The Determinants of Multilateral Nuclear Assistance

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Abstract

The International Atomic Energy Agency (IAEA) is the world's foremost provider of nuclear assistance, but its contribution is often overlooked by the existing literatures on nuclear proliferation and international organizations. IAEA nuclear assistance is both important in its own right as a potential factor in the proliferation of sensitive nuclear technology, and as a new domain through which to understand how benefits are provided by other international organizations, such as international financial institutions. In this paper, we explore the ways that different principal-agent relationships—as manifested in voting and participation rules, institutional procedures, and other mechanisms of state control—affect the influence of powerful states over the distribution of multilateral assistance. We test our theories using a dataset of all IAEA nuclear assistance projects since 1971. Our findings have important implications for theoretical work on delegation and agency in international organizations, as well as the literature on the drivers of nuclear proliferation. We also offer new points of leverage for policymakers seeking to limit the spread of sensitive nuclear technology.

States may benefit in a number of ways from membership in international organizations (IOs). IOs of various types seem to mitigate collective action problems, provide information about the compliance of others, and create forums for the resolution of conflicts between nations. But some states also benefit from IOs more directly through international aid or other assistance from IOs. This assistance may take many forms—loan guarantees, development projects, in-kind expertise—and may be providing based on widely differing criteria, but in many cases politics play an important role in determining which states receive direct benefits.

The provision of IO benefits can diverge, however, from the stated goals of the organization or the preferences of its members as a whole. Often employing a principal-agent framework, the literature on international institutions highlights the difficulties that some collective principals may face in maintaining control of their agents. These studies focus almost exclusively, however, on international financial institutions, where biased access to IO assistance can affect underlying economic conditions and, in the process, have political and economic implications. In doing so, these works risk understating the extent of the principal-agent problem. We have found previously, for example, that access to certain forms of assistance from the International Atomic Energy Agency (IAEA) contributes to nuclear weapons proliferation, a key international security concern. Principal agent problems may thus be distorting access to IO benefits in ways that directly affect the peace and security of all. This paper analyzes the distribution of IO benefits to determine whether who receives assistance is affected by unintended agency slack or deliberate principal bias.

In this paper, we examine the determinants of technical assistance in nuclear technology provided by the IAEA to its member states. Founded to promote peaceful uses of the atom under safeguards against its misuse, the IAEA's Technical Cooperation (TC) program is the multilateral extension of the Atoms for Peace program that provided nuclear assistance from the United States to other nations beginning in the 1950s. Today, it fulfills part of the promise of the Nuclear Nonproliferation Treaty (NPT) to support the development of nuclear technology in states that have agreed to forswear the development of nuclear weapons.

The TC program is by far the largest provider of international nuclear assistance, but may suffer from agency slack. Donor states complain about persistent inefficiencies and misspent funds in the program. Although the TC program consists exclusively of civilian nuclear technology, it has been shown to present a risk of being used to support the development of nuclear weapons. This presents a puzzle with important security implications: Why does the Agency provide technical assistance to states if doing so diverges from the apparent collective preferences of its members?

This paper makes two unique contributions to the literature. First, we expand the discussion of the benefits directly provided to states by international organizations beyond the domain of international financial institutions. In doing so we help to integrate international security institutions—which have been largely neglected in this literature—into the wider body of IO scholarship. Because the IAEA simultaneously serves both a security and development function, it poses a unique challenge for principal control and represents a fruitful case for explaining the provision of benefits by international institutions. Second, our analysis of IAEA TC has important implications for nuclear

nonproliferation. Because civilian nuclear cooperation and certain types of multilateral nuclear assistance have been associated with nuclear proliferation (Brown and Kaplow forthcoming; Fuhrmann 2009b), understanding the drivers of technical assistance may play an important role in managing the proliferation risks of nuclear technologies.

The Political Economy of IAEA Technical Cooperation

The International Atomic Energy Agency (IAEA) was created in 1957 to promote peaceful uses of nuclear technology, while also ensuring that its assistance was not used to further nuclear weapons efforts (IAEA 1957). The IAEA focused primarily on providing technical assistance with nuclear technology, which many see as a form of development assistance, until the entry into force in 1970 of the Nuclear Nonproliferation Treaty (NPT) made safeguards compulsory for non-nuclear weapon states that had ratified the treaty.

The formal process of approving IAEA assistance projects begins with states applying to the IAEA Secretariat's Department of Technical Cooperation (TC). These projects include fellowships and training, support and execution of applying radioactive isotopes for medical and agricultural purposes, provision of nuclear-use equipment, and consulting on projects with nuclear components.[1] TC staff members identify feasible projects to propose to the Board of Governors for approval. The standard for many years appears to have been only feasibility, a standard much lower than effectiveness or usefulness for supporting nuclear advancement or economic development. The stated

[1] The IAEA has not yet built, supplied, managed, or operated nuclear energy facilities such as for energy production or fissile material enrichment or reprocessing. The IAEA does operate several international research laboratories to support both safeguards and TC operations.

goal of TC currently is to "contribute to sustainable social and economic benefits in Member States and their increased self-reliance in the application of nuclear techniques" (IAEA 2012). The TC Department therefore plays a substantial role in deciding which projects are ultimately implemented. Since 1985, proposals have been submitted to the Standing Advisory Group on Technical Assistance and Cooperation and successful candidates are then sent to the Member States in advance of their final review at the September meeting of the Board.[2]

The Board is the executive body of the Agency, responsible for day-to-day oversight of the Secretariat. The IAEA Statute uses a complex regional formula that provides effectively permanent seats to twelve of the most advanced nuclear states (so designated each year by the outgoing Board) and the remainder are elected to two-year staggered terms by the full membership at the annual meeting of the General Conference. Each of the thirty-five Governors has one vote; while most decisions are technically decided by a simply majority, the "Spirit of Vienna" dictates a very strong norm of consensus decision-making. TC projects presented by the Secretariat are thus generally approved as a slate and by consensus, like almost every Board decision. The General Conference has no role in the approving or rejecting specific TC projects; it approves only the overall direction of the TC program when it approves the budget and the annual report provided by the Board.

Brown and Kaplow (forthcoming) have found that receiving TC related to the nuclear fuel cycle is a significant factor in determining whether states will seek nuclear

[2] Standing Advisory Groups are composed of individuals selected by the Director General to provide advice on the Secretariat's activities (IAEA 1995).

weapons. The result adds to findings in other work that state-to-state nuclear assistance is a significant cause of nuclear weapons proliferation (Fuhrmann 2009a; Fuhrmann 2009b; Kroenig 2009). The potential link between civilian nuclear cooperation and nuclear weapons points to an inherent tension between the dual missions of the IAEA—the promotion of peaceful uses of nuclear technology and the regulation or safeguarding of this technology to prevent weapons proliferation. The member states of the IAEA collectively support the need for both nonproliferation and technical assistance but are individually likely to prioritize one over the other. How, then, does the IAEA juggle competing demands in its provision of technical cooperation? To what extent do the interests of member states that govern the organization or that provide most of its funding affect the distribution of TC?

Given the competing missions within the IAEA, it seems nearly inevitable that some agency slack would appear in the relationship between the collective principal—the General Conference of the IAEA—and its agent, the IAEA itself. One cause of agency slack could be the IAEA Secretariat pursuing policy outcomes that diverge from those desired by its state masters. In theory, IOs are created (or otherwise contracted with) by states in order to make decisions or take actions in a policy area through specialization, economies of scale, or assistance in resolving disputes over policy externalities, distributing future gains, or creating policy bias (Hawkins et al. 2006). International delegation occurs when states form a collective principal and contract with an agent to produce certain collective goods. This contract structures an investment in a set of assets specific to producing collective goods—management, staff, and materiel are screened, selected, and rewarded for particular behaviors (McCubbins et al. 1987)—while

distancing the principals from the need or ability to initiate or approve specific actions. Delegation enables cooperation primarily by allowing an IO the autonomy to use supposedly politically neutral and technocratic methods of producing outcomes that are in the collective interest of its principals. In trying to acquire these gains, however, states run the risk of creating "run-away" IOs that implement policies that diverge from those the member states would otherwise implement (Cortell and Peterson 2006; Hawkins et al. 2003; Hawkins et al. 2006; Kiewiet and McCubbins 1991).

What factors, then, determine the extent of IAEA technical assistance to a particular state? The IAEA's Department of Technical Cooperation highlights, first and foremost, the development goals of the TC program. The IAEA works closely with the United Nations Development Program and other international development organizations to support the provision of basic services in the least developed countries in particular, providing, for example, agricultural, industrial and medical services that depend on nuclear technology.

Development hypothesis 1: Less developed states will receive more IAEA technical assistance.

At the same time, like other forms of development assistance, TC projects must build on some level of capacity to be useful for long-term development. Training programs cannot be effective without fledgling nuclear engineers to train, resource surveys require some latent uranium reserves to survey, and safety protocols must be adapted to nuclear facilities that are at least in the planning stages. An existing nuclear capability, then, is likely to be a prerequisite for many TC programs in the areas of fuel cycle development, nuclear safety, and nuclear physics research.

Development hypothesis 2: States with at least some latent nuclear capability will receive more IAEA technical assistance.

The IAEA is aware that pursuing nuclear development goals could facilitate nuclear weapons efforts. Since the early 1990s, IAEA procedures have called for the Department of Technical Cooperation to coordinate with the Department of Safeguards to ensure there was no conflict with the Agency's nonproliferation goals, and since 2005 safeguards officials are supposed to have reviewed all TC projects. The IAEA provides a list of proposed TC projects to Board members in advance of approval at least in part to allow objections to individual projects to be raised on nonproliferation grounds.

Despite these mechanisms, the Agency is up-front about the fact that a state's spotty nonproliferation track record will not disqualify it from receiving technical assistance (GAO 2009). TC is routinely provided to states that have not signed the NPT, that do not have comprehensive safeguards agreements in place, and even to a state (Iran) found by the Agency to be in violation of its international nonproliferation commitments. It is in the area of nonproliferation where the potential for agency loss is most acute. Several prominent member states—including many of the largest funders of the IAEA—probably would prefer that TC be made conditional on basic nonproliferation goals, or at the very least compliance with IAEA or NPT commitments.

Even if the proliferation behavior of a state is not a formal criterion for TC approval, it may be that the IAEA anticipates the proliferation concerns of its collective principal. We might then expect to see states that are not seen as good nonproliferation citizens or that seem to be pursuing weapons themselves receive somewhat fewer technical assistance projects than others.

Nonproliferation hypothesis 1: States that sign international nonproliferation agreements will receive more IAEA technical assistance.

Nonproliferation hypothesis 2: States without nuclear weapons programs will receive more IAEA technical assistance.

Alternatively, the IAEA may be *too* responsive to the views of member states with greater institutional influence, sacrificing development or nonproliferation goals to satisfy these member states' preferences. IAEA institutional features may provide some states with disproportionate influence by virtue or their serving on the Board, providing substantial funding, or providing in-kind donations of expertise or equipment. This dynamic afflicts other IOs that provide tangible benefits to members. States on the UN Security Council receive significantly more World Bank projects and benefit from more IMF programs, even if such states also suffer from less economic growth (Dreher, Sturm, and Vreeland 2009a, 2009b; Bueno de Mesquita and Smith 2010). States sitting in positions of unusual institutional influence may be rewarded in the same way as individual representatives to domestic legislatures can solicit disproportionate levels of spending for their districts by virtue of particular committee assignments (Kuziemko and Werker 2006).

Unlike in the domestic context, horse-trading of pet TC projects in the IAEA is made difficult by the fact that the full slate of technical assistance is presented by the Secretariat and approved in a single, generally unanimous Board vote. Still, states in influential positions within the IAEA could exert undue influence if the IAEA staff members responsible for developing the slate of proposed TC projects take into account the stated or assumed preferences of the most influential states, either because they fear a potential backlash and potential loss of funding for TC programs, or because increased

interaction with representatives of these states has had an effect on their own preferences. Specifically, states with longer tenure as IAEA members or greater influence as a result of longer tenure on the Board may have seen their own values embedded in the IO.[3]

IAEA influence hypothesis 1: States that have been IAEA members for a longer period of time will receive more IAEA technical assistance.

Also, states that serve on the Board may wield more direct influence in decisions about the IAEA and its future than the members at large. Some Board seats have semi-permanent status and others rotate amongst just a few within a region. In addition, TC is financed by voluntary and extra-budgetary contributions, as compared to the regular budget's compulsory contributions, making it easier for larger donors to exert influence on the program as a whole.[4] Therefore, the staff may act rationally to anticipate the interests of states that have greater influence because they served more often on the Board, and can therefore be expected to also serve more often in the future.

IAEA influence hypothesis 2: States that have served more often as IAEA Governors will receive more IAEA technical assistance.

It may be that the distribution of power in the international system rather than institutional influence determines how IAEA technical assistance is awarded. If great power politics affects IAEA decision-making, then states more closely aligned with, or at least with policies more acceptable to the major powers may receive more technical

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[3] Johnson (2011) argues powerful states can exert such an ideational influence over IOs that is distinct from formal institutional control mechanisms.

[4] The United States, Japan, Germany, UK, France, Italy, and Russia were the largest seven donors of voluntary contributions to the TC Fund, in order, in 2010 (IAEA 2010). Voluntary Contributions are targets set by the Board for each individual state and go largely but not exclusively to TC; states may also choose to provide "extra-budgetary" and in-kind contributions to support favored Agency projects.

assistance. The IMF and World Bank seem to respond to political pressures by the US and other large donors in making lending decisions. Closer allies of the US (and also of other G7 states), for example, face fewer conditions on IMF assistance loans than do other states (Dreher and Jensen 2007). Also, states on the UN Security Council are disproportionately the beneficiaries of World Bank development loans (Dreher et al. 2009).

International affinities hypothesis 1: States that are more closely aligned with major powers will receive more IAEA technical assistance.

On the other hand, it is also possible that IAEA technical assistance is biased against the most powerful international players, particularly the United States. Among many members of the non-aligned movement, TC is often seen as a kind of ongoing compensation for the continuation of a two-tiered system of nuclear haves and have-nots. If the five nuclear weapon states acknowledged by the NPT are allowed to have weapons while all other states cannot, the argument goes, then at the very least these states should receive subsidized access to nuclear technology through IAEA technical assistance programs. For those unhappy with the central bargain of the NPT, the provision of TC might even be a way to reward those states that most vocally oppose the status quo, particularly those that clash with the United States.

International affinities 2: States that are less closely aligned with major powers will receive more IAEA technical assistance.

Testing the Determinants of Multilateral Nuclear Assistance

To investigate the determinants of IAEA Technical Cooperation, we use a dataset of active TC projects between 1971 and 2000, collected using the query tool on the IAEA

TC website (Brown and Kaplow forthcoming).[5] Because not all IAEA members seek technical assistance, we limit our analysis to participating states—those states either that are a participant in an active TC project in a given year, or that have received TC assistance in a previous year and will be a beneficiary of TC in a future year in our data. This definition effectively excludes states from our analysis in the years before the decision has been made to participate in TC and in the years after the decision has been made to stop participating, but includes those states that are general participants in the program and simply do not receive a TC project in a given year.

There is wide variation in the provision of technical cooperation to IAEA member states. Figure 1 illustrates this variation both among states and over time. The white line in the chart represents the average number of active technical cooperation projects per participating state over time.[6] The black boxes mark the 25th through 75th percentiles of TC projects among participants in each year, and the dotted lines show the range of TC awards. The overall amount of technical assistance provided by the IAEA has increased significantly since the 1970s, as has the difference in the number of projects awarded to the most- and least-popular beneficiaries.

Quantitative analysis

We now present several quantitative models that explore the determinants of this variation. We structure our data as a pooled time series, using a country-year unit of

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[5] We include only national-level TC projects in our analysis, excluding efforts that the IAEA classifies as regional or interregional.

[6] The up-and-down motion in the trend-line beginning in the 1990s is probably due to the two-year TC application and funding cycle. In the second-year of the cycle, a number of projects have ended but have not yet been replaced by new multilateral assistance.

analysis. As discussed above, we exclude from our analysis any state that is not a TC participant in a given year, and limit the analysis to the 1971 to 2000 time period. To address likely serial correlation in our time-series cross-section data, as well as the fact that we use a count as our outcome variable, we employ a negative binomial generalized estimating equation (GEE) model and use an AR1 working correlation structure (Zorn 2001).[7]

The dependent variable in each model is the number of active TC projects in which the state was a participant in a given year. This measure seeks to capture the extent to which states benefit from the TC program. An alternative measure might be the size or cost of the TC projects in which a state participates. The small size of most TC projects, however, suggests that using the raw count of TC projects in a given year probably does not significantly skew our results. In 2010, for example, the average cost of a TC project was about $130,000; this is not a large sum in the realm of nuclear technology.

To test our development hypotheses—that the amount of TC a state is awarded is a function of their level of economic and nuclear development—we include in our model several variables that reflect a state's need for nuclear assistance and its ability to make use of that assistance. As a general proxy for economic strength, we include real GDP per capita (Gleditsch 2002), with the expectation that lower GDP per capita will be associated with a greater amount of international technical assistance.

[7] We use Stata's *xtgee* command to estimate all models. In each case, we capture the α dispersion parameter from a standard negative binomial model and use that parameter for the negative binomial GEE. A poisson GEE yields similar results; details of these robustness checks are available from the authors.

Recipient states also must be in a position to make use of nuclear assistance. We thus include in our models a measure of the state's latent nuclear capacity (Jo and Gartzke 2007). While this measure was originally developed with an eye toward the state's potential for nuclear weapons development, the same latent capabilities—domestic nuclear deposits and the availability of nuclear and chemical engineers, for example—are also likely to apply to nuclear energy production.

Finally, we include in the models a dichotomous variable that takes on the value of 1 if a state produces any of its electricity from nuclear sources, and 0 otherwise (World Bank 2008). To benefit from some TC projects—including reactor safety training, nuclear waste site surveys, or security planning for active nuclear facilities—states must have some nuclear power generation capability. We thus expect that states with a domestic nuclear power industry will on average participate in a larger number of TC projects.

The nonproliferation hypotheses suggests that TC will be used to reward states that have strong nonproliferation records, and to punish states thought to be at risk of producing nuclear weapons. We include in our models a dichotomous variable that takes on the value of 1 if a state has signed the NPT, and 0 otherwise.[8] We also control for the presence of a nuclear weapons program in a state for a given year, using the nuclear weapons program dates from Jo and Gartzke (2007).

A state may build institutional influence within the IAEA, either via membership longevity or by virtue of a position on the Board. We measure the former with a count of

[8] States need not be NPT members to participate in IAEA TC projects. Pakistan, for example, is one of the most frequent recipients of IAEA technical assistance but remains outside of the treaty.

the number of years since the state first joined the IAEA, and account for participation on the IAEA Board of Governors with the cumulative years, as of a given year, that a state has served on the Board. If institutional influence matters for the provision of multilateral nuclear assistance, we would expect both measure to be associated with an increased number of TC projects.

We examine international orientation of states relative to major powers in several ways. First, we use Gartzke's (2006) affinity of nations index to capture a state's commonality of interest with the United States.[9] Second, we use Lake's (2009) index of security hierarchy as a measure of the level of influence the United States exerts over a particular state. This measure is the sum of an index of U.S. military personnel posted in a given state and an index of that state's alliances independent of the United States, normalized to the index's highest value in 1995. Finally, to measure alignment with the Soviet Union, we employ a dichotomous variable that takes on the value of 1 if a state is a member of the Warsaw Pact in a given year, or 0 otherwise. These measures seek to capture the extent to which a state is roughly aligned with the United States and other Western powers that make up the IAEA's major principals, at least in terms of the organization's overall funding.

Findings

The results of our quantitative tests are shown in Table 1. Models 1 through 4 are used separately to evaluate the development, nonproliferation, IAEA influence, and international affinities hypotheses, respectively. Model 5 combines the results from each

[9] Note that the United States is not considered a TC participant and so is itself excluded from the analysis.

of the preceding models. Positive coefficients are associated with participation in a greater number of TC projects in a given year, while negative coefficients suggest that a factor diminishes TC participation.

Models 1 and 5 yield results consistent with the development hypotheses. Lower per capita GDP is associated with increased TC participation in the combined Model 5 (although it is not a statistically significant factor when the development hypothesis is tested alone). Nuclear capacity and the presence of a nuclear power industry are both significant drivers of increased technical cooperation. These results suggest that the IAEA in awarding TC projects does address the dual requirements of development aid: need and capacity to accept aid.

We find, however, no support for the nonproliferation hypothesis. Neither NPT membership nor the presence of a nuclear weapons program seems to have an effect on the amount of TC assistance received by a state. While the lack of a strong link between nonproliferation behavior and multilateral technical assistance may not be desirable from the point of view of those worries about the spread of weapons technology, it is hardly surprising. Members of the non-aligned movement have long argued that technical assistance is the right of member states absent a formal finding of non-compliance. Since it is very rare to have proof of a member state's significant violation of their international nonproliferation commitments, states with nuclear weapons programs need not forfeit their international nuclear assistance.

Influence within the IAEA appears to provide member states with the opportunity to benefit from increased technical cooperation. States with a history of service on the Board benefit from more nuclear assistance on average. This effect persists even after

controlling for the amount of time a state has been a member of the IAEA, which itself is associated with participation in a greater number of TC projects. More institutionally savvy member states thus have the ability to direct benefits back home, despite the fact the Board itself has formal control over the slate of TC projects. This finding suggests that either these states exert some behind-the-scenes influence on the particular TC projects that are forwarded to the Board for consideration, or else the IAEA employees staffing the Department of Technical Cooperation give some consideration to the set of countries that will be approving the TC projects and making funding decisions for the Department going forward.

If the United States and its allies would prefer to reward member states that share its international orientation, the IAEA is not obliging. Among states that receive TC, states whose preferences are more in line with the United States tend to receive less technical assistance from the IAEA, while Soviet allies during the Cold War participated in more TC projects. This effect seems tied to commonalities of interest, rather than formal links between states; the level of US hierarchy in security affairs has no significant effect on the amount of TC received by a state. While states closer to the US may benefit from more direct forms of assistance, these findings are consistent with the idea that the non-aligned movement has "captured" the IAEA's technical cooperation staff and sees TC as compensation for participating in the nonproliferation regime.

Conclusion

IAEA technical assistance is unusual among forms of development aid in that it carries direct security consequences in the form of additional risk of nuclear weapons proliferation (Brown and Kaplow forthcoming). Because of this, the question of what

determines the extent of IAEA TC takes on additional importance. If the IAEA's provision of TC diverges from the collective preferences of the organization's member states, then the effect of any agency loss on international security may be substantial.

We find that while development criteria do seem to affect the provision of TC, international nuclear assistance seems conditioned by other, perhaps less collectively desirable, factors. Influence within the IAEA, in the form of Board membership or tenure within the organization, translates into greater numbers of TC projects. Affinity with the United States in matters of international policy seems to have the opposite effect, including among Warsaw Pact members during the Cold War. Finally, members of the NPT do not receive more technical assistance on average; nor do countries with active nuclear weapons programs receive less. It is worrying that nonproliferation goals do not factor into the provision of TC, but compromises in the norms and even legalized rules of the nonproliferation regime have come to protect access to peaceful uses of the atom in the absence of legal judgments of noncompliance.

What does this mean for policymakers seeking to limit the spread of nuclear weapons? First, as others have pointed out (GAO 2009), the current system of awarding TC does not give adequate weight to nonproliferation goals. Attempts to limit TC for even acknowledged violators of treaty commitments, let alone those merely suspected of pursuing weapons work, have led to serious diplomatic battles in the halls of the IAEA and have not been fully successful. The flexibility of the Director General in reporting to the Board suspicions of noncompliance may advantage extra-institutional leverage, but they constrain the Agency's ability to use its formal, legal mechanisms to convince states to return to compliance. Given the risks associated with TC, however, more effort should

be devoted to assigning real proliferation criteria to TC projects of at least the most sensitive types, and to recasting the discussion about TC form the language of "rights" to the languages of "responsibilities."

Second, the anti-US bias in the provision of TC is troubling. More transparency in the TC application, review, and approval process is needed to counter the possible "capture" of TC staff by members of the non-aligned movement. The Department of Technical Cooperation should report to the Board information on the formal applications received from each country that were not recommended for approval, along with justifications of these decisions. By reducing information asymmetries, this could make the process of TC project application and review more efficient for the Agency and TC recipients.

Finally, these results emphasize the important role that tenure within international institutions plays in winning benefits for a state. The United States and other advanced nuclear states benefit from the current system of quasi-permanent membership in the governing body, the long-term consequences of which appears to be privileged influence within the Agency. Policy makers could reconsider the mechanism of assigning membership on the Board, but it may be more effective to introduce greater transparency to the Board review process. It is also worth reexamining the role that member states play in influencing personnel decisions within the IAEA. If general institutional influence translates into influence over personnel, then it will be difficult to return the IAEA to its ideal of technical assistance in support only of important development goals.

Figure 1: IAEA Technical Cooperation over Time

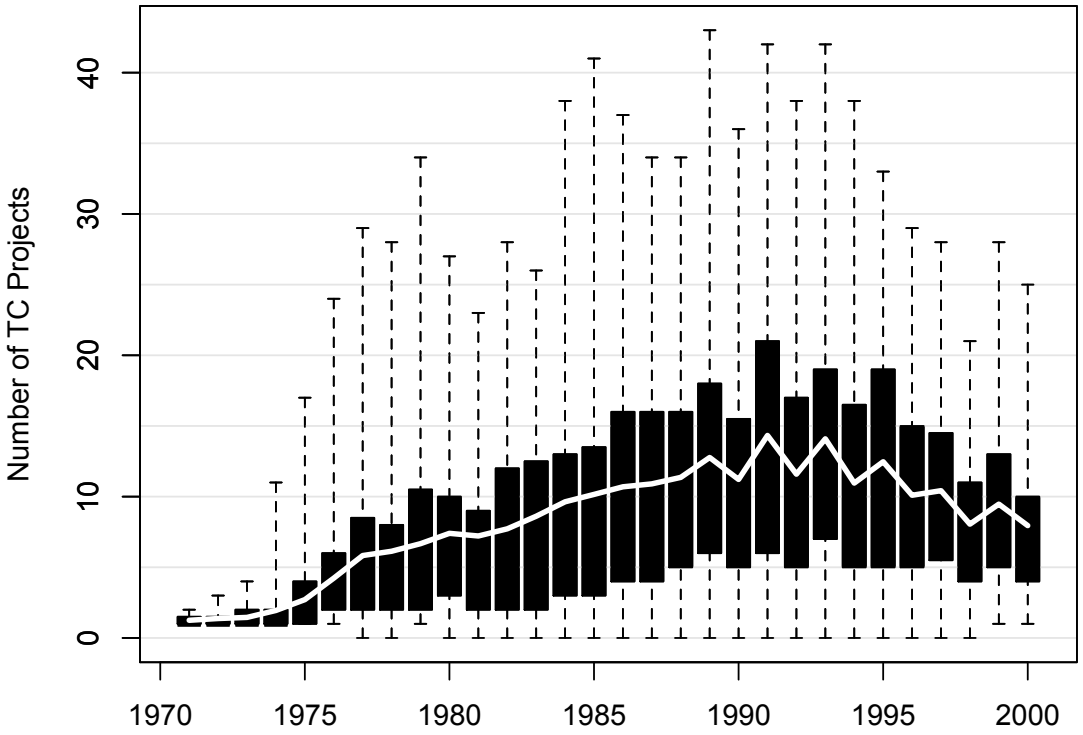

Table 1: Determinants of the number of TC projects among TC participants, 1971-2000

		Model 1		Model 2		Model 3		Model 4		Model 5	
		Count of TC Projects		Count of TC Projects		Count of TC Projects		Count of TC Projects		Count of TC Projects	
Development	GDP per capita	-0.376	(0.745)							-0.202	(0.075) **
	Nuclear capacity	0.073	(0.038) ^							0.060	(0.027) *
	Nuclear energy	0.357	(0.151) *							0.337	(0.134) *
Nonproliferation	NPT member			0.011	(0.109)					-0.021	(0.096)
	Nuclear weapons program			-0.043	(0.097)					-0.001	(0.078)
IAEA influence	Cumulative BOG memberships					0.026	(0.012) *			0.020	(0.012) ^
	Years in the IAEA					0.036	(0.004) ***			0.031	(0.004) ***
International affinities	Affinity to US							-0.290	(0.094) **	-0.263	(0.081) **
	Warsaw Pact member							0.257	(0.090) **	0.240	(0.053) ***
	US security hierarchy							-0.046	(0.137)	-0.181	(0.142)
	Constant	1.335	(0.156) ***	1.667	(0.113) ***	0.758	(0.106) ***	1.638	(0.061) ***	0.719	(0.142) ***
	N	2219		2220		2215		2220		2215	

GEE negative binomial coefficients with robust standard errors, clustered by country, in parentheses. An AR1 working correlation structure is used for estimation.

*** p<0.001, ** p<0.01, * p<0.05, ^ p<0.10

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