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National Policy and Transnational Governance of Climate Change: Substitutes or Complements?

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Many scholars and policymakers see transnational governance as a substitute for lackluster national and international policies, particularly in the context of intergovernmental gridlock or limited state capacity. The bulk of the literature explains sub- and non-state actors' participation in transnational initiatives as a product of, on the one hand, micro-level incentives and, on the other, diffusion processes that create and spread normative and market-based pressures. We argue that such theoretical perspectives overlook the dynamic relationship between national policies and transnational governance. First, we argue that ambitious national policies positively affect sub- and non-state actors' participation in transnational governance. Second, we posit that domestic institutions condition the effects of micro-level incentives and transnational pressures on participation in transnational governance. We test these claims in the climate regime, using an original dataset that, for the first time, measures cross-national participation in transnational climate initiatives across jurisdictions. The results support our expectations. They therefore suggest that we should understand national policies and transnational governance as complements, rather than competitors, to one another. Finally, by showing how and when national policies affect participation in transnational initiatives, we identify important scope conditions for their significance in addressing climate change.

Introduction

Across many areas of world politics, cities, businesses, civil society groups, and other sub- and non-state actors increasingly create and join transnational governance institutions. This trend raises fundamental questions about the nature of the international system. Does transnational governance depend on, reinforce, replace, or possibly even subvert states and the intergovernmental system? While much existing literature has debated whether transnational governance presents an alternative to state-based governance, in this article we take a new approach to these issues by examining the causal relationship between national policies and transnational governance, and how national political institutions condition this relationship. We argue that national policies create incentives for sub- and non-state actors to engage in complementary forms of transnational governance because they help transnational actors meet the requirements of their domestic policy environments. We also argue that open domestic institutions increase the ability of sub- and non-state actors to engage transnationally by allowing for cross-border linkages and providing greater freedom for sub- and non-state actors to operate in a governance capacity. However, the positive relationship between national politics and transnational governance is more important for countries with more closed institutions, which mute other drivers of engagement in transnational governance.

Our argument offers a novel explanation, rooted in domestic politics, for the spread of transnational governance around the world. Much of the existing literature tends to emphasize either factors "above" states (for example, cross-border economic or social networks) or "below"

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them (for example, the micro-incentives and normative motivations of firms, cities, NGOs, and other constituencies). Such arguments largely abstract from the role of domestic structures, and tend to imply that transnational governance substitutes for weak national policies. We instead challenge the notion that participation in transnational governance and its relation to public policy can be understood on the basis of micro-incentives and transnational influence alone, without further theorizing the direct and mediating roles of domestic policies and institutions. These arguments imply a complementary relationship between national policies and transnational governance.

We examine this argument in the realm of climate change, where the growing salience of both national policies and transnational governance create an ideal testing ground and arguably a "hard case" for our hypotheses. Observers have often interpreted the rapid rise of transnational initiatives, which paralleled the stagnation of the intergovernmental regime under the United Nations Framework Convention on Climate Change (UNFCCC) for almost two decades, as a reaction to the inadequacy of state-based institutions (Hoffmann 2011; Green 2013). Meeting in Paris in December 2015, the climate regime shifted from a process of internationally negotiated targets to a system in which countries define their own national commitments, which are then reviewed periodically and strengthened. The Paris Agreement also recognizes, for the first time, the initiatives created by transnational actors and calls upon "non-party stakeholders" to increase their own climate commitments (Hale 2016). Still, the relation between transnational governance and public policy in the climate regime remains controversial. For example, in the lead-up to the Paris summit, India, in a statement joined by Brazil, South Africa, and China, argued that initiatives outside the UN process "must not distract us here in our efforts to address the challenge of climate change multilaterally under the Convention" (GGCA 2015). Climate change governance thus provides an important and rich empirical ground to evaluate arguments about the relationship between public policy and transnational initiatives.

We test our theoretical propositions using a new dataset that, for the first time in the literature, measures cross-national participation by sub- and non-state actors in transnational climate governance initiatives across a large number of countries. The data reveal enormous variation in participation in transnational climate governance across countries, allowing us to examine how national policies and institutions influence engagement in transnational governance. Confirming our theoretical expectations, we find that participation in transnational initiatives is highest in countries with strong national climate policies. We also show that when open domestic political structures give transnational actors agency to engage in climate governance, national policies continue to affect participation in transnational schemes, but existing explanations relating to actors' micro-incentives and cross-border connectedness also hold. By contrast, when domestic institutions are more restrictive, they weaken societal drivers of participation in transnational climate governance. In such contexts, more ambitious national policies can make a major difference in opening venues for transnational initiatives, thus reinforcing the tendency for complementarity between formal regulations and transnational governance.

Overall, our theory and findings contribute to a new understanding of how the state mediates the impact of global forces and influences the ways in which transnational arrangements take root across borders. They suggest that students of global governance should question the idea that transnational governance and national or intergovernmental policies are largely substitutes. Instead, we contribute to an emerging strand of literature that seeks to explain how governance arrangements in different spheres overlap and interact, and explore how these intersections affect the strategies of actors in world politics.

The article proceeds as follows. Section 2 describes the nature of transnational climate governance and the global distribution of participation, highlighting puzzling patterns of uneven uptake. Section 3 then considers existing explanations for participation in transnational initiatives and develops our hypotheses about how domestic institutions condition these mechanisms and the role that national policies play. Sections 4 and 5 present our data and statistical analysis, and Section 6 concludes with a discussion of the article's implications for both theory and policy.

Mapping Participation in Transnational Climate Governance

Transnational governance arises when non-state and/or sub-state actors in at least two different states adhere to rules and practices that seek to steer behavior toward shared, public goals. When these rules focus on steering behavior related to climate change, broadly construed, we term this phenomenon "transnational climate governance." We refer to each specific set of rules as an "initiative" or "scheme," and each instance in which an actor partakes in an initiative or claims to comply with a set of transnational rules as an instance of "participation." Transnational governance in this sense seeks to affect more directly the behavior of non-state and sub-state actors, and is distinct from transnational advocacy because it does not aim to bring about a shift in governmental policies. Of course, the advocacy or lobbying activities of non-state actors—such as NGOs, private companies, associations, and others—cannot always be neatly separated from their roles as governors, but the analytic distinction remains important because the immediate aims of each activity are considerably different (Andonova, Betsill, and Bulkeley 2009; Avant, Finnemore, and Sell 2010; Abbott 2012).

In recent years, a burgeoning literature has examined various aspects of the phenomenon of transnational climate governance. In doing so, scholars have typically taken the "initiative" or "scheme" as the main unit of analysis. The vast majority of research focuses on explaining why transnational governance arises and how transnational rules gain authority. In doing so, scholars rely on case studies of individual schemes in order to document the causal processes through which they emerge and take shape (Betsill and Bulkeley 2004; Newell and Paterson 2010; and Hale and Roger 2014, among others). Several recent works develop databases of transnational climate governance, which map and explain variation in the number and type of initiatives, the issues they focus on, their geographical scope, and claims of authority (see Hoffmann 2011; Bulkeley et al. 2014; Hale and Roger 2014).

We extend these efforts by introducing a new dataset that, for the first time, provides information on actor participation across countries. We build on the dataset of 75 schemes presented by Hale and Roger (2014).[1] To enter

[1] See Hale and Roger (2014). The dataset builds, in turn, on the data compiled by Bulkeley et al. (2014).

this dataset, several conditions had to be met. Initiatives had to be genuinely *transnational*, involving non-state or sub-state actors from at least two different states as "members" or "adopters" of the same transnational rules. They also had to focus on *climate change*, a broad criterion taken to include mitigation and adaptation activities, energy and forestry, carbon offsetting and carbon labeling, and so on, provided the scheme defines itself as an attempt to address climate change. A number of schemes have combined a focus on climate change with other issues, such as water conservation or human rights. For instance, the network Local Governments for Sustainability (ICLEI) has a broad agenda related to the sustainability of cities, but focuses strongly on adopting measures for establishing "low carbon" cities and resilience. Another municipal network, the Climate Alliance of European Cities with Indigenous Rainforest Peoples, links local concerns about climate to issues of indigenous rights and livelihoods.

Finally, an initiative included in the database had to count as an instance of *governance*. This is perhaps the hardest criterion to operationalize. An initiative is taken as an instance of governance if it seeks to steer those who participate toward some common, public goal. Steering may occur through the explicit setting of behavioral rules, product standards, or guidelines that aim to regulate the actions of non-state and sub-state actors. It may also occur through less direct means, such as programs that help others take actions toward public goals, including capacity-building initiatives, technical assistance, or climate finance (Andonova, Betsill, and Bulkeley 2009). The dataset does not include activities that serve the interest of single organizations, or collective activities aimed primarily at profitmaking, enhancing corporate reputation, or advocacy vis-à-vis public institutions. For example, the World Wide Fund (WWF) is a well-known international NGO with a vast advocacy network, involved in a range of lobbying and informational activities. Our database does not include the WWF network itself, but does include specific governance schemes that the organization has helped create, such as the Gold Standard certification for voluntary carbon offsets. The Gold Standard seeks to steer the practices of project developers and buyers on the carbon market toward greener offsets that prioritize renewable energy and sustainable development co-benefits. Similarly, we do not regard business associations or corporate social responsibility (CSR) programs of individual companies as instances of governance, although our database does include private-sector transnational initiatives such as the Carbon Disclosure Project, which entails a commitment by member companies to regularly report their GHG emissions according to a set of specified standards.

Using the dataset of 75 initiatives described above, we collected data on the number of participants active in each country, drawing on membership lists, registries, and other databases that identify participating actors. Many of these are public and available on the websites of each transnational governance scheme. Others were acquired by corresponding with staff from the initiatives, or constructed or inferred from various sources that are all on file with the authors. In total, we were able to obtain such lists for 71 of the 75 initiatives in the database. We then matched each participant on these lists with a particular nation-state. In most cases, this was based on self-reporting found in each of the participant lists. Where this was not possible, we then examined other sources, such as websites, reports, or other documentation, to determine an actor's geographical base.[2] In total, as of 2012, we recorded over 14,000 instances of participation by sub-state and non-state actors across 189 states.

As Figure 1 demonstrates, participation varies significantly across political jurisdictions. It does not appear to follow a simple North-South pattern. Industrialized countries like the United States and Canada participate significantly, but so do China and India, Brazil, South Africa, and Kenya. On average, there are 76 instances of participation in a country, but with a standard deviation of 282 there is significant variation around this figure. In 31 countries we found no instances of participation at all. Another 29 countries have only one instance of participation in the initiatives that we have surveyed. However, in the median country there are five instances of participation and a total of 29 countries have more than the mean. Widespread participation is, therefore, somewhat skewed towards a relatively small group of countries. But within this group, there is significant diversity. The top 29 countries include developed and developing and democratic and authoritarian countries from all major regions of the world.

Theorizing Participation in Transnational Climate Governance

What accounts for the variable participation in transnational climate governance that the database reveals? Theorizing the politics of transnational governance across jurisdictions is critical for understanding how it relates to governmental policies, for example as a complement or substitute. In this section, we first summarize the substitute-complement debate in the literature. We then provide an overview of the main societal and diffusion mechanisms that existing studies have emphasized to account for participation in transnational governance, and explain why such accounts offer an important but incomplete explanation of participation. We then elaborate our core hypotheses regarding how political institutions and state policies condition the likelihood of participation, arguing that theory should lead us to expect greater complementarity between transnational climate governance and national policy than is commonly recognized.

Complement or Substitute? The Scholarly Divide over Transnational Governance

Since scholars began exploring how transnational interactions shape world politics, they have been divided over whether the phenomenon depends on, reinforces, replaces, or even subverts states and the intergovernmental system. In a seminal special issue on transnational relations, Nye and Keohane (1971) noted deep-seated disagreements between its contributors. Some argued that the scale and geographical scope of transnational relations had expanded as a result of actions and policies of states; others countered that the expansion was a product of technological changes—and that transnational forces were themselves altering and subverting state policies.[3] While no longer stated in such terms, similar debates continue in studies of transnational governance, which examine the role of transnational actors not just as participants

[2]In the case of organizations that have offices in multiple countries, we coded actors based on the location of their head office, unless it was made clear that only a country office was the relevant participant.

[3]The former view was most forcefully expressed by Gilpin (1972); the latter, by Field (1971).

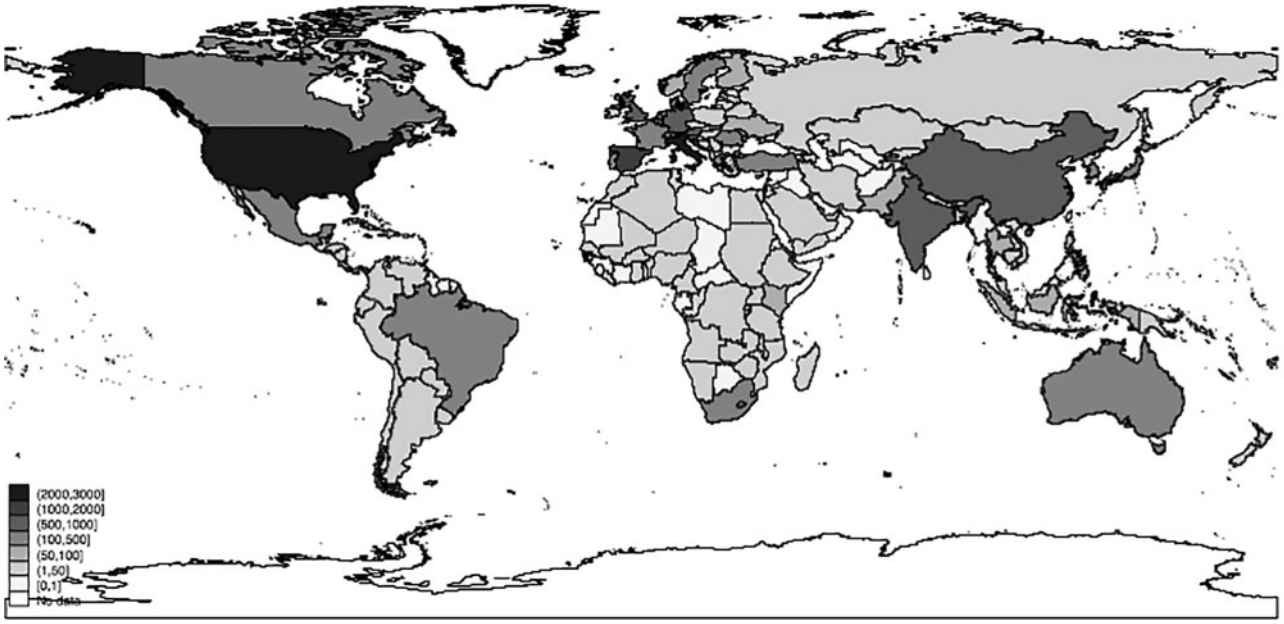

Figure 1. Cross-national participation in transnational climate governance in 2012

in world politics but as global governors (Avant, Finnemore, and Sell 2010; Hale and Held 2011).

Transnational governance arrangements provide many governance functions—such as rule-setting, dispute resolution, and public good provision—which are traditionally associated with national governments and intergovernmental organizations. Hence, many scholars see them as alternatives to state-based forms of governance. According to this view, governance by transnational actors serves to compensate for reduced state capacity or failing policies and institutions at the national or international levels (Strange 1996; Mathews 1997; Hoffmann 2011). A recent issue of *Governance* focuses specifically on the role of transnational actors as service providers in what the editors term "areas of limited statehood" (Krasner and Risse 2014). A number of studies demonstrate that private and hybrid institutions create authoritative rules and provide public goods in areas where public regulation lags, such as in a number of environmental, human rights, or economic contexts (Cashore, Auld, and Newsom 2004; Prakash and Potoski 2006; Mayer and Gereffi 2010; Green 2013). Taking an even wider view, we find analogous arguments about soft law substituting for—and even conflicting with—hard law, or about regional agreements substituting for conflicting with multilateral ones (Shaffer and Pollack 2010; Baldwin 2006). The common thread between these diverse literatures is the concept of *substitution*. If an issue has not been addressed satisfactorily by one set of governance arrangements, relevant actors have an incentive to address it via another.

In contrast to this view, a number of scholars argue that transnational governance is frequently driven by states and other public actors. A growing literature examines the role of states and intergovernmental organizations as entrepreneurs or orchestrators of transnational governance schemes (Andonova 2010; Abbott et al. 2015; Hale and Roger 2014). Such actors often catalyze and shape transnational initiatives in order to gain additional leverage over the problems they face. For others, transnational governance represents not simply a new regulatory strategy, but the "re-articulation" of the state into a new institutional form, and even an evolution of the practice of state sovereignty itself (Slaughter 2004; Andonova 2014; Sending and Neumann 2006). A burgeoning literature—recently characterized by Farrell and Newman (2014) as constituting a "new interdependence" approach to international relations—seeks to illuminate the way in which transnational networks and intergovernmental arrangements interact and jointly shape a range of regulatory outcomes (Bruszt and McDermott 2014; De Búrca, Keohane, and Sabel 2014; Sabel and Zeitlin 2010). One of the main links between these strands of research is the concept of *complementarity*. Different modes of governance frequently work together in a more synergistic fashion by building upon and reinforcing, rather than substituting for, one another.

To resolve this controversy, we need to understand how transnational governance and state-based forms of governance interact. This article advances the debate on transnational relations and public institutions by investigating *when* and *how* different modes of governance complement or substitute each other—not simply whether they do. Specifically, it theorizes the interaction between national policies and participation in transnational governance initiatives by sub-state and non-state actors. The question we ask is: do we see more engagement in transnational governance where national policies are strong or weak, and what kinds of factors condition this relationship? Answering this question requires a reevaluation of existing explanations for why sub- and non-state actors participate in transnational governance, to which we now turn.

Societal Dynamics and International Diffusion Mechanisms

Much of the existing literature on the adoption of transnational rules by non-state and sub-state actors focuses on the role of domestic societal pressures and international diffusion processes (Roger and Dauvergne 2016). Studies in this vein show how the normative or material incentives that drive non-state and sub-state actors to participate in transnational initiatives are determined first by the actions of individuals and local advocacy groups within states, and

then subsequently transmitted beyond their borders through linkages such as transnational networks or supply chains. We discuss these two mechanisms in turn and tease out each of their observable implications for transnational climate governance.

First, at the most fundamental level, participation in transnational governance is influenced by how much consumers or voters in a society want to project a set of values through transnational schemes, or reward firms or local governments that engage in certain desirable practices (Prakash and Potoski 2006, 2007; Betsill and Bulkeley 2004). Typically, this comes down to whether a society has strong environmental values and whether it is able to impress those values upon other sub-state and non-state actors. These conditions create incentives for participation in transnational governance because both firms and local governments may wish to project an image of environmental stewardship and try to convince potential customers and voters that they benefit the environment (Newell and Paterson 2010; Lee 2013). Transnational initiatives help sub- and non-state actors do this partly because membership in a particular scheme may provide credible information to citizens and consumers about their environmental commitments (Engel and Orbach 2008; Baron 2009; Potoski and Prakash 2009; Andonova and Tuta 2014). Participation may also provide access to resources and legitimacy that may facilitate achievement of these goals. In their conceptualization of the governance role of municipal networks, Betsill and Bulkeley (2004) emphasize that local governments facing incentives from local constituents to promote clean energy management, transportation, and planning often participate in transnational initiatives because these objectives can be pursued more effectively and credibly across different levels of governance and with counterparts abroad.

In the aggregate, such motivations lead us to expect greater demand for participation in societies where a higher proportion of the population shares a commitment to environmental action and has the capacity and resources to engage in collective action. The sociological and economic literatures stipulate that individuals in wealthier societies likely have stronger environmental values (see Inglehart 1995; Stern, Common, and Barbier 1996). Resource-mobilization theories of social movements, in turn, emphasize that the capacity for collective action heavily depends on material resources, which are more readily available within wealthier societies (see McCarty and Zald 1977; Dalton, Recchia, and Rorschneider 2003; Stroup 2012). Thus, this line of argument in the literature leads us to expect:

H1: *The greater the wealth of a society, the more non-state and sub-state actors participate in transnational climate governance.*

The second mechanism that the transnational governance literature traditionally discusses focuses on the diffusion of initiatives from countries with high societal demand to other jurisdictions through pressure from advocacy networks and/or international supply chains. International NGOs (INGOs) frequently use their networks and moral leverage to put pressure on states to change policies, particularly where restrictive domestic institutions block more traditional avenues for change (Keck and Sikkink 1998; Risse, Ropp, and Sikkink 1999). Increasingly, however, advocacy groups also directly target private and sub-national actors, bypassing the state altogether (Wapner 1995; Della Porta and Tarrow 2005; Tarrow 2005; Vogel 2005). Protests against brand-name retailers worked, in the analysis by Gereffi, Garcia-Johnson, and Sasser (2009), like "the discovery of gunpowder" for environmental groups, prompting them to create, promote, and support a series of corporate certification schemes and other kinds of voluntary initiatives aimed at raising environmental and labor standards in countries where policies were unambitious or poorly enforced (Mayer and Gereffi 2010).

With respect to climate change, in particular, INGOs have created and pushed for the adoption of a number of voluntary initiatives, such as the Gold Standard for certifying carbon offsets, the WWF-sponsored scheme mentioned above, and Refrigerants, Naturally!, a Greenpeace and the United Nations Environmental Program (UNEP) initiative promoting the deployment of ozone- and climate-friendly cooling technologies in partnership with the industry (Bulkeley et al. 2014). In many cases, these INGOs have provided expertise and other kinds of support to build capacity, raise awareness, and lower the costs of participation by non-state and sub-state actors, thereby promoting adherence to transnational rules (Locke 2013; Dauvergne and Lister 2013; Andonova 2014). Transnational advocacy activity is thus widely hypothesized to influence not only the policies of states, as much of the literature on transnational activism has emphasized, but has increasingly encouraged other actors to participate in transnational governance as well. Hence, we can expect:

H2: *The more environmental INGOs operate in a country, the more non-state and sub-state actors participate in transnational climate governance.*

An additional diffusion mechanism focuses on how market-based linkages transmit economic incentives to participate in transnational governance. Businesses in countries with high domestic demand for participation in transnational governance often have a strong incentive to "export" environmentalism through their supply chains. This aims to reduce the likelihood that they will be exposed to negative boycotts by local NGOs and to increase the credibility of their environmental claims (Gereffi, Garcia-Johnson, and Sasser 2009; Garcia-Johnson 2000; Prakash and Potoski 2006; Vogel 2008; Perkins and Neumayer 2010; Bernhagen and Mitchell 2010). Places with low domestic demand for participation in transnational governance and unambitious policies may then be encouraged to participate in initiatives when powerful downstream businesses demand adherence to transnational rules. In some domains, compliance with transnational rules has become almost essential to the profitability of upstream firms, which can in turn have serious impacts upon market participants and societies (Clapp and Fuchs 2009; Fuchs and Kalfagianni 2010). This is certainly the case in the market for carbon offsets, where adherence to voluntary carbon offset standards is virtually essential to market entry (Newell and Paterson 2010; Green 2013). Such considerations therefore lead scholars to expect that levels of participation—especially by businesses—should strongly correlate with the extent to which a country depends on access to markets that are themselves subject to voluntary regulation and governance. A number of studies have similarly argued that sub-state actors, such as municipalities and regional

governments, have an incentive to participate in transnational initiatives when they are more embedded within global economic networks (Lee 2013). Hence, we can expect:

H3: *The more a country depends upon foreign markets that themselves exhibit high levels of participation in transnational governance schemes, the more non-state and sub-state actors in that country participate in transnational climate governance.*

The logic of advocacy and market-based diffusion of transnational governance summarized in Hypotheses 2 and 3 imply a compensatory effect between transnational initiatives and public policies. Networks, according to these perspectives, circumvent domestic institutional failures, mitigate regulatory risk, and "level the playing field" of international markets where regulations vary. Such explanations often assume, at least implicitly, that sub- and non-state actors somehow detach from their domestic political contexts when they act transnationally (see critiques by Bartley 2011; Stroup 2012). This assumption is often useful, as it allows scholars to develop general and parsimonious explanations for an increasingly significant dimension of world politics. However, international relations scholars recognize the importance of domestic politics for international economic and advocacy interactions (Evans, Jacobson, and Putnam 1993; Keohane and Milner 1996; Risse, Ropp, and Sikkink 1999).

In recent years, the literature on transnational relations has increasingly highlighted the complex interplay between domestic institutions and transnational networks across multiple issue domains and cases, particularly through detailed case studies. Research on forestry certification, for instance, shows how a range of domestic conditions—such as property rights, the structure of the forestry sector, or state-society relations—influence the adoption and market share of such standards (Cashore, Auld, and Newsom 2004; Espach 2006; Bartley 2014). The relative position of sub-state and non-state actors within the structure of domestic institutions can furthermore determine how and when they gain access to and benefit from transgovernmental networks, as well as the content of transnational regulations (Büthe and Mattli 2011; Bach and Newman 2014). Others highlight the relevance of state capacity for participation in public-private partnerships, or how government institutions can promote or obstruct participation in voluntary schemes (Andonova 2014; Bernhagen and Mitchell 2010; Berliner and Prakash 2014; Hale and Roger 2014). In sum, participation in transnational governance ultimately entails a rearrangement of domestic political resources and interfacing between institutional conditions across regulatory planes (Farrell and Newman 2014; Bruszt and McDermott 2014). Our theoretical framework develops this line of research by specifying a set of general expectations about *how* domestic institutions and policies jointly shape the opportunities for participation in transnational governance for climate change.

The Role of Domestic Policies and Institutions

Building on the broader literature on transnational relations and domestic politics, we elaborate an argument that focuses on two core national-level variables—political institutions and state policies—that can enable or constrain the agency of sub- and non-state actors and create different incentives to participate in transnational governance. Our theory examines both the independent influence of institutional and policy mechanisms, as well as their conditional effects on opportunities for crafting or participating in transnational initiatives. It also helps explain the conditions under which the societal and diffusion mechanisms highlighted above can be expected to operate, demonstrating the limits of existing arguments.

Consider the role of political institutions first. In order for societal pressures and diffusion mechanisms to create incentives for participation in transnational governance, sub-state actors must be able to hold and act on preferences independent of governments. Where this is not the case, or where governments restrict the scope for independent action, many of the societal and diffusion mechanisms that scholars highlight cannot drive participation in transnational governance. Two characteristics of domestic political institutions are particularly relevant in this regard: the openness of a political system and its degree of political decentralization.

The openness of a state's political system matters because the kinds of societal mechanisms described above rely to a significant extent on the freely chosen actions of domestic and transnational actors, including their ability to engage in public deliberation, contestation, and mobilization (Bernauer, Böhmelt, and Koubi 2013; Dalton, Recchia, and Rorschneider 2003; Sikkink 2005; Stroup 2012). If the domestic system grants actors political space and agency, a government should be more willing to tolerate transnational actions, even when the aims of initiatives are not strictly congruent with its own policy preferences. Political freedoms create a vibrant associational life and the strengthening of social capital, which, in turn, create capacity for taking collective action both domestically and across scales in the management of natural resources (Ostrom 1990; Pretty and Ward 2001). By contrast, closed institutions make it more difficult for sub-state and non-state actors to hold policy preferences and take actions at odds with the state, constraining opportunities to pursue local or societal objectives through transnational networks. Russia provides a case in point, since the government curbs civil liberties and restricts the activities of INGOs, while at the same time keeping centralized control over climate initiatives and cooperation (Henry 2010; Andonova and Alexieva 2012).

Keck and Sikkink (1998) theorize how advocacy actors may seek to overcome domestic constraints by reaching out to transnational networks and leveraging international pressure for domestic policy change. Transnational governance may present a different scenario, however, because such transnational initiatives often seek to spur action in parallel to, or even despite, the state. It thus presupposes some degree of societal capacity and agency to put in place voluntary rules and practices that the state does not actively obstruct, a condition that the transnational governance literature does not sufficiently take into account.

The degree of institutional decentralization also likely plays a role in mediating opportunities for transnational engagement, particularly for sub-state actors. For cities or regional governments to participate in transnational governance, they must first of all have the authority to act on issues related to climate change. When engaging in transnational schemes, regions and cities typically build on their expertise and jurisdiction over the management of power systems, transportation policy, building codes,

waste management, and the financing of local public goods. Such efforts involve leadership on the part of local authorities and appear to be more common in relatively decentralized systems of administration such as the United States, Canada, Germany, or Italy (Selin and VanDeveer 2009; Betsill and Bulkeley 2004). When sub-state actors have limited agency in terms of policy authority or fiscal capacity, they struggle to pursue policies other than those explicitly encouraged by the central government. Again, the degree of autonomy that actors possess forms a crucial prerequisite to participation.

Along this line of reasoning, it is indicative that theoretical perspectives on the layering of different modes of governance across jurisdictions developed first to account for regulatory politics in the European Union and United States (Pollack and Shaffer 2001; Sabel and Zeitlin 2010; Farrell and Newman 2014). These entities possess liberal institutions and devolved political authority along functional or regulatory lines. When applied to global issues and North-South interactions, however, the institutional conditions that enable domestic actors and sub-state authorities to play an active role in transnational governance may be more limited, and have been less explicitly theorized in the existing literature (Bruszt and McDermott 2014). By opening the "black box" of domestic politics in the study of transnational governance, our analysis explicitly emphasizes the relationship between the relative openness and decentralization of political institutions and the drivers of participation in transnational governance. Hence, we expect:

H4: *When domestic political institutions give sub- and non-state actors greater agency to engage in governance activities, societal and diffusion mechanisms more effectively increase participation in transnational climate governance.*

While Hypothesis 4 posits an "institutional effect" on participation, we also anticipate a "policy effect" on opportunities for such engagement. In particular, we argue that when a state holds more proactive policy preferences with respect to climate change, levels of participation should increase. Furthermore, we expect that this policy effect can open greater space for participation, particularly when institutional structures are closed.

We identify two causal mechanisms that link state policy and transnational governance in a more synergistic fashion. First, when a state is relatively more proactive on climate change, sub-state and non-state actors may voluntarily participate in transnational initiatives to attain first-mover advantages, information, or other resources that can help them become more competitive and shape the new policy environment. Transnational initiatives, in this way, can facilitate compliance by allowing domestic actors to draw on transnational resources and freely experiment with alternative implementation instruments, and by enabling them to extend the reach of policies across borders and into competing markets. An example is firm adoption of various corporate carbon accounting tools, such as the Greenhouse Gas Protocol. Many firms use these tools to understand the implications of carbon prices set by states (Newell and Paterson 2010).

Second, proactive governments can also promote participation in transnational schemes in order to lower the costs of designing, monitoring, and enforcing climate change policies. Over time, governments have complemented traditional command and control policies with more flexible market-based regulations and even parallel self-regulatory schemes to support the implementation of regulatory standards (Harrison 1998; Baranzini and Thalmann 2004). Studies of transgovernmental networks emphasize the propensity of proactive governmental agencies to link horizontally through networks in support of their implementation capacity or policy agendas (Slaughter 2004; Bach and Newman 2014). In other words, public agencies actively steer a growing number of public-private partnerships and even sub-national networks in pursuit of their policy agendas (Andonova 2014; Hale and Roger 2014). The EU, for example, committed to a specific emission reduction target under EU law and the Kyoto Protocol, but also spurred the creation of the Covenant of Mayors, a major transnational initiative that encourages cities to adopt voluntary commitments to clean energy management and climate mitigation. Further, various national governments actively encourage and support participation in this initiative as part of their broader approach to climate change.

In addition to this logic, we anticipate that policies will particularly affect participation when domestic institutions constrain societal agency. When political institutions are open and sub-state and non-state actors have a high degree of agency, societal and diffusion mechanisms are likely to play an important role in encouraging participation. National or supranational policy may add an additional motivation, but it is only one of a number of factors likely to promote participation in transnational governance. Further, societal and diffusion mechanisms may operate to increase participation even when a national government's policies are relatively unambitious. However, when closed political institutions make sub-state and non-state actors less able to act independently of the state, the state's policy preference becomes all-important. In such contexts, when a state's policy preference does not align with the aims of transnational initiatives, it then obstructs voluntary participation, as Hypothesis 4 suggests. Societal and diffusion mechanisms cannot operate effectively, and the government provides no independent incentive of its own. Yet, when such a state has a preference for ambitious action, then the government's policies may have a strong effect. Participation should be higher, since government agencies are more likely to both promote participation to advance their policy agendas and to tolerate participation, even when they may restrict similar actions in other areas. This implies that agencies of authoritarian governments with a pro-climate agenda will favor transnational initiatives aligned with governmental priorities over others. Participation therefore results from either the co-optation of societal interests, or by enlarging selectively the political space for experimentation with transnational initiatives in a policy domain that is vetted by the government.

The Chinese government's embrace of carbon trading illustrates these dynamics, as this interest has led it to actively encourage participation in certain initiatives related to this policy agenda (Hale and Roger forthcoming). By co-developing carbon standards with transnational actors and encouraging Chinese actors to take part in transnational carbon offset markets, Chinese bureaucracies built their own capacity to design and implement effective domestic carbon markets, and to familiarize key interest

groups with such systems.[4] Taken together, then, the two mechanisms of policy influence lead us to expect:

H5: *When governments hold pro-climate policy goals, more sub-/non-state actors will participate in transnational climate governance. Further, this effect will be particularly important for determining participation when political institutions are relatively closed.*

Hypotheses 4 and 5 present the most counterintuitive propositions in our theoretical framework and suggest a more nuanced answer to the question of whether transnational and national climate actions are substitutes or complements. Strong national policies enhance participation, we argue, but this effect is stronger in closed institutional environments. Our analysis does not ignore the fact that the weakness of the international regime and the lack of meaningful climate policies in many countries may have provided a variety of motivations for actors to engage in bottom-up initiatives, as discussed in the previous section on societal mechanisms. Indeed, the transnational activities of many cities and regions in the United States since the late 1990s speak of such motivations. However, the theoretical argument suggests a more complex and reinforcing relationship between domestic conditions and transnational incentives than has been previously recognized. It posits that participation in transnational climate governance cannot be understood without an account of domestic politics, and the institutional and policy constraints or opportunities embedded therein. The rest of the article empirically evaluates the theoretical argument and its five core hypotheses.

Data and Methods

The empirical model employs as its main dependent variable (labeled TCG) the cross-national indicator of participation in transnational climate governance described in Section 2. Specifically, this indicator measures how many instances of participation in the 71 initiatives we observed across jurisdictions in the year 2012. We also construct an alternative version of the dependent variable that is identical to the first, but with the two largest initiatives removed. We do so in order to account for the fact that these two initiatives are considerably larger compared to the average (in terms of the total number of participants involved) and focus primarily on European cities, which may cause our basic measure to paint a picture of participation that is unduly influenced by regional European dynamics.[5] In practice, as we later show, this makes little difference. We furthermore estimate our baseline model for subsamples of states whose civil liberties score above and below the sample mean. Splitting the sample in this way allows us to test how political institutions condition the operation of the societal mechanisms (as per H4), and to test our proposition that the positive effect of state policy on participation is especially important when institutions are relatively closed (H5).

The first set of explanatory variables is intended to evaluate our core argument about the role of political institutions and public policy in shaping participation in transnational governance. According to H4, we expect the agency of non-state actors like NGOs and businesses to be largely related to the freedom these actors enjoy to take actions that may not be specifically promoted or sanctioned by a central authority. We rely chiefly on the Freedom House measure of civil liberties to capture this idea.[6] We use measures of political rights (also Freedom House), regime type (Polity IV), and citizens' voice and accountability (World Governance Indicators) as robustness checks later on (see Table 1).[7] In order to measure the effect of political decentralization on the agency of sub-state actors like cities and regions (H4), we use a binary variable that records whether a country is federal or not (Forum on Federations 2015). These data are the best available for a sufficiently large number of countries, but because they measure political decentralization quite narrowly (looking only at formal federalism, not other forms of devolution) this represents a conservative test of our hypothesis.[8]

We use the Environmental Performance Index (EPI) Climate Policy Indicator, which measures the ambitiousness of climate policies across states, in order to test the hypothesized effect of public policy on participation in transnational governance, as per H5 (data from Emerson et al. 2012). We also use a count of all international environmental agreements (IEAs) ratified by a country as a broader measure of environmental policy (data from Mitchell 2002–2013). Overall, this variable is the most difficult to operationalize because the ambitiousness of climate policies may both cause and be caused by the actions of sub- and non-state actors; that is, it may suffer from endogeneity problems. We employ a number of strategies to mitigate this concern. First, our main regressions use the pre-2000 data for the EPI climate policy measure, which predates 65 of the 75 initiatives in the main database. We can therefore be largely certain that the EPI climate score captures states' historical commitments to environmental protection, and is not driven by participation in transnational governance or the societal variables that may influence both government policy and transnational participation at a later time.[9] In our robustness tests, we also make use of the core EPI index, which focuses on a larger range of environmental issues beyond climate change. The particulate air pollution (PM10) in a country is used as another proxy for countries' commitments to environmental protection (data from World Bank [2014]). This pollutant is relatively easy and inexpensive to control, and countries with even basic commitments to environmental protection will be very likely to have done so, even if they have high greenhouse gas emissions.[10]

[4]At the Copenhagen Climate Summit in 2009, for instance, China launched the "Panda standard" for carbon accounting, a joint venture of various Chinese governmental agencies and transnational carbon trading schemes.

[5]The outliers are The European Covenant of Mayors and the Climate Alliance of European Cities with Indigenous Rainforest Peoples. These initiatives have 4640 and 1659 members, respectively.

[6]The original Freedom House index uses an ordinal scale of 1–7, with 1 representing high levels of civil liberties. To facilitate interpretation, we have subtracted the Freedom House scores from 7, changing the measure to an ordinal scale of 0–6, with 6 indicating higher civil liberties. A similar transformation was applied to the political rights variable.

[7]The latter two indicators provide data for substantially fewer countries than the Freedom House variable and are less closely aligned with the underlying concept we wish to measure.

[8]The World Bank measure of fiscal decentralization is limited to a small number of countries.

[9]While the climate policies of states have evolved since 2000, a pre-2000 measure is appropriate to alleviate the potential endogeneity concerns because we are not conducting a panel analysis due to the absence of time-series measures on participation in transnational climate governance. The present study can serve as a baseline for further data collection and analysis on the inter-temporal variation in transnational governance and the interplay with public policy.

[10]The correlation between PM10 and Carbon Dioxide [CO_2] emissions is –0.06.

Table 1. Descriptive statistics

Variables	*N*	*Mean*	*sd*	*Min*	*Max*
Dependent variables					
TCG	189	76.45	281.6	0	2,555
TCG (adjusted)	189	32.06	124.7	0	1,448
TCG (high CL)	96	131.7	382.7	0	2,555
TCG (low CL)	93	19.41	65.62	0	553
Main explanatory variables					
Federalism	192	0.12	0.326	0	1
Civil liberties (CL)	192	3.528	1.767	0	6
EPI climate	132	45.06	23.11	1.8	95.7
IEA ratifications	191	51	24.48	10	144
GDP per capita	183	7.878	1.52	4.952	11.04
Trade	181	0.0319	0.406	0	5.459
ISO 14001	192	1.146	5.251	0	55.32
INGOs	149	0.119	0.193	0	1.472
Carbon dioxide	183	9.099	2.571	3.291	15.51
Alternative measures and robustness checks					
Voice	191	2.432	0.99	0.337	4.104
Political rights	189	2.414	0.961	0.108	4.416
Polity	129	3.265	6.385	−10	10
EPI	131	50.08	9.316	25.6	76.2
Air pollution	176	59.46	41.36	7.614	222.1
Green aid	173	63.65	145.9	0	1,179
FDI	130	15.79	51.94	0.0161	519.3
GDP	132	24.5	1.804	20.52	29.66

The next set of independent variables aims to test hypotheses about the role of societal demand and transnational connectedness on decisions by non- and sub-state actors to participate. In order to test H1—the extent to which the preferences and resources of individuals in a society are likely to create incentives and capacity for participation—we use data on countries' Gross Domestic Product (GDP) per capita from the World Bank's World Development Indicators database (World Bank 2014). The impact of INGOs on the propensity to participate, which is anticipated by H2, is tested with data on organizational membership across countries in the International Union for Conservation of Nature (IUCN) (Andonova and Levy 2003; Bernauer, Böhmelt, and Koubi 2013; Andonova 2014). Membership in IUCN, one of the oldest INGOs with activities in the vast majority of countries, is the best available proxy of transnational advocacy activity for a large sample of states. To assess H3, which focuses on the role of international economic incentives, we constructed a weighted trade flow variable similar to the one employed by Prakash and Potoski (2006). This variable uses data from the Correlates of War Trade Dataset and our own data on participation in transnational climate governance and measures how much a country trades with all other countries in the world, weighted by its trading partners' levels of participation (Barbieri and Keshk 2012).[11] Finally, we take the number of firms certified to the ISO 14001 environmental management standard as a measure of broader business interest in transnational governance and CSR, which is furthermore related to supply chain-based demand from firms in pro-environmental jurisdictions (Prakash and Potoski 2007).

Two additional measures of international connectivity are also considered in the robustness tests undertaken in Section 6. First, we employ Hicks et al.'s (2008) measure of "green aid" to determine whether the amount of aid a country receives that is earmarked for green projects is correlated with participation in transnational climate governance. Second, we consider the amount of foreign direct investment a country receives, as recorded in the World Development Indicators database, as an alternative measure of economic interdependence (Prakash and Potoski 2007; World Bank 2014).

In all of our regressions, we include a natural log of CO_2 emissions to control for underlying country characteristics that may affect variation in the total number of potential participants in transnational climate governance. In general, states that emit more CO_2 are *ceteris paribus* expected to participate in more transnational initiatives, since emitters are the ultimate targets of direct or indirect influence of both public policy and transnational schemes, independently of any of the factors discussed above. In the later robustness tests, we also use a natural log of GDP as a robustness check for the size of the economy. However, because CO_2 emissions are correlated with GDP for most countries, it is not desirable to include them in the same regression.[12]

Table 1 presents descriptive statistics of all the dependent and explanatory variables used in our main analysis, as well as in the robustness tests. Time-varying independent variables are measured as averages across the period 1990–2010. Thus, for example, the variable "GDP per capita" for country *j* is *j*'s average annual GDP per capita from 1990 to 2010 (in current terms). Table A1 in the appendix reports the correlations among the explanatory variables used in the main analysis. The highest correlation (0.657) is between civil liberties and the number of international environmental agreements. In order to determine whether multicollinearity was a problem, we also calculated Variance Inflation Factor (VIF) scores for all the variables used in the main analyses (Table A2 in the appendix), which are all well within generally accepted boundaries.

Empirical Analysis and Findings

Given that our dependent variable is a count of the instances of participation in transnational climate governance across countries, a Poisson or negative binomial regression model is usually considered most appropriate. These models do not assume a normal distribution and specifically accommodate variables bounded at zero. The Poisson model is simpler, but generates inefficient estimates and inflated z-scores when data exhibit over-dispersion since it assumes that the dependent variable's conditional variance is equal to the conditional mean (Long 1997, 216–40). The negative binomial model, in contrast, is more general and designed to handle data of this sort. Standard tests confirmed that the participation data exhibited over-dispersion, and we therefore opted to use a negative binomial regression model measured by maximum likelihood to generate estimates.[13]

[11]The formula for calculating this variable is:

$$\text{International trade}_i = \sum_j TCG_j * (Exports_{ij}/Exports_i)^2$$

where TCG_j is the measure of country *j*'s participation in TCG, $Exports_{ij}$ is country *i*'s exports to country *j*, while $Exports_i$ is country *i*'s total exports. See Prakash and Potoski (2006, 125) for further details.

[12]The data on GDP are from the World Bank's World Development Indicators database, and the data on CO_2 emissions from the World Resources Institute's Climate Analysis Indicators Tools (CAIT) database.

[13]To determine the appropriate regression model, several tests can be conducted. These include using Stata's predict command after estimating Poisson and negative binomial regressions and comparing the conditional means and variances; using the estatgof command to determine the model's goodness-of-fit after a Poisson regression; and a likelihood ratio test of the hypothesis that the over-dispersion parameter, α, is not equal to zero after negative binomial

Table 2. Regression results

Variables	*1* *TCG*	*2* *TCG (Adjusted)*	*3* *TCG (High Civil Liberties)*	*4* *TCG (Low Civil Liberties)*
Civil liberties	**0.471*****	**0.172***		
	(0.096)	(0.089)		
Federalism	0.577**	0.166	1.133***	0.133
	(0.276)	(0.252)	(0.362)	(0.488)
EPI climate	0.029***	0.037***	0.018**	0.042***
	(0.007)	(0.007)	(0.008)	(0.013)
IEA ratifications	0.012*	0.008	0.014*	0.023
	(0.006)	(0.005)	(0.008)	(0.016)
GDP per capita	−0.039	0.012	0.246*	0.166
	(0.108)	(0.101)	(0.137)	(0.196)
Trade	−0.057	0.068	−0.096	−9,152.43
	(0.175)	(0.158)	(0.157)	(5,923.27)
ISO 14001	0.046**	0.006	0.073**	0.026
	(0.02)	(0.014)	(0.033)	(0.027)
INGOs	0.003	1.388***	−0.33	1.247
	(0.508)	(0.48)	(0.481)	(1.988)
Carbon dioxide	0.607***	0.685***	0.501***	0.541***
	(0.081)	(0.078)	(0.113)	(0.144)
Constant	−6.624***	−7.568***	−5.627***	−7.261***
	(1.297)	(1.24)	(1.936)	(2.17)
Observations	115	115	61	54

Standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

The main regression results are reported in Table 2. Column 1 reports the baseline model. Column 2 shows estimates from an identical analysis that uses the sample that excludes the two largest initiatives, as discussed earlier. Columns 3 and 4 then report estimates for subsamples of states whose civil liberties (CL) scores are above and below the population mean, respectively. As noted above, these subsamples provide further evidence on how political institutions condition the operation of the societal mechanisms (as per H4), and on the hypothesized positive effect of state policy on participation, particularly when institutions are relatively closed (H5). Note that the magnitude of the effect of different explanatory variables cannot be inferred by directly comparing their coefficients; we provide additional information on the magnitude of different effects in the discussion below.

Overall, the empirical results provide strong support for the core hypotheses related to the institutional and policy effects (H4 and H5). Consider first the baseline model and Model 2. We find that participation tends to increase with the level of civil liberties enjoyed and that the variable consistently achieves statistical significance as anticipated by H4. In the first model, for example, increasing civil liberties one standard deviation above the mean (the difference between India and Italy, for example) results in an additional nine instances of participation by non-state and sub-state actors. Our measure of administrative decentralization (federalism) also emerges as a significant predictor in our baseline model, but not in the second model that excludes the two largest initiatives. This can be accounted for by the fact that by excluding the two largest initiatives, which focus on European cities, the smaller sample loses important variation of participation by substate actors, whose agency is more likely to be dependent on levels of political decentralization.

Turning to the main policy hypothesis (H5), we find that the ambitiousness of a government's climate change policies also has a positive effect on participation across all models. In the baseline model, moving one standard deviation above the mean of the EPI Climate indicator produces 26 additional instances of participation, suggesting that climate policy is a particularly important driver of participation. The IEA ratifications variable performs less well as a proxy, however, achieving statistical significance only in Models 1 and 3, and demonstrating a significantly weaker substantive effect (an increase from the mean by one standard deviation yields only two additional instances of participation). Nevertheless, these findings suggest that, overall, transnational climate governance tends to complement rather than substitute for national policies.

The explanatory variables that evaluate the relevance of societal demand and transnational connectedness in supporting participation also yield interesting results. Surprisingly, in the main regressions that include the full sample (Models 1 and 2, Table 2), GDP per capita and our weighted international trade variable never reach standard levels of statistical significance, do not consistently point in the expected direction, and show limited substantive effects. This suggests that societal wealth and capacity to demand environmental quality, as well as economic inter-connectedness, are not consistent predictors of participation in TCG initiatives at this level of aggregation. Levels of ISO 14001 certification are, however, positively correlated with participation in transnational climate governance and statistically significant in our first model, suggesting that integration with supply chains and broader business commitment to transnational environmental sustainability standards may indeed play a role. However, the effect is relatively small. Finally, the effect of INGO networks is positive and significant in our second model, but the effect is also substantively small, with a one-standard deviation increase above the mean in the number of active INGOs leading to only five additional instances of participation. This indicates that while transnational advocacy organizations may play an important

regression. These all confirmed that over-dispersion was present and therefore that the negative binomial regression model is preferred to the Poisson regression model. For further details on determining the appropriate model for count data, see Cameron and Trivedi (1998, 77–79).

Table 3. Alternative specifications of the baseline model

Variables	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Civil liberties	**0.450*****	**0.444*****				**0.469*****	**0.473*****	**0.467*****
	(0.098)	(0.106)				(0.121)	(0.09)	(0.102)
Federalism	0.848***	0.731**	0.730***	0.574**	0.545**	−0.132	0.553**	0.554*
	(0.283)	(0.288)	(0.272)	(0.26)	(0.275)	(0.396)	(0.257)	(0.319)
EPI climate			0.031***	0.028***	0.031***	0.040***	0.012**	0.032***
			(0.007)	(0.007)	(0.007)	(0.008)	(0.006)	(0.008)
IEAs	0.020***	0.016**	0.020***	0.005	0.018***	0.021**	0.009	0.013*
	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.01)	(0.006)	(0.008)
GDP per capita	0.404***	0.376***	0.103	−0.16	0.358***	0.556***	−0.095	0.018
	(0.088)	(0.099)	(0.101)	(0.111)	(0.133)	(0.161)	(0.101)	(0.138)
Trade	−0.233	−0.089	−0.033	−0.103	−0.037	0.108	−0.024	−0.052
	(0.184)	(0.188)	(0.17)	(0.168)	(0.168)	(0.176)	(0.161)	(0.18)
ISO 14001	0.044**	0.049**	0.040**	0.052***	0.041*	0.025	0.043**	0.059*
	(0.021)	(0.022)	(0.02)	(0.02)	(0.023)	(0.05)	(0.017)	(0.031)
INGOs	−0.088	−0.024	0.155	0.066	0.233	−0.257	−0.288	−0.023
	(0.571)	(0.552)	(0.483)	(0.483)	(0.533)	(1.176)	(0.466)	(0.636)
Carbon dioxide	0.547***	0.517***	0.550***	0.615***	0.593***	0.847***		0.585***
	(0.07)	(0.081)	(0.084)	(0.078)	(0.077)	(0.111)		(0.094)
Pollution	−0.004*							
	(0.002)							
EPI		0.028*						
		(0.016)						
Polity			0.066***					
			(0.019)					
Voice				1.164***				
				(0.186)				
Political rights					1.261***			
					(0.214)			
FDI						−0.001		
						(0.005)		
GDP							0.644***	
							(0.077)	
Green aid								0
								(0.001)
Constant	1.773***	3.099***	6.330***	6.550***	6.015***	6.287***	14.884***	7.041***
	(0.598)	(0.948)	(1.353)	(1.252)	(1.282)	(1.548)	(1.985)	(1.412)
Observations	137	115	106	115	115	75	109	102

Standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.

role in encouraging participation, their effect is modest and may be more pronounced in entrepreneurial schemes of non-state actors, since the effect only seems to hold when we exclude several large municipal initiatives. The control variable, CO_2 emissions, is positively related to participation and statistically significant as expected.

Next, consider the split-sample Models 3 and 4, which provide additional analytic leverage and powerful support for our main hypotheses about the conditional effects of political institutions on state climate change policies. In Model 3, we see that when we restrict the sample to countries with higher than average civil liberties, societal and diffusion mechanisms are more likely to operate, as expected by the institutional argument captured in H4. Domestic demand and transnational linkages (measured by GDP per capita and ISO 14001, respectively) have a positive and significant effect in this group. However, in Model 4, which restricts the sample to countries with low civil liberties, these effects are entirely absent: international linkages and demand for environmental action associated with greater material resources are both statistically insignificant. The findings suggest that while many of the variables that scholars have traditionally emphasized play an important role in driving participation in transnational governance, they only do so when international and domestic actors are able to exercise agency within a domestic political arena. This sharp difference highlights the fundamental importance of political institutions in conditioning the opportunities for sub- and non-state actors' engagement in transnational governance. We see not only that institutional context matters, but precisely when and how it matters as well.

The second key finding that follows from Models 3 and 4 is the consistent, statistically significant, and substantively important effect of national climate policies on participation. As in the baseline models, the ambitiousness of national policies is associated with increased participation in transnational climate governance. However, the results also show that when civil liberties are low, state policies appear to be the *only* variable that matters for participation. In more open societies, national policies matter, but, as noted above, so do a host of other variables such as the extent to which actors are integrated into supply chains and INGO networks, the amount of material resources individuals possess, and their associated values. By contrast, if civil liberties are highly restricted, these variables matter less. Further, the effect of national climate policies in the low civil liberties sample is roughly twice as large as in the high civil liberties sample, indicating that government policy does indeed have a much larger effect in this context.

The results of the statistical analysis capture important mechanisms of interplay between domestic political structures and the agency of non-state and sub-state actors in global governance. The way domestic politics affects participation suggests that national policies and transnational initiatives are likely to reinforce each other. These results help us make sense of the differential politics of participation in transnational governance that the existing descriptive and case-oriented literature has captured. The literature on US-focused initiatives provides qualitative evidence on the relevance of liberal and decentralized institutions in enabling networks of cities, voluntary markets for carbon offsets, and regional initiatives by liberal governors in coordination with their Canadian or European counterparts. While such actions reacted to nonexistent climate policy at the federal level, they have depended critically on societal mobilization and on proactive policies at the city or state levels (Selin and VanDeveer 2009; Betsill and Bulkeley 2004).

The relevance of open institutions and pro-climate policies is also pronounced in many cases cutting across the North-South divide, including for the kind of networks actors choose to participate in. Italy, for example, has promoted strong action at the municipal levels to reduce its carbon footprint, and its cities are among the most active participants in transnational initiatives. Likewise, Germany and the UK have played a leading role in the formulation of national and EU policies, and non-state and sub-state actors in these countries have responded with strong engagement in transnational schemes, particularly those closely aligned to their national priorities, such as clean energy and municipal networks, and in the case of the UK, private corporate initiatives. In countries such as Brazil or the Philippines, which enjoy proactive socioeconomic movements and more favorable policy contexts, actors have participated primarily in initiatives that correspond to societal and policy priorities, such as forestry, biomass fuels, and social certification of carbon offsets, in the case of Brazil, and renewable energy technologies, in the Philippines. The cases illustrate how societal capacity and policy direction shape the type of agency and governance strategy that actors pursue through transnational networks in profound ways.

In less democratic countries, such as China, Russia, or Indonesia, the patterns of participating in transnational climate initiatives have taken yet a different route, but one that the theory elaborated in this article can make sense of. In Russia's case, business actors and regional governors became interested in carbon markets and corresponding governance schemes shortly after the negotiations of the Kyoto Protocol. The government curbed such activities early on, however, for lack of interest in climate policy and a desire to maintain tighter control over its regions. Participation in transnational initiatives has been low and mainly limited to industries and actors closely related to the government (Andonova 2014). China exemplifies a country with restrictive institutions but relatively ambitious policies related to clean energy and carbon markets, which have in turn translated into a high level of participation, albeit with selective backing or tolerance from the government (Hale and Roger 2017). Participation in transnational initiatives in Indonesia, in turn, picked up around the time when the government hosted the 2007 Conference of the Parties of the UNFCCC and projected a more active position, particularly with respect to the relevance of forests and renewable energy. Such case-based evidence illustrates the kinds of mechanisms that our analysis hypothesizes are important determinants of the broader patterns of participation in transnational climate governance initiatives. They also give a sense of the fine variation in transnational engagement across countries implied by the theoretical framework, which can become the subject of further empirical and policy studies.

Robustness Checks

To probe the strength of the findings presented above, Table 3 reports the results of seven different specifications of Model 1 as robustness tests. Each uses alternative measures of our core explanatory variables and is motivated by the empirical or methodological concerns, as discussed in Section 4. In Model 2, our main climate policy variable is replaced first by the air pollution variable PM10 (Pollution) and then with the wider EPI measure of environmental performance (EPI) to alleviate endogeneity concerns. The air pollution variable produces a significant effect in the expected (negative) direction, as does EPI in the expected (positive) direction (Table 3, Models 1 and 2). These tests suggest that a government's exogenous policy commitment to environmental issues and climate change supports greater participation in transnational climate governance, since we would expect no association between participation and these variables if causality ran in the opposite direction.

Table 3 (specifications 3–5) also presents the results using the alternative measures of domestic institutions described in the previous section to ensure that the effect is not simply an artifact of the particular indicator that we use. They show that no matter how we measure variation in the institutional structures that make it possible for non-state or sub-state actors to exercise agency, our results do not change significantly. Finally, the alternative specification of international connectivity—FDI (Model 6) and green aid (Model 8)—perform no better than our preferred measures in the main results. The variable GDP (Model 7), as an alternative measure for the control variable Carbon Dioxide, remains positive and significant.

Our results hold also in re-specifications of the split-sample models, using air pollution or the broader EPI variable as a proxy for policy (Table A3 in the Appendix). The effect of these policy measures is significant, large, and in the expected direction particularly within countries with low civil liberties. In the high civil liberties subsample, however, these measures lose relative significance, while, as expected, variables reflecting the agency of sub- and non-state actors correspondingly gain prominence. Overall, our empirical analysis supports our theoretical argument about the conditioning effect of domestic institutions on participation in transnational governance and the tendency toward complementarity between proactive formal policies and voluntary transnational initiatives.

Conclusion

Governance complexity now characterizes a great deal of world politics. Societies grapple with growing interconnectedness, which produces new policy challenges and new governance pathways. Whether governments worry about security threats, public health, climate change, or a multitude of other issues, they see transnational initiatives that link private, societal, and public actors across borders as important components of the governance mix. However, the international relations literature tends to treat questions of institutional complexity and

transnational governance separately. Instead, we need to place the two in active dialogue.

This article theorizes how state-based and transnational governance interact, cutting across the domestic-international divide. Our analysis sheds new light on the interplay of societal forces, transnational networks, and public policy, and shows how domestic institutions condition these interactions. Our findings suggest that, while transnational governance may indeed substitute for lackluster national policies in some instances, we should expect the opposite to be true on average: strong national policies create incentives for sub- and non-state actors to engage transnationally. These results imply that we should approach the question of complexity in global governance differently. Instead of simply noting institutional overlap and diversification at the international level, we should examine the interplay between transnational, national, and intergovernmental governance arrangements.

The findings carry important implications for policy. Current debates focus on whether private initiatives and transnational participation detract from or support national and intergovernmental processes. These debates are overly narrow. Given that the international climate regime has shifted to a model that emphasizes the role of homegrown policies and the input of non-state stakeholders, transnational governance is likely to be of growing importance.

Our study shows more than 14,000 instances of participation in transnational climate networks across the world. Our findings also identify the domestic conditions under which transnational climate governance is likely to become more or less relevant. The correlation between the openness of domestic institutions, national climate policies, and participation means that transnational initiatives will be most prevalent in countries that are already taking steps to combat climate change. In leader countries, like most states in Europe, transnational climate governance may reinforce, improve, and help implement national policies. It may increase the policy influence of these states internationally, particularly with countries that have limited policy commitments but in which non-state and sub-state actors possess significant freedom. By the same token, we will see little non-state actor participation in transnational climate governance in countries such as Nigeria, Pakistan, Saudi Arabia, and Russia, which have both restrictive institutions and weak climate polices.

Instead, transnational initiatives are likely to be most important in intermediate cases. In advanced economies with substantial civil liberties and a degree of decentralization but rather limited national commitment to climate, non-state and sub-state actors will likely play a key role. That is, in countries such as the United States, Canada, and Australia, non- and sub-state actors may be able to substitute, at least to some degree, for weak climate policies. Similarly, in countries—such as China and Indonesia—that are taking active steps to address climate change, but where local and non-state actors face barriers to action, we will still expect transnational governance to strengthen national commitments to reduce emissions. Because a large share of the world's current and future emissions is likely to come from countries in these intermediate categories, our findings suggest that transnational initiatives will be a crucial element of global climate governance.

The theory and research findings of this article open new directions for research. First, the significant role of domestic institutions and national policies in conditioning the scope of transnational governance suggests the value of bringing a stronger comparative focus to the study of transnational governance. The field needs a much better understanding of how specific national policies and institutional conditions matter for different types of transnational initiatives.

Second, our analysis implies that scholars should study the broader effects of transnational initiatives on state policies and international cooperation. In this regard, our findings complement the growing literature on "new interdependence," which has demonstrated how transnational networks, domestic politics, and international agreements are often layered and produce more dynamic effects that have been overlooked by traditional theories in the field (Büthe and Mattli 2011; Farrell and Newman 2014; Bruszt and McDermott 2014). Domestic institutions and policies likely shape the outcomes of such interactions. We should start to explore how these dynamics occur across multiple issue areas.

Finally, the article shows how problems like climate change that implicate politics and governance arrangements on multiple scales, as well as transnational governance institutions, transcend the traditional division of political science into domestic and international spheres. The 2015 Paris Agreement, which puts national polices and transnational initiatives at the center of intergovernmental cooperation, demonstrates this point. The success of the regime now depends on an effective synergy between bottom-up transnational networks, active state policies, and intergovernmental instruments. How much do existing theories of international relations help us understand the conditions under which such a system can function effectively? Our study suggests that the quality of institutions at all levels is likely to be important. But further research will be needed to analyze the conditions under which intergovernmental instruments can best support the uptake of meaningful domestic and transnational commitments.

Supplementary Information

Replication data for the statistical analysis and the STATA .do file are available at: http://graduateinstitute.ch/fr/home/research/centresandprogrammes/cies/publications/books-and-articles.html, as well as the *International Studies Quarterly* data archive.

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Appendix

Table A1. Correlation matrix of explanatory variables

Variable	*Civil liberties*	*Federalism*	*EPI climate*	*IEA ratifications*	*Trade*	*ISO 14001*	*INGOs*	*GDP per capita*	*Carbon dioxide*
Civil liberties	1								
Federalism	0.137	1							
EPI climate	0.1319	0.1525	1						
IEA ratifications	0.657	0.186	−0.2276	1					
Trade	0.051	0.2104	−0.1025	0.0182	1				
ISO 14001	0.0228	0.0232	−0.1332	0.2033	0.014	1			
INGOs	0.3437	0.4109	−0.1519	0.4473	0.0954	0.2363	1		
GDP per capita	0.6208	0.17	−0.5924	0.6184	0.0037	0.1556	0.2968	1	
Carbon dioxide	0.1065	0.4632	−0.6025	0.4357	0.1242	0.4514	0.5045	0.4246	1

Table A2. Collinearity diagnostics

Variable	*VIF*	*SQRT VIF*	*Tolerance*	*R-squared*
Civil liberties	2.59	1.61	0.38	0.61
Federalism	1.49	1.22	0.67	0.33
EPI climate	2.74	1.66	0.36	0.63
IEA ratifications	2.66	1.63	0.37	0.62
Trade	1.07	1.04	0.93	0.07
ISO 14001	1.41	1.19	0.71	0.29
INGOs	1.7	1.31	0.58	0.41
GDP per capita	3.26	1.81	0.31	0.69
Carbon dioxide	3.69	1.92	0.27	0.73
Mean VIF	2.29			

Table A3. Alternative specifications of split-sample models

Variables	*Models with pollution variable substituted*		*Models with broader EPI variable substituted*	
	CL high	*CL low*	*CL high*	*CL low*
Federalism	**1.355*** **	**0.045**	**1.452*** **	**0.058**
	(0.352)	(0.526)	(0.324)	(0.534)
IEA ratifications	0.016**	0.044***	0.022***	0.030*
	(0.008)	(0.016)	(0.007)	(0.016)
Trade	−0.087	−3,102.31	−0.199	−4,564.90
	(0.168)	(5,972.70)	(0.152)	(5,341.26)
ISO 14001	0.084**	0.023	0.079**	0.019
	(0.034)	(0.03)	(0.031)	(0.029)
INGOs	−0.267	3.078	−0.411	3.475
	(0.494)	(2.158)	(0.464)	(2.136)
GDP per capita	−0.005	−0.290*	−0.019	−0.330**
	(0.135)	(0.167)	(0.111)	(0.158)
Carbon dioxide	0.411***	0.492***	0.429***	0.498***
	(0.104)	(0.153)	(0.083)	(0.134)
Pollution			−0.002	−0.007*
			(0.003))	(0.004))
EPI	0.026	0.059**		
	(0.02))	(0.029))		
Constant	−3.268**	−5.146**	−2.318**	−0.969
	(1.451)	(2.217)	(1.129)	(1.021)
Observations	61	54	68	69

Standard errors in parentheses. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$.