countries (the Soviet Union among them) have not had the necessary resources available to furnish themselves with solid civil technology. The USSR has been able to land a remoted-controlled vehicle on the moon but has had to turn to the West for the technology to put cars and trucks on its roads."

In order for the Western countries to conserve the resources that they are today lavishing on competing national defense programs, Callaghan advocates cooperation within the framework of an "Atlantic market" that would include North America and Europe, the latter to be represented by an international body, for example, a "European agency for defense materiel procurement," formed out of the Independent European Program Group.

The existence of the IEPG, which has currently raised such great hopes in Europe, does, however, cause a certain amount of tension in Atlantic cooperation. This is a logical upshot of the contradiction between the desire to rationalize military hardware within NATO and the fear of competition that the potential emergence of a powerful European industry has created on the other side of the Atlantic.

Thus, the IEPG is somewhat ambiguous about its description of "independent" and attempts to maintain a difficult balance between its pursuit of European teamwork and rationalization in defense, on the one hand, and cooperation in transatlantic relations that fall within the framework of NATO's overall defense interests, on the other.

The Western European Union

In discussing defense cooperation within the Atlantic Alliance, we cannot avoid referring to the Western European Union (WEU).

Initially there was a Western Union; it was formed in 1948, 1 year before the creation of NATO, pursuant to the signing of the Treaty of Mutual Assistance in Brussels by France, Great Britain and the Benelux countries.

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This was an attempt to create a European Defense Community. This plan fell through, and in 1954 the Western Union merely brought Germany and Italy under the treaty and changed its name to the Western European Union. All of the WEU countries belong to NATO.

The Treaty of Brussels is still in effect (it has a duration of 50 years, in other words, up to 1998), and its members' pledge to mutual defense, according to Article 4, is much more binding than the North Atlantic Treaty.⁴²

The Western European Union is organized as follows: a Council of Ministers, a Consultative Assembly, a Secretariat, a Standing Armaments Committee and an Arms Control Agency.

The Assembly is deliberative and has no executive powers. Nonetheless, the numerous studies on contemporary European problems that it debates and publishes are of great interest (witness the frequent references to them in this book), and the recommendations that it formulates both reflect and form public opinion.

The Standing Armaments Committee is not of constitutional origin because it was not set up under the treaty, but later in 1955. Its headquarters is located in Paris, where it maintains a Permanent Secretariat. It meets quarterly and promotes cooperation agreements voluntarily suggested by member countries by organizing "groups" on which they are represented. It initially achieved some results in establishing the specifications of military vehicles, and we should mention in its favor that the production of the Bundeswehr's vehicles was based on a study by this committee. In this chapter we will see what its current direction and interests are.

The Arms Control Agency's mission was to oversee Germany's rearmament, and thus its present-day role has diminished greatly.

The cost of running the various WEU bodies is apportioned among the member countries in accordance with coefficients expressed in 1/600ths of the budget.

The table below shows these coefficients and the 1978 budget in two currencies, pounds and French francs, inasmuch as the WEU has some of its bodies in London (the permanent representatives to the Council and the Secretariat General) and some in Paris (the Assembly and the Standing Armaments Committee). In all, there are 150 officials in the 2 countries.

Contribution of the Member Countries of the WEU in 1978

<u>Country</u>	<u>x/600ths</u>	<u>Pounds</u>	<u>Francs</u>
Germany	120	133,341.00	2,991,056.00
Belgium	59	65,559.33	1,470,602.53
France	120	133,341.00	2,991,056.00

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Italy	120	133,341.00	2,991,056.00
Luxembourg	2	2,222.34	49,850.94
Netherlands	59	65,559.33	1,470,602.53
United Kingdom	<u>120</u>	<u>133,341.00</u>	<u>2,991,056.00</u>
Totals	600	666,705.00	14,955,280.00

As we can see, these figures are very small in comparison to the amounts that the members of NATO have to contribute to finance its administrative structure.

The WEU has very pragmatically subordinated itself to NATO, a much more consequential organization, and for this reason included the following clause in the protocol under which Germany and Italy were incorporated: "In executing the Treaty, the high contracting parties and all of the bodies created by them under the Treaty will cooperate closely with the North Atlantic Treaty Organization," adding that: "In order to avoid any overlapping with the NATO Staffs, the Council and the (Arms Control) Agency will defer to the appropriate military authorities of NATO for any information and opinion on military matters."

Article 10 of the "WEU Council Decision Establishing a Standing Armaments Committee" (7 May 1955) stipulates that this committee "will, in close association with NATO, seek to enhance consultation and cooperation in the field of armaments..." and later adds: "It will strive to promote... agreements or compromises on problems such as armaments studies, standardization, production and supplies. Such agreements or compromises can be concluded among all the countries of the Western European Union or among any number of them. They will remain open to participation by other countries of the North Atlantic Treaty Organization." This last sentence illustrates the WEU's desire to maintain very close collaboration with the other NATO components."

The members of the Secretariat of the Standing Armaments Committee are elected from among the representatives of the respective NATO countries, attend the meetings of the NATO Conference of National Armaments Directors as observers and also maintain links with the Alliance's Military Agency for Standardization (MAS); thus, as we might suppose, they are thoroughly familiar with the work being done on weapons standardization.

In its search for a stronger, less NATO-subordinated European identity and in its eagerness to remove arms production questions from the Organization's scope, France attempted in the early 1970's to revitalize the WEU as a genuinely European defense body that would complement the political and economic activities of the EEC. A WEU draft recommendation on European unity reminds "the member countries of the EEC that have not yet acceded, as well as all /European countries with democratic regimes/ [in boldface] that would like to join in a common defense policy, that they can accede to the Treaty of Brussels."⁴³

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These initiatives by France have not succeeded in curbing NATO's influence in the attempts to coordinate the defense efforts of the Western European countries.

The Western European Union has adapted to this fact and tries to engage in activities that complement NATO's.

In May 1975, shortly before the IEPG emerged, the WEU instructed the Standing Armaments Committee, which has done authoritative reports on the issues within its jurisdiction but has not succeeded in hammering out any specific cooperation project, to work in the future, "in close association with NATO, in a bid to enhance consultation and cooperation in the field of weaponry, in order to seek common solutions that will enable the governments of the member countries to meet their materiel requirements. To this end, it will strive, whenever the opportunity presents itself, to promote agreements or compromises on problems such as armaments studies, standardization, production and supplies."⁴⁴

Later, in June 1976, even though the IEPG had already been set up, the WEU Council instructed the Standing Armaments Committee, "as a task for the immediate future, to draft a detailed blueprint for a study that will take the form of a descriptive analysis of the situation in the weapons industries in the member countries and thus help to give a clearer view of the industrial and economic implications of arms standardization."⁴⁵

In connection with this study, the WEU Assembly resolved in November 1976 to recommend to the Council: "To invite the countries that are signatories of the North Atlantic Treaty and members of the EEC or that are associated with the Community under Article 238 of the Treaty of Rome, to take part in the study that the Standing Armaments Committee is supposed to undertake." We can see that this is an attempt to broaden the Committee's field of action, but this time there is no mention of "all the European countries with democratic regimes"; only the countries that belong to NATO and to the EEC or are associated with the Community are included. Thus, efforts were undertaken to get Norway and Denmark to join in, but they were unsuccessful. Greece and Turkey, however, have shown a willingness to cooperate in this sphere, although such cooperation has not yet become a reality.

The work done by the Standing Armaments Committee on defense industries has given the IEPG further proof of the WEU's pragmatism, in that it is trying to coexist with the IEPG and, in particular, maintain close ties with Subpanel 4 of its Panel 3, which, as we mentioned previously, is concerned with industrial cooperation and the rationalization of the European defense industry (it is chaired by France).

Once the Standing Armaments Committee had completed the "detailed blueprint" that it had been charged with drafting in 1976, the Council asked IEPG to apprise it of the studies that it had been conducting, mainly Subpanel 4, in order to avoid any overlapping.

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The Standing Armaments Committee has already received draft definitions on armaments and the industries that produce them from the IEPG, and thus the two bodies will be working with this common base.

In light of the work that the IEPG is already doing, the Standing Council of the WEU has charged the Standing Armaments Committee with complementary tasks⁴⁶. Thus, while the IEPG conducts an economic survey on defense industries, the Standing Armaments Committee will look into legal statutes and national legislation on the matter and wait for the IEPG to provide it with the economic findings of its survey so that they can work with the same base. This is an example of how close ties are maintained between the two bodies.

FINABEL

Another organization that has an impact on arms cooperation is FINABEL, which was created in 1953 as the first attempt at military coordination in Europe. It consists of the chiefs of staff of Germany, Belgium, France, Great Britain, the Netherlands, Italy and Luxembourg.⁴⁷ Germany joined in 1956, and Great Britain in 1972 after it became part of the European Community. All of the countries in this organization belong to NATO and to the EEC.

FINABEL's function is to promote cooperation in ground weapons among its members by establishing common military qualitative specifications for this materiel, by joint experiments with weapons and procedures, by conducting tactical and logistic studies and by exchanging information. It does not attempt to get involved in the specific field of joint military production because this is not the province of the chiefs of staff. However, the work that FINABEL does is indispensable for subsequent cooperation in arms manufacture.

The chiefs of staff meet once a year in one of the capitals of the member countries. It has a Permanent Secretariat in the Belgian Defense Ministry and a Main Committee of Military Experts, whose function is to oversee and control its 15 tasks forces. It also has a Logistics Committee.

NATO recognizes FINABEL as practically a regional group in its sphere of competence, and the CNAD's Ground Armaments Agency makes frequent use of FINABEL's studies. In addition, it has official ties with the EUROLONGTERM Subgroup of the Eurogroup, which is concerned with tactical doctrine. The WEU's Standing Armaments Committee maintains close ties with FINABEL, and the IEPG is in contact with it too, although a formal relationship has not been established.

FINABEL has already formulated more than 200 agreements on a wide range of ground weapons, especially in connection with their military specifications.

Also of interest in the area of land-based military equipment are the joint experiments with prototypes and a wideranging exchange of information,

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both in connection with combat materiel and the procedures for using it. All of this is a valuable contribution to the preparations for weapons standardization.

The European Economic Community

Eight of the nine member countries of the EEC belong to NATO; Ireland is the exception. In order to examine Europe's military industrial cooperation within NATO, we feel that we must view it within the framework of the EEC, which comprises the leading European members of NATO insofar as weapons production and procurement are concerned.

Although the Treaty of Rome does not broach the issue of common defense,⁴⁸ the EEC cannot remain divorced from industrial cooperation in armaments, given the economic implications for its members.

The Political Committee of the European Parliament instructed Lord Gladwyn to draft a report on the effects of a European foreign policy on defense. In his 1974 report, Gladwyn addresses the issue of European defense cooperation and, among other things, the possible creation of a joint arms supply agency.

In his 1975 Report on the European Union, Tindemans also proposed the creation of a "European arms supply agency." Spinelli made a more specific proposal for the establishment of an agency for European aeronautics, a sector in which the military component is an important one. All of these reports predate the establishment of the IEPG in 1976.

The 8 May 1978 Klepsch Report to the European Parliament on "European Cooperation in Armaments Supply" is a key document in this area. The report states that the aeronautical, shipbuilding and electronic industries cannot survive unless the military and civilian sectors are dealt with together and that the military or political institutions that are concerned with this field do not possess the Community's capabilities for organizing the industrial aspect of armaments supplies. It reaches the central conclusion that "a single, structured Community market for military hardware must be created."

The Klepsch Report came out after the creation of the Independent European Program Group, to which it attaches such importance that it proposes that the IEPG be given a permanent secretariat to function as "the main institutional component of a European armaments supply agency" and that the EEC Commission be represented at the meetings of the IEPG. We should point out here that all of the members of the Community, except Ireland, belong to the IEPG and that while Norway, Portugal and Turkey are part of the group without belonging to the EEC, the latter two are in the process of joining, with Turkey having an association agreement.

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The Klepsch Report proposed that this agency, which would represent the IEPG and the European Committee, be the spokesman of Europe's interests in negotiations with the United States and Canada, negotiations whose hallmark would be the "two-way street" concept in arms trade.

On 14 June 1978 the European Parliament adopted the proposals in the Klepsch Report and invited the European Community to promptly submit to the Council "a program of European action for the design and production of conventional weapons" as another facet of the EEC's common industrial policy. The IEPG also examined the report at its October 1978 meeting and deemed the proposals bearing on it "interesting."

The EEC and the WEU cooperate closely in the field of military industry, as we can see from the broad common ground in the studies and reports conducted on this sector. Nevertheless, the Tindemans Report proposes that "the (European) Parliament be able to deliberate henceforth on all the issues that are within the province of the (Western European) Union." In a footnote the same report states that "the extension of the jurisdiction of the European Parliament to the issues that have hitherto been discussed in the WEU Assembly raises the question of whether the Western European Union's parliamentary body ought to be kept functioning." Now then, the EEC's jurisdiction in matters involving security and defense has not yet been provided for statutorily or legally and is merely a goal proposed in the reports we have quoted. In contrast, the WEU is backed up by a formal defense treaty, by a more than 30-year history and by an organization that has studied and deliberated on European defense problems at great length. Thus, as long as there is no other European group that has jurisdiction in security matters, there will be European countries interested in seeing the WEU, which will coordinate its activities with NATO and the ECC, survive.

The new European Parliament, elected by universal vote in May 1979, held a debate in September of this year on European armaments cooperation. This debate stemmed from the question that parliament members Fergusson (British Tory) and Von Hassel (German Christian Democrat) posed to the European Commission as to whether the Commission "intended to contact the North Atlantic Treaty Organization and the appropriate services of the member states (of the EEC) with a view towards establishing joint armaments supply programs within the framework of the Community's industrial policy."

Strong opposition was voiced during the debate, particularly from the representatives of the UDR [Union of Democrats for the Republic] and the French Communists. The majority felt that the topic was in order and addressed its industrial facets. The well-known Europeanist Davignon emphasized his oft-expressed opinion that the Commission has a duty to monitor the development of industry and technology, which are fields on which military programs have major repercussions at the civilian level, adding that "the scope of military programs... is up to governments; it is up to us (the European Parliament) to assess them in the industrial sphere."

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As a result of this parliamentary debate, the Commission is supposed to undertake two studies, one "to determine precisely what the impact of public sector orders is on the development of a given number of technologies that are useful and necessary to industry in a broad sense," and the other "to ascertain how, once the programs have been decided on sovereignly and under the jurisdictions of the various States, we can see to it that industrial development proceeds in the most effective manner for industry, while guaranteeing jobs and competition as best we can."

Hence, this is another possible channel for European Communities cooperation in the armaments industry, and it can certainly fit within the broader framework of Atlantic cooperation.

8. Consequences of NATO Membership in the Area of Logistic Cooperation

The long and difficult process involved in NATO's defense logistics rationalization policy has gradually given rise to a network of links and exchanges in the defense industry that, while not yet as extensive as it would like, must nevertheless be judged as a positive, albeit limited, achievement. A Western country that does not belong to NATO does not have access to the potential industrial cooperation stemming from this web of defense relations among NATO nations.

We have seen how although initially, in the 1950's, the standardization of major military hardware and equipment was achieved through the hegemony of the United States, which supplied the other Atlantic Alliance countries, there had already been a notable exchange of technical information in NATO, as well as major progress in the common classification of materiel and in the standardization of procedures.

Later, in the 1960's, although the "NATO Basic Military Requirements" policy, a bid to coordinate the flourishing and diversified European industry, failed, there were two isolated cooperation arrangements that we ought to again emphasize. In the production sector there was the NAMSO, which coproduced the Tornado aircraft through the Panavia and Turbo-Union consortiums (this system could serve as a model for other joint production projects), and in the sphere of multinational logistic support there was NAMSA, which has been consolidating and expanding its capabilities as a logistics agency for the maintenance and supply of spare parts for the equipment that is in common use in the Alliance. Along with these two main accomplishments in the 1960's, there were various other cooperation programs of varying scope in the 1960's that created a series of multinational consortiums: SETEL, Euromissile, etc that provided valuable experience in joint production. At the same time, the institutional sphere saw the further development of NATO's logistic cooperation agencies, such as the CNAD, the MAS and NIAG, with which the WEU's Standing Armaments Committee and the FINABEL organization worked in close cooperation.

Despite the strongly independent stand that French industry took as a result of President De Gaulle's policy of autarky, all of this generated

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within NATO a series of links among arms experts and decision-makers, both in the military and industrial spheres, that gave rise to studies and reports in this field as well as to a climate of opinion that enabled major initiatives to be taken in the 1970's towards industrial and defense logistics cooperation.

A country that has remained outside NATO for the more than 30 years it has been in existence has already missed the chance to take part in its valuable coproduction experiences and to become involved in the exchange of technical information, in the standardization of procedures and equipment and in the close ties that have developed among qualified experts in the various organizations and forums that are concerned with these fields.

It is now, however, that remaining outside NATO could have the biggest impact on the military industry of a Western European country. The establishment of the NATO Long-Term Defense Program, the possible expansion of the NATO Maintenance and Supply Organization, the possibilities offered by the Periodic Armaments Planning System (PAPS), complemented by the NATO Armaments Planning Review (NAPR), all of this, along with the current course of U.S. policy in standardization and, above all, with the emergence of the Independent European Program Group, is highly favorable to the establishment of real and effective cooperation, within Europe, on the one hand, and within NATO, on the other. It is now that the above groups and programs are submitting to each other lists of the arsenals that each country has, along with lists of what needs to be replaced, so that they can together plan cooperation in future arms supply programs for the short-, medium- and long-term, and they are looking into the exchange of technological information (even confidential technology) as a necessary basis for cooperation. Hence, expectations are running high. Up to now progress has been slow and difficult, and there is no assurance that this will not be the case in the future, but the circumstances are more pressing now than before, and thus hopes are also higher.

From an economic standpoint, if Spain does not join NATO, it will remain outside this process. Even in the event that it joins, if it does so too late, it runs the risk of being left out of the multinational military industrial cooperation programs that are now under way, to the detriment of this sector of domestic industry. Estimates are that it takes 10 years from the time that the military requirements for a given modern weapons system are established until the system becomes available. The replacement programs that begin in the early 1980's will yield their first results the following decade. A few years delay in joining these programs could mean a lag of more than a decade in benefiting from their results.

It is not possible to quantify the consequences for domestic industry of involvement in NATO arms supply cooperation. We could do a domestic input-output table that would show military industry as a separate sector and highlight the direct and indirect dependencies and influences of this sector with respect to the other domestic and foreign sectors that

affect our domestic economy. But this would not enable us to draw conclusions pertinent to the purposes of our study. It would be a valuable working base in the hypothetical event of future cooperation, but we cannot quantify in advance the results of the many potential cooperation agreements that could arise from multinational cooperation.

The Alliance has done general quantitative estimates of overall investments in arms research, development and supplies, as well as partial estimates of the potential savings that would be derived from cooperation in specific instances. There is, however, no comprehensive survey in which we could include the numbers for Spain's domestic industry.

American specialist Callaghan has conducted a study containing figures on the losses or waste within NATO due to duplication of outlays by the allied countries, as shown in the following table:⁴⁹

Estimate of Waste in the Atlantic Alliance (in billions of dollars)

<u>Outlays (except for nuclear forces)</u>	<u>United States</u>	<u>Europe</u>	<u>Waste</u>
Research and development	5.0	2.6	2.60 (a)
Materiel procurement	12.0	7.0	2.95 (b)
Support activities for the European zone	?	?	5.65 (c)
Total: More than	17.0	9.6	11.2 (d)

(a) The waste estimate equals 100 percent of European outlays for research and development (which overlap).

(b) The waste estimate is the sum of 10 percent of U.S. purchases (\$1.2 billion) and 25 percent of the purchases by the European allies (\$1.75 billion).

(c) The waste estimate comes to 10 percent of direct American defense expenditures connected with the stationing of U.S. troops in Europe, which are in the range of \$4 billion (\$400 million, in other words), plus 15 percent of allied European outlays on their Armed Forces, which are in the order of \$35 billion (in other words, \$5.25 billion).

(d) The waste according to this report is "more than \$10 billion."

Callaghan's 1975 estimate of "more than \$10 billion" in waste due to overlapping arms supply activities in NATO is \$3 to \$4 billion higher than the U.S. Defense Department's estimate at the time.

There are also some specific figures on the advantages of joint production in the Dankert Report, which says: "It is difficult to evaluate the costs incurred because of collaboration. It appears, however, that doubling the size of a market as a result of collaboration means savings of about 20 percent of the average unit cost for a major military aircraft program. In the case of less important projects the savings could be in the range

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of 10 percent. These figures are based on estimates of bilateral national programs, for which the total cost of joint development is one and a half times the 'unilateral' cost; thus, each government has to contribute only two-thirds of what it would have to spend if it were undertaking the work alone. Concurrently, production costs are boosted five percent because of difficulties relating to geographic distance, language differences, etc." The aforementioned Klepsch Report also makes something of an attempt to quantify the savings and extra outlays stemming from cooperation. It states: "The estimates of the extra costs involved in collaboration in a project vary. The development costs could be 20 percent higher if the project is divided along traditional lines or 50 percent higher if different models are produced to meet different needs. The production cost will probably also be higher if one of the parties has demanded that the equipment possess certain specifications which other parties do not deem necessary. A simple mathematical calculation shows, however, that the joint development of a weapon is the least expensive solution for a country, unless its overall needs are enormous. For example, a modern fighter aircraft that costs a single country \$1 billion to develop and that costs \$5 million a unit to produce,⁵¹ could be manufactured more advantageously in a partnership, assuming a 20 percent 'collaboration premium' both for development and production costs, as long as production did not exceed 400 planes. There are other financial advantages. The required investment is cut practically in half during the initial stages of design and production tooling. The higher costs show up later. There is greater flexibility, particularly when it is not known initially how many units are going to be purchased. Collaboration offers the advantage of distributing human and financial resources for research and development over a greater number of projects. The risks of failure are shared. technology is spread among the participants without entailing a corresponding rise in outlays for science and industry. In short, the cost of developing sophisticated weapons systems is so high today, in comparison to the number of units that European countries need, that collaboration is essential unless a country is willing to risk all in large enough export markets."

As we can see from these quotes, the advantages of cooperation are more easily expressed qualitatively than quantitatively but are acknowledged by all experts in the field. At the Western European Union's colloquium on "a European armaments policy,"⁵² Kulilo, the director of the Dynamics Division of Messerschmitt Bolkow-Blohm, described thus the advantages and disadvantages of multinational industrial cooperation: as advantages, "the distribution of prototype development costs; the spreading around of development risks; the broadening of bases: experience and capacity; cutting supply costs by increasing the number of production lines, and finally, advantages in logistics (maintenance and repairs) and in availability"; as disadvantages, only "the need to harmonize differing national legislations, standards and procedures, and the only partial involvement of existing industries."

Aside from purely military reasons for standardization and interoperability to team effectively with armies from other countries, there are clear-cut economic reasons for multinational cooperation in defense industries if a country wishes to keep up an appropriate rate of materiel replacement,

materiel that has often necessitated sizable investments and that will become obsolete, making such investments unproductive, if not subject to a replacement timetable.

A modern army has to have today's complex weapons systems: aircraft, guided missiles, electronic detection systems, etc. The research and development of these systems require sizable outlays that are difficult for a country to cope with alone, even in the case of the most highly developed Western European countries.

If these weapons systems are purchased from another country, this cost is compounded by the price of the maintenance contract over its useful life, which at times can come to $1\frac{1}{2}$ or 2 times the initial price tag. Add to this the fact that the life of these weapons systems ranges from 15 to 25 years, at which time they must be replaced by more sophisticated and, hence, more costly systems.

Under current circumstances, marked by tight budget restrictions stemming from the simultaneous inflation and recession in Western economies, the NATO countries, and the European members in particular, have an obvious and pressing need for multinational cooperation as the financial solution to their military hardware supply problem. The expressive comment by Mr Critchley, the chairman of the WEU's Defense and Armaments Affairs Committee, to the effect that we are in danger of "being disarmed by inflation" has been given widespread publicity in Western defense organizations. NATO is endeavoring to avert this danger through savings in both the research and development and in the production of weapons systems.

It is trying to save on research and development by seeking to avoid the overlapping involved in several countries working on the same project. It aims for agreements on the apportionment of the efforts devoted to this phase of research and development by the various parties, so that they can work together with each earmarking its own resources for the research and development of the project component assigned to it. The prototypes of the Roland missile and of the Jaguar, Alpha Jet and Tornado aircraft were developed this way, for example.

In addition, it is also looking for economies of scale in the production of the developed prototypes, such as in the F-16 or Tornado joint production projects. Boosting the number of units to be manufactured has made them affordable, and these economies of scale are heightened when each joint producing country takes charge of manufacturing an entire line of components for the overall program.

Equally large savings are also sought by organizing a joint maintenance logistic support. This cuts the cost of contracts for the acquisition of sizable shipments of spare parts, for periodic checkups and for repairs.

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The goal of economizing through cooperation does present difficulties, however. The very difficulty of resolving the problem of logistic rationalization and standardization of materiel has given rise in NATO to the wide range of groups that we have described in this chapter. As we have surely have seen throughout this work, this complexity seems to be inherent to all spheres of NATO, a logical consequence of its being a voluntary organization of sovereign, independent and predominantly democratic States that seeks to reconcile transatlantic interests with the regional interests of its European members and, in turn, the individual interests of these countries with the overall interest of the European zone; all of them share a common interest in cooperation, however.

Now then, if NATO and, especially, the European members of NATO must resort to collaboration for the economies needed to acquire up-to-date weapons systems, it is obvious that Spain's absence from the various arms cooperation forums leaves it quite isolated. Thus, regardless of how much money it invests in materiel supplies, the domestic defense industry must necessarily limit itself to the production of elementary ordnance, from which it seeks profits through exports, mainly to Third World nations, exports that might carry certain political overtones. As far as complex, modern weapons systems are concerned, Spain is in the position of a tributary country vis-a-vis the economic powers producing these kinds of weapons, with their future maintenance subject to foreign decision-making.

It could be argued that the solution is production under license, as has been done in Spain with the manufacture of the American F-5 supersonic aircraft, the AMX-30 tank and the Daphne and Acosta submarines, which are of French origin. This is not, however, a comprehensive solution for meeting a modern army's needs in terms of numerous, complex weapons systems. Production under license is normally limited to supplying the domestic market, and therefore output cannot be boosted in pursuit of an export policy that would make the manufacture of these costly weapons systems profitable. More importantly, meeting weapons supply needs through an extensive policy of production under license leaves domestic industry at the mercy of outside "research and development" capabilities, thus crippling domestic initiative in this key phase of industrial development. It is commonplace by now to discuss the repercussions of the defense industry on the progress of other domestic industries in terms of state-of-the-art or pacesetting technologies, but it is obvious that in aeronautics, information science and electronics in general, to mention but a few fields, there is a close correlation between the funds initially earmarked for research and development in the military and the subsequent civil gains in these key sectors of industrial development. Manufacture under license greatly limits the potential for progress in advanced technologies and makes domestic industries subcontractors, at the expense of sizable royalties, which indirectly finance the technology of the licensing country. We need only mention that Spain invests in research only half of what it spends for technology imports.

An article by Miguel Buesa and Javier Brana⁵³ states that 70 percent of the contracts for foreign technology transfers in the 1974-78 period were signed by the main military hardware manufacturing companies. The authors add that "the core of the defense industry's dependence is its need to acquire overseas the know-how required to produce not only the end products but also and above all the product components. This means that during a conflict some weaponry production could be shut down because of a cut-off of the foreign technology utilized in the manufacture of parts." Taking a similar approach, Jose Seijas, director of CETME, asserts: "We could say that there are fields of military technology in which we are independent and even competitive. For example, we export traditional and conventional infantry weapons (rifles and machine guns, mortars and antitank grenades, short-range air defense weaponry, antitank guns and ammunition, etc), while in other fields we are totally dependent on other countries, at least for weaponry planning and design." We could also cite General Gutierrez de Benito, who as director general of Armaments and Materiel of the Defense Ministry, told the magazine RECONQUISTA (April 1979) that there are "fields of defense in which we are practically totally dependent on other countries today."

We are dependent mainly on the major industrialized NATO countries. Thus, we once again have the paradox that Spain's military industrial complex is heavily dependent on the major production centers in the NATO countries while not belonging to any of the Alliance groups that promote cooperation and, hence, not benefiting from the network of links and ties that enable the allied countries to take maximum advantage of joint production planning. The situation is similar in the sphere of military strategy; because of its indirect involvement in Western defense under its agreement with the United States, Spain is part of the Western security system but cannot participate in the NATO groups that do the security planning and remains outside the centers that coordinate this comprehensive defense, which has a major bearing on Spain.

Although the advantages of multinational cooperation are not great in the case of countries with low rates of industrial development because of their limited capacity for involvement in cooperative efforts, within NATO and in particular within the Independent European Program Group, because countries have an equal voice, if not equal capacities, attempts are made to mitigate the disadvantages of this imbalance through a political commitment to the common defense. Also, as we mentioned before, the IEPG has a subpanel that has been charged with studying how cooperation can be balanced out so that not only the highly industrialized countries benefit from it.

Furthermore, however, Spain's case is different from that of the more backward countries in NATO. Spain is sufficiently industrialized to reap greater benefits from participation than from noninvolvement. Its industrial development has enabled it to collaborate on multinational civilian projects, such as the Airbus or the Ariane rocket, while its absence from Western politicomilitary organizations has prevented it

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from getting involved in all of the military hardware cooperation groups and programs that have arisen within NATO. Spain has signed several joint production contracts with various Western European countries, but they are all bilateral and do not offer the advantages of coproduction within the multilateral framework of the North Atlantic Treaty Organization.

If Spain joined the Alliance, it would have access to all of the NATO technical bodies that we have been discussing in this chapter and would be able to take part in the current cooperation projects aimed at establishing a common technological and industrial base, and as we have said, the present moment could turn out to be a key phase in attaining this aim. At the aforementioned seminar in Ditchley Park (Great Britain) in 1978 on Spain and NATO, General Haig, listing the advantages to Spain of membership in the Alliance, specifically said that "it would be entitled to the statutory acquisition of military technology."

Given Spain's current foreign policy of integrating into Western Europe, we do not have to wait until the lengthy process of formalizing NATO membership is completed to secure Spain a seat in the European forums that are pursuing the policy of cooperation in arms supply.

We can gather from this chapter that the main European organization in this area might well be the Independent European Program Group, to which both NATO and the EEC ascribe a leading role in furthering European arms cooperation. We should once again stress that the IEPG does not have an official charter governing it nor an institutionalized bureaucracy. Therefore, there is no clause formally linking the IEPG to either NATO or the EEC, and although it maintains close relations with the two organizations, it also likes to underscore its "independent" and "European" character. Hence, the IEPG is still in its formative process and, since it has neither a statutory nor an organizational base, enjoys great flexibility in its makeup.

High-level European NATO officials have told this author that they know of no reason why Spain cannot discuss bilaterally with the IEPG member countries the possibility of its participation in the group.

This possibility would presumably be scuttled by a Spanish stand against NATO and even by a public declaration of neutrality, inasmuch as every IEPG country today belongs to NATO. In contrast, Spain's membership in the group would be facilitated by the possibility of future entry into NATO and by the current negotiations for Spanish membership in the EEC.

The enormous advantage of prompt Spanish membership in the IEPG would be the opportunity to get involved in a European arms collaboration and programming process that is still in its formative years, which are, hence, decisive for future cooperation. And although because this is precisely its initial phase, favorable results cannot be guaranteed, losing the opportunity to get involved at this point could have major consequences for domestic industry.

Spain's desire to take part in European armaments cooperation programs could perhaps be complemented by closer ties to the Western European Union. We have mentioned how at one point in 1975 the WEU proposed that the Brussels Treaty could be signed by "any European country with a democratic regime" that wanted to join in a common defense policy, even though subsequently, in 1976, participation in the work of the Standing Armaments Committee was offered only to "NATO member countries that belong to or are associated with the EEC." These positions have varied according to circumstances and are evidence of the difficulties encountered by European countries in finding a suitable forum for furthering defense cooperation in the absence of a common political power and a joint foreign policy.

On 20 June 1977, 5 days after the Spanish parliamentary elections, the General Affairs Committee of the WEU Assembly drafted a "Follow-Up Report"⁵⁴ recommending that the Council "look into the possibilities of close cooperation between Spain and the WEU member countries." The Council responded in March 1978⁵⁵ that "it looked favorably upon the furtherance of close cooperation between Spain and the member countries of the Western European Union." We should point out that neither of the two quotes talks about direct cooperation with the WEU, only with "the member countries of the WEU." Since other multinational European organizations are now tending to displace the WEU, the political advantages of signing the Brussels Treaty are debatable, because its future is in doubt. Nevertheless, for the time being the treaty is the only formal defense cooperation commitment among exclusively European countries and is, therefore, valuable until such time as another, more up-to-date option emerges to replace it. Can Spain and is it in Spain's interest to sign the Brussels Treaty as another step along the road to integration in Europe? It is not within the scope of this work to analyze the possibility or the political advantages of closer Spanish ties with the WEU. However, from the standpoint of economic consequences, we should make the point here that although the activities of the WEU are mainly deliberative and analytical today, it is a major forum with a wideranging audience in the field of European arms cooperation; its reports make opinion; it develops valuable multinational links and ties among arms experts, and it maintains close ties with NATO and the IEPG. The WEU membership fees are inconsequential; based on its 1978 budget, which we outlined above, the seven countries that belong to it pay an average of about 50 million pesetas a year. Participation in the WEU could complement membership in NATO in matters of arms cooperation.

In short, we feel that from a strictly economic perspective, access to the cluster of organizations and ties in the field of logistics that would stem from NATO membership, is advantageous to Spain's domestic military industry and in terms of weaponry supplies for our Armed Forces. Given the length of the membership process and as long as this is not ruled out as an ultimate goal, taking the first steps towards collaboration with the IEPG would be a way of gaining time so that our domestic military industry could participate in international cooperation programs. The possibility of closer ties with the WEU, and specifically, a seat on the Standing Armaments Committee, would be a complementary albeit a much

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less important move, assuming that the IEPG does not fall short of the expectations that it has created at this point.

Therefore, we feel that from an industrial standpoint, it is in Spain's interest to promptly join these two European forums, the IEPG and the WEU, so that we can get a head start on coordination with the policy of multinational cooperation in arms supplies. This kind of cooperation is developing slowly and laboriously within NATO and during this decade could give rise to a major framework for common military logistics.

FOOTNOTES

28. According to the publication "World Armaments and Disarmaments. 1977 Yearbook."
29. "Report to the European Parliament on European Cooperation in the Field of Armaments Supply," by Egon Klepsch, 8 May 1978.
30. "Military Logistic Systems in NATO," Adelphi Papers, No 62, 1969.
31. According to the "Colloquium on a European Arms Policy," Western European Union, Paris, 3 March 1977.
32. NATO defines the STANAG or "Standardization Agreement" as "The record of an agreement among several or all the member nations to adopt like or similar military equipment, ammunition, supplies, and stores; and operational, logistic, and administrative procedures. National acceptance of a NATO allied publication issued by the Military Agency for Standardization may be recorded as a Standardization Agreement. Also known as "STANAG."
33. According to the official NATO publication "NATO Facts and Figures."
34. Section 814 (a), Department of Defense, Appropriation and Authorization Act of 1976, Public Law 94-361, 14 July 1976.
35. Section 803 (c), Department of Defense, Appropriation and Authorization Act of 1976, Public Law 94-361, 14 July 1976.
36. Document 689 of the Western European Union on "European and Atlantic Armaments Cooperation," 1 December 1975.
37. According to Document 738, "A European Arms Policy," Western European Union, 10 May 1977.
38. Published by the International Institute of Strategic Studies in Adelphi Paper No 129.
39. Document 738 of the Western European Union, 10 May 1977.

40. Presented to the European Parliament as a report to the European Communities, 8 May 1978.
41. Issue 1,102, 28 February 1979. NOUVELLES ATLANTIQUES is published in Brussels and is close to NATO circles, which makes it something of a semiofficial organ. It is usually the mouthpiece for European and at times preponderantly French views, however. The boldface is from the original.
42. Article 4 of the WEU stipulates: "In the event that one of the high contracting parties is the target of armed aggression in Europe, the others shall, pursuant to the provisions of Article 51 of the UN Charter, lend aid and assistance by every means in their power, military and otherwise."
43. According to NOUVELLES ATLANTIQUES, 28 March 1975. The boldface is the author's.
44. Recommendation No 269 of the WEU Assembly to the Council, 28 May 1975.
45. Response of the Council to Recommendation 281 of the WEU Assembly, 14 June 1976.
46. Document 769 of the WEU on "Distribution of Tasks Between the Standing Armaments Committee and the Independent European Program Group," 28 February 1978.
47. FINABEL is the initials of France, Italy, the Netherlands, Germany [Allemagne], Belgium and Luxembourg.
48. The only allusion to defense matters is in Article 224 of the treaty, which says: "The member States shall consult with each other with a view towards jointly taking the necessary steps to prevent the operations of the Common Market from being impaired by the measures that a member State might be obliged to take in the event of serious internal difficulties that adversely affect the public order, in the event of war or serious international tensions that constitute threat of war, or to meet the commitments contracted by said State, with a view towards maintaining peace and international security." As we can see, this article aims solely at keeping the Common Market in operation and does not address potential defense cooperation.
49. From the report "U.S./European Economic Cooperation in Military and Civil Technology," February 1975.
50. Document 738 of the WEU, 7 May 1977.
51. The unit price of the Tornado was estimated 10 years ago at \$7 million; current guesses are that because of the delays it could be close to \$30 million.

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52. Document 738 of the WEU, 10 May 1978.
53. "Tecnologia y dependencia: El caso de la industria militar," INFORMACION COMERCIAL ESPANOLA [magazine], Issue 55, August 1979.
54. Document 746 of the WEU. The report was approved by a vote of 16 for, 2 against and 3 abstentions.
55. Document 765 of the WEU, 28 March 1978.

Chapter VI: Final Conclusions

As we said in the introduction to this work, Spain finds itself at a crucial juncture in selecting its future security system or defense model. Such a system must guarantee the highest level of security compatible with national sovereignty and economic capabilities.

As we have seen, one of its security model options is membership in the Atlantic Alliance. Membership entails economic consequences that our appropriate national authorities will have to take into account as one more factor in their decision-making process.

Consequently, throughout this work we have analyzed those aspects of NATO that involve an economic component, in order to infer the potential repercussions on Spain should it decide to join the Atlantic Alliance.

The economic consequences of NATO membership hinge first of all on the membership status in the Alliance and on the greater or lesser presence in the bodies that make up the NATO structure.

These factors are negotiable and, in the final accounting, are accepted freely and sovereignly by each country. Theoretically, a country's status can range from merely being a signatory of the Washington or North Atlantic Treaty to full-fledged participation in all of the bodies and agencies in the Alliance's complex organizational structure.

Naturally, a mere signing of the Washington Treaty means at least permanent representation on the Atlantic Council, with the resulting benefits of joint political consultation. The 15 current members have an ambassador and a permanent mission to the Council and can be represented as full-fledged members in the subsidiary civil bodies. Within the military organization only France and Iceland have their own highly individual statuses.

A freely agreed status can be revised over time, in accordance with prevailing circumstances, because the principle of national sovereignty takes precedence over the commitments that have been contracted. France and Greece are clear-cut examples of this. Hence, a given status can never force a country to fulfill future economic commitments that it does not freely and sovereignly agree to.

Now that we have made these preparatory remarks, let us take a look at the economic repercussions of Spain's membership in NATO.

Direct Repercussions

a) Under no circumstances would Spain have to make an initial economic contribution in the form of a membership fee or as compensation for the outlays that the previous members have made.

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b) It would, however, be obliged to make an annual contribution to finance the NATO bodies in which it would be represented or from which it would benefit directly as a member, in accordance with the membership status it adopts.

In the event that Spain joined with the normal or most common NATO status, in other words, participating in all of the Organization's civil and military agencies, the percentages of its annual contributions to the financing of these agencies would be subject to negotiation.

The percentages are based mainly on a nation's economic and military capabilities, the basic indicators being GDP, defense spending (measured according to the standard NATO definition) and population. NATO usually works with absolute values for these indicators.

At the seminar "Spain, NATO and Western Defense" in Ditchley Park, England in 1978, General Haig, the then supreme commander of Allied Forces in Europe, estimated, based on these indicators, that Spain's contribution to NATO financing would be some \$12 million.

In our study we have advanced an argument based on per capita values and come to the conclusion that the following percentages could be used in the negotiations on Spain's contribution to cost-sharing:

<u>Budget</u>	<u>Percentage</u>
Civil Budget	2.63
15-Nation Military Budget	2.68
14-Nation Military Budget	3.20

If these percentages are applied to the 1981 NATO budget, they give a total of \$12.444 million. At an exchange rate of 85 pesetas to the dollar (the average in 1981), this is equivalent to 1.05774 billion pesetas, or 0.31 percent of Spain's 1981 defense budget.

c) Contributions are also required periodically to finance the new programs in NATO's so-called "common infrastructure," in other words, the jointly used installations that are needed for NATO Armed Forces deployment and operations during maneuvers or in the event of an alert or a war.

The Alliance takes the approach that the host country (the country in which a given common infrastructure installation is planned) should not have to bear the total cost of the project, which is, instead, shared among the nations that might make use of it. The following are the basic considerations in negotiating the percentages of cost-sharing:

- The contributive capacity of each potential user country
- The advantage to the user countries
- The economic benefits accruing to the host country.

Nonetheless, the negotiations relating to common infrastructure cost-sharing are more complex than the ones connected with defraying the operating expenses of NATO's structures. They permit a much more flexible approach, in which all sorts of considerations, even strategic and political, have a place. For example, a country with a sizable amount of infrastructure on its soil might be assigned a low cost-share, as is the case with Turkey.

The host country must at least purchase the land for the installations and provide the necessary public utilities (access roads, power, water, etc). In exchange, the host country could secure major economic benefits, such as jobs for local manpower, influx of foreign exchange, expansion and improvement of transportation, pipeline or telecommunications networks.

At the Ditchley Park conference General Haig estimated Spain's contribution to these outlays at around \$50 million. Such an estimate does not mean very much, however, because we do not know what specific installations Spain would contribute to the common infrastructure and, furthermore, what facilities in allied countries Spain could make potential use of.

What installations might Spain contribute to the Atlantic Alliance's infrastructure inventory? The following, among others, merit consideration:

- The possible establishment of one or more NATO headquarters on Spanish soil
- The extension of the Organization's telecommunications system to our territory
- Many of the bases and other installations to which the United States today has use rights under the existing U.S.-Spain Friendship and Cooperation Treaty. According to an official U.S. estimate, the entire group of installations is valued at \$1.088 billion, in 1967 prices, which is a sizable sum if we consider the value of NATO's infrastructure installations in the other Mediterranean countries: \$658 million in Italy, \$384 million in Greece and \$783 million in Turkey (current NATO estimates).

To the above we might add:

- The Semiautomatic Air Defense System (SADA), valued at more than \$120 million
- The Spanish Army's expensive, modern telecommunications network, which is on the verge of completion
- Various Spanish ports, air bases and road networks, which would be of inestimable logistic value to the Organization and would undergo improvements to enhance their potential and utilization.

An a priori determination and quantification of these potential contributions is practically impossible. As a ballpark figure (subject, in any event, to whatever specific programs are undertaken and to Spain's involvement in each of them), we estimated (through calculations based once again on per capita values) that Spain would be contributing about \$30 million a year to the common infrastructure. At the 1981 exchange rate of 85 pesetas to the dollar, this is equivalent to 2.55 billion pesetas, or 0.76 percent of Spain's 1981 defense budget.

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We feel it bears mentioning that as far as infrastructure investments are concerned, NATO employs the clearing system. For example, if a country withdraws installations that it had previously committed to the common infrastructure, it has to make up for what the other countries would have contributed to these installations. This insures the principle of sovereignty that enables a country to regain exclusive national ownership of common installations in its own territory. Consequently, this system could generate future economic obligations if a country were to decide to reassess its membership status or simply to withdraw certain installations from common use.

d) To sum up the above conclusions: In the event that Spain joined NATO and had a normal status of participation in its military and civil structures, it would entail the following direct repercussions on Spanish defense spending:

--An unavoidable annual quota to defray the operating expenditures of the Alliance's common bodies; this could be estimated at about 0.31 percent of Spain's defense budget

--A potential share in common infrastructure expenditures, a share that might even be subject to political considerations. The reference figure we calculated was 0.76 percent of Spain's defense budget.

The sum of these two figures comes to about 1.07 percent of Spain's defense budget, but this should only be taken as a rough indication of the economic commitment that Spain would be making. We can conclude, in any event, that the cost of our membership in NATO is inconsequential in relation to our overall defense spending.

Indirect Economic Impact

e) Spain's membership in the Atlantic Alliance could also have an indirect impact on defense spending, as a result of NATO's system of "common defense planning."

The complex process of "common planning" attempts to determine the combat capabilities needed to assure joint defense against a common enemy. To this end, the International Secretariat and NATO's military authorities, in close collaboration with the representatives of the member countries, analyze the potential of each country to contribute to the defense effort. From this analysis stem "recommendations" to each member country, so that together they can achieve the common Force Goal.

These recommendations, which are formulated with such circumspection, do involve at least a certain amount of moral and political pressure to fulfill commitments. Thus, if a country is having problems meeting them, it must give its NATO allies an explanation, inasmuch as the overall security of the Alliance is affected.

f) In determining the contributions to the Force Goal, NATO makes broad use of the concept of burden sharing. In this regard, we frequently come across scholars who argue that countries ought to devote a similar percentage of their GDP to defense spending.

NATO, however, does not push the allies towards uniformity of defense spending as a percentage of GDP. Clear-cut proof of this is the broad range of such spending among members. In 1980, for example, the United States' defense spending came to 5.5 percent of its GDP; Germany's was 3.3 percent; Italy's, 2.3; Luxembourg's 1.1, and as an extreme case, Iceland's was zero. We should underscore, therefore, that these percentages are a function of national policies and capabilities, not common planning.

The farthest that NATO has gone under the common planning system is to "recommend" (we would stress the term) a uniform increase in defense spending (3 percent a year in real terms for the 1979-83 5-year period), but this applies to the defense spending that each country has independently decided on, and there is even a contingency clause stating that "economic conditions will affect the chances of achieving the agreed three percent boost." In point of fact, most of the member countries are not carrying out the "recommendation" to boost defense spending by three percent.

g) In addition, membership in the Alliance could mean that certain military units will be "assigned" to the NATO command. These units normally:

- Must maintain NATO-prescribed and -supervised training levels.
- Must conduct maneuvers with the other allied countries.

Such activities entail expenditures, which are easier to avoid in the case of independent training if a country does not belong to the Alliance.

There are no general criteria for determining the level of forces to be assigned to NATO. Each nation is an individual case, the factors being its military capability, political and economic conditions and relative location in a potential theater of operations. In short, this is a domestic decision.

Therefore, there is no reason why economic consequences that go beyond a nation's own plans should stem from the potential assignment of units to the NATO military command.

h) Something similar could be said about the division of the Armed Forces into their three traditional components (army, navy and air force) and their further breakdown into branches and specialties. Logically, if Spain decides to take care of its security by joining NATO instead of adopting a neutral stand, membership in the Alliance does affect the individual security options of each country, and the structure of Spain's Armed Forces would have to adapt to the missions that would be assigned it in the Alliance and they could thus devote less attention to the missions being undertaken by others.

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This could entail a reorganization, but there is no reason why it would have to exceed the country's overall defense effort capabilities, inasmuch as, in the final accounting, as with everything pertaining to the obligations stemming from NATO membership, the organization of a country's Armed Forces comes under its exclusive jurisdiction and is contingent on its economic capabilities.

i) With the above facts in mind, we should also acknowledge that the philosophy of defense effort burden sharing carries increasing weight in common Force Goal planning, for which frequent multilateral consultations are held, during which defense efforts are constantly compared and justified.

These consultations promote a systematic exchange of specific, detailed information on the military programs of the various allied countries and their individual economic strength. This facilitates an understanding of common problems and difficulties, as well as a critical assessment of the respective efforts.

In order to participate responsibly in joint planning, a nation must have well-founded arguments to justify its stands. Resorting to isolated indicators of a defense effort (defense spending as a percentage of the GDP, defense spending as a percentage of government spending, per capita defense spending, etc) is erroneous and leads to differing conclusions, depending on which indicator is used.

It is for this reason that we have done an econometric study of Spain's defense effort in comparison to that of the other NATO nations.

Such an analysis enables us to simultaneously consider the main magnitudes influencing defense spending, even though they are redundant variables, inasmuch as the "principal components" synopsise the synthetic variables that have the greatest impact on the phenomenon under study, regardless of the relationship that might exist among these variables.

j) In examining the relative level of Spain's defense effort, we initially did a principal components analysis of a 31-country sample (the NATO nations, the other members of the OECD and the Warsaw Pact countries) and then of a 12-country sample (the European members of NATO, excluding Iceland, which has no Armed Forces).

Our first analysis showed that based on a greater affinity within the explanatory variables of a defense effort, Spain belongs to a subset or "class" of nine countries (Bulgaria, Greece, Czechoslovakia, Poland, Hungary, Romania, Yugoslavia, Spain and Turkey), only two of which, Greece and Turkey, belong to NATO. These two countries, like Spain and Yugoslavia, are classified by the OECD's Economic Aid Committee as "developing," not "developed." Hence, these countries should serve as our references in a comparative analysis of Spain's defense effort.

We should also keep in mind that the conflict between Greece and Turkey has forced them to engage in an above-normal defense effort.

k) Our analysis of 12 European NATO countries and Spain began by calculating Spain's defense spending in accordance with the standardized NATO definition. For 1976, our reference year, we arrived at a figure of about 165 billion pesetas, which might be slightly high. The military budget that year, 124.5 billion pesetas, came to just 75 percent of total defense spending according to the NATO definition. The 75 percent figure can be used as an approximation for subsequent years.

Spain's total defense spending can thus be estimated at 2.28 percent of its GDP. This is quite different from the figures often computed by commentators who do not make proper use of the NATO definition of defense spending.

l) The factor analyses of 31 countries and of the 12 European NATO countries show Spain as being engaged in a small defense effort, albeit relatively larger than certain NATO countries with stronger economies, such as Italy and Denmark.

m) When we analyzed the trends in per capita defense effort from 1972 to 1979, we found that Spain recorded a higher percentage increase than the 12 European NATO countries.

n) We can conclude, hence, that if Spain were to join NATO and if pursuant to its joint planning the Alliance were to recommend that Spain boost its defense spending in relation to the other members, and if such an increase ran counter to national political interests and exceeded our financial capabilities, Spain would have sufficient countering arguments.

Therefore, there are no grounds for the somewhat widespread opinion among certain groups in this country that if Spain joined NATO, it would have to substantially boost its defense spending (we often see the baseless calculation that it would have to double the current level).

Possibility of Receiving Aid

o) As far as obtaining military aid within NATO is concerned, The Atlantic Treaty sets forth the general principle of mutual assistance to maintain and develop the "individual and collective capacity to resist an armed attack." However, this principle gave rise to substantial military aid only during the initial years of the Alliance, when the United States tried to hasten the economic recovery and strengthen the defense capacity of its European allies.

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Aid programs are limited nowadays, and naturally the common planning of Force Objectives does entail obligatory aid for the countries that are having problems fulfilling their commitments.

Now then, the common planning process is an appropriate vehicle for pointing out the needs of a given country, as well as the mutual benefits that derive from the Alliance's major economic powers helping the weaker members to boost their defense capabilities. Prospective aid must be negotiated bilaterally between governments and, of course, entails compensation for the country granting it. Greece, Portugal and Turkey have received economic and military assistance in recent times, but in general the amounts have been far smaller than at NATO's outset. Only Turkey, which is in dire straits, is receiving sizable amounts of aid.

Our conclusion, hence, is that if Spain decides to join NATO, it should not do so because of the prospect of obtaining appreciable amounts of military aid.

In this connection, we have analyzed the aid Spain has received under the existing Spanish-American Treaty and concluded that it can only be described as scant and inconsequential. Therefore, faced with the choice of renegotiating a pact with the United States (which is in the midst of an economic crisis) or joining the Atlantic Alliance, Spain should not conclude that the economic compensation it receives justifies the continuation of its exclusive bilateral security pact with the United States. The fact is that membership in the Alliance is compatible with a new agreement with the United States.

Although there is no reason to believe that Spain would secure substantially more aid in NATO, we can assert that Spain could negotiate with the United States and the other members of the Alliance to receive aid at least comparable to, if not greater than what it would under just a bilateral treaty with the United States. NATO membership offers the basic advantage of participation in the Alliance's political, diplomatic and military forums and, therefore, in the planning for the use of the military bases and other facilities that Spain would be transferring to NATO for the common defense. This would enable Spain to negotiate prospective aid with more facts and arguments at its disposal.

p) As a member of NATO Spain could also derive economic benefits from the contributions that the other members would make to the infrastructure construction and improvement projects in Spain, as long as what Spain received in this connection exceeded what it would have to contribute to the common infrastructure as a whole. This could be considered indirect economic aid stemming from NATO membership, as has been the case for Greece and Turkey.

q) In short, if we weigh the potential aid from NATO countries and the economic obligations arising from membership in the Alliance, the

bottom line for Spain could turn out to be positive, although under the current circumstances any aid that it might receive from NATO is not likely to be appreciable.

Consequences in the Area of Logistic Cooperation

r) The principle that applies in the Atlantic Alliance is that "logistics is a national responsibility," in other words, each country takes care of its own needs. However, the NATO military command is concerned about the lack of a centralized logistic system, mainly in connection with the outfitting of its Armed Forces and the subsequent maintenance of this equipment. Furthermore, the increasing cost of weapons systems poses serious financial problems for individual nations wishing to acquire them.

NATO has attempted to mitigate these difficulties by:

- Creating bodies for logistic coordination and standardization in which all member countries are represented.
- Pursuing a policy of materiel standardization and interoperability, made possible by the joint production of principal weapons systems.
- Making multinational logistic support available through an international logistic agency for maintenance and spare parts supply (NAMS0).

The long and difficult process involved in NATO's defense logistics rationalization policy has gradually given rise to a network of links and exchanges in the defense industry that, while not yet as extensive as it would like, must nevertheless be judged as a positive, albeit limited, achievement.

A Western country that does not belong to NATO does not have access to the potential industrial cooperation stemming from this web of defense relations among NATO nations.

s) As American expert Thomas A. Callaghan said at the Hans Rissen Conference in Hamburg in February 1978: "In the years preceding the First World War, the nations with more than 25 million inhabitants were in a position to provide what was essential for their own defense. During the Second World War and in the immediate postwar period, only the nations with 50 million inhabitants had the necessary resources to develop and produce their own materiel. But in the 1960's, nations like Great Britain, France, Germany and Italy were unable to assume the burden of developing and producing their own weapons systems...A national policy cannot aim at independence (or more precisely, nondependence) unless the country in question is willing to pay the price." And this price must either be overall economic development, as has been the case with the Warsaw Pact countries, or international cooperation.

The research and development of today's complex weapons systems require advanced technology and huge investments, and this combination outstrips the

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technological and economic capabilities of even the most advanced European countries if they act alone. Collaboration in this field enables countries to pool the necessary human and financial resources, to share the risks and to disseminate technology among themselves.

An isolated country's problems in the research and development process are compounded by the need to "produce" a sufficiently large number of units. It must seek these economies of scale in prototype production either by aiming for a sizable export market or by undertaking joint production with several other countries, thus cutting supply costs by upping the production run.

Moreover, a policy of cooperation permits no less important savings through subsequent joint logistic support in maintenance and replacement parts.

Statistics show that even in the most highly developed Western countries the development of prototype weapons systems through multinational cooperation is the most inexpensive solution, unless a single country's demand is heavy enough.

In contrast, if modern weapons systems are purchased from the producer, as Spain often does, the high price tag is compounded by the cost of a maintenance contract for the system's scheduled life, which is often $1\frac{1}{2}$ or 2 times the purchase price, with the additional drawback of the restrictions that it generally entails on the freedom to use these weapons systems.

Production under license, which entails sizable royalties, normally limits output to domestic market demand and leaves national industry at the mercy of another country's research and development capacity.

Under the present circumstances of tight budgets and simultaneous inflation and recession, countries much stronger than Spain are in danger of "being disarmed by inflation" and are fighting back by seeking the necessary savings through cooperation, both in research and development and in the production and maintenance phase.

t) We find, thus, that as far as the manufacture of high-technology military equipment is concerned, Spain's industry is almost entirely dependent on the main production centers in the NATO countries, while Spain itself remains outside the complex system of Alliance agencies that promote cooperation and, therefore, does not enjoy the major advantages that accrue to the allied nations from joint production planning.

Among the benefits that Spain would reap from joining NATO, the Ditchley Park seminar specifically mentioned that "it would be entitled to the statutory acquisition of military technology."

Spain is sufficiently industrialized to reap greater benefits from participation than from noninvolvement. Joining the Atlantic Alliance would give it access to all of the NATO technical bodies that we have been discussing throughout this work.

u) Current conditions are propitious to the further development of logistic cooperation, within Europe, on the one hand, and within NATO, on the other.

Special mention should be made of the Independent European Program Group, which first got organized in 1976 and began in 1979 to pursue specific preparatory measures for joint production projects. Concurrently, the new European Parliament, elected by universal suffrage in May 1979, began debate on European arms cooperation, because of its impact on the Community's industrial development.

The IEPG is now drawing up lists of each member country's materiel and of their respective replacement requirements, so that they can then jointly plan cooperation in future arms supply programs (short and long term) and the exchange of advanced (including confidential) technology.

If Spain does not join NATO, it will remain outside this process. A delay in joining would mean being excluded from the joint programming that is now under way.

We do not feel that membership in NATO is essential to begin efforts towards collaboration with the IEPG. The IEPG does not have a charter or an institutionalized bureaucracy and enjoys great flexibility in its makeup. There is no clause officially linking the IEPG with either NATO or the EEC, though it does maintain close relations with the two while at the same time underscoring its "independent" and "European" character.

In our study of the IEPG, we found no obstacle to Spain's membership in it. However, every IEPG country is also a member of NATO, and we could thus assume that prospective membership would be ruled out by a Spanish decision not to join NATO or a declaration of neutrality. We feel, therefore, that Spain should join the IEPG with an eye towards the ultimate goal of membership in NATO and the EEC.

The major advantage of taking the first steps towards IEPG membership would be that it would open the doors for Spain to joint European arms collaboration and programming, which is still in its infancy. Precisely because this is its initial phase, results cannot be guaranteed, but if they turn out to be favorable, losing the opportunity to join at this early stage could have major consequences for domestic industry, assuming that the IEPG does not fall short of the expectations it has created.

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Joining the Western European Union would be a complementary, albeit much less important move.

To summarize, we feel that Spain does not have to join NATO first but that this should not be ruled out as a prospective goal. In the meantime, by joining these two European forums, the IEPG and the WEU, Spain could get something of an indirect head start on coordination with the policy of Western cooperation in armaments supply, which is developing slowly and laboriously with the general context of the Atlantic Alliance and which could give rise to a major framework for common military logistics in the 1980's.

Overall Conclusion

We will summarize the conclusions of this study as follows:

The only unavoidable economic obligations entailed in normal-status membership in the Atlantic Alliance are the periodic contributions to the financing of its organizational structure and common infrastructure. These contributions are negotiable, and in any case Spain's share could be described as inconsequential in relation to its total defense budget.

The remaining economic obligations, stemming from NATO's joint planning of Force Goals, take the form of "recommendations" and will under no circumstances cause a substantial rise in the level of national defense spending, neither above what is necessary for our own security nor in excess of what the nation can afford.

Certain economic benefits could be derived from the construction of NATO infrastructure installations on Spanish soil and from the enhancement of existing facilities. Some military and economic assistance is also obtainable in NATO; under the current circumstances, such compensation is not likely to be of much consequence, though neither would it be smaller than in an exclusively bilateral relationship with the United States.

The main economic advantages of NATO membership are in the field of defense logistics. Economic advantages could be forthcoming in the defense industry sector in particular, because of the chance to take part in multinational joint production projects. This would give Spain access to advanced technology and have a favorable impact on the development of its defense industry, both in terms of prototype research and development, profitable production runs and logistic maintenance support.

In this connection, Spain does not have to wait until it becomes a formal member of the Atlantic Alliance, which would be the ultimate goal. It could gain the advantages of arms cooperation by first joining the European organizations (IEPG, WEU and the EEC) that are also working in this area.

Our overall conclusion is that while the economic consequences of NATO membership could be positive for the nation's economy, they are not important enough to be considered a conditioning factor in the political decision of whether or not to join. In any event, such a decision involves value judgments, strategic and political ones in particular, which go beyond the stated purposes of this work.

Furthermore, this study, which is merely one individual's effort, highlights the many complex peculiarities and facets of NATO's intricate structure and workings. Thus, a group of trained economists should be formed to focus on this issue. They should gather together and analyze the necessary background information for a subsequent decision by the appropriate authorities. If the decision is to join the Atlantic Alliance, then this group would be able to provide well-documented economic advice on what status Spain ought to adopt and could later negotiate the economic commitments arising from this status on the most advantageous terms possible.

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