NATO BURDEN SHARING AND RELATED ISSUES

I. INTRODUCTION

A. NATO has remained a viable institution from its inception on 24 August 1949 (Treaty established on 4 April 1949).

B. NATO has endured and responded effectively to alterations in strategic doctrines, changes in economic conditions, advancements in weapon capabilities, and the emergence of political contingencies.

C. With the end of the Cold War, the dissolution of the Warsaw Pact on 31 March 1991, and the withdrawal of Russian troops some 1,000 kilometers eastward, NATO no longer has the traditional role of deterring aggression from its eastern borders.

D. From 13 December 1956, North Atlantic Council (NAC) extended NATO missions to involve nonmilitary cooperation among its allies, including limiting drug trafficking, promoting scientific cooperation, controlling road traffic, furthering economic cooperation, and addressing common environment problems.

E. Resurfacing issue of burden sharing

- theory of public goods applied to evaluate

- changes in strategy, weapon technology, and perceived threats have changed burden sharing greatly

- huge changes on the horizon arising from peacekeeping, new R & D breakthroughs, and NATO expansion

II. NATO: An Institutional Review

A. Evolution of membership

- 1952: Greece and Turkey joined (13th, 14th)
- 1955: West Germany (15th)
- 1982: Spain (16th)
- 1990: Unified Germany
B. Chronology


- Initial negotiations included Brussels Treaty Powers (Belgium, France, Luxembourg, the Netherlands, and the UK), Canada and the United States.

- on 15 March 1949, Denmark, Iceland, Italy, Norway, and Portugal invited to join.

- established 4 April 1949

- Brussels Treaty Powers alliance merged into the Western Union, later to become the Western European Union (WEU), subordinate to NATO with security of Europe as its mandate.

C. Primary Articles

- Present Table 2.1

- Highlight Articles 4-6

- Articles 7-14 set some of the institutional rules

D. *NATO operates as a "loose" or unintegrated structure in which sovereign allies maintain both policy independence and discretionary power over military expenditures. Any action of the NAC must be unanimous, so that members have not committed themselves to go along with any decision that they disagree with.*

- meetings of the council at the ministerial level or higher are fairly infrequent - about twice a year

- the allies decide the overwhelming portion of their defense spending
independently. Collective or common funding over military command, infrastructure, and civil structure is less than 1% and in 1997 was 0.4%. This may double with NATO expansion.

E. CIVIL STRUCTURE

- NAC: supreme political authority

- Defense Planning Committee handles most collective defense matters

- Nuclear Planning Group addresses issues concerning nuclear forces in NATO

- Secretary-general is a senior statesman elected by allies and is chairman of NAC, DPC, and NPG

- Military committee subordinate to NAC, DPC, NPG which advises the political authorities of NATO on issues involving common defense, and which also oversees the two NATO commands

- Committees

F. MILITARY STRUCTURE

- integrated command structure - two primary commands

  - Supreme Allied Command Europe (SACEUR)
  - Supreme Allied Command Atlantic (SACLANT)

- Each command has three subcommands

- 1994 SACEUR assumed responsibility for out-of-area operations

- Headquarters of the Allied Command Europe (ACE) is the Supreme Headquarters Allied Powers Europe (SHAPE in Casteau, Belgium).

- Within SACLANT, the Canada-US Regional Planning Group provides for the defense of Canada and the United States.
III. PURE PUBLIC GOOD MODEL: DETERRENCE

A. Pure Public Good of deterrence

- Deterrence, as provided by strategic nuclear weapons, is nonrival among allies, because, once deployed, these weapons’ ability to deter enemy aggression is independent of the number of allies on whose behalf the retaliatory threat is made, provided the promised retaliation is automatic and credible: need an automatic trigger of response.

- For strategic forces, benefits are nonexcludable whenever the defense provider(s) cannot fail to deliver the promised retaliatory response against an invader of another ally. This is particularly true if an invasion of one ally creates significant collateral damage to the provider of the deterrent forces - e.g., consider Canada vis-à-vis the US.

B. Basic model

- unitary player maximizes utility subject to a budget or resource constraint and to spillovers

- DEF = f(Price, Income, Spillins, Threat, Strategic aspects)

C. Implications

(1) defense spending burdens are anticipated to be shared unevenly; large, wealthy allies will shoulder the defense burdens for smaller, poorer allies - exploitation hypothesis (perfect substitutability)

(2) defense spending will be allocated inefficiently from an alliance standpoint, inasmuch as the sum of marginal benefits will not be equated to the marginal cost of this provision

(3) No need to restrict alliance size - no crowding
(4) Defense demand depends on relative prices, income, spillins and threat (signs of terms)

(5) Negatively sloped reaction path, present Figure 2.1

(6) As the number of allies expand | more spillins | more suboptimality

IV. JOINT PRODUCT MODEL OF ALLIANCES

A. Joint product model of alliances generalizes the pure public good model, because it encompasses the latter as a special instance when only a single pure public output is derived from the defense activity.

B. If defense provision gives rise to multiple outputs, then joint products exist.
   - imperialism
   - deterrence (purely public)
   - damage limitation or protection (impurely public owing to thinning)
   - ally-specific or private goals (colonial interests, patrolling coastal waters, civil unrest, terrorism)

C. Conventional forces are subject to consumption rivalry in the form of force thinning as a given commitment of forces is spread to defend a longer perimeter (exposed border) or a greater surface area.

D. Structure of Model
   - Unitary player maximizes utility subject to budget constraint, spillins, and joint product relationship
   - Relate weapon types to the kinds of outputs

E. Implications
(1) Burdens of defense shared more in accordance with benefits received. Economic size need not determine burdens.

(2) Defense is nearer to Pareto-optimal levels. The greater the share of excludable benefits to total benefits, the larger should be the concordance between benefits received and burdens shared, because these excludable benefits can only be acquired by providing one’s own defense.

(3) Alliance size restrictions are relevant based on the thinning of forces associated with damage-limiting protection.

(4) \[ \text{ALLDEF} = f(\text{Price}, \text{Full}, \text{Spillins}, \text{Threat}, \text{Strategic}) \] where ALLDEF is alliancewide defense spending and Full denotes full income or the ally’s income plus value of defense spillins. If the model is purely public, then spillins drop out of the equation.

(5) Reaction paths may be positively sloped if two or more of the jointly produced outputs are complementary

V. MILITARY DOCTRINE OF NATO

A. The threat of Soviet westward expansion was held in check by NATO’s adherence to a deterrence strategy of mutual assured destruction (MAD), whereby any Soviet territorial expansion involving NATO allies would be met with a devastating nuclear attack. MC48 allowed NATO’s first use of nuclear weapons.

- credible because Soviet forces were vulnerable to a preemptive attack

- pure public implication


- This doctrine required strategic nuclear forces, tactical nuclear forces, and conventional forces to work together.
- In 1967, NATO adopted directive MC 14/3, which sets out the principles of flexible response.

- Under the new doctrine, aggression would be countered with a measured response based on the nature of the provocation. NATO needed to strengthen both its conventional and tactical forces.

- An European ally that did not increase its military activities might invite aggression, since the Warsaw Pact might have a better opportunity to gain an advantage in a conventional exchange on that ally’s soil.

- This new reliance on conventional weapons meant that a greater share of NATO’s defense benefits was either ally-specific or impurely public as compared with the MAD era. Implication: less exploitation of the large by the small.

- New doctrine created a complementarity between strategic and conventional weapons.

- Buildup of Soviet strategic arsenal eliminated any US first-strike advantage and, with this elimination, the credibility of a US retaliation was also limited.

- 1980 Reagan buildup increased the amount of pure public benefits and made for more free-riding opportunities. Also there was the modernization of French and British nuclear forces.

- Strategic Defense Initiative

- 1984: forward-defense strategy or "deep strike" based on precision-guided munitions to target and destroy the Warsaw Pact’s rear-echelon forces.

C. Post-Cold War doctrine: 1991 on

- Rome summit on 7-8 November 1991, a new defense doctrine began to take shape as NATO assumed responsibility for ensuring Europe’s safety from threats both within and beyond NATO
boundaries.

- This new doctrine of crisis management required the development of more mobile forces that could be projected where needed.

- Oslo summit in June 1992, NATO added peacekeeping as an official NATO mission

- December 1993: Combined Joint Task Forces, multilateral forces that include air, land, and maritime capabilities

- Formal NATO agreement to develop CJTFs was made at the January 1994 Brussels summit

- Investment in power projection: US, France, UK, Germany. Exploitation concerns.

VI. BURDEN SHARING IN NATO: THE PAST AND PRESENT

A. Burden sharing based on defense expenditures as a percent of GDP, which shows the within-country burden of defense spending.

- Present Table 2.2

- Defense burden for the US dropped following the introduction of this doctrine, while those of the other allies had typically stayed the same, thus narrowing the burden-sharing gap.

- Opposite movement of gap during the Reagan buildup

- Downsizing has been more pronounced in the US in the post-Cold War era.

- Olson-Zeckhauser test of correlation between GDP rank and rank of DEF/GDP was positive and significant for 1964.

B. Average Benefit Shares versus Actual Defense Burdens

- Sandler and Forbes (1980) examined the rank correlation between
GDP and defense burdens (DEF/GDP) for all years between 1960 and 1975. Their findings show that this rank correlation was statistically significant (at the .05 level) only until the mid-1960s.

- Khanna and Sandler (1996) updated this earlier study through 1992. There were no statistically significant positive rank correlations after 1966. Some increase in the positive correlation during the Reagan buildup.

- Support pure public model for MAD and impurely public thereafter.

C. Test using alternative defense burden measure equal to the ally’s share of NATO total defense expenditures.

- Tables 2.3 and 2.4


- Applicability of joint product model: proxy for defense benefit is average of (1) an ally’s share of NATO’s population, (2) an ally’s share of NATO’s GDP, and (3) an ally’s share of NATO’s exposed borders.

- Wilcoxon test indicates whether or not average benefit share and defense burden are statistically equivalent. At the .05 level of significance, these two measures are statistically equivalent for 1975, 1980, 1990, and 1994, but not for 1985, at the height of the Reagan buildup.

- 1994 the match, while significant, declined as Britain and France increased their strategic forces and as peacekeeping missions assumed greater importance.

VII. BURDEN SHARING IN NATO: THE FUTURE

A. Increased importance of crisis management
- NATO assumption of peacekeeping would imply more pure publicness and exploitation

- NATO enforcement of the Nuclear Non-Proliferation Treaty (NPT) implies more purely public benefits

- High-technology weapons mean greater R & D and huge investments in weapon systems. US, France, and the UK spend the most on R & D. Tendency to greater R & D share of budget and more exploitation of large by the small.

- EU pooling efforts could limit the exploitation

B. Tendency to pure publicness

VIII. PUBLIC CHOICE CONSIDERATION

A. Government failures as bureaucrats and elected officials pursue their own gains.

B. Public choice considerations can actually lead to overspending. Budget-maximizing tendencies.