

Transatlantic Burden Sharing and Out of Area Operations: Afghanistan in the Context of Historic Trends

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Abstract

This paper argues that while NATO (the North Atlantic Treaty Organization) is undergoing a severe test of alliance cohesion in Afghanistan, this test does not pose a serious threat to its continued existence. Changes in burden sharing among NATO allies across the alliance's entire history can largely be explained by variations in the excludability of security benefits. NATO's burden sharing in Afghanistan, an out of area operation where alliance focused spending can be isolated from general purpose defense expenditures, represents a variation in degree, not in kind, with regard to historical tendencies. Although it represents a challenge to alliance cohesion, disagreements over burden sharing in the ISAF mission are therefore not likely to threaten NATO's future as an alliance.

Introduction

Debates surrounding adaptability and burden sharing in NATO have sharpened recently as the alliance has become deeply engaged in the International Security Assistance Force (ISAF), a security mission in Afghanistan that the United Nations Security Council created in 2001. NATO provides most of the troops involved. Like so many previous challenges NATO has faced, from France's unilateral withdrawal from the alliance's unified command structure in 1966 to the Balkan wars of the 1990s, NATO's role in ISAF, and the concomitant discussions about burden sharing there, is often characterized as a crisis. The collapse of the Soviet Union and the elimination of the unifying threat underlying its existence was another moment at which there was great uncertainty about NATO's future. Without the obvious threat, the alliance could have broken up, persisted as it was, or transformed to meet new imperatives. To all appearances, NATO is transforming, as is evidenced by members' willingness to engage in out of area operations (which take place outside the borders of any NATO member) in the Balkans and Afghanistan. As it has transformed, the way the alliance distributes the burden of security has also evolved.

NATO's continued existence has been addressed most aptly by liberal institutionalist scholars, who attribute the alliance's persistence to members' persistent perception

of NATO as a useful institution. Yet, at least one puzzle remains: what explains the evolution of NATO burden sharing throughout its history? This is a particularly important question, because the answer would help us understand the future of ISAF in particular, and NATO in general. International relations and political economy theories offer three hypotheses that could explain changes in burden sharing among NATO members: structural realism, liberal institutionalism, and the joint product model.

Possible Explanations

Structural realism is characterized by the notion that the interaction between actors at the international level takes place in a situation of anarchy, and that in these circumstances states seek only to assure their own security. Under this anarchic system states invariably fall prey to the security dilemma whereby an action taken simply to preserve one state's security is perceived by others as a threat, and results in increased tensions and constant potential for conflict (Herz 1951). Alliances, then, represent a *temporary* pooling of strategic resources in order to counter a specific threat, or to balance against a perceived risk. Structural realist analyses of NATO have generally yielded two major conclusions. The first is that NATO would not long outlive the passing of the major threat that galvanized its creation (the Soviet Union) (Mearshimer 1990). The second is that European efforts at integration are largely intended to balance US hegemony (Posen 2006).

Most states, under a structural realist framework, eschew any division of labor in security efforts, since they are more concerned with relative power than overall gain (Hellmann 1993). It is for this reason that structural realists see alliances as ultimately ephemeral. Structural realist theory predicts heavy free riding when smaller states on one side of a bipolar condition expect that the great power with which they have allied themselves will attend to the bulk of security provisions as it protects its own interests, as was the case during the early period of the Cold War. There should be less free riding when smaller states perceive that the interests of the great power are no longer immediately aligned with their own. This was the case during the flexible response period of the Cold War when US policy changed from deterrence through massive nuclear retaliation to deterrence through a series of strategies beginning with more conventional warfare. A structural realist approach would thus anticipate a US attempt to press its advantage in the "unipolar moment" that marked the end of the Cold War (Krauthammer 1990), but, as NATO began to fray, for European states to also increase defense spending. Such increases would be focused on national priorities, not NATO priorities.

Liberal institutionalism on the other hand, does not see the concern for relative power as central to states' decision making. This body of work emphasizes international institutions as a determinant of the extent to which relative gains are important. When institutions are stable and meaningful, states are less concerned about relative gains (Hellmann 1993). In other words, institutions act to curb the anarchic nature of interstate relations, while not eliminating it. Liberal institutionalists differ from structural realists on three key points. First, they contend that evolutions in alliance behavior

depend upon institutions, not just relative power calculations. Second, liberal institutionalists do not share the structural realist viewpoint that alliances will collapse when gains are unevenly distributed because they argue that cooperation in the framework of stable institutions can result in a positive-sum game. Third, liberal institutionalists contend that rational actors are sometimes willing to forgo certain aspects of sovereignty in order to construct and maintain institutions that are beneficial to them (Hellmann 1993). Additionally, liberal institutionalist approaches to interstate relations generally accept the notion of complex interdependence, whereby the increase in economic and other forms of cooperation between states reduces the likelihood of conflict (Keohane and Nye 1977). NATO, in a liberal institutionalist framework, can be seen as a product of complex interdependence—and as one of history’s most successful institutions. A liberal institutionalist approach that saw NATO’s persistence as a result of its capacity for institutional adaptation would generally anticipate convergence of burden sharing over time, based on the perceptions member states have that NATO serves multiple purposes and facilitates addressing multiple problems: regional and global instability, as well as relations among the allies themselves.

While liberal institutionalism is an explicit response to structural realism, joint product theory is largely external to that debate. However, it is perhaps a more powerful tool than either of the preceding theories in explaining evolutions in burden sharing in alliances. The joint product model applies when the provision of a single security good has multiple outputs. Benefits from a joint product are impurely public when the benefits are either partially excludable between allies or partially rival among allies (Sandler and Hartley 1999). This paper will rely on the excludability component of the joint product thesis: when security is less excludable, burden sharing ought to be more equal. When it is more excludable, burden sharing ought to be less equal. This simple axiom seems to hold generally true throughout NATO’s history.

The paper poses two empirical questions in order to test these three hypotheses. First, how is the evolution in burden sharing across NATO reflected in member participation in ISAF? Second, how does this evolution fit in the context of burden sharing through NATO’s entire history?

Methodology

Data was analyzed to compare four time periods:

- Massive Retaliation, NATO’s collective defense doctrine from 1949–1966
- Flexible Response, NATO’s collective defense doctrine from 1967–1991
- The Post Cold War Period, from 1992–2000
- The Post 9/11 Period, from 2001–2009

Each era is examined through two empirical approaches. First, a quantitative study of burden sharing in NATO from 1949–2009 provides information on the larger political economy context in which specific operations take place. Second, a spatial statistical study of burden sharing in ISAF after its Area of Responsibility (AOR),

expanded to the whole of Afghanistan in 2007, provides an opportunity to evaluate burden sharing in a specific, out of area NATO operation. It also allows assessment of two sets of US troops with different objectives: one devoted to wider NATO security goals of regional stability (ISAF), and another devoted to narrower US goals stemming from Operation Enduring Freedom (OEF) and the Global War on Terror (now officially referred to as the Overseas Contingency Operation). The presence of these two contingents provides a control for excludability of security. A study of burden sharing in ISAF is therefore an opportunity to isolate spending indicating alliance commitment from spending that indicates balancing.

Spatial Statistical Model

The purpose of the spatial statistical component of this work was to develop an indicator in order to code operational participation of NATO allies in ISAF. The indicator, ISAF BSI, can be divided by a broader indicator called NATO BSI to determine the extent to which allies' military expenditures are alliance focused as opposed to nationally or regionally focused. This project also attempts to add a comparative component to geospatial analysis of the insurgency in Afghanistan and Pakistan, by using zonal statistics to generate a Protection Ratio (PR) for each NATO member's ISAF contingent.ⁱ

To get to the ISAF BSI and the PR, "military burden" is used to measure military expenditures and their economic significance and impact, and is defined as the ratio of military expenditures to the Gross Domestic Product. The "burden sharing index" (BSI) is an indicator developed specifically for this paper, based on the work of Sandler and Hartley (1999). The index is designed as a proxy for the cost/benefit ratio associated with each member's participation in NATO. BSI is calculated by dividing the *NATO Cost Share* of each member (member military expenditures divided by total NATO military expenditures) for each year by the *NATO Benefit Share* of each member (member benefits divided by total NATO benefits). Benefit share expresses benefits as a function of economic goods protected (GDP) and human lives protected (population, with urban population weighted additionally to account for both the increased vulnerability of urban dwellers and their disproportionate contribution to GDP). It is calculated with this formula:

$$\begin{aligned} \text{BSI} &= \frac{\text{NATO Cost Share}}{\text{NATO Benefit Share}} \\ &= \frac{\text{Member MILEX} / \text{Total NATO MILEX}}{(\text{Member GDP} + \text{Member Pop.} + \text{Member Urban Pop.}) / \text{NATOTotal}} \end{aligned}$$

A simple way of understanding the BSI is to imagine two colleagues out for dinner. The total cost of the dinner is \$100. Colleague A ordered \$60 worth of food and drinks, and colleague B ordered \$40 worth of food and drinks. They split the bill evenly. Colleague A therefore bore 50% of the alliance's costs, and received 60% of the alliance's benefits. His BSI is therefore 0.5/0.6, or 0.833. Colleague B also bore 50% of the

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alliance's costs, but received only 40% of the benefits. Colleague B's BSI is therefore 0.5/0.4, or 1.25. In short, the lower the BSI, the lower the burden share.

The burden gap with the United States is a variant of the military burden, specifically using the United States as a point of reference for comparison with other NATO members and groups of members. It is simply the difference between the military burden of the United States and the member or group of members considered. Observing evolution in the burden gap over time facilitates comparison in hypothesis testing.

The ISAF BSI is a function of the PR, which is a ratio of ISAF activities against insurgent forces to insurgency activities against the civilian populace, member troop levels, and member "caveat" status (what restrictions a member has placed on how provided troops can be used). The PR is intended as a proxy for member states' willingness to conduct operations in support of the ISAF commander's first directive: "secure and serve the population" (Petraeus 2010). The PR calculation is:

$$PR = \frac{ISAF \text{ Activity Targeting Insurgency}}{Insurgent \text{ Activity Targeting Civilians}} \bigg/ \frac{Population}{km^2}.$$

Therefore the ISAF BSI is calculated:

$$\begin{aligned} ISAF \text{ BSI} &= \frac{ISAF \text{ PR Share of Member}}{NATO \text{ Benefit Share of Member}} \\ &= \frac{(Member \text{ Troops} \times Member \text{ PR}) / (Total \text{ NATO Troops} \times NATO \text{ PR})}{Member \text{ GDP} + Member \text{ Pop.} + Member \text{ Urban Pop.}} \bigg/ NATO \text{ Total}. \end{aligned}$$

Kernel density calculations were conducted using the ISAF BSI to create a density map of events across Afghanistan, classifiable by district or province.ⁱⁱ The zonal statistics calculation produced the mean PR for the AOR being analyzed. The model produced a raw PR, which was then normalized separately according to troop strength and national caveats to be reinserted into the data set for wider NATO burden sharing as "ISAF BSI" in order to test the theoretical hypotheses discussed above quantitatively. This analysis was done by calculating a ratio of ISAF BSI to overall BSI, which allowed for comparison between a member's share of the more general security burden, and that member's ISAF-specific burden share (largely NATO). Relating the ISAF BSI to the larger BSI allows some mitigation of the problems posed by the joint product nature of military expenditures within an alliance in assessing alliance contributions more generally. The ratio of ISAF BSI to overall BSI will be used as a rough proxy for the ratio of military expenditures designed for joint NATO "consumption" and those designed for either national "consumption" or for the benefit of another institution (primarily Europe's Common Security and Defense Policy or national priorities in this case).

A ratio of 1 or above suggests a greater focus on NATO priorities than on national or regional priorities, a ratio of less than 1 suggests the opposite. Extremely wide varia-

tion in the ISAF BSI/BSI ratio indicates a wide degree of variation among NATO members' NATO-directed military expenditures. Geographically, there exists a concentration of insurgent activities in particular Regional Commands, or RCs (RC-South and RC-East) and a relative dearth of insurgent activities in RC-West and RC-North. On its face, this distribution could be interpreted one of two ways: either the owners of RC-South and RC-East (the UK and the US, respectively) are failing in their stabilization missions where the owners of RC-West and RC-North (Italy and Germany, respectively) are succeeding; or the UK and the US are willing to undertake challenging missions where Italy and Germany are not. The "national caveat" component of the ISAF mission makes the answer to this question appear obvious. But, allowing for national caveats and other restrictions, more nuance is required to understand various NATO members' willingness to contribute to the ISAF mission, and in particular to comply with the "to secure and serve the population" directive.

Modeling Caveats

The PR and the ISAF BSI arrived at in this study merit some caveats. They are based on some very general estimates, due to paucity of data in some cases. First, country AORs, which help explain what country accepted the burden of which incidents, are estimates based on the geographical center of the lowest Afghan administrative unit (province or district) publicly attributed to a given ISAF member, troop movements reported in the media, and the author's experience and judgment as to a reasonable AOR emanating from that location. Second, country protection ratios are also calculated across *all* space that is attributed to the concerned country, even where there is overlap between countries. Hypothetically, then, a small force with the mission to guard an ISAF installation, and therefore with a minimal role in securing and serving the population, would earn the same raw PR score as a larger, more active contingent. Lastly, all incidents were weighted equally. That is to say, a "night letter" published by insurgent forces carries as much weight as a complex attack with 200 victims, and a press conference announcing an impending ISAF offensive carries as much weight as an operation that detains multiple High Value Targets (HVTs).

Findings

Table 1 is a summary of the paper's findings according to each theoretical hypothesis evaluated:

Table 2 outlines ISAF BSI/BSI for five states and two state groupings. The burden of ISAF has seemingly been borne disproportionately by particular European NATO members, at least in comparison to their broader BSI. However, there are several important aspects to this finding. First, BSI was calculated using US contributions to ISAF specifically, i.e. exclusive of OEF contributions. The data in the table reflect the weighting of OEF as a US-interest focused operation, i.e. one whose benefits are perceived as excludable. As US forces become nearly fully committed to ISAF starting in 2010, this trend will change significantly, although US ISAF BSI will remain below 1. It is impor-

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Table 1. Summary of Hypotheses and Findings

STRUCTURAL REALISM	MASSIVE RETALIATION 1949–1966 HEAVY FREE-RIDING, BURDENS HEAVIER ON LARGE POWERS	FLEXIBLE RESPONSE 1967–1991 LESS FREE-RIDING, STILL HEAVY BURDEN ON LARGER POWERS	POST COLD WAR ERA 1992–2000 US ATTEMPTS TO PRESS ADVANTAGES, INCREASED GAPS	POST 9/11 ERA 2001–2009 US ATTEMPTS TO PRESS ADVANTAGES, INCREASED GAPS
LIBERAL INSTITUTIONALISM	SOME FREE-RIDING, BUT CONVERGENCE DURING PERIOD DEPENDING ON DOMESTIC CONSENSUS	SOME FREE-RIDING, BUT CONVERGENCE DURING PERIOD DEPENDING ON DOMESTIC CONSENSUS	CONVERGENCE CONTINGENT UPON PERCEPTIONS	CONVERGENCE CONTINGENT UPON PERCEPTIONS
JOINT PRODUCT MODEL	SHARE TO LARGER POWERS	CONVERGENCE UNTIL SDI, THEN DIVERGENCE AND MORE FREE-RIDING	CONVERGENCE DUE TO HIGH LEVEL OF EU BENEFITS FROM NATO OPERATIONS	DIVERGENCE DUE TO SOME DEGREE OF EXCLUDABILITY IN COMPELLENCE OPERATIONS
FINDINGS	BIGGEST GAPS AND MOST FREE-RIDING	LOWER GAPS OVERALL, BRIEF PERIODS OF FRENCH AND BRITISH BURDEN SHARES EXCEEDING THAT OF US	INCREASED FREE RIDING, BUT LOWER THAN ALL OTHERS ERAS LITTLE EVIDENCE OF US PRESSING ADVANTAGES.	FREE-RIDING INCREASED EVEN FURTHER. SOME EVIDENCE OF US PRESSING ADVANTAGE

tant to note that this finding does *not* mean that European NATO members are contributing more to ISAF than the United States, which is clearly not the case. It means that they are contributing more *relative* to their wider contribution to NATO.

Table 2. ISAF BSI/BSI

COUNTRY/ ISAF BSI/BSI	2007	2008	2009	ISAF AVERAGE	2010 PROJ.
FRANCE	0.0710	0.4574	0.0371	0.1885	0.03
GERMANY	0.2229	0.8126	1.0303	0.6886	0.73
ITALY	0.8064	0.2460	0.3005	0.4510	0.21
UNITED KINGDOM	2.5543	4.0673	3.4202	3.3473	2.41
UNITED STATES	0.6976	0.5898	0.6662	0.6512	0.91
ALL EU MEMBERS	1.4962	2.1140	2.1638	1.9247	1.53
ALL SMALL MEMBERS	1.9174	1.3902	1.3807	1.5628	0.97

Perhaps more interesting is the variation of ISAF BSI/BSI *within* European NATO members. While the table above demonstrates an extremely wide gap between, for example, the UK and France, the chart below demonstrates some interesting cases among NATO's individual members, highlighting extremely high ISAF BSI to overall BSI ratios on the part of Denmark, the UK, and Canada (all known as strongly "Atlanticist" alliance members), and extremely low ISAF BSI to overall BSI ratios on part of France and Italy, with Germany also showing a relatively low ratio. These ratios suggest that Atlanticist countries devote a relatively large proportion of their military expenditures to NATO-focused tasks (in this case ISAF operations), while France and Italy, and to a lesser extent the United States and Germany, may have other priorities.

Historical Evolution

Burden sharing became more equal over the course of the Cold War and the ten years that followed. While gaps between the United States and European allies have widened since 2001, they have not reached levels seen during the Flexible Response period of the Cold War. Nor have they even remotely approached gaps seen during the period of Massive Retaliation. This section will analyze the evolution in burden sharing across NATO during the each period listed above, in light of the three theoretical hypotheses being tested.

Massive Retaliation: 1949–1966

The period from 1949 to 1966 was characterized by NATO's doctrine of Massive Retaliation. This doctrine relied on the threat of unconstrained nuclear response to an act of Soviet aggression to compensate for NATO's relative conventional weakness during the period. Here, it is the joint product model that most closely reflects reality in the Massive Retaliation period, although the structural realist approach also aligns with the data studied. First, the average burden gap between a given country's military burden

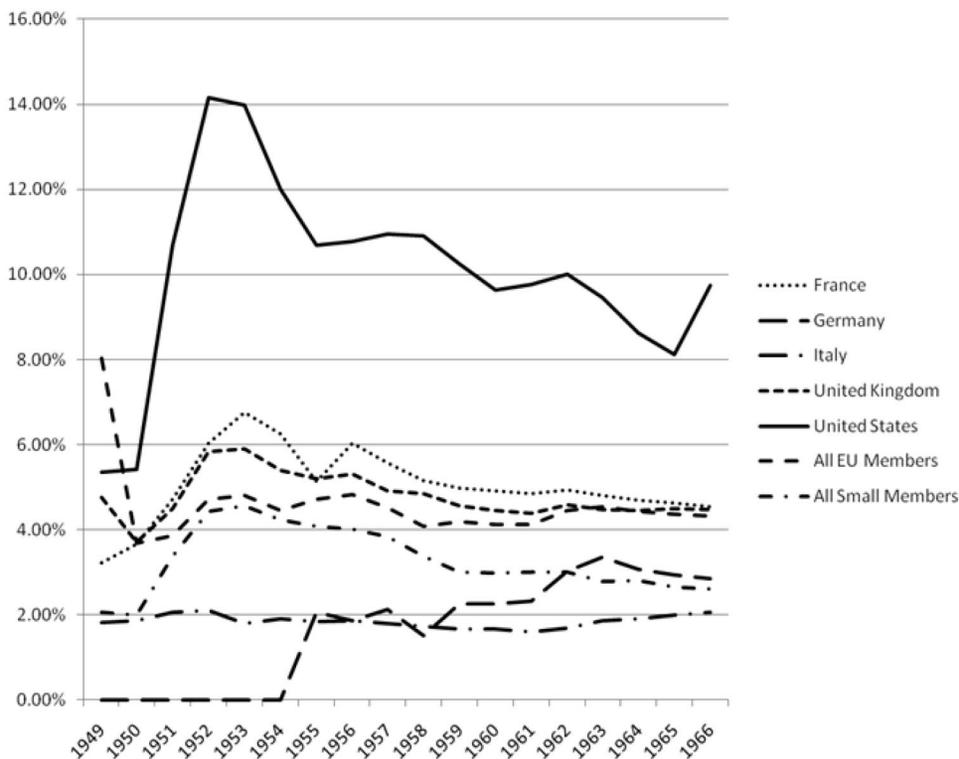
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Table 3. Burden Gap by Country Between 1949 and 1966

COUNTRY/ BURDEN GAP	PERIOD																Avg.		
	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964		1965	1966
FRANCE	2.13%	1.76%	5.98%	8.12%	7.22%	5.74%	5.56%	4.74%	5.37%	5.75%	5.28%	4.72%	4.91%	5.07%	4.66%	3.91%	3.49%	5.20%	4.98%
GERMANY	5.35%	5.42%	10.69%	14.15%	13.98%	12.00%	8.63%	8.91%	8.81%	9.39%	8.00%	7.38%	7.44%	7.00%	6.11%	5.55%	5.17%	6.89%	8.38%
ITALY	3.53%	3.57%	8.62%	12.05%	12.18%	10.08%	8.84%	8.90%	9.16%	9.16%	8.59%	7.97%	8.16%	8.32%	7.59%	6.70%	6.11%	7.67%	8.18%
UNITED KINGDOM	0.59%	1.72%	6.19%	8.32%	8.07%	6.60%	5.50%	5.47%	6.04%	6.06%	5.69%	5.19%	5.38%	5.44%	4.98%	4.15%	3.62%	5.27%	5.24%
UNITED STATES	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ALL EU MEMBERS	1.40%	2.14%	6.74%	9.37%	9.14%	7.53%	5.99%	5.95%	6.37%	6.79%	6.07%	5.52%	5.67%	5.60%	4.96%	4.23%	3.79%	5.48%	5.71%
ALL SMALL MEMBERS	3.29%	3.43%	7.31%	9.72%	9.42%	7.77%	6.61%	6.77%	7.12%	7.53%	7.24%	6.66%	6.76%	7.01%	6.66%	5.82%	5.47%	7.14%	6.76%

and that of the United States is greater during this period than any other studied (see Figure 1).

Figure 1: Military Burden—Select NATO Members (1949–1966)



The large increase in US military burden during the Korean Conflict is also an indicator of the “excludability” of the benefits of that conflict (the United States clearly had more at stake in Korea than did the European NATO allies). Meanwhile, military burden appears to converge across European NATO allies throughout the period. This convergence is most likely due to converging costs and benefits of NATO membership.ⁱⁱⁱ

The evolution of costs and benefits of NATO membership, measured by BSI, is shown in the chart below. The gap between respective countries’ burden sharing indices is largest during the Massive Retaliation period. Highlighting the implications of the Joint Product model, the United States’ BSI saw notable increases at the outset of the Korean and Vietnam conflicts, a feature of the excludability of any perceived security benefits of those conflicts, largely driven by US security priorities rather than NATO priorities.

Flexible Response: 1967–1991

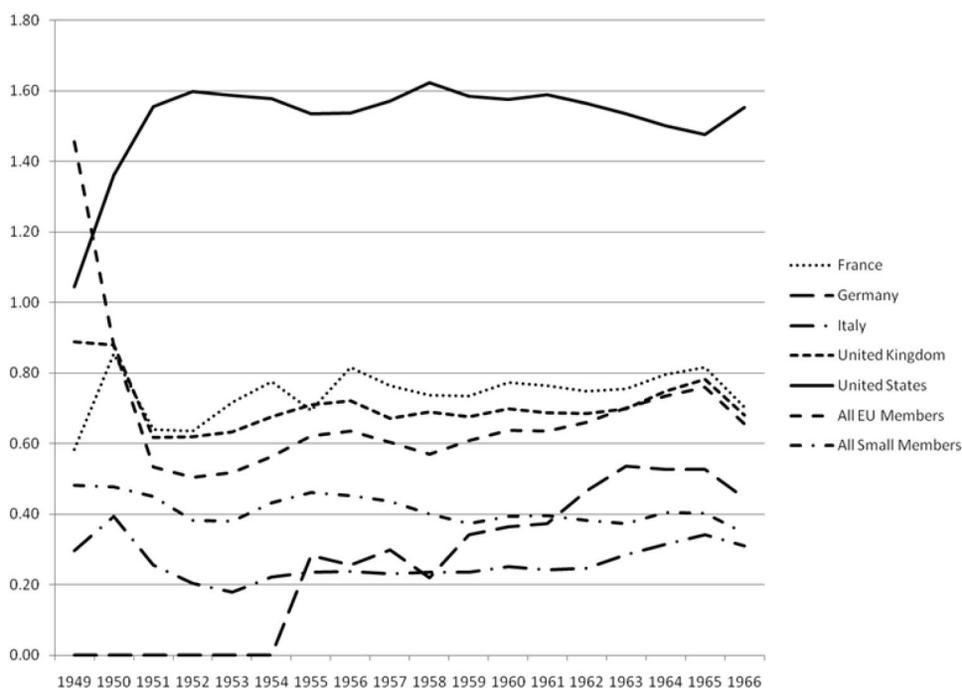
Flexible Response was a period associated with relatively low excludability of security benefits and therefore relatively high equality of burden sharing. Unlike the US/NATO

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Table 4. Burden Gap for NATO Members, 1968 – 1990

COUNTRY/ BURDEN GAP	PERIOD																AVG.
	1968	1970	1972	1974	1976	1978	1980	1982	1984	1986	1988	1990					
FRANCE	5.91%	5.14%	3.59%	2.79%	1.43%	0.50%	0.26%	2.62%	3.31%	2.90%	2.11%	1.60%	2.70%				
GERMANY	7.72%	6.07%	4.10%	2.71%	2.07%	1.29%	1.62%	3.49%	4.05%	3.80%	3.08%	2.18%	3.58%				
ITALY	8.37%	6.90%	5.09%	4.69%	4.07%	3.57%	3.46%	4.60%	4.73%	4.66%	3.61%	2.88%	4.74%				
UNITED KINGDOM	6.46%	5.21%	3.20%	2.67%	1.91%	1.31%	-0.44%	1.76%	2.47%	2.24%	1.82%	0.92%	2.47%				
UNITED STATES	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%				
ALL EU MEMBERS	6.41%	5.19%	3.26%	2.28%	1.48%	0.62%	0.38%	3.36%	4.04%	3.05%	2.22%	1.70%	2.82%				
ALL SMALL MEMBERS	7.49%	6.06%	4.64%	3.63%	2.47%	2.07%	2.62%	4.09%	4.21%	4.01%	3.25%	2.41%	3.94%				

Figure 2: BSI—Select NATO Members (1949–1966)



doctrine of Massive Retaliation during NATO’s early years, in this time period the United States and its allies maintained both conventional and nuclear deterrents.

As the Soviet Union’s power relative to the NATO allies waned and détente between the USSR and the United States developed, structural realism would anticipate a somewhat reduced level of cohesion in the alliance. However, due to the continued conventional and proxy threat from the USSR, a structural realist view of NATO burden sharing would also anticipate gaps in burden share to narrow during this period, with expenditures increasing among European allies concerned about abandonment.

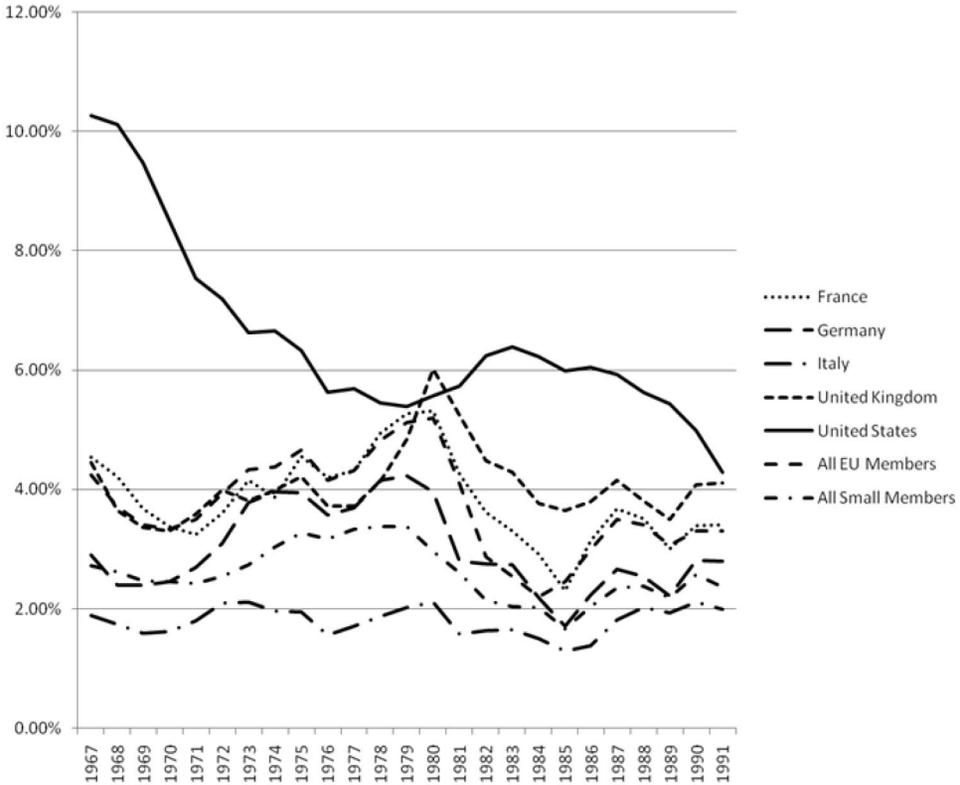
The joint product model’s more precise prediction seems to be borne out by steadily decreasing burden gaps through the late 1960s and 1970s to the point of near convergence, followed by a widening of the gap between the US and the European allies starting around 1981 and continuing through the late 1980s (see Table 4), likely due to the Strategic Defense Initiative (SDI) in the United States, a missile defense program that rendered benefits of US defense spending less excludable, while also increasing that spending.

Figure 3 traces the evolution of selected NATO members’ military burdens during the Flexible Response period. The rapid downward trajectory for the US in the initial years of the Flexible Response period is evident, until the late 1970s, when there was near convergence between the military burdens of the United States, the United Kingdom, France, and the EU average. In the early years of the development of SDI, the US military burden increased slightly, but the EU members’ military burden decreased

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rapidly, likely reflecting the reduction in excludability engendered by SDI. A second round of convergence took place at the end of the Cold War, this time due mainly to rapidly decreasing US military burden.

Figure 3: Military Burden—Select NATO Members (1967–1991)



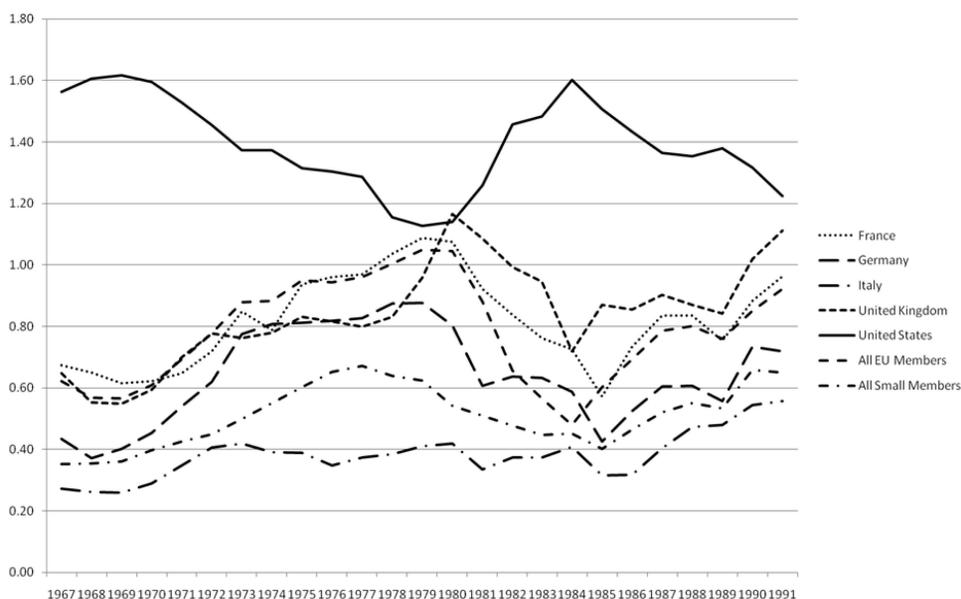
The BSI tells a similar story, with the US BSI only reaching the Massive Retaliation period average in 1968 (the very outset of the period and the height of the Vietnam conflict) and 1984 (the height of the Strategic Defense Initiative). BSI also saw broad convergence in the late 1970s and at the close of the Cold War.

Post Cold War Period: 1991–2000

The immediate aftermath of the Cold War was characterized by a search for direction on the part of NATO, as it sought to redefine itself in the absence of the Soviet threat. The period was also characterized by a series of conflicts at the periphery of Europe, as Yugoslavia disintegrated violently.

The data from this period largely bore out the joint product and liberal institutionalist predictions, as the burden gap separating the United States and its European allies was much smaller during this period than any of the previous periods studied. Interestingly, the gap shrunk from 1992 to 1996, only to begin increasing from 1997 onward.

Figure 4: BSI—Select NATO Members (1967–1991)



This change is likely related to the United States’ 1996 Quadrennial Defense Review (QDR), which apparently determined that the reductions in military spending that had taken place from 1987 onward had been too deep (US Dept. of Defense 1996). Essentially, the 1996 QDR all but acknowledged the United States’ hegemonic position, and attempted to assume significant responsibility for global security. This approach is indicative of the behavior of a unipole facing a hegemon’s dilemma, understood here to mean that “the very extent of the hegemon’s influence means that all sorts of geographic and ideological disturbances can threaten it” (Jervis 2006). Second, it suggests a reduction in the excludability of security, similar to that brought about by the Strategic Defense Initiative in the early 1980s. After 1996, reductions in US military expenditures began to level out as allies’ expenditures continued to dwindle, resulting in an increased gap. This increased gap, however, did not match that experienced in either of the two previous periods studied. The average across the period remains the lowest among the period studied (see Table 5).

Figure 5 demonstrates a period of transatlantic convergence through the early 1990s, apparently driven by a significant reduction in the military burden of the United States, coupled with less significant reductions among the European NATO members, whose expenditures were largely fixed costs associated with personnel in large conscript armies. This pattern appears to cease after 1996, with US reductions slowing to a near halt, and European reductions continuing apace as conscript armies shrank.

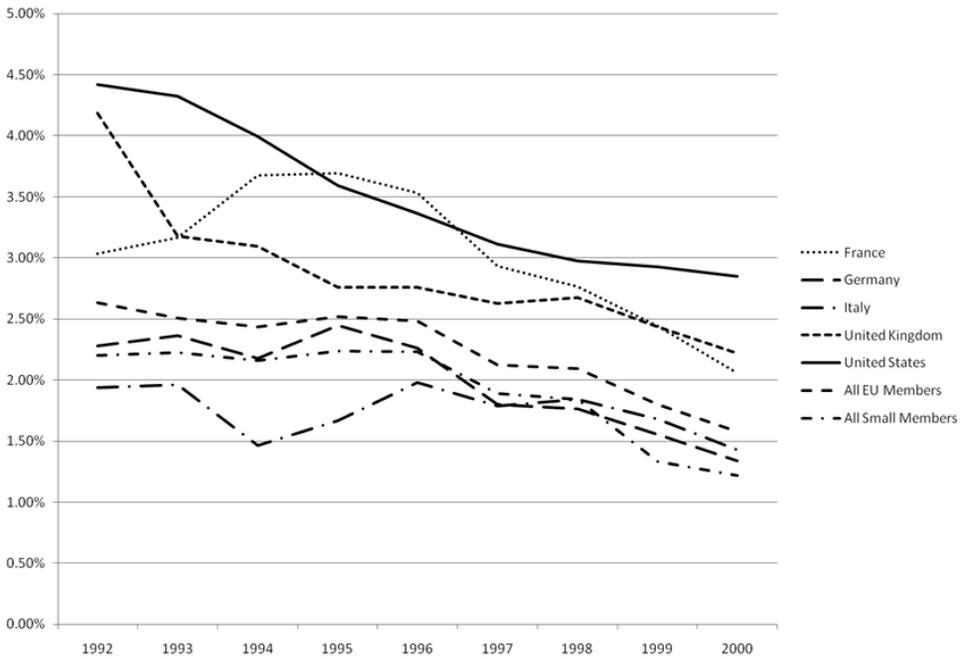
Figure 6 tells a similar story. France’s BSI even narrowly surpassed that of the US in 1995 and 1996, as did its military burden during those years. The trend quickly reversed from 1997 on however, coinciding with the 1996 QDR.

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Table 5. Burden Gap for NATO Members, 1992–2000

COUNTRY/ BURDEN GAP	1992	1993	1994	1995	1996	1997	1998	1999	2000	PCW AVG.
FRANCE	1.38%	1.16%	0.32%	-0.10%	-0.17%	0.18%	0.21%	0.48%	0.79%	0.47%
GERMANY	2.14%	1.96%	1.82%	1.15%	1.10%	1.31%	1.21%	1.37%	1.51%	1.51%
ITALY	2.48%	2.37%	2.53%	1.93%	1.38%	1.32%	1.14%	1.24%	1.42%	1.76%
UNITED KINGDOM	0.24%	1.14%	0.90%	0.83%	0.60%	0.49%	0.30%	0.49%	0.63%	0.62%
UNITED STATES	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ALL EU MEMBERS	1.79%	1.82%	1.56%	1.07%	0.88%	0.99%	0.88%	1.13%	1.27%	1.26%
ALL SMALL MEMBERS	2.22%	2.10%	1.84%	1.35%	1.13%	1.22%	1.13%	1.59%	1.63%	1.58%

Figure 5: Military Burden—Select NATO Members (1992–2000)

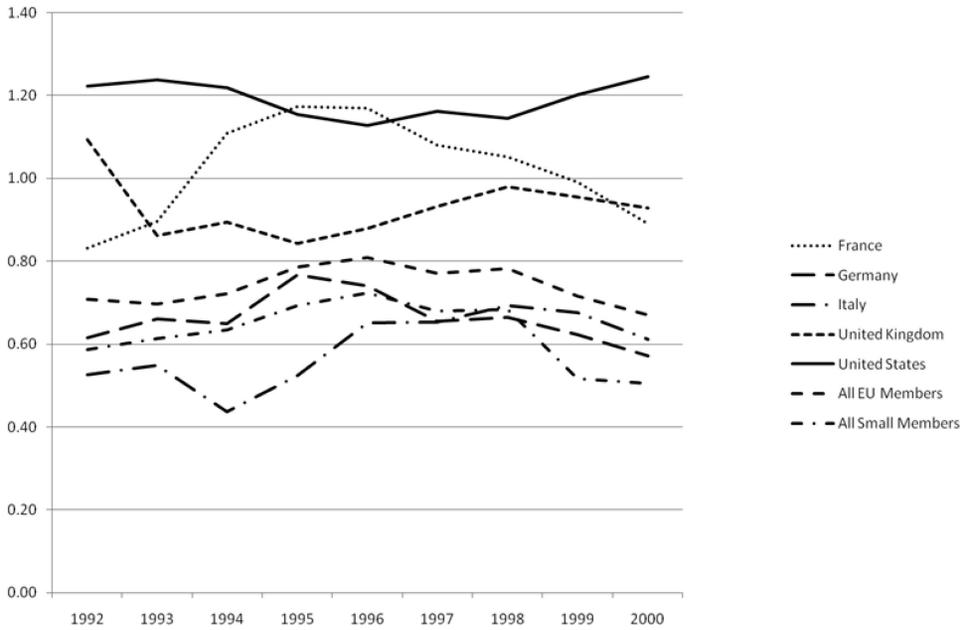


Post 9/11 Period: 2001 to 2009

The period following the September 11 attacks has been characterized by wildly diverging opinions within NATO on appropriate courses of action in the realm of security, which has, in turn, affected both policy and expenditures, and can be best explained by differing perceptions of the threats facing NATO members (Archick and Gallis 2005).

The joint product model would suggest some divergence of burden sharing, as US security gains from adventures in Iraq and Afghanistan were perceived to be partially excludable vis-à-vis European allies. This model suggests that if overall burden sharing

Figure 6: BSI—Select NATO Members (1992–2000)



did not diverge, at least burden sharing relating specifically to out-of area operations would diverge.

The evolution of the burden gap demonstrates a small increase in the gap between the military burden of the United States and those of its European allies. The increases are not, however, as significant as the patterns seen in previous periods would suggest under a structural realist, or even a joint product model of the situation (see Table 6).

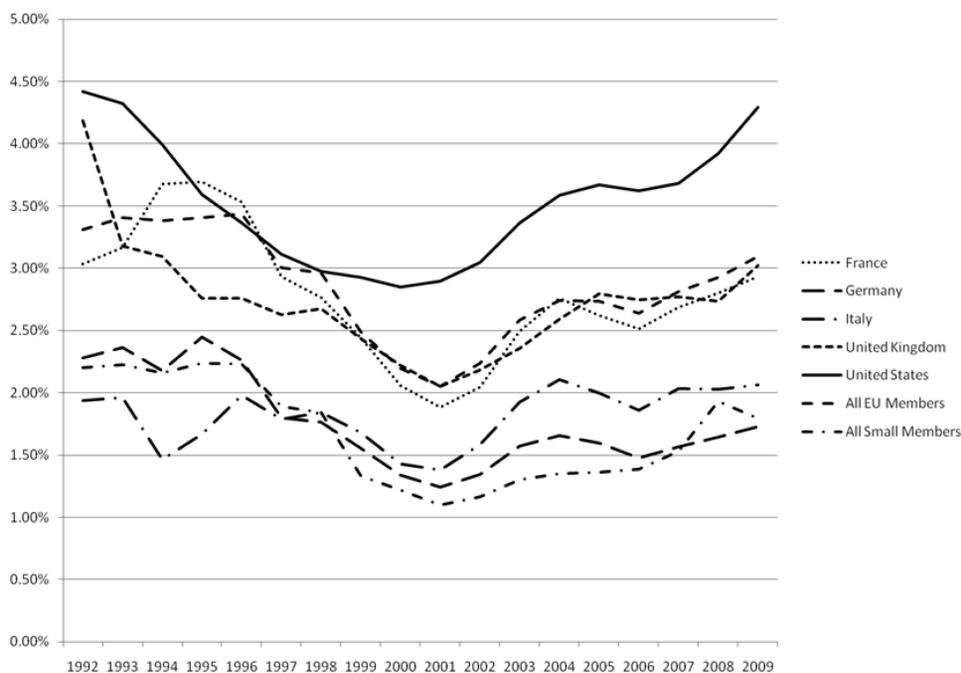
Table 6. Burden Gap for NATO Members, 2001–2009

COUNTRY/ BURDEN GAP	2001	2002	2003	2004	2005	2006	2007	2008	2009	POST 9/11 AVG.
FRANCE	1.02%	1.01%	0.87%	0.83%	1.05%	1.11%	0.99%	1.12%	1.37%	1.04%
GERMANY	1.66%	1.71%	1.79%	1.93%	2.08%	2.15%	2.12%	2.27%	2.57%	2.03%
ITALY	1.52%	1.46%	1.44%	1.48%	1.68%	1.77%	1.65%	1.89%	2.23%	1.68%
UNITED KINGDOM	0.84%	0.86%	1.01%	1.00%	0.88%	0.87%	0.91%	1.18%	1.27%	0.98%
UNITED STATES	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
ALL EU MEMBERS	1.42%	1.45%	1.52%	1.61%	1.71%	1.74%	1.68%	1.83%	2.09%	1.67%
ALL SMALL MEMBERS	1.80%	1.88%	2.07%	2.24%	2.31%	2.24%	2.15%	1.99%	2.50%	2.13%

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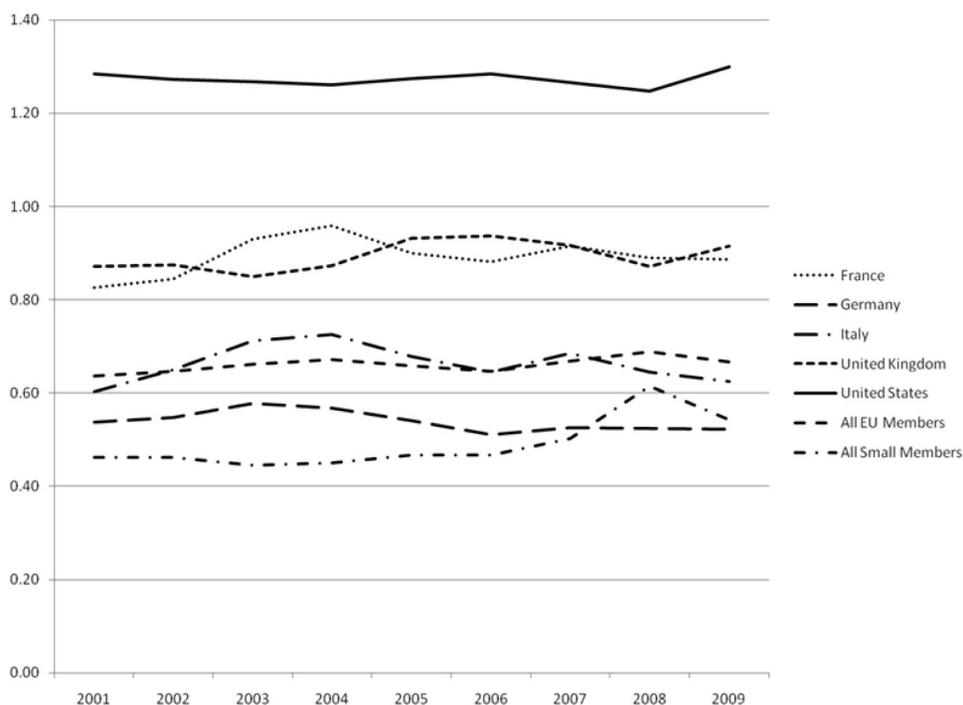
Of note during this period is the high degree of apparent convergence in terms of military burden on the part of the United Kingdom, France, and the overall European Union average, indicating a shared understanding between the EU's leading military powers, and their effective leadership in setting the pace for EU-wide military expenditures (see Figure 7).

Figure 7: Military Burden—Select NATO Members (2001–2009)



Also of note in Figure 7 is the apparent correlation between movements in the United States' military burden and European Union members' military burden. While the United States' burden is continually higher, EU expenditures appear to at least increase in a somewhat correlated manner with regard to US expenditures.^{iv} Liberal institutionalist theory would contend that correlated but lesser expenditures in Europe indicate alliance commitment. Additionally, an apparent degree of stasis in the evolution of the BSI among NATO members also could suggest a degree of "institutionalization" of the transatlantic defense relationship beyond that seen previously (see Figure 8). A structural realist argument, however, would suggest that this close correlation is a result of traditional balancing in accordance with structural realist approaches. The figures are not enough to arbitrate. Countries that are balancing should have a low ISAF BSI relative to their overall BSI, and countries that are committed to the alliance should have a high ISAF BSI relative to their overall BSI.

Figure 8: BSI—Select NATO Members (2001–2009)



Conclusions: Cross-Period Comparisons and ISAF Participation

The analysis makes three major findings. First, that NATO members have operationalized their military expenditures in widely varying fashions in Afghanistan. Second, that burden sharing progressively converged across the alliance over the course of the Cold War and the ten years that followed it, while gaps between the United States and European allies have widened since 2001. This period is associated with relatively high excludability of security benefits and therefore relatively high equality of burden sharing. The present gaps are dwarfed by those observed during the Massive Retaliation period of the Cold War. This period is associated with extremely low excludability of security benefits, and therefore significant inequality of burden sharing. Finally, the relative inequality in ISAF participation, coupled with relative equality in general military spending, indicates that there is a significant amount of spending by NATO members that is *not* NATO-focused. Taken together, these three findings suggest that NATO is undergoing a severe test of alliance cohesion in Afghanistan, but that, taken in the context of historical challenges and NATO’s historical distribution of the costs and benefits of security provision, current challenges seem unlikely to pose a serious threat to the alliance’s existence. Military burdens have generally decreased among NATO members throughout the history of the alliance. This tendency suggests “success” on the part of NATO as a tool of threat mitigation—decreasing military burden is an indicator of decreasing threat perceptions. At the same time, it suggests that NATO as an institution has failed to convince its European members to increase their share of the common

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defense and security burden—a stated goal of NATO at least since the Lisbon Conference of 1952. The post 9/11 period has been a relatively minor exception to this trend—while the US’s military burden has increased slightly relative to the previous period, most European allies’ military burdens have decreased relative to the previous period.

However, there is a puzzling aspect to this evolution: internal to the post 9/11 period, European allies’ military burdens have moved roughly in line with that of the US. Over the entire period studied (1949–2009), roughly 50% of variation in EU members’ military expenditures is correlated with variations in US military expenditures the year prior. This correlation varies from period to period, roughly in line with what would be anticipated by a joint product model of NATO burden sharing: a fairly tight (67%) correlation is seen during the Massive Retaliation period, almost no correlation (less than 1%) is present during the Flexible Response period, and intense correlation (75%) is present during the entire Post Cold War period (from 1991 to 2009). In spite of (or perhaps because of) widespread hand-wringing on both sides of the Atlantic, and while still dramatically less than US military expenditures, European military expenditures have increased in (scaled) rhythm with US expenditures in the most recent period studied. Why? Has NATO cohesion strengthened over this period, in spite of the chorus of naysayers? Or are European powers seeking to balance US power by mirroring changes in military expenditures? Comparing ISAF BSI to overall BSI helps to identify which countries appear committed to alliance priorities (ISAF) and which appear more interested in national or regional priorities. The high variance in ISAF BSI observed suggests that tight correlation in military expenditures between some NATO members and the United States may not come as a result of shared commitment to NATO, but as a result of balancing behavior in line with structural realist arguments on CSDP and balancing (Posen 2006).

These findings support a modified joint product model explanation of variations in military expenditure across NATO over time. It is relatively clear from the data evaluated for this paper that there is a high degree of variation within NATO in terms of the orientation of expenditures, with some members directing their capabilities largely toward NATO priorities such as ISAF, and others pursuing either national or regional priorities. For example, priorities include a US focus on counterterrorism, or a focus in some European states on Europe’s Common Security and Defense Policy (CSDP).

So while NATO has undergone some transformation, the wide variance of engagement in the alliance’s most significant out of area operation ever (ISAF) suggests that inertia may play a significant role in NATO’s continued existence. While each year that NATO continues to exist sheds more doubt on the realist view that it was doomed to collapse after the end of the Cold War, the notion that it exists in name only continues to hold some relevance. The data that this paper has examined reveal that similar efforts up to this point have yielded mixed results, with NATO contributing mightily as an organization to efforts in Afghanistan, although those contributions have varied wildly across member states. If “out of area or out of business” is indeed the forward trajectory for NATO, the future of the organization will depend on whether the member states’

citizens prefer expeditionary engagements to the irrelevance of the alliance. While evidence for NATO's transformation being complete is sparse, it is equally difficult to find evidence of NATO becoming irrelevant. NATO members continue to value their membership in the alliance, as their continued contributions indicate. While the alliance is undergoing a severe test of cohesion in Afghanistan, if this challenge is examined in terms of historical trends in burden sharing, the current challenges do not seriously call NATO's future into question.

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Endnotes

- ⁱ While case studies in burden sharing within NATO are ample (Forster and Cimbala 2005), as are broader analyses of the political economy aspects of NATO burden sharing (Sandler and Hartley 1999), it appears that none have made explicit use of geostatistical analysis.
- ⁱⁱ Kernel Density calculates the density of point features around each output raster cell. "Conceptually, a smoothly curved surface is fitted over each point. The surface value is highest at the location of the point and diminishes with increasing distance from the point, reaching zero at the Search radius distance from the point. Only a circular neighborhood is possible. The volume under the surface equals the Population field value for the point, or one if NONE is specified. The density at each output raster cell is calculated by adding the values of all the kernel surfaces where they overlay the raster cell center. The kernel function is based on the quadratic kernel function (Silverman 1986, 76, equation 4.5) (qtd. in ESRI Developer Network)."
- ⁱⁱⁱ Liberal or historical institutionalists might attribute this trend to NATO as an institution exercising more influence over its members.
- ^{iv} R^2 for US and EU Military Burden over this period is .95, based on a linear regression with a 1-year time lag.

References

- Archick, Kristin and Paul Gallis. 2005. *NATO and the European Union*. CRS Report for Congress. <http://handle.dtic.mil/100.2/ADA469417>
- ESRI Developer Network. "How Kernel Density Works." http://edndoc.esri.com/arcobjects/9.2/NET/shared/geoprocessing/spatial_analyst_tools/how_kernel_density_works.htm
- Forster, Peter Kent and Cimbala, Stephen J. 2005. *The US, NATO and Military Burden-Sharing*. New York: Frank Cass.
- Hellmann, Gunter. 1993. "Neorealism, Neoliberal Institutionalism, and the Future of NATO." *Security Studies* 3.1: 3–43.
- Herz, John. 1951. *Political Realism and Political Idealism*. Chicago: University of Chicago Press.
- Jervis, Robert. 2006. "The Remaking of a Unipolar World." *The Washington Quarterly* 29.3: 5–19.

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Keohane, Robert O., and Nye, Joseph S. 1977. *Power and Interdependence: World Politics in Transition*. Boston: Little, Brown and Company.

Krauthammer, Charles. 1990. "The Unipolar Moment." *Foreign Affairs* 70(1): 23–33.

Mearshimer, John J. 1990. "Why We Will Soon Miss the Cold War." *The Atlantic Monthly* 266.2: 35–50.

Petraeus, David H. 2010. "COMISAF's Counterinsurgency Guidance." Kabul: ISAF.

Posen, Barry R. 2006. "European Union Security and Defense Policy: Response to Unipolarity?" *Security Studies* 15.2: 149–186.

Sandler, Todd, and Hartley, Keith. 1999. *The Political Economy of NATO: Past, Present, and into the 21st Century*. Cambridge: Cambridge University Press.

United States Department of Defense. 1997. *Report of the Quadrennial Defense Review*. <http://www.dod.gov/pubs/qdr/>.