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# Department of Defense



## Report on Allied Contributions to The Common Defense

A Report to United States Congress

by Caspar W. Weinberger  
Secretary of Defense

MARCH 1985

REPORT ON ALLIED CONTRIBUTIONS  
TO THE COMMON DEFENSE

A REPORT TO THE US CONGRESS

MARCH 1985

TO THE CONGRESS OF THE UNITED STATES

I am pleased to submit this report on Allied Contributions to the Common Defense. This is the fifth year the Department has submitted such a report, as now required by the provisions of Section 1003, PL 98-525, the Department of Defense Authorization Act, 1985.

The report seeks to analyze the complex question of burdensharing within the Atlantic Alliance and with Japan from a balanced, realistic perspective. It examines a number of quantitative measures of ability to contribute and of performance as well as the broader political aspects of the burdensharing issue.

As the report makes clear, there is no single, universally accepted formula for calculating each country's "fair share." Instead, the report examines a wide range of relevant criteria and other considerations, and offers an overall assessment based on all these factors. I conclude from this comprehensive review that the non-US NATO allies and Japan, as a group, are making a substantial contribution to the common defense -- greater than is commonly recognized. Important differences emerge, however, when the results for individual countries are compared, with some allies doing their fair share but others doing less.

Given the current conventional force imbalance between NATO and the Warsaw Pact, we have emphasized the need for both our allies and the US to increase their defense efforts. I am gratified to report considerable progress by the allies in this regard, as evidenced by recent agreement to increase substantially the NATO infrastructure program, allied commitments to increase their holdings of critical ammunition stocks, and the adoption of certain force goals to compensate for possible US force deployments to Southwest Asia.

Due to the complexity of the issue, there will no doubt be understandable differences of opinion over how best to characterize the burdensharing efforts of our allies. However, we believe there are no major differences between the Administration and the US Congress on the more important proposition that our allies should indeed do more. Increased efforts on the part of all NATO member nations including the US are needed, quite apart from burdensharing considerations, because of the manifest need to improve substantially NATO's conventional capabilities. We have been working on many fronts to encourage our allies to improve their defense capabilities. As noted above, encouraging progress is being achieved.

We believe we can continue to make progress in obtaining important Alliance capability improvements as long as we focus attention on the objective need for such improvements. The process will not be helped by divisive arguments over burdensharing or by legislative efforts to compel a particular level or type of allied performance. The best way to encourage improved allied efforts has been and will remain through our own positive example and leadership. The continued cooperation and support of the Congress will be crucial to our attainment of this goal.

*Sigurd W. Huntington*

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## I. INTRODUCTION AND OVERVIEW

### PURPOSE

→ This report responds to Congress' interest in the extent to which our principal allies are contributing their fair share of the effort to provide for our common defense. It analyzes various burdensharing indices and factors for the United States, our NATO allies and Japan, offers some conclusions as to recent and current performance, and describes what is being done to encourage the allies to do more.

### WHAT IS BURDENSARING?

Our defense arrangements with members of NATO and with Japan rest on formal commitments, freely made by sovereign nations, to contribute by collective efforts to our common security. Alliances, like other agreements, remain healthy so long as they respond to shared national interests. They remain acceptable to members so long as risks and responsibilities are -- and are perceived as being -- equitably shared. The contributions of partners include both material (quantifiable) factors as well as intangible (e.g., political) factors, as when governments persevere in policies serving overall security interests in the face of competing domestic and international pressures.

### RECENT DEVELOPMENTS

We are gratified to report some very encouraging recent developments pertaining to allied conventional defense efforts. At the December 1984 Ministerial meeting, Defense Ministers took four positive decisions that will have a significant impact on future allied defense capability.

Infrastructure Program. Ministers agreed on a significantly increased funding level for the Infrastructure program, which provides facilities for the collective needs of Alliance forces. The level for the next six-year period will be 3.0 Billion Infrastructure Accounting Units (IAU) (approximately \$7.85 billion), which is more than double the funding agreed to in the previous five year period. The new program will provide a substantial improvement for US reinforcing forces. The NATO Infrastructure program provides an excellent example of how burdensharing is working in practice within the Alliance. While the United States contributes 27.8% of the total infrastructure funds, we have been receiving benefits that represent 35% to 40% of the value of the program.

Sustainability. Responding to Secretary Weinberger's December 1983 Initiative, the Ministers committed their nations to expanding existing plans for the procurement of specific critical munitions and to increasing their efforts to meet the force goals that call for augmented war reserve stocks of ammunition.

Conventional Defense. The Ministers agreed to the need for continuing improvement of NATO's conventional defense capabilities. They specifically asked Secretary General Lord Carrington and the DPC Permanent Representatives to come forward with proposals for a coherent effort toward that goal. The undertaking is intended to establish priorities for improvements; accelerate completion of the recently initiated conceptual military framework; harmonize national improvement efforts; and make further progress in coordinated defense procurement toward these ends. Ministers also agreed to Alliance-wide efforts to make the necessary resources available. The Secretary General will report the initial results of this effort at the Spring 1985 DPC Ministerial.

Out-of-Area Force Goals. Defense Ministers also endorsed a supplemental set of force goals envisaging "compensatory" NATO measures to offset the impact of possible US force deployments "out-of-area." These additional force goals call for feasibility studies (to be completed in 1985) of air and land improvements in areas where ACE capabilities would be significantly reduced by US deployments to Southwest Asia.

#### THE QUESTION OF FAIR SHARE

As will be discussed in the next section, there is no single, universally accepted formula for calculating each country's "fair share." Therefore, what we have attempted to do in this report is (1) portray the efforts of the NATO nations and Japan on the basis of a variety of key quantitative indicators, (2) discuss the purpose and utility of each indicator as well as important caveats and limitations, (3) highlight important non-quantifiable factors that must be considered to round out the picture, and (4) provide an overall assessment based on all of these factors.

#### POLITICAL ASPECTS

Any assessment of burden-sharing must include an examination of the political environment in which allied governments operate. We continue to share with our allies a common perception of the serious threat that the Soviet Union and its military buildup pose to Alliance security. However, there are understandable differences among the allies as to the most appropriate way to meet the Soviet challenge. These differences arise not only by virtue of history and culture, but also because of geography.

Positioned next to the line of potential combat, the Europeans' sense of the risks of conflict is more immediate than our own, and the public desire for an easing of East-West tensions is more widespread. Families divided by the East-West border have different perceptions and different priorities for East-West rapprochement. And Europe generally, its economies disrupted by the post-war division of the continent, tends to attach greater importance to expanding East-West trade.

With these factors in mind, we must regard the leadership that European Governments have provided and their successes in support of Alliance defense policies as very real contributions to burdensharing. Differences in perspective that sometimes lead the allies to take independent positions have not marred a record of cooperation that is, on the whole, remarkably good (and surely the envy of any other Alliance system).

An important ongoing success in political burdensharing is the unity and resolve the European allies have shown in staying on course for the deployment of longer-range intermediate-range nuclear forces (LRINF) in the absence of an arms control agreement obviating the need for such deployment. Soviet diplomatic pressures, a massive Soviet effort to influence European public opinion, and even openly enunciated threats have not derailed the NATO "two-track" decision of December 1979. The public outcry that greeted the first deliveries at the end of 1983 has only partly subsided, and the political risks faced by the European leaders most directly concerned remain substantial. INF remains a marked demonstration of political courage.

Moreover, in the sixth year of the Soviet occupation of Afghanistan, it is well to recall that our allies took steps to impose political and economic costs on the Soviet Union for its invasion there and that European leaders have greeted its fifth anniversary with renewed condemnations. Our allies have also taken firm measures in response to Soviet support for repression in Poland. European assistance in the Middle East (demining the Red Sea, for instance) and elsewhere bespeaks an increasing awareness that our defense efforts must be complementary even outside the Atlantic area in order to maximize our common security.

A more tangible form of political burdensharing lies in the conscription system maintained by most NATO allies for fulfilling manpower requirements in support of the NATO Alliance. These systems have substantial political and social costs, as we know. That those governments are prepared to bear these costs is further evidence of their willingness to sacrifice on behalf of the common security.

## QUANTITATIVE MEASURES

By some numerical comparisons the United States is clearly doing more than its allies. For example, the United States is expending between 6% and 7% of its Gross Domestic Product on defense while its NATO allies are spending about 3 1/2 % on a weighted average basis, and Japan is spending about 1%. Also, the United States is increasing its real defense expenditures at a much higher rate than its allies. There are, however, a number of factors that tend to moderate these disparities. Some of our allies would say that the disparity between the US share of GDP for defense and the non-US NATO weighted average can be attributed, in part, to our role as a nuclear superpower and our worldwide interests and responsibilities. It is also important to recognize that the relatively high real growth in US defense spending in recent years reflects, in part, an effort to compensate for the real decreases and low growth rates the United States experienced during most of the 1970s, when our allies were achieving steady real increases. As noted earlier, most European countries (the exceptions are the United Kingdom and Luxembourg) rely on conscript manpower for military personnel, resulting in many instances in lower manpower costs and a larger trained reserve manpower pool than they would have had with an all-volunteer force. Moreover, some relevant allied economic burdens are not included in the NATO definition of defense expenditures. These include items such as proportionally greater developmental assistance and, for the Federal Republic of Germany, the Berlin expenditures and the loss of relatively greater rents and tax revenue due to the unusually large amount of real estate dedicated to defense purposes.

Moreover, for a number of important quantitative defense measures our NATO allies compare well with the United States. For example, they field slightly more active duty military manpower as a percent of population than the United States and substantially more armored division equivalents (ADE) and tactical combat air force aircraft in relation to their economic strength.

Based on a review of all factors, one may conclude that the non-US NATO allies, as a group, are making a substantial contribution to the common defense. They are certainly doing much better than is commonly recognized. Important differences emerge, however, when the results for individual countries are compared. Some nations appear to be doing at least their fair share; other NATO nations and Japan appear, on the whole, to be making contributions below their fair share.

Because of the many judgments involved in taking account of the intangibles and weighing the individual indicators, there may be honest differences of opinion on how best to characterize the burdensharing efforts of our allies, both in the aggregate and individually. We do not believe, however, that there are any major differences between the

Administration and the US Congress on the more important question of whether our allies should do more. Increased efforts on the part of all member nations are needed, not because of burdensharing statistics but because of military assessments of required improvements in NATO's capabilities. We have been working on many fronts to encourage our allies to improve their defense capabilities. The results of the December 1984 DPC Ministerial meeting, discussed at the start of this chapter, provide strong evidence that progress is being achieved.

We believe that we will continue to make progress in obtaining important Alliance capability improvements as long as we focus attention on the objective need for such improvements. Achieving US security goals would cost much more if the NATO Alliance and our partnership with Japan were permitted to become weak as a result of divisive arguments over defense burdensharing. Unilateral pronouncements by the United States on the extent to which our allies are or are not sharing the burden are not an effective basis for encouraging improved allied efforts. Our positive leadership has always been and will remain a better means to ensure the adequacy of our common defense effort.

## II. COMPARISON OF SELECTED INDICATORS OF BURDENSARING

Defense analysts do not have a single, universally accepted formula for calculating each country's "fair share" of the collective defense burden. Any such measure would have to take account of, and weigh, the many disparate factors that together determine the level of a nation's defense effort. The task is more complicated than simply identifying which factors to count, and deciding how each should be weighed relative to the others. While many components of defense effort are measurable, others are much more subjective in nature and do not readily lend themselves to quantification. Consequently, even the most sophisticated techniques in our analytical tool kit today cannot provide a definitive solution to the fair share problem.

In order to be responsive to the spirit of the Congress' request for a comparison of "fair and equitable shares . . . that should be borne" and "actual defense efforts . . . that currently exist," this report adopts an approach that entails displaying selected indicators side by side. The overall assessment takes into account these measures as well as other nonquantifiable factors discussed elsewhere in the text.

Broadly speaking, the measures of performance used in this analysis can be grouped into three general categories:

- o Indicators of nations' ability to contribute (Table II-1);
- o Indicators of the amounts that actually have been contributed (Table II-2); and
- o Indicators that measure nations' contributions as a function of their ability to contribute (Table II-3).

To simplify comparisons, most of the indicators considered in Tables II-1 and II-2 measure a country's relative performance in one of two ways: (1) as a share of the combined NATO/Japan total and (2) as a percentage of the value of the highest-ranking nation. The figures in Table II-3 are expressed as ratios, calculated by dividing the "contribution" shares by the "ability to contribute" shares. Simply stated, a ratio of around 1.0 indicates that a nation's contribution and its ability to contribute are roughly in balance. A ratio above 1.0 indicates that a country is contributing beyond its "fair share," whereas a ratio below 1.0 implies that a country's contribution is not commensurate with its ability to contribute. This approach enables us to consider and compare a variety of disparate measures using a common, easily comprehensible scale.

The following section summarizes the major findings of the analysis. Subsequent sections describe the various indicators used to measure individual countries' performance and examine the results for each indicator. Appendix A

elaborates on that discussion, presenting the detailed results for selected indicators.

This year, for the first time, data for Spain have been included in this report. Spain joined the NATO Alliance in 1982, but does not commit its forces to NATO's military commands. Consequently, unlike nations that are fully integrated into the Alliance's military structure, Spain does not submit a reply to NATO's annual Defense Planning Questionnaire, from which much of the historical data reported in this document were drawn. Since in some cases comparable data are not yet available for Spain, some of the charts do not include a Spanish contribution. Where Spain has been included, US estimates were used if Spanish or NATO figures were not available. (To aid in comparing this year's results with the findings of previous editions of the report, Appendix A provides two tables for each performance measure, one including figures for Spain and the other omitting Spain from the share calculations.)

#### MAJOR FINDINGS OF THE ANALYSIS

The broad conclusions reported below take into account (1) the ratios recorded in Table II-3, (2) the trend data shown in Table II-2 and discussed in other sections of this report, and (3) difficult-to-quantify and non-quantifiable factors (such as host nation support) discussed elsewhere in the document. Among the ratio data, we have given heaviest weight to the defense spending/prosperity index share ratio (C2) and, to a lesser degree, to the defense spending/gross domestic product (GDP) ratio (C1), as these combine the most comprehensive indicator of defense effort with the most comprehensive indicators of ability to contribute--the so-called "prosperity index" and GDP.

The US Effort. Based on the major quantifiable measures examined, the United States appears to be contributing somewhat more than its fair share of the NATO and Japan total. For example, the US defense/GDP (C1) and defense/prosperity index share (C2) ratios are 1.45 and 1.19, respectively. The ratios for active duty manpower/population (C3) and active and reserve manpower/population (C4) also exceed the 1.0 norm. Of all the indicators considered in Table II-3, only in division equivalents and aircraft do the US ratios (C5, C7 and C6, C8) drop below 1.0. When taking into account our historical role in NATO and the intangible benefits that accrue to the United States as the acknowledged leader of the Free World our allies might argue: (1) that we are getting full value for the extra effort we appear to be expending and (2) that our leadership role obligates us to do more than simply achieve our statistically computed fair share.

Allied Efforts. The non-US NATO allies as a group appear to be shouldering roughly their fair share of the NATO and Japan defense burden. For example, the weighted-average ratio of their defense/prosperity index shares (C2)

# A. SELECTED INDICATORS OF ABILITY TO CONTRIBUTE (INCLUDING SPAIN)

RANK	(A1)		(A2)		(A3)		(A4)	
	GDP SHARE	POPULATION SHARE	PER CAPITA GDP (% OF HIGHEST NATION)	PROSPERITY INDEX SHARE				
1	US 44.50%	US 31.38%	US 100.0%	US 54.60%				
2	JA 16.32%	JA 15.92%	NO 95.0%	JA 14.47%				
3	GE 8.83%	GE 8.22%	CA 93.1%	GE 8.21%				
4	FR 7.03%	IT 7.69%	DE 79.2%	FR 5.86%				
5	UK 6.16%	UK 7.54%	GE 75.8%	CA 5.03%				
6	IT 4.77%	FR 7.29%	JA 72.3%	UK 4.36%				
7	CA 4.40%	TU 6.40%	FR 68.0%	IT 2.59%				
8	SP 2.15%	SP 5.11%	NE 65.5%	NE 1.44%				
9	NE 1.79%	CA 3.33%	LU 64.2%	NO 0.87%				
10	BE 1.08%	NE 1.92%	BE 57.9%	SP 0.78%				
11	DE 0.77%	PO 1.35%	UK 57.6%	BE 0.77%				
12	NO 0.74%	GR 1.32%	IT 44.3%	DE 0.75%				
13	TU 0.67%	BE 1.32%	SP 29.7%	GR 0.14%				
14	GR 0.47%	DE 0.68%	GR 24.9%	TU 0.06%				
15	PO 0.28%	NO 0.55%	PO 14.6%	PO 0.05%				
16	LU 0.04%	LU 0.05%	TU 7.4%	LU 0.04%				
NON US NATO	39.18%	52.70%	52.4%	30.93%				
NON US NATO + JAPAN	55.50%	68.62%	57.0%	45.40%				
TOTAL NATO	83.68%	84.08%	70.2%	85.53%				
TOTAL NATO + JAPAN	100.00%	100.00%	70.5%	100.00%				

# B. SELECTED INDICATORS OF CONTRIBUTION (INCLUDING SPAIN)

RANK	(B1) DEFENSE SPENDING SHARE	(B2) DEFENSE SPENDING % CHANGE 71 VS 83	(B3) ACTIVE DEFENSE MANPOWER SHARE	(B4) ACTIVE DEFENSE MANPOWER % CHANGE 71 VS 83	(B5) ACTIVE & RESERVE DEFENSE MANPOWER SHARE	(B6) GROUND FORCES ADE3 SHARE	(B7) TAC AIR COMBAT ACFT SHARE
1	US 64.73%	TU 109.13	US 39.73%	TU 35.54%	US 37.46%	US 36.70%	US 42.34%
2	UK 7.28%	JA 103.70%	TU 10.70%	LU 16.67%	GE 10.88%	TU 11.27%	UK 9.47%
3	GE 6.70%	GR 97.41%	FR 8.73%	NO 10.85%	FR 9.16%	GE 10.23%	FR 9.34%
4	FR 6.56%	LU 95.18%	GE 8.15%	GE 4.00%	TU 9.07%	FR 7.34%	GE 9.03%
5	JA 3.65%	FR 45.13%	IT 6.73%	FR 2.57%	SP 6.66%	GR 6.23%	IT 5.07%
6	IT 2.87%	BE 44.30%	UK 6.71%	JA 2.28%	IT 6.42%	UK 5.48%	TU 4.26%
7	CA 2.17%	NO 34.14%	SP 6.64%	BE 1.92%	UK 5.42%	IT 4.54%	GR 3.99%
8	SP 1.37%	GE 27.92%	JA 3.21%	SP	GR 3.53%	SP 4.35%	JA 3.62%
9	NE 1.29%	CA 22.51%	GR 2.44%	GR -0.64%	NE 2.35%	JA 3.95%	BE 2.62%
10	BE 0.81%	IT 21.30%	NE 1.59%	CA -4.54%	JA 2.28%	NE 3.34%	NE 2.29%
11	TU 0.75%	NE 16.71%	CA 1.48%	NE -7.54%	NO 1.85%	DE 1.78%	CA 2.28%
12	GR 0.67%	UK 11.66%	BE 1.41%	IT -7.66%	BE 1.72%	BE 1.56%	SP 1.97%
13	NO 0.51%	US 6.48%	PO 1.27%	US -14.58%	PO 1.20%	NO 1.50%	NO 1.30%
14	DE 0.42%	DE 5.35%	NO 0.63%	DE -22.39%	CA 1.12%	PO 0.90%	DE 1.24%
15	PO 0.21%	SP	DE 0.50%	UK -23.10%	DE 0.87%	CA 0.82%	PO 1.17%
16	LU 0.01%	PO -24.95%	LU 0.02%	PO -58.18%	LU 0.01%	LU 0.01%	LU 0.00%
NON-US NATO	31.62%	26.88%*	57.06%	-2.45%*	60.26%	59.35%	54.04%
NON-US NATO + JAPAN	35.27%	32.24%*	60.27%	-2.18%*	62.54%	63.30%	57.66%
TOTAL NATO	96.35%	12.23%*	96.79%	-8.20%*	97.72%	96.05%	96.38%
TOTAL NATO + JAPAN	100.00%	14.12%*	100.00%	-7.87%*	100.00%	100.00%	100.00%

\*Excludes Spain

# C. SELECTED INDICATORS COMPARING CONTRIBUTION WITH ABILITY TO CONTRIBUTE (INCLUDING SPAIN)

RANK	(C1)		(C2)		(C3)		(C4)		(C5)		(C6)	
	RATIO: GDP SPEND. GDP SHARE (B1 A1)	RATIO: DEF. SPEND. GDP SHARE (B1 A1)	RATIO: DEF. SPEND. GDP SHARE (B1 A1)	RATIO: DEF. SPEND. GDP SHARE (B1 A1)	RATIO: ACTIVE DEF. MANPOWER/ POP. SHARE (B3 A2)	RATIO: ACTIVE & RES. POP. SHARE (B5 A2)	RATIO: ADE SHARE/ PROSPERITY INDEX SHARE (B6 A4)	RATIO: ADE SHARE/ PROSPERITY INDEX SHARE (B6 A4)	RATIO: ACFT SHARE/ PROSPERITY INDEX SHARE (B7 A4)			
1	US	1.45	TU	12.38	GR	1.85	NO	7.26	TU	186.56	TU	70.45
2	GR	1.43	GR	4.67	TU	1.67	GR	4.13	GR	43.75	GR	28.01
3	UK	1.18	PO	4.19	SP	1.30	DE	2.22	PO	17.87	PO	23.40
4	TU	1.12	SP	1.75	US	1.27	NE	1.92	SP	5.56	BE	3.41
5	FR	0.93	UK	1.67	FR	1.20	GE	1.92	DE	2.39	SP	2.52
6	GE	0.76	US	1.19	NO	1.14	BE	1.72	NE	2.32	UK	2.17
7	PO	0.75	FR	1.12	BE	1.07	FR	1.35	BE	2.03	IT	1.95
8	BE	0.75	IT	1.11	GE	0.99	SP	1.31	IT	1.75	DE	1.67
9	NE	0.72	BE	1.05	PO	0.94	US	1.07	NO	1.73	NE	1.60
10	NO	0.69	NE	0.90	UK	0.89	TU	0.96	UK	1.26	FR	1.59
11	SP	0.64	GE	0.82	IT	0.89	PO	0.81	FR	1.25	NO	1.49
12	IT	0.60	NO	0.59	NE	0.83	IT	0.77	GE	1.25	GE	1.10
13	DE	0.54	DE	0.56	DE	0.74	UK	0.41	US	0.67	US	0.78
14	CA	0.49	CA	0.43	CA	0.44	CA	0.14	JA	0.27	CA	0.45
15	LU	0.28	LU	0.35	LU	0.35	JA	0.04	LU	0.22	JA	0.25
16	JA	0.22	JA	0.25	JA	0.20	LU	0.00	CA	0.16	LU	0.00
	NON-US NATO	0.81		1.02		1.08		1.25		1.92		1.75
	NON-US NATO + JAPAN	0.64		0.78		0.88		0.97		1.39		1.27
	TOTAL NATO	1.15		1.13		1.15		1.18		1.12		1.13
	TOTAL NATO + JAPAN	1.00		1.00		1.00		1.00		1.00		1.00

# C. SELECTED INDICATORS COMPARING CONTRIBUTION WITH ABILITY TO CONTRIBUTE (INCLUDING SPAIN)

RANK	(C7)		(C8)	
	RATIO: ADE SHARE/ GDP SHARE (B6 ÷ A1)		RATIO: ACFT SHARE/ GDP SHARE (B7 ÷ A1)	
1	TU	16.86	GR	8.56
2	GR	13.36	TU	6.37
3	PO	3.20	PO	4.19
4	DE	2.32	BE	2.42
5	SP	2.02	NO	1.74
6	NO	2.02	DE	1.62
7	NE	1.87	UK	1.54
8	BE	1.44	FR	1.33
9	GE	1.16	NE	1.28
10	FR	1.04	IT	1.06
11	IT	0.95	GE	1.02
12	UK	0.89	US	0.95
13	US	0.82	SP	0.92
14	JA	0.24	CA	0.52
15	CA	0.19	JA	0.22
16	LU	0.17	LU	0.00
	NON-US NATO	1.51		1.38
	NON-US NATO + JAPAN	1.14		1.04
	TOTAL NATO	1.15		1.15
	TOTAL NATO + JAPAN	1.00		1.00

is 1.02, while that for their defense/GDP shares (C1) is .81 and all of their remaining ratios exceed 1.0, some by a wide margin.

Important differences emerge, however, when the results for individual countries are compared. Some of the NATO allies appear to be doing at least their fair share; other NATO nations and Japan appear, on the whole, to be making contributions below their fair share.

Japan, the only non-NATO country considered in this analysis, ranks last or close to last on most of the measures surveyed and, thus, appears to be doing far less than its fair share. This validates our major emphasis over the last several years on encouraging the Japanese to meet their defense goals within this decade.

#### DESCRIPTION OF BURDENSARING MEASURES IN TABLES II-1 AND II-2

The quantitative performance ratios used in the preceding discussion were derived from two major categories of data: indicators of ability to contribute and indicators of actual contributions. The following material briefly describes the major burdensaring indices associated with each category.

##### Indicators of Ability to Contribute

The ability of nations to contribute to the collective defense effort (see Table II-1) was evaluated on the basis of four indices:

GDP Share (A1). Reflects the total value of all goods and services produced by a country and is widely used for comparing defense burdens among nations.

Population Share (A2). Provides an indication of the total amount of human resources available to each nation and, thus, is useful in examining defense manpower contributions.

Per Capita GDP (A3). GDP divided by population; a widely accepted measure of economic development and standard of living.

Prosperity Index Share (A4). This experimental indicator--used in previous editions of this report--adjusts GDP shares (A1) in proportion to each nation's position on the per capita GDP measure (A3). The index is based on the premise that the collective interest of the Free World is best served if the relatively more prosperous nations (in terms of per capita GDP) carry a proportionately larger share of the collective military burden, thereby allowing relatively less prosperous nations to concentrate

their limited resources to a greater degree on basic domestic programs. The index is computed by multiplying GDP shares (A1) by per capita GDP (A3) and normalizing the resulting products so that they sum to 100 percent. (Table II-4 illustrates the steps in the computation.) The underlying principle is analogous to that of a graduated income tax. For example, if GDP alone is used as an indicator of a nation's fair share of the defense burden, Norway's required contribution would be 0.74 percent of the NATO and Japan total; however, because Norway ranks second in per capita GDP, its fair share based on the prosperity index is 0.87 percent--about an 18 percent increase. Nations that rank relatively low in per capita GDP (e.g., Greece, Turkey, and Portugal) have prosperity index shares that are below their GDP shares.

### Indicators of Contribution

This analysis draws on seven major measures of contributions to defense (See Table II-2).

Defense Spending Share (B1). The share figures recorded for the NATO countries (including the United States) are based on definition agreed to by NATO of what is to be included in total defense spending. This ensures a much higher degree of comparability than could be achieved using any other available data. Although spending shares are probably the most comprehensive indicator of defense effort, it is important to recognize that they measure input, not output. Also, they do not fully reflect certain important outlays that contribute to a country's overall defense effort, (e.g., host nation support).

Percentage Change in Defense Spending, 1971 vs. 1983 (B2). Provides an indication of changes in real defense spending. Figures have been computed using constant 1983 prices and 1983 exchange rates.

Active Defense Manpower Share (B3). Reflects active-duty military and civilian manpower levels in peacetime. Including civilians in the calculation helps eliminate comparability problems stemming from differences in national policies on the use of civilians for military tasks.

Percentage Change in Active Defense Manpower Levels, 1971 vs. 1983 (B4). Provides an indication of changes in peacetime active-duty military and civilian manpower strengths.

Active and Reserve Defense Manpower Share (B5). Includes peacetime active-duty end strengths and civilian manpower levels plus an estimate of "committed reserves" (i.e., reservists with mobilization assignments).

# COMPUTATION OF PROSPERITY INDEX

## (INCLUDING SPAIN)

	(1)	(2)	(3)	(4)
	GDP SHARE (A1)	PER CAPITA GDP (A2) (% OF HIGHEST NATION)	(1) x (2)	PROSPERITY INDEX (A4) (% ALLOCATION OF COL (3))
BELGIUM	1.08%	57.9%	62.73	0.77%
CANADA	4.40%	93.1%	409.57	5.03%
DENMARK	0.77%	79.2%	60.82	0.75%
FRANCE	7.03%	68.0%	477.58	5.86%
GERMANY	8.83%	75.8%	669.02	8.21%
GREECE	0.47%	24.9%	11.61	0.14%
ITALY	4.77%	44.3%	211.39	2.59%
LUXEMBOURG	0.04%	64.2%	2.87	0.04%
NETHERLANDS	1.79%	65.5%	117.05	1.44%
NORWAY	0.74%	95.0%	70.67	0.87%
PORTUGAL	0.28%	14.6%	4.08	0.05%
SPAIN	2.15%	29.7%	63.79	0.78%
TURKEY	0.67%	7.4%	4.92	0.06%
UK	6.16%	57.6%	354.97	4.36%
US	44.50%	100.0%	4449.80	54.60%
JAPAN	16.32%	72.3%	1179.06	14.47%
NON US NATO	39.18%	52.4%	2521.08	30.93%
NON US NATO + JAPAN	55.50%	57.0%	3700.14	45.40%
TOTAL NATO	83.68%	70.2%	6970.88	85.53%
TOTAL NATO + JAPAN	100.00%	70.5%	8149.94	100.00%

Ground Forces Armored Division Equivalent (ADE) Share (B6). The ADE is an indicator of effectiveness of ground forces based on the quantity and quality of their major weapons. This static measure—which is widely used within DoD for ground force comparisons—provides a more accurate picture of combat effectiveness than do simple counts of combat units and weapons. The measure does not, however, take into account such factors as ammunition availability, logistical support, training, communications, and morale.

Air Force Tactical Combat Aircraft Share (B7). Includes fighter/interceptor, attack, bomber, and tactical reconnaissance aircraft in air force inventories.

#### BURDENSARING MEASURES AND PERFORMANCE

This section provides a detailed comparison of US and allied efforts as measured by the major burdensaring indicators discussed above. The discussion treats each indicator individually, explaining its purpose and utility as well as noting important caveats and limitations. Relevant statistics are summarized in the accompanying charts. As noted earlier, indicators fall into three general categories: indicators of ability to contribute (e.g., gross domestic product); 1/ indicators of amount of contribution (e.g., total defense spending, total military and civilian manpower); 2/ and indicators that relate contributions and ability to contribute (e.g., percentage of GDP allocated to defense spending). 3/

In theory, there could be another category of indicators measuring benefits received. For the most part, these involve highly subjective judgments and are not easy to quantify. Since one of the major benefits of participating in a collective defense effort is successful deterrence of conflict and freedom from foreign domination, some would argue that the larger a nation's population (or the larger its GDP), the more that nation has to lose if the alliance defense effort is not successful. By that line of reasoning, many of the indicators of economic condition and strength would reflect benefits received. Others would argue, however, that successful deterrence and freedom from domination are intangibles best left unquantified.

In the final analysis, our primary goal must be a steady, coherent, and sustained growth of alliance defense capabilities pending the achievement of arms control agreements that would obviate this need. This does not mean that we do not believe the burdens of alliance membership should be distributed as widely and equitably as possible. It does, however,

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1/ All of these are addressed in Appendix A.

2/ One of these — defense spending by resource category — is addressed in Appendix A.

3/ One of these — per capita defense spending — is addressed in Appendix A.

reflect a concern that we have focused too often solely on individual members' contributions to that objective, rather than on the capabilities and requirements of the Alliance as a whole.

### Total Defense Spending

This indicator measures defense spending by each nation, both in absolute terms and as a share of the NATO and Japan total (Charts II-5 and II-6). As noted in the previous section, the figures for the NATO nations reflect the types of expenditures defined by NATO as contributing to total defense spending. While this ensures a much higher degree of comparability (both for comparing trends among nations and for examining trends over time) than could be obtained using any other available data, some nations feel their defense efforts are understated by these criteria because they do not include certain expenditures of a unique nature.

Germany, for example, feels that its economic assistance to Berlin and support for the Berlin garrisons, which are not considered "defense expenditures" under NATO's accounting rules, contribute significantly to the alliance defense effort in the broadest sense of the word. If included, these expenditures would increase Germany's defense spending total for 1983 by around 25 percent.

Defense related costs, such as real estate provided for forward-deployed forces and some host nation support expenditures, also are not counted as defense spending under the NATO definition. The current market value of the real estate made available to allied forces stationed in Germany, for example, has been estimated by the German Government at around \$16 billion.

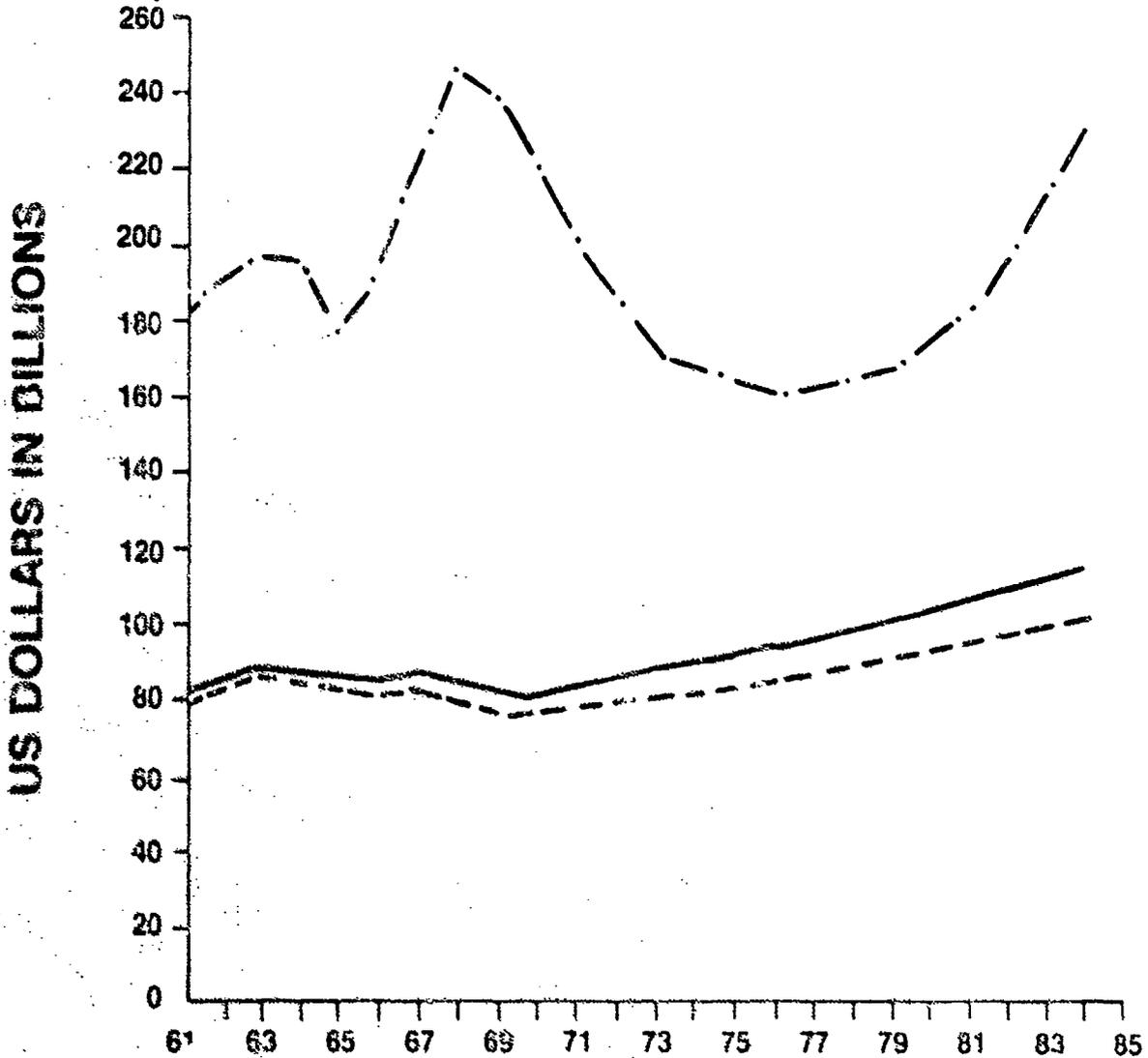
Some European nations, especially Germany, incur additional expenses by hardening or building redundancy into civil projects with potential military applications. Examples include roads, pipelines, and civilian communication systems. Many of these expenditures cannot be reported under NATO's defense accounting criteria.

The value of civilian assets (e.g., trucks) that are designated for military use in time of war likewise cannot be counted as defense expenditures. Yet these assets contribute directly to NATO's and Japan's military capabilities and reduce the amount these nations and the United States might otherwise have to spend on defense. This is particularly the case for Germany, which has undertaken a significant program to register civilian assets that would be used by the Bundeswehr and allied forces in wartime.

It is also important to recognize that identical defense expenditures by two nations will not necessarily translate into identical amounts of military capability. Since a number of our allies are able to man their

# TOTAL DEFENSE SPENDING (FISCAL YEAR) US DOLLARS IN BILLIONS

(1983 CONSTANT PRICES — 1983 EXCHANGE RATES)



**LEGEND**

**YEAR**

- UNITED STATES
- - - NON US NATO
- NON US NATO & JAPAN

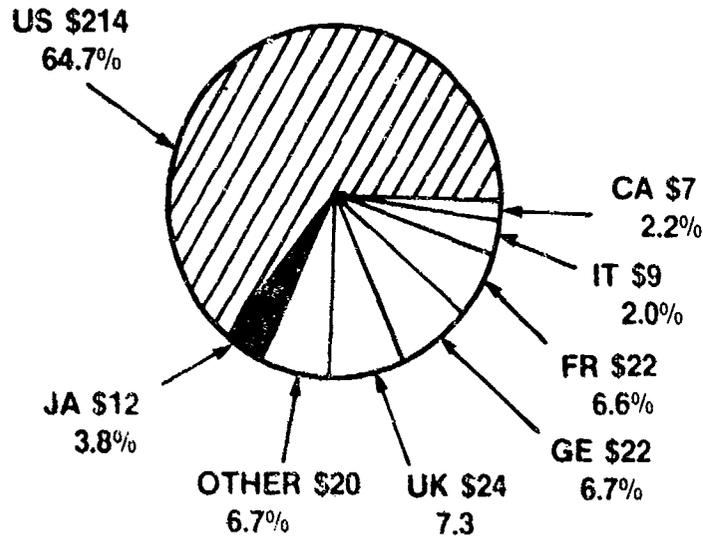
**FOOTNOTES**

BASED ON THE NATO DEFINITION OF DEFENSE SPENDING

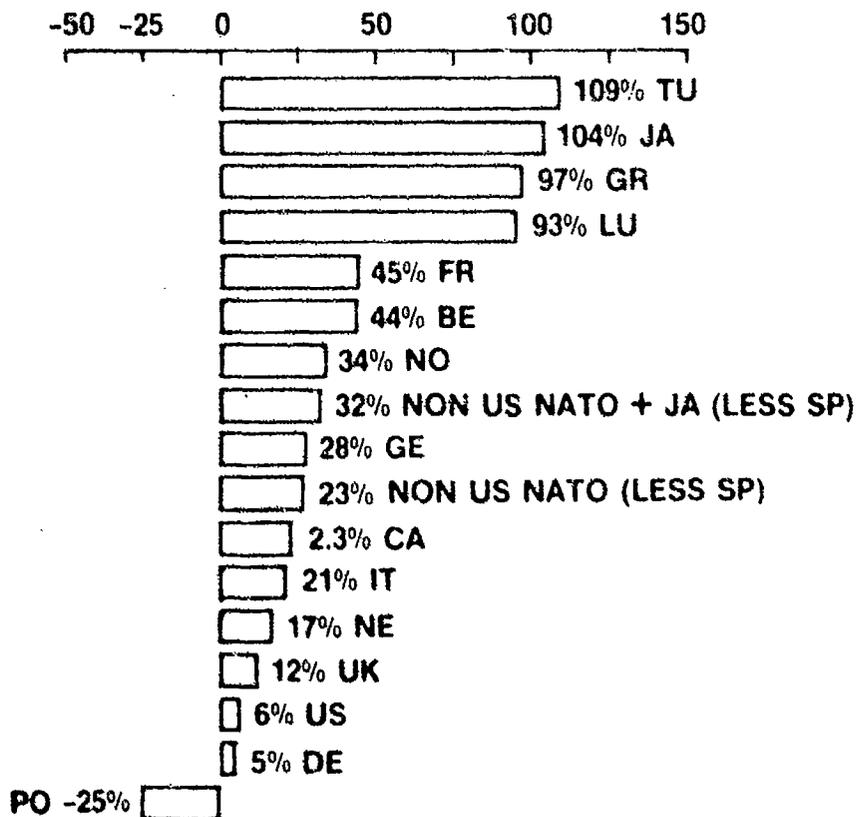
# TOTAL DEFENSE SPENDING (FY) (1983 CONSTANT DOLLARS IN BILLIONS 1983 EXCHANGE RATES)

1983

TOTAL NATO & JAPAN: \$330



## % CHANGE IN TOTAL DEFENSE SPENDING (1971 VS. 1983)



forces at a lower cost than we can, traditional spending comparisons (such as those displayed in the accompanying charts) may understate the size and value of allied forces vis-a-vis our own.

Together, the NATO nations and Japan spent some \$330 billion on defense in 1983. The United States supplied about \$214 billion, or 65 percent of that amount. As Chart II-5 shows, US defense spending in real terms declined during most of the 1970s, but toward the end of the decade, this pattern reversed. The net change in US and allied shares between 1971 and 1983 reflects a 27 percent real increase in the defense budgets of the non-US NATO members as a group, 104 percent real growth for Japan, and a real increase of 6.5 percent in US defense spending.

#### Percentage of Gross Domestic Product (GDP) Allocated to Defense

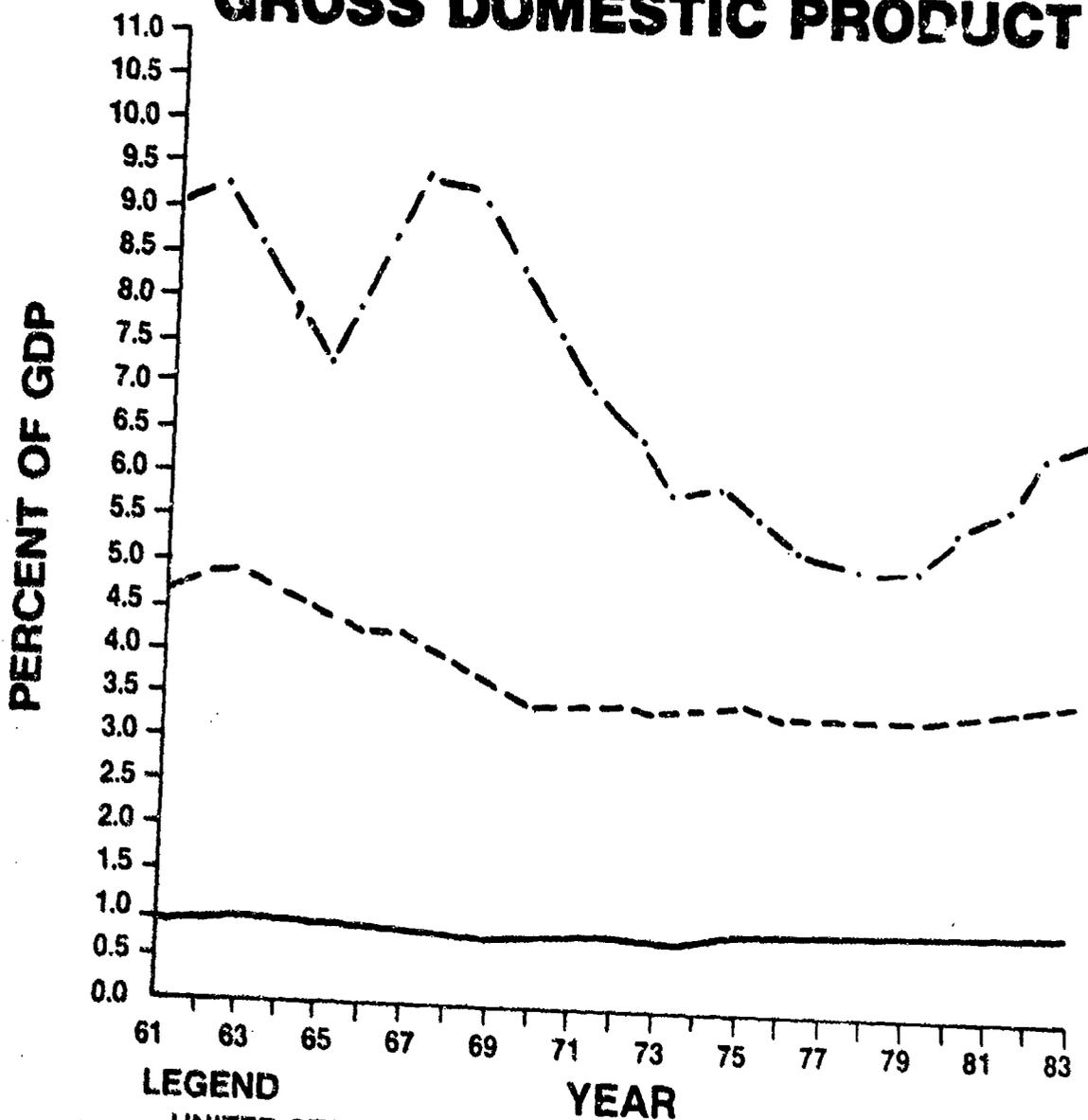
This is probably the most popular of all the indicators of defense burdensharing. Among its virtues are that it is easy to compute; it is based on data that usually are readily available; and it is easy to explain and understand. (Chart II-7)

When used as one of a variety of indicators, and with an understanding of some of its shortcomings, the GDP share indicator can provide valuable insights. Unfortunately, there is often a tendency to view it as the "be-all and end-all" and, thus, to rely on it to the exclusion of other measures. Another problem is the tendency of some users of this measure to automatically assume—explicitly or implicitly—that "equitable" burdensharing requires all nations to devote an equal share of GDP to defense. An opposing view frequently voiced within the Alliance is that it is more equitable, and in the collective interest of the Free World, for nations with the strongest economies to devote a proportionately larger share of their wealth to defense, thereby allowing weaker members to allocate proportionately more of their limited resources to basic domestic programs. This is analogous to the graduated income tax used by the United States and many other nations in apportioning domestic revenue burdens.

Finally, it is important to recognize that all of the factors discussed in the previous section that render total defense spending an imperfect indicator of a nation's defense effort also apply to defense spending as a share of GDP. That is, the measure does not take into account efforts that are not directly reflected in defense budgets.

With a 1983 percentage of 6.6, the United States allocates a larger portion of its GDP to defense than do any of the other nations surveyed here (Chart II-8). Greece ranks second, with 6.4 percent, while the United Kingdom's 5.3 percent share places it third, followed by Turkey

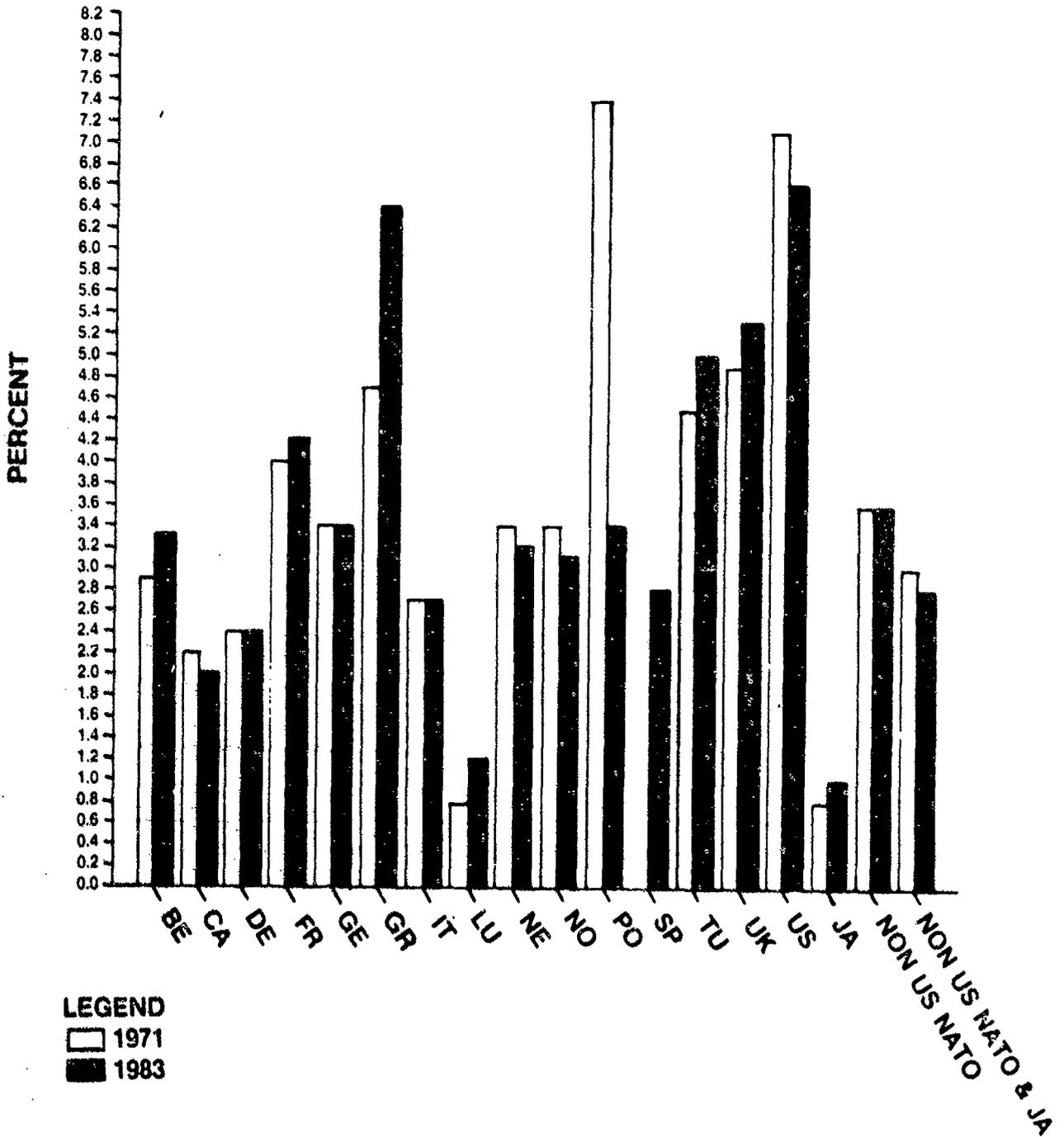
# TOTAL DEFENSE EXPENDITURES (CY) AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT



**LEGEND**  
- · - UNITED STATES  
- - - NON US NATO  
—— JAPAN

FOOTNOTES  
BASED ON THE NATO DEFINITION OF DEFENSE SPENDING

# TOTAL DEFENSE SPENDING AS A PERCENT OF GDP



(5.0 percent) and France (4.2 percent). All of the remaining nations have shares of 3.4 percent or less. The weighted average for the non-US nations combined is 3.6 percent if only the NATO nations are considered and 2.8 percent if Japan is included in the calculation.

The obvious discrepancy between the US share and the shares of many of the allies can be attributed, in part, to our role as a nuclear superpower and our worldwide interests and responsibilities. The very low Japanese percentage and relatively modest German percentage follows partly from political and constitutional constraints (on defensive efforts for the Japanese and on overall force size for the Germans).

An examination of the trends indicates that the weighted-average percentage for all of the non-US NATO nations combined declined steadily during the 1960s. Since the early 1970s, allied defense spending has generally kept pace with economic growth, resulting in a level trend in share of GDP devoted to defense in 1971-83. By comparison, the US GDP percentage fell around 30 percent between the early 1970s and 1979, but turned sharply upward in 1980. The 1970s decline cannot be attributed solely to our Southeast Asia phase-down inasmuch as our percentage in the early 1960s, prior to the Vietnam buildup, was two points above the early 1970s level (9.0 percent versus around 7.0).

#### Total Active-Duty Military and Civilian Manpower

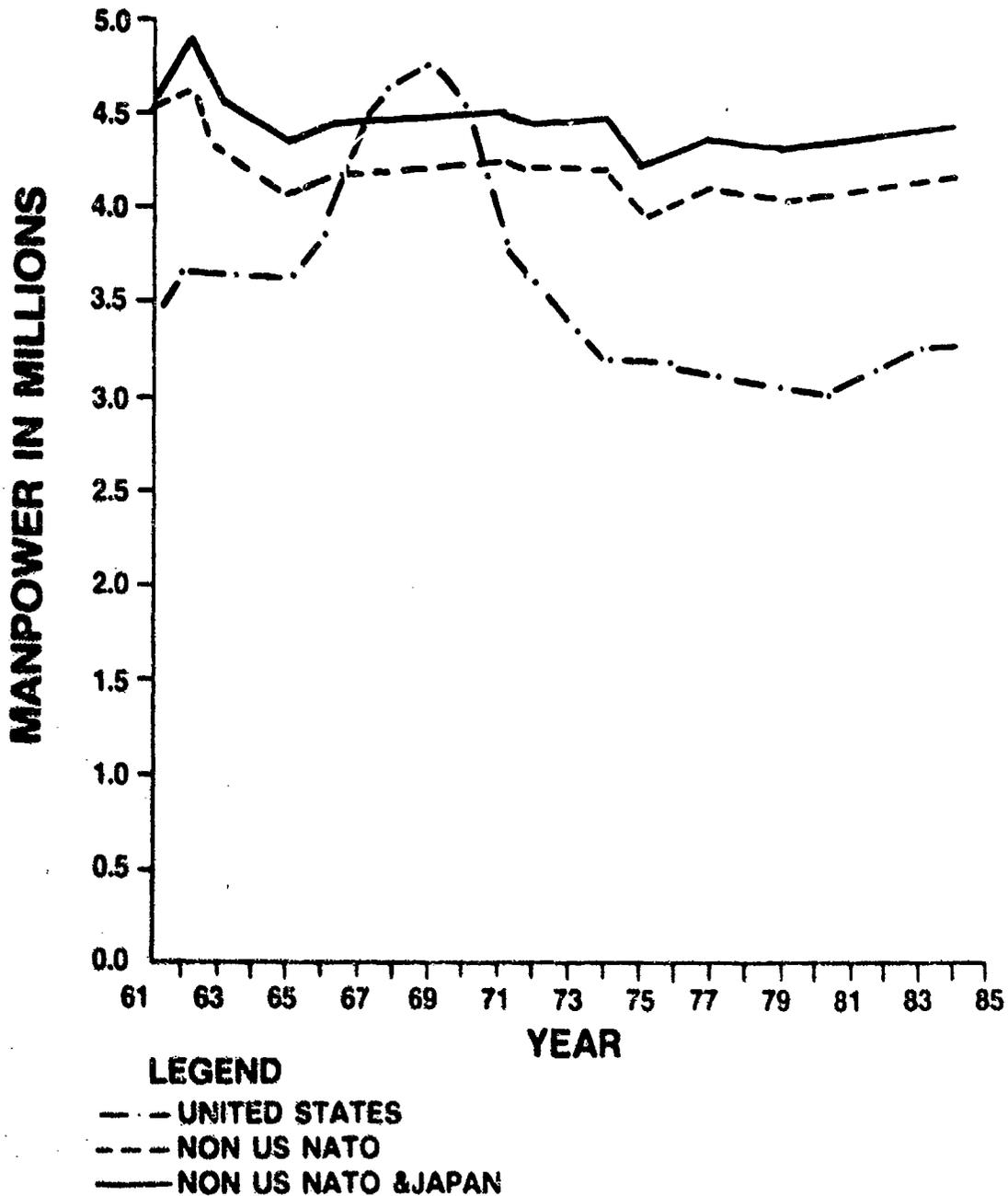
Charts II-9 and II-10 show the peacetime active-duty military and civilian manpower resources allocated to defense by each nation. Charts II-11 and II-12 provide similar breakouts for peacetime active-duty military manpower only (i.e., the figures exclude civilians).

Including civilian defense manpower helps eliminate comparability problems stemming from different national policies on the use of civilians for military tasks. Accordingly, the discussion below focuses on the combined military and civilian figures.

Since this indicator does not include reserve manpower, it tends to understate the efforts of nations, such as Norway, that have structured their forces around a small cadre of active-duty personnel that can be rapidly fleshed out (by drawing on a large pool of trained reservists) in an emergency.

Variations indicated by this measure can be attributed, among other things, to differences in (1) active/reserve policies, (2) the cost of manpower and (3) the extent to which programs emphasize labor-intensive forces (e.g., ground units) versus capital-intensive ones (navies and air forces).

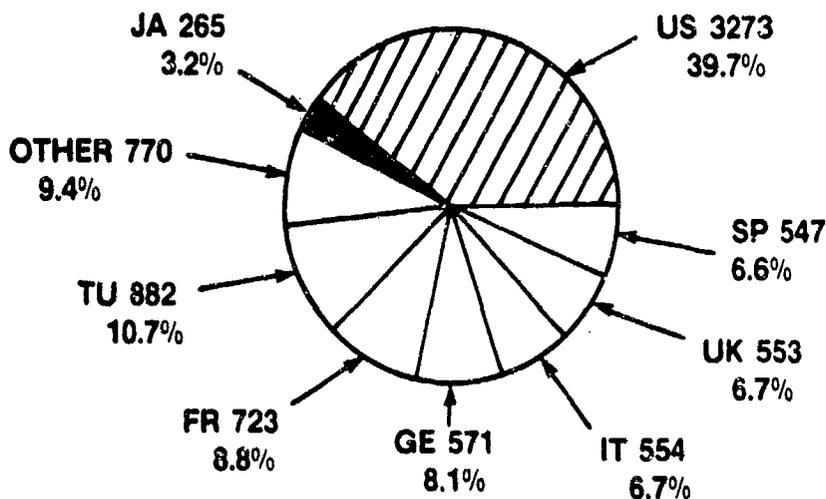
# TOTAL ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER (IN MILLIONS)



# TOTAL MILITARY AND CIVILIAN MANPOWER (IN THOUSANDS)

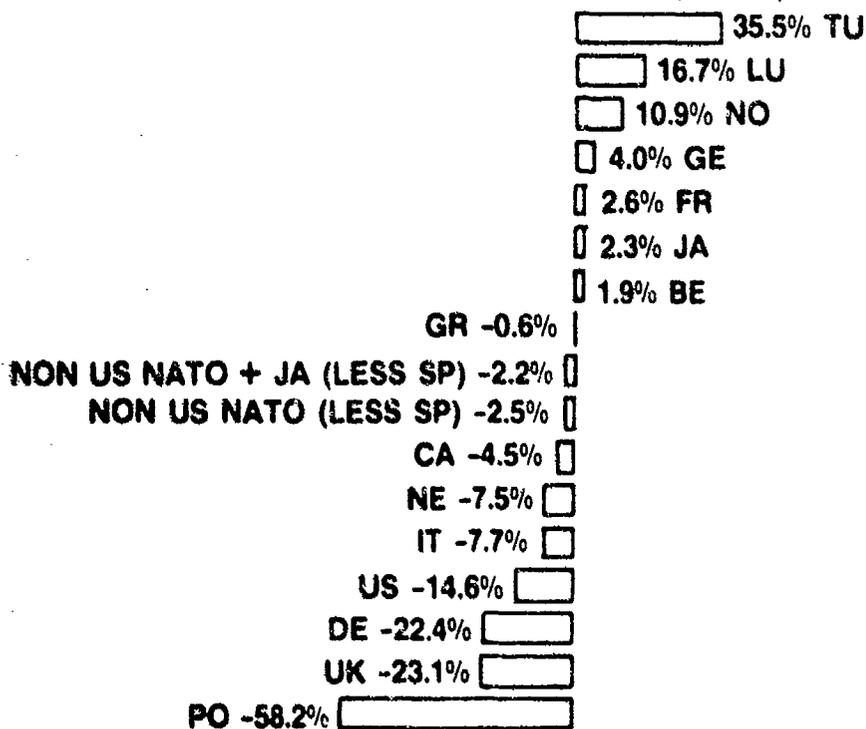
1983

TOTAL NATO & JAPAN: 8239



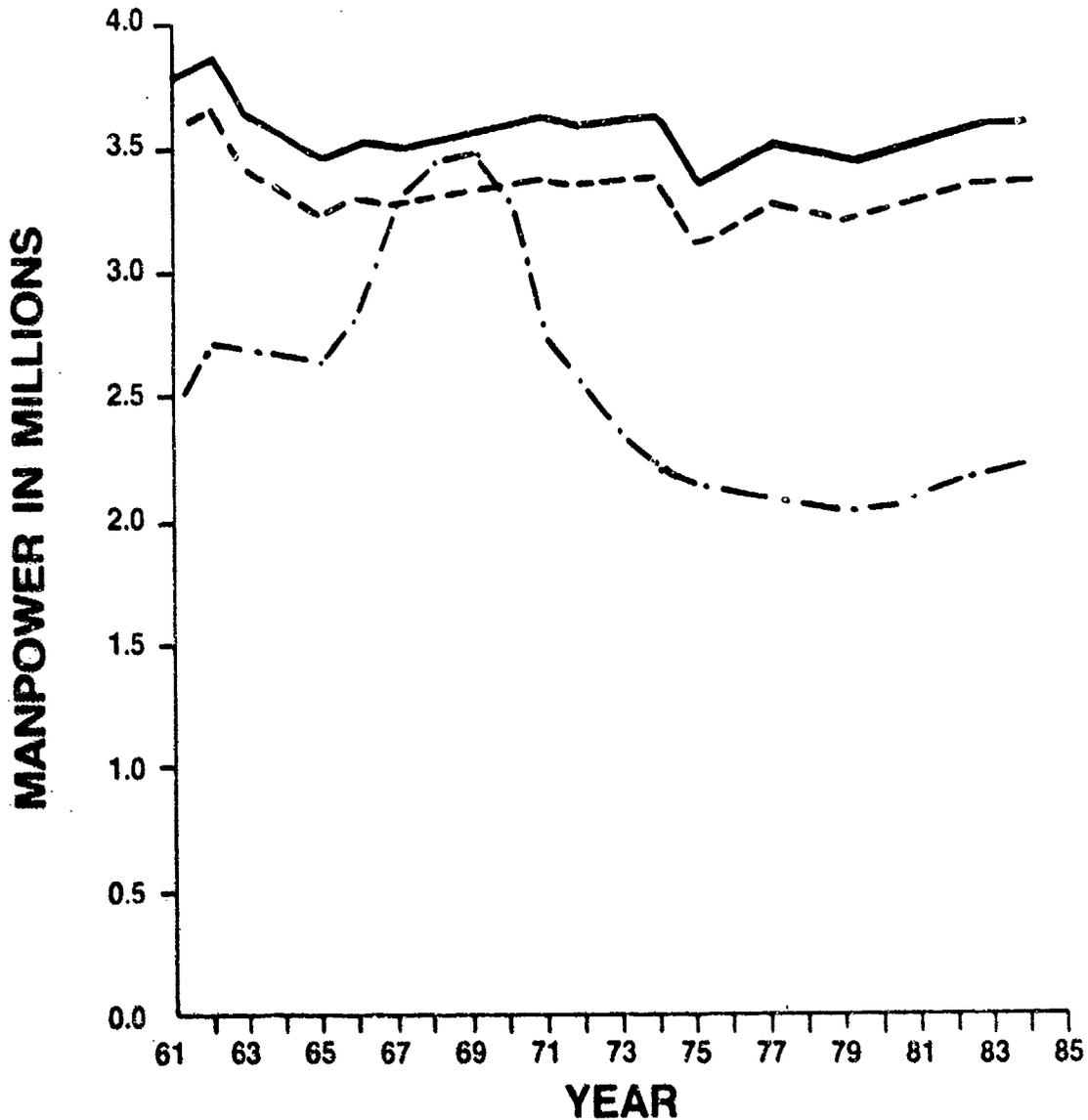
## % CHANGE IN TOTAL MILITARY AND CIVILIAN MANPOWER (1971 VS. 1983)

-75   -50   -25   0   25   50   75



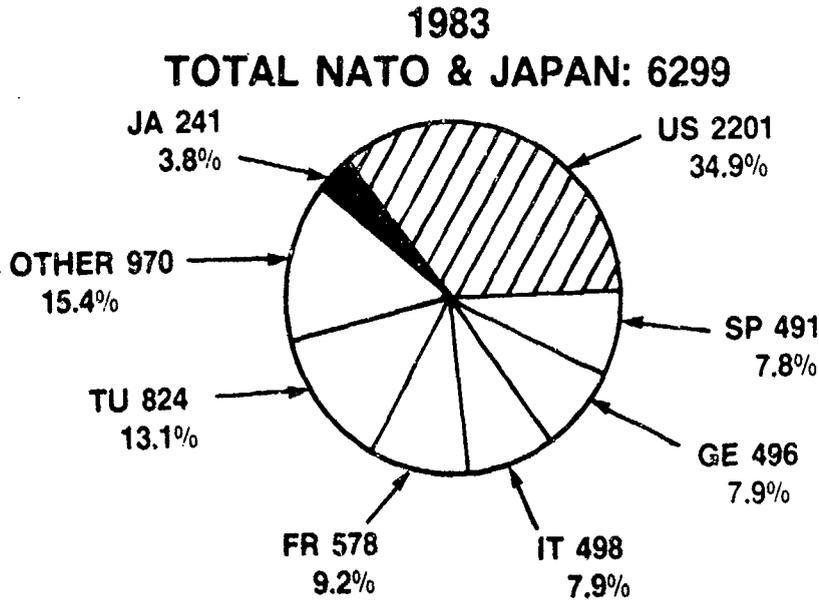
# TOTAL ACTIVE DUTY MILITARY MANPOWER

(MILLIONS)

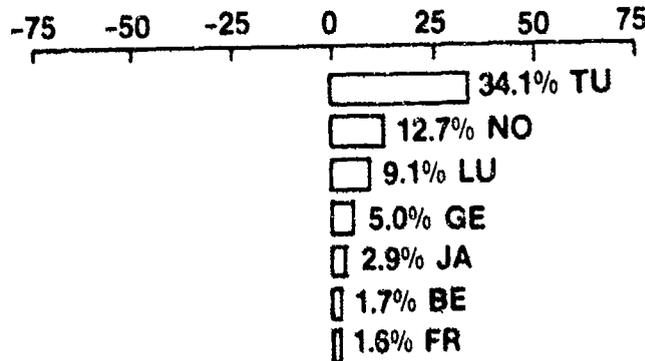


**LEGEND**  
- . - UNITED STATES  
- - - NON US NATO  
— NON US NATO & JAPAN

# TOTAL MILITARY MANPOWER (IN THOUSANDS)



## % CHANGE IN TOTAL MILITARY MANPOWER (1971 VS. 1985)



- NON US NATO + JA (LESS SP) -0.1%
- NON US NATO (LESS SP) -0.4%
- GR -1.2%
- IT -5.3%
- CA -6.7%
- NE -7.8%
- UK -13.2%
- US -15.9%
- DE -31.7%
- PO -61.9%

A review of the trends indicates that US manpower levels declined by around 21 percent between 1971 and 1980, but then increased by about 8 percent between 1979 and 1983—for a net change of minus 15 percent over the 1971-83 period. The total strength of the non-US NATO allies remained practically unchanged during the early 1970s, but declined by around 5 percent between 1974 and 1976, reflecting, in part, reductions in British, Italian, and Portuguese manpower that were partially offset by increases in Turkish manpower. Then, during 1976-83, the trend turned upward, with the non-US NATO allies (less Spain) registering an increase of around 4 percent—reflecting a growth in Turkish and Italian manpower levels, a relatively more modest decline in the number of British personnel, and generally steady levels for most of the other allies. (Data on Spanish forces for prior years were not available for this report.) As a result of these changes in non-US NATO manpower levels, and a 2 percent increase in Japan's 1971-83 level, the US share of the NATO (less Spain) and Japan total fell from 45.9 percent in 1971 to 42.6 percent in 1983.

#### Total Active-Duty Military and Civilian Manpower and Committed Reserves

Chart II-13 reflects the active-duty military and civilian manpower figures recorded in the previous charts, plus an estimate of "committed reserves" (i.e., reservists with assignments after mobilization).

Including committed reserves, the NATO nations and Japan together have almost 13 million people under arms or in their civilian defense establishment. Of that amount, non-US nations account for 7.7 million (or 60 percent of the total), while the United States contributes about 4.8 million.

Most of the non-US NATO nations supply larger shares of the NATO and Japan total under this measure than they do under the "active military and civilian" measure used in the previous section.

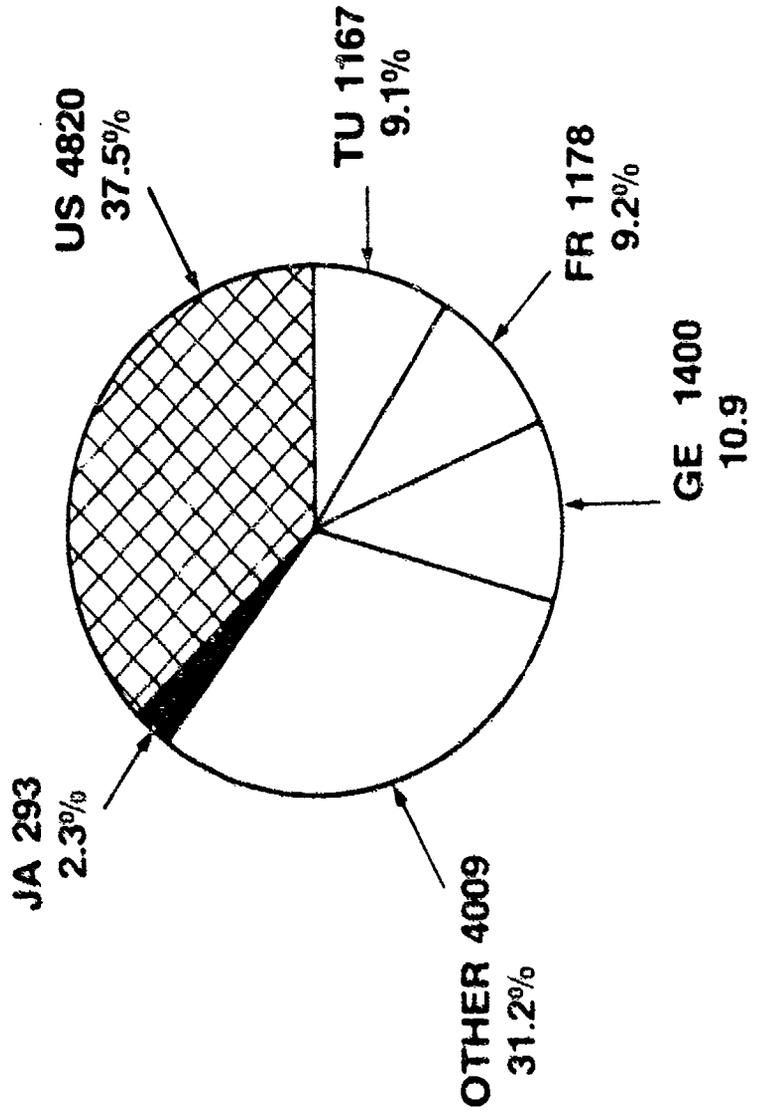
#### Defense Manpower as a Percentage of Population

This widely used and generally well-understood indicator provides a basis for comparing the defense manpower contributions of nations, taking into account differences in the size of their populations. The percentages reported below were derived using combined military and civilian manpower levels (Charts II-14 and II-15). For purposes of comparison, figures for military manpower only are also provided (Charts II-16 and II-17).

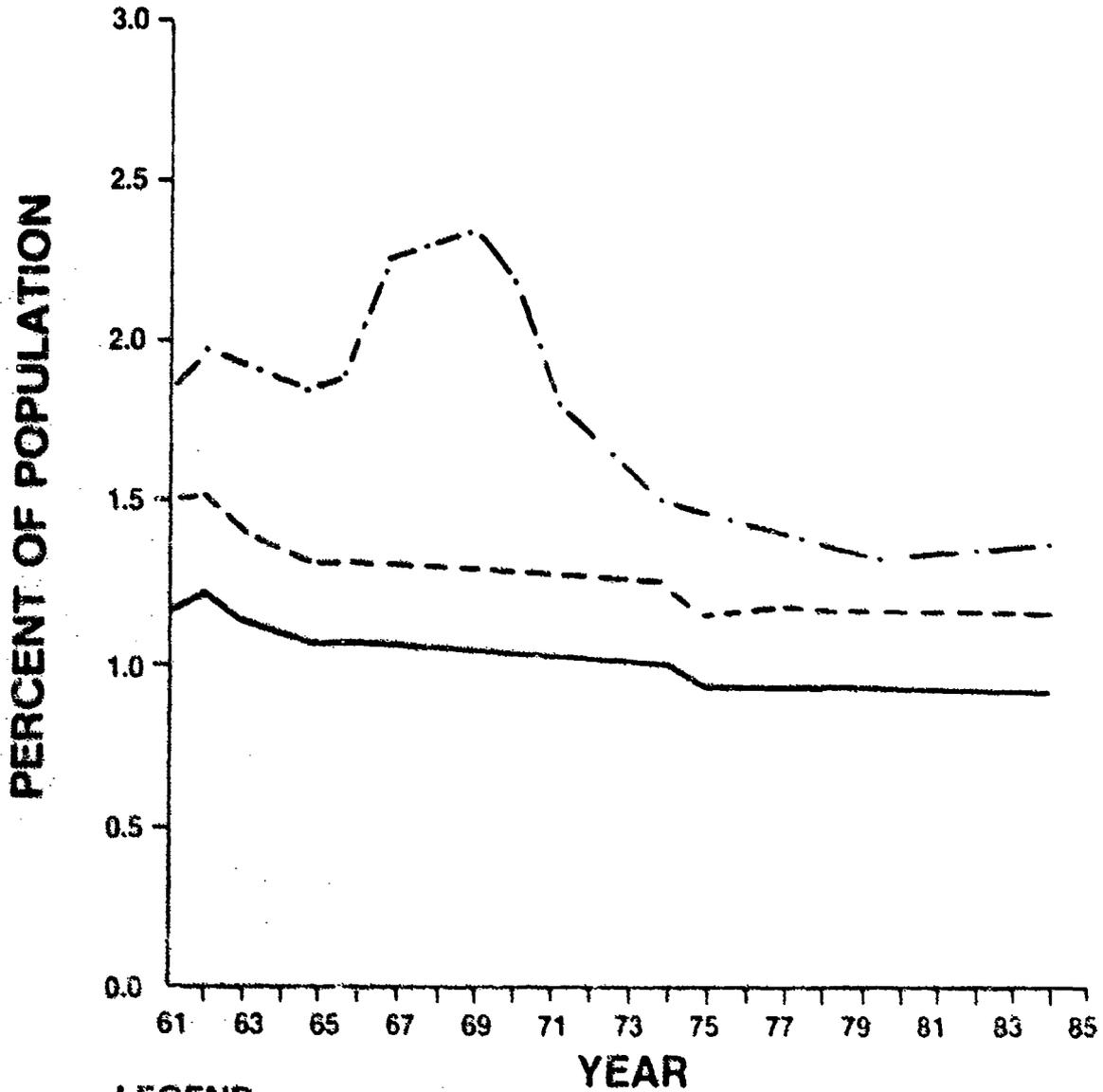
Active-Duty Military and Civilian Manpower as a Percentage of Population (Charts II-14 and II-15). This indicator shows a wide variation among nations in 1983, ranging from a high of 2.0 percent and 1.8 percent for Greece and Turkey, respectively, to 0.4 percent and 0.2 percent for Luxembourg and Japan. The United States ranks fourth with 1.4 percent, following

# TOTAL ACTIVE MILITARY AND CIVILIAN MANPOWERES AND COMMITTED RESERVES (IN THOUSANDS)

1983  
TOTAL NATO & JAPAN: 12867

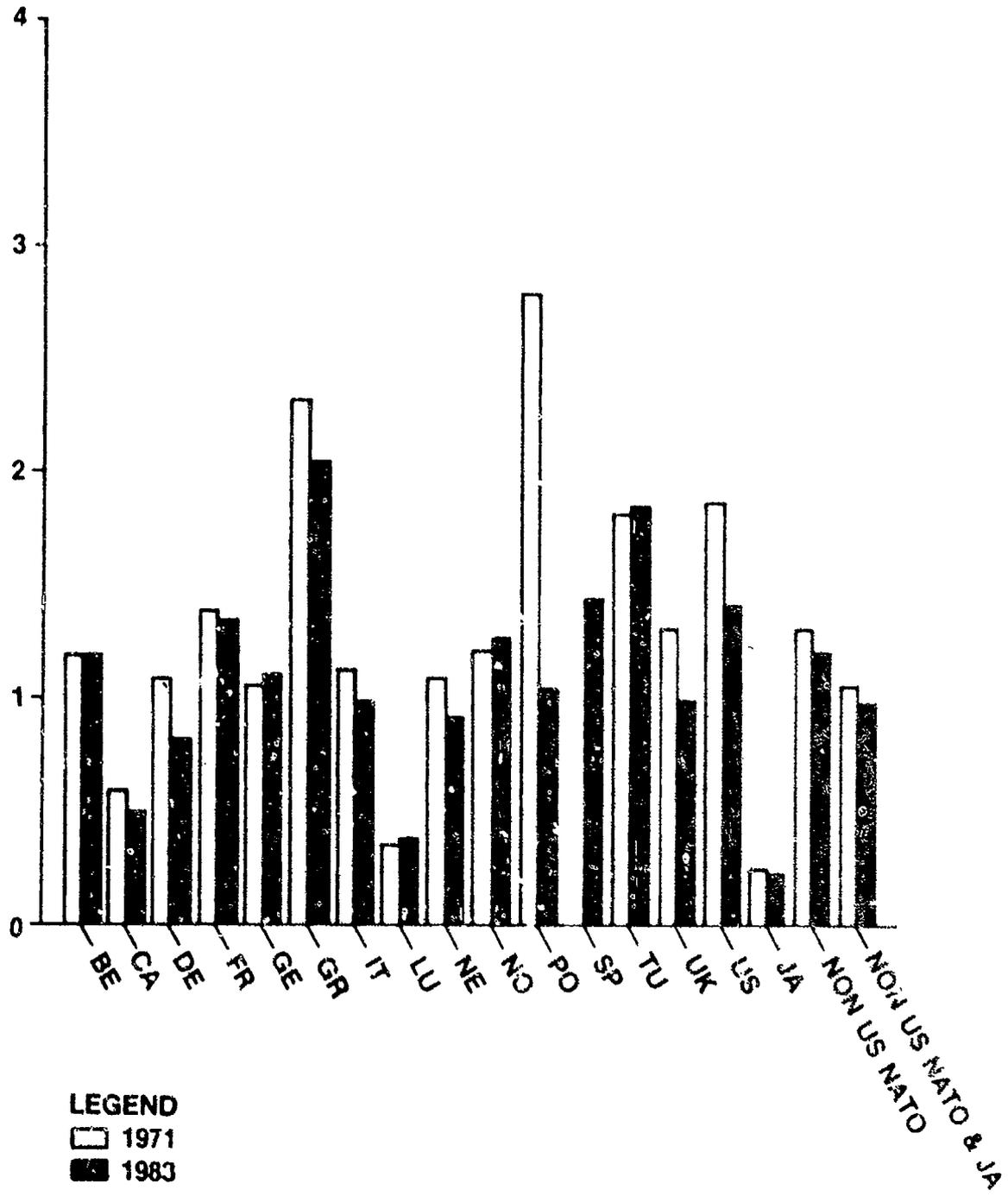


# TOTAL ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER AS A % OF TOTAL POPULATION



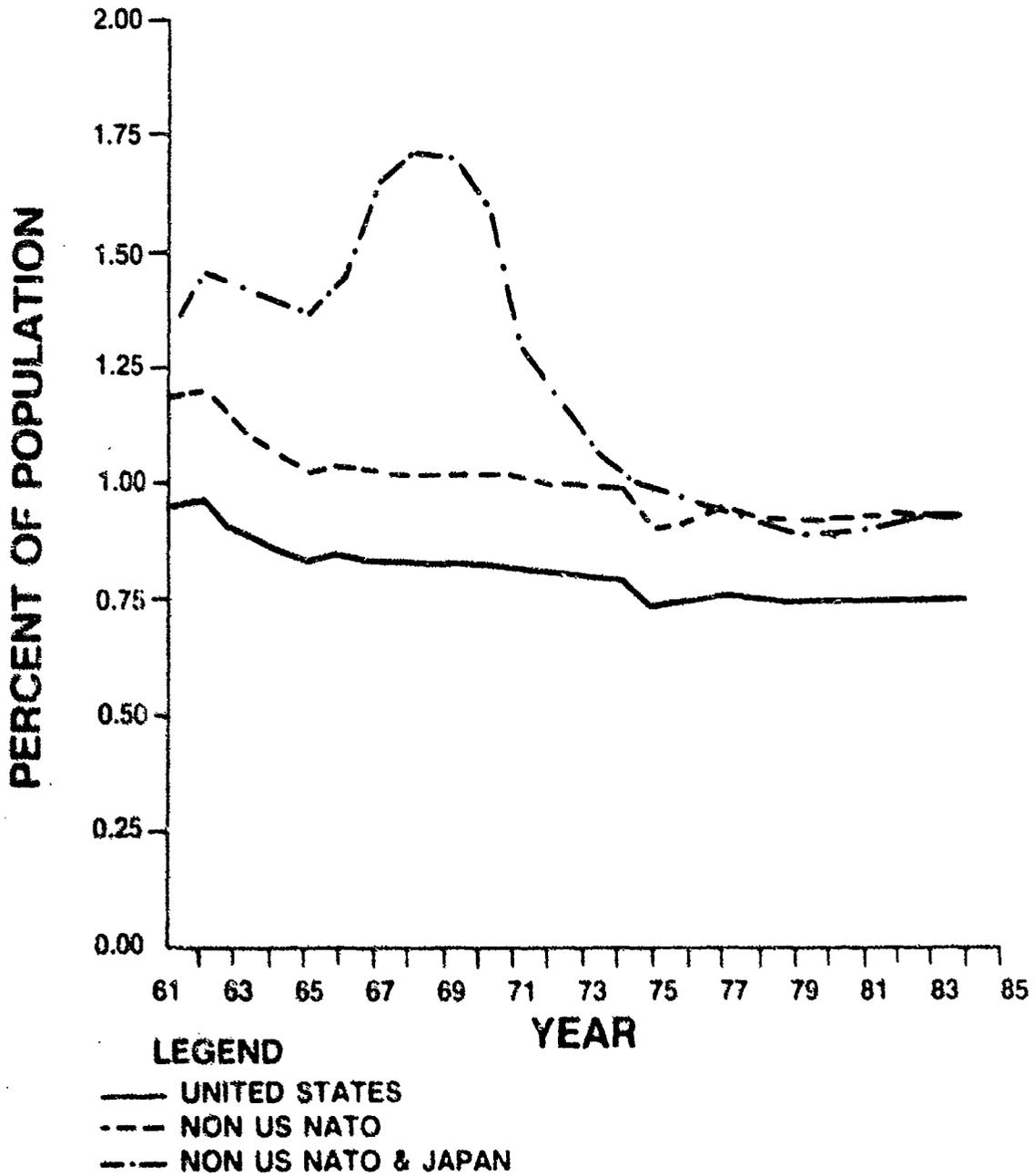
**LEGEND**  
- · - UNITED STATES  
- - - NON US NATO  
— NON US NATO & JAPAN

# MILITARY AND CIVILIAN MANPOWER AS A PERCENT OF POPULATION

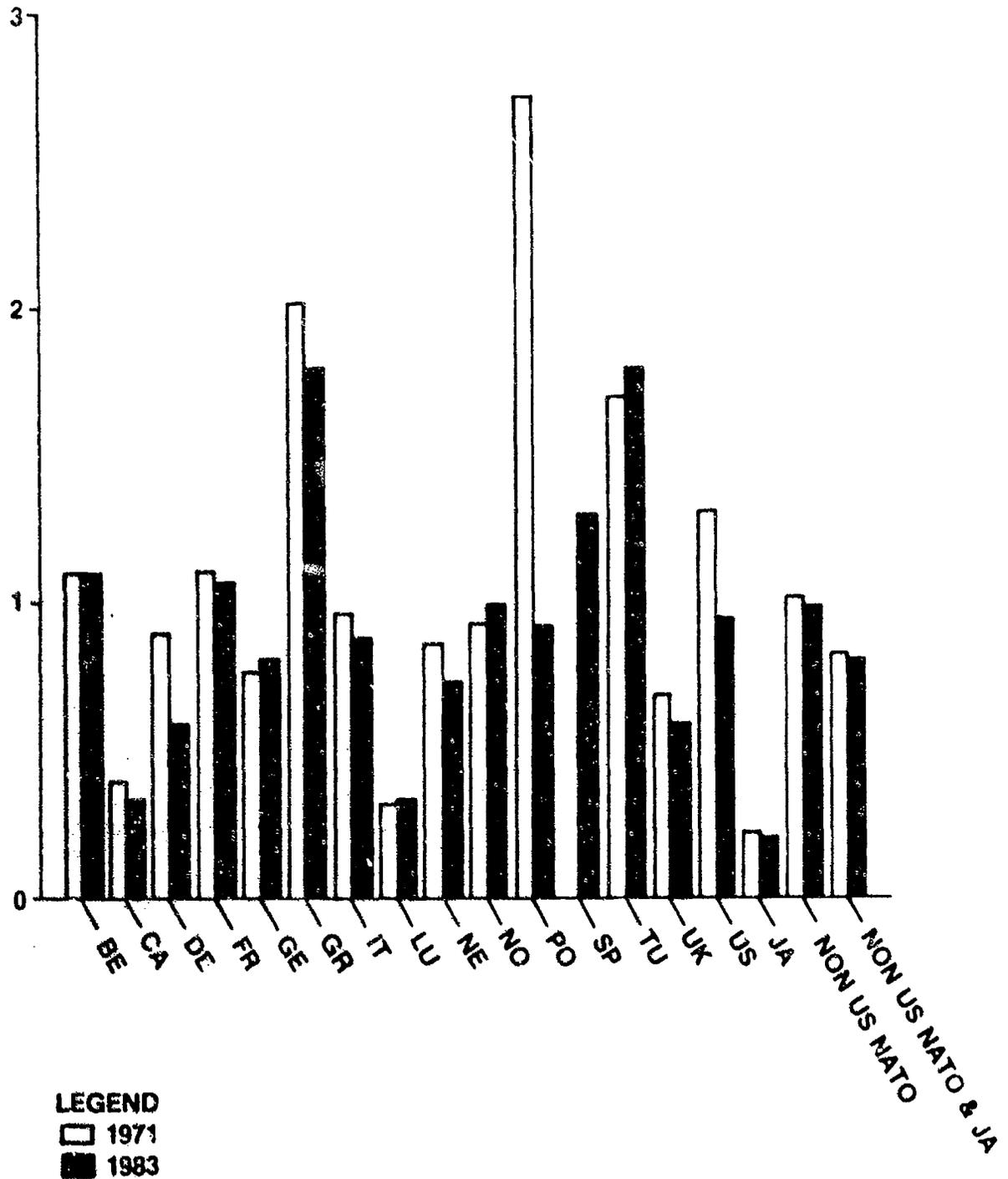


# TOTAL ACTIVE DUTY MILITARY MANPOWER

AS A % OF TOTAL POPULATION



# MILITARY MANPOWER AS A PERCENT OF POPULATION



Spain (1.4 percent) and ahead of France (1.3 percent). Germany, the Netherlands, and the United Kingdom all fall below the non-US NATO average of 1.19 percent. In reviewing Germany's relatively low position, it is important to remember that the size of the German active-duty force is limited by postwar treaties.

An examination of the trends reveals a 28 percent decline in the US share between 1971 and 1979, followed by a small increase (of around 3 percent) between 1979 and 1983—resulting in a 25 percent net decline for 1971–83. The weighted average percentage for all of the non-US NATO nations combined fell approximately 10 percent between 1971 and 1975, but since the mid-1970s has remained generally level. The figures for Japan follow a pattern similar to that of the non-US NATO allies.

The United Kingdom's 24 percent decline is largely due to a draw-down in British forces outside of Europe during the late 1960s and early 1970s, whereas Portugal's sharp decrease—which caused its ranking to fall from first in 1971 to ninth in 1982—can be attributed to its massive withdrawal from Africa during the early 1970s.

Active-Duty Military and Civilian Manpower and Committed Reserves as a Percentage of Population (Chart II-18). The results change considerably for several nations when reserve manpower is included in the calculation. By this measure, Norway and Denmark rank first and seventh (with percentages of 5.8 and 2.2, respectively), as against fourth and tenth if only active manpower is considered.

#### Output-Oriented Indicators (Ground, Naval and Air Forces)

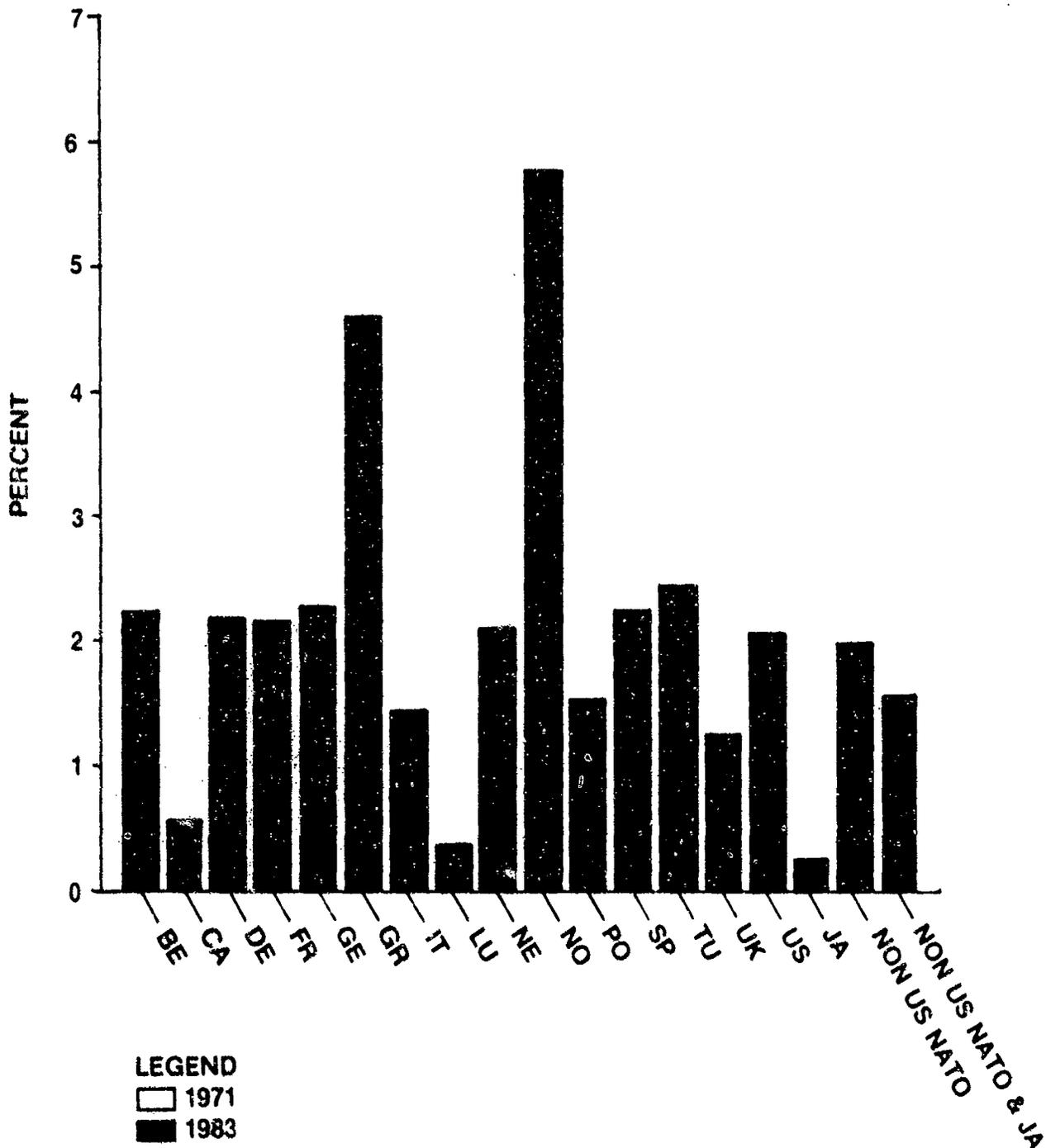
To expand the focus of our review of US and allied efforts, the following material portrays selected output-oriented indicators of ground, naval and air forces.

It is important to emphasize that there are not single, comprehensive output indicators that fully reflect all of the factors that constitute military capability. The material presented here is intended to provide a thumbnail sketch of each country's force contributions by highlighting a few key static indicators that are widely accepted within the defense analysis community. The data used for these displays are based largely on US estimates and incorporate country responses to the NATO Defense Planning Questionnaire for those nations that participate in NATO's coordinated defense planning process.

#### Ground Forces

Armored Division Equivalents (ADE). The ADE is a relative measure of effectiveness of ground forces based on quantity and quality of major weapons.

# MILITARY AND CIVILIAN MANPOWER AND COMMITTED RESERVES AS A PERCENT OF POPULATION 1983



This measure is an improvement over simple counts of combat units and weapons; however, it does not take into account such factors as ammunition availability, logistical support, training, communications and morale. At the present time there is no single indicator that incorporates these additional factors.

As Chart II-19 shows, the non-US nations combined account for 61 percent of the ADEs of the NATO members and Japan while the United States supplies the remaining. The allied contribution drops to 58 percent if Japan is excluded.

We have also examined current holdings of the NATO nations in two categories of ground forces equipment—main battle tanks and artillery.

The most striking feature of this comparison is the large total volume of equipment maintained by the non-US nations as a whole relative to the US holdings. The holdings of all of the non-US nations combined exceed those of the United States by roughly 34 percent for tanks and by 123 percent for artillery.

### Naval Force Tonnage

Tonnage is a static measure of aggregate fleet size. For most purposes, it provides a more meaningful basis for comparison than do simple tallies of ships. The use of tonnage alone does not, however, provide any indication of the numbers of weapons aboard ships, or of the weapons' effectiveness or reliability. Nor does the measure take account of the less tangible ingredients of combat effectiveness, such as personnel training and morale. Consequently, tonnage data should be considered as giving only a rough indication of naval capability.

Chart II-20 shows the aggregate tonnage of the US, non-US NATO, and Japanese navies, excluding strategic missile submarines. The US contribution is 63 percent, compared with 33 percent for the non-US NATO allies and 37 percent for the non-US NATO nations and Japan.

It should be noted these data include for the US some tasks that allied navies do not customarily perform, (e.g., fleet support, sealift, and amphibious operations). When only major surface combatants—the ship types more closely associated with the primary roles of allied navies—are included, the picture changes somewhat (see Chart II-21). By this measure, the US share declines to 53 percent, compared with 41 percent for the non-US NATO nations (and 47 percent if Japan is included).

CHART II-19

# ARMORED DIVISION EQUIVALENTS (ADE'S)

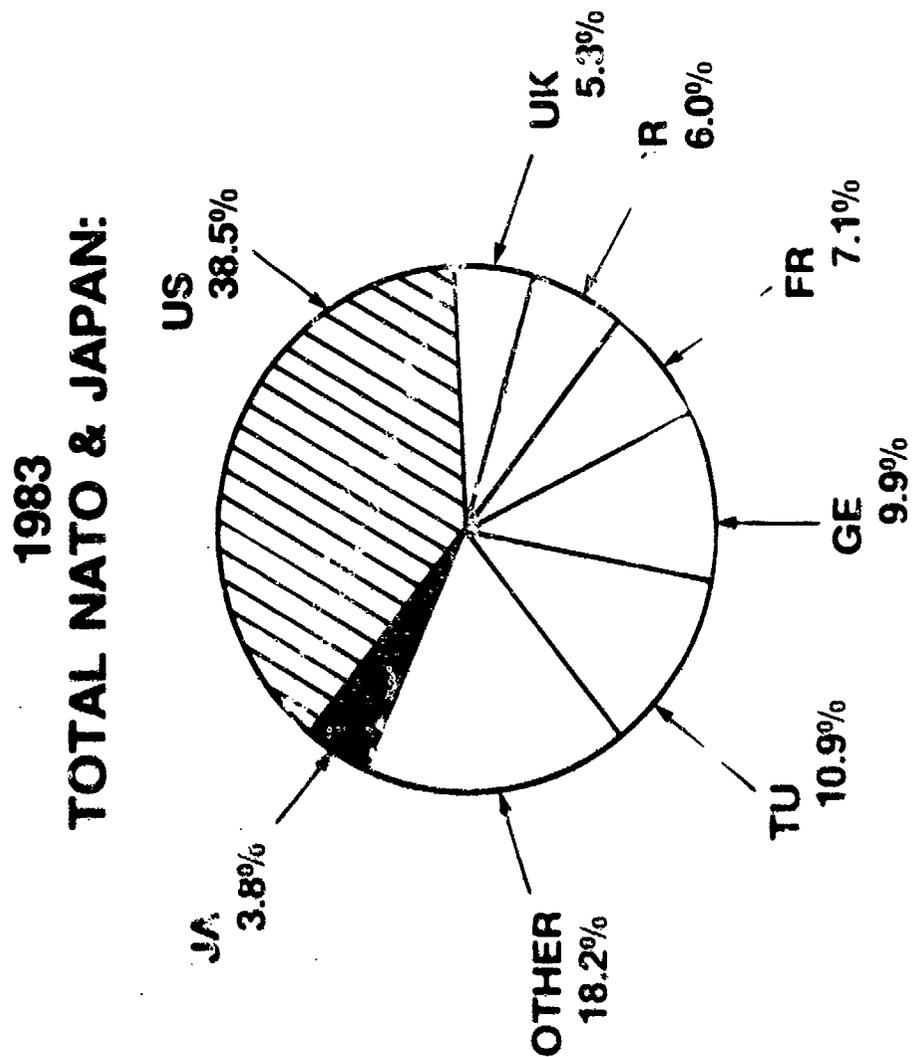
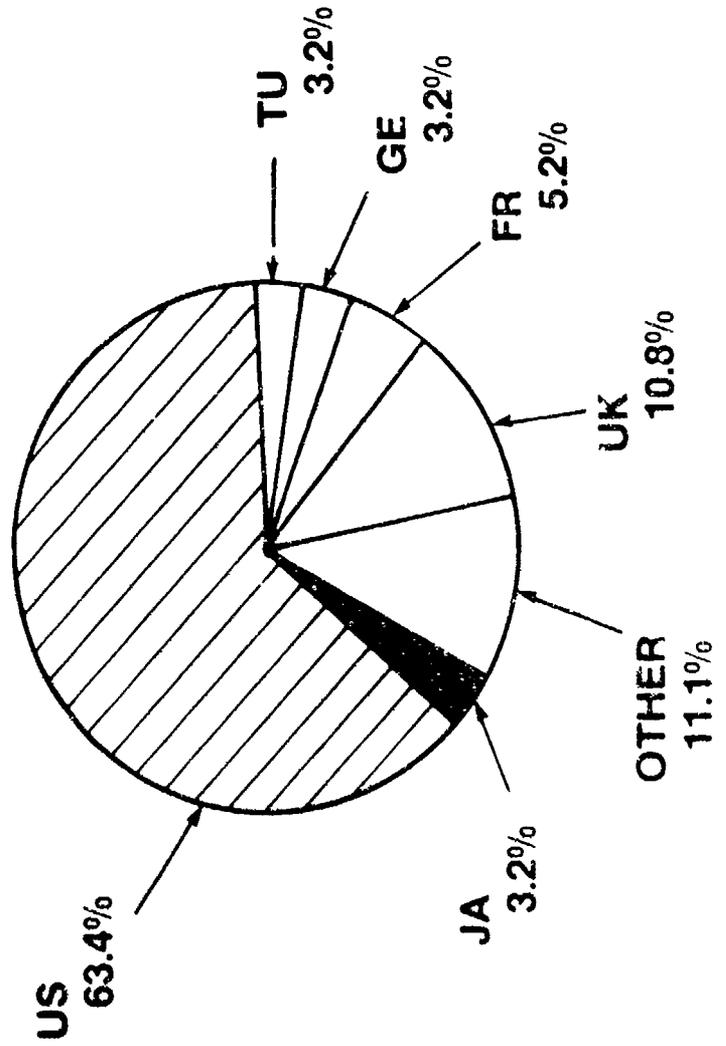


CHART II-20

# TOTAL NAVAL FORCE TONNAGE (ALL SHIPS LESS STRATEGIC SUBMARINES) (IN THOUSANDS)

(INCLUDING SPAIN)

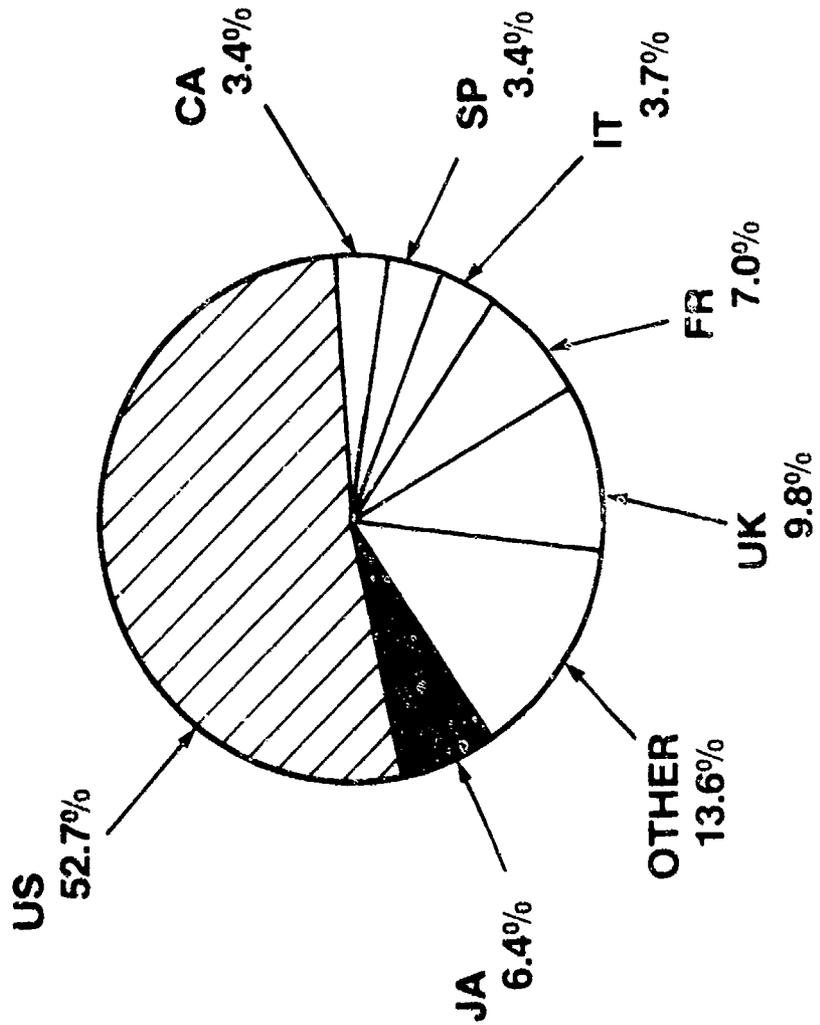
1983  
TOTAL NATO & JAPAN:



# TOTAL NAVAL FORCE TONNAGE (PRINCIPAL SURFACE COMBATANTS)

(INCLUDING SPAIN)

1983  
TOTAL NATO & JAPAN:



An analysis of the modernization programs being undertaken by the US and allied navies shows the amount of "old" tonnage is heavily influenced by the aging Greek and Turkish fleets, which together contribute about one-third of the tonnage in that subcategory. When just surface combatants are counted, Canada, Greece, and Turkey contribute slightly less than one half of the nonmodernized tonnage in the non-US NATO fleets. That picture should change over the next decade, however, as all three countries have ambitious modernization programs under way.

France and Germany are also in the process of replacing those portions of their fleets built in the 1950s and early 1960s. As a rule, the allies tend to keep their ships--especially support, amphibious, and mine warfare vessels--longer than the United States does, replacing them only when block obsolescence affects several classes.

#### Air Force Tactical Combat Aircraft

Each ally's share of the total number of fighter/interceptor, attack, bomber, and tactical reconnaissance aircraft in the NATO and Japanese inventories is shown in Chart II-22. Those trainer aircraft that are considered to be combat capable are included in the equipment counts; electronic warfare aircraft are not.

Although no single non-US nation accounts for more than 10 percent of the NATO and Japan total, the combined holdings of these countries represent 58 percent of the total. Excluding Japan, the non-US NATO share drops slightly, to 54 percent.

With 45 percent of its inventory consisting of new-generation aircraft and the remaining 55 percent comprising current-generation equipment, the US Air Force is further along in its aircraft modernization program than are the air forces of the other NATO members. For those countries, new-generation aircraft constitute 18 percent of their combined aircraft holdings, whereas current-generation models account for 67 percent and older planes for the remaining 15 percent. That picture, too, will change over the coming years, as the major modernization programs now under way within most of the allied air forces near completion. As a result, by the mid- to late 1980s, new-generation aircraft will constitute a sizable share of the allied inventory with few or no older-model planes remaining.

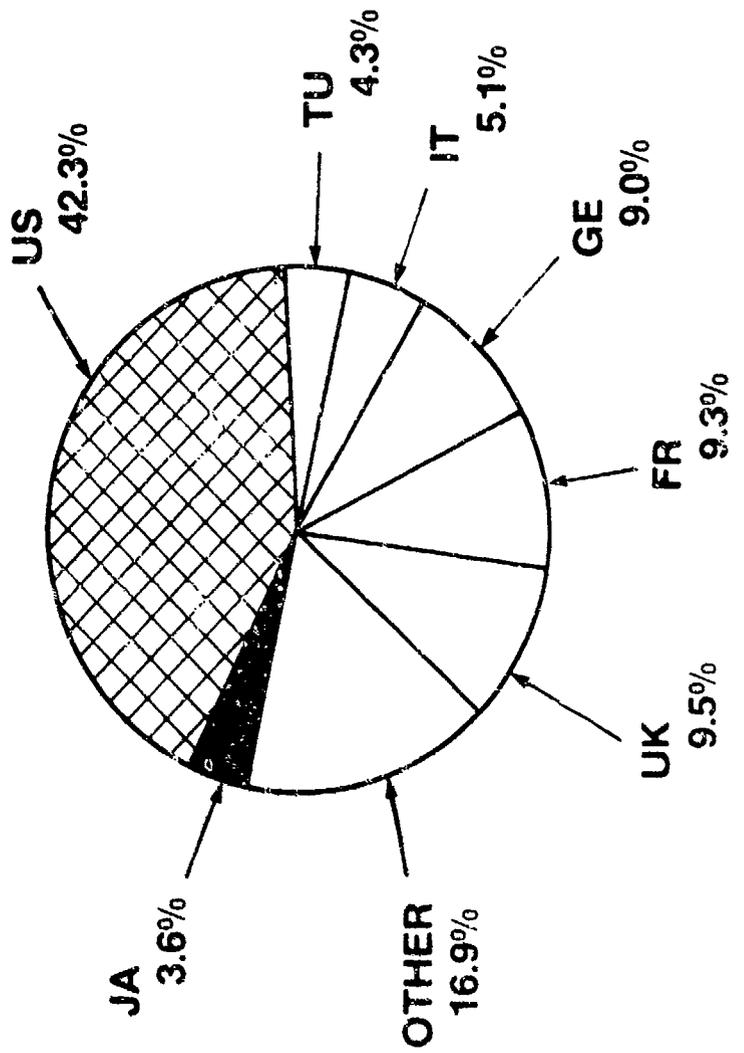
#### ALLIED PERFORMANCE IN ACHIEVING NATO'S THREE PERCENT REAL GROWTH GOAL

The following paragraphs address the Congress' request for estimates of the rate of real growth in defense spending achieved by each of the NATO allies in recent years. Table II-23 presents country-by-country estimates of the percentage change in real defense spending for 1981 through 1985.

CHART II-22

# TOTAL AIR FORCE COMBAT AIRCRAFT

1983  
TOTAL NATO & JAPAN:



Six of the NATO allies--Canada, France, Germany, Greece, Luxembourg, and the Netherlands--had increases in the region of 3 percent or more in 1981, while Norway came close with a 2.7 percent increase. (NATO interprets "in the region of three percent" as being an increase of 2.8 percent or greater.) Six nations reported such increases in 1982: Canada, Italy, Luxembourg, Norway, Turkey, and the United Kingdom. Four nations--Canada, Luxembourg, Norway, and Spain--were in the three percent range in 1983.

Preliminary estimates for 1984 indicate that eight or nine countries--Belgium, Canada, Greece, Italy, Luxembourg, the Netherlands, Turkey, the United Kingdom and possibly Norway--achieved increases in the 3 percent range.

Two points are worthy of special emphasis. First, it should be noted that for two of the four years surveyed here (1981 and 1984) the non-US NATO allies as a group achieved, or are tentatively projected to achieve, increases in the vicinity of 3 percent. Second, although the real increases in US spending exceed the average growth rates of allied defense programs over the 1981-85 period, the high US growth rates in recent years reflect in part an effort to compensate for the real decreases and low growth rates we experienced during most of the 1970s, when our allies were achieving steady real increases. Accordingly, US cumulative real defense spending for the early 1970s through the mid-1980s was the same amount it would have been if US defense spending had declined by a uniform annual rate of roughly 1 to 2 percent each year during that period. A comparable computation for the non-US allies results in a uniform annual rate of plus 2 percent.

# GROWTH IN TOTAL DEFENSE SPENDING OF NATO COUNTRIES

(PERCENT CHANGE FROM PREVIOUS YEAR IN CONSTANT PRICES)  
(EXCLUDING INFLATION)

	1981	1982	1983	1984 (EST)
BELGIUM	0.9	-3.3	-1.2	3.1
CANADA	3.1	4.9	6.9	6.0
DENMARK	0.6	-0.3	0.8	-0.6
FRANCE	3.9 <sup>a/</sup>	1.4 <sup>a/</sup>	1.5 <sup>a/</sup>	-1.1 <sup>a/</sup>
GERMANY	3.2	-0.9	0.9	0.2/0.9
GREECE	22.8	-1.0	-8.2	8.2
ITALY	-0.5	3.1	2.5	4.0/7.2
LUXEMBOURG	4.8	3.9	3.5	3.1
NETHERLANDS	4.2	1.6	0.3	4.7
NORWAY	2.7	4.1	4.0	1.0/3.5
PORTUGAL	1.2	0.6	-2.5	-5.7/-2.6
SPAIN	1.1	2.3	4.2 <sup>a/</sup>	NA
TURKEY	1.8	4.6	-4.4	3.2
UNITED KINGDOM	1.4	6.0	0.5	6.7
UNITED STATES	4.7	7.6	7.4	4.8
NON-US TOTAL <sup>b</sup>				
EXCLUDING SPAIN	2.9	2.3	1.1	2.7/3.3
INCLUDING SPAIN	2.8	2.3	1.2	
NATO TOTAL <sup>b</sup>				
EXCLUDING SPAIN	4.1	5.8	5.3	4.2/4.3
INCLUDING SPAIN	4.0	5.7	5.3	

NOTES: THE SPENDING TOTALS FROM WHICH THESE FIGURES WERE DERIVED REFLECT NATO'S DEFINITION OF DEFENSE SPENDING AND ARE THE BEST ESTIMATES THAT CAN BE MADE ON THE BASIS OF INFORMATION NOW AVAILABLE.

NATIONAL FISCAL YEARS CORRESPOND TO CALENDAR YEARS EXCEPT FOR THOSE OF CANADA AND THE UNITED KINGDOM, WHICH RUN FROM APRIL TO MARCH, AND THE UNITED STATES, WHICH BEGINS ITS FISCAL YEARS IN OCTOBER. TURKISH DATA THROUGH 1981 ARE BASED ON A MARCH-FEBRUARY FISCAL YEAR; IN 1983, TURKEY CONVERTED TO A JANUARY-DECEMBER FISCAL YEAR.

<sup>a</sup>DOD ESTIMATE.

<sup>b</sup>WEIGHTED AVERAGE GROWTH RATES DEVELOPED USING CONSTANT 1983 PRICES AND 1983 EXCHANGE RATES.

### III. EFFORTS TO ELIMINATE DISPARITIES AND TO IMPROVE ALLIED PERFORMANCE

In May 1984, NATO Defense Ministers adopted NATO force goals for the six-year period, 1985-90. If fully implemented, these NATO force goals will not only improve Alliance conventional defense capabilities, but they will enhance allied burdensharing performance. The communiqués from the meetings of Defense Ministers in both May and December 1984 contained forceful language in support of commitments to Alliance solidarity and conventional defense improvements. The December communiqué announced a substantial increase in NATO common infrastructure funding (with special emphasis on facilities for US tactical reinforcing aircraft), sustainability (for example, commitments to increase war reserve stocks of ammunition and missiles), and adoption of force goals which are compensatory measures for possible US out-of-area operations. In addition, in December 1984, Defense Ministers called for an Alliance effort to improve conventional defense capabilities and mandated the Secretary General and the DPC Permanent Representatives to come forward with proposals for this effort.

During 1984, NATO was seized with several matters relating directly to burdensharing. NATO continued to follow through on its 1979 dual-track decision on LRINF, which was a signal burdensharing success for the Alliance. NATO infrastructure facilities for LRINF units were constructed and the initial GLOM units were deployed. In light of these positive developments, the allies turned their attention toward the need to improve NATO's conventional defense posture.

NATO also continued to make progress on two major initiatives relating to NATO burdensharing: "emerging technologies" and "compensatory measures for out-of-area deployments."

Also in Spring 1984, the Executive Working Group (EWG) completed its Second Annual Report on the "Coordination of NATO Defense Planning (CDP)." This Report included follow-up developments in four of the six key areas for Ministerial attention which were contained in the 1983 CDP Report, and focused on "Electronic Warfare (EW)", "Identification Friend or Foe (IFF)", and "Logistics Planning in support of the Rapid Reinforcement Plan (RRP)", as areas which require high-level attention in all NATO nations, in order to improve NATO's conventional defenses.

#### BURDENSARING AND NATO DEFENSE PLANNING

Annually, each allied nation submits a reply to the NATO Defense Planning Questionnaire (DPQ) which covers its five-year defense plan. The content of the DPQ itself is reviewed annually, and the US has continually pressed for the DPQ to call for an increasingly detailed and revealing report of both the inputs and the outputs related to allied defense efforts.

Upon the receipt of allied replies to the DPQ, which are due on 31 July of each year, the US Mission to NATO, in coordination with the US Delegation to the Military Committee (USDELMC), assesses each nation's efforts and proposes an appropriate approach for the US to take during the Defense Review Committee (DRC) multilateral reviews of national defense plans. These multilateral reviews offer significant opportunities to influence allied burdensharing performance. Following the Defense Review, the DRC prepares a General Report on Defense for Ministers, which is a useful vehicle for calling attention to the need for greater effort by all NATO nations.

In the spring of each even-numbered year, NATO adopts a new set of force goals, which are formal targets for improvement of military forces committed to the Alliance. These force goals are drawn from draft force proposals prepared for each member nation (less France, Spain, and Iceland) by the Major NATO Commanders (MNCs) and approved by the NATO Military Committee. The Defense Review Committee conducts multilateral examinations of the set of proposals for each individual nation and forwards the resulting set of draft force goals to the Permanent Representatives who then formally adopt them on behalf of Ministers as national planning objectives.

In Spring 1984, Defense Ministers adopted NATO force goals for the period 1985-90, although these force goals -- and they are "goals," not commitments -- do not seek all of the force improvements that the MNC's would like to have the NATO nations provide. The force goal packages for each nation normally call for each nation to provide annual real defense spending increases "in the region of three percent or more." If nations accomplish these NATO force goals, allied burdensharing will be improved.

In Autumn 1984, Defense Ministers adopted a supplemental set of force goals to compensate for possible US force deployments to Southwest Asia. This was an important step forward in Alliance defense planning and in NATO burdensharing. These supplemental goals are only a first step, however. Most of the supplemental force goals call for feasibility studies with a completion date of end-1985, in order to identify specific measures to achieve recommended improvements. The task then remains to anchor those measures in national defense plans and to expedite their actual implementation.

NUCLEAR PLANNING GROUP. The NATO Nuclear Planning Group (NPG) includes the Defense Ministers of all Alliance countries, less France and Iceland. In their semiannual meetings, NPG Ministers have called attention to the importance of sharing the risks and costs of maintaining Alliance nuclear deterrent forces. Furthermore, Ministers have reaffirmed the need to maintain deterrent forces whose delivery systems and warheads are survivable, responsive and effective. NPG communiqués and other NATO documents reflect this attention. On a permanent basis, the NPG is represented in NATO Headquarters by the NPG Staff Group which performs the day-to-day work of NPG Ministers, including work on documents and reports designed to enhance the understanding by allied governments and their publics of the necessity to share the risks and costs of maintaining the nuclear deterrent.

The continuing implementation of the December 12, 1979 dual-track decision is perhaps the most obvious example of the willingness of NATO nations to share the considerable political costs as well as the military risks associated with the modernization of NATO's LPINF forces. In particular, the governments of basing countries have been subjected to intense political pressure from elements of their own publics as well as from foreign governments and peace groups to alter their support for deployment absent a concrete negotiated result obviating the need for such deployment. Without the steadfast support of these governments in particular, deployments would not have been possible.

#### COMMONLY-FUNDED PROGRAMS

In NATO, common funding and cost-sharing in various multinational forums go hand-in-hand with the broadest possible cooperation for common defense. The long adopted theme of one country, one vote (despite unequal cost-shares) is the basis for unanimous agreements for common funding by the whole membership. With few exceptions, this common funding theme applies to the NATO Infrastructure Program, the program for Operations and Maintenance (O&M) of the NATO Military Headquarters, agencies, and military common use facilities, and the NATO Civil Budget for O&M of the NATO Headquarters, the NATO building and civil programs.

In the early 1950's, political decisions which established the widely varying NATO country cost-shares of the common funding programs were heavily influenced by economic indications of the comparative abilities of the nations to contribute. More recently, our allies have increased their contributions to such programs beyond their proportion of NATO's GNP (or GDP) in recognition of greater US expenditures on other defense programs.

Infrastructure Program. The infrastructure program finances the capital costs of commonly funded and standardized military facilities for wartime common use, for joint use by two or more countries, or by NATO-committed forces of one country. The facilities produced by this program, since 1950, are the most tangible evidence of NATO cooperation. Its benefits, in addition to the security aspects, are further shared by all participating countries in terms of actual use by their forces, economic gains from their presence and operations, and commercially through competition for the labor-intensive construction work and the high value communications-electronic equipment contracts involved.

Originally the US share was over 43 percent. At present, the US share is about 28 percent and 12 other countries provide the remaining 72 percent. However, France joins in funding air defense projects, and the US share is then about 24 percent with the other allies paying the remaining 76 percent. The country cost-sharing percentages are normally reaffirmed or adjusted every five or six years when NATO Defense Ministers decide upon multiyear program levels.

For the five year cost sharing period 1980-1984, the nations initially agreed to a fund ceiling of one billion infrastructure accounting units (IAU) which represented about two-thirds of the total identified requirement. In 1980, the IAU was valued at \$4.71. Subsequently, the allies agreed to an additional IAU 74 million to cover the construction costs of the GLCM deployment. In 1983, another IAU 150 million was added to the program to accommodate some of the large backlog of unfunded requirements. Coupled with the French contribution of IAU 19 million, the total for the period reached IAU 1.243 billion. In spite of these additions, many infrastructure requirements remained unprogrammed, partially due to the effects of inflation.

In December 1984, the NATO nations agreed on a new six year (1985-1990) infrastructure ceiling of IAU 3.0 billion. Although this fell somewhat short of the US goal of IAU 3.8B, it nonetheless represented a significant increase in funding for this important program - about 55 percent in real terms over the previous period. Many other nations also supported the higher ceiling but believed that NATO could not, initially, implement more than IAU 3.0B of construction. Our agreement to the lower funding level was given in return for an agreement to review the program in 1987-88 to determine if implementation has improved enough to warrant an increase in infrastructure funds. While our cost share has remained under 28 percent, the IAU is now valued at \$2.35 due to the strong dollar in Europe which makes our participation in the program even more favorable.

Within this substantially larger program, most higher priority US infrastructure requirements can be satisfied to include: essential airfield facilities for US reinforcement aircraft; shelters for reinforcement aircraft; completion of the PATRIOT missile deployment; construction of fuel storage and distribution facilities in Iceland; storage and airfield facilities in Norway to support a US Marine Amphibious brigade; storage requirements associated with the US/FRG wartime host nation support agreement; and facilities for US combat helicopters.

Military Budget. The second common funding category, for recurring operations and maintenance (O&M), covers cost-sharing for the International Military Headquarters and agencies as well as peacetime O&M utilization costs of certain infrastructure-built systems and facilities (communication, POL Pipeline, War Headquarters, etc.), which are totally for NATO common use. The US share of this NATO military budget is currently about \$100M yearly. It is important to note, however, that most infrastructure-built facilities are for the use of one or more NATO country's committed forces. Each using country pays unilaterally for all such O&M costs for each facility.

Civil Budget. The NATO civil budget provides for the O&M costs of the NATO Headquarters building in Brussels, Belgium, its civilian personnel, and a few NATO nonmilitary activities. This program is financed from nondefense budgets by all NATO countries. The current US share of 23.4 percent is budgeted by the Department of State. The total civil budget was about \$67M in 1982.

NATO Science Program. The NATO Science Program is a jointly-funded program which promotes scientific research through grants and fellowships to scientists from Alliance nations. The research is generally in a hard

science. One element of the program, "Science for Stability," is designed to fund lower-technology projects in the Southern Region of the Alliance. These funds go generally to Greece, Turkey, and Portugal. With the entry of Spain into the Alliance, some funds may be spent there. The aim of the science activities is more to promote a bond among Alliance members and to exchange information, than to do research at the cutting edge of any particular technology. The cost of the Science Program is approximately \$12 million and the "Science for Stability" Program has a budget of about \$2 million.

Von Karman Institute (VKI). The VKI is a post-graduate research center in fluid dynamics. It is located in Waterloo, Belgium, and has an international reputation as a research center in that field. It is funded by 13 members of the Alliance and has a staff of students and instructors nominated by the supporting member nations. The US share (\$250,000) is contributed in its entirety by the US Air Force. The Air Force is very interested in the programs of the Institute and in continuation of its contribution.

All categories of NATO cost-sharing have served the US well. While total US defense expenditures continue to exceed those of all the other NATO countries together, the US contribution to all of the common funding programs (i.e., infrastructure, military budget, civil budget) averages less than 30 percent.

Other Commonly-Funded Programs. There have been numerous other NATO cooperatively-financed joint ventures. Their contributions vary and involve only those countries which have special reasons to participate and share the costs. These include consortia financing programs, which usually involve coproduction or joint service ventures. They are developed by the participating countries and appropriately endorsed by NATO. Country inputs equate directly to the products for its benefit that each country expects. This consortium approach has been used: (a) to procure, store and distribute spares, replacement components and supplies, and (b) to operate installations that serve only directly participating/paying countries (examples: NATO Maintenance and Supply Agency (NAMSA) in Luxembourg, and the NATO HAWK Production and Logistics Organization (NHPLO) in Paris, France). Special innovations are adopted for special projects, like the multicountry funding of both capital costs and O&M costs for the NATO Airborne Early Warning and Control System (AEW&CS). Since the cost-sharing percentages of country contributions to such ventures are different from those established for common funding programs, they are administered as separate entities.

#### ARMAMENTS COOPERATION

Our armaments cooperation activities focus on equitable burdensharing with Alliance and other countries with whom we share security interests. Since 1957, when initial agreement was achieved on NATO coproduction programs, there have been over 200 activities in the form of bilateral and multilateral codevelopment, coproduction, and licensed production projects; Memoranda of Understanding and Family of Weapons projects; dual-production and industry-to-industry efforts; and outright weapons sales.

The broad infrastructure for cooperation continues to expand as more industry-to-industry relationships are developed. The Multiple-Launch Rocket System (MLRS) is an example of a US system with early European involvement. The AV-8B Harrier is an example of a European system with US industrial team arrangements for coproduction. The three nation Rolling Airframe Missile (RAM) and the four nation terminal guidance warhead for the MLRS program are examples of cooperative developments involving technology exchanges of advanced technologies.

Significant improvements have been made in NATO's air defense coverage through a joint effort with the Congress. Innovative agreements have been signed with Germany for acquisition of the PATRIOT air defense system and point defense of airfields with the European ROLAND system. The Netherlands and the US have entered into a similar innovative cooperative arrangement for The Netherlands' PATRIOT. Discussions with Belgium are now underway as well. This will result in enhanced effectiveness and interoperability in NATO's air defense.

The Emerging Technologies Initiative, now endorsed by all NATO Ministers, offers a cogent demonstration of our determination to increase NATO's conventional defense capabilities through armaments cooperation. This initiative focuses on near-term efforts to field military equipment which would make a substantial difference in the ability of alliance forces to repel an aggressor. A key feature of the Emerging Technologies Initiative is that opportunities are provided for early entry into high-technology programs. We must share technology to make the Emerging Technologies Initiative succeed, but the technology that is shared must be protected from compromise through strengthened safeguards. This initiative to exploit emerging technologies to improve conventional defense is proceeding in NATO. Specifically, it will focus Alliance resources on an initial small number of programs endorsed by NATO. Additional candidate programs have been proposed by both the US and IEPG nations and are currently under review. This NATO-wide effort is expected to provide significant conventional capabilities within this decade, e.g., in forward defense, attack of follow-on forces, counterair, C<sup>3</sup>I, and C<sup>3</sup> countermeasures.

We are also actively pursuing cooperation with Japan and other allied and friendly nations on a bilateral basis. Our focus is upon defined forces and missions which meet US and allied objectives collectively. We are working to understand both of our needs in order to most effectively use the resources of all. Last year, we negotiated an agreement with Japan to facilitate the flow of their technology to the US with the aim of utilizing it to meet our mutual broad-based defense mission needs. We have made continued progress in establishing balanced armaments cooperation with Japan. The Defense Science Board (DSB) has conducted an assessment of the potential and means for enhancing and intensive assessment of two critical technological areas to determine whether increased US-Japan cooperation in these selected

areas would be in the mutual interest of the US and Japan. The Defense Policy Advisory Committee on Trade (DPACT) is preparing an assessment of increased armaments cooperation from the perspectives of both trade and defense. These efforts are focused within the DoD to ensure our overall program of armaments cooperation is balanced and in our national interest.

On an individual basis many of these armaments cooperation projects can be considered successful as they have achieved a measure of standardization and interoperability and an exchange and infusion of technology into weapons systems that has enhanced Alliance capabilities. But NATO's cooperative efforts to date have not produced that degree of weapons modernization and interoperability, equipment availability and combat readiness needed to offset the numerical superiority and increasing sophistication of the Warsaw Pact forces, nor enough combat sustainability to enable NATO's conventional forces to resist a Warsaw Pact attack for more than a limited time.

Cooperative acquisition of armaments, through equitable burdensharing, is a key element of efforts to increase the conventional capabilities of the Alliance. Armaments cooperation can enhance NATO's industrial base by advancing technology and high-technology skills of the labor force. This opportunity will provide tangible incentives for the Europeans to modernize their conventional force capabilities. We must act, and the Europeans must act, to make armaments cooperation possible. A recent DSB study of industry-to-industry armaments cooperation found that cooperation is possible — much of the regional industrial infrastructure is already in place — but clear, unambiguous and consistent government support for arms cooperation is essential.

#### INFORMATION PROGRAM

The US Mission to NATO (USNATO) and American Embassies in NATO capitals conduct active Public Information Programs in support of US Government political and security objectives. Senior Foreign Service officers, including the Ambassador, meet regularly with European and American news correspondents. They give public presentations and participate in seminars and symposiums on defense issues throughout Western Europe and the US. Each year USNATO sponsors two major "Regional" seminars, which include opinion leaders from throughout Western Europe and the US, on the most urgent security issues of the day. Regular "Euronet" satellite press conferences on defense and foreign policy themes are offered to the large International Press Corps in Brussels. The USNATO Ambassador and senior USNATO officers brief 35-to-40 groups of European opinion leaders invited to NATO Headquarters each year. This briefing program is managed jointly by USIA, USNATO and US Armed Forces Public Affairs Offices throughout Europe, in collaboration with US Embassies in fifteen NATO Capitals. In addition, USNATO officers explain the European-American defense relationship to thousands of official and non-official visitors to NATO Headquarters annually. Other US Embassies in NATO capitals and Tokyo conduct similar programs.

## BURDENSARING AND THE NATO MILITARY AUTHORITIES

The US Delegation to the Military Committee (USDELMC) represents the Joint Chiefs of Staff at NATO Headquarters, and the US Military Representative to the Military Committee (USMILREP) heads the USDELMC. As is the case for USNATO, USDELMC deals with the allies on a multilateral basis and is also involved in the burdensharing issue on many fronts.

Much of the work of the Military Committee parallels that of the North Atlantic Council and the Defense Planning Committee. Regular formal and informal meetings of Allied MILREPS, annual appraisals of allied military capabilities and performance and force proposals provide opportunities to deal with burdensharing issues.

## CIVIL EMERGENCY PLANNING

Civil emergency planning efforts continued during 1984, based on the agreed methodology for planning for reception and onward movement of reinforcements, in the area of obtaining civil support for SACEUR's Rapid Reinforcement Plan (RRP). Important elements include planning for essential improvements to reception facilities, and obtaining waivers to national legislation regarding the movement of hazardous goods.

Specific goals have been set and agreed to by European nations for the provision of civil passenger and cargo aircraft. There is only a minor shortfall in meeting these goals which for the most part can be attributed to fluctuations in the European airline industry.

All merchant shipping has been committed to NATO by member nations and of these approximately 600 have been identified specifically to support the Rapid Reinforcement Plan (RRP).

The shortfall in ammunition war reserve stocks has been highlighted by NATO Defense Ministers as one of the most serious deficiencies in the Alliance capability to fight a conventional war. In this connection, the Industrial Planning Committee (IPC), a subgroup of the SCEPC, will issue (in early 1985) an in-depth analysis of national capabilities to surge and to mobilize production of certain types of ammunition and missiles. The study should be useful to military planners in determining how to eliminate the present shortfall and to improve sustainability.

The Joint Civil Military Medical Group (JOMMG), a subgroup of the Civil Defense Committee (CDC) (which is a subgroup of the SCEPC), continues its studies on various aspects of civil/military medicine to promote better civil support for the military in the areas of disaster relief, preventive medicine, mass casualty assistance, training, and population movement.

### HOST NATION SUPPORT (HNS)

Progress continues to be made in refining logistic support arrangements, policies and procedures. USEUCOM Logistics Coordination Cells are currently operative in the UK, Belgium, Luxembourg, The Netherlands, Italy and Norway. Host Nation and Sending Nation Agreements are reviewed and refined and multinational planning is continually improving.

Implementation of the German Wartime Host Nation Support (WHNS) Agreement of April 15, 1982 continues. Following activation of several small units to support US Forces in Europe in 1983, the German Army has activated, during 1984, 22 German Bundeswehr reserve units dedicated to providing logistic support to US units. These units include: one transport battalion, one NBC defense battalion, one maintenance and service company, two security companies, two escort batteries and fifteen security platoons. The German Air Force has activated support elements for eight collocated operation bases (COBs) as well as eight airfield damage repair (ADR) squadrons. Additional units will be activated in 1985 as suitable facilities for equipment holding units become available. Implementation of the program to ultimately attain a German Bundeswehr reserve force of approximately 93,000 individuals to perform wartime critical logistics functions continues on schedule. In addition, technical agreements between Germany and the US for the provision of military support as well as support from German civilian resources are in the final stages of negotiation and are expected to be concluded in 1985.

Concurrent with the continuing implementation of the US-German WHNS Agreement, efforts on the part of USEUCOM to formalize host nation support requirements and plans with various nations in the NATO Southern and Northern Regions continue and are at various stages of completion ranging from preliminary negotiations to identifying specific needs of US forces to the completion of general agreements. In some instances, political considerations preclude discussion of logistics support arrangements at this time.

### JAPANESE PERFORMANCE TOWARD ACHIEVING SELF-DEFENSE (INCLUDING SEA-LANES TO 1,000 MILES)

Although the 1983-1987 Mid Term Defense Plan (MTDP) was designed to accomplish only the minimum force level requirements of Japan's 1976 National Defense Program Outline (NDPO) which was formulated prior to the formal assumption of the 1981 sea-lane defense mission, accomplishment of the NDPO standards would significantly increase the territorial, air, and sea-lane defense capabilities of the Self-Defense Forces. During 1984, the Defense Agency announced that the MTDP would not reach its goals and began to plan the follow-on 1986-1990 program. This formulation will continue until mid-1985.

At present Japan's Self-Defense Forces include:

- a. 13 Ground Self-Defense Force divisions, which are increasingly exercising and becoming interoperable with US Army and Marine Corps units;
- b. more than 50 destroyer-type vessels, the first squadrons of co-produced P-3C aircraft, and submarines. Some ships and aircraft participated in the multinational Exercise RIMPAC near Hawaii and in increasingly sophisticated exercises with the US Seventh Fleet in waters closer to Japan;
- c. more than 300 interceptor and support aircraft, including the first squadrons of co-produced F-15s which are interoperable with front line units of the US Air Force.

If all of these Japanese forces were sustainable in combat, which they presently are not, Japan's deterrent capability would be extremely significant, particularly due to their stationing so close to the major Soviet naval and air bases in Northeast Asia.

Although the need for improvements in the quality of the ground forces and in both quality and quantity of maritime and air inventories are recognized by Japanese defense experts, the Defense Agency is wisely attempting to make its present equipment more useful by giving emphasis to sustainability items at the same time it is bringing force levels up to higher standards. In the Cabinet approved budget for 1985, sustainability funding is increased by 28% over 1984 and if this trend continues in the new 1986-1990 MTDP, there will be a quantum jump in the self-defense capability of Japan's forces including its sea-lane capability.

The Soviet Union seemed to acknowledge the increasing credibility of Japanese-American defense cooperation in 1984 by conducting three press conferences in Tokyo specifically to criticize Japan's allowing TOMAHAWK - capable US ships to call at Japanese ports, the deployment of two squadrons of US F-16s at Misawa Air Base in Northern Japan from 1985-1987, the support costs of which are being funded significantly by the Japanese Government, and by Japan's policy of defending its sea-lanes to 1,000 miles.

Should Japan's self-defense capability continue to progress to attain the full capabilities to meet the goals which Japan set in 1981 as a part of a division of defense responsibilities with the US -- goals which Prime Minister Nakasone's support have made more credible -- and if the US continues to fulfill its strategic roles also clarified in 1981, the complications for Soviet planning in the Far East will increase, thereby significantly enhancing local Japanese security and regional deterrent stability in the Western Pacific.

## APPENDIX A

### ADDITIONAL BURDENSARING DATA

This appendix provides a detailed comparison of US and allied efforts for the following burdensharing indicators: gross domestic product (GDP), population, per capita GDP, per capita defense spending, and defense spending by resource category. Also included are tabular breakouts for all of the major burdensharing indicators discussed in Chapter II and this appendix.

This material supplements and should be examined in conjunction with the "Burdensharing Measures and Performance" section of Chapter II.

#### Gross Domestic Product (GDP)

Charts A-1 and A-2 show the total GDP of each of the NATO nations and Japan along with each nation's share of the NATO and Japan total. GDP reflects the total value of all goods and services produced within the national borders of a country in a given year and, thus, is a good indicator of the magnitude and rate of growth of a country's economy.

The magnitude of GDP varies greatly among the nations surveyed ranging in 1983 from \$3 billion for Luxembourg to \$3.3 trillion for the United States. As a percentage of the NATO and Japan total, the US share amounted to 44 percent in 1983—a decline of about two percentage points from the level of the early 1970s. <sup>1/</sup>

The US share of GDP is substantially greater than that of any other nation. Japan, the second-ranking nation, accounts for only 16 percent of the total and Germany, the third in rank, for 9 percent.

Among the non-US NATO nations, Germany, France, and to a lesser degree, the United Kingdom dominate the field, with Italy following close behind. Canada, Spain, the Netherlands and Belgium are clustered somewhat further down the scale, with shares in the 1 to 4 percent range, while the remaining six NATO nations (Denmark, Turkey, Norway, Greece, Portugal, and Luxembourg) account, individually, for less than 1 percent of the total and as a group, for only 3 percent.

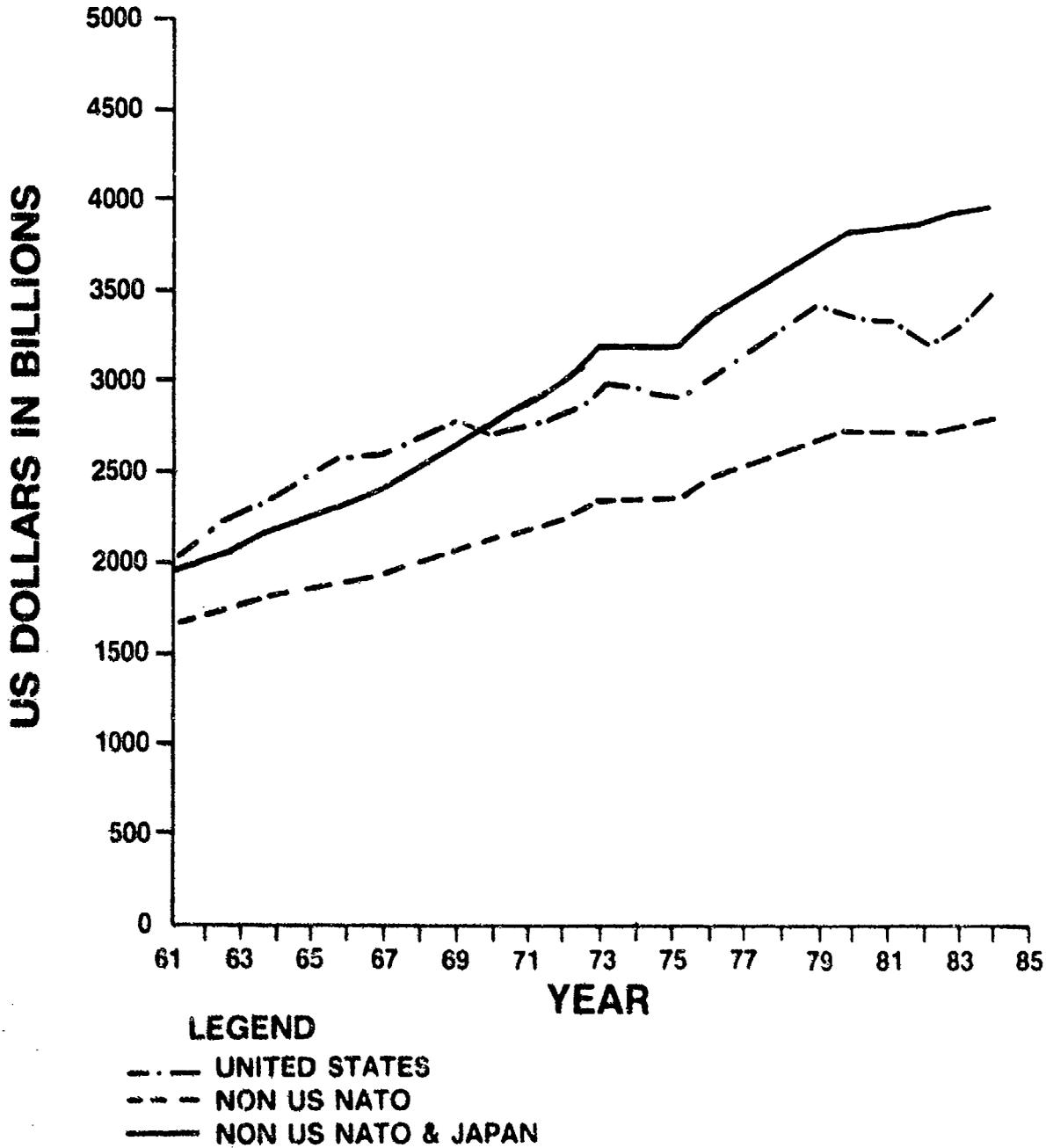
An examination of real GDP growth provides some interesting insights into economic activity during the past decade. Between 1971 and 1983, US real GDP grew by 37 percent, compared with around 33 percent for the non-US NATO nations and an impressive 74 percent for Japan. Among the non-US NATO nations, three countries—Turkey, Portugal, and Norway—achieved growth rates of higher than 50 percent, while the United Kingdom, with a 23 percent increase, lagged behind all the nations. Denmark and Germany—countries that are typically perceived from this side of the Atlantic as having highly prosperous economies—managed real increases for 1971-83 of less than 30 percent, placing them close to last on the basis of GDP real growth during the 1970s and early 1980s.

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<sup>1/</sup> All share figures were computed using constant 1983 prices and 1983 exchange rates.

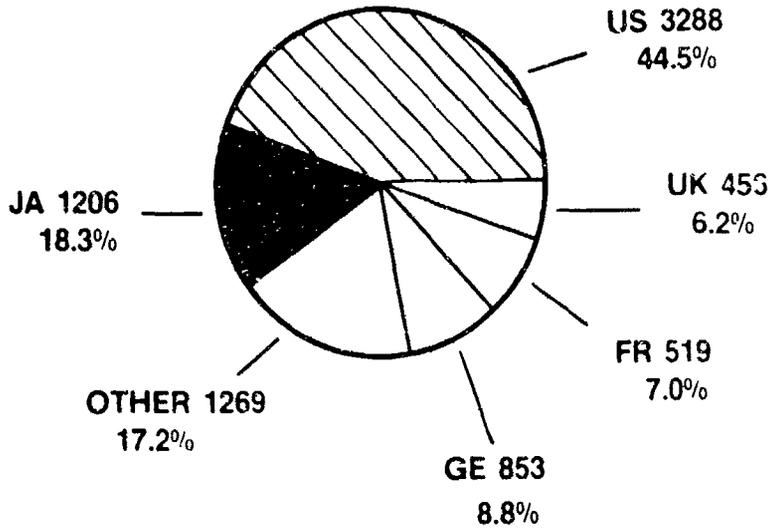
# TOTAL GROSS DOMESTIC PRODUCT US DOLLARS IN BILLIONS

(1983 CONSTANT DOLLARS — 1983 EXCHANGE RATES)

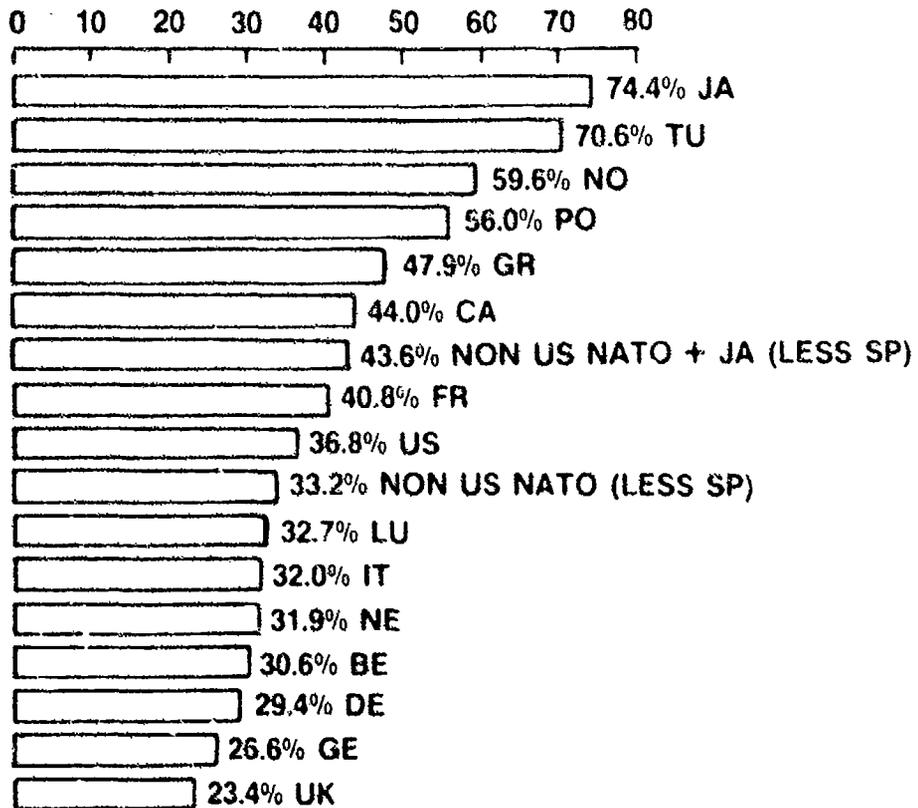


**GROSS DOMESTIC PRODUCT**  
**(1983 CONSTANT DOLLARS IN BILLIONS —**  
**1983 EXCHANGE RATES)**

1983  
**TOTAL NATO & JAPAN: 7390**



**% CHANGE IN GROSS DOMESTIC PRODUCT (1971 VS 1983)**



## Population

Charts A-3 and A-4 compare the mid-year population size of the various nations and, thus, provide an indication of the human resources available to each. Population counts are relevant to defense burdensharing analyses for two reasons. On the one hand, they give a rough indication of the size of the pool from which a nation must draw its defense manpower. From this standpoint, a large and fast growing population would be a positive sign. On the other hand, they indicate the extent to which defense may have to compete with civil programs for fiscal resources. By that standard, a large and growing population could mean additional requirements for those government services and consumer goods that compete with defense for taxpayers' dollars and for industrial capacity.

The results for this indicator exhibit many of the same general patterns as those for GDP. As with GDP, this measure varies widely across nations, the range in 1983 extending from 0.4 million for Luxembourg to 234 million for the United States.

The US figure translates to 31.4 percent of the NATO and Japan total--roughly double the 15.9 percent share of Japan, the second most heavily populated country. Germany, which ranks third, supplies 8.2 percent of the total and is followed closely by Italy, the United Kingdom, and France, which account for 7.6 percent, 7.5 percent, and 7.3 percent, respectively.

Although the total percentage change in population growth between 1971 and 1983 varies from +0.2 percent for Germany to +32 percent for Turkey, there have been no dramatic changes in national shares of the total over the 13-year period.

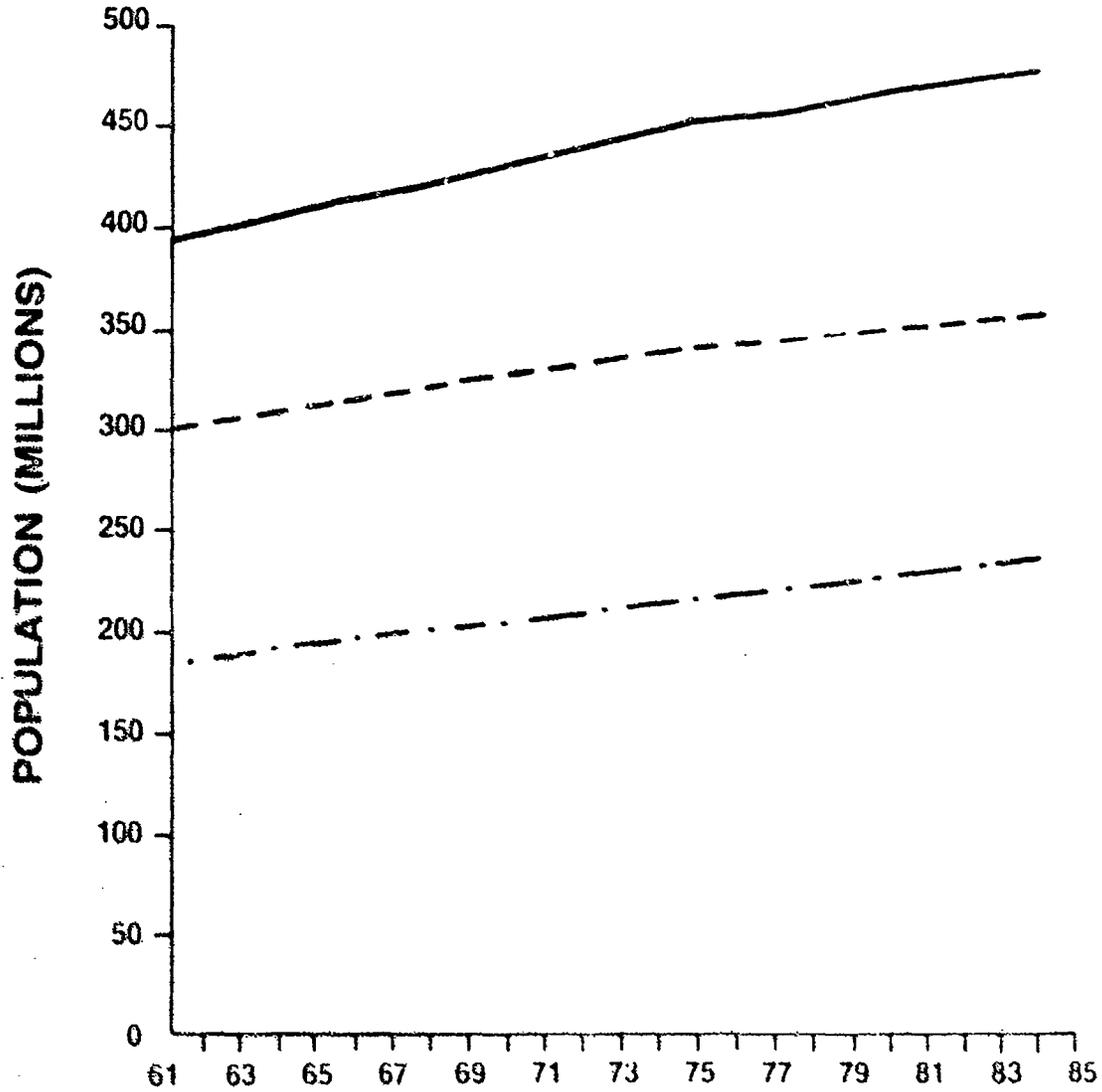
## Per Capita Gross Domestic Product

Per capita GDP (total GDP divided by total population) is a widely accepted measure of economic development and standard of living. This indicator recognizes that although a nation's total GDP may be relatively large and rapidly growing, if its population is also large and fast growing it may not be able to generate sufficient national income to provide for the needs of the populace.

A review of the trends (Charts A-5 and A-6) reveals a fairly clear-cut distinction between the "haves" and the "have-nots," or perhaps more accurately, the "have lesses." Most of the Northern and Central Region nations are clustered relatively close together at the top of the range, with per capita GDPs from \$9,000 to \$14,000.

Among the top-ranking countries for this indicator, the United States places first with a per capita income of \$14,022, followed by Norway, Canada, Denmark, and Germany, with per capita incomes ranging from \$13,316 to \$10,624. The United Kingdom, with a per capita income of \$8,078, ranks lowest of all the Northern and Central Region nations.

# TOTAL POPULATION (MILLIONS)



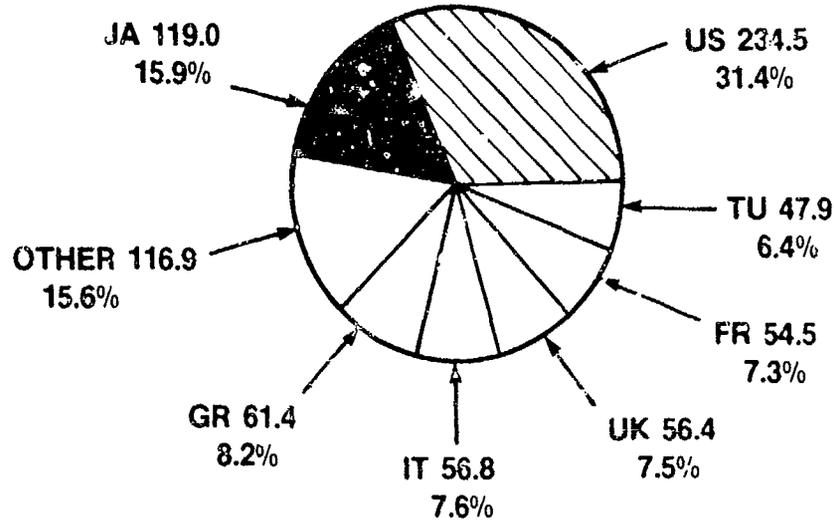
## LEGEND

- . - UNITED STATES
- - - NON US NATO
- NON US NATO & JAPAN

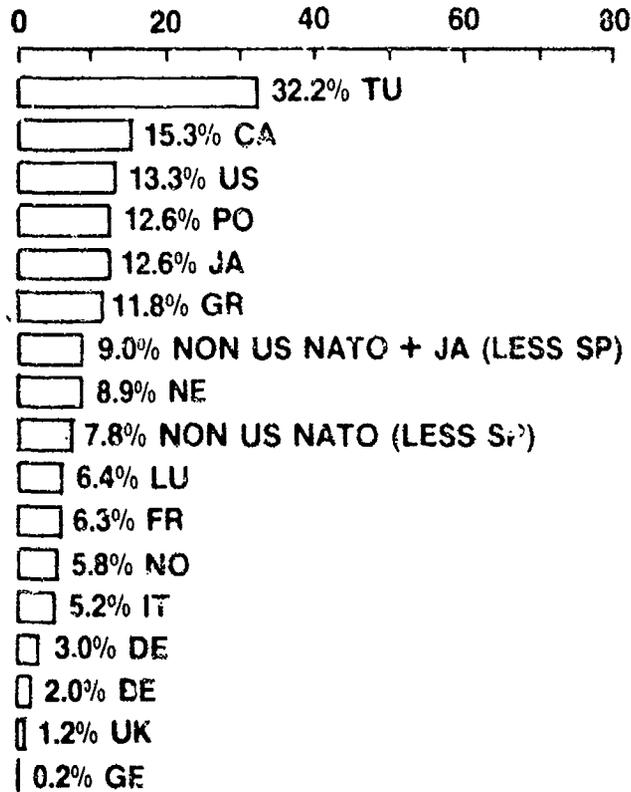
## YEAR

# POPULATION (IN MILLIONS)

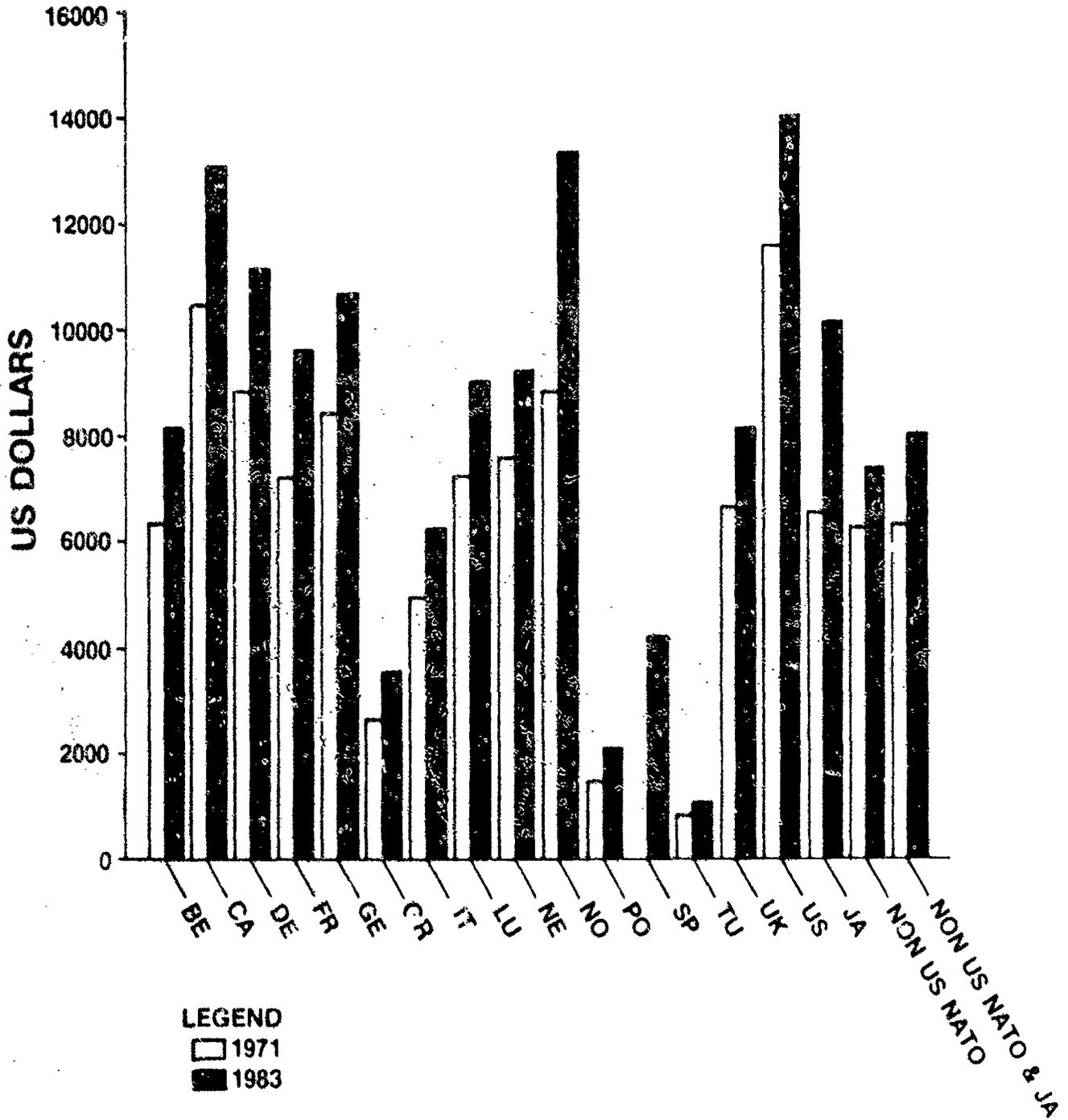
1983  
TOTAL NATO & JAPAN: 747.4



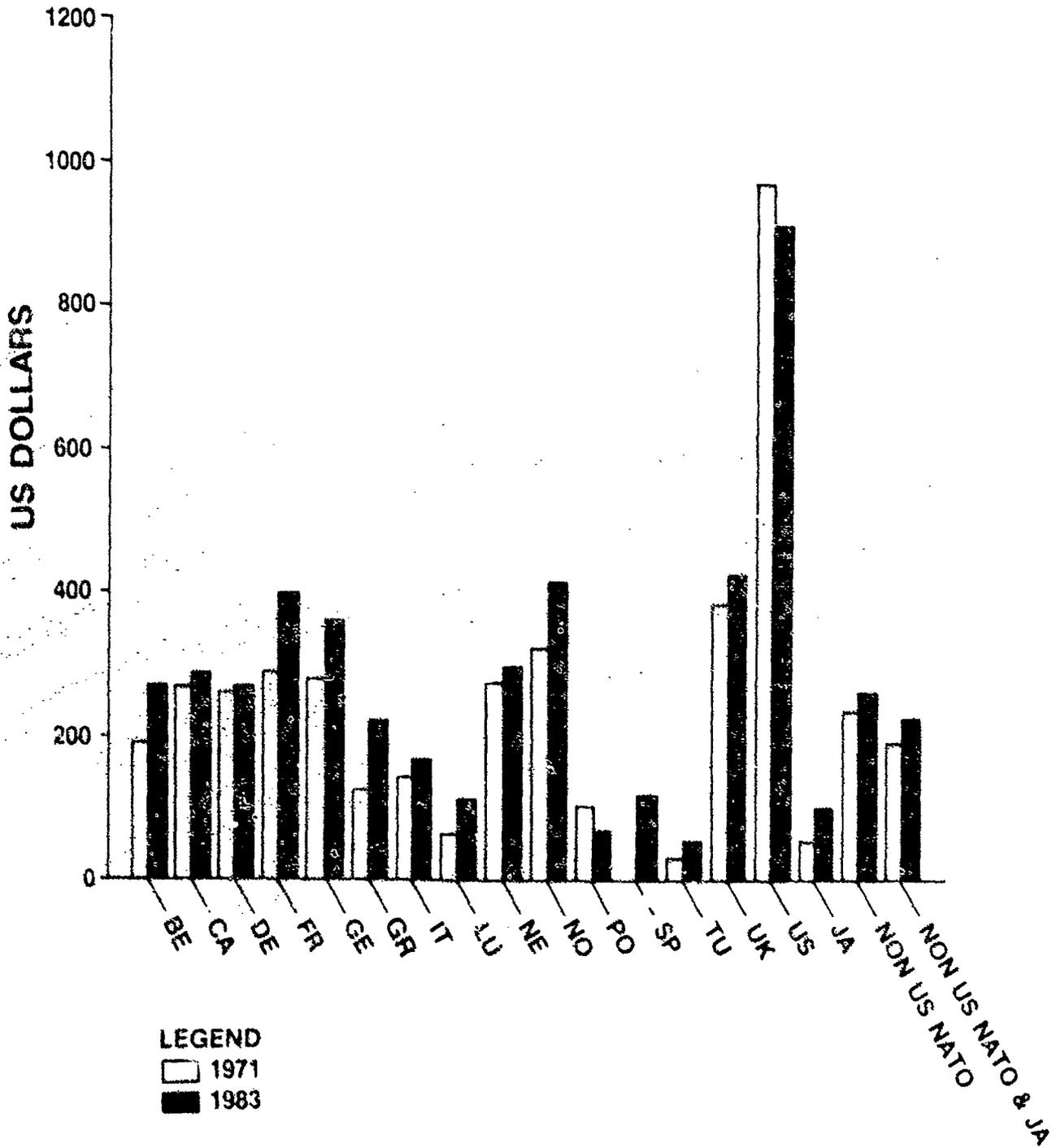
## % CHANGE IN POPULATION (1971 VS. 1983)



# GROSS DOMESTIC PRODUCT PER CAPITA



# DEFENSE SPENDING PER CAPITA



NATO's Southern Region members occupy the bottom rungs of the Alliance's per capita GDP ladder. Per capita national income among these nations ranges from \$6,209 for Italy (twelfth among the countries) down to \$1,033 for Turkey (last in the Alliance).

Between 1971 and 1983, the greatest increases in per capita GDP were achieved by Japan, Norway, and Portugal (55 percent, 51 percent, and 39 percent, respectively). The United States, the Netherlands, and the United Kingdom, with increases of 20.8 percent, 21.2 percent, and 22 percent, respectively, showed the smallest improvement.

#### Total Defense Spending Per Capita

This indicator relates a nation's defense spending to its population size. Although widely used, the measure is difficult to interpret and subject to misunderstanding. Whereas total population may be a good basis for comparing manpower contributions, it is not immediately obvious why it should be a reasonable basis for determining whether nations' total defense contributions are equitable. That is, a nation with a large population may not necessarily have more funds to devote to defense than does a country with a smaller population. For example, Turkey's GDP is roughly equal to Norway's, but its total defense spending is about one-and-a-half times greater (Chart A-6). Yet, because its population is more than ten times larger than Norway's, Turkey appears (on the basis of the per capita defense spending measure) to be making a substantially smaller contribution than is its northern flank ally.

#### Total Defense Spending by Resource Category 2/

Charts A-7 through A-10 show how the United States and its allies allocate their defense spending among major resource categories, such as personnel, procurement of major equipment and ammunition, and research and development (RDT&E). The data represent actual or estimated outlays, adjusted to conform to a definition agreed to by NATO on what is to be included in each resource category.

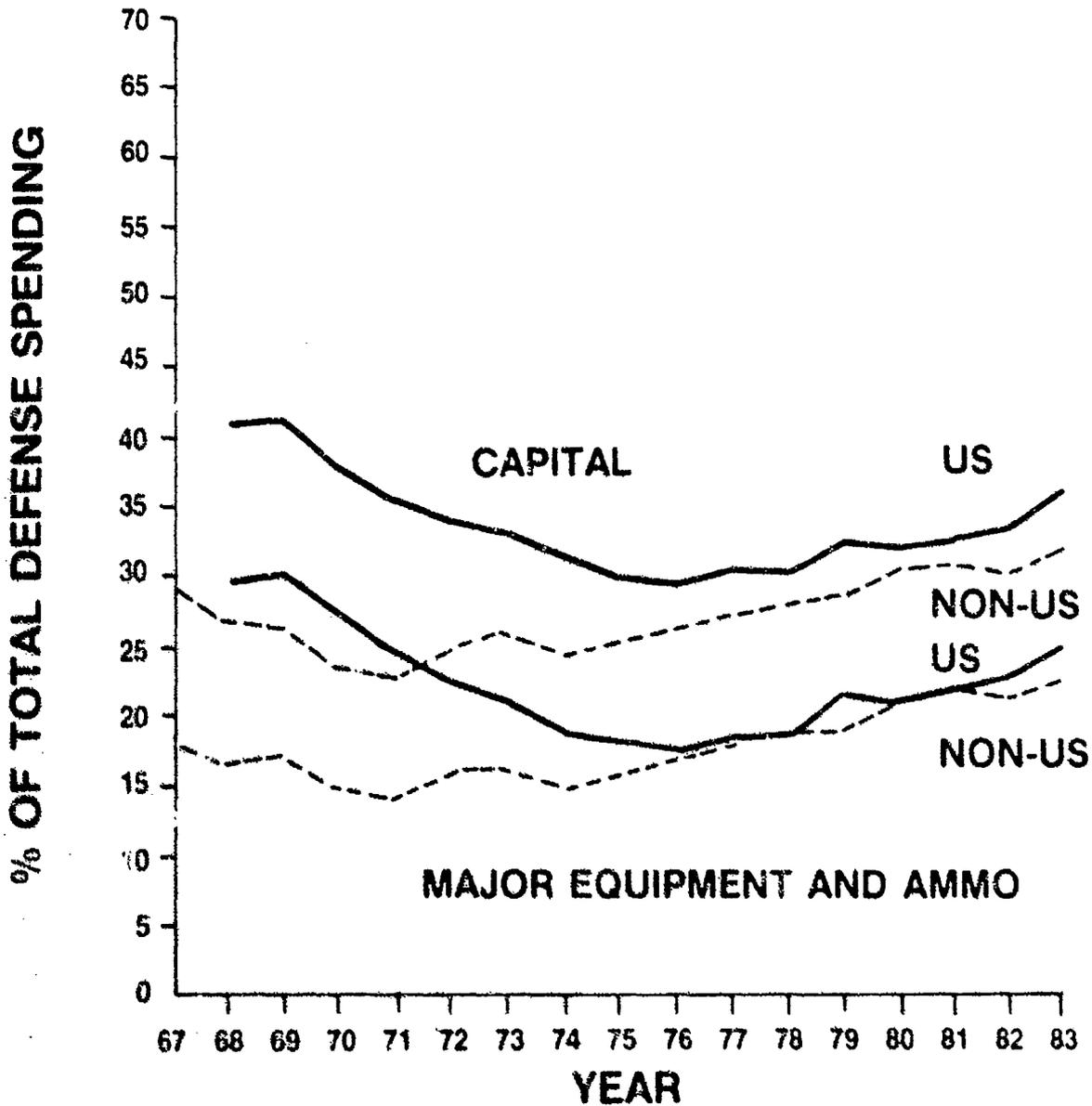
Charts A-7 and A-8 compare the trends for the group of non-US NATO nations with those for the United States. The figures given for the allied nations exclude France, Greece, Japan, Luxembourg, Spain and Turkey, for which

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2/ This section addresses trends through 1983. Information available on allied spending by resource category for 1984 and beyond is not sufficiently refined to enable us to provide firm figures for those years. Based on preliminary data, we are inclined to believe that the patterns exhibited in prior years will not change drastically during 1984 and 1985.

# US AND NON-US NATO SPENDING FOR CAPITAL AND MAJOR EQUIPMENT AND AMMUNITION

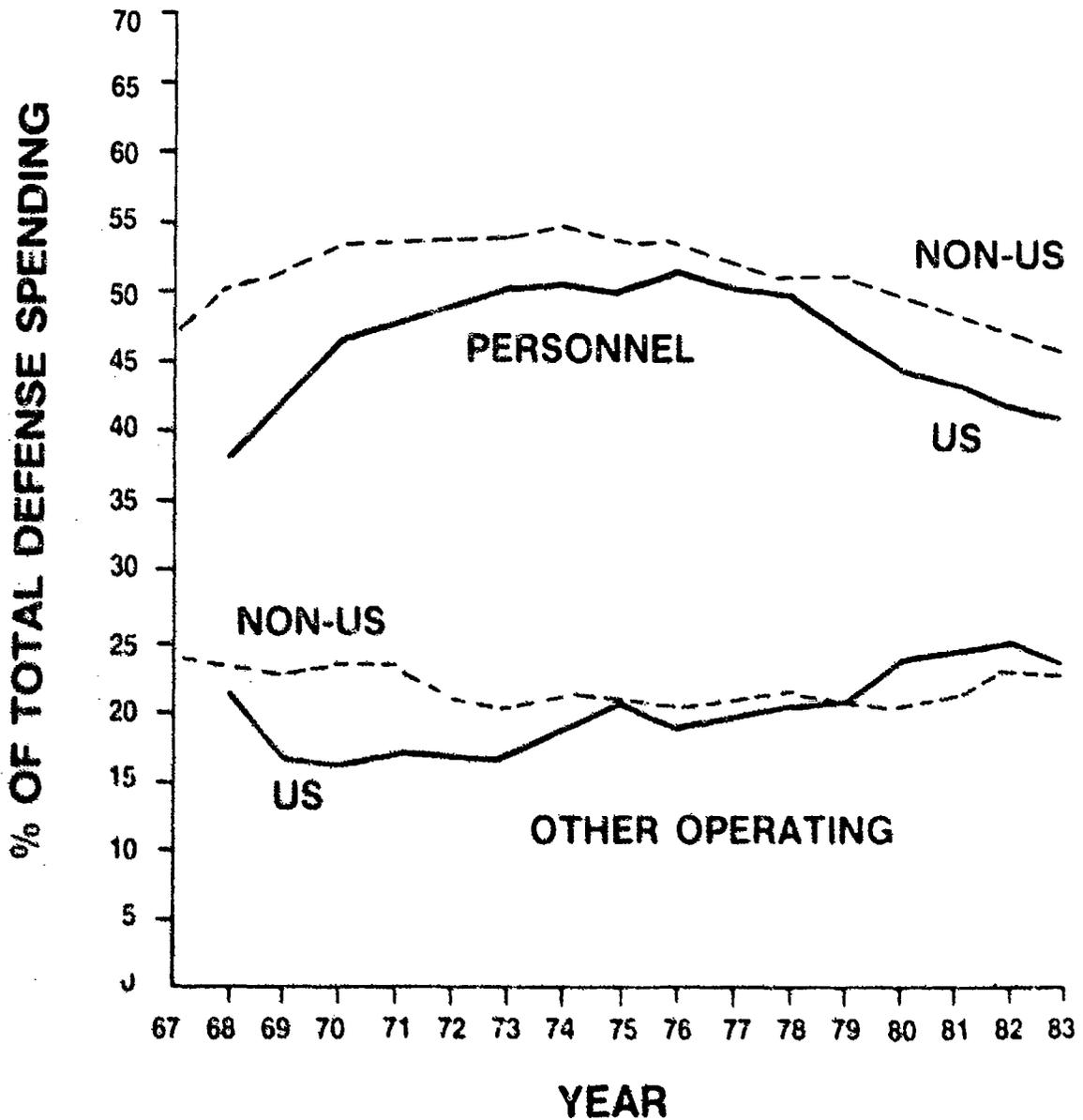
(% OF TOTAL DEFENSE SPENDING)



EXCLUDES FR, GR, LU, TU

# US AND NON-US NATO SPENDING FOR PERSONNEL AND OTHER OPERATING EXPENDITURES

(% OF TOTAL DEFENSE SPENDING)



EXCLUDES FR. GR. LU. TU

comparable data were not readily available for all years. The term "capital" expenditure, as used below, covers RDT&E, procurement of major equipment and ammunition, and construction of facilities, including NATO infrastructure.

Since the mid-1970s most of the allies have been allocating a growing share of their defense spending to capital expenditures, thereby reversing a downward pattern that existed during the late 1960s and early 1970s. The share allocated to capital by the non-US NATO nations as a group declined from 30 percent in 1967 to 23 percent in 1971, and then increased to 32 percent during the early 1980s (Chart A-7). A similar pattern is exhibited for procurement of major equipment and ammunition--the largest component of capital expenditures. This category declined from 19 percent in 1967 to 14 percent in 1971, and then gradually increased to 21 percent in 1980, 22 percent in 1981 and 1982, and 23 percent in 1983. By contrast the US capital percentage fell from around 40 percent in 1968 to 30 percent in 1975, reflecting in part the Southeast Asia phasedown. The share remained in the neighborhood of 30 percent during 1975-78 and then moved upward to 36 percent between 1979 and 1983. US spending for major equipment and ammunition followed a comparable trend, declining from 30 percent to 18 percent between 1968 and 1975, holding steady at about 18 percent of total expenditures between during 1975-78 and increasing to 25 percent in 1983.

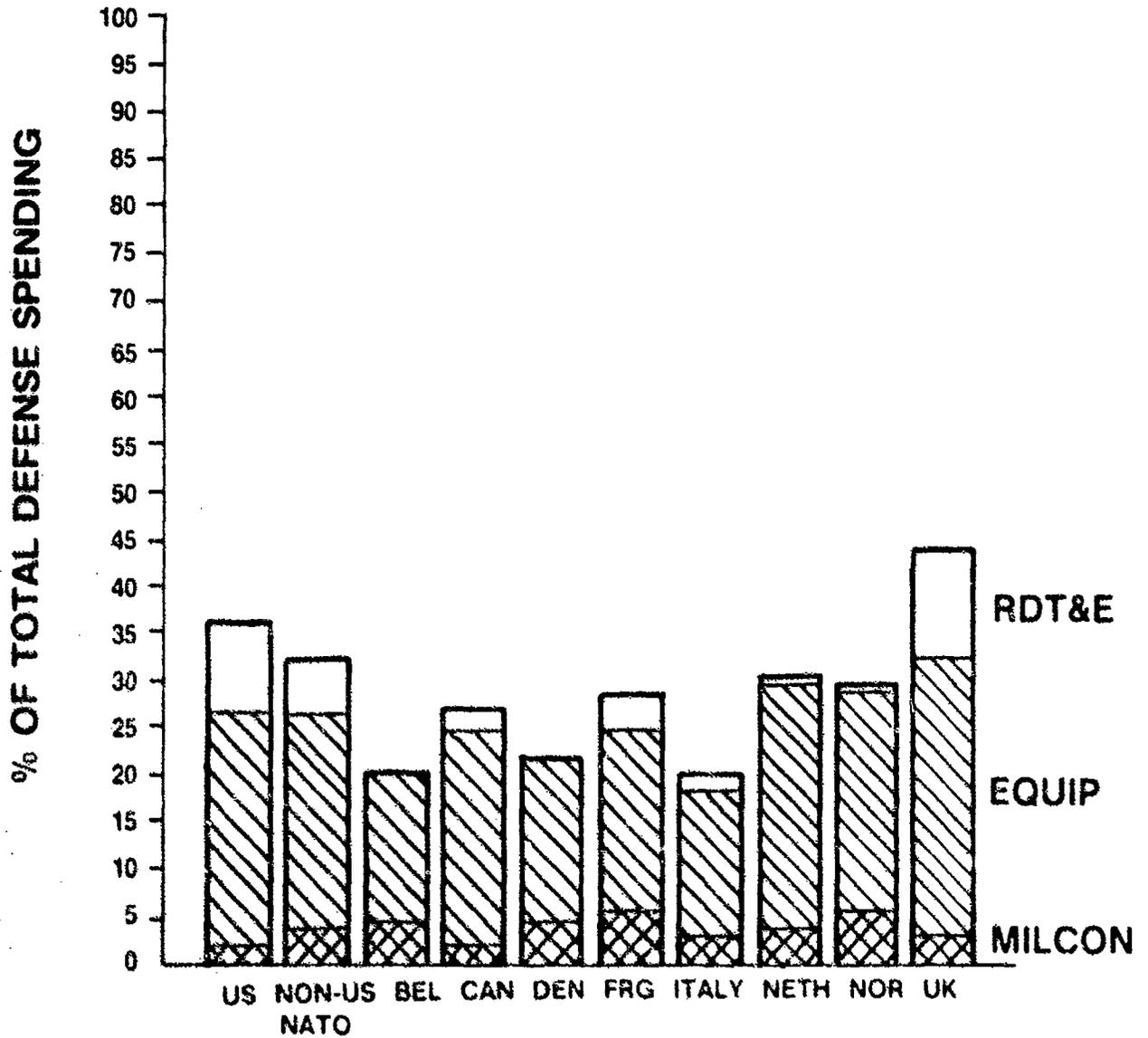
The allied personnel percentage (which includes military and civilian pay and allowances and military pensions) increased from around 45 percent in 1967 to 54 percent in 1974, but has declined to 45 percent since then (Chart A-8). The personnel share of US defense spending climbed from 38 percent in 1968 to 50 percent in 1973, remained on the order of 50 percent to 52 percent during 1973-78, and then declined to 41 percent in 1983.

The allied percentage allocated to "other operating" expenditures (which encompasses all operations and maintenance expenditures less military and civilian pay allowances) dropped from one-quarter of total defense spending in 1967 to 21 percent in 1973. Since 1973, the share has remained between 20 and 22 percent. US expenditures in this category dropped from 21 percent to 17 percent of total spending between 1968 and 1969, held steady at around 16 percent to 18 percent between 1970 and 1974, and then gradually increased to the 23-25 percent range during the early 1980s.

Charts A-9 and A-10 compare the percentage of 1983 defense outlays allocated to each resource category by the United States, selected allies, and all of the allies combined (excluding, as indicated earlier, France, Greece, Japan, Luxembourg, Spain, and Turkey).

As Chart A-9 shows, the British lead all the NATO nations in the percentage of total defense spending devoted to capital expenditures. The United Kingdom allocation of about 45 percent is followed by the 36 percent for the United States, between 25 and 35 percent for the Netherlands, Norway, Germany, and Canada, and roughly 18 percent to 25 percent for most of the other nations.

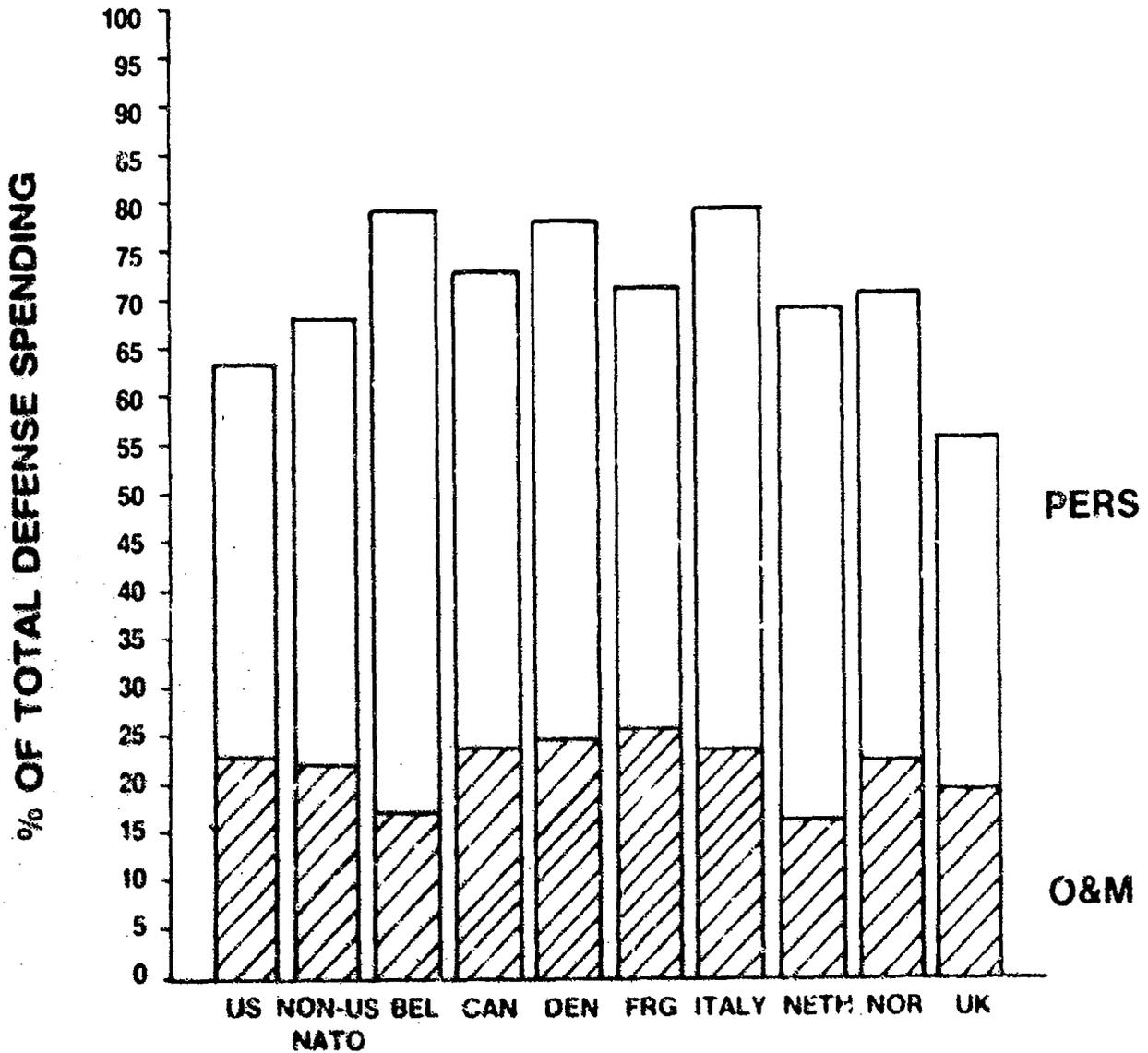
# PERCENT OF TOTAL DEFENSE SPENDING ALLOCATED TO CAPITAL EXPENDITURES 1983



RDT&E	9.6	5.4
EQUIP	25.1	22.7
MILCON	1.6	3.9
TOT CAP	36.4	31.9

NON-US AVERAGE EXCLUDES FR. GR. LU. TU, SP

# PERCENT OF TOTAL DEFENSE SPENDING ALLOCATED TO OPERATING EXPENSES 1983



PERS	40.6	45.7
O&M	23.0	22.4
TOT OP	63.6	68.1

NON-US AVERAGE EXCLUDES FR. GR. LU. TU, SP

One fact that seems particularly striking is Germany's relatively low percentage for major equipment and ammunition vis-a-vis the percentages of the United States and the United Kingdom and several other nations. This appears to be attributable in part to Germany's relatively greater emphasis on labor-intensive ground forces and its relatively modest emphasis on capital-intensive naval forces.

Canada's capital percentage figure was one of the lowest recorded in NATO during the 1970s, reflecting years of inaction regarding major equipment replacement needs. The picture has become brighter, however, thanks to a long-range improvement program. Under this plan, the Canadians have acquired or are acquiring new maritime patrol aircraft, tanks, and combat aircraft. As a result, the capital percentage has increased from less than 15 percent in the mid-1970s to more than 25 percent in 1983.

British spending for RDT&E has, for most years since the early 1950s, been the highest or second highest in NATO as a percentage of total defense spending.

The share of total spending allocated to personnel ranges from around 60 percent for Belgium and Portugal to under 40 percent for the British. Both the United States and Germany allocate less than half of their budgets to this category. The weighted average for all the non-US nations (excluding France, Greece, Japan, Luxembourg, Spain, and Turkey) is 46 percent.

# TOTAL DEFENSE SPENDING (FY)

(1983 CONSTANT DOLLARS IN BILLIONS —  
1983 EXCHANGE RATES)

	1971			1983			TOTAL % CHANGE
	\$	% OF NATO & JAPAN TOTAL	RANK	\$	% OF NATO & JAPAN TOTAL	RANK	71 VS 83
BELGIUM	\$ 1.85	0.7%	9	\$ 2.68	0.8%	9	+44.3
CANADA	\$ 5.84	2.0%	7	\$ 7.15	2.2%	7	+22.5
DENMARK	\$ 1.31	0.5%	10	\$ 1.37	0.4%	13	+5.3
FRANCE	\$ 14.92	5.2%	4	\$ 21.65	6.7%	4	+45.1
GERMANY	\$ 17.30	6.1%	3	\$ 22.13	6.8%	3	+27.9
GREECE	\$ 1.11	0.4%	13	\$ 2.20	0.7%	11	+97.4
ITALY	\$ 7.82	2.7%	5	\$ 9.48	2.9%	6	+21.3
LUXEMBOURG	\$ 0.02	0.0%	15	\$ 0.04	0.0%	15	+95.2
NETHERLANDS	\$ 3.65	1.3%	8	\$ 4.26	1.3%	8	+16.7
NORWAY	\$ 1.27	0.4%	11	\$ 1.70	0.5%	12	+34.1
PORTUGAL		0.3%	14	\$ 0.69	0.2%	14	-24.6
TURKEY	\$ 1.18	0.4%	12	\$ 2.47	0.8%	10	+109.1
UK		7.5%	2	\$ 24.01	7.4%	2	+11.7
US	\$200.62	70.3%	1	\$213.63	65.6%	1	+6.5
JAPAN	\$ 5.91	2.1%	6	\$ 12.03	3.7%	5	+103.7
NON US NATO	\$ 78.68	27.6%		\$ 99.83	30.7%		+26.9
NON US NATO + JAPAN	\$ 84.59	29.7%		\$111.87	34.4%		+32.2
TOTAL NATO	\$279.30	97.9%		\$313.46	96.3%		+12.2
TOTAL NATO + JAPAN	\$285.21	100.0%		\$325.49	100.0%		+14.1

# TOTAL DEFENSE SPENDING (FY)

(1983 CONSTANT DOLLARS IN BILLIONS —  
1983 EXCHANGE RATES)  
(INCLUDING SPAIN)

	1971			1983			TOTAL % CHANGE
	\$	% OF NATO & JAPAN TOTAL	RANK	\$	% OF NATO & JAPAN TOTAL	RANK	71 VS 83
BELGIUM	\$ 1.85	0.7%	9	\$ 2.68	0.8%	10	+44.3
CANADA	\$ 5.84	2.0%	7	\$ 7.15	2.2%	7	+22.5
DENMARK	\$ 1.31	0.5%	10	\$ 1.37	0.4%	14	+5.3
FRANCE	\$ 14.92	5.2%	4	\$ 21.65	6.6%	4	+45.1
GERMANY	\$ 17.30	6.1%	3	\$ 22.13	6.7%	3	+27.9
GREECE	\$ 1.11	0.4%	13	\$ 2.20	0.7%	12	+97.4
ITALY	\$ 7.82	2.7%	5	\$ 9.48	2.9%	6	+21.3
LUXEMBOURG	\$ 0.02	0.0%	15	\$ 0.04	0.0%	16	+95.2
NETHERLANDS	\$ 3.65	1.3%	8	\$ 4.26	1.3%	9	+16.7
NORWAY	\$ 1.27	0.4%	11	\$ 1.70	0.5%	13	+34.1
PORTUGAL	\$ 0.92	0.3%	14	\$ 0.69	0.2%	15	-24.6
SPAIN	\$ •	• %	•	\$ 4.52	1.4%	8	0.0
TURKEY	\$ 1.18	0.4%	12	\$ 2.47	0.7%	11	+109.1
UK	\$ 21.51	7.5%	2	\$ 24.01	7.3%	2	+11.7
US	\$200.62	70.3%	1	\$213.63	64.7%	1	+6.5
JAPAN	\$ 5.91	2.1%	6	\$ 12.03	3.6%	5	+103.7
NON US NATO	\$ 78.68	27.6%		\$104.36	31.6%		
NON US NATO + JAPAN	\$ 84.59	29.7%		\$116.39	35.3%		
TOTAL NATO	\$279.30	97.9%		\$317.98	96.4%		
TOTAL NATO + JAPAN	\$285.21	100.0%		\$330.02	100.0%		

# TOTAL DEFENSE SPENDING AS PERCENT OF GDP

	1971			1983			TOTAL % CHANGE
	%	% OF HIGHEST NATION	RANK	%	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	2.9	39.2%	10	3.3	50.6%	8	+15.3
CANADA	2.2	30.2%	13	2.0	30.6%	13	- 9.7
DENMARK	2.4	32.8%	12	2.4	36.7%	12	- 0.2
FRANCE	4.0	54.1%	6	4.2	63.2%	5	+4.2
GERMANY	3.4	45.5%	9	3.4	51.3%	6	+0.6
GREECE	4.7	63.3%	4	6.4	96.5%	2	+35.9
ITALY	2.7	36.5%	11	2.7	40.7%	11	- 0.6
LUXEMBOURG	0.8	10.8%	15	1.2	18.9%	14	+56.3
NETHERLANDS	3.4	46.5%	7	3.2	48.8%	9	- 6.4
NORWAY	3.4	45.8%	6	3.1	46.8%	10	- 8.9
PORTUGAL	7.4	100.0%	1	3.4	50.8%	7	- 54.7
TURKEY	4.5	61.3%	5	5.0	75.7%	4	+10.2
UK	4.9	66.6%	3	5.3	80.5%	3	+7.8
US	7.1	95.3%	2	5.5	100.0%	1	- 6.4
JAPAN	0.8	11.4%	14	1.0	15.1%	15	+18.1
NON US NATO	3.6	48.1%		3.6	55.0%		+2.0
NON US NATO + JAPAN	3.0	40.4%		2.8	42.8%		- 5.4
TOTAL NATO	5.5	74.4%		5.3	79.6%		- 4.6
TOTAL NATO + JAPAN	5.0	67.7%		4.5	68.8%		- 9.3

# TOTAL DEFENSE SPENDING AS PERCENT OF GDP (INCLUDING SPAIN)

	1971			1983			TOTAL % CHANGE
	%	% OF HIGHEST NATION	RANK	%	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	2.9	39.2%	10	3.3	50.6%	8	+15.3
CANADA	2.2	30.2%	13	2.0	30.6%	14	- 9.7
DENMARK	2.4	32.8%	12	2.4	36.7%	13	- 0.2
FRANCE	4.0	54.1%	6	4.2	63.2%	5	+4.2
GERMANY	3.4	45.5%	9	3.4	51.3%	6	+0.6
GREECE	4.7	63.3%	4	6.4	96.5%	2	+35.9
ITALY	2.7	36.5%	11	2.7	40.7%	12	- 0.6
LUXEMBOURG	0.8	10.8%	15	1.2	18.9%	15	+56.3
NETHERLANDS	3.4	46.5%	7	3.2	48.8%	9	- 6.4
NORWAY	3.4	45.8%	8	3.1	46.8%	10	- 8.9
PORTUGAL	7.4	100.0%	1	3.4	50.8%	7	- 54.7
SPAIN	.	.%	.	2.8	43.1%	11	0.0
TURKEY	4.5	61.3%	5	5.0	75.7%	4	+10.2
UK	4.9	66.6%	3	5.3	80.5%	3	+7.8
US	7.1	95.3%	2	6.6	100.0%	1	- 6.4
JAPAN	0.8	11.4%	14	1.0	15.1%	16	+18.1
NON US NATO	3.6	48.1%		3.6	54.4%		
NON US NATO + JAPAN	3.0	40.4%		2.8	42.8%		
TOTAL NATO	5.5	74.4%		5.2	78.6%		
TOTAL NATO + JAPAN	5.0	67.7%		4.5	68.3%		

# TOTAL ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER (THOUSANDS)

	1971			1983			TOTAL % CHANGE
	(000)	% OF NATO & JAPAN TOTAL	RANK	(000)	% OF NATO & JAPAN TOTAL	RANK	71 VS 83
BELGIUM	114.3	1.4%	12	116.5	1.5%	11	+1.9
CANADA	127.8	1.5%	11	122.0	1.6%	10	- 4.5
DENMARK	55.6	0.6%	13	41.6	0.5%	14	- 22.4
FRANCE	705.3	8.4%	3	723.4	9.4%	3	+2.6
GERMANY	645.3	7.7%	5	671.1	8.7%	4	+4.0
GREECE	202.7	2.4%	9	201.4	2.6%	8	- 0.6
ITALY	600.5	7.2%	6	554.4	7.2%	5	- 7.7
LUXEMBOURG	1.2	0.0%	15	1.4	0.0%	15	+16.7
NETHERLANDS	141.9	1.7%	10	131.2	1.7%	9	- 7.5
NORWAY	47.0	0.6%	14	52.1	0.7%	13	+10.9
PORTUGAL		3.0%	8	104.3	1.4%	12	- 58.2
TURKEY	650.5	7.8%	4	881.7	11.5%	2	+35.5
UK		8.6%	2	552.9	7.2%	6	- 23.1
US	3831.7	45.9%	1	3273.0	42.6%	1	- 14.6
JAPAN	258.2	3.1%	7	264.8	3.4%	7	+2.3
NON US NATO	4258.5	51.0%		4154.1	54.0%		- 2.5
NON US NATO + JAPAN	4517.4	54.1%		4418.9	57.4%		- 2.2
TOTAL NATO	8090.2	96.9%		7427.1	96.6%		- 8.2
TOTAL NATO + JAPAN	8349.1	100.0%		7691.9	100.0%		- 7.9

# TOTAL ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER

(THOUSANDS)  
(INCLUDING SPAIN)

	1971			1983			TOTAL % CHANGE
	(000)	% OF NATO & JAPAN TOTAL	RANK	(000)	% OF NATO & JAPAN TOTAL	RANK	71 VS 83
BELGIUM	114.3	1.4%	12	116.5	1.4%	12	+1.9
CANADA	127.8	1.5%	11	122.0	1.5%	11	- 4.5
DENMARK	53.6	0.6%	13	41.6	0.5%	15	- 22.4
FRANCE	705.3	8.4%	3	723.4	8.8%	3	+2.6
GERMANY	645.3	7.7%	5	671.1	8.1%	4	+4.0
GREECE	202.7	2.4%	9	201.4	2.4%	9	- 0.6
ITALY	600.5	7.2%	6	554.4	6.7%	5	- 7.7
LUXEMBOURG	1.2	0.0%	15	1.4	0.0%	16	+16.7
NETHERLANDS	141.9	1.7%	10	131.2	1.6%	10	- 7.5
NORWAY	47.0	0.6%	14	52.1	0.6%	14	+10.9
PORTUGAL	294.4	3.0%	8	104.3	1.3%	13	- 58.2
SPAIN				546.9	6.6%	7	
TURKEY	650.5	7.8%	4	881.7	10.7%	2	+35.5
UK	711	8.6%	2	552.9	6.7%	6	- 23.1
US	3831.7	45.9%	1	3273.0	39.7%	1	- 14.6
JAPAN	258.9	3.1%	7	264.8	3.2%	8	+2.3
NON US NATO	4258.5	51.0%		4701.0	57.1%		
NON US NATO + JAPAN	45	54.1%		4965.8	60.3%		
TOTAL NATO	8090.2	96.9%		7974.0	96.8%		
TOTAL NATO + JAPAN	8349.1	100.0%		8238.8	100.0%		

# TOTAL ACTIVE DUTY MILITARY MANPOWER (THOUSANDS)

	1971			1983			TOTAL % CHANGE
	(000)	% OF NATO & JAPAN TOTAL	RANK	(000)	% OF NATO & JAPAN TOTAL	RANK	71 VS 83
BELGIUM	106.8	1.7%	11	108.6	1.9%	9	+1.7
CANADA	86.9	1.4%	12	81.1	1.4%	12	- 6.7
DENMARK	44.5	0.7%	13	30.4	0.5%	14	- 31.7
FRANCE	569.3	9.0%	3	578.3	10.0%	3	+1.6
GERMANY	472.0	7.5%	5	495.7	8.5%	5	+5.0
GREECE	178.7	2.8%	9	176.6	3.0%	8	- 1.2
ITALY	526.0	8.3%	4	498.1	8.6%	4	- 5.3
LUXEMBOURG	1.1	0.0%	15	1.2	0.0%	15	+9.1
NETHERLANDS	113.0	1.8%	10	104.2	1.8%	10	- 7.8
NORWAY	36.3	0.6%	14	40.9	0.7%	13	+12.7
PORTUGAL	244.2	3.9%	7	33.0	1.6%	11	- 61.9
TURKEY	614.5	9.7%	2	823.8	14.2%	2	+34.1
UK	384.0	6.1%	6	333.4	5.7%	6	- 13.2
US	2714.0	42.9%	1	2201.0	37.9%	1	- 18.9
JAPAN	234.3	3.7%	8	241.0	4.1%	7	+2.9
NON US NATO	3377.3	53.4%		3365.3	57.9%		- 0.4
NON US NATO + JAPAN	3611.6	57.1%		3606.3	62.1%		- 0.1
TOTAL NATO	6091.3	96.3%		5566.3	95.9%		- 8.6
TOTAL NATO + JAPAN	6325.6	100.0%		5807.3	100.0%		- 8.2

# TOTAL ACTIVE DUTY MILITARY MANPOWER

(THOUSANDS)  
(INCLUDING SPAIN)

	1971			1983			TOTAL % CHANGE
	(000)	% OF NATO & JAPAN TOTAL	RANK	(000)	% OF NATO & JAPAN TOTAL	RANK	71 VS 83
BELGIUM	106.8	1.7%	11	108.6	1.7%	10	+1.7
CANADA	86.9	1.4%	12	81.1	1.3%	13	- 6.7
DENMARK	44.5	0.7%	13	30.4	0.5%	15	- 31.7
FRANCE	569.3	9.0%	3	578.3	9.2%	3	+1.6
GERMANY	472.0	7.5%	5	495.7	7.9%	5	+5.0
GREECE	178.7	2.8%	9	176.6	2.8%	9	- 1.2
ITALY	526.0	8.3%	4	498.1	7.9%	4	- 5.3
LUXEMBOURG	1.1	0.0%	15	1.2	0.0%	16	+9.1
NETHERLANDS	113.0	1.8%	10	104.2	1.7%	11	- 7.8
NORWAY	36.3	0.6%	14	40.9	0.6%	14	+12.7
PORTUGAL	244.2	3.9%	7	93.0	1.5%	12	- 61.9
SPAIN				491.3	7.8%	6	
TURKEY	614.5	9.7%	2	823.8	13.1%	2	+34.1
UK	384.0	6.1%	6	333.4	5.3%	7	- 13.2
US	2714.0	42.9%	1	2201.0	34.3%	1	- 18.9
JAPAN	234.3	3.7%	8	241.0	3.8%	8	+2.9
NON US NATO	3377.3	53.4%		3856.6	61.2%		
NON US NATO + JAPAN	3611.6	57.1%		4097.6	65.1%		
TOTAL NATO	6091.3	96.3%		6057.6	96.2%		
TOTAL NATO + JAPAN	6325.6	100.0%		6298.6	100.0%		

## ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER AND COMMITTED RESERVES (THOUSANDS)

	1983		
	(000)	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	221.7	1.85%	11
CANADA	143.9	1.20%	13
DENMARK	112.0	0.93%	14
FRANCE	1178.1	9.81%	3
GERMANY	1399.9	11.66%	2
GREECE	454.1	3.78%	7
ITALY	825.9	6.88%	5
LUXEMBOURG	1.4	0.01%	15
NETHERLANDS	302.2	2.52%	8
NORWAY	237.9	1.98%	10
PORTUGAL	154.7	1.29%	12
TURKEY	1166.8	9.72%	4
UK	697.3	5.81%	6
US	4820.0	40.14%	1
JAPAN	293.5	2.44%	9
NON US NATO	6895.9	57.42%	
NON US NATO + JAPAN	7189.4	59.86%	
TOTAL NATO	11715.9	97.56%	
TOTAL NATO + JAPAN	12009.4	100.00%	

**ACTIVE DUTY MILITARY AND CIVILIAN  
MANPOWER AND COMMITTED RESERVES  
(THOUSANDS)  
(INCLUDING SPAIN)**

	1983		
	(000)	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	221.7	1.72%	12
CANADA	143.9	1.12%	14
DENMARK	112.0	0.87%	15
FRANCE	1178.1	9.16%	3
GERMANY	1399.9	10.88%	2
GREECE	454.1	3.53%	8
ITALY	825.9	6.42%	6
LUXEMBOURG	1.4	0.01%	16
NETHERLANDS	302.2	2.35%	9
NORWAY	237.9	1.85%	11
PORTUGAL	154.7	1.20%	13
SPAIN	857.5	6.66%	5
TURKEY	1166.8	9.07%	4
UK	697.3	5.42%	7
US	4820.0	37.46%	1
JAPAN	293.5	2.28%	10
NON US NATO	7753.4	60.26%	
NON US NATO + JAPAN	8046.9	62.54%	
TOTAL NATO	12573.4	97.72%	
TOTAL NATO + JAPAN	12866.9	100.00%	

# TOTAL ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER AS PERCENT OF TOTAL POPULATION

	1971			1983			TOTAL % CHANGE
	%	% OF HIGHEST NATION	RANK	%	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	1.18	42.5%	8	1.18	57.9%	6	- 0.1
CANADA	0.59	21.3%	13	0.49	24.0%	13	- 17.2
DENMARK	1.08	38.8%	10	0.81	39.9%	12	- 24.7
FRANCE	1.38	49.5%	5	1.33	65.1%	4	- 3.5
GERMANY	1.05	37.8%	12	1.09	53.5%	7	+3.8
GREECE	2.30	82.5%	2	2.04	100.0%	1	- 11.1
ITALY	1.11	40.0%	9	0.98	47.8%	10	- 12.2
LUXEMBOURG	0.35	12.5%	14	0.38	18.7%	14	+9.7
NETHERLANDS	1.08	38.7%	11	0.91	44.8%	11	- 15.1
NORWAY	1.20	43.3%	7	1.26	61.8%	5	+4.8
PORTUGAL	2.78	100.0%	1	1.03	50.6%	8	- 62.9
TURKEY	1.80	64.6%	4	1.84	90.3%	2	+2.6
UK	1.29	46.4%	6	0.98	48.1%	9	- 24.0
US	1.85	66.5%	3	1.40	68.4%	3	- 24.6
JAPAN	0.24	8.8%	15	0.22	10.9%	15	- 9.2
NON US NATO	1.29	46.4%		1.17	57.2%		- 9.5
NON US NATO + JAPAN	1.04	37.3%		0.93	45.6%		- 10.2
TOTAL NATO	1.51	54.2%		1.26	61.7%		- 16.5
TOTAL NATO + JAPAN	1.30	46.7%		1.08	53.2%		- 16.5

# TOTAL ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER AS PERCENT OF TOTAL POPULATION (INCLUDING SPAIN)

	1971			1983			TOTAL % CHANGE
	%	% OF HIGHEST NATION	RANK	%	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	1.18	42.5%	8	1.18	57.9%	7	- 0.1
CANADA	0.59	21.3%	13	0.49	24.0%	14	- 17.2
DENMARK	1.08	38.8%	10	0.91	39.9%	13	- 24.7
FRANCE	1.38	49.5%	5	1.33	65.1%	5	- 3.5
GERMANY	1.05	37.8%	12	1.09	53.5%	8	+3.8
GREECE	2.30	82.5%	2	2.04	100.0%	1	- 11.1
ITALY	1.11	40.0%	9	0.98	47.8%	11	- 12.2
LUXEMBOURG	0.35	12.5%	14	0.38	18.7%	15	+9.7
NETHERLANDS	1.08	38.7%	11	0.91	44.8%	12	- 15.1
NORWAY	1.20	43.3%	7	1.26	61.8%	6	+4.8
PORTUGAL	2.78	100.0%	1	1.03	50.6%	9	- 62.9
SPAIN				1.43	70.2%	3	
TURKEY	1.80	64.6%	4	1.84	90.3%	2	+2.6
UK	1.29	46.4%	6	0.98	48.1%	10	- 24.0
US	1.85	66.5%	3	1.40	68.4%	4	- 24.6
JAPAN	0.24	8.8%	15	0.22	10.9%	16	- 9.2
NON US NATO	1.29	46.4%		1.19	58.5%		
NON US NATO + JAPAN	1.04	37.3%		0.97	47.5%		
TOTAL NATO	1.51	54.2%		1.27	62.2%		
TOTAL NATO + JAPAN	1.30	46.7%		1.10	54.0%		

# TOTAL ACTIVE DUTY MILITARY MANPOWER AS PERCENT OF TOTAL POPULATION

	1971			1983			TOTAL % CHANGE
	%	% OF HIGHEST NATION	RANK	%	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	1.10	40.5%	6	1.10	61.5%	3	- 0.3
CANADA	0.40	14.8%	13	0.33	18.2%	14	- 19.1
DENMARK	0.90	32.9%	9	0.59	33.2%	11	- 33.7
FRANCE	1.11	40.8%	5	1.06	59.3%	4	- 4.4
GERMANY	0.77	28.3%	11	0.81	45.1%	9	+4.8
GREECE	2.02	74.3%	2	1.79	100.0%	1	- 11.6
ITALY	0.97	35.8%	7	0.88	49.0%	8	- 10.0
LUXEMBOURG	0.32	11.7%	14	0.33	18.3%	13	+2.6
NETHERLANDS	0.86	31.4%	10	0.73	40.5%	10	- 15.3
NORWAY	0.93	34.2%	8	0.99	55.3%	5	+6.5
PORTUGAL	2.72	100.0%	1	0.92	51.5%	7	- 66.2
TURKEY	1.70	62.3%	3	1.72	96.2%	2	+1.4
UK	0.69	25.3%	12	0.59	33.1%	12	- 14.2
US	1.31	48.1%	4	0.94	52.5%	6	- 28.4
JAPAN	0.22	8.1%	15	0.20	11.3%	15	- 8.6
NON US NATO	1.02	37.6%		0.95	52.0%		- 7.6
NON US NATO + JAPAN	0.83	30.4%		0.76	42.5%		- 8.4
TOTAL NATO	1.13	41.7%		0.94	52.7%		- 16.8
TOTAL NATO + JAPAN	0.98	36.1%		0.82	45.8%		- 16.8

# TOTAL ACTIVE DUTY MILITARY MANPOWER AS PERCENT OF TOTAL POPULATION (INCLUDING SPAIN)

	1971			1983			TOTAL % CHANGE
	%	% OF HIGHEST NATION	RANK	%	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	1.10	40.5%	6	1.10	61.5%	4	- 0.3
CANADA	0.40	14.8%	13	0.33	18.2%	15	- 19.1
DENMARK	0.90	32.9%	9	0.59	33.2%	12	- 33.7
FRANCE	1.11	40.8%	5	1.06	59.3%	5	- 4.4
GERMANY	0.77	28.3%	11	0.81	45.1%	10	+4.8
GREECE	2.02	74.3%	2	1.79	100.0%	1	- 11.6
ITALY	0.97	35.8%	7	0.88	49.0%	9	- 10.0
LUXEMBOURG	0.32	11.7%	14	0.33	18.3%	14	+2.6
NETHERLANDS	0.86	31.4%	10	0.73	40.5%	11	- 15.3
NORWAY	0.93	34.2%	8	0.99	55.3%	6	+6.5
PORTUGAL	2.72	100.0%	1	0.92	51.5%	8	- 66.2
SPAIN				1.29	71.9%	3	
TURKEY	1.70	62.3%	3	1.72	96.2%	2	+1.4
UK	0.69	25.3%	12	0.59	33.1%	13	- 14.2
US	1.31	48.1%	4	0.94	52.5%	7	- 28.4
JAPAN	0.22	8.1%	15	0.20	11.3%	16	- 8.6
NON US NATO	1.02	37.6%		0.98	54.7%		
NON US NATO + JAPAN	0.83	30.4%		0.80	44.7%		
TOTAL NATO	1.13	41.7%		0.96	53.9%		
TOTAL NATO + JAPAN	0.98	36.1%		0.84	47.1%		

# TOTAL ACTIVE DUTY MILITARY AND CIVILIAN MANPOWER AND COMMITTED RESERVES AS A PERCENT OF TOTAL POPULATION

	1983		
	%	% OF HIGHEST NATION	RANK
BELGIUM	2.25	39.0%	5
CANADA	0.58	10.0%	13
DENMARK	2.19	38.0%	6
FRANCE	2.16	37.5%	7
GERMANY	2.28	39.6%	4
GREECE	4.60	79.9%	2
ITALY	1.45	25.2%	11
LUXEMBOURG	0.38	6.6%	14
NETHERLANDS	2.10	36.5%	8
NORWAY	5.76	100.0%	1
PORTUGAL	1.53	26.6%	10
TURKEY	2.44	42.3%	3
UK	1.24	21.5%	12
US	2.06	35.7%	9
JAPAN	0.25	4.3%	15
NON US NATO	1.94	33.7%	
NON US NATO + JAPAN	1.51	26.3%	
TOTAL NATO	1.99	34.5%	
TOTAL NATO + JAPAN	1.69	29.4%	

AS USED HERE THE TERM "COMMITTED RESERVES" INCLUDES RESERVISTS WITH ASSIGNMENTS AFTER MOBILIZATION.

**TOTAL ACTIVE DUTY MILITARY AND CIVILIAN  
MANPOWER AND COMMITTED RESERVES  
AS A PERCENT OF TOTAL POPULATION  
(INCLUDING SPAIN)**

	1983		
	%	% OF HIGHEST NATION	RANK
BELGIUM	2.25	39.0%	5
CANADA	0.58	10.0%	14
DENMARK	2.19	38.0%	7
FRANCE	2.16	37.5%	8
GERMANY	2.28	39.6%	4
GREECE	4.60	79.9%	2
ITALY	1.45	25.2%	12
LUXEMBOURG	0.38	6.6%	15
NETHERLANDS	2.10	36.5%	9
NORWAY	5.76	100.0%	1
PORTUGAL	1.53	26.6%	11
SPAIN	2.24	39.0%	6
TURKEY	2.44	42.3%	3
UK	1.24	21.5%	13
US	2.06	35.7%	10
JAPAN	0.25	4.3%	16
NON US NATO	1.97	34.2%	
NON US NATO + JAPAN	1.57	27.2%	
TOTAL NATO	2.00	34.7%	
TOTAL NATO + JAPAN	1.72	29.9%	

AS USED HERE THE TERM "COMMITTED RESERVES" INCLUDES RESERVISTS WITH ASSIGNMENTS AFTER MOBILIZATION.

# ARMORED DIVISION EQUIVALENTS (ADE's)

	1983	
	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	1.58%	11
CANADA	0.83%	14
DENMARK	1.81%	10
FRANCE	7.44%	4
GERMANY	10.37%	3
GREECE	6.32%	5
ITALY	4.60%	7
LUXEMBOURG	0.01%	15
NETHERLANDS	3.38%	9
NORWAY	1.52%	12
PORTUGAL	0.91%	13
TURKEY	11.43%	2
UK	5.56%	6
US	40.25%	1
JAPAN	4.00%	8
NON US NATO	55.75%	
NON US NATO + JAPAN	59.75%	
TOTAL NATO	96.00%	
TOTAL NATO + JAPAN	100.00%	

# ARMORED DIVISION EQUIVALENTS (ADE's) (INCLUDING SPAIN)

	1983	
	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	1.52%	12
CANADA	0.80%	15
DENMARK	1.73%	11
FRANCE	7.12%	4
GERMANY	9.93%	3
GREECE	6.05%	5
ITALY	4.41%	7
LUXEMBOURG	0.01%	16
NETHERLANDS	3.24%	10
NORWAY	1.46%	13
PORTUGAL	0.87%	14
SPAIN	4.22%	8
TURKEY	10.94%	2
UK	5.32%	6
US	38.55%	1
JAPAN	3.83%	9
NON US NATO	57.62%	
NON US NATO + JAPAN	61.45%	
TOTAL NATO	96.17%	
TOTAL NATO + JAPAN	100.00%	

# NAVAL FORCE TONNAGE

## (ALL SHIPS LESS STRATEGIC SUBMARINES)

### (THOUSANDS)

	1983	
	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	0.31%	14
CANADA	1.85%	8
DENMARK	0.45%	13
FRANCE	5.33%	3
GERMANY	3.24%	5
GREECE	1.83%	9
ITALY	1.87%	7
LUXEMBOURG	0.00%	15
NETHERLANDS	1.40%	10
NORWAY	0.64%	12
PORTUGAL	0.65%	11
TURKEY	3.23%	6
UK	11.05%	2
US	64.86%	1
JAPAN	3.29%	4
NON US NATO	31.85%	
NON US NATO + JAPAN	35.14%	
TOTAL NAT	96.71%	
TOTAL NATO + JAPAN	100.00%	

INCLUDES GENERAL PURPOSE SUBMARINES, AIRCRAFT CARRIERS, PRINCIPAL SURFACE COMBATANTS, PATROL COMBATANTS, MINE WARFARE SHIPS/CRAFT, AND GENERAL PURPOSE AUXILIARY SHIPS.

IF ALL NATIONAL SYSTEMS ARE INCLUDED THE US SHARE WOULD BE 66%.

**NAVAL FORCE TONNAGE**  
**(ALL SHIPS LESS STRATEGIC SUBMARINES)**  
**(THOUSANDS)**  
**(INCLUDING SPAIN)**

	1983	
	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	0.30%	15
CANADA	1.81%	9
DENMARK	0.44%	14
FRANCE	5.21%	3
GERMANY	3.17%	5
GREECE	1.79%	10
ITALY	1.83%	8
LUXEMBOURG	0.00%	16
NETHERLANDS	1.36%	11
NORWAY	0.63%	13
PORTUGAL	0.64%	12
SPAIN	2.26%	7
TURKEY	3.15%	6
UK	10.80%	2
US	63.40%	1
JAPAN	3.21%	4
NON US NATO	33.39%	
NON US NATO + JAPAN	36.60%	
TOTAL NATO	96.79%	
TOTAL NATO + JAPAN	100.00%	

INCLUDES GENERAL PURPOSE SUBMARINES, AIRCRAFT CARRIERS, PRINCIPAL SURFACE COMBATANTS, PATROL COMBATANTS, MINE WARFARE SHIPS/CRAFT, AND GENERAL PURPOSE AUXILIARY SHIPS.

# NAVAL FORCE TONNAGE (PRINCIPAL SURFACE COMBATANTS) (THOUSANDS)

	1983	
	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	0.44%	14
CANADA	3.50%	6
DENMARK	0.45%	13
FRANCE	7.26%	3
GERMANY	2.56%	10
GREECE	2.78%	8
ITALY	3.81%	5
LUXEMBOURG	0.00%	15
NETHERLANDS	2.72%	9
NORWAY	0.89%	12
PORTUGAL	1.28%	11
TURKEY	2.99%	7
UK	10.13%	2
US	54.59%	1
JAPAN	6.58%	4
NON US NATO	38.83%	
NON US NATO + JAPAN	45.41%	
TOTAL NATO	93.42%	
TOTAL NATO + JAPAN	100.00%	

**NAVAL FORCE TONNAGE**  
**(PRINCIPAL SURFACE COMBATANTS)**  
**(THOUSANDS)**  
**(INCLUDING SPAIN)**

	1983	
	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	0.43%	15
CANADA	3.38%	7
DENMARK	0.44%	14
FRANCE	7.01%	3
GERMANY	2.47%	11
GREECE	2.69%	9
ITALY	3.68%	5
LUXEMBOURG	0.00%	16
NETHERLANDS	2.63%	10
NORWAY	0.86%	13
PORTUGAL	1.24%	12
SPAIN	3.41%	6
TURKEY	2.89%	8
UK	9.79%	2
US	52.73%	1
JAPAN	6.35%	4
NON US NATO	40.92%	
NON US NATO + JAPAN	47.27%	
TOTAL NATO	93.65%	
TOTAL NATO + JAPAN	100.00%	

# TACTICAL AIR FORCE COMBAT AIRCRAFT

	1983	
	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	2.67%	9
CANADA	2.33%	11
DENMARK	1.27%	13
FRANCE	9.52%	3
GERMANY	9.21%	4
GREECE	4.07%	7
ITALY	5.17%	5
LUXEMBOURG	0.00%	15
NETHERLANDS	2.34%	10
NORWAY	1.32%	12
PORTUGAL	1.20%	14
TURKEY	4.34%	6
UK	9.66%	2
US	43.20%	1
JAPAN	3.69%	8
NON US NATO	53.11%	
NON US NATO + JAPAN	56.80%	
TOTAL NATO	96.31%	
TOTAL NATO + JAPAN	100.00%	

INCLUDES FIGHTER/INTERCEPTOR, ATTACK, BOMBER, TACTICAL RECONNAISSANCE  
AND COMBAT CAPABLE TRAINER AIRCRAFT.

# TACTICAL AIR FORCE COMBAT AIRCRAFT (INCLUDING SPAIN)

	1983	
	% OF NATO & JAPAN TOTAL	RANK
BELGIUM	2.62%	9
CANADA	2.28%	11
DENMARK	1.24%	14
FRANCE	9.34%	3
GERMANY	9.03%	4
GREECE	3.99%	7
ITALY	5.07%	5
LUXEMBOURG	0.00%	16
NETHERLANDS	2.29%	10
NORWAY	1.30%	13
PORTUGAL	1.17%	15
SPAIN	1.97%	12
TURKEY	4.26%	6
UK	9.27%	2
US	62.54%	1
JAPAN	3.62%	8
NON US NATO	54.04%	
NON US NATO + JAPAN	57.66%	
TOTAL NATO	96.38%	
TOTAL NATO + JAPAN	100.00%	

INCLUDES FIGHTER/INTERCEPTOR, ATTACK, BOMBER, TACTICAL RECONNAISSANCE  
AND COMBAT CAPABLE TRAINER AIRCRAFT.

# GROSS DOMESTIC PRODUCT

(1983 CONSTANT DOLLARS IN BILLIONS —  
1983 EXCHANGE RATES)

	1971			1983			TOTAL % CHANGE
	\$	% OF NATO & JAPAN TOTAL	RANK	\$	% OF NATO & JAPAN TOTAL	RANK	71 VS 83
BELGIUM	\$ 61	1.2%	9	\$ 80	1.1%	9	+30.6
CANADA	\$ 226	4.4%	7	\$ 325	4.5%	7	+44.0
DENMARK	\$ 44	0.9%	10	\$ 57	0.8%	10	+29.4
FRANCE	\$ 369	7.2%	4	\$ 519	7.2%	4	+40.6
GERMANY	\$ 516	10.0 %	3	\$ 653	9.0%	3	+26.6
GREECE	\$ 23	0.5%	13	\$ 34	0.5%	13	+47.9
ITALY	\$ 267	5.2%	6	\$ 353	4.9%	6	+32.0
LUXEMBOURG	\$ 2	0.0%	15	\$ 3	0.0%	15	+32.7
NETHERLANDS	\$ 100	1.9%	8	\$ 132	1.8%	8	+31.9
NORWAY	\$ 34	0.7%	11	\$ 55	0.8%	11	+59.6
PORTUGAL	\$ 13	0.3%	14	\$ 21	0.3%	14	+56.0
TURKEY	\$ 29	0.6%	12	\$ 49	0.7%	12	+70.6
UK	\$ 369	7.2%	5	\$ 455	6.3%	5	+23.4
US	\$2403	46.7%	1	\$3288	45.5%	1	+36.8
JAPAN	\$ 691	13.4%	2	\$1206	16.7%	2	+74.4
NON US NATO	\$2055	39.9%		\$2737	37.8%		+33.2
NON US NATO + JAPAN	\$2746	53.3%		\$3943	54.5%		+43.6
TOTAL NATO	\$4458	86.6%		\$6025	83.3%		+35.1
TOTAL NATO + JAPAN	\$5150	100.0%		\$7231	100.0%		+40.4

# GROSS DOMESTIC PRODUCT

(1983 CONSTANT DOLLARS IN BILLIONS —  
1983 EXCHANGE RATES)  
(INCLUDING SPAIN)

	1971			1983			TOTAL
	\$	% OF NATO & JAPAN TOTAL	RANK	\$	% OF NATO & JAPAN TOTAL	RANK	% CHANGE 71 VS 83
BELGIUM	\$ 61	1.2%	9	\$ 80	1.1%	10	+30.6
CANADA	\$ 226	4.4%	7	\$ 325	4.4%	7	+44.0
DENMARK	\$ 44	0.9%	10	\$ 57	0.8%	11	+29.4
FRANCE	\$ 369	7.2%	4	\$ 519	7.0%	4	+40.6
GERMANY	\$ 516	10.0 %	3	\$ 653	8.8%	3	+26.6
GREECE	\$ 23	0.5%	13	\$ 34	0.5%	14	+47.9
ITALY	\$ 267	5.2%	6	\$ 353	4.8%	6	+32.0
LUXEMBOURG	\$ 2	0.0%	15	\$ 3	0.0%	16	+32.7
NETHERLANDS	\$ 100	1.9%	8	\$ 132	1.8%	9	+31.9
NORWAY	\$ 34	0.7%	11	\$ 55	0.7%	12	+59.6
PORTUGAL	\$ 13	0.3%	14	\$ 21	0.3%	15	+56.0
SPAIN				\$ 159	2.2%	8	
TURKEY	\$ 29	0.6%	12	\$ 49	0.7%	13	+70.6
UK	\$ 369	7.2%	5	\$ 455	6.2%	5	+23.4
US	\$2403	46.7%	1	\$3288	44.5%	1	+36.8
JAPAN	\$ 691	13.4%	2	\$1206	16.3%	2	+74.4
NON US NATO	\$2055	39.9%		\$2896	39.2%		
NON US NATO + JAPAN	\$2746	53.3%		\$4102	55.5%		
TOTAL NATO	\$4458	86.6%		\$6184	83.7%		
TOTAL NATO + JAPAN	\$5150	100.0%		\$7390	100.0%		

# TOTAL POPULATION (MILLIONS)

	1971			1983			TOTAL % CHANGE
		% OF NATO & JAPAN TOTAL	RANK		% OF NATO & JAPAN TOTAL	RANK	71 VS 83
BELGIUM	9.7	1.5%	10	9.9	1.4%	12	+2.0
CANADA	21.6	3.4%	8	24.9	3.5%	8	+15.3
DENMARK	5.0	0.8%	13	5.1	0.7%	13	+3.0
FRANCE	51.3	8.0%	6	54.5	7.7%	6	+6.3
GERMANY	61.3	9.5%	3	61.4	8.7%	3	+0.2
GREECE	8.8	1.4%	12	9.9	1.4%	11	+11.8
ITALY	54.0	8.4%	5	56.8	8.0%	4	+5.2
LUXEMBOURG	0.3	0.1%	15	0.4	0.1%	15	+6.4
NETHERLANDS	13.2	2.1%	9	14.4	2.0%	9	+8.9
NORWAY	3.9	0.6%	14	4.1	0.6%	14	+5.8
PORTUGAL	9.0	1.4%	11	10.1	1.4%	10	+12.6
TURKEY	36.2	5.6%	7	47.9	6.7%	7	+32.2
UK	55.7	8.7%	4	56.4	7.9%	5	+1.2
US	207.1	32.2%	1	234.5	33.1%	1	+13.3
JAPAN	105.7	16.4%	2	119.0	16.8%	2	+12.6
NON US NATO	330.0	51.3%		355.7	50.2%		+7.8
NON US NATO + JAPAN	435.6	67.8%		474.7	66.9%		+9.0
TOTAL NATO	537.0	83.6%		590.2	83.2%		+9.9
TOTAL NATO + JAPAN	642.7	100.0%		709.2	100.0%		+10.3

# TOTAL POPULATION

(MILLIONS)  
(INCLUDING SPAIN)

	1971			1983			TOTAL % CHANGE
		% OF NATO & JAPAN TOTAL	RANK		% OF NATO & JAPAN TOTAL	RANK	71 VS 83
BELGIUM	9.7	1.5%	10	9.9	1.3%	13	+2.0
CANADA	21.6	3.4%	8	24.9	3.3%	9	+15.3
DENMARK	5.0	0.8%	13	5.1	0.7%	14	+3.0
FRANCE	51.3	8.0%	6	54.5	7.3%	6	+6.3
GERMANY	61.3	9.5%	3	61.4	8.2%	3	+0.2
GREECE	8.8	1.4%	12	9.9	1.3%	12	+11.8
ITALY	54.0	8.4%	5	56.8	7.6%	4	+5.2
LUXEMBOURG	0.3	0.1%	15	0.4	0.0%	16	+6.4
NETHERLANDS	13.2	2.1%	9	14.4	1.9%	10	+8.9
NORWAY	3.9	0.6%	14	4.1	0.6%	15	+5.8
PORTUGAL	9.0	1.4%	11	10.1	1.4%	11	+12.6
SPAIN				38.2	5.1%	8	
TURKEY	36.2	5.6%	7	47.9	6.4%	7	+32.2
UK	55.7	8.7%	4	56.4	7.5%	5	+1.2
US	207.1	32.2%	1	234.5	31.4%	1	+13.3
JAPAN	105.7	16.4%	2	119.0	15.9%	2	+12.6
NON US NATO	330.0	51.3%		393.9	52.7%		
NON US NATO + JAPAN	435.6	67.8%		512.9	68.6%		
TOTAL NATO	537.0	83.6%		628.4	84.1%		
TOTAL NATO + JAPAN	642.7	100.0%		747.4	100.0%		

# GROSS DOMESTIC PRODUCT PER CAPITA

(1983 CONSTANT DOLLARS — 1983 EXCHANGE RATES)

	1971			1983			TOTAL % CHANGE
	\$	% OF HIGHEST NATION	RANK	\$	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	\$ 6339	54.6%	11	\$ 8117	57.9%	10	+28.1
CANADA	\$10455	90.1%	2	\$13054	93.1%	3	+24.9
DENMARK	\$ 8844	76.2%	3	\$11102	79.2%	4	+25.5
FRANCE	\$ 7203	62.1%	8	\$ 9532	68.0%	7	+32.3
GERMANY	\$ 8411	72.5%	5	\$10624	75.8%	5	+26.3
GREECE	\$ 2639	22.7%	13	\$ 3491	24.9%	13	+32.3
ITALY	\$ 4951	42.7%	12	\$ 6209	44.3%	12	+25.4
LUXEMBOURG	\$ 7212	62.1%	7	\$ 8999	64.2%	9	+24.8
NETHERLANDS	\$ 7585	65.3%	6	\$ 9190	65.5%	8	+21.2
NORWAY	\$ 8831	76.1%	4	\$13316	95.0%	2	+50.8
PORTUGAL	\$ 1477	12.7%	14	\$ 2047	14.6%	14	+38.6
TURKEY	\$ 800	6.9%	15	\$ 1033	7.4%	15	+29.1
UK	\$ 6626	57.1%	9	\$ 8078	57.6%	11	+21.9
US	\$11608	100.0%	1	\$14023	100.0%	1	+20.8
JAPAN	\$ 6542	56.4%	10	\$10133	72.3%	6	+54.9
NON US NATO	\$ 6228	53.7%		\$ 7695	54.9%		+23.6
NON US NATO + JAPAN	\$ 6304	54.3%		\$ 8306	59.2%		+31.8
TOTAL NATO	\$ 8302	71.5%		\$10209	72.8%		+23.0
TOTAL NATO + JAPAN	\$ 8013	69.0%		\$10197	72.7%		+27.3

# GROSS DOMESTIC PRODUCT PER CAPITA

(1983 CONSTANT DOLLARS — 1983 EXCHANGE RATES)  
(INCLUDING SPAIN)

	1971			1983			TOTAL % CHANGE
	\$	% OF HIGHEST NATION	RANK	\$	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	\$ 6339	54.6%	11	\$ 8117	57.9%	10	+28.1
CANADA	\$10455	90.1%	2	\$13054	93.1%	3	+24.9
DENMARK	\$ 8844	76.2%	3	\$11102	79.2%	4	+25.5
FRANCE	\$ 7203	62.1%	8	\$ 9532	68.0%	7	+32.3
GERMANY	\$ 8411	72.5%	5	\$10624	75.8%	5	+26.3
GREECE	\$ 2639	22.7%	13	\$ 3491	24.9%	14	+32.3
ITALY	\$ 4951	42.7%	12	\$ 6209	44.3%	12	+25.4
LUXEMBOURG	\$ 7212	62.1%	7	\$ 8990	64.2%	9	+24.8
NETHERLANDS	\$ 7585	65.3%	6	\$ 9190	65.5%	8	+21.2
NORWAY	\$ 8831	76.1%	4	\$13316	95.0%	2	+50.8
PORTUGAL	\$ 1477	12.7%	14	\$ 2047	14.6%	15	+38.6
SPAIN				\$ 4160	29.7%	13	
TURKEY	\$ 800	6.9%	15	\$ 1033	7.4%	16	+29.1
UK	\$ 6626	57.1%	9	\$ 8078	57.6%	11	+21.9
US	\$11608	100.0%	1	\$14023	100.0%	1	+20.8
JAPAN	\$ 6542	56.4%	10	\$10133	72.3%	6	+54.5
NON US NATO	\$ 6228	53.7%		\$ 7352	52.4%		
NON US NATO + JAPAN	\$ 6304	54.3%		\$ 7997	57.0%		
TOTAL NATO	\$ 8302	71.5%		\$ 9842	70.2%		
TOTAL NATO + JAPAN	\$ 8013	69.0%		\$ 9888	70.5%		

# PER CAPITA DEFENSE SPENDING

(1983 CONSTANT DOLLARS — 1983 EXCHANGE RATES)

	1971			1983			TOTAL % CHANGE
	\$	% OF HIGHEST NATION	RANK	\$	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	\$192	19.8%	9	\$271	29.8%	8	+41.5
CANADA	\$270	27.9%	7	\$287	31.5%	7	+6.2
DENMARK	\$263	27.1%	8	\$269	29.5%	9	+2.2
FRANCE	\$291	30.0%	4	\$398	43.6%	4	+36.6
GERMANY	\$282	29.1%	5	\$360	39.5%	5	+27.7
GREECE	\$126	13.0%	11	\$222	24.4%	10	+76.6
ITALY	\$145	14.9%	10	\$167	18.3%	11	+15.3
LUXEMBOURG	\$ 61	6.3%	13	\$112	12.3%	13	+83.5
NETHERLANDS	\$276	28.5%	6	\$296	32.5%	6	+7.2
NORWAY	\$324	33.5%	3	\$411	45.2%	3	+26.8
PORTUGAL	\$102	10.6%	12	\$ 69	7.5%	14	- 33.0
TURKEY	\$ 33	3.4%	15	\$ 52	5.7%	15	+58.2
UK	\$386	39.8%	2	\$426	46.8%	2	+10.3
US	\$969	100.0%	1	\$911	100.0%	1	- 6.0
JAPAN	\$ 56	5.8%	14	\$101	11.1%	13	+80.9
NON US NATO	\$238	24.6%		\$281	30.8%		+17.7
NON US NATO + JAPAN	\$194	20.0%		\$236	25.9%		+21.4
TOTAL NATO	\$520	53.7%		\$531	58.3%		+2.1
TOTAL NATO + JAPAN	\$444	45.8%		\$459	50.4%		+3.4

# PER CAPITA DEFENSE SPENDING

(1983 CONSTANT DOLLARS -- 1983 EXCHANGE RATES)

(INCLUDING SPAIN)

	1971			1983			TOTAL % CHANGE
	\$	% OF HIGHEST NATION	RANK	\$	% OF HIGHEST NATION	RANK	71 VS 83
BELGIUM	\$192	19.8%	9	\$271	29.8%	8	+41.5
CANADA	\$270	27.9%	7	\$287	31.5%	7	+6.2
DENMARK	\$263	27.1%	8	\$269	29.5%	9	+2.2
FRANCE	\$291	30.0%	4	\$398	43.6%	4	+36.6
GERMANY	\$282	29.1%	5	\$360	39.5%	5	+27.7
GREECE	\$126	13.0%	11	\$222	24.4%	10	+76.6
ITALY	\$145	14.9%	10	\$167	18.3%	11	+15.3
LUXEMBOURG	\$ 61	6.3%	13	\$112	12.3%	13	+83.5
NETHERLANDS	\$276	28.5%	6	\$296	32.5%	6	+7.2
NORWAY	\$324	33.5%	3	\$411	45.2%	3	+26.8
PORTUGAL	\$102	10.6%	12	\$ 69	7.5%	15	- 33.0
SPAIN	\$ .	. %	.	\$118	13.0%	12	0.0
TURKEY	\$ 33	3.4%	15	\$ 52	5.7%	16	+58.3
UK	\$386	39.8%	2	\$426	46.8%	2	+10.3
US	\$959	100.0%	1	\$911	100.0%	1	- 6.0
JAPAN	\$ 56	5.8%	14	\$101	11.1%	14	+80.9
NON US NATO	\$238	24.6%		\$265	29.1%		
NON US NATO + JAPAN	\$194	20.0%		\$227	24.9%		
TOTAL NATO	\$520	53.7%		\$506	55.5%		
TOTAL NATO + JAPAN	\$444	45.8%		\$442	48.50%		

APPENDIX B  
BURDENSARING MEASUREMENT FACTORS

DATA PROBLEMS

Any discussion of comparative burdensharing must rest on comparability of the underlying data on which comparisons are based. Ultimately all the data must come from the countries concerned, but each has its own budget, financial and tax systems. In addition, different methods of recruiting and managing manpower make it difficult to compare personnel costs between nations. Problems are created by fluctuations in international exchange rates and differences in the quality and use of inflation indicators. NATO has attempted to deal with some of these problems, e.g., by agreeing on a common definition of what constitutes defense expenditures. NATO has not, however, formally addressed such problems as differences in purchasing power parity, the effects of taxation on defense expenditures, or ways to normalize manpower costs resulting from the use of volunteers or conscripts.

DEFINITION OF DEFENSE EXPENDITURE

The necessary and fundamental basis for a comparison of NATO defense efforts is an agreed common definition of defense expenditures. These are defined broadly, for NATO purposes, as expenditures made by national governments specifically to meet the needs of the country's armed forces. Under this definition expenditures for any given period should represent payments made during that same period, even if, for national accounting reasons, the payments may be charged to a preceding budget period. Only actual payments are counted and the payment is considered made when the money is actually disbursed. Indirect costs, such as loss of revenue cause by of tax exemptions on government transactions, are not counted as payments. An example of a non-defense budget item which might be included in the NATO definition is the cost of domestic security forces (assuming they will be under military authority in wartime, have had military training and are issued military equipment). Other examples would be government contributions to military pension systems and unreimbursed military assistance to other members of the alliance. Items which would not be included in the NATO definition are, inter alia, the costs of war damage, veteran's benefits, civil defense and stockpiling of strategic materials.

The definition above is substantially complete but does not cover all the possible cases. Any division between defense expenditures and other public outlays which contribute to NATO security is partially arbitrary. Aid to developing countries and the expense of maintaining free access to Berlin supplement military outlays to the extent that they foster political cohesion and contribute to free world stability.

Some authorities believe that the cost of defense should be defined in terms of the value of civilian goods and services foregone because of the necessity to spend on defense - the opportunity costs, in an economist's definition. The difference between the opportunity cost and the defense expenditure could be significant in the case of the pay of military personnel in countries which rely on conscription, where military pay is lower than the foregone value of their services to the economy. Defense efforts of such countries would be understated in comparison to those of countries with volunteer forces. However, this distinction holds only when the civilian labor market would offer alternative employment to all conscripted individuals, as in situations of full employment. As unemployment fluctuates in each country the opportunity cost of conscript manpower changes with it.

### EXCHANGE RATES

Exchange rate fluctuations exert an important influence on international comparisons of defense burden-sharing. For example, whenever the US dollar exchange rate falls in terms of the currency of another NATO ally, that country's defense budget appears smaller when converted to dollars. Nevertheless, the amount of defense a given sum can buy remains the same (within the country) despite the fall in terms of the dollar.

In the past year, most NATO currencies have remained fairly stable in terms of each other while most have weakened against the dollar. None (except the dollar) has appreciated significantly. Exchange rates have been held constant in this report to minimize the misleading effects of exchange rate fluctuations on burden-sharing comparisons.

Exchange rate fluctuations reflect economic and political changes in the supply and demand of currencies, which themselves reflect changing financial and trade relationships among countries. They may also reflect changes in mood or business confidence. Because exchange rates are subject to several economic and political forces, the resulting changes in the costs of stationing troops are not considered costs to the Alliance in burden-sharing terms.

It is necessary to find a method to equalize exchange rate fluctuations. The most precise method devised to date is the Purchasing Power Parity (PPP) system. This states the number of units of a country's currency which have the same purchasing power for a category of goods or services as one U.S. dollar has in a given year. This is a good system for comparison between two countries, but becomes much more difficult when three or more are involved.

Another system, developed by the United Nations, is the Country-Product-Dummy (CPD) method which uses a set of "international prices" derived from purchasing power parities. The UN comparisons using these "international prices" reveal a different picture when compared with straight linear exchange rate conversions. The latter method tends to understate real expenditures by other countries relative to the US, especially when the dollar is strong (as it has been during the last year).

Because of such problems of statistical methodology NATO uses agreed-upon statistical data and systems in preparing its International Staff Memorandum: "Basic Statistical data on the Defense Effort and Economic Developments of NATO Countries". The memorandum employs its own exchange rate conversion method to compare national defense expenditures. The NATO international staff is constantly working on the problem of developing better methodology to improve its price deflators. This will lead eventually to the development of an agreed PPP system for defense comparisons. In the meantime, NATO makes its comparisons using the best available data, plus other consistent sources, in its annual International Staff Memorandum.

#### THE EFFECTS OF INFLATION ON DEFENSE SPENDING MEASUREMENT

The technique for handling the complex problem of measuring the effects of inflation on defense spending comparison has become a sub-science of its own. The system used in NATO makes use of a calculated deflator which makes possible comparisons among several countries with differing exchange rates. Deflators can be computed in different ways and several methods have been developed in attempts to draw valid comparisons and conclusions about the defense budgets of NATO countries and Japan. None of these is flawless. Nevertheless, the deflator system is the best tool we have devised up to now to enable quick comparisons to be drawn. Though it is widely used, its methodology is constantly being refined. The deflator allows the most accurate comparisons to be made between the prices and budget outlays of one country with those of another, allowing for each country's rate of inflation.

Inflation can have a important impact on the public's perception of defense spending. While budget outlays in actual amounts continue to increase, the goods and services these amounts buy do not increase at the same rate because of inflation. This is a difficult idea to convey to national electorates who, even if they understand the reasoning behind it, are themselves caught in the squeeze of inflation. In inflationary times, there is strong competition among conflicting interests and programs

for budgetary resources. When popular social programs are threatened and inflation adds new burdens to those who are caring for the young, old, sick and incapacitated, increases in military spending are not politically popular. The effects of inflation on a nation's will to spend scarce resources on defense can be very strong. All NATO countries have had problems with this in the last few years.

#### GENERAL ECONOMIC IMPACT OF DEFENSE EFFORTS

While all NATO countries have common political and defense goals which they try to attain through membership in the Alliance, it is evident that they differ greatly from one another, particularly in economic strength. For example, Iceland has 240,000 inhabitants and the U.S. 235,000,000. Canada has 6 persons per square mile and the Netherlands has 900. Providing space for military use, including bases, is more difficult and represents a greater economic sacrifice where space is limited. Gross Domestic Product (GDP) also varies widely from \$3 billion in Iceland and Luxembourg to \$3,288 billion in the United States. The GDP of the United States represents about 55% of the Alliance total while Germany's is about 11%. GDP variations are largely influenced by the degree of a nation's economic developments. For instance, the United State's per capita GDP is \$14,023 compared to Turkey's \$1,033. NATO has always supported the concept that countries whose economic strength is greatest should assume a greater burden by devoting a larger portion of their GDP to defense. This is similar to the principle of progressive taxation which most NATO countries apply to share the internal costs of government and public services. Therefore, those with higher incomes should be prepared to contribute not only a greater amount in absolute terms but also a greater proportion of their incomes. In some cases, therefore, civilian consumption and investment must be restrained to meet the needs of the Atlantic Community. These limitations should be less onerous for the economically less developed members.

Some of the European members of the Alliance believe that the division between defense and other public expenditures which contribute to security is somewhat arbitrary. Certainly, payments for social purposes, education, investment in economic growth, assistance to developing countries, maintaining free access to Berlin, etc., complement military outlays in that they contribute to political cohesion and aid in resisting internal and external threats. Any other definition of the defense effort would also be open to the charge of being arbitrary as well. While some civilian expenditures also strengthen the defense position of member countries it is equally true that military outlays, particularly infrastructure projects, also benefit the civilian economy. The feeling of security which is the product of defense efforts is a necessary prerequisite to prosperity and internal calm, and contributes to development and prosperity.

### BALANCE OF PAYMENTS

For some countries foreign exchange difficulties have indeed been one of the main obstacles encountered in the defense effort. However, in the case of fairly advanced countries, it is not normally an obstacle of a structural nature, as are the obstacles met by developing countries. In this respect, looking only at the military transactions affecting the foreign exchange position would be misleading; indeed, a relatively large deficit on such transactions may be easily financed by countries whose general balance of payments is positive, or who have accumulated abundant gold and foreign exchange reserves, while even a small deficit on military transactions may seriously add to the balance of payments difficulties experienced by other countries. In short, the problem of the impact of the defense effort on the foreign exchange position of a country has to be examined in the context of its overall external finances, i.e., taking account of the strength of its balance of payments and of its gold and foreign exchange reserves.

### ECONOMIC DEVELOPMENT

The NATO Alliance has several members (and sub-national regions) which are underdeveloped. The stability of these nations is, to a greater extent or lesser extent, dependent on their continued development, and thus this development will to some extent determine their roles in the Alliance in future years.

### INDUSTRIAL IMPACT

Over the years, many programs have been established for the cooperative development and production of NATO weapons. The methods employed coproduction, dual-production and the families of weapons concept. These programs all involve the sharing of development and production costs and have produced large savings in R&D expenditures to individual nations. They are the primary avenue of technology transfer among the nations of the Alliance. Weapons program transfers operate in both directions. For example, the US has bought the MAG-58 machine gun and the 120mm tank gun from Europe, and European manufacturers have fabricated the F-16 airframe and components.

In defense equipment trade, the balance is still well in the United States' favor. In dollar terms we sell approximately six times more equipment to Europe than it buys from us. This is partly explained by the preponderance of "big ticket" items, e.g., fighter aircraft we sell to Europe. We are seeking opportunities to develop more of a two-way street in defense trade with our allies.

### CONTRIBUTION OF STATIONED FORCES TO HOST NATION ECONOMY

tangible benefit to nations where NATO troops are stationed is the

hard currency contributions, both official and personal, which go along with the maintenance of large standing forces. Housing, food supplies and energy are a few of the major expenditures which are largely bought from the host country. Support services and administration are also largely staffed by nationals of the host country, making military bases important employers in several nations. In the forty years since the end WW II, the economies of numbers of communities in Western Europe have become tightly linked to the spending patterns of local base administrations. Local economies also benefit from base-related priorities for internal redistribution - where national governments spend important sums locally in support of facilities on their own soil. While this does not add to the total income of the nations, it has important local effects.

#### WEST BERLIN

Germany makes substantial outlays for the defense of West Berlin which include the support of three allied garrisons (US, UK and France). There are also programs funded by West Germany designed to promote the political and economic stability of the city. Because of several wartime and postwar agreements, West Berlin expenditures, even for the military garrisons, cannot be included as defense expenditures in NATO tallies. Yet, it is Alliance doctrine that the defense of West Berlin is a NATO commitment. If the funds West Germany spends in West Berlin (over \$5.4 billion per annum) were included in her NATO total, her officially documented Alliance burdensharing level would go up substantially. The city of Berlin remains of great psychological value to Germans on both sides of the border, while the NATO commitment to its defense is a visible measure of NATO's resolve in Central Europe.

#### AID TO DEVELOPING COUNTRIES

Official aid to developing countries is sometimes cited as part of a nation's overall defense burden. In addition to military assistance, which is included in NATO's definition of defense expenditure, most industrialized NATO countries extend various types and amounts of developmental assistance to developing countries. While these expenditures do not add directly to NATO's defensive capability, they do in general contribute to Free World peace and stability and they do constitute a financial burden on the donor's economy. The proportion of putative economic aid actually assignable to defense-related purposes can only be estimated on a case-by-case. There is so much variation in the objectives and recipients of aid that direct comparisons between donor countries are very hard to make.

Further, defining "aid" is extremely difficult and can be misleading. Exemptions from tariff and non-tariff barriers, monetary and non-monetary preferences, standards and codes and a variety of preferential commercial arrangements all influence the amounts of assistance provided in real terms. Statistical problems abound. Chart B-1 is an attempt to reconcile as many of the problems as possible.

# NET OFFICIAL DEVELOPMENTAL ASSISTANCE AS PERCENT OF GDP

	PERCENTAGES				\$ MILLIONS			
	1980	1981	1982	1983	1980	1981	1982	1983
BELGIUM	.50	.59	.60	.59	595	575	501	480
CANADA	.43	.43	.42	.45	1075	1189	1197	1429
DENMARK	.74	.73	.77	.73	481	403	415	395
FRANCE	.64	.73	.75	.74	4162	4177	4028	3815
GERMANY	.44	.47	.48	.49	3567	3182	3163	3176
ITALY	.17	.19	.24	.24	683	665	812	827
JAPAN	.32	.28	.29	.33	3353	3171	3023	3761
NETHERLANDS	1.03	1.08	1.08	.91	1630	1510	1474	1195
NORWAY	.85	.82	.99	1.06	486	467	559	584
UNITED KINGDOM	.35	.44	.38	.35	1852	2191	1793	1605
UNITED STATES	.27	.20	.27	.24	7138	5782	8202	7992
NON US NATO	.48	.52	.52	.52	14,531	14,359	13,942	13,506
NATO	.38	.36	.38	.38	21,669	20,141	22,144	21,498
TOTAL	.37	.35	.37	.37	25,022	23,312	25,167	25,259