Peace Through Partnership: IGO Membership and Military Spending

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PEACE THROUGH PARTNERSHIP:
IGO MEMBERSHIP AND MILITARY SPENDING

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This paper examines the role of International Intergovernmental Organization (IGO) memberships have on defense expenditures, arguing that state leaders substitute high military spending rates for IGO membership as the information transmission mechanisms of IGOs offer more accurate information about the security environment that diminishes the need for military spending. States do not become pacifists as they are integrated into the international network of IGOs; rather, they find a reduced usefulness in and need for a robust military. This project empirically tests this relationship, and findings indicate a small but significant relationship between military spending and IGO membership. The most integrated states experience a 1 percent reduction in their overall military spending rates. However, this only applies to non-security IGOs. Contrary to previous findings, security IGOs have no consistent influence on military spending.

INTRODUCTION

Military spending remains a major spending priority for most states. As Bohme and Bove (2014) articulate, using Stockholm International Peace Research Institute (SIPRI) data, the world allocated $1.753 trillion (US Dollars) in 2012 for military expenditures. The question of why states spend money on the military has been widely addressed by a large literature within political science.1 In general, this literature has concluded that states respond to the international security environment and create budgets that are the product of domestic political processes which often include numerous actors with varying interests and levels of influence. States, who live in a chaotic and often anarchical world, pursue multiple security solutions simultaneously, including establishing
military competency and strength, defence alliances, forging economic ties, and utilizing the tools of diplomacy. States can substitute one policy option for another in their pursuit of security, leading security policy and defense spending to be influenced by a range of factors. Recent modeling of military spending has confirmed and determined that the major factors in determining military spending are regime type, militarized conflict, the military budgets of allies and enemies and their geographic proximity, economic capacity, and the previous year's budget. These variables contribute to a nearly complete assessment of military spending decisions. However, the current analysis leaves out small but important contributing factors to military spending decisions.

One such small contributing factor that the literature has not examined is the role International Intergovernmental Organizations (IGOs) play in shaping military spending decisions. The literature examining the role of IGOs on state behavior has primarily focused on the role of overlapping memberships and militarized conflict, has examined IGO influence mainly in a dyadic context, and has demonstrated that IGO membership can reduce the propensity of states to engage in militarized disputes, assist in the resolution and management of territorial disputes, reduce the duration of disputes, and facilitate trade. This literature has found that IGOs are formed to coordinate security needs, a primary concern of states, by establishing credible commitments and opportunities for cooperation.

This paper argues that IGO membership directly influences state leaders, who become accustomed to the dispute resolution mechanisms provided by IGOs, and who further become dependent upon IGO networks which shape the strategic choices states make. The literature has examined the role IGOs play in providing information, offering opportunities for communication and mediation with other states, and their influence in regulating the normative behavior of states around security issues.

IGOs are products of major powers and the balance of power within the international system, yet they retain their own individual ability to shape state behavior and interests. States who join IGOs are buying into global governance, which is in part controlled and directed by major powers, mainly the United States (U.S.). IGOs, however, signal and indicate a state's willingness to participate in such governance, and further provide structures for states to interact in the international system. For example, participating in IGOs may signal to the U.S. that a state is on board with its leadership, but it also provides opportunity for cooperation with other states. In other words, the role of IGOs is a mixture of varying types of influence. On one side IGOs provide an opportunity for hegemons to funnel power, while on the other IGOs offer a structured means to govern relations in the international system without such hegemonic influence. Given that the hegemon does not intervene in every conflict or crisis, there is evidence to suggest that IGOs are independent of major powers, at least for some of the time, and to work to fill the power vacuum, and thus help establish the rules of state interactions and behavior. This paper argues that it is this influence that has been unaccounted for in previous examinations of military spending patterns. The influence of IGOs does not turn states into pacifists; rather, they find a reduced need for a robust military. IGO memberships and participation in global governance work to diminish the attractiveness of high military budgets in light of additional information gained through repeated interactions. State leaders face competing demands for limited resources, as winning coalitions demand state resources in exchange for leadership support. In order to meet these demands, leaders look for low cost policies that allow for the simultaneous implementation of policies in other arenas. Leaders learn that they can substitute high military spending rates for IGO memberships, as states develop and become accustomed to the pacific influence of IGOs. Domestic winning coalitions demand military spending, but this has largely been the product of undemocratic regimes and hegemonic
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status. This paper argues that a portion of the costs of providing security can be offset by participating in global governance, because the information gained from the repeated interactions that IGOs facilitate works to develop relationships between states and solidify reputations that foster cooperation and exchange information about capabilities and interests. The information from IGOs makes it more difficult for domestic political actors to advocate for high military spending races, as behavior about other states disseminates through a country.

To test this hypothesis, I examine the role of IGO membership in defense spending outcomes using country-year data. I combine the modeling approach employed by recent military spending research, and couple it with IGO data. The findings indicate that while IGOs work to reduce military spending, it is on average a small percentage of overall defense spending. Since IGOs are not created equally, I break down the IGO variable into security and non-security oriented organizations using Boehmer et al. (2004). I find that it is the non-security organizations that actually reduce military spending, while security organizations when examined on their own have no discernable influence. These findings support the hypothesis that, of all the causal mechanisms identified in the literature that allow IGOs to influence conflict behavior, it is informational exchanges that work to decrease tensions and help illuminate domestic political decisions, because non-security IGOs do not provide their member states with a promise of a defensive military coalition.

The remainder of this paper is organized as follows. First, I briefly examine the theoretical underpinnings of the IGO conflict literature. From there I develop a theoretical framework which argues that IGO membership reduces military spending through the interaction of domestic political demands, and then derive my hypothesis from this discussion. I then outline my research design, present my results and conclude with a discussion of my findings.

THE BENEFITS OF IGO MEMBERSHIP

Liberals, Constructivists, and Realists contest the role of IGOs in international relations, yet combined they provide a holistic and balanced understanding of how IGOs shape state behavior. Realists downplay the power of IGOs to influence state behavior, while Liberals and Constructivists highlight their influence, albeit in slightly different ways. Liberals argue that IGOs can, independently of their membership characteristics, shape the behavior of member states in two general ways. First, IGOs have the ability to increase opportunities for communication between states by providing a forum for the safe transmission of signals, as well as structures to mediate their conflicts. IGOs have credibility that states lack, and when they communicate their interests by threatening sanctions, embargos, or other types of leverage, they can effectively mediate conflicts between states in jeopardy of escalating to a militarized conflict. Second, information transmission increases transparency between states by forcing them to clarify their positions in numerous interactions within the structure of the organization, thus reducing uncertainty between potential adversaries as to their intent, interests, and strategies.

This argument is succinctly outlined in the seminal work of Russett and Oneal (2001), who identify six causal mechanisms that IGOs perform to help keep the peace between member states: (1) enforce norms, (2) mediate among conflict parties, (3) information conveying reduced uncertainty, (4) expands nation’s concept of self-interested into long term, (5) socialization and shaping norms such as democratic ones, and (6) generating narratives of mutual identification. A number of scholars have defended these causal mechanisms with substantial evidence. In short, a consensus among Liberals has agreed that IGOs have the ability to affect the understanding, environment, and interests of states. While the specifics of the argument evolve, such as those arguing that IGOs’ choices are based more on their membership with the intent of avoiding conflict or causing conflict, and debates with realists remain, the consistent argument has been that in certain contexts IGOs can have a pacific effect on state behavior.

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While liberals root their theory in the rational choice calculations states make in response to IGO actions, constructivists argue that IGOs teach states new behaviors and alter their identities and thus their priorities.
Given that IGOs are formulated and designed to facilitate cooperation between states, Constructivist arguments are consistent with the position taken in this paper, that IGO membership has the ability to reorganize the security needs of the state, and can reduce military spending. IGOs shape the policy and normative behavior of states, which see the international community as more conflict-resolution orientated, and who view the use of military leverage as less acceptable. Constructivists further argue that these practices produce customs which define acceptable behavior, such as the norms surrounding the use of nuclear weapons.\textsuperscript{19}

Realists, who see IGOs as merely an extension of state power, and as unable to independently shape state behavior, reject all of the above described Liberal and Constructivist mechanisms.\textsuperscript{20} Realists present strong support for their arguments, as the driving force behind the creation of many IGOs were major powers, whose motivation was to create institutions that could manage their international affairs and advance their interests. Hegemons may be crucial to the creation of IGOs; however, once created IGOs can influence and shape state behavior beyond the intention of major powers.\textsuperscript{21} While some debate remains, a consensus has emerged among many international relations scholars that IGOs shape state behavior.

**IGO MEMBERSHIP AND MILITARY SPENDING**

Building from this literature, this paper argues that IGOs influence the amount of resources states choose to allocate toward the military. The causal mechanisms behind this influence is the role of information exchanges, facilitated by membership in IGOs. Decisions about military spending are made by leaders who face competing demands from their winning coalitions for limited state resources.\textsuperscript{22} All executives must confront the anarchical world, and are thus forced to provide the public good of security, i.e., the protection of the state from internal or external threats. States utilize militaries to provide the public good of security, but in addition they also build alliances and join IGOs. This paper posits that IGOs provide a substitution policy for state leaders, in that they reduce the utility of using military force to achieve state interests, thus reducing tension between states and the probability of conflict. States become conditioned to the pacific mechanisms of IGOs and utilize these mechanisms to prevent conflict and reduce tension, in turn minimizing the pressure to maintain high levels of military spending. States do not eliminate their militaries nor do they refrain from conducting modernization efforts or research and development; rather, the reduced need and utility of the military in the face of demands for other public goods forces leaders to make tough choices, one of which is reducing levels of military spending.

States' decision making is dependent on information flows to and from the executive leadership. Information in an anarchical world is riddled with falsehoods and misinformation, as states are incentivized to misrepresent their capabilities and interests. However, states cannot misrepresent long without consequences, and a great deal can be learned about a nation-state's interests from observing their behavior. IGOs are a formal setting where such behavior can be observed, and remains a major forum where the transmission of information between states can occur. States offer their official position on a variety of issues ranging from economic to social and everything in between. While many of these positions obfuscate the truth, many are substantive and can reveal a state's economic, political, security, or social concerns. For example, Saudi Arabia's motivation to head the U.N. Commission on Human Rights highlights the misrepresentation states can engage in given the Saudi's known behavior, but likewise Saudi Arabia's position on the Organization of the Petroleum Exporting Countries' production targets reveals another state interest. In some cases the detailed information can be specifically about military spending. Consider the Andean Community's (CAN) Lima 2002 Commitment, where the member states of Bolivia, Colombia, Ecuador, Peru, and Venezuela agreed, in part, to declare the region free from air-to-air missiles and from nuclear, chemical, and biological weapons, and made a commitment to eradicate illicit weapons trafficking and anti-personal landmines.\textsuperscript{23} While most of the weapons being banned were beyond the means or strategic interests of the member states, weapons trafficking remains a real threat to the stability of member states. In addition, the agreement called for greater transparency
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in military spending behavior. Over time it is not difficult for states to gain a somewhat accurate picture of the internal workings of another country on military spending issues, but all other interests as well, however incomplete their understanding is.

This information is coupled with the personal relationships that develop in repeated interactions organized by IGOs. Individual diplomats can build relationships, and in the very least reputations for being reasonable, accurate, and honest. While double and triple crosses and other such drama occurs, the bulk of interactions transmit reliable and accurate information. Personal avenues of information exchanges remain critical and widely used mechanisms that shape policy maker perceptions and understandings of the exact threat posed by international actors. For example, media reports discussing various international negotiations and meetings often discuss the reputation of individual diplomats, often in a positive light. Some reports are obviously the product of crafty communication strategies. However, others are successful at their jobs because they effectively communicate. Consider the long time Saudi diplomat Bandar Bin Sultan, who maintained his credentials through four presidents as the Ambassador to the U.S. from 1983-2005. Personal relationships matter in such repeated interactions, and work to facilitate better understanding between countries.

Beyond the personal relationships of diplomats, states make credible commitments within the processes governed by IGOs. These credible commitments work to bolster follow-through in agreements, including the accuracy and amount of information states provide on their official positions. It is this information that helps states discern the interests, position, and motivation of other states. As states gain a more accurate understanding of other states, their budgetary process becomes better informed, and executives can make informed choices on where to put their limited resources. This information may be detailed and useful, and ranges from the Organization of American States Inter-American Convention on Transparency in Conventional Arms Acquisition requiring the exchanging of information regarding arms purchases, to the North Koreans requesting food assistance from the United Nations (UN) Food Assistance Program in September of 2015. In the OAS case, states actually know what other states in the region are doing, to some degree, on arms purchases, while in the UN case China, Japan, the U.S. and others have a better sense of domestic problems facing a weak and belligerent rogue state. The point is that in either case a picture is being transmitted through the information diffusion opportunities offered by IGO structures, diminishing the possibility that state security planning operates on a worst case scenario. IGOs facilitate domestic fact-based budgeting, as opposed to fear based, with fact-based diminishing spending requirements.

Authoritarian leaders are especially prone to this influx of information, as the bulk of public spending is distributed among the political, economic, and military elite of the country. While they do not have the same demands on their spending choices as democratically-elected executives, they are still restrained by their own domestic political environment and need to hold together a winning coalition requiring distribution of state funds. These leaders use the information they obtain from the international community, and rearrange their military spending decisions based on the threat assessment they find in the international security environment. These information flows occur in the repeated interactions they enjoy with countries they have overlapping IGO memberships with.

IGO memberships reduce the military spending by having additional information about how other states are preparing for possible future military action. States can properly adjust their strategic decisions, as opposed to working with incomplete information.

IGO memberships reduce the military spending by having additional information about how other states are preparing for possible future military action. States can properly adjust their strategic decisions, as opposed to working with incomplete information. As Jervis (1976) has noted, there are many different types of misperceptions, and while IGOs do not provide total transparency of other state's military planning, the increased information they provide is more than the limited and questionable information utilized in previous state military planning, a situation which historically led to...
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Turkey's recognition as a candidate for European Union (EU) membership unveiled their military capabilities to Greek policy makers, and created new pathways of information that shaped both Turkey and Greece's policy debates. The sharing of such information occurs through the routinized interactions of state leaders within the structures of IGOs. While the structures of IGOs promote competition and may amplify policy differences, they also allow for bargaining space to be created for cooperation and compromise, which opens the door to a reduction of tension and an avoidance of conflict. IGOs do not eliminate these conflicts; rather, they provide the structures to reduce conflict as well as tension. By providing additional information, states can more effectively plan their security choices. The interactions between states within IGO work to clarify positions and dispel myths about state interests and ideas about action. Given that few state leaders view militarized conflict as a risk-free and productive avenue to achieve their ends, such exchanges will reduce the necessity for high levels of military spending. 

More than simple information exchanges, many IGOs offer the opportunity for states to engage in structured discussions and agreements on important and vital security issues and explore possible actions to take in response to them. This exchange of signals, widely theorized and discussed in the literature, provides the kind of exchange and communication that can alter the internal decision-making processes of states. The credible commitments and leverage mechanisms that enforce compliance of agreements are important for governing state behavior, but such endeavors start with repeated interaction and information exchanges. Even the most contentious relationships can benefit from the exchange of signals. Consider the current conflict between Iran, the U.S. and several Western states over the Iranian nuclear program. Current sanctions implemented by the United Nations Security Council (UNSC) are to be lifted only when Iran ceases suspected enrichment activity under the recently announced deal between the U.S., Russia, France, England, and Iran. Clearly, the adversarial states in this conflict have successfully communicated their positions without resorting to a direct military encounter. This example illustrates the ways in which IGOs serve as a forum for communication for even the most hostile of dyads. Moreover, if Iranians fulfill their portion of the agreement and allow International Atomic Energy Agency (IAEA) inspectors into their nuclear facilities, they can expect certain behaviors from the U.S. and the IAEA. In this case, both countries would not have had to allocate as many resources to the military if the structures of the IAEA and its information transmission capacity were not in place. It is the exchange of information within IGOs that allows the construction and implementation of such arrangements.

On their own, the conflict resolution and pacific mechanisms of IGOs may not shape military spending allocation by states; however, such decisions are not solely the product of foreign affairs, they are deeply rooted in domestic institutions.
overstatements on an adversary's abilities and fueled arms races. Consider the most conservative of Turkey's security elite, whose tension with Greece continues to occupy substantial portions of their military planning. Turkey's recognition as a candidate for European Union (EU) membership unveiled their military capabilities to Greek policy makers, and created new pathways of information that shaped both Turkey and Greece's policy debates about how much security to acquire, thus reducing the required amount of military spending in both countries. Specifically, beyond Greece ending their veto to Turkey's EU candidacy, Turkish leaders learned more about Greece's willingness to resolve the Cypriot question peacefully. While Turkey still considers Greece a threat, Turkish policy leaders are armed with information obtained through the EU accession process that can inform their decision making. Information exchanges can diminish the power of hawks, reduce uncertainty, and result in more pacific policies being adopted, given that failure to pursue an aggressive security policy may prove disastrous. While some information sharing may empower hawks and confirm suspicions, it is the contention of this paper that more often information sharing has a pacific effect, as both states are looking to produce only as much security as needed given the other spending demands on the state.

The sharing of such information occurs through the routinized interactions of state leaders within the structures of IGOs. While the structures of IGOs promote competition and may amplify policy differences, they also allow for bargaining space to be created for cooperation and compromise, which opens the door to a reduction of tension and an avoidance of conflict. IGOs do not eliminate these conflicts; rather, they provide the structures to reduce conflict as well as tension. By providing additional information, states can more effectively plan their security choices. The interactions between states within IGO work to clarify positions and dispel myths about state interests and ideas about action. Given that few state

leaders view militarized conflict as a risk-free and productive avenue to achieve their ends, such exchanges will reduce the necessity for high levels of military spending.

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may not shape military spending allocation by states; however, such decisions are not solely the product of foreign affairs; they are deeply rooted in domestic institutions. State leaders face competing demands for limited state funds, as their winning coalitions demand state resources in exchange for leadership support. Leaders work to maintain the support needed to retain office either electorally in democracies or via the distribution of private goods in autocracies. However, leaders pursue the simultaneous implementation of policies in multiple arenas (education, transportation, health care, etc.) in order to maintain support, and are under great pressure to do so. Leaders work to implement as many successful policies as possible, and thus are motivated to pursue low cost policies that achieve their goal of retaining the support of winning coalitions. As states develop and become accustomed to the pacific mechanisms of IGOs, leaders learn they can substitute high military spending rates for other goods that bolster the support of their winning coalitions. As argued above, the costs of providing security for the state can be offset by participating in global governance, developing relationships and reputations that foster cooperation, and resolving conflicts before they escalate through the mechanisms of IGOs, as such components of IGOs bolster security and reduce the need for high rates of military spending. Forces such as a rivalry or war clearly still retain the power to increase military spending rates in the presence of IGO membership, as the power of IGO memberships cannot overcome all security considerations or threats. However, domestic pressure for state resources simplifies where spending can be cut. IGO memberships clarify for leaders where security policy can be shifted to meet the other demands on the state. The argument presented here is not that IGOs work to eliminate militaries or fully substitute their role in providing security for the state, but rather that IGOs lower the requirement for defense spending, which states take advantage of, given the competing demands leaders face to allocate state resources to other public and private goods in order to retain power.

The international relations literature asserts that there are a large number of influences on military spending. These influences are not zero-sum; they collectively culminate into a state’s decisions on the size of the military budget. Formally, the demand for military expenditures can be expressed most simply as \( M = f(S, NS, I) \), where \( S \) = security environment, \( NS \) = non-security factors, such as wealth and domestic politics, and \( I \) = inertia, which captures the lagged influence of the previous year’s budget and country specific effects. To date the \( S \) portion of the equation has been under-theorized, in that IGO memberships have been left out of previous analyses. Past contributions to the literature, such as Smith (1989), Flores (2011), and others have modeled security in a limited fashion, such as \( S = F(AS, ES, IS) \), with \( AS \) = allied spending, \( ES \) = enemy spending, and \( IS \) = security threats. This paper expands on the field’s understanding of what is considered in \( S \) by adding IGO memberships to the equation. This addition is important given the ability of IGOs to alter the security environment of states, as detailed above. States with strong economies, engaged in a militarized conflict, or facing domestic insurgencies all can expect their defense budgets to vary. While IGOs play a role in the defense budget process, they are a sufficient but not a necessary condition for defense budgets to vary. In other words, IGOs can reduce military spending, but they are not required to reduce military spending, as other factors play a larger role in the defense budget process. However, the sufficient condition does not hold in some circumstances, such as states in full scale war. While some states may be excluded from some IGOs for defense policy decisions, the bulk of IGOs do not prevent membership based on high defense spending rates. The more IGOs a state is a member of, the greater number of joint memberships a state has with the nations of the world, and the more information exchanges, however small, a country will engage in with other nations. In total, the above literature leads to the following hypothesis, which guides this study:

**H1:** States who are members of intergovernmental organizations will reduce their military spending, relative to states that retain fewer IGO membership.

**TESTING THE ARGUMENT**

The data utilized in this study is drawn from Bohmelt and Bove’s (2014) analysis of military spending rates, who gathered their base model from Nordhaus et al (2012). These two projects utilized country-year panel data for the 1952-2000 time period and represent the current consensus among IR scholars on how to model military spending. The major addition...
PEACE THROUGH PARTNERSHIP

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The dependent variable for this study is the share of GDP allocated to the defense budget, measured in constant US Dollars, with a transformation to account for purchasing power parity and log.45 The data is drawn from both SIPRI and Correlates of War (COW) Project, with data from SIPRI providing the 1988-2000 period, and 1965-1987 period being drawn from the COW data. The defense expenditure data contains all financial resources available to the military in time of war, and contains all resources that could be deployed in a time of conflict, regardless of their active or reserve status.46 Military spending data has been criticized for being inaccurate and difficult to properly measure given the general withholding of information states engage in around their security planning. Lebovic (1999) criticized the COW dataset, which builds from both the SIPRI and the U.S. Arms Control and Disarmament Agency (ACDA, now Bureau of Arms Control). Lebovic’s main concern is use of the COW dataset in studies that focus on limited samples arranged by year or geographic region. He concluded, however, that the use of the dataset was appropriate for larger samples, such as the one employed here.47 The argument that Lebovic (1999) makes is that while specific values of defense spending may be inaccurate, the general directionality is correct. Therefore, this research, which aims only at uncovering directionality, is not harmed by this set of issues in the data.

Capturing state involvement in an IGO has several options. The one employed here is a simple measurement of membership, as all IGO memberships have the ability to deliver information regardless of their focus.48 The independent variable of interest, Total IGO Membership, captures the number of IGO memberships a state holds in a given year.49 In calculating this variable, observer and associate memberships are eliminated, making

Total IGO Membership simply the total number of full IGO memberships a given state had in a given year. For example, the U.S. was a member of 96 organizations out of a possible 337 organizations in 1993, making the value for Total IGO Membership for the U.S. in 1993 96. Total IGO Membership captures the level of integration of a state into IGO networks, in comparison to other states and over time, and considers the growth of IGOs in the international system.49 The military alliances of NATO and the Warsaw Pact are removed from the sample, and added to the alliance data. That integration serves as the undercurrent to the theoretical argument presented above; as states become more and more integrated into the international community, the number of ties they have with other states in the IGO context produces more options for resolving conflicts, and thereby reshapes the security planning of the state. States join a variety of types of organizations, and each of them, it is argued here, have the capacity to deliver information. While some IGOs may be better positioned to transmit information, each IGO offers states an opportunity to publicly position themselves on a range of issues, and thus transmit information to other states, and vice versa.

While I argue that all IGOs transmit information, it is clear that not all IGOs are created equal with regards to their capacity and institutionalization.50 This therefore constitutes a major drawback to Total IGO Membership, as it does not distinguish between IGOs. I argue that security IGOs are particularly well positioned to transmit information concerning critical security issues that further facilitate the reduction of military spending. This study therefore parses out the varying influence security IGOs have on state military spending decisions. To do so, this study borrows criteria from Boehmer, Gartzke and Nordstrom (2004) to identify these security IGOs. Boehmer, Gartzke and Nordstrom (2004) suggest that highly institutionalized security IGOs are more able to shape the security behavior of states and contain the following three elements: 1) a high level of institutionalization, 2) member cohesion, and 3) a specific security mandate. Further, they demonstrate that these highly institutionalized IGOs with security mandates do more to reduce the probability of conflict between member states than organizations without such structures, as they possess the "organs or mechanisms of mediation, arbitration, or adjudication aimed at conflict resolution and the enforcement of organizational decisions."51
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These structured organizations contain assemblies, secretariats, bureaucracies to implement policy, formal rules and procedures, and have security cooperation as an integral part of the organization’s founding documents. Interventionist organizations have the above elements combined with mechanisms for mediation, arbitration, and adjudication and other means to coerce state decisions, the means to enforce organizational decisions and norms, and a specific security mandate. These elements of Interventionists or Security IGOs constitute the institutionalization referenced above, as these IGOs have the capacity, resources, and bureaucratic capacity that have the ability and means to effectively communicate private information. For an IGO to have a security mandate, the founding documents must indicate a security intention for the organization. This project argues that all IGOs have some ability to transmit information, but security IGOs are better positioned to communicate critical information that ultimately shape state security spending decisions.

The variable, Total Security IGOs, is a simple count variable calculated by summing the number of security organizations a state is a member of in a given year. To control for the influence of non-security IGOs, a modified version of Total IGO Membership (Total Non-Security IGOs) minus the Total Security IGO variable is added to the model to evaluate which type of organization influence military spending. The two variables, Total Security IGO and Total Non-Security IGO, correlate at .82.

I utilize the modeling strategy employed by Bohmelt and Bove (2014) who build on Nordhaus et al. (2012), whose base model is as follows:

\[
\text{Military Spending (ln)} = \text{Total IGO Membership} + \text{Peace Years} + \frac{\text{trade/GDP} \times \text{Contiguity} \times \text{allies} \times \text{GDP/World GDP} \times \text{number of states in system} \times \text{GDP(logged)} + \text{military spending foes} + \text{military spending allies} + \text{lagged dependent variable} + \text{error term}
\]

Military Spending (ln) is converted into constant US Dollars measured with purchasing power parity and log transformed, and is represented as a share of GDP. Peace Years counts the number of years since a state was involved in any fatal MID. Fatal MIDs are preferred to wars, as they are more common and capture the ongoing security threats of the state (Lake 2009; Nordhaus et al 2012). Democracy has been widely theorized to result in a reduction in military spending, with empirical results providing support, and is drawn from the polity data (Marshall and Jaggers 2004). The share of the overall GDP that is related to trade is the simple product of those two figures, which is included to capture the ranking of the country in a given year relative to the rest of the world. Given that economic power is a major predictor of military spending, it is also included in the model. Having both captures economic changes from year to year, and also the relative influence a country will have in the international system. The data for both share an overall GDP drawn from the Gleditsch data. Given that neighboring countries often pose the largest security threat, a measure of contiguity is also included. The Number of States in the System, as Bohmelt and Bove (2014) state, “simply counts the number of existing countries in a given year.” To account for the influence of other countries military spending levels, two separate measures capturing the military spending of foes and allies are added to the model, both drawn from Nordhaus et al (2012). These figures categorize states as friends or foes based on the similarity of alliance portfolios, with the top half of portfolios being considered friends, and the bottom half foes. Lastly, a lagged dependent variable is included in the model to account for bureaucratic inertia. All states in which there are tens years of data are included in the model. I use pooled time-series data which includes all states for which data are available, which amounts to over 4400 observations for the time period of 1965-2000.

**ANALYSIS AND FINDINGS**

Three modeling strategies are utilized to estimate the relationship between military spending and IGOs. The main modeling strategy utilizes Prais-Winsten regression with correlated Panels Corrected standard errors (PCSE) to account for an AR-1 process found in this time series data on account of the lagged dependent variable. To ensure robustness, I also used cluster analysis, fixed effects, and regional indicators. Tables 2 and 3 display the results from the nine models run. Model 1 is the base model without either IGO variable. Model 2 contains the simple count of Total IGO memberships as the primary independent variable, which produces a negative and significant coefficient. Model 3 removes the Total IGO Membership Count variables, and adds the disaggregated IGO variables, Total Security IGOs
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Table 1: Total IGO Membership and Defense Burden 1965-2000

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1 (PCSE Only)</th>
<th>Model 2 (PCSE IGOs)</th>
<th>Model 3 (PCSE IGOs Disaggregated)</th>
<th>Model 4 (Controls Only)</th>
<th>Model 5 (Only Non Security IGOs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total IGO Membership</td>
<td>.001*** (.0004)</td>
<td>.001 (.002)</td>
<td>-.006** (.002)</td>
<td>.0009* (.0004)</td>
<td></td>
</tr>
<tr>
<td>Security IGOs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non Security IGOs</td>
<td>.001* (.0006)</td>
<td>-.003* (.0001)</td>
<td>-.0003* (.0001)</td>
<td>-.0003* (.0001)</td>
<td></td>
</tr>
<tr>
<td>Peace Years</td>
<td>-.0004* (.0001)</td>
<td>.0002 (.001)</td>
<td>-.0003* (.0001)</td>
<td>-.0003* (.0001)</td>
<td></td>
</tr>
<tr>
<td>Trade/GDP</td>
<td>.004 (.003)</td>
<td>.006* (.003)</td>
<td>.006* (.003)</td>
<td>.005* (.003)</td>
<td></td>
</tr>
<tr>
<td>Regime Type</td>
<td>-.004*** (.0009)</td>
<td>-.0033 (.0009)</td>
<td>-.0033 (.0009)</td>
<td>-.0033 (.0009)</td>
<td></td>
</tr>
<tr>
<td>Contiguity</td>
<td>.002 (.001)</td>
<td>.004* (.001)</td>
<td>.003* (.001)</td>
<td>.003* (.001)</td>
<td></td>
</tr>
<tr>
<td>Contiguity</td>
<td>.002 (.001)</td>
<td>.004* (.001)</td>
<td>.003* (.001)</td>
<td>.003* (.001)</td>
<td></td>
</tr>
<tr>
<td>Allies</td>
<td>-.0001 (.001)</td>
<td>.0064 (.001)</td>
<td>.0002 (.001)</td>
<td>.0005 (.001)</td>
<td></td>
</tr>
<tr>
<td>GDP Share</td>
<td>273 (.226)</td>
<td>1.24 (.228)</td>
<td>1.19 (.231)</td>
<td>1.24 (.231)</td>
<td>1.25 (.224)</td>
</tr>
<tr>
<td>GDP (ln)</td>
<td>.082*** (.012)</td>
<td>.093*** (.013)</td>
<td>.093*** (.013)</td>
<td>.093*** (.013)</td>
<td></td>
</tr>
<tr>
<td>Spending Foes</td>
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<td>.027 (.023)</td>
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<tr>
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<td>.615 (.403)</td>
<td>.621 (.390)</td>
<td>.589 (.391)</td>
<td>.618 (.396)</td>
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**p ≤ .001  *p ≤ .01  **p ≤ .05  *p ≤ .10

Coefficient (Standard Error)

Model 5 GDP per capita is switched out for a logged GDP variable

---

Table 2: IGO Membership and Defense Burden 1965-2000

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 6 (Regions)</th>
<th>Model 7 (Dropped Highly Integrated States)</th>
<th>Model 8 (Fixed Effects)</th>
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<tbody>
<tr>
<td>Security IGOs</td>
<td>-.003 (.002)</td>
<td>-.002 (.002)</td>
<td>-.004 (.002)</td>
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<td>Non Security IGOs</td>
<td>-.001* (.0007)</td>
<td>-.001* (.0006)</td>
<td>-.001* (.0004)</td>
</tr>
<tr>
<td>Peace Years</td>
<td>-.0002 (.0002)</td>
<td>-.0003* (.0001)</td>
<td>-.0003* (.0006)</td>
</tr>
<tr>
<td>Trade/GDP</td>
<td>.004 (.003)</td>
<td>.008* (.003)</td>
<td>.006* (.003)</td>
</tr>
<tr>
<td>Regime Type</td>
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<td>-.003*** (.0009)</td>
<td>-.002*** (.0007)</td>
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<tr>
<td>Contiguity</td>
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<td>.005 (.001)</td>
<td>.001 (.001)</td>
</tr>
<tr>
<td>Allies</td>
<td>-.0002 (.001)</td>
<td>.0005 (.001)</td>
<td>.002 (.001)</td>
</tr>
<tr>
<td>GDP Share</td>
<td>400 (.270)</td>
<td>-759 (.532)</td>
<td>.223 (.245)</td>
</tr>
<tr>
<td>GDP (ln)</td>
<td>.096*** (.013)</td>
<td>.094*** (.014)</td>
<td>.100*** (.006)</td>
</tr>
<tr>
<td>Spending Foes</td>
<td>.021 (.024)</td>
<td>.032 (.025)</td>
<td>.043**</td>
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<tr>
<td>Spending Friends</td>
<td>.001 (.008)</td>
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<td>.044 (.006)</td>
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<td>Europe</td>
<td>.013 (.029)</td>
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<td>Sub-Saharan Africa</td>
<td>.013 (.029)</td>
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<tr>
<td>Middle East</td>
<td>.092** (.28)</td>
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<tr>
<td>Asia</td>
<td>.001 (.020)</td>
<td></td>
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</tr>
<tr>
<td>Lagged DV</td>
<td>905*** (.010)</td>
<td>916*** (.011)</td>
<td>.898*** (.005)</td>
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<tr>
<td>Constant</td>
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<td>-.684 (.419)</td>
<td>-.788** (.266)</td>
</tr>
<tr>
<td>R2</td>
<td>97</td>
<td>97</td>
<td>97</td>
</tr>
<tr>
<td>N</td>
<td>4492</td>
<td>4492</td>
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</table>

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Coefficient (Standard Error)

Model 5 GDP per capita is switched out for a logged GDP variable

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### Table 1: Total IGO Membership and Defense Burden 1965-2000

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
<th>Model 5</th>
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<td>-.001 (.006)</td>
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<tr>
<td>Non Security IGOs</td>
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<td>-.0003* (.0001)</td>
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<tr>
<td>Peace Years</td>
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<td>-.0003* (.0001)</td>
<td>-.0003* (.0001)</td>
<td>-.0003* (.0001)</td>
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<tr>
<td>Trade/GDP</td>
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<td>Regime Type</td>
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<td>Spending Foes</td>
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<td>-.615 (.403)</td>
<td>-.621 (.393)</td>
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***p ≤ .001, **p ≤ .01, *p ≤ .05, +p ≤ .10
Coefficient (Standard Error)
†For Model 5 GDP per capita is switched out for a logged GDP variable

### Table 2: IGO Membership and Defense Burden 1965-2000

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<th>Model 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security IGOs</td>
<td>-.003 (.002)</td>
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<tr>
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<tr>
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<td>.043**</td>
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***p ≤ .001, **p ≤ .01, *p ≤ .05, +p ≤ .10
Coefficient (Standard Error)
and Total Non-security IGOs. The results indicate that it is the non-security IGOs that have a negative influence on military spending, while security IGOs have a positive but non-significant influence on defense spending rates. Models 4 and 5 each profile the security IGO and non-security IGO membership variables, with each coefficient being negative and significant, indicating that while the non-security IGO variables remain consistent from model 3, the security IGO variable switches direction and becomes negative and significant. Total Security IGOs and Total Non-security IGOs Count correlate at the .82 level.

Drawing on the results contained in model 3, the Clarify program was used to produce fixed effects and offer a better understanding of the influence of the variables of interest on military spending. The results suggest the average state has a less than 1 percent reduction of military spending, as they move from the lowest to the mean value in non-security IGOs. In other words, a state with both the average military spending rate and average number of non-security IGOs has a 7 percent reduction in military spending in a given year based on what the findings of model 3 suggest. States with the average military spending rate who have the highest number of non-security IGOs reduce their military budgets by 2 percent. In substantive terms, this model indicates that a country such as Spain, the country with the closest to the average defense spending in 2012, would reduce their military spending by US $807 Million (2012) a year if they had the average number of non-security IGO memberships. Given that Spain is more integrated than the average country in the international network of IGOs, that figure is likely higher based on the models' findings. The suggestion from the model is that the influence that non-security IGOs have, while a small percentage, could constitute a substantial sum for many countries. Take Jamaica in 1996, for example, whose economy was in the tenth percentile of the sample, was member of 16.6 percent of the active IGOs that year, and saved nearly $17 million dollars, a substantial sum for a nation of less than three million people. Such funds may have been utilized to tackle social issues such as education or health care, resulting in a measurable increase in the standard of living, or amounting to a de facto tax cut. On the other side of the spectrum, the Netherlands, whose economy in 1996 was in the 90th percentile for the sample, held memberships in 31 percent of active organizations, resulting in a calculated savings of 2.6 billion or 24 percent of their defense. The average country by both economic size and IGO membership saved over $133 million dollars in military spending a year, while countries in the 90th percentile of economic size saved over $2.1 billion a year. These results suggest a strong negative relationship between membership in IGOs and military spending, and provides support for Hypothesis 1, which suggests that non-security IGO memberships lead to a reduction in militarization.
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Figure 1, built from model 3, captures the first differences graphically, and indicates the strong decline in military spending levels as states increase the value of non-security IGOs. Table 2 examines models that add regional indicators to the analysis. Model 6 is an amended version of model 3, adding regional indicators to the modeling. Only the Middle East variable was significant, and its positive coefficient suggests that relative to the reference category, suggesting that Middle Eastern nations were more likely to have higher rates of military spending compared to the other regions. Further, the coefficient for non-security IGOs falls from a significance level of .025 in model 3 to .07 in model 6, indicating that some of the influence of IGOs can be in part
explained by regional characteristics. Model 7 examines this premise by removing the most integrated states in the dataset and re-running model 3. In this scenario, the results are consistent with model 3, as non-security IGOs having a negative and significant influence on military spending rates. Model 8 is a fixed-effects model that produces results consistent with model 3. Further, alternative sets of control variables did not alter the results. I dropped peace years and added a simple count of MIDs in a given year, added civil wars, regional instability (which is a count of civil wars and MIDs occurring in neighboring states), rivalry, a Cold War dummy, and major power, all of which did not alter the results in any significant way. Further, I split the alliance variable into major power alliances (U.S., Russia/Soviet Union, France, UK, China) and non-major power alliances, with the results that were consistent with model 3, and in a model not reported here dropped alliances all together with results consistent with model 3 as well. This indicates that the influence of alliances is diminished with the presence of IGOs. Further, there is evidence from the models to suggest that even while controlling for alliances with major powers, that non-security IGOs work to reduce military spending. These findings help illustrate how IGOs are important factors in military spending decisions. Tests for panel unit roots indicated stationary data. Lastly, cluster analysis on standard errors was used with results consistent with model 3. In all, the data was not sensitive to alterations and the findings of model three were consistently with the robustness checks utilized.

CONCLUSION
This research contributes to the literature by starting a conversation about the possibility of a more nuanced understanding of how IGO memberships shape state decision making around a critical component of state behavior. This research suggests that membership in IGOs, specifically non-security IGOs, reduces military spending rates. As states increase the number of IGO memberships, they reduce, albeit in small numbers, the size of their military budgets. States use the information gained from repeated IGO interactions to inform their understanding of the global security environment, and it is the more common and repeated interactions that in non-security IGOs with a diverse set of states that help reduce military spending, not security-IGOs where member states are more likely to have strong pre-existing bilateral relationships. Information from IGOs change the internal calculations of states, who can substitute IGO membership for military strength, with the influence of IGOs extending beyond dyadic relationships. Yet the findings also undermine the position that IGOs are inherently a pacific force in the international system, as security IGOs have no discernable influence on military spending rates. The expectation of the theory presented here is that as states increase their participation in IGOs, they will reduce their military spending rates, not eliminate or dramatically reduce them. States continue to retain their ability to defend themselves as they increase their IGO memberships. These are slight changes, amounting to no more than 2 percent of defense spending for the most integrated states, and a tenth of a percent for the least. The findings suggest that IGOs matter, but not nearly as much as economic power, regime type, or conflict.

This research establishes the link between certain types of IGOs and reductions in military spending, there are clear directions future research can take. First, the results here do not isolate specific IGOs, aside from those that do not have a security mandate, and thus we cannot tell for sure the exact nature or specific functions various IGOs carry out. This suggests that more research is needed to evaluate what particular information transmission processes work to reduce military spending rates. Further, the results do not identify what kind of military spending changes occur. Militaries may be making changes in strategy, such as fewer troops and more intelligence spending. Future work should investigate these shortcomings.

This research has direct policy implications. States should consider how their commitments to security IGOs shape their defense planning, and examine if those commitments are undermining their overall security agenda. Policy makers can also consider actions that either increase the...
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This research has direct policy implications. States should consider how their commitments to security IGOs shape their defense planning, and examine if those commitments are undermining their overall security agenda. Policy makers can also consider actions that either increase the
number of effective IGOs or strengthen the ties with preexisting memberships. Such action arguably will free up resources for investment in education, health care, emerging industries or possible tax cuts, all factors that determine the health of a society in a global economy. States can continue to utilize IGOs to coordinate collective state action, communication, and facilitate conflict resolution mechanisms in the context of a dispute. It is clear that some of these institutions are working to reduce the threat of militarized conflict and facilitate state cooperation on shared interests.

Appendix A: List of Security IGOs

African Union
Arab League
Arab Maghreb Union
Association of Southeast Asian Nations
Commonwealth of Independent States Charter
Commonwealth Secretariat
Economic Community of Central African States
Economic Community of West African States
European Bank for Reconstruction and Development (EBRD)
European Economic Community/European Community
International Atomic Energy Agency
Inter-American Conference on Social Security
Inter-American Investment Corporation
Intergovernmental Committee for European Migration/International Organization for Migration
International Atomic Energy Agency
International Bank for Economic Cooperation
International Bank for Reconstruction and Development (World Bank)
International Bureau for the Protection of the Moselle against Pollution
International Bureau for the Protection of the Rhine against Pollution
International Centre for the Study of the Preservation and Restoration of Cultural Property

Notes


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International Atomic Energy Agency
Inter-American Conference on Social Security
Inter American Investment Corporation
Intergovernmental Committee for European Migration/International Organization for Migration
International Atomic Energy Agency
International Bank for Economic Cooperation
International Bank for Reconstruction and Development (World Bank)
International Bureau for the Protection of the Moselle against Pollution
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Notes

PEACE THROUGH PARTNERSHIP


9. The role of winning coalitions demanding payment through military budgets has largely been contained to hegemons and authoritarian regimes, and thus can be controlled for in the modeling process.


28. For example, consider the role of Hawks, who according to Kahneman and Renshon (2007) speak to the psychology humans who have built in bias leaning toward aggressive action in the face of an adversary. The idea, while not new is clear, policies
Peace Through Partnership


7. Ibid.


9. The role of winning coalitions demanding payment through military budgets has largely been contained to hegemon and authoritarian regimes, and thus can be controlled for in the modeling process.


14. Oneal and Russett (2001), Boehmer et al. (2001), and Keohane and Martin (1995), all provide support for this line of reasoning.


28. For example, consider the NATO partnership, where members have shared exercises and strategic planning partnerships, but don’t discuss all elements of their capabilities. See Jervis, Robert (1998), “War and Misperception” in “The Origin and Prevention of Major Wars,” Journal of Interdisciplinary History 18 (2):675-700.

29. Consider the difficulty in obtaining reliable intelligence on opposing state’s military capabilities, which is compounded by misrepresentation of state capabilities.


31. Consider the role of Hawks, who according to Kahneman and Renshon (2007) speak to the psychology humans who have built in bias leaning toward aggressive action in the face of an adversary. The idea, while not new is clear, policies
that offer strength and aggression over the promise of reciprocal cooperation have greater appeal to most voters, citizens, and policy makers.

32 Faussett and Voigly (2010).
33 Ibid.
34 Ooreal and Rushett (2001).
35 While there are several sanctions currently implemented by the UNSC, here I am referring to Resolution 1737 (2006).
36 Some scholars argue that sanctions are a form of conflict; the point being made here is that no militarized violence occurred (See Oudraat 2000). Based on this previous research, it is not surprising to find that some policy makers have argued that Iran and the U.S. are fighting a proxy war in Iraq (NYT 4/12/2008 “Iraq Fighting Proxy War in Iraq, Envoy Says.”), and it is safe to assume that U.S. Intelligence agencies are working to infiltrate key Iranian institutions for the purpose of sabotage and intelligence gathering. However, the nuclear issue is one of many points of contention, and the ongoing interactions in Iraq and elsewhere do not take away from the fact that the two states have not gone to war directly with one another.
38 Although many authoritarian leaders must distribute private goods to maintain power, evidence suggests that public goods are also part of the calculi in retaining power. See Bueno de Mesquita et al. (2003).
39 Certainly some authoritarian state leaders retain their positions by appealing military leaders or coup-proofing, which drives up military spending rates. However, there is an upper bound to this resource distribution, and thus such authoritarian leaders can be shaped by IGOs in similar ways as democracies.
42 Most IGOs have a social or economic mandate as opposed to a security mandate which would demand certain behaviors. Consider the WTO, which has no security requirements for admission.
43 The data was provided by Bohmelt and Bove, available here: http:// thedata.harvard.edu/dvn/dv/researchandpolitics. Both Bohmelt and Bove (2014) and Nordhaus (2012) offer detailed discussions of the data and their placement in the model. In this analysis portion of this project, variations on the model and different estimation techniques are utilized.
44 1965 is the start year, as it is the first consecutive year in which the Correlates of War International Organization data set has data, prior to 1965 data is coded in five year increments.
45 While there are several sanctions currently implemented by the different estimation techniques are utilized.
46 This data uses Defense Burden as a share of the economy (GDP) rather than its absolute value, as opposed to direct military spending data, because nations have varying levels of population, land mass, and size of economy. Using raw defense spending data would create a measurement error, as it would be difficult to tell whether or not the change in defense spending was a function of some other variable. The decision to do this is consistent with previous contributions to the literature (Goldsmith 2003, 2007; Bohmelt and Bove (2014).
47 Goldsmith (2003) provides an overview of how he dealt with Lebovic’s critique, a position that this paper supports.
49 The top scores of Total IGO Membership are among European countries during the 1960s and early 1970’s.
51 Boehmer et al. (2004), 17.
52 See Boehmer et al for additional information on their coding procedures.
53 As Boehmer et al (2004) argue, this does not mean that security IGOs have to have the capacity to deploy peacekeepers or otherwise militarily intervene. Rather, the purpose and mandate of the organization has to include a security focus.
54 A list of these organizations can be found in appendix A. The criteria is drawn directly from Boehmer et al (2004).
55 Nordhaus et al. (2012).
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50. A list of these organizations can be found in appendix A. The criteria is drawn directly from Boehmer et al. (2004).

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58. This is a simple count of the number of sea or land based borders a given country has and is drawn from the COW data.


60. Nordhaus et. al. (2012).


62. The following countries are not included in the modeling. Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Comoros, Croatia, Estonia, Georgia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Slovakia, Slovenia.

63. Missing data is not a major concern for this study. There are a number of observations of missing data for military spending, but they do not pose problems in terms of biasing the results given how few observations are missing.


65. This calculation is based on the average non-security IGO value, not Spain’s actual Non-security IGO percentage value, which is not available for 2012.

66. This figure was calculated by taking the projected savings of the budget and adding it to the final military budget for 1996, and then calculating what percentage it made up.

67. All figures drawn from the analysis are in 1996 US Dollars.

68. The regions are North America, South America, Europe, Sub-Saharan Africa, the Middle East, Asia, and Oceania as the reference category in model 6.

69. I dropped from the analysis the 10 percent of observations (country-years) with the highest Total IGO Membership score.

70. These include France, the United Kingdom, the U.S., Canada, Sweden, Norway, Denmark, the Netherlands, and Italy, which are the eight most integrated states. An additional model not reported here that included the regional indicators but not the eight most integrated states produced similar results as model 3.

71. The Stata command xtunitroot was used which combines a number of unit roots or stationarity in panel datasets.


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71. The Stata command xtunitroot was used which combines a number of unit roots or stationarity in panel datasets.