Preferences, Power and the Emergence of Informal Intergovernmental Organizations[1]

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Abstract

Informal intergovernmental organizations, such as the G20, APEC and the FSB, have become a prominent feature of the global landscape. Many believe this is because—given their greater flexibility and agility—such organizations are better tailored to the kinds of complex challenges states increasingly face than their more formal counterparts. However, such functionalist arguments are underspecified and rest on weak empirical evidence at present. Most importantly, they do not take into account how domestic politics, conflict and power can decisively influence the kinds of organizations that are likely to appear in a given issue area. This project offers an alternative account of the emergence of informal intergovernmental organizations that explicitly incorporates these variables. It emphasizes how domestic politics and institutions structure state preferences over organizational form, and how the distribution of preferences and state power then shape the organizations that subsequently emerge. Empirical support for this theory is provided through a quantitative analysis of formal and informal organizations created by OECD states between 1950 and 2005.

1. Introduction

Across nearly all areas of global politics, new varieties of governance are appearing that fit only uneasily into traditional categories.[2] Among the most important are "informal" or "soft" intergovernmental organizations (IGOs), which share many of the features of traditional "formal" IGOs, but typically lack their large bureaucracies and firm grounding

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[2] Hale and Held 2011; Avant, Finnemore, and Sell 2010.

in international law.[3] Some are now among the most important IGOs operating today. The Group of 20 (G20), the Asia Pacific Economic Cooperation (APEC) and the Financial Stability Board (FSB)—some of the most prominent examples of informal IGOs—regularly feature in news headlines. Hardly a day passes without a statement by world leaders in the G20, standard setting by an APEC sub-committee, or the release of a monitoring report by the FSB. These organizations—and hundreds of others like them—leave few aspects of our lives untouched.

Almost no one would dispute that informal IGOs have grown in number and salience, but, curiously, only a few attempts have been made to demonstrate this fact and explain why it has happened. To the extent that it exists, current scholarship has tended towards functionalist accounts, largely grounded in the "rational design" school of International Relations (IR). Roughly, these explain that informal IGOs typically emerge when they offer benefits that their formal counterparts do not. They argue that informal IGOs have certain properties that make them better at solving particular kinds of cooperation problems, and that states generally choose them when confronted with such issues. Extrapolating from this argument, then, the growing prominence of informal IGOs is likely a product of a larger shift in the nature of the problems that states have faced, particularly as global interdependence has deepened.

[3] Klabbers 2001; Vabulas and Snidal 2013.

Certainly, such arguments have strong intuitive appeal. States, no doubt, attempt to design institutions that address contemporary global challenges.[4] Further, it seems clear that the process of globalization has thrown up new challenges that are not easily solved by traditional means.[5] But, I argue, such explanations remain weak and incomplete. First, rational design arguments have yet to be tested in a rigorous manner. At present, the evidence offered to support these theories is quite limited. Existing case studies show that the arguments that have been advanced are indeed plausible. But their value is uncertain: they do not tell us whether they hold across a large range of cases. Further, some contradictory evidence suggests that they might not.[6] Second, and more fundamentally, rational design arguments tend to neglect the role of domestic politics, conflict and power in driving an organization's level of formality—a fact that may help to account for such anomalies. This is a problem that is characteristic of theories of rational design, more generally, yet it seems especially problematic when it comes to issues of formality, as discussed in greater detail later on in the paper.

In this article, I aim to address the theoretical and empirical problems identified above. To do so, I develop an alternative theory of organizational form that attempts to incorporate the variables that theorists of rational design have so far omitted. This theory suggests that the formality of an IGO is a product of (a) processes of state preference formation and (b) processes of state preference "aggregation," which occur through interstate bargaining.[7] It explains that, while states may wish to create an informal IGO

[4] Koremenos, Lipson, and Snidal 2001; Koremenos 2005.
[5] Cerny 1995; Evans 1997; Held 2000.
[6] Verdier 2009; Bach 2010.
[7] Zacher and Matthew 1995; Moravcsik 1997.

when doing so would help to address a particular problem, they may also choose informality when significant domestic constraints make a formal IGO undesirable or unachievable domestically, or when the actors "leading" cooperation on the behalf of a state are more autonomous. The theory also explicitly allows for the possibility that these preferences may not be shared—that is, states may disagree about how formal or informal an IGO should be—and that power can therefore play an indispensible role in determining whose preference gets "realized" when an organization finally emerges.

Second, I provide a rigorous test of both the theory that I advance and functionalist alternatives. In order to do so, I have developed a comprehensive database of IGOs that draws on the existing Correlates of War Intergovernmental Organizations (COW-IGO) Dataset and supplements it with new data on informal IGOs drawn from the *Yearbook of International Organizations*. This is, on its own, a major contribution, as it provides the first accurate estimate of the growth of informal IGOs in the global system and offers scholars a fuller picture of the total number of IGOs active in the world today. However, by using this database to derive a sample of IGOs for analysis and by operationalizing new indicators that measure key explanatory variables, this dataset also allows me to quantitatively estimate the explanatory power of each of the theories.

Overall, the analysis provides powerful support for the paper's central thesis: while characteristics of a cooperation problem do drive the form of an IGO to some extent, domestic constraints and the autonomy of the actors leading cooperation in powerful states play the most important role. The growth of informal IGOs may, therefore, be

driven as much by—if not more than—major shifts in the domestic political arenas of powerful states as the changing nature of the problems states face.

The paper proceeds as follows. In the next section I briefly discuss the main properties of formal and informal IGOs, and present descriptive statistics from the dataset used in the paper to illustrate the main puzzle that it addresses. Section 2 then discusses the two main theories that are investigated. I start by explaining the main characteristics of functionalist explanations, tease out their empirical predictions, and show why they fall short, before presenting the new theory that I advance as an alternative. Section 3 then presents the quantitative analysis. I begin the section with an overview of the sample and the explanatory variables that I use to test the two contending theoretical approaches. I then discuss the empirical results of the analysis, conduct a number of robustness tests, and attempt to mitigate potential selection and endogeneity problems. Finally, in the conclusion, I summarize the paper's contribution to the study of IR and IGOs and reflect upon the broader policy implications of the findings.

2. Conceptualizing and Mapping Informal Organizations

Formal IGOs are a central feature of the global political landscape, and a key unit of analysis in the field of IR. They are structured in a variety of different ways and seek to accomplish a range of different tasks.[8] This diversity makes it inherently challenging to define them precisely. Indeed, on some level, it may be impossible to do so, since they are fundamentally social constructs.[9] Nevertheless, most political scientists and

[8] Schermers and Blokker 2003.
[9] Brolmann 2007; Klabbers 2009.

international lawyers believe that they share at least three basic characteristics.[10] First, formal IGOs are primarily created by sovereign states. Though other actors may be involved in various ways, organizations created by non-state actors (multinational corporations, non-governmental organizations) and sub-state actors (cross-border networks of municipalities, for example), as well as IGOs (so-called "emanations") are not generally regarded as formal IGOs. Second, they have bodies that are functionally separate from their members. Usually this would imply an autonomous body of some kind that is delegated responsibility for undertaking certain tasks: a secretariat with a budget, staff and offices.[11] Often, these can be quite large bureaucracies, as is the case with the European Union and United Nations. Finally, they are established by an agreement governed by international law. That is, to be regarded as a *formal* IGO an organization must be founded by an international treaty that establishes precise legal obligations.

Scholars have, however, increasingly noted that many IGOs actually depart from this "traditional" model.[12] These "informal" IGOs share certain features with their more formal counterparts, but differ in other important respects. Like formal IGOs, for instance, informal IGOs are undoubtedly the progeny of states. They are not established by non-state or sub-state actors. However, informal IGOs are, generally, less likely to have bodies that are clearly separate from their members. The G20 and the FSB, for instance, are created by states and have distinct organizational identities but have no

[10] Singer and Wallace 1970; Pevehouse, Nordstrom, and Warnke 2004; Brolmann 2007.
[11] Haftel and Thompson 2006; Bradley and Kelley 2008.
[12] Zaring 1998; Klabbers 2001; Vabulas and Snidal 2013; Di Stasi 2015.

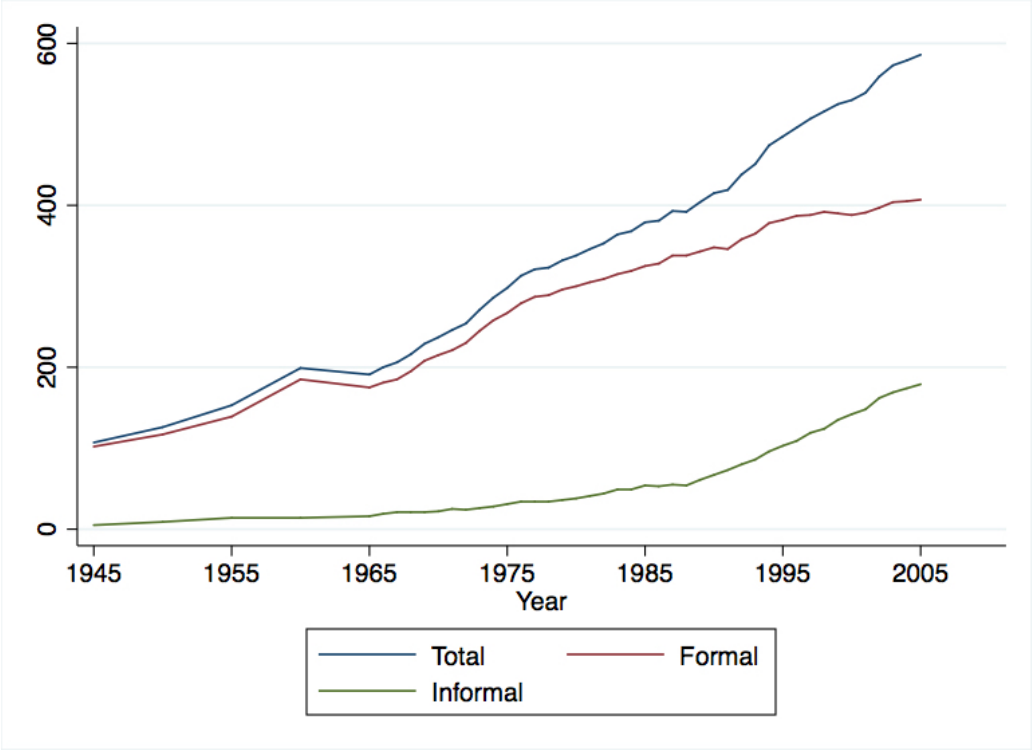
independent secretariats of their own. Secretarial services are, instead, provided directly by one or more members, or by another IGO. If they do have an independent secretariat, it is likely to be quite small. The third and most important feature of informal organizations is their "twilight" status beyond the traditional boundaries of international law.[13] In contrast with formal IGOs, which are established by international treaty, informal IGO are typically founded by "non-binding" agreements—a Memorandum of Understanding (MOU), "gentleman's agreement," or the like. The Terms of Reference of the Asia Pacific Group on Money Laundering (APG) offers a striking example.[14] It describes the APG as a "multilateral organization" that is "established by agreement among its members and is autonomous." Yet, at the same time, it explicitly states that the organization is "voluntary and co-operative in nature," and that its authority "does not derive from an international treaty."

Such organizations might be merely curious exceptions if they were relatively rare or unimportant. However, informal IGOs are actually an increasingly dominant feature of the global landscape. This can be seen in Figure 1, which reveals the extraordinary rise of informal organizations between 1945 and 2005. The figure has been constructed using data from the existing COW-IGO Database as well as a new companion dataset that I have constructed using the *Yearbook of International Organizations*. The COW Database was created by coding organizations found in the *Yearbook* and other sources according to a "formal" conceptualization of an IGO.[15] To enter the dataset an organization had to be created by states, had to be an autonomous body and had to be established by

[13] Schachter 1977; Zaring 1998.
[14] See APG 2012.
[15] Pevehouse, Nordstrom, and Warnke 2004.

international treaty. The new companion dataset is inspired by an attempt by Felicity Vabulas and Duncan Snidal to measure the number of informal IGOs, but relies on the same data collection procedure as the COW Database and employs a modified coding rule.[16] To be included in this dataset, an organization had to be created by states, had to display evidence of a limited organizational structure, and had to be founded by a non-binding international agreement, such as an MOU.[17] By combining these two datasets, we gain a much more accurate picture of the evolution of IGOs over time than has previously been possible.

Figure 1 Temporal Pattern in the Dataset, 1945-2005



Specifically, the figure shows that the total number of IGOs has steadily grown since the

[16] Vabulas and Snidal 2013.
[17] For a full discussion of the coding procedures, see the data appendix.

early 1950s, rising from roughly 100 in 1945 to nearly 600 by 2005. However, this overall trend masks significant variation in terms of the *kinds* of organizations that states have been creating. In 1945, formal IGOs were clearly dominant; informal IGOs represented only 5 percent of the total. This continued well into the 1960s. After a period of rapid growth, the number of formal IGOs rose to 185 by 1960. In contrast, only 14 informal IGOs had emerged by this time—accounting for only 7 percent of the total. Then, by the mid to late 1970s, something started to change. The number of formal IGOs began to plateau as the rate of creation decreased—a seemingly anomalous trend noted by a number of scholars.[18] But, crucially, this new dataset shows that this tapering-off was not in fact anomalous. Overall, states continued to create IGOs at roughly the same rate. Instead, the *type* of organization that states tended to create shifted. Over the same period, the number of informal IGOs skyrocketed, rising from 31 in 1975 to 179 by 2005—nearly a six-fold increase. By 2005, they comprised roughly a third of all the active IGOs. This shift, which existing studies failed to pick up due to their narrow focus on formal IGOs, partially accounts for the perplexing decline in their rate of creation. Yet it cries out for its own explanation: why have states increasingly relied on informal IGOs to solve the problems they face?

3. Theorizing Informal Organizations

In order to develop our understanding of the rise of informal IGOs this paper seeks to explain why states choose to create either a formal or an informal IGO in a given context. By developing our understanding of what drives states to create informal IGOs in the first place, we can start to explain why they have become more common over time. To do so,

[18] Shanks, Jacobson, and Kaplan 1996; Pevehouse, Nordstrom, and Warnke 2004.

this section advances a theory that attempts to model the processes of state preference formation and aggregation that are hypothesized to jointly determine the form that an organization is likely to take. The theory emphasizes the role of domestic politics and institutions in shaping state preferences over organizational form and highlights how the distribution of preferences and state power determine the final outcomes that we see. Before outlining my own approach, however, I begin by discussing previous efforts to understand informal IGOs and I show how they fall short.

3.1 Previous Work

Only relatively recently have scholars of IR attempted to develop theories and test hypotheses about when we can expect different kinds of IGOs to appear. The most prominent of these are largely functionalist in nature, explaining that states choose to establish an informal IGO when doing so offers important benefits. They make this claim by first arguing that informal IGOs have certain properties that contrast with the properties of formal IGOs.[19] They emphasize, for instance, that informal IGOs are faster, more flexible and offer states greater confidentiality than their more formal counterparts. Formal IGOs, by contrast, are generally more autonomous, can accommodate a larger membership and can tackle more issues simultaneously. These theorists then argue that when states attempt to cooperate with one another they face a range of problems that differ in terms of their structure, and hypothesize that states choose to create informal IGOs when doing so is the most efficient way of solving the particular kind of cooperation problem they confront in a given context. Thus, for example, Vabulas and Snidal claim that states choose a particular level of formality because "different issue

[19] Eeilstrup-Sangiovanni 2009; Bradford 2011; Vabulas and Snidal 2013.

areas—with different underlying cooperation problems—are best addressed by different levels of institutional formality."[20]

Table 1 presents a rough summary of the specific hypotheses advanced by scholars in this rational design tradition.[21] In the far left column ("Properties") we see the main dimensions of institutional variation that differentiate formal from informal IGOs. In the second and third columns, we then see the different aspects of the cooperation problems that they believe are important for determining organizational choice. An informal IGO is preferred, for example, when there is high uncertainty about future states of the world, since the greater flexibility that an informal IGO offers means it can be adjusted more easily in response to new contingencies. In contrast, a formal IGO should be expected when there is significant scope for opportunism—when a problem has the structure of a Prisoner's Dilemma—since the greater autonomy that formality affords may offer certain advantages: a more autonomous IGO might be better at providing credible information about the behaviour of other states or might even be able to sanction states that defect from a cooperative equilibrium. By comparison, when the scope for opportunism is low, such mechanisms are not necessary and an informal IGO should be preferred. Each of these hypotheses is discussed in more detail in the next section. For now, it is simply important to note the general thrust of the functionalist argument: that, on average, states create IGOs that are "matched" with the problems they are supposed to solve, and that we

[20] Vabulas and Snidal 2013, p.212. On "rational design" of international institutions, see Koremenos, Lipson, and Snidal 2001; Koremenos 2013.
[21] See Vabulas and Snidal 2013, p 209-212. Others taking a similar approach include Whytock 2005; Eeilstrup-Sangiovanni 2009; Bradford 2011; and Kahler and Lake 2009. On theories of rational design, see Koremenos, Lipson, and Snidal 2001; Koremenos 2013.

should therefore expect to find a strong correlation between particular aspects of the problems states confront and different institutional designs.

Table 1 Determinants of Organizational Form

Property	Formal Organization	Informal Organization
1. Flexibility	Low uncertainty about future states of the world	High uncertainty about future states of the world
2. Agility	Low urgency, Routine problems.	High urgency, Systemic crises.
3. Confidentiality	Less sensitive issues, Cooperative external relations.	Highly sensitive issues, Antagonistic external relations.
4. Autonomy	High opportunism, Heterogeneous interests.	Low opportunism, Homogeneous interests.
5. Scale	Large numbers, Wide issue scope.	Small numbers, Narrow issue scope.

While intuitively plausible, there are reasons to doubt the validity of functionalist accounts. First of all, there is some evidence that functionalist theories get important empirical predictions wrong. If they were correct, then IGOs dealing with the similar problems should display similar levels of formality. Yet IGOs operating in the same issue area—money laundering, banking or metrology, for instance—but within different regions often display different levels of formality.[22] Second, functionalist theories also suggest that, in general, there should be a good "match" between the problems that states confront and the design of an organization. However, again, there is evidence suggesting that many informal IGOs are not well suited to the problems they are supposed to

[22] For the data supporting this point, see the data appendix.

address.[23] Arguably, these empirical anomalies are related to two other *theoretical* problems that plague rational design theories more generally: their exclusion of domestic politics and state power. Rational design theorists are, in fact, quite explicit about the fact that they do not take domestic politics into account, and—though they are less explicit about this—have often been accused of failing to show how power can determine the kind of design that gets selected.[24] Both are problematic, given that IR has generally shown that these factors are crucial determinants of state behaviour and institutional design, and even influence the legal form of international agreements.[25] It is, therefore, reasonable to expect that they matter for organizational form as well.

3.2 A New Theory of Organizational Form

The overall point of the above criticisms is not to suggest that functionalist arguments are fundamentally wrong, but that they are incomplete. The theory proposed in this section attempts to build upon this insight by explicitly incorporating domestic politics, conflict and power into an account of organizational form. The model proceeds in two steps, and starts from the same place as functionalist theories: with the cooperation problem states face. In the first stage, states are confronted with an issue that can be solved via an IGO of some kind and they develop preferences over the desired level of formality. Here, the hypothesis is that domestic politics and institutions rather than the situation structure alone are decisive. In the second, these preferences are then taken as given and states bargain over the organization's level of formality. The final outcome is predicted to

[23] Verdier 2009.
[24] Koremenos forthcoming; Duffield 2003. On more general problems with functionalist theories, and the importance of taking distributional implications of institutions and power into account, see Knight 1992; Gruber 2000; Moe 2005.
[25] Milner 1997; Moravcsik 1998. On the role of domestic politics in determining the legal form of international agreements, see Raustiala 2005 and Guzman 2008.

reflect the preferences of the state with the greatest negotiating power. I discuss each stage in turn.

Preference formation. I begin by assuming some increase in the "demand" for governance in a given issue area.[26] This creates an incentive for cooperation, and, it is assumed, for the creation of an IGO rather than a standalone agreement.[27] Thus, the theory admits that aspects of the cooperation problem can certainly create an incentive for states to design institutions in a particular way. The kinds of factors that rational design theorists believe may drive decisions about the formality of an IGO may play a role as well. Yet, I argue, the nature of this demand also creates an incentive for particular actors within a state to initiate or "lead" cooperation, given their stake in a particular issue, and that this can change the outcomes we would otherwise expect. Demand for governance is assumed to be a product of externalities that tend to increase as global interdependence deepens.[28] These externalities then either fall on non-state actors within states, who subsequently lobby domestic public actors to engage in intergovernmental cooperation to reduce the negative impacts of the externality; or they may fall directly on a particular public institution, negatively affecting its capacity to regulate behaviour that falls within its remit. Either way, through this process, an incentive for cooperation arises and some public actor within each state is "selected" to lead cooperative efforts on the problem in question.

[26] Keohane 1982.
[27] Abbott and Snidal 1998; Koremenos 2008.
[28] Moravcsik 1997; Held 2000.

The selection process matters because different kinds of bodies within the state may be chosen to lead cooperative efforts. For simplicity, I distinguish between two: political institutions and independent agencies.[29] The former are public bodies managed by or directly accountable to elected officials, whose tenure is relatively uncertain, since they can be removed from office more easily (if, for instance, a government changes). In the United States (US), the Departments of State and Treasury are examples. The latter, by contrast, are public bodies that are led by officials who are not elected by the people, or directly managed by elected officials.[30] Typically, their positions are more certain by comparison, since they serve definite terms in office, and they have considerable leeway to make decisions based upon their expert authority. Examples include regulatory bodies run by unelected bureaucrats, such as the Securities and Exchange Commission in the US or the Competition Bureau in Canada. Both political institutions and independent agencies are public entities; they differ, primarily, in terms of the degree of domestic autonomy that they possess. While political institutions are directly managed by elected politicians and beholden to electoral politics, independent agencies are—by design—more insulated from these forces.

The kind of public actor that is "selected" matters, I argue, because the degree of autonomy they possess can be expected to lead to different "baseline" preferences over organizational form.[31] Political institutions, for instance, are more likely to prefer formal organizations, on balance. These kinds of bodies are, as noted above, characterized by the

[29] This distinction roughly derives from Thatcher and Stone Sweet 2003.
[30] Ibid, pp.2.
[31] Abbott and Snidal 2000; Bach 2010.

fact that they are influenced by electoral politics to a far greater extent and the tenure of officials heading these kinds of bodies is more uncertain. Given this, greater legalization helps politicians to do two things. First, since international treaties (in comparison to soft agreements) are seen to be more prestigious domestically, greater legalization helps politicians to demonstrate leadership, bolster their reputations and improve their probability of being re-elected.[32] Second, since greater legalization makes it more difficult for a state to "exit" an agreement (or IGO) by raising the reputational costs of doing so, creating a more formal IGO helps to "lock-in" the policy preferences of a politician to a far greater extent.[33] They will, therefore, be more certain that their policies will remain in place, even if they are removed from office at some point in the future.

If an independent agency is "selected," by contrast, we can reasonably expect it to prefer greater informality, on balance. This is because independent agencies highly value the autonomy they possess and will likely take actions that will limit the extent to which other domestic actors—legislators, lawyers, diplomats, etc.—intervene in their affairs.[34] As David Andrew Singer has noted, "political intervention, in its various guises, is the bane of a regulator's existence. When politicians attempt to influence regulatory policy directly […] they threaten the agency's autonomy and prestige."[35] "Regulators will," therefore, "use all strategies at their disposal to minimize the possibility of intervention."[36] Informality helps them to do so. Since creating an informal IGO does not require extensive ratification procedures, monitoring arrangements or budgetary

[32] See Aust 2000; Brewster 2004; Guzman 2008.
[33] Moravcsik 2000; Brewster 2004; Guzman 2008.
[34] Damro 2006; Singer 2007; Bach 2010.
[35] Singer 2007, p.22.
[36] Ibid.

allocations, it allows independent agencies to both engage in intergovernmental cooperation to reduce externalities they face—which may, in turn, lead to political intervention if left unchecked[37]—while maintaining a higher level of control over their affairs than would otherwise be possible.

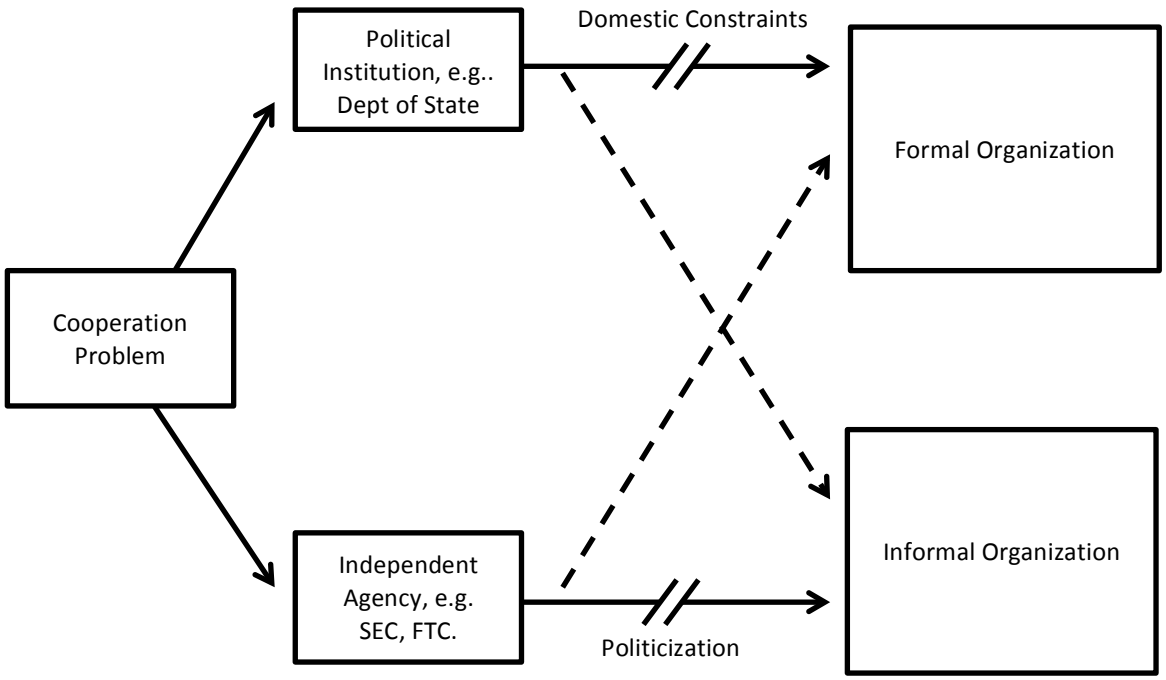
That said, political institutions and independent agencies cannot pursue their first preference at all times. Political institutions, for instance, are unlikely to be able to pursue a formal approach when they face significant *domestic constraints*. Creating a formal IGO requires a larger shift from the prevailing domestic "status quo," since the domestic ratification, monitoring and budgetary requirements associated with signing an international treaty to establish a formal IGO are much more onerous. The prospects for formal cooperation are therefore likely to be heavily influenced by factors that make it more or less difficult for a political institution to attain the domestic support necessary. When the number of domestic veto players is high, then, formality becomes a less achievable objective. And, when this occurs, a political institution may then switch to a more informal approach, which may satisfy some of the constituents in favor of international cooperation while circumventing those that oppose it. An informal IGO is a second-best solution, but is likely viewed as better than the alternative: no IGO at all. Further, they can be relatively easily scaled-up in the future.[38]

Independent agencies, by contrast, are unlikely to achieve their first preference when their actions become *politicized*. This may occur under several different conditions, but is

[37] On this point, see Singer 2007.
[38] Abbott and Snidal 2004.

most likely to occur when an independent agency is seen to be failing or underperforming in some important way by other domestic political actors.[39] An issue that arises might also be simply too important or controversial to be left up to bureaucrats alone, particularly if there are significant domestic distributional consequences.[40] Politicians may then demand a say. Either way, when this happens other domestic actors—including, especially, those within political institutions—may threaten to intervene or actively intervene in the affairs of an independent agency. If so, then the agency will lose its ability to control foreign policymaking, and the probability that a more formal approach to international cooperation will be pursued can be expected to increase correspondingly.

Figure 2 Model of State Preference Formation

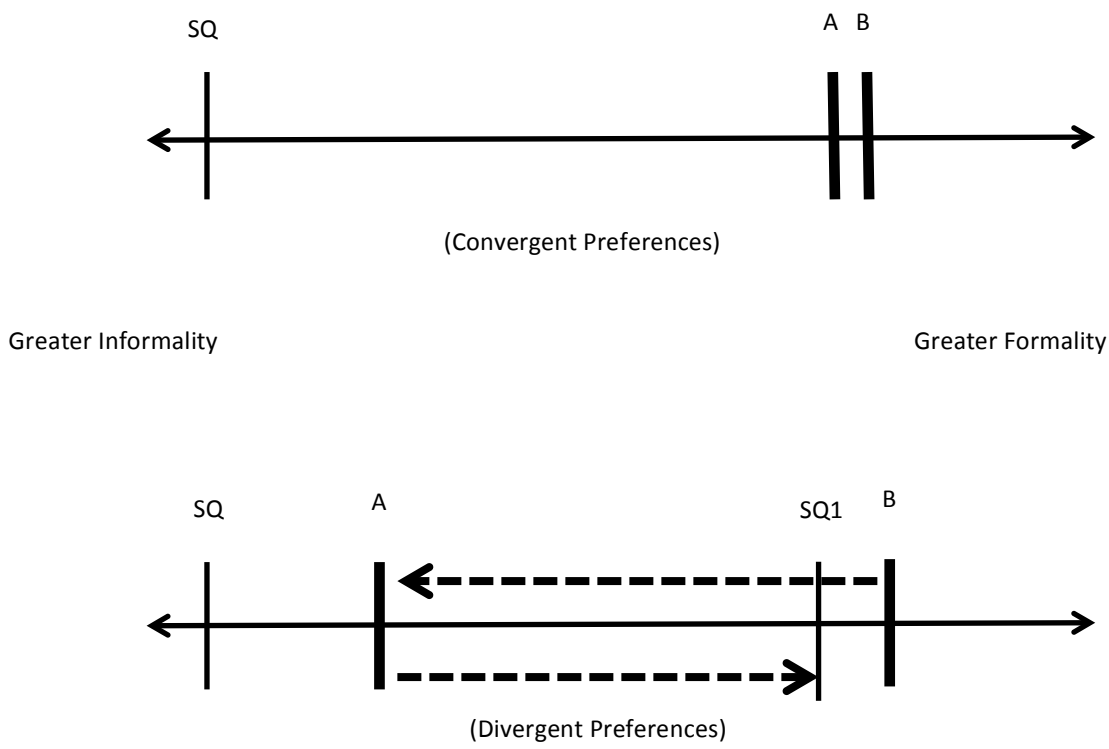


[39] Damro 2006; Singer 2007.
[40] Richards 1999.

In sum, the preference formation process described above (visualized in Figure 2) is a matter of functionalist demand *and* domestic politics. A cross-border cooperation problem prompts public actors to become involved in creating an IGO of some kind, but also "selects" particular public actors to lead cooperative efforts. The domestic institutions that are selected through this process are hypothesized to have different baseline preferences over the formality of an IGO. If a political institution is selected, then a preference for greater formality is expected *unless* policymakers face significant domestic constraints. If a more autonomous independent agency is selected, by contrast, then a preference for informality is expected *unless* an issue gets politicized.

Preference Aggregation. The domestic preference formation process described above is obviously a simplified model. Yet it still allows a great deal of causal complexity. The process can play out in different ways in different states depending on the state of politics and the institutional structure prevailing within each of the states involved at the time an IGO is being created. This means that it is entirely possible that the preferences of states may conflict, even when they are dealing with the same issue—a possibility that seems to be omitted or overlooked by functionalist approaches. The second step in the model seeks to explain how such conflicts are resolved. It starts by taking state preferences as given and explains how they aggregate to produce either a formal or informal IGO using a simple bargaining model, as shown in Figure 3.

Figure 3 Model of State Preference Aggregation



In the model, states bargain over a continuum that ranges from a high level of informality (on the left) to a high level of formality (on the right). If the preferences of states converge, as shown in the upper panel, then we should obviously expect the commonly preferred outcome to arise. If two states both desire the same level of formality, then neither has an incentive to hold up cooperation to achieve its goal. They may, of course, disagree about other dimensions of institutional design and engage in hard bargaining over those issues. But, when it comes to organizational form, there is little disagreement, and states can attain the desired outcome without too much trouble. There is no need to persuade, pressure, or coerce others to get what they want. The outcome is, in other words, in equilibrium.

By contrast, when state preferences diverge, as shown in the lower panel, bargaining power is likely to be a much more important consideration. In this case, states agree that an IGO of some kind is desirable but they disagree over the form it should take. When this occurs, neither can attain its preferred outcome without compelling the other in some way, and the final outcome is likely to reflect the preference of the state with the greatest bargaining power. Here, in line with basic bargaining theories, a state is expected to have greater power over others if its position is closer to the status quo or "reversion point."[41] In Figure 3, the preference of State A is much closer to the status quo (SQ), which, bargaining theory tells us, means that it is much more likely to be able to hold out or "veto" cooperation if it does not get what it wants. State B is then more likely to defer to a point closer to A's preference. We can then expect that State A's preferred outcome will emerge. However, bargaining power is not simply a matter of whose preference is closer to the status quo; other actions are possible. If State B can threaten to "go it alone" with others or take actions—such as sanctions or side-payments—that have the effect of moving the status quo to a point closer to its preferred outcome (SQ1), then State A is more likely to defer to a point closer to State B's preferred outcome.[42] In this case, by contrast, the final outcome is expected to reflect State B's preferences.

In sum, the theory of preference "aggregation" hypothesizes that when preferences converge, we can expect the outcome commonly preferred by all relevant states to emerge and that power will play little role. When preferences diverge, on the other hand,

[41] Nash 1950; Rubinstein 1982; Muthoo 1999; Richards 1999.
[42] Gruber 2000; Moe 2005.

the final outcome will heavily depend on the bargaining power of the states involved. If a state or group of states is capable of vetoing the solutions proposed by others or coercing others to accept an outcome they do not want, then the subsequent organization should align with their preference.

3.2 Observable Implications

Rational design theories have a clear observable implication: if they are right, we should see a strong correlation between particular aspects of the cooperation problems that an IGO is created to address and an organization's level of legal formality. By contrast, if domestic politics and power are driving the design of these institutions—in line the the theory presented above—we should see something different. Specifically, there are two overarching hypotheses that follow from the model presented above. First, if my theory is correct, then the probability that an IGO will be informal should increase if policymakers in most states or in a few particularly powerful states face significant domestic constraints at the time that an organization is established. Second, the probability that an IGO will be informal should increase if the actors leading cooperation on the behalf of most states or a few particularly powerful states have greater autonomy. The follow section tests these hypotheses.

4. Quantitative Analysis

In this study, the unit of analysis is the IGO and the dependent variable is an IGO's level of formality. In line with the dataset presented in Section 2, this is a dichotomous variable. It takes a value of 1 if an IGO is informal and a value of 0 if an IGO is formal.

However, due to data constraints, the actual analysis only employs a subset of the total sample. Specifically, the sample contains all of the IGOs created *exclusively* by OECD states between 1950 and 2005 for which suitable data was available.[43] This amounts to around 90 IGOs. Of these, 53 are formal, having been constituted by an international treaty, while 37 are informal, constituted without recourse to a legally binding agreement. Some are relatively well known organizations, such as the European Organization for Nuclear Research (CERN), the European Central Bank (ECB), and the Organization for Economic Cooperation and Development (OECD), but most are lesser known bodies, such as the European Company for the Financing of Railway Equipment (EUROFIMA), the Group for Aeronautical Research and Development in Europe (GARTEUR), and the International Cooperation on Cosmetics Regulation (ICCR). Thus, while the sample is constrained to include only those organizations created by OECD states, there is no bias towards organizations that are subjectively deemed "important," or which have already received attention from scholars.[44]

The first explanatory variable, *Autonomy*, is designed to measure the extent to which the presence of independent agencies affects the organizational form of an IGO. The variable is constructed using participant lists from the negotiations that led to the establishment of

[43] Specifically, to generate a specific group of states, I began with the set of original OECD states, which have largely been well-off democracies since 1950, and added several others, such as Australia and New Zealand, which also undoubtedly meet the criterion. The 25 state selected in this way are: Austria, Australia Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, New Zealand, Norway, the Netherlands, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom, the United States. In order to increase the sample size, I also allowed organizations to include Yugoslavia as a founding member.

[44] Note also that while the sample is not geographically representative, the temporal trend that we find within it mirrors what we see in the larger dataset. For comparative descriptive statistics, see the data appendix.

each organization. These provide a record of the individuals that took part on each delegation and the domestic bodies they were associated with, which is a reasonable indication of the domestic actors that were "leading" cooperation within each of the states involved. I have then coded each of the domestic bodies according to their level of autonomy using a modified version of the coding scheme developed by Jordana et al. that measures the "independence" of regulatory agencies.[45] According to this measure, if an agency is independent, it receives a score of 1; if not, it receives a score of -1. These scores are then assigned to each individual on a delegation and then aggregated for each state, providing us with a single score for each state that tells us the extent to which autonomous actors were "leading" cooperation. In order to take the power of each state into account, these scores have then been weighted by the state's share of the "founding group's" total GDP. Finally, by summing each of these values, we arrive at a single score for each IGO that tells us the extent to which autonomous actors have led cooperation within politically relevant states.[46] A score close to +1 indicates that autonomous actors

[45] Jordana, Levi-Faur, and i Marin 2011. Also, see Levi-Faur 2005. For their database and further details on coding procedures, see the website of the GlobalReg Research Group: http://www.globalreg-project.net. Note that I drop their third criterion that requires a body to be engaged in "regulation;" the critical factor here is the degree of formal independence that a body possesses within a state, not what it does per se.

[46] Mathematically, the formula used to calculate each value of *Autonomy* for each of the IGOs in the sample is:

$$\sum_{j=1}^{n} \frac{i_{j1} + i_{j2} + i_{j3} \ldots i_{jt}}{t} * \frac{g_{jf}}{\sum_{j=1}^{n} g_{jf}}$$

Where n is the total number of states involved in creating an organization, i_j is a delegate from country j (and either equals 1 if the delegate hails from a independent agency or -1 otherwise), t is the total number of delegates from country j, and g_{jf} is country j's GDP in the year that the organization is created. The year that an organization is "created" or "established" is taken to be the year that the agreement constituting the organization is first opened for signature. This may or may not be different from the dates of "establishment" in the COW-IGO Dataset, which record the year that an organization started operations. Using this year rather than the year before or an average of the years before is not problematic since there are rarely significant "jumps" in GDP

were predominant on the delegations of most states or a few particularly powerful states; a score of 0 indicates greater "politicization," or preference divergence; and a score close to -1 indicates that non-autonomous, political institutions dominated most delegations involved, or the delegations of a few very powerful states. If the theory presented above is correct, a higher value is expected to raise the probability that an IGO will be informal

The second explanatory variable, *Constraints*, is designed to measure the extent to the domestic constraints that policymakers face influences the organizational form an IGO. It is constructed using the widely used POLCON index developed by Henisz, which measures the number of veto players within a state at a particular point in time.[47] To do so, I have measured the "average" level of constraints in the years prior to the creation of an IGO for each of the states involved. I have then taken the difference between this average value and the value that the measure takes in the particular year that an IGO is established. This number tells us, for each state, whether the domestic constraints that policymakers could expect to face were higher or lower than usual at the time that a constitutive agreement would be signed. Again, in order to take into account that fact that not all preferences are likely to matter equally, I have then weighted these scores by each state's share of GDP. Finally, by summing the values for each state, we are able to arrive at single indicator that tells us the extent to which domestic constraints were higher or

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levels from year to year. At any one point in time, the relative economic size of a state is quite stable.

[47] Henisz 2002. Specifically, I use his POLCONIII measure. I chose not to use the alternative POLCONV measure because it is less comprehensive and includes units that seemed inappropriate in the field of foreign affairs, since the measure expands upon the first by including sub-federal governmental units and the judiciary. The most recent version of the dataset is available here: https://whartonmgmt.wufoo.com/forms/political-constraint-index-polcon-dataset/. For further information on this dataset and how it differs from other attempts to measure veto points and veto players, see Jahn 2010.

lower than average within the politically relevant states involved in establishing an IGO.[48] In order to facilitate comparison, I have rescaled these values to range between +1 and -1. A value of +1 indicates that constraints across most states or within the most powerful states were much higher than usual; a value of 0 indicates that constraints were about average, or that there was significant divergence across the founding group; and a value of -1 indicates that domestic constraints where much lower than usual. Again, if the new theory presented above is correct, a higher value should increase the probability that an IGO will be informal.

In order to take the impact of the cooperation problem, or "situation structure," into account, I also develop measures to operationalize the different rational design hypotheses set out in the previous section. In each case, I do my best to faithfully replicate the coding procedures used in relevant rational design studies. Thus, for instance, in order to develop a measure of *Uncertainty* in an issue area I employ a coding procedure used by Koremenos.[49] In her study "Contracting Around International Uncertainty" she codes uncertainty as a dichotomous variable (taking a value of 1 if there is a high level of uncertainty, and 0 otherwise), and these values are assigned to different issue areas. Occasionally, however, a suitable coding procedure did not exist and had to

[48] Mathematically, the formula used to generate each value of *Constraints* is:

$$\sum_{j=1}^{n}(v_{jf} - v_{ja}) * \frac{g_{jf}}{\sum_{j=1}^{n} g_{jf}}$$

Where n is the total number of states involved in creating an organization, v_{jf} is the level of domestic constraints prevailing in country j at the time of founding, v_{ja} is the average level of domestic constraints in country j, and g_{jf} is j's GDP at the time of that an IGO is constituted or "founded."

[49] Koremenos 2005.

be created from scratch. This was the case with *Agility*. Rational design theorists argue that an organization is more likely to be informal if the issue it deals with requires a "speedy" response. Here, I conceptualize such issues as those that are "time-sensitive"—meaning that failure to act quickly would lead to significant losses of property or life. In part, this comes down to whether an organization focuses on "reacting" to major problems or events. Based on this thinking, I have created a variable that takes three values: -1, 0, +1. It is coded +1 if the organization focuses on "reacting" or "responding" to problems that may entail large losses of life or property. Any organization designed to respond to "emergencies", "disasters", "epidemics," "crises," or "conflicts" are categorized as dealing with issues that require speed. If the organization is primarily engaged in regulatory standard setting or research, by contrast, it is coded -1—indicating that the organization may emphasize slower, more meticulous decision-making. All others are coded 0, indicating that they are engaged in activities that are not particularly time-sensitive in either sense.

The third rational design variable that I code for, *Confidentiality*, measures the level of secrecy that an issue calls for. Functionalists have argued that when states wish to keep their activities hidden from view that an informal design offers important advantages. Alternatively, where states wish to make their activities especially transparent, they may opt for a more formal design. To create this variable, I build upon insights from the work of Tallberg et al.[50] Their study of the "opening up" of intergovernmental organizations, argues that states adopt a variety of designs that may grant different degrees of "access"

[50] Tallberg et al. 2014.

to transnational actors. Some tasks require considerable discretion, and therefore access is not granted; others benefit considerably from the input of transnational actors. Following their work, I argue that organizations requiring a high level of discretion or secrecy are those dealing with security or monetary issues; those that are more open generally deal with complex issues or those which require considerable local implementation. I therefore construct a variable that takes three values: -1, 0, +1. If an organization deals with security or monetary issues, it is coded 1, indicating that it will benefit from a high level of confidentiality. If an issue is highly complex, requiring significant expertise, or if there is need for local implementation, then it is coded +1. All others are coded 0, indicating that they do not benefit from being especially open or closed.

The next two variables that I construct are designed to measure an organization's need for autonomy. One factor that is likely to drive an organization's need for autonomy is the potential for *Opportunism*. If an organization deals with issues where non-compliance is likely to significantly affect another actor, then greater autonomy may be necessary, since there will likely be a need for the organization to engage in enforcement, monitoring or dispute settlement. This may only be possible in a more independent body, and therefore greater formality will be necessary. In order to code for the potential for opportunism I develop a measure that takes three values: 0, 1, and 2. The different values are assigned to organization depending on the kind of activity they are engaged in, which is determined through constitutive documents, descriptions in the *Yearbook of International Organizations*, websites, or secondary sources. Specifically, if an organization is primarily engaged in research, training, or information exchange, or acts simply a

discussion forum, it is coded with a 0. This indicates that there is "low" potential for opportunism. Organizations engaged in finance or joint operations, such as running a major facility that requires substantial investment and ongoing funding, are coded 1, indicating "medium" potential for opportunism. Finally, organizations engaged in rule-setting, mutual security, or dispute settlement, are coded 2, indicating "high" potential for opportunism. The exception is organizations designed purely for facilitating regulatory coordination. These are coded as having low potential for opportunism. Such organizations are engaged in rule-setting but there is little need for enforcement once the rules are established.

Next, I also construct a variable that measures the level of *Heterogeneity* among the actors involved in creating an organization. In addition to the potential for opportunism, rational design scholars have also argued actors are more likely to require greater autonomy if their preferences are more heterogeneous, since there will be greater scope for conflict and lower levels of trust. This, in turn, raises the need for dispute settlement and third parties capable of monitoring enforcing commitments. I operationalize heterogeneity along the lines of Koremenos by using the Affinity of Nations index developed by Gartzke, which is based upon voting patterns in the United Nations General Assembly.[51] The data is dyadic and ranges from -1 to +1, taking a high value if two states vote similarly and a low value if they vote differently. To gauge the degree of preference heterogeneity using this variable we can take the minimum value from among the various

[51] Koremenos 2008; Gartzke 1998; Gartzke 2006.

dyadic values for all the countries involved in creating an organization, relying upon a "weakest link" assumption.[52]

Finally, rational design scholars have also argued that the size of an organization's *Membership* and the scope of the issues (*Issue Scope*) that an organization is intended to resolve may impact the formality of an organization. If a large group of countries wish to cooperate with one another or if an organization is designed to address a larger number of issues, this may require greater formality. Here, I measure the size of the group using an organization's current membership. Even if an organization is created by only a small number of actors, they may rationally anticipate that its membership will grow in the future and therefore may require a more formal design. With regard to the scope of the issues that an organization is designed to address, I make use of the measure developed by Lenz et al.[53] They have developed a coding procedure that utilizes a list of 26 different issue areas that an organization may be active in to gauge the number of distinct issues that it is intended to address. I employ this same technique using descriptions in the *Yearbook of International Organizations*.

Table 4 in the paper's appendix shows descriptive statistics for all of the variables used in the analysis. Table 5 in the appendix shows all of the basic correlations between each of variables, and Table 6 reports Variance Inflation Factor (VIF) scores that measure

[52] Hirshleifer 1983. The Affinity of Nations Index ranges from 0 to 1 for each dyad, with a value of 1 meaning that state preferences are highly congruent. The raw measure of preference heterogeneity that I construct (using the minimum value among the states involved) therefore take a low value of there is a high level of heterogeneity. To ease interpretation I have, however, inverted the measure. As used here, a higher value implies greater heterogeneity.
[53] Lenz et al. 2015.

potential for multicollinearity between all of the variables included in the main analysis. The VIF scores are all well below conventional bounds of acceptability.

4.1 Results

Table 2 shows the results of a probit analysis that includes these variables. Model 1 shows the basic results for *Autonomy* and *Constraints*. Models 2 through 8 then show the simple bivariate relationships between each of the rational design variables and the dependent variable. Model 9 includes all of the functionalist variables together in a single model. Model 10 then replicates this model but adds in both *Autonomy* and *Constraints*. In line with expectations, Model 1 shows that *Autonomy* and *Constraints* are statistically significant and positively signed when included in the same model.[54] Among the bivariate relationships, Models 4 and 5 stand out. The first shows the relationship between *Confidentiality* and formality, while the second shows the effect of *Opportunism*. Both are statistically significant and the signs on the coefficients are in the directions predicted by rational design theories. The positive sign on *Confidentiality* in Model 4 tells us that as the need for confidentiality increases, an organization is more likely to be informal. The negative sign for *Opportunism* in Model 5, in turn, indicates that as the potential for opportunism grows an organization is less likely to be informal. The rest of the rational design variables (*Uncertainty*, *Agility*, *Heterogeneity*, *Membership* and *Issue Scope*) never achieve statistical significance in the bivariate models, and in some cases are incorrectly signed. Model 2 and Model 3, for instance, suggest that *Uncertainty* and *Agility* have, if anything, negative relationships with

[54] The bivariate relationships are statistically significant as well, but omitted here.

informality when considered on their own—the opposite effect predicted by rational design theories.

Model 9, as mentioned, includes all of the rational design variables in a single model. Here, again, the variables *Confidentiality* and *Opportunism* stand out. Both are found to be statistically significant and correctly signed. The rest of the variables still do not achieve statistical significance, with the exception of *Heterogeneity*. In this model, *Heterogeneity* proves to be significant at the 10 percent confidence level but it is incorrectly signed. The positive coefficient suggests that as preference heterogeneity rises among the states involved in creating an intergovernmental organization, the probability that it will be informal grows. Model 10 then adds *Autonomy* and *Constraints*. In this model, *Confidentiality* and *Opportunism* continue to be statistically significant and have the correct signs. However, the most important finding to be derived from this model is that despite the addition of these variables, *Autonomy* and *Constraints* continue to be important predictors of informality. Both are statistically significant at the 5 percent confidence level or better and the signs on the coefficients indicate that they have a positive relationship with informality, as expected by my own theory.

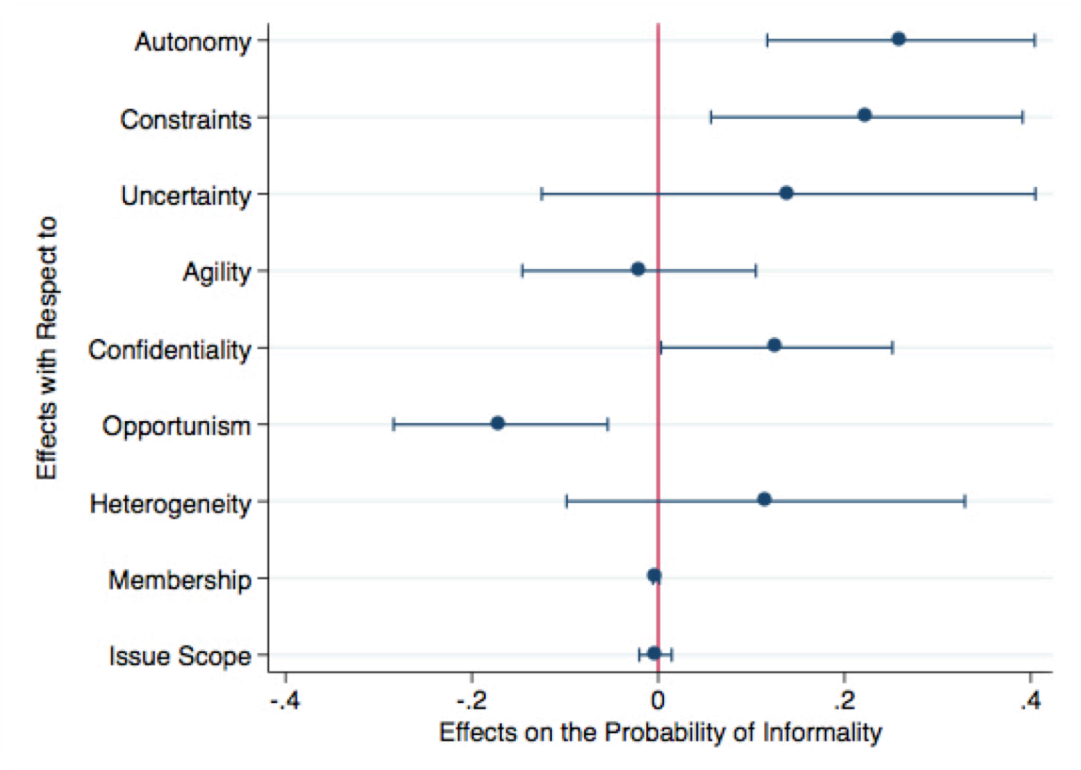
Table 2 Bivariate and Multivariate Regressions

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Autonomy	1.141***									1.089***
	(0.319)									(0.351)
Constraints	0.863**									0.936**
	(0.346)									(0.377)
Uncertainty		-0.378							0.0557	0.585
		(0.271)							(0.445)	(0.563)
Agility			-0.183						-0.0829	-0.0855
			(0.191)						(0.239)	(0.267)
Confidentiality				0.342*					0.618**	0.532*
				(0.184)					(0.271)	(0.291)
Opportunism					-0.643***				-0.732***	-0.706**
					(0.179)				(0.249)	(0.278)
Heterogeneity						0.434			0.758*	0.482
						(0.388)			(0.458)	(0.466)
Membership							-0.00531		-0.0129	-0.00908
							(0.00485)		(0.00813)	(0.00747)
Issue Scope								-0.0234	0.00716	-0.0123
								(0.0335)	(0.0380)	(0.0370)
Constant	0.334	-0.0522	-0.273*	-0.125	0.214	-0.0517	-0.123	-0.144	0.969**	1.079**
	(0.285)	(0.182)	(0.146)	(0.146)	(0.178)	(0.208)	(0.179)	(0.180)	(0.387)	(0.442)
Observations	90	90	90	90	90	90	87	90	87	87

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The results from this analysis indicate that some rational design variables do appear to play a role. But it also tells that even after we take this into account, *Autonomy* and *Constraints* still have a positive effect on the probability of an organization being informal. That said, we might still wonder about the size of these effects. Even if *Autonomy* and *Constraints* have an impact on the outcome, this would be much less interesting if their effect was relatively small compared to other variables. Yet it appears this is not the case. To determine what their relative impact is on the outcome, we can estimate the marginal effects of all of the variables. These results, which are derived from Model 10, are presented in Figure 4. On the y-axis are each of the variables included in the model. On the x-axis we see each variable's *average* marginal effect on the probability that an organization is informal. Each of the blue points is the model's best estimate of the average size of each variable's effect on the outcome, while the whiskers indicate the 95 percent confidence levels on either side of this estimate. Overall, the figure shows that among all of the variables in the model *Autonomy* and *Constraints* have the largest effects on the outcome. On average, an increase in these variables will raise the probability that an organization will be informal by over 20 percent (26 and 22 percent, respectively). The other two variables that achieve statistical significance, *Confidentiality* and *Opportunism*, also have an impact on the outcome, but their effect is smaller. Among them, *Opportunism* has the largest effect: on average, an increase in the potential for opportunism lowers the probability that an organization will be informal by about 17 percent. Increasing the need for *Confidentiality*, in turn, raises the likelihood that an organization will be informal by roughly 12 percent.

Figure 4 Average Marginal Effects



Overall, the results presented thus far strongly support the theory presented in the previous section. Both *Autonomy* and *Constraints* are positively correlated with an organization's level of informality. Further, compared to relevant rational design variables, they also appear to have the largest impact on the probability that an organization will be informal. Still, we might wonder whether these results are robust across different specifications of the model or different ways of measuring explanatory variables. They are. Table 3 presents a number of different models that provide additional estimates of the results and include the alternative measures of relevant variables described above. Model 1 is identical to Model 10 above and included for reference. Models 2 and 3 then include the same variables but estimate the results using logit and OLS models, respectively. The results show that there is no major difference in the

results. All of the key variables maintain their signs and significance levels. The only new finding is that *Membership* achieves significance in Model 3. The negative sign indicates that organizations with a larger number of actors involved are less likely to be informal, in line with the rational design theory. Models 4 and 5 then replicate the results in Model 1 but use alternative measures of preference heterogeneity. The first uses the difference between the maximum and minimum levels of GDP for all the countries involved in creating an organization; the second uses a Gini measure of inequality. In both cases, the key variables again maintain their signs and significance levels, with the exception of *Confidentiality*, which does not reach standard levels of statistical significance in Model 4. Finally, Model 6 uses an alternative measure of the size of an organization's membership—specifically, membership at the time that an organization is created. But, again, this does not change the main results.

Table 3 Robustness Checks

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Autonomy	1.089***	1.880***	0.278***	1.108***	1.125***	1.272***
	(0.351)	(0.677)	(0.0700)	(0.350)	(0.346)	(0.381)
Constraints	0.936**	1.618**	0.203**	1.021***	0.867**	0.886**
	(0.377)	(0.683)	(0.0948)	(0.371)	(0.403)	(0.383)
Uncertainty	0.585	0.890	0.0939	0.820	0.553	0.558
	(0.563)	(0.976)	(0.131)	(0.626)	(0.560)	(0.555)
Agility	-0.0855	-0.192	0.0228	-0.0364	-0.0780	-0.0919
	(0.267)	(0.476)	(0.0681)	(0.295)	(0.266)	(0.261)
Confidentiality	0.532*	1.056*	0.138*	0.412	0.510*	0.568*
	(0.291)	(0.602)	(0.0782)	(0.289)	(0.285)	(0.316)
Opportunism	-0.706**	-1.255**	-0.184**	-0.834***	-0.756***	-0.755***
	(0.278)	(0.534)	(0.0737)	(0.305)	(0.281)	(0.281)
Heterogeneity	0.482	0.903	0.116			0.560
	(0.466)	(0.785)	(0.138)			(0.551)
Membership	-0.00908	-0.0142	-0.00225*	-0.00643	-0.00508	
	(0.00747)	(0.0141)	(0.00126)	(0.00791)	(0.00646)	
Issue Scope	-0.0123	-0.00869	-0.00423	-0.0249	-0.0173	-0.00692
	(0.0370)	(0.0607)	(0.0104)	(0.0360)	(0.0379)	(0.0373)
Hetero (Gini)				0.0749		
				(1.412)		
Hetero (Max-Min)					0.551	
					(0.852)	
Member (Orig)						-0.0518
						(0.0404)
Constant	1.079**	1.889**	0.801***	0.808	0.687	1.560**
	(0.442)	(0.825)	(0.0980)	(0.727)	(0.516)	(0.674)
Observations	87	87	87	86	87	90
R-squared			0.407			

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

4.2 Addressing Selection and Endogeneity Concerns

One complexity that has not been discussed in detail thus far has been the possibility of selection and endogeneity problems, especially regarding the impact of *Autonomy*. The key issue is that some of the rational design variables may be important not simply as controls, independently shaping the probability that an organization will be formal or informal. Instead, they may actually determine when certain actors are likely to "lead" cooperation as well. That is, perhaps certain features of the cooperation problem that states face not only make an organization more likely to be informal but also determine when a state is likely to leave responsibility for leading cooperation up to more autonomous actors. In other words, maybe states are more willing to let autonomous domestic actors lead cooperation when there is little chance of opportunism and greater need for confidentiality, and vice versa. Obviously, this possibility complicates hypothesis testing. If true, the quantitative analysis undertaken above could plausibly show that there is a significant relationship between levels of actor autonomy and an organization's level of informality but the relationship would not be a causal one. Instead, the situation structure would simply make it more likely that we would see higher levels of autonomy *and* make it more likely that an organization will be informal.

With observational data, one of the most powerful ways of addressing this issue is through "matching" methods, which can help to mitigate such concerns by partially endogenizing the likelihood that autonomous actors will be present in any given situation. The logic of matching strategies is to approximate as much as possible a genuine controlled experiment, where a "treatment" is assigned at random. In a real experimental

situation, we are then able to control for all of the other factors that may influence the outcome because randomization means that the treatment is not correlated with any other explanatory factors. Obviously, this is not possible with observational data. However, using matching methods, we can compare cases that are similar, or "matched," in every possible respect except for the fact that in some (the "treatment" group) the explanatory variable is present and in others it is not (the "control" group). Once this is done, we can then re-estimate the causal effect of the explanatory variable by examining the difference in outcomes across these two groups. The estimate will be better—and can help to mitigate selection and endogeneity concerns—because the matching procedure explicitly accounts for the different theoretically relevant factors that could also be driving the likelihood that a particular case received the "treatment" in the first place.

One of the most widely used matching methods relies upon propensity scores.[55] This method begins by using the variables believed to determine the likelihood that a case receives a treatment as regressors in a logit model with a dichotomous "treatment" variable as the outcome. In the case at hand, the "treatment" would be *Autonomy*, and the regressors are the relevant rational design variables that we believe might influence the probability that autonomous actors will lead cooperative efforts. This procedure then generates a propensity score for each case in the sample, which tells us the probability that a particular case will receive the treatment, given the values of the other variables. We then use each case's propensity score to match observations in the treatment group with others in the control group. Each set of matched observations then has an equal

[55] Guo and Fraser 2010; Stuart 2010.

probability of having received the treatment, but the individual cases actually differ with respect to whether or not they have in fact received the treatment. Following this, we can then perform a number of "balance" diagnostics to verify the degree of similarity between the treatment and control groups. Finally, we can then use the matched sample to re-estimate the causal effect of the treatment variable using a difference in means test.

In order to employ a matching method, I have begun by dichotomizing the "treatment" variable, *Autonomy*, since it is not a binary variable. I have done so by recoding *Autonomy* to equal 1 if a value is above the mean and 0 if a value is below the mean. Using a logit model, we then estimate the propensity scores for each case in the sample, which tell us the probability that the new "treatment" variable, *Autonomy2*, will take a value of 1. To do so, I have used the rational design variables *Confidentiality* and *Opportunism*. I have dropped the others from this model because they are both substantively and statistically insignificant in nearly all of the models presented thus far. The scores generated in this way are, as mentioned, probabilities and therefore range from 0 to 1. The average probability that a case receives the *Autonomy* treatment is .29, or 29 percent, and the propensity scores range from close to 0 to .52, or 52 percent. This indicates that, given the values of the other variables in the model, there is *hypothetically* a very low probability of the actors leading cooperation being autonomous in some cases, and a greater than 50 percent chance of them being autonomous in others.

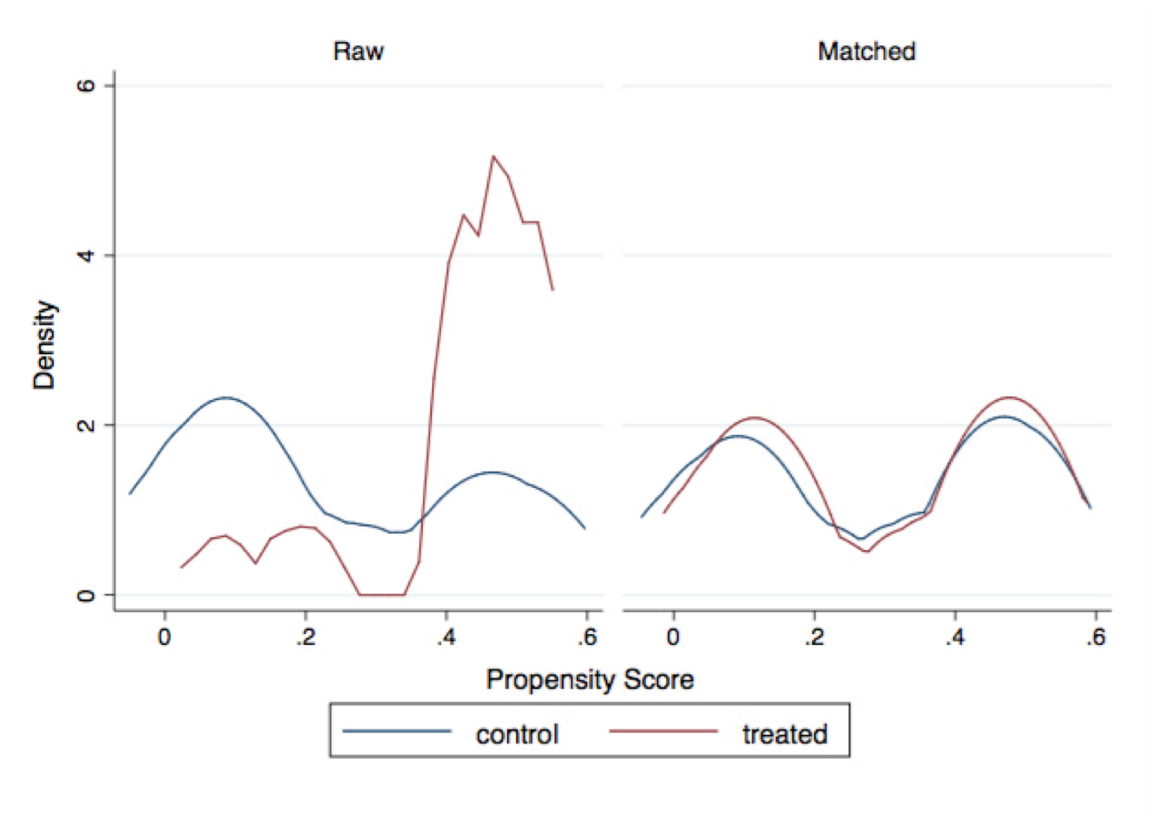
In order to undertake matching, I have adopted a three "nearest neighbor," with replacement, matching rule. This means that each of the observations in the treatment

group can be matched with three (weighted) observations in the control group, and that once a case has been used as a match it continues to be available for further matches afterwards. I also apply a "caliper" of .05, which restricts the "radius" or range of the "potential" matches in the control group to those that lie within at least 5 percentage points of the observation in the treatment group. Finally, the range of possible matches is also restricted to those that fall within the "common support."[56] Once this has been done, I have then performed a number of diagnostics to ensure that "balance" has occurred.[57] First, I have examined the standardized difference in means[58] of each covariate, as well as their variance ratios, in both the "raw" and "matched" samples.[59] This revealed that the standardized difference of each covariate across the treatment and control groups are significantly reduced in the matched sample, and well within conventional bounds. Likewise, the variance ratios are much closer to unity in the matched sample, and, again, well within conventional bounds. Second, t-tests for each variable then also confirm that the matching procedure has removed any statistically significant differences across the treated and control groups. Finally, we can see the overall improvement in balance by examining a density plot of the propensity scores across the raw and matched samples. This is shown in Figure 5, which allows us to compare, visually, how similar the propensity scores are across these two groups. Again, this reveals that the cases in the

[56] That is, any observations with propensity scores that fall outside of the range of overlap between each of the treatment and control groups are dropped.
[57] "Balance" is said to occur when the cases in both the treatment and control groups not only have the same propensities to have received the treatment, but when the standardized difference in means and variance ratios are identical across each group as well.
[58] The standardized difference in means, or "standardized bias," is defined as the difference in means in the "treatment" and "control" groups, divided by the standard deviation for the entire "treated" group.
[59] The detailed results are reported in Table 7 in the appendix.

"matched" sample are much more alike in terms of their probability to have received the treatment.

Figure 5 Balance Density Plot



Together, these balance diagnostics suggest that while balance across the treatment and control groups is not perfect, it is significant better than in the raw sample. We can, therefore, be reasonably confident that relevant aspects of the cooperation problems that we think may drive autonomous actors to engage in cooperation are held constant across the two groups. Having achieved this we are now in a position to re-estimate the effect of *Autonomy2* by examining the difference in means across the treatment and control groups. Doing so confirms that the autonomy of the actors leading cooperation has a

substantively and statistically significant ($p<.01$) effect on the likelihood that an organization will be informal. Specifically, the results indicate that, on average, an increase in *Autonomy2* from 0 to 1 (hypothetically equivalent to a switch from non-autonomous to autonomous actors) raises the probability that an organization will be informal by roughly 36 percent. To reinforce this analysis, I have also utilized a range of other approaches to addressing selection and endogeneity concerns, including inverse-probability weighting and coarsened exact matching.[60] These other methods provide alternative ways for ensuring balance across the treatment and control groups and they confirm the results presented here.[61]

4.5 Conclusion

Informal IGO are an increasingly prominent feature of the global political landscape, yet they have thus far remained relatively poorly understood. Existing efforts to explain their emergence have, to a significant extent, been grounded in a rational design approach. However, this article has provided reasons to doubt that this explanation is sufficient, and argues that the reason for this lies in their relative neglect of domestic politics, conflict and power. It advanced an alternative theory that builds upon this existing approach but attempts to incorporate these variables. It has also undertaken the first systematic effort to evaluate these two theories. The analysis began by identifying a sample of 90 formal and informal IGO that serve as the study's dependent variable. It then developed two

[60] Iacus, King, and Porro 2012; Imai and Ratkovic 2014.
[61] The detailed results of these analyses are not presented here but the code for running these tests can be found in the supplementary material for this chapter. I have also undertaken a similar propensity analysis with a larger number of covariates, including additional rational design variables and the domestic constraints variable. This alternative analysis again broadly confirms the results presented here.

explanatory variables that measure: a) the extent to which the actors leading cooperation in politically relevant states involved in creating an IGO are autonomous, and b) the level of domestic constraints. Both factors are hypothesized by my theory to impact an organization's level of formality. The paper then developed a number of variables aimed at testing the main rational design conjectures. These hypotheses were then evaluated through a multivariate analysis. This analysis indicated that rational design theories do indeed have some validity. In particular, it suggested that the level of confidentiality that an issue requires and the scope for opportunism affects the probability that an organization will be informal. However, the results also indicated that, while this was true, domestic constraints and the autonomy of the actors leading cooperation still have powerful effects on informality—indeed, they appear to have the largest effects among all the variables considered. The analysis therefore provides considerable support for the theory that I advance in this paper.

Extrapolating from these results, the paper has a number of important implications. First, it suggests that the rise of informal IGOs may have little to do with the changing nature of the problems that states face. While there is, certainly, evidence that this might be the case, the analysis indicates that the growing prominence of informal IGO may also have been driven by important changes within the domestic political arenas of powerful states. Specifically, we can hypothesize that informal IGOs may be appearing as a result of two significant shifts: first, growing domestic gridlock that makes it challenging to pursue more formal varieties of cooperation; and, second, the growth of independent regulatory agencies, which may have a preference for varieties of cooperation that preserve the

autonomy and authority they possess. Certainly, there is considerable evidence of both trends already.[62] The analysis therefore indicates how major changes in the international system may be caused not by systemic factors—such as levels of interdependence and the complexity of the problems states face—but by domestic ones at a different level of analysis that have been projected outwards to shape the international system itself.[63]

Second, the paper's findings have important policy implications. Over the past twenty years there has been significant debate over the right approach to managing contemporary global challenges. Some have argued strongly in favor of informal solutions and criticized formal organizations as ineffectual, rigid, and generally inappropriate for managing many of today's most important issues.[64] Others, by contrast, have argued that informal organizations are unhelpful and unaccountable, undermining prospects for effective global governance.[65] Rational design theories, if correct, would seem to support the optimists. If informal organizations arise primarily because they offer the best solution to the particular kind of problem that states face, then there is good reason to think that their growth is a good thing. But this paper has shown, contrary to past research, that rational design theories do not seem to fare particularly well and that the alternative approach performs much better. This theory would imply, however, that there is no necessary relationship between the kind of problem states face and the form of an IGO. While it is possible that an informal IGO may be successful and well suited to a particular issue area, nothing guarantees this outcome. Ultimately, therefore, we should

[62] Elgie 2001; Pollit et al. 2001; Binder 2003; Thatcher and Stone Sweet 2003.
[63] In this regard, the theory has a strong affinity with Burley 1993.
[64] Slaughter 2004; Eeilstrup-Sangiovanni 2009; Bradford 2011; Brummer 2014. Also see Patrick 2014; Patrick 2015.
[65] Verdier 2009; Verdier 2013.

be much more skeptical about the more optimistic claims made on the behalf of many informal IGOs.

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Appendix

Table 4 Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.
Form	90	0.4111111	0.4947919	0	1
Autonomy	90	-0.630252	0.6179787	-1	1
Constraints	90	0.1928496	0.4650326	-1	1
Uncertainty	90	0.4666667	0.5016826	0	1
Agility	90	-0.2555556	0.7429233	-1	1
Confidentiality	90	0.3111111	0.7441826	-1	1
Opportunism	90	0.7555556	0.8651961	0	2
Heterogeneity (Affinity)	90	-0.4060749	0.3463297	-0.9864865	0.3846154
Heterogeneity (Gini)	89	0.4572515	0.1459998	0.02021	0.753868
Heterogeneity (Diff)	90	0.3798947	0.2127226	0.0200277	0.9666412
Membership (Current)	87	24.29885	28.27445	3	180
Membership (Original)	90	8.888889	5.286073	2	19
Issue Scope	90	3.488889	3.551371	1	26

Table 5 Correlation Matrix

	Autonomy	Constraints	Uncertainty	Agility	Confidentiality	Opportunism	Heterogeneity	Membership	Issue Scope
Autonomy	1								
Constraints	0.21	1							
Uncertainty	-0.38	-0.01	1						
Agility	-0.26	-0.12	0.56	1					
Confidentiality	0.1	-0.19	-0.48	-0.38	1				
Opportunism	-0.47	-0.08	0.7	0.5	-0.28	1			
Heterogeneity	0.17	-0.23	-0.25	-0.01	0.16	-0.22	1		
Membership	0.06	0.03	-0.16	-0.04	0.06	-0.08	0.19	1	
Issue Scope	-0.08	-0.01	0.08	-0.16	0	0.04	0.07	0.15	1

Table 6 Collinearity Diagnostics

Variable	VIF	VIF (Square root)	Tolerance	R-Squared
Autonomy	1.35	1.16	0.7409	0.2591
Constraints	1.18	1.09	0.8454	0.1546
Uncertainty	2.47	1.57	0.4041	0.5959
Agility	1.63	1.28	0.6141	0.3859
Confidentiality	1.49	1.22	0.6715	0.3285
Opportunism	1.8	1.34	0.5558	0.4442
Heterogeneity	1.38	1.17	0.725	0.275
Membership	1.27	1.13	0.788	0.212
Issue Scope	1.18	1.09	0.8484	0.1516
Mean VIF	1.53			

Table 7 Summary of Balance Diagnostic[66]

	Standardized Differences		Variance Ratio	
	Raw	Matched	Raw	Matched
Confidentiality	0.3820586	0.091978	0.5424931	1.113891
Opportunism	-1.109623	-0.14428	0.3106485	0.7469563

[66] In a "balanced" sample the standardized difference or "bias" should be as close to 0 as possible and less than .25. The variance ratio should be as close to 1 as possible and between .5 and 2. See Rubin 2001; Stuart 2010.