

Agents or Advisers? Bureaucratic Structure and the Politics of Trade Protection*

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Abstract

Studies of trade policy have largely neglected the key role of bureaucracies in aggregating competing preferences into policy. This paper shows that bureaucratic structure shapes the degree of influence politicians and interest groups exert over trade policy. I argue that bureaucratic structures endowed with independence, internal expertise, consolidation and fewer formalized channels of interest group participation produce less protectionist trade policies. Using a novel dataset of categorized trade bureaucracies across a panel of 135 countries and 20 years, the empirical test assesses the effect of bureaucracies on non-tariff barriers—one such form of administered protection. I find that governments where trade is led by independent institutions endowed with internal expertise are more likely to have free trade policies. Conversely, governments with fragmented trade policy processes and formalized channels of stakeholder participation are more likely to raise protection barriers.

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1 Introduction

Does bureaucratic structure affect the ability of private actors to shape trade? Existing explanations of trade policy highlight either interest groups or firms pressure (Kim and Osgood 2019) or politicians' electoral incentives (Rickard 2015), but they have largely neglected the role of bureaucracies. Yet for politicians or interest groups to determine trade outcomes, they must control the bureaucrats who design, implement, and regulate policy. Recognizing this, interest groups spend considerable resources contacting the bureaucracy in an effort to influence policy. In the EU, an estimated 20000 lobbyists contact the European Commission and Parliament on a daily basis (Greenwood 2017). Evidence from US federal lobbying data suggests "the groups active and pressing their issues in the legislature are also active and pressing their issues in the bureaucracy" (Boehmke, Gailmard and Patty 2013, p. 18). Ample empirical evidence also shows that interest groups often directly lobby bureaucrats (Haeder and Yackee 2015; Funk and Seamon 2015; Yackee and Yackee 2006; Boehmke, Gailmard and Patty 2013; Naoi and Krauss 2009; You 2017).

This paper shows bureaucracies shape a large share of outcomes in trade policy. It advances the core argument that bureaucratic structure shapes the degree of influence politicians and interest groups exert over trade policy, leading to meaningful variation in outcomes. I analyze several dimensions of bureaucratic structure: independence, internal expertise, consolidation, and formal interest groups access channels. I empirically test my argument in a cross-national comparison of trade bureaucracies and administered protection in over 100 countries over the period 1995-2017, using an original measure of bureaucratic structure. The results show governments are more likely to have free trade policies when trade is led by independent institutions endowed with internal expertise. Conversely, governments with fragmented trade policy processes and formalized channels of stakeholder participation are more likely to raise protection barriers.

This study makes three contributions to the scholarship on foreign economic policy and international political economy. First, it explains a previously understudied yet critical dimension of global economic governance: bureaucratic institutions (and not simply political institution) channel interest groups and politicians' policy influence. Although International Political Economy scholarship has had a long tradition of studying domestic political institutions and their effect on foreign economic policy, it has paid less attention to bureaucratic institutions, while providing extensive attention to regime type (Milner and Kubota 2005; Mansfield, Milner and Rosendorff 2002; Milner and Mansfield 2012; Gowa and Mansfield 1993) and electoral mechanisms (Kono 2006; Rickard 2015). Yet stakeholders shape interna-

tional economic policy through bureaucratic channels of influence as well. Many policies of critical importance remain in the sphere of administrative actions where bureaucracies and not legislatures are the key actor.

Second, this study provides a theoretical framework for applying bureaucratic politics to the study of trade policy. Most existing research of how bureaucracies shape foreign policies treat the bureaucracy as monolithic, ignoring variation among the different bureaucracies forming a state’s administrative system (Zegart 2009; Allison 1969; Jonathan and Thomas 1992; Evans and Rauch 1999). Yet we know from recent studies of foreign aid that variation in institutional characteristics across bureaucracies affects outcomes. For example, foreign aid institutions’ level of independence shapes foreign aid allocation (Arel-Bundock, Atkinson and Potter 2015; Honig 2015). I present a typology of bureaucratic structure that takes advantage of heterogeneity in agencies’ accessibility to interest groups to show variation in this structure can affect trade policy as well. This strategy departs from existing studies of institutional design and foreign policy because it explicitly incorporates the inter-agency process necessary to create foreign economic policy.

Third, this study contributes a measurement strategy that captures variation across countries, over time, and across organizations. Existing research focuses on single-country, single-period, or single-organization case studies that make it difficult to explore this variation. The study of comparative foreign economic policy has been hobbled by the lack of data on how bureaucracies vary across different administrative traditions and over time. To create this data important for studying how bureaucracies affect policy, I apply empirical methods—historical and quantitative—to create a time series cross section dataset that identifies all bureaucracies in charge of trade policy and categorizes their type across a sample of 135 countries and 20 years. I take advantage of the WTO Trade Policy Review Mechanism (TPRM) – which introduced periodical reviews of WTO member countries’ trade policy regime under a common review standard – to get a consistent cross-national measure of bureaucratic structure. While other datasets aim to explore cross-national variation in bureaucracy, such as the International Country Risk Guide (Howell 2011) and the Quality of Government (Teorell et al. 2015), they provide expert survey based measures of bureaucracy-as-a-whole, hiding important cross-organizational variation. In addition, this bureaucracy-as-a-whole approach makes it difficult to study bureaucratic effects on policy, as it does not allow an analytic focus on the specific bureaucracies in charge of a policy area.

The paper proceeds as follows. Section 2 highlights bureaucracies as a critical dimension of trade policy overlooked in existing accounts of policymaking. Section 3 argues certain

institutional features of bureaucracy reduce interest groups influence over policy, and shows how these institutional features map onto an existing typology of bureaucratic units that form a country's bureaucratic structure. Section 4 introduces the data source and proposes a measurement strategy to create a consistent cross-national measure of bureaucratic structure. It also presents descriptive statistics for this measure. Section 5 explains the identification and estimation strategies, as well as their limitations. Section 6 assesses the effect of bureaucratic structure on non-tariff barriers. Section 7 examines robustness to alternative estimation strategies. Section 8 discusses the findings and implications of this study.

2 What Determines Trade Policy?

Trade policymaking is a lengthy and contentious process that affects the distribution of gains in an economy. It creates tremendous opportunities and incentives for rent seeking and therefore incentivizes interest groups to try to influence policymakers to implement policies closer to their preferred position. Existing research has focused on politicians as key participants in trade policymaking. Nevertheless, most governments allow bureaucrats to play a large role in designing, implementing, and regulating policy: bureaucrats gather information and coordinate with domestic third parties; negotiate a large swathe of trade policies; translate trade policies into domestic rules and regulations. Bureaucrats thus play a central role throughout the entire trade policymaking process. However, existing explanations of trade policy overlook the bureaucracy, largely focusing instead on interest groups or political incentives for trade policy.

Existing research argues interest group pressure determines trade policy outcomes. Industry incentives and characteristics lead to variation in the ability to collectively organize and lobby the government for the desired trade policy outcome. Interest groups that favor protection lobby for trade barriers. Interest groups that favor liberalization lobby for free trade. The final policy reflects firms' ability to collectively organize: if protectionist groups are better organized than pro-free trade groups, lobbying leads to more trade barriers.¹ The final policy also reflects inter-industry variation: lobbying from exporting industries ([Destler 1987](#); [Milner 1997](#); [Davis 2003](#); [Kim 2017](#)), or from the manufacturing sector ([Gawande, Krishna and Olarreaga 2012](#)) leads to fewer trade barriers.

Yet the domestic institutional context shapes the degree of interest group access to the policymaking process, effectively mediating its effectiveness in shifting policymakers' posi-

¹See [Kim and Osgood \(2019\)](#) for a review.

tion. Domestic institutional models of trade policy consider variation in the level of access to the policymaking process. These models highlight the political incentives that will lead elected policymakers to set more or less protectionist trade policies. Institutions such as regime type (Milner and Kubota 2005; Mansfield, Milner and Rosendorff 2002), electoral or constitutional rules (Kono 2006; Rickard 2012), or institutional access points (Ehrlich 2011) shape which constituencies politicians serve, which leads to variation in the level of trade barriers. The literature on electoral systems' effect on trade policy offers mixed results for whether a protectionist bias exists in proportional rule versus majoritarian systems (Rickard 2015). Even domestic institutions such as democracy that we expect to have a positive effect on trade policy liberalization may exhibit a combination of liberalization through lower tariffs but protectionism through higher non-tariff barriers (Kono 2006). Likewise, democracies are both the high violation and high enforcement countries, as shown by Davis (2012) in the context of WTO disputes. Mixed empirical results in the literature on domestic institutions and trade policy suggest important unexplained variation.

General mechanisms advanced by research on bureaucratic delegation highlight reasons to expect that bureaucracies can enhance or restrict the role of leaders and legislatures. Moe (1989) suggests that elected officials uncertain about their ability to maintain office can increase delegation to bureaucracies to insulate policies from future office holders. Epstein and O'Halloran (1999, p. 12) note that “[w]hen it is hard to make new policy, it is hard to overturn what bureaucrats have done.” They suggest bureaucrats are insulated from external control via the same mechanisms that hinder regular legislative policymaking channels. A considerable number of scholars have also focused on how presidential appointments influence public policy (Moe 1982; Wood and Waterman 1994; Lewis 2008). In the context of American foreign policy, Milner and Tingley (2015) analyze the choice of foreign policy instruments by U.S. leaders as a function of presidential control over bureaucratic agencies.

Existing research also notes the importance of bureaucracy for policy outcomes. A wealth of research on postwar East Asian state-led industrialization has long recognized the role of the bureaucracy—and the public-private partnership between the state and industry—in promoting economic growth (see, for example, Johnson (1982), Johnson (1987), Amsden and Chu (2003), Evans (2012), Pempel (1999), Doner, Ritchie and Slater (2005), Stubbs (1999), Vu (2007), among others). Research on monetary policy also highlights the role of the bureaucracy in improving policy effectiveness: delegation of authority to independent agencies is a solution to the credibility issues hindering effective policymaking (Rogoff 1985; Stasavage and Keefer 2003). This suggests bureaucratic structure may be significant in the

trade policymaking process as well.

3 How Does Bureaucratic Structure Shape Trade?

I argue the degree of protectionism bias in trade policy will depend on bureaucratic structure. Bureaucratic structure differentially channels stakeholder preferences into policy, leading to variation in policy outcomes as well. Trade policy is a collaborative effort between many stakeholders, including politicians, interest groups and bureaucrats. Yet these groups have different trade policy preferences. To accommodate competing interests and make trade policy politically feasible, trade policy often includes exceptions and flexibility measures alongside more liberalizing policy instruments. For example, preferential trade agreements may eliminate tariffs on some products while introducing exceptions, rules-of-origin, non tariff barriers, or flexibility provisions that limit liberalization on others. I argue that bureaucratic structures endowed with independence, internal expertise, consolidation and fewer formalized channels of interest group participation will lead to less protectionism, by reducing interest groups' access to and influence over trade policy.

Independence—defined as the ability to determine and execute one's activity independently from other actors embedded in the policymaking process—provides bureaucratic insulation from political processes.² Political principals delegate discretion over policymaking to the bureaucracy because bureaucrats have more expertise³ than the principals. The problem policymakers face is choosing from a menu of policy tools in the face of uncertainty about policy consequences. Delegation to bureaucratic agents reduces policy uncertainty by allowing for the collection of more objective and complete information about alternative policies (Gilligan and Krehbiel 1987; McCubbins 1985; Kiewiet and McCubbins 1991; Bawn 1995).

Legislators would like to balance this need for better information with the need to prevent bureaucratic drift. Yet the administrative procedures that decrease drift also decrease an agency's ability to utilize its expertise (Noll 1971; Bawn 1995). As long as the gains from bureaucratic expertise exceed the costs of bureaucratic drift, politicians will delegate more independence to the bureaucracy (Bawn 1995). Consequently, policy in low independence environments will more closely reflect the preferences of political principals, and of the interest groups these politicians represent.

Yet political principals do not necessarily share the same trade preferences with each

²See Miller and Whitford (2016) for a full treatment of bureaucratic independence.

³Defined as “the higher probability of having superior information about the actual effects of various policy choices” Stephenson (2007, p. 471)

other, which may lead to issuing contradictory mandates to the bureaucracy. Politicians want to maximize reelection to office and campaign contributions and will therefore vary in their support for trade liberalization depending on the constituents they serve. Chief executives will support preferential trade agreements to demonstrate credible commitment for liberalization to the domestic electorate (Milner and Mansfield 2012). Other political actors may favor policies that appeal to narrower constituencies, such as legislators responsive to particular interest groups (Nielson 2003) or labor (Owen 2017). Bureaucrats in environments with low independence will have to implement mandates that incorporate these conflicting demands, leading to a more protectionist bias in trade policy via narrowly-targeted exceptions or flexibility provisions.

In contrast, trade bureaucrats align with pro free trade interests. Bureaucrats prioritize minimizing policy decision uncertainty (McCubbins, Noll and Weingast 1987, 1989), which allows them to maximize policy benefits, while minimizing political conflict that may result in professional consequences (Reenock and Gerber 2008). To maximize policy benefits, bureaucrats will pursue their organizational objectives and maximize the overall welfare of the groups under their jurisdiction. Doing so allows bureaucrats to develop a reputation for expertise and high-quality work with professional implications, in the form of increased autonomy (Carpenter 2001). Yet reputations are developed over time. The longer time horizons that bureaucrats face will incentivize longer-term strategies than politicians and interest groups. Trade bureaucrats will therefore prefer measures that decrease uncertainty about future compliance, creating incentives to oppose exceptions and narrowly targeted provisions. Such exceptions allow stakeholders to renege on some of the commitments they previously made, increasing policy uncertainty.

A second source of informational asymmetry that leads to uncertainty over a policy's effect arises between bureaucracy and the interest groups it regulates (Laffont and Tirole 1993). Interest groups possess important informational advantages, such as about their own products, policy effects on their group, or compliance behavior (Gailmard and Patty 2012), all of which are useful inputs to the formulation of effective policy by bureaucrats (Milner 1997; Grossman and Helpman 2001; Dal Bó 2006; Milner and Tingley 2015). This asymmetry may generate incentives to hide or misreport information from the bureaucrat (Dal Bó 2006; Gailmard and Patty 2012) and hence accurate reporting may rely on the credible promise of rents (Laffont and Tirole 1991, 1993). When bureaucrats depend on outsiders for information, their decisions will reflect the source of information (Baron and Myerson 1982). But this effect is conditional on bureaucratic expertise: bureaucrats who

have the independent resources to evaluate the information they receive are less likely to accept it at face value (Bawn 1995, p. 65). As a result, increasing bureaucratic expertise should decrease opportunities for rent seeking.

Government and private sector cooperation need not always be informal. Private sector representatives are often formally included in public sector structures.⁴ Such participation converts private representatives of industry into authorized public advisers. While representatives of interest groups are not considered part of the administration, and as such, do not have veto power in the policy process, they may be directly involved in the negotiation process or even in drafting of policy. They are “close enough to government to be up-to-date with government’s ongoing policy challenges. They have the potential to act as knowledge brokers trusted to provide [...] policy advice that fits into the policy cycle” (OECD 2017, p. 118).

Through the advising process, interest groups become part of the policymaking network. They learn private information, gain a direct line of communication with government officials, and contribute directly to policy formulation. The government seeks industry participation in public policy formulation precisely for industry’s high level of expertise. Consequently, the government relies most on industry members in policy areas where governmental actors have less information or expertise. Bureaucratic reliance on interest groups is highest for complex and uncertain tasks (Moffitt 2014). Most often, these are precisely the areas of policy with the largest distributional consequences that are most complex and uncertain, which increases interest groups’ influence over trade policy where they have most incentives for rent seeking.

The level of consolidation (i.e. number of bureaucracies with jurisdiction over trade policy) impacts interest groups’ access and thus their influence over trade policy as well. Less consolidated bureaucratic structures where multiple institutions hold overlapping jurisdiction over trade incentivize competitive dynamics among different bureaucratic institutions. Interest groups can use these inter-bureaucratic competitive dynamics to their advantage, lobbying or exchanging information with the bureaucracy most likely to listen to its demands. Conversely, as consolidation increases and the number of bureaucracies with trade jurisdiction decreases, bureaucrats can leverage the support or backing of those groups that align with their preference to bolster their position (Hawkins and Jacoby 2006; Elsig and Dupont 2012). While consolidation affects access, this effect is more pronounced in environ-

⁴Such participatory mechanisms are different from public advocacy. Whereas groups participate in public advocacy by organizing in private or public associations, they gain a formal role in the policymaking process only once the government sets up interest groups specifically designed to assist in its activity.

Table 1: Institutional Features by Type of Bureaucracy

	Independence	Internal Expertise	Include Private Sector	Example (from the US)
Ministry	Low	Low	No	Department of Commerce
Agency	High	High	No	International Trade Commission
Advisory group	High	High	Yes	International Trade Advisory Committees

ments where independence and expertise are lower. High independence and expertise afford insulation from interest groups, so I expect interest groups will be unable to forum-shop under these conditions. As the number of institutions with low independence or internal expertise increases, so will reliance on interest groups for information, exacerbating interest group influence over policy.

From Theoretical Dimensions to Systematic Cross-Country Comparison

To balance trade offs of control and autonomy for different issues, governments allocate executive authority across administrative units with three common forms: ministries, agencies, or advisory groups. These bureaucratic units are systematically distinct on the organizational dimensions that condition industry access to policymaking described above. Ministries have less independence, less internal expertise, and do not directly incorporate members of the private sector. Agencies have more independence and a high level of internal expertise. Like ministries, they do not directly incorporate members of the private sector. In contrast, advisory groups have a high level of internal expertise, but their expertise is entirely derived from the private sector representatives that make up a majority of such groups' membership. The number of agencies, ministries, or advisory groups will capture the overall level of bureaucratic consolidation.

Ministries

Ministries⁵ are the traditional vertically integrated bureaucratic forms closest in organization to Weberian bureaucracy (OECD 2002). As the central public sector organizations of administrative systems, ministries traditionally represented the “dominant organisational

⁵Called ‘departments’ in certain administrative traditions

form in central government” (Gill 2002).⁶ Structurally, ministries do not have a separate legal identity from the government. From a policy perspective, ministries are in charge of carrying out the functions of central government such as defense, diplomacy, or taxation (OECD 2002). They are headed by a minister and report directly to the minister and the Cabinet (or president in presidential systems). Ministry officials work in closer proximity to legislators than other bureaucrats because they issue ministerial orders, submit bills to the Cabinet or propose Cabinet orders. Ministries are thus more responsive to the political context (Gill 2002).

Ministries may enable interest groups to have increased access to the policymaking process because of their proximity to the core government. Compared to other bureaucratic units, ministries are more directly under the political control of their principals and thus endowed with lower levels of independence. Political principals can influence their daily operations and restrict their financial and personnel autonomy (Verhoest et al. 2012). When politicians are responsive to their constituencies, this responsiveness to principals will in turn facilitate special interests’ input into policy.

Ministries’ reduced level of independence in turn results in reduced internal expertise. Internal expertise can be increased by investing in human capital (Gailmard and Patty 2007; Bendor and Meirowitz 2004). Bureaucrats develop expertise either as a response to the discretion they were conferred ex ante (Aghion and Tirole 1997), or to maintain or increase their level of discretion or autonomy, which some have argued is conditional on bureaucratic expertise (Gailmard and Patty 2012; Carpenter 2001). One of the conclusions from Gailmard and Patty (2012, p. 35) is that policymaking expertise “will emerge only if such acquisition is rewarded through increased discretionary authority.” Endowing institutions with more independence is associated with higher quality work, as shown in the context of Independent Regulatory Agencies (Koop and Hanretty 2018).

A second institutional characteristic leads to ministries’ reduced internal expertise: their more generalized area of jurisdiction. Ministries have jurisdiction over a higher number of distinct issue areas than other types of agencies, ranging from design of policy, laws, rules, and regulations, to administration of taxes, and monitoring of other governmental bodies (Gill 2002, p. 36). This is also reflected in their organizational structure, which often includes sub-departmental units, such as services, bureaus, or administrations (Funk and Seamon 2015, p. 6). Specialization—i.e., low skills “for all but a subset of tasks”—leads to higher expended effort on task completion (Dewatripont, Jewitt and Tirole 1999, p. 202).

⁶Gill (2002) discusses this in the context of OECD member countries.

Thus ministries' lack of specialization will in contrast lead to lower expended effort per task, limiting the accumulation of internal expertise.

Ministries are also in charge of those policy areas where lobbying is most frequent: agenda-setting and policy formulation (Verhoest et al. 2012). This encourages more extensive contact with interest groups. While a significant amount of ex post lobbying occurs (You 2017), interest groups are more likely to lobby ex ante (Hall and Deardorff 2006; Dekel, Jackson and Wolinsky 2009; Lohmann 1995), during the formulation and agenda stage of policymaking. Ministries thus should face more interest group pressures than other bureaucratic types.

The underlying characteristics of ministries therefore allow more access. As the number of ministries proliferates, interest group opportunities for forum shopping will as well, leading to increased influence over the policymaking process. Inter-ministerial dynamics encourage competition among these administrative units that interest groups can leverage for more access. In addition, ministries often have overlapping jurisdiction over the trade agenda and must coordinate in an inter-bureaucratic process. They therefore need interest group support to bolster their position in the inter-agency process, further strengthening the bargaining position of interest groups: each interest group will lobby or exchange information with the ministry most likely to listen to its demands.

H1: A higher number of ministries facilitates informal special interests input into policy, leading to more exceptions to liberalization (higher protectionist bias)

Agencies

Agencies are designed to be more independent and specialized than their parent ministry.⁷ One of the central characteristics that differentiates agencies from ministries and departments is their extended autonomy from superior bodies (Maggetti and Verhoest 2014; Roness 2009). In their systematic review of the design of agencies, Verhoest et al. (2012, p. 415) conclude that “agency-like bodies have been set up, or hived off from departments, to free or exempt specific units or services from strict regulations and procedures regarding the use of resources and management that apply to core departments.”

The largest wave of public service systems reforms worldwide—New Public Management (NPM)—focused on the disaggregation of large bureaucracies and transferring of some of

⁷Parent ministry here refers to the ministerial department that would have jurisdiction of the larger policy area under which the agency's jurisdiction also falls.

their functions to agencies.⁸ This process—called agencification—specifically called for an increase in bureaucratic independence and efficiency. Policymakers envisioned agencification as a way to “increase efficiency and effectiveness, enhance the autonomy of managers, place services closer to citizens, reduce political meddling and enable ministers to concentrate on the big policy issues.”⁹

As single-purpose organizations (Biela and Papadopoulos 2014), agencies also have more internal expertise than ministries. Countries design agencies to “build specialized expertise on a specific topic that is not found in the core administration, or even, although rarely, to coordinate/integrate expertise scattered across ministries (e.g. Centrelink in Australia)” (Verhoest et al. 2012, p. 416). In the case of Japan, for example, an agency is established “when a certain area of the activities which are dealt with by a Ministry is of large volume, its character is different from other works, and consequently it is appropriate for the area of work to be separated from the other and to be taken care of by a head (who is substantially independent of the minister) from the viewpoint of efficiency.”¹⁰ A single-purpose organization will be more specialized than a ministry covering multiple policy issues, resulting in more expertise. In addition, agencies have more implementation and regulatory functions, which are associated with requirements for technical expertise as well.

Agencies are therefore not susceptible to the same type of competitive dynamics as ministries, so increasing the number of agencies should limit the access of interest groups to the policymaking process. More agencies reduce the bureaucracy’s reliance on industry for information. As specialized institutions, agencies collect information drawing on their own internal expertise. Limiting reliance on interest groups for collecting information reduces informal contact with interest groups, which, in turn, limits potential rent seeking groups’ access to the policymaking process. Agencies are also less susceptible to direct interest group lobbying than ministries, because they are mostly in charge of policy implementation. As discussed above, most lobbying occurs at the agenda-setting policy stage. In addition, agencies are also less susceptible to political pressures to represent narrow interests, as their higher level of independence better isolates them from political processes and political incentives

⁸NPM is a bureaucratic organization paradigm that recommends translating business sector practices to the public sector, in order to cut costs and increase efficiency. NPM-style bureaucratic reforms were especially popular in 1990s and 2000s Europe. Although implementation of such reforms took different shapes in different countries, some of the common elements were: downsizing, contracting out, customer orientation, agencification, and flexible employment practices (see Hammerschmid et al. (2019) for a detailed explanation).

⁹Pollitt et al. (2004, p. 3), cited in Verschuere and Vancoppenolle (2012)

¹⁰National Government Organization Law of Japan, citation from http://japan.kantei.go.jp/constitution_and_government_of_japan/national_adm_e.html. Available in English at: http://www.japaneselawtranslation.go.jp/law/detail_main?id=13&vm=2&re

associated with electoral cycles.

H2: A higher number of agencies restricts special interest input into policy, leading to fewer exceptions to liberalization (lower protectionist bias)

Advisory groups

Advisory groups are organizations with a formal role in the policymaking process but staffed by representatives of interest groups. They are set up by the government to assist its activities, which distinguishes them from self-organized private or public associations that might also participate in public advocacy. The EU refers to its advisory committee as serving to provide “a forum for discussion on a given subject and on the basis of a specific mandate involving high-level input from a wide range of sources and stakeholders that takes the form of opinions, recommendations and reports” (European Union 2020). Advisory group participation is thus conditional on expertise.

Relatively limited scholarship theorizes about advisory groups and their work, since generally advisory group meetings are not open to the public. To illustrate how the organizational dimensions in Table 1 apply to advisory groups, below I provide an illustrative example using the case of the U.S. Advisory Committee System. Advisory groups are part of national administration systems in many governments outside the United States as well.

The United States Advisory Committee System advises federal agencies, Congress, and the President on many national issues. Advisory committees’ effectiveness is contingent upon their independence. To be independent, advisory committees must be composed of members who have been appointed on expertise criteria, rather than partisanship or ideology.¹¹ Furthermore, the Federal Advisory Committees Act (FACA) requires “that any legislation or agency action that creates a committee contain provisions to ensure that the advice and recommendations of the committee will be independent and not inappropriately influenced by the appointing authority.”¹² Here, the appointing authority usually refers to Congress, although agencies or the president may also establish committees.

Membership criteria includes expertise and knowledge relevant to the issue area the committee covers.¹³ This is especially the case for tier 3 committees, known as Industry Trade Advisory Committees (ITACs), due to the technical nature of their work. ITACs, which represent the majority of trade advisory committees, are designed specifically to link industry

¹¹See [United States \(2004\)](#)

¹²See [United States \(2008\)](#), p. 3)

¹³See [United States \(2018\)](#)

and the government; ITAC members must “serve, directly or indirectly, as the representative of a U.S. entity that trades internationally and is engaged in the manufacture of a product or the provision of a service”¹⁴ While FACA requires other interests be represented on these sector-based advisory groups, in practice the majority of advisory committee members represent industry.¹⁵ The United States Government Accountability Office corroborates this view. The office conducted a review of the structure of the international trade advisory committee system in 2004. It concluded lack of balance in the composition of the advisory committees.¹⁶

Participation in advisory groups converts private representatives of industry into authorized public advisers with a formal role in policymaking. Where multiple advisory groups exist, each is more likely to be given a narrow substantive mandate, leading it to hold more influence over policy.¹⁷ A systematic review of the empirical record shows that, where a single advisory group exists, it tends to include multiple issue areas and members from corresponding interest groups. A case in point is Japan, where only one advisory group, the Industrial Structure Council,¹⁸ under the Ministry of Economy, Trade, and Industry, is in charge of advising the government on trade policy. As the number of advisory groups increases, interest groups are increasingly able to shape trade policy. Under one advisory group which aggregates inter-industry views, representatives of distinct firms and sectors must coordinate one common response or policy recommendation. The resulting recommendation will necessarily be more moderate.¹⁹

H3: A higher number of advisory groups facilitates formal special interests input into policy, leading to more exceptions to liberalization (higher protectionist bias)

Empirical evidence: underlying bureaucratic characteristics variation

Below I provide descriptive empirical evidence to show the administrative categories in table 1 are distinct not only conceptually but also empirically. Using survey data at the country-institution level for a sample of 1726 institutions across 16 countries,²⁰ I show that

¹⁴See [United States \(2018, p. II.1\)](#)

¹⁵For an info-graphic with 2014 data see [Ingraham and Schneider \(2014\)](#)

¹⁶See [United States \(2004\)](#)

¹⁷[Tama \(2011\)](#) argues this is the case in the context of national security

¹⁸http://www.meti.go.jp/english/policy/economy/industrial_council/index.html

¹⁹Interviews conducted by author with members of the Industrial Structure Council (Japan) and Keidanren officials, Tokyo, Japan, summer 2018.

²⁰Data comes from the Common Public Organisation Data Base for Research and Analysis (COBRA, <https://soc.kuleuven.be/io/cost/survey/>) a cross-country database that covers 1726 organizations

agencies have more independence than ministries or within-ministry departments. Figure 1 shows the proportion of organizations within each bureaucratic type by organizational independence. The higher the value on the x-axis, the more independent the organization.²¹ Figure 1 shows ministries and within-ministry departments have a lower proportion of observations with high organizational independence scores when compared to bodies in the agency category. In extension analysis in Appendix B, I show this difference is statistically significant. This descriptive evidence supports the proposition that ministries are less independent than agencies.

4 Measuring Bureaucratic Structure

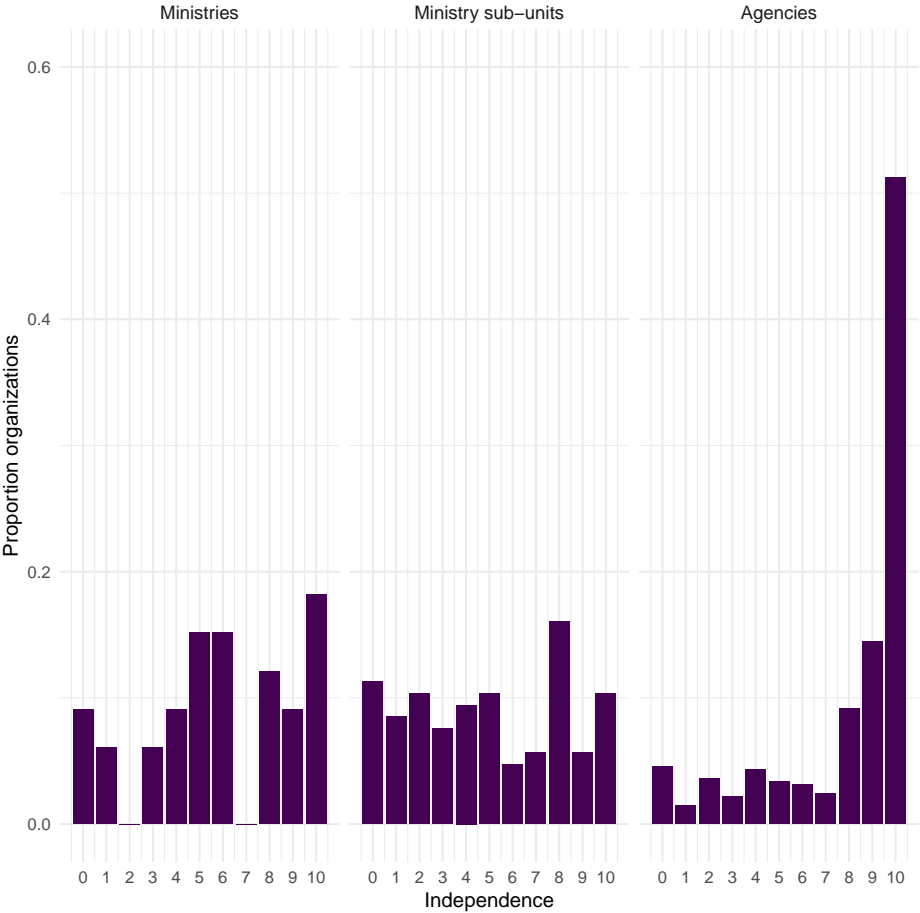
Within-country bureaucratic design varies across organizations and over time (Koop and Hanretty 2018). Yet existing measures of bureaucracy operationalize bureaucracy at the country level, aggregating over different agencies, ministries, and other bureaucratic organizations to arrive at a single score of bureaucratic design. Most often, these measures are based on expert surveys, masking temporal variation and also introducing bias (Fukuyama 2013). I operationalize bureaucratic structure as the count of distinct types of bureaucracies involved in trade policymaking at the country-year level. This includes all institutions with a formal mandate over the formulation, coordination, and implementation of trade, such as: executive ministries, regulatory agencies, committees (ministerial), advisory and consultative bodies, and sectoral governmental bodies. I therefore exclude public or semi-public bodies (e.g., civil society groups), private bodies (e.g., chambers of commerce), professional associations (e.g., industrial associations, unions).

Classifying bureaucracies is a challenging task that requires knowledge of bureaucratic systems across countries. Differences in naming conventions or statutory requirements across countries render classifying bureaucracy into the administrative forms presented in Table 4 equally challenging. For example, countries may use the general name of “agency” to refer to a number of organizations with variation in degree of independence or closeness to the central government. Alternatively, some countries refer to statutorily independent agencies as “commissions,” or even exhibit within-country variation in naming conventions for institutions that are statutorily similar.

from 16 countries: Norway, Ireland, Flanders, Italy, Australia, the Netherlands, Hong Kong, Austria, Germany, Portugal, Lithuania, Switzerland, Finland, Romania, and Sweden. The COBRA project uses a common questionnaire to survey senior managers of public sector organizations about their own institutions. I thank Professor Koen Verhoest for making this data available for my research.

²¹See Appendix A for details on the operationalization of the independence index

Figure 1: Histogram of Organizational Independence by Administrative Type



The x-axis shows independence, from 0—no independence—to 10—most independence. The y-axis shows the proportion of organizations within each organizational independence score. Each of the three panels represents an administrative type/bureaucratic category: ministries, sub-units of ministries, or independent agencies. Observations are normalized by the number of institutions within each administrative type, to account for differences in the number of surveyed institutions of each type. Total observations: 553 institutions.

I use three data sources to measure bureaucratic structure. The main sources are the World Trade Organization’s Trade Policy Reviews (TPRs).²² The Trade Policy Review Mechanism (TPRM) was introduced in 1994 in the Agreement Establishing the WTO (Marrakesh Agreement). Under this mechanism, the WTO’s Trade Policy Review Body periodically assesses the trade policies of all WTO member countries and their impact on the multilateral trading system. While reviews are cyclical, how often a country is reviewed depends on the size of its economy: the top four trading members are reviewed every two years, the next 16 every four years, and all other members every six years. The reviews cover a significant share of global trade, with reviews conducted up to 2011 covering as much as 89% of world trade (not including intra-EU trade), at all levels of development (Laird and Valdés 2012, p. 468).

However, the TPRs do not specify whether a bureaucracy is a ministry, independent agency, or a different organizational structure. Once I identify the specific institutions involved in trade, I use two additional sources to check the statutory status and categorize these institutions: trade related legislation mentioned in the TPRs, as well as websites, organizational histories, and historical governmental directories of the coded bureaucracies. For example, in the case of the European Union, I use the yearly European Union encyclopedia and directory (Europa Publications 1996-2008). In the case of the United States, I use the U.S. Trade Representative’s Trade Policy Agenda and Annual Report (United States 1995-2016). In the case of the People’s Republic of China, I use the Notices of the State Council on the Establishment of Organs of the State Council, which clearly indicate whether a bureaucracy has the status of ministry, agency, etc. (State Council 2003 [1998]).

Using the TPRs as a data source for coding institutional design offers the advantage of coverage, comparability, and reduced bias from individual country capacity. The TPR mechanism was introduced in the 1994 Marrakesh Agreement. Since each TPR reviews economic policymaking for the 5 years preceding the TPR of each country, the documents cover the period from 1990 to 2018. Moreover, all WTO members are periodically evaluated. Thus, the TPR data allows us to leverage cross-national variation for a large sample over time. In addition, reporting governments and governments under Secretariat evaluation are expected to follow the same TPR-issued guidelines when submitting their review. This common review standard allows meaningful comparison across documents. Moreover, the WTO Secretariat exclusively compiles secretariat policy-issued reviews. According to the WTO, “In preparing its report, the Secretariat seeks the cooperation of the Member, but

²²Available at https://www.wto.org/english/tratop_e/tpr_e/tpr_e.htm

has the sole responsibility for the facts presented and views expressed.”²³ The Secretariat assistance ameliorates concerns for capacity among reporting governments. In the case of self-reports by members under review, we might also worry about lack of transparency. The proactive role of Secretariat to elicit information mitigates the problem. Annex 3(v)(b) in the Marrakesh Agreement (1994), which covers the TPR mechanism, states that “the Secretariat should seek clarification from the Member or Members concerned of their trade policies and practices.”²⁴ TPRs usually indicate when the information was withheld or not available.

Descriptive analysis

The dataset includes 135 countries over the period 1995 – 2017, with observations for some country-years not being available. Three types of missingness are present in this data: 1) due to timing of reviews; 2) due to some countries joining the WTO later; and 3) due to some countries joining custom unions that lead to a supra-national trade policy. First, as certain countries are reviewed at an interval of 5 years, where a review was upcoming in more recent years but may not yet have been completed, such as 2018 or 2019, countries might have missingness for the years 2012 – 2017. Second, for those countries that entered the WTO fairly recently, such as China or Vietnam, I coded significantly fewer years, as no TPRs were available to easily determine whether institutional changes occurred prior to their joining the WTO. Third, the European Union (EU) is coded at the EU-level, where trade policy for EU-member countries is conducted. EU member countries are not coded separately, with the exception of countries that gained membership in subsequent enlargement waves, which are coded at the individual country level prior to accession. This leads to the appearance of missingness for post-accession years.

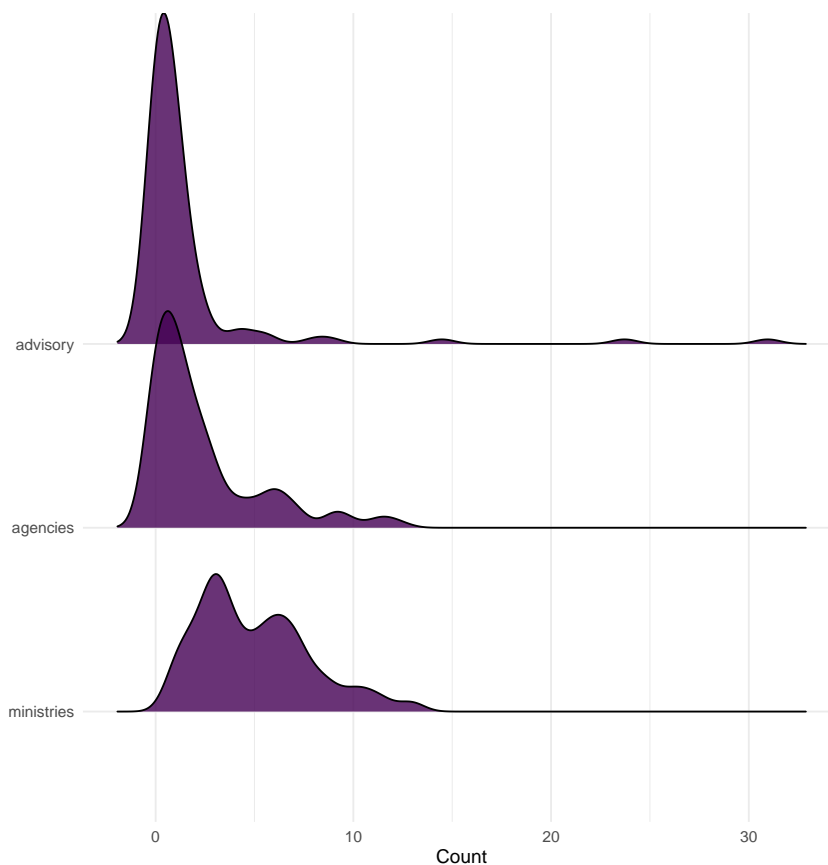
Substantial cross-country variation exists in how countries design their bureaucratic apparatus. Figure 2 shows descriptive statistics of the bureaucratic structure variables. The data is right-skewed for all variables except *number of ministries*. That is, most countries have fewer than 5 agencies considered key players in trade, and less than 2 advisory groups. Most of the countries in the sample have few agencies and few advisory groups. Indeed, many do not have any: 35% for agencies and 48% for advisory. We can see a wide range in the number of each institutional type. At the extremes, some countries do not have any agencies or advisory groups, while others have as many as 22 agencies and 37 advisory groups. The countries with the highest number of agencies in the sample are Bolivia and Malaysia,

²³See https://www.wto.org/english/tratop_e/tpr_e/tp_int_e.htm

²⁴See https://www.wto.org/english/tratop_e/tpr_e/annex3_e.htm

and the country with the highest number of advisory groups is the United States. This aligns with prior expectations: whereas agencies and advisory groups are newer forms of organization, ministries have been one of the traditional forms of organization, so it should be present in most if not all countries.

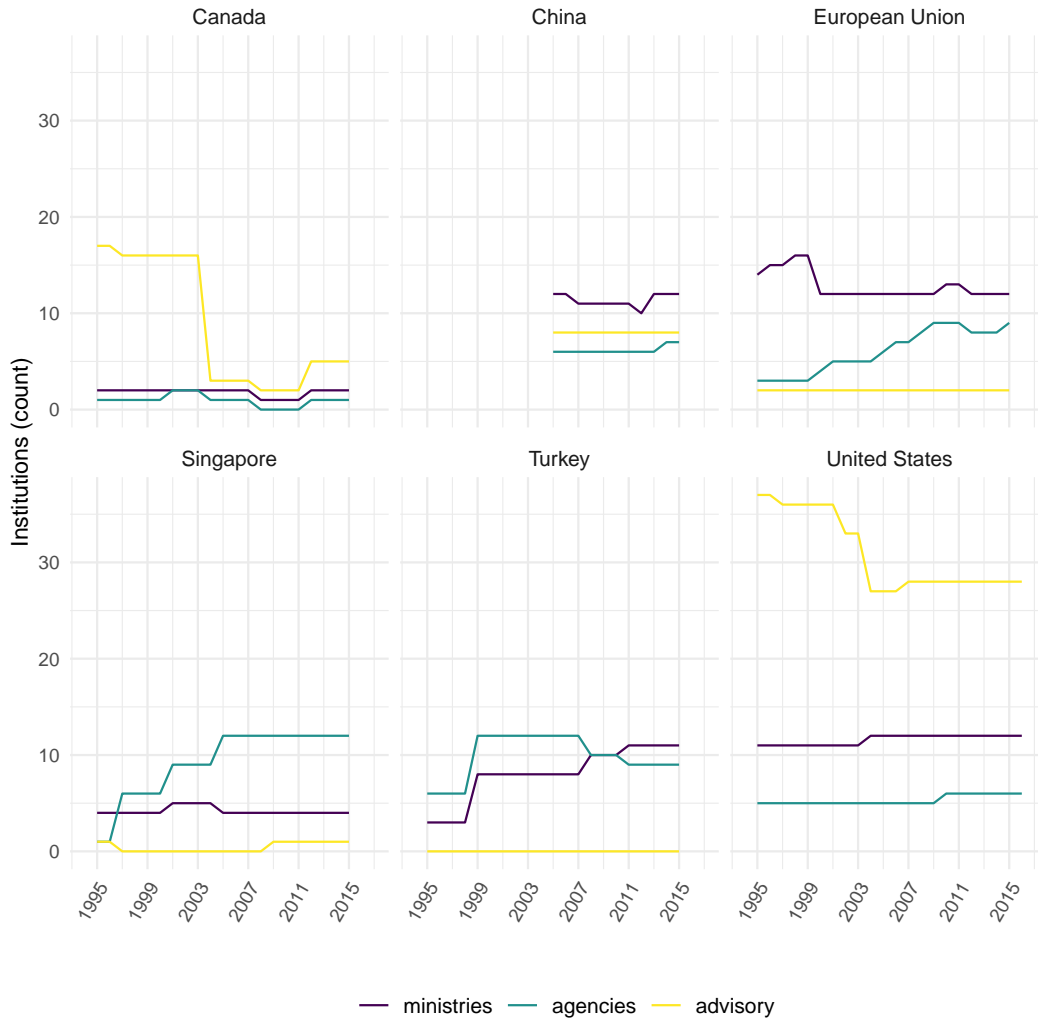
Figure 2: Distributions of Bureaucracy Variables



Patterns of within-country variation also reveal shifts in bureaucratic structure over time. Figure 3 shows time trends in bureaucratic structure for Canada, China, the European Union, Singapore, Turkey, and the United States. We can see rich variation both within and across countries. Dramatic shifts, such as in the case of Advisory Groups in Canada, or ministries and agencies in the case of Turkey, are relatively rare. While dramatic changes in consecutive years are rare, some countries undergo significant change. For example, we see an increase in agencies in Singapore from 1 in 1995 to 12 in 2005. Likewise, Turkey experiences an increase in the number of ministries over the period 1995 - 2012. However, this trend is not monotonical. Turkey's increase in the number of agencies until 2008, this was followed by a steady decrease in its number of agencies post-2008.

Bureaucratic structure varies within regime type and income level categories as well.

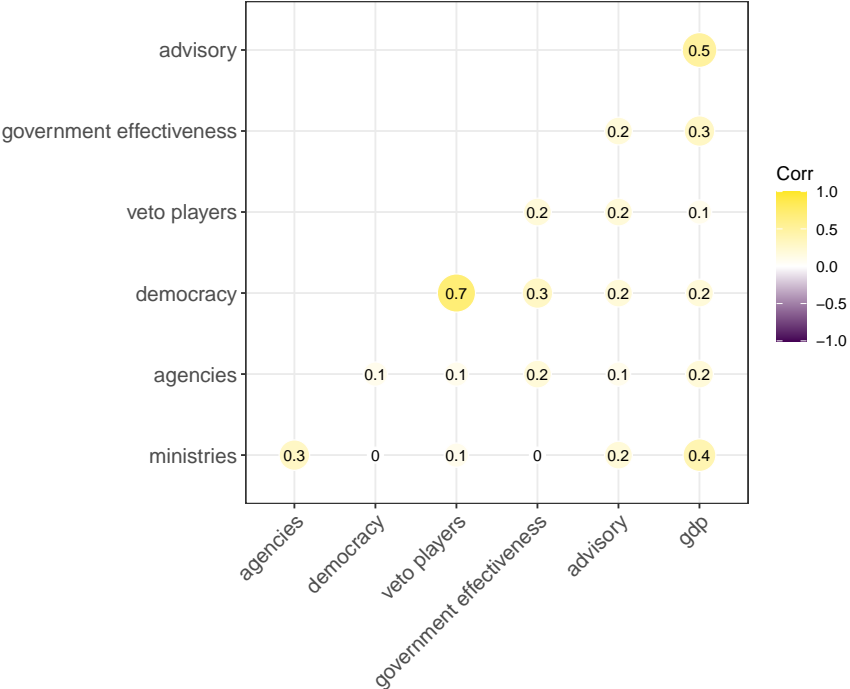
Figure 3: Trends in Bureaucratic Structure Over Time



Variation in the number of ministries, agencies, and advisory groups for selected countries over the period 1995-2015. The y-axis shows the total number of bureaucracies of each type. The x-axis shows the year of measurement.

These measures capture variation that is distinct and weakly correlated with other political institutions or economic variables conventionally used in IPE studies. Figure 4 shows the correlations among counts of agencies, ministries, and advisory groups and regime type, veto players, and GDP. Correlations between bureaucratic structure measures and the three potential confounders above are very low, with the exception of advisory groups and GDP, which have a moderate correlation of 0.5. Figure 11 in the appendix shows the distributions of each bureaucratic structure variable are fairly similar across income level and regime type. This descriptive evidence suggests an independent effect of bureaucracies.

Figure 4: Correlation Plot between Bureaucratic Structure and Confounders for Institutional Design



5 Empirical Analysis

To evaluate my theory that bureaucratic structures that make bureaucrats susceptible to interest group influence have an effect on trade policy, I propose focusing on the use of temporary trade barriers (TTBs). There are several advantages to using TTBs as an outcome:

they are comparable across countries and easily quantifiable; they are responsive to bureaucratic intervention; and they have a non-ambiguous (i.e. unidirectional) relationship to lobbying efforts. In addition, TTBs have substantial economic effects, accounting for “most of the discretionary border protection beyond WTO negotiated tariff rates” (Teh, Prusa and Budetta 2009, p. 166). Finally, using TTBs helps mitigate endogeneity and reverse causality concerns.

TTBs—antidumping, countervailing, and safeguards—are temporary restrictions on imports that governments use when domestic industry is injured or threatened with injury. While there is variation in the domestic laws regulating TTB procedures, with some having much more stringent rules than those required under the WTO, WTO member countries (which comprise the sample in this paper) abide by a set of common rules that codify application of TTBs by member countries: the WTO Anti-Dumping Agreement (ADA), the WTO Agreement on Subsidies and Countervailing Measures (ASCM), and the WTO Agreement on Safeguards (ASG). This feature of TTBs render them comparable across countries.

TTBs are a form of administered protection, so domestic bureaucrats have considerable discretion over their implementation. Consider the key implementation criteria for antidumping law: 1) whether dumping occurred and 2) whether domestic industry was injured in the process. While the GATT/WTO ADA does offer guidelines around these two criteria, the guidelines are sufficiently vague that in practice these two criteria are defined under a country’s domestic law. The process is primarily bureaucratic. Domestic industries who have been injured by dumped import must first file a petition with the bureaucrats in charge of dumping determination. The bureaucrats then determine whether they will initiate an investigation or not. The outcomes depends on bureaucratic definition and measurement of this criteria.²⁵ As a result, bureaucrats have a very high level of discretion in such determinations.

TTBs, and antidumping in particular, are a classic protectionist tool that mobilizes lobbying by those seeking protection. TTBs are particularly attractive to those seeking protection because they can be used to respond very fast to changes in the economic environment, due to their short administrative timelines (Blonigen and Prusa 2016). This allows us to sharpen the focus on industry demands for protection. In contrast, other trade instruments, which potentially offer some liberalization and some protection, would make identifying the effect of industry influence less straightforward without data on the specific demands industry made.

Interest groups also have an incentive to use TTBs because of their substantial economic

²⁵See Blonigen and Prusa (2016) for a comprehensive discussion of the antidumping process.

effects. Antidumping duties are much larger than the average MFN tariff, providing substantial protection. Studies find substantively large estimates of trade effects as well. For example, in the case of the United States, [Carter and Gunning-Trant \(2010\)](#) estimate AD orders lead to a decrease in trade value of 40%, and in trade volume of 60% for countries subject to the order. Effects might extend to non-subject countries as well. [Prusa \(2001\)](#) estimates a 60% to 80% decrease in trade value following antidumping orders.²⁶ Effects are not limited to cases in which dumping and injury are determined. Mere initiation of investigations have economic consequences ([Davis and Pelc 2017](#); [Staiger and Wolak 1994](#); [Blonigen and Prusa 2003](#)).

Lastly, I select TTBs as the outcome of this study as a trade policy that can ameliorate concerns regarding endogeneity and reverse causality. One concern in this analysis is that of endogeneity: countries might reform their bureaucracy when bureaucrats are not sufficiently responsive to the trade policy principals desire to implement. Yet the period from petition filing to duty application in the case of TTBs is very short—as short as 30 days in some cases. In contrast, administrative reforms tend to be a slow and infrequent process, as they require consultation and consensus among many actors to execute.

To illustrate, consider two cases of proposed bureaucratic reform, in Canada and Japan. Canadian Prime Minister Paul Martin announced in 2003 the restructuring of the Department of Foreign Affairs and International Trade into two separate departments. Despite the fact that the Martin administration immediately issued a cabinet order to advance this agenda, the required legislation to proceed with the restructuring never passed. Even where political consensus towards bureaucratic reorganization is achieved, as was the case with the 1997 Hashimoto reforms in Japan, it may take years to put this political will in practice. For the Japanese case, actual bureaucratic restructuring did not happen until 2001.

Thus, using TTBs mitigates concerns that principals might change bureaucratic structure to shift this particular type of trade policy in the short run. I take two additional steps to deal with endogeneity and reverse causality concerns. First, in the estimations, I control for confounding variables such as regime type, veto players, electoral system, and government effectiveness. Second, I use a matching with weighted difference-in-differences design that allows estimating the average treatment effect on the treated on the time-series cross section observational data employed in this paper.

Data for TTBs comes from the 2016 Temporary Trade Barriers Database ([Bown 2010](#)), considered the most authoritative source for this type of data ([Davis and Pelc 2017](#)). I

²⁶Ibid.

focus the analysis on TTB initiations, defined as new investigations and imposition of new barriers. Following results in [Staiger and Wolak \(1994\)](#), which demonstrate that initiating an investigation is associated with trade destroying effects, scholars have used the number of initiations as a measure of protectionism.

Estimation strategy

Zero Inflated Negative Binomial

Only a small proportion of countries are heavy and consistent users of TTBs, so the dependent variable features overdispersion and excess zeroes—77% of the observations in this analysis have 0 TTB initiations. Two data generating processes could lead to an observation with 0 TTBs: a country may never use TTBs due to structural reasons or a preference for other policy tools; or a frequent TTB user may choose not to use TTBs in a particular year. For example, both Japan and the United States have years with 0 TTB initiations. But observing a 0 for Japan, a country that has implemented only a handful of TTBs over the past decades, is different from observing a 0 for the United States, an extensive TTB user. Theoretically, these two classes of 0 may arise from different processes, with the former being of a structural nature (i.e. these observations could only be 0). To model this process, I use a zero-inflated negative binomial model (ZINB).

Controls

I control for a series of macroeconomic variables that capture demand for protection from the industry side, because we can expect TTB usage to be conditional on demand for protection.

Annual GDP Growth (%). We know countries' propensity to initiate TTB is a function of macroeconomic factors such as changes in GDP and GDP per capita ([Knetter and Prusa 2003](#); [Blonigen and Prusa 2016](#)). Demand for protection increases when countries experience weak domestic GDP growth, so I control for it as a potential macroeconomic shock leading to increases in the demand for protection. The data comes from the World Bank's World Development Indicators Dataset (WDI).²⁷

Exchange Rate. Another macroeconomic shock that can lead to an increase in the demand for protection is an appreciation in the domestic currency. When the currency appreciates, imports become cheaper, leading to more import competition. To capture this, I use the Real Effective Exchange Rate, which measures “the changes in the exchange rates

²⁷See <https://datacatalog.worldbank.org/dataset/world-development-indicators>

of a country vis-à-vis its trading partners” (OECD 2016, p. 94). Another macroeconomic shock that follows this logic is **Annual Import Growth**. Data for both variables also comes from the WDI. Some studies use the **MFN Applied Rate** to account for a protectionist policy that could potentially substitute for TTBs. I lag this variable for the specifications that use this control. I use data from the WDI on the indicator **MFN Tariff Rate Weighted Mean, all products (%)**.

Next, I control for domestic institutional variables that might moderate the explanatory variables. While we do not necessarily expect **Regime Type** to influence countries’ filing of trade remedies, we might expect bureaucracies in democracies and authoritarian regimes to function differently. Data for regime type comes from the Polity Project (Jagers and Gurr 1995). Likewise, a large literature on **Veto Players** argues both institutional design and trade policy are contingent on the number of veto players. Data for veto players comes from the Political Constraints Dataset (Henisz 2000). I also control for **Income Group**, to capture how bureaucracies in higher income countries might benefit from higher budgets or general higher administrative capacity. I use data and income group classifications from the World Bank.

I also control for the the lagged outcome, **Lag TTB Initiations**, to account for the fact that a new investigation would not arise if a TTB is already in place for a particular product.

Lastly, I control for variables that might confound bureaucratic performance, and that generally fall under the category of administrative capacity, such as bureaucratic quality or rule of law. I use the World Bank’s Worldwide Governance Indicators’ **Government Effectiveness**, a variable that captures “perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies” (Kaufmann, Kraay and Mastruzzi 2011, p. 223).

6 Results

I test the hypotheses that a higher number of ministries or advisory groups facilitate special interests input into policy, leading to more protectionism, while a higher number of agencies prevents special interest input into policy, leading to less protectionism. If these hypotheses are correct, we should see a *positive* association between **agencies** and the outcome **never using TTB initiations**; and a *negative* association between **ministries** and **advisory groups** and the outcome **never using TTB initiations** in the zero-inflation component

of the ZINB. This is because the zero-inflation component of the ZINB models the probability of an event not occurring, as described above. If the hypotheses are correct, we should also see a *negative* association between **agencies** and the outcome **TTB Initiations**; and a *positive* association between **ministries** and **advisory groups** and the outcome **TTB Initiations** in the count component of the ZINB.

Tables 2 and 3 present results for the Zero-Inflation Negative Binomial Models. Table 2—the zero inflated component of the model—estimates the *zero counts*, that is, the probability of never using TTB initiations. We can see that there is a statistically significant effect in models 1, 2, and 3. An increase in agencies is associated with a positive effect on the probability of never using TTB initiations; an increase in ministries and in advisory groups is associated with a negative effect on the probability of never using TTB initiations. This supports all three hypotheses regarding the effects of bureaucratic structure on protectionism. This effect dissipates in the case of **agencies** once we control for all bureaucratic types in the same model, as reported in model 4.

Table 3—the count component of the model—estimates how many realizations of the outcome occur among those with a chance of initiating TTBs. We observe a statistically significant effect in models 2 and 3, which estimate the effect of ministries and advisory groups on the probability of TTB initiations: an increase in ministries and advisory groups is associated with an increase in the probability of TTB initiations. We do not see a similar effect on agencies. This lends support for Hypotheses 1 and 3, that is, that a higher number of ministries and a higher number of advisory groups lead to more protectionism.

Table 4 in the Appendix shows the country and year coverage for the observations that entered the regressions, for the most restricted sample, with all controls included.

Substantive Effects

Figure 5 shows the predicted number of AD initiations by type of bureaucracy and World Bank upper middle income classification. The median TTB user country falls in the upper middle income classification. All other control variables are kept at their mean. The predicted probability of AD initiations increases with the number of ministries and advisory groups, and decreases with the number of agencies. However, note that while the x-axis varies from 0 to the maximum number of institutions in the sample, the plausible range of variation on those variables is much smaller. As shown in Figure 2, in the case of agencies and advisory groups, 0 – 5 covers most of the observed data. Interpreting the substantive effect of going from 0 to 1 might be thus more appropriate.

Table 2: Zero-inflation Component, Zero Inflation Model Results

	<i>Dependent variable: Probability of No Initiations</i>								
	Temporary Trade Barriers				Antidumping				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Ministries	-0.308*** (0.087)				-0.188** (0.085)	-0.302*** (0.082)			-0.168* (0.087)
Advisory		-0.489*** (0.127)			-0.401*** (0.140)		-0.459*** (0.136)		-0.374*** (0.157)
Agencies			0.008 (0.047)	0.293*** (0.085)	0.043 (0.038)			0.018 (0.053)	0.024 (0.040)
Regime Type	-0.154*** (0.052)	-0.049 (0.038)	-0.083 (0.052)	-0.109*** (0.039)	-0.077* (0.044)	-0.307*** (0.063)	-0.150*** (0.040)	-0.283*** (0.059)	-0.184*** (0.051)
MFN Rate Weighted (lag)	-0.135** (0.056)	0.024 (0.049)	-0.144*** (0.054)	-0.016 (0.043)	0.006 (0.055)	-0.021 (0.039)	0.052 (0.037)	0.001 (0.054)	0.049 (0.046)
Veto Players	-1.785 (1.207)	-1.542* (0.896)	-1.943 (1.195)		-1.118 (0.899)	-1.383 (1.109)	-1.344 (0.885)		-1.126 (0.949)
Government Effectiveness	-1.922*** (0.427)	-1.415*** (0.392)	-2.011*** (0.473)	-1.573*** (0.390)	-1.546*** (0.414)	-1.503*** (0.447)	-1.327*** (0.374)	-1.274** (0.510)	-1.338*** (0.395)
Observations	726	726	726	726	726	726	726	726	726

Note:

*p<0.1; **p<0.05; ***p<0.01

The Zero-inflation component predicts the probability of never using trade remedies. We regress a binary latent variable Z_i that takes the value 1 if countries never use TTBs, and 0 otherwise on the counts of **agencies**; **ministries**; **advisory groups**, as well as controls for macroeconomic variables, regime type, veto players, and government effectiveness.

Table 3: Count Component, Zero Inflation Model Results

	<i>Dependent variable: Count initiations</i>							
	Temporary Trade Barriers				Antidumping			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ministries	0.038* (0.019)			0.023 (0.031)	0.051** (0.021)			0.040 (0.033)
Advisory		0.024*** (0.009)		0.021* (0.011)		0.026*** (0.010)		0.022* (0.012)
Agencies			0.025 (0.024)	0.010 (0.024)			0.023 (0.027)	-0.004 (0.027)
Import Growth (lag)	0.016* (0.008)	0.014* (0.008)	0.017** (0.008)	0.014* (0.008)	0.015 (0.009)	0.014 (0.009)	0.013 (0.010)	0.014 (0.009)
Regime Type	0.022 (0.027)	0.003 (0.028)	0.026 (0.031)	0.020 (0.028)	-0.073* (0.038)	-0.080** (0.035)	-0.093* (0.048)	-0.064* (0.038)
Veto Players	-0.233 (0.451)	0.010 (0.440)	0.020 (0.482)	-0.036 (0.437)	-0.309 (0.485)	-0.023 (0.468)		-0.191 (0.476)
MFN Rate Weighted (lag)	-0.042** (0.019)	-0.027 (0.023)	-0.041** (0.019)	-0.023 (0.025)	0.032 (0.025)	0.020 (0.023)	0.041 (0.032)	0.028 (0.027)
Observations	726	726	726	726	726	726	726	726

Note: *p<0.1; **p<0.05; ***p<0.01

The Count component models how many realizations of the outcome occur among those with a chance of using TTBs. We regress TTBs, a count variable that takes the value 0 if countries do not use TTBs in a particular year, and positive values otherwise on the counts of **agencies**; **ministries**; **advisory groups**, as well as controls for macroeconomic variables, regime type, veto players, and government effectiveness.

We can substantively interpret the effect of a first difference of going from 0 to 1 by exponentiating the coefficients from the ZINB models. For model 5, which includes all bureaucratic variables in the same regression, the zero inflation component models show the baseline odds of not using TTBs increases by one unit increase in agencies by 1.04; decreases by one unit increase in ministries by 1.2; and decreases by one unit increase in advisory groups by 1.49. The count component models show us the baseline number of TTB initiations among those who have a positive probability of using TTBs is 0.44 for the ministry specification (model 1) and 1 for the advisory groups specification (model 2). A unit increase in ministries increases the odds of using TTBs by 1.04 times, while a unit increase in advisory groups increases it by 1.02 times.

The effects in the count component are more pronounced in the case of AD measures. The baseline number of AD initiations among those who have a positive probability of using AD is 1.69 for the ministries specification (model 6) and 2.26 for the advisory groups specification (model 7). A unit increase in ministries increases the odds of using AD initiations by 1.05 times, while a unit increase in advisory groups increases it by 1.02 times.

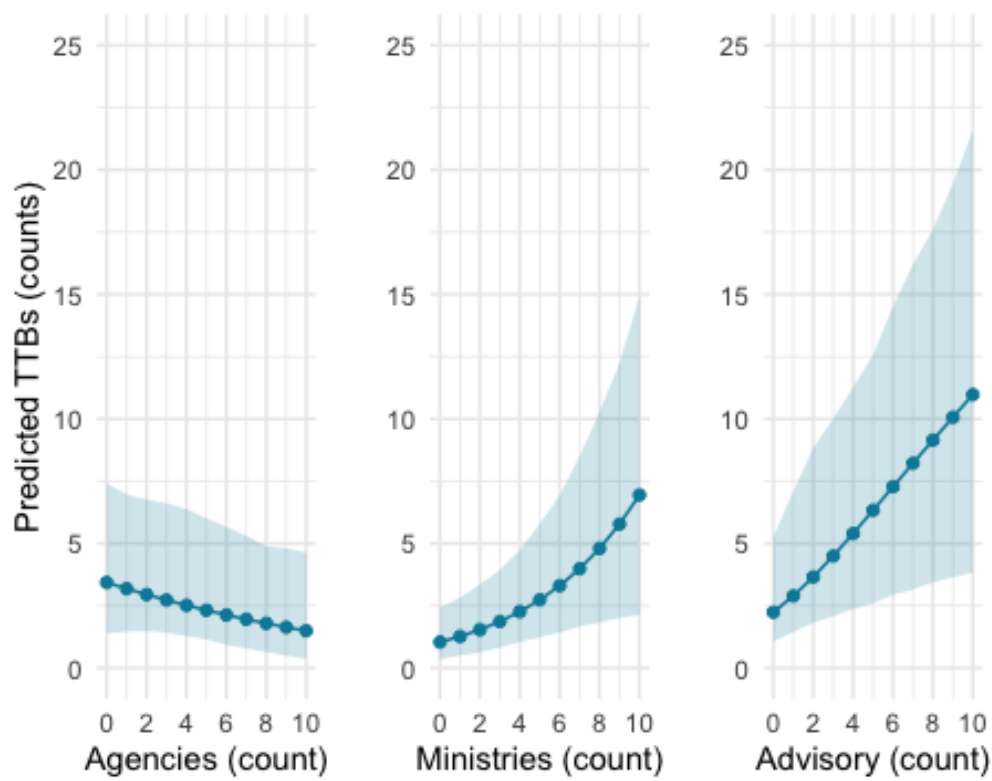
While these are not necessarily mathematically substantively large estimates—a unit increase in advisory groups would lead to about 1 more TTBs (and 2.3 more AD)—in practice both affected governments and industries consider the trade distortions associated with even one TTB serious enough to warrant expending considerable resources to remove them. To put these numbers in context, consider India, the top user of AD measures during the period 1995-2013, applied a total of 519 AD measures during this period, for an average of 28 per year. Brazil, a top 5 user of AD measures, applied 165 AD measures during this period, for an average of about 9 AD measures per year ([Blonigen and Prusa 2016](#), p. 119).

7 Robustness to Alternative Estimation Strategies

ZINB allows us to model zeroes that arise from the two different data generating processes and analyze cross-country variation. However, it cannot robustly identify the effect of within-country variation in bureaucratic structure. A popular method to analyze within-country variation in a time series cross-section dataset is fixed effects regression. Linear fixed effects regression models are used extensively in the social sciences to model panel and longitudinal data ([Imai and Kim 2019](#); [Angrist and Pischke 2008](#)), but these methods are arguably not appropriate for non-linear models such as the zero-inflated negative binomial.

To estimate the effect of within-country variation in bureaucratic structure, I use two ad-

Figure 5: Predicted AD initiations by Type of Bureaucracy, Upper Middle Income Countries



The dependent variable is AD initiations (counts). I use estimates from the count component of the ZINB models to construct predictive probabilities. All controls are kept at their in-sample mean. 90% Confidence Intervals were constructed with simple block bootstrapping, using 1000 iterations. I bootstrap for uncertainty to account for clustered standard errors.

ditional methods: ordinary least squares with country and year fixed effects, and a matching with weighted difference-in-differences design. Given the linear nature of the OLS models employed in this section, for these models I replace the outcome variable number of TTBs with a continuous measure of TTBs activity: trade-weighted TTB stock. This measure represents the imports subject to any TTB in effect in a particular country-year, where each product line (at the HS-6 digit product level) is weighted by the amount of trade in that product. This measure also takes into account the size of the duty associated with the TTB, as described in [Bown \(2011\)](#). Using these additional methods and outcomes allows us to test the robustness of our results to alternative specifications.

7.1 Two-way Fixed Effects Ordinary Least Squares

The OLS specifications use the same range of independent and time-varying control variables in the count component of the ZINB model. All economic control variables are lagged. In contrast to the ZINB model, the OLS models include country and year fixed effects. Formally, the OLS estimation strategy takes the following form:

$$Stock_{i,t} = \beta_1 Ministries_{i,t} + \beta_2 Agencies_{i,t} + \beta_3 Advisory_{i,t} + X'_{i,t-1}\theta + \alpha_i + \delta_t + \epsilon_{i,t}, \quad (1)$$

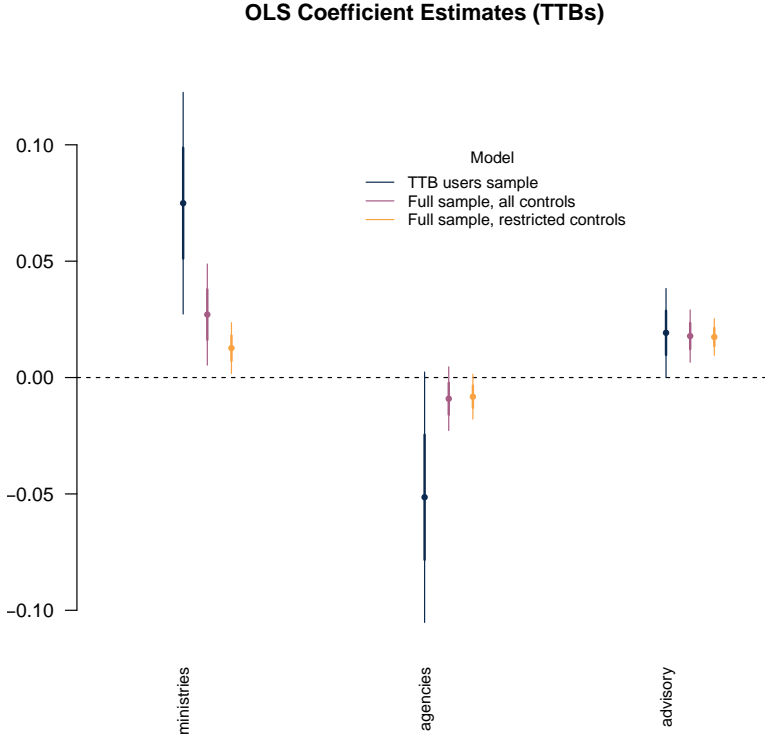
where the dependent variable is TTB trade-weighted stock.²⁸ X represents time varying controls, and α_i and δ_t country and year fixed effects. I run three models. Model 1 includes a sample of only those countries that are considered TTB users (this includes any countries that have used at least one TTB in the past), using all control variables in the ZINB count specification. Model 2 includes all countries in the sample, as well as the full set of control variables. For those countries that have never used TTBs, I code the outcome variables TTB and AD trade-weighted stock as zero. Model 3 includes all countries in the sample, but a restricted set of control variables. Many of the countries in the sample have missingness on some of the control variables, driving the number of observations included in the analysis down. Model 3 excludes the three control variables with most missingness: exchange rate, veto players, and government effectiveness.

Figure 6 presents results for the OLS analysis. We can see that the direction of the effect provides support for the hypotheses: ministries and advisory groups have a positive effect, while agencies have a negative effect on the trade weighted TTB stock. Unlike the

²⁸In additional analysis in the appendix I show results for the outcome AD-only as well.

ZINB specification, which compares across cross-national variation, the two-way fixed effects OLS models compare within-country variation, so we can interpret this as suggestive evidence that, where changes in bureaucratic structure occurred, an increase in the number of advisory groups and ministries led to an increase in TTB usage. In contrast, an increase in the number of agencies led to a decrease in TTB usage. Substantively, the effect is relatively small: An increase in ministries by 1 unit is associated with a 0.075 percentage points increase in TTB stock. However, these effects are substantial, given the average annual import shares subject to TTBs over the period 1997 – 2007 for high income economies (e.g., 1.10 for Canada, 0.38 for South Korea, or 0.18 for Australia). In fact, even the United States, which is one of the more prominent users of TTBs, had an average annual import share subject to TTBs during this period of 4.58 (Bown 2011, p. 1966).

Figure 6: Effect of Bureaucratic Types on TTBs Over Time



OLS coefficient estimates of bureaucratic types (ministries, agencies, and advisory groups) on trade-weighted stock of TTBs. All models include country-year fixed effects. 95% Confidence Intervals, with 90% Confidence Intervals denoted in bold. Sample sizes are as follows: 310 (TTB users sample), 614 (full sample, all controls) and 1078 (full sample, restricted controls).

7.2 Matching Differences-in-Differences

This design allows us to estimate the average treatment effect on the treated of a change in bureaucratic structure on the incidence of TTBs. Matching methods allow estimating causal effects with observational data, by matching treated observations with control observations similar on observable characteristics. Given the time series cross-national nature of the data, units receive treatment at different times and one unit may be treated multiple times. I follow the matching methodology proposed by Imai, Kim and Wang (N.d.), which is a nonparametric generalization of the difference-in-differences estimator that does not rely on the linearity assumption in the more commonly used regression with two-way fixed effects.²⁹ For each treated observation, the method first selects a set of control observations with identical treatment history in the period preceding treatment. The resulting matched set is further refined until the covariate histories and outcomes of the matched control observations become similar to those of the treated observations. The next step adjusts for possible unobserved time trends via a difference-in-differences estimator.

Specifically, I first create a treatment condition corresponding to an increase in the number of agencies, such that

$$D_{it} = \begin{cases} 1, & \text{if number agencies **increase** at time } t \\ 0, & \text{otherwise} \end{cases} \quad (2)$$

For each treated observation, I then select all control observations with no increase in the number of agencies for a period of 3 years prior to the treated observation experiencing an increase in the number of agencies. I then select the 5 control countries that best minimize the Mahalanobis distance between the treated and matched control observations. I further include the total number of agencies (lagged), ministries, and advisory groups as matching covariates, as well as the economic fundamentals of each country. I include the counts of agencies to account for the fact that, for example, going from no agency to one agency is a very different scenario than going from ten agencies to eleven agencies, or from no agency to eleven agencies. The treatment variable **increase in agencies** is an indicator variable that only captures if an increase occurs, therefore losing important information about the degree of change that occurred. Including the number of agencies captures this information. I lag this variable so as not to capture the treatment itself. I control for the other bureaucratic types (ministries and advisory groups) as well.

I then apply a difference-in-difference estimator to calculate the average treatment effect

²⁹See the description at <https://github.com/insongkim/PanelMatch>

on the treated (ATT) for the increase in number of agencies. I repeat the procedure to estimate the ATT for a total of 6 treatments: a decrease in the number of agencies; an increase in the number of advisory groups; a decrease in the number of advisory groups; an increase in the number of ministries; and a decrease in the number of ministries. Figures 12, 13, and 14 in the Appendix show the distributions of treatment across units and over time for each of the 6 treatments.

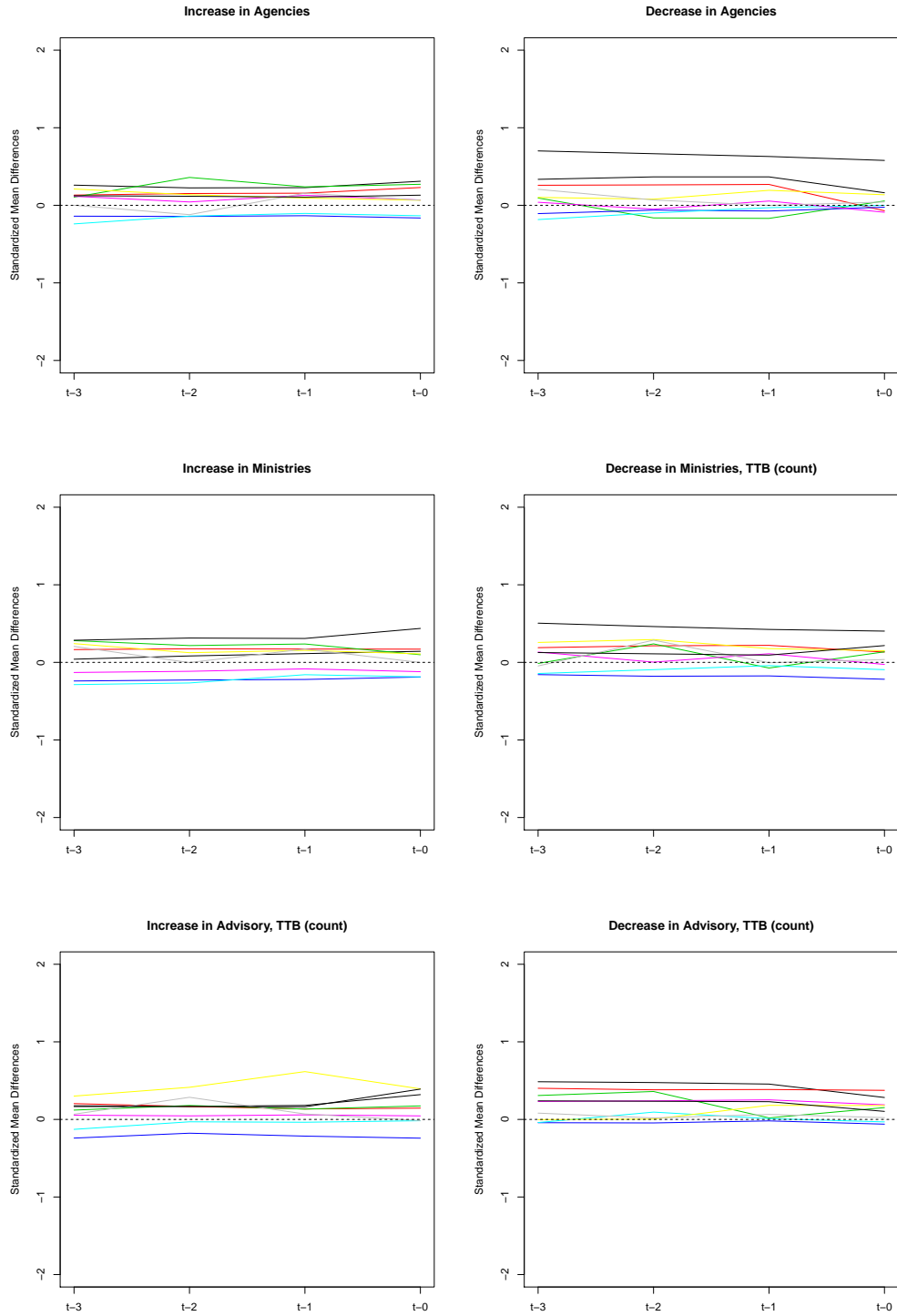
Figures 7 and 8 show the covariate balance and frequency distribution of the number of matched control units for each specification. We can see that a majority of treated observations received a large number of matched control units, and that covariates achieved proper balance. In addition, there are very few treated observations for which we could not find matched control units. This suggests increased validity of the analysis.³⁰ Figure 9 shows the results of the matching analysis. It presents estimated average treatment on the treated effect (ATT) for six treatment conditions: increase (decrease) in agencies; increase (decrease) in advisory groups; and increase (decrease) in ministries. I show the ATT for up to three years after a change in institutional structure to determine whether the effect persists over time. We can see the treatment **increase in agencies** has a negative effect on expected TTBs, while **decrease in agencies** has a positive effect on expected TTBs. We see opposite effects on the advisory groups treatment, as an **increase in advisory groups** leads to an increase in expected TTBs, while a **decrease in advisory groups** leads to a decrease in expected TTBs. Substantively an increase in agencies leads to about 2 fewer expected TTBs, which an increase in advisory groups leads to about 2 more expected TTBs. These results align with those from the ZINB and OLS specifications, providing further support for the hypotheses that an increase in agencies has a negative effect on protectionism, while an increase in advisory groups has a positive effect on protectionism. We do not see a similar effect for either an increase or a decrease in ministries. This could be because ministries, as the main bureaucratic organizational form across countries, tend to exhibit more stickiness over time. Completely eliminating an existing ministry or creating a new ministry is much more rare than creating a new advisory group or agency.

8 Conclusion

Bureaucracies are central in every stage of the foreign economic policy cycle. Policymakers worry about vesting too much power in bureaucracies because bureaucrats are shielded from

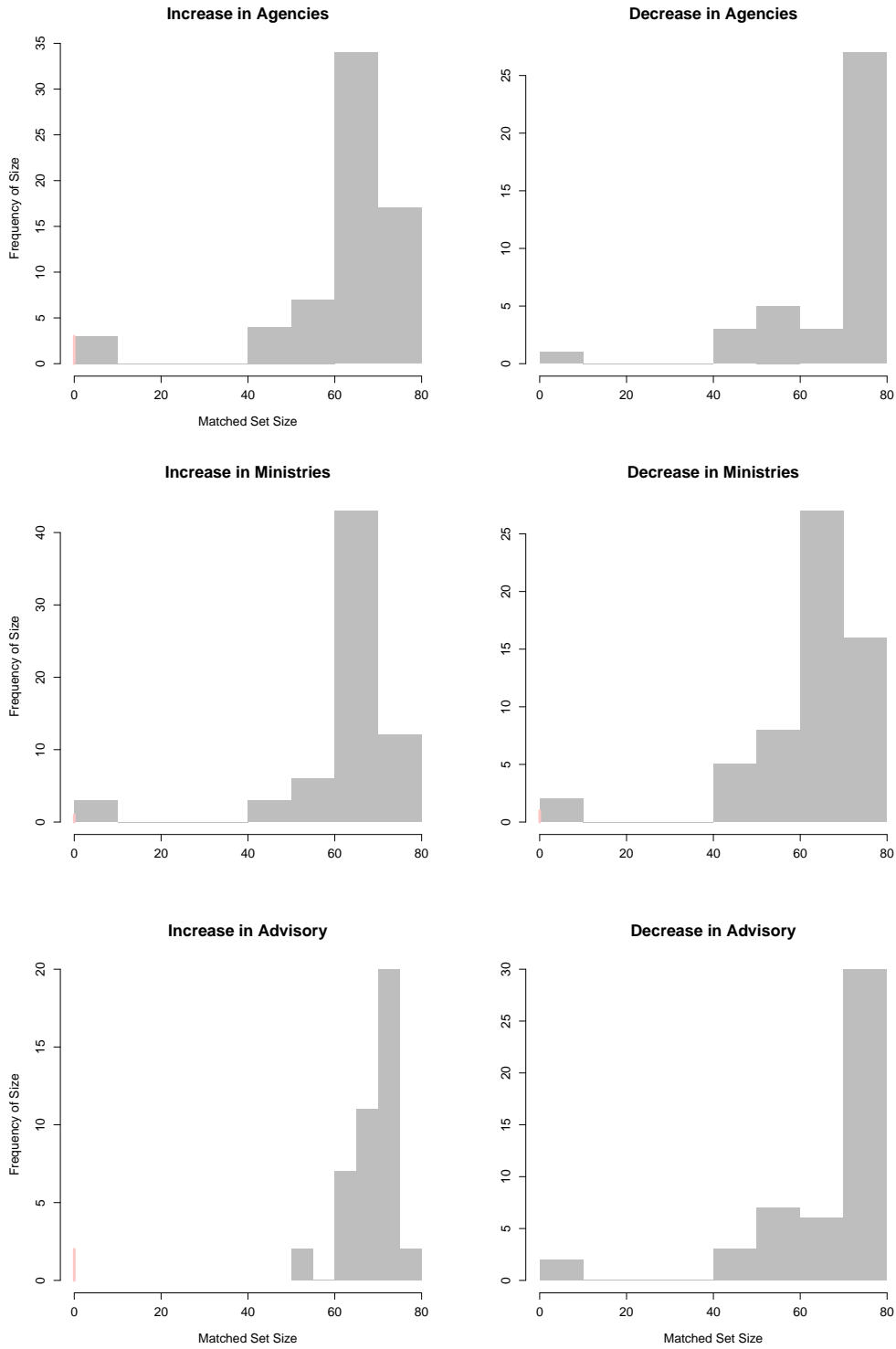
³⁰All analysis has been implemented in R with the package `PanelMatch` (Imai, Kim and Wang (N.d.), available at <https://github.com/insongkim/PanelMatch>)

Figure 7: Covariate Balance Plots with Mahalanobis Distance Matching



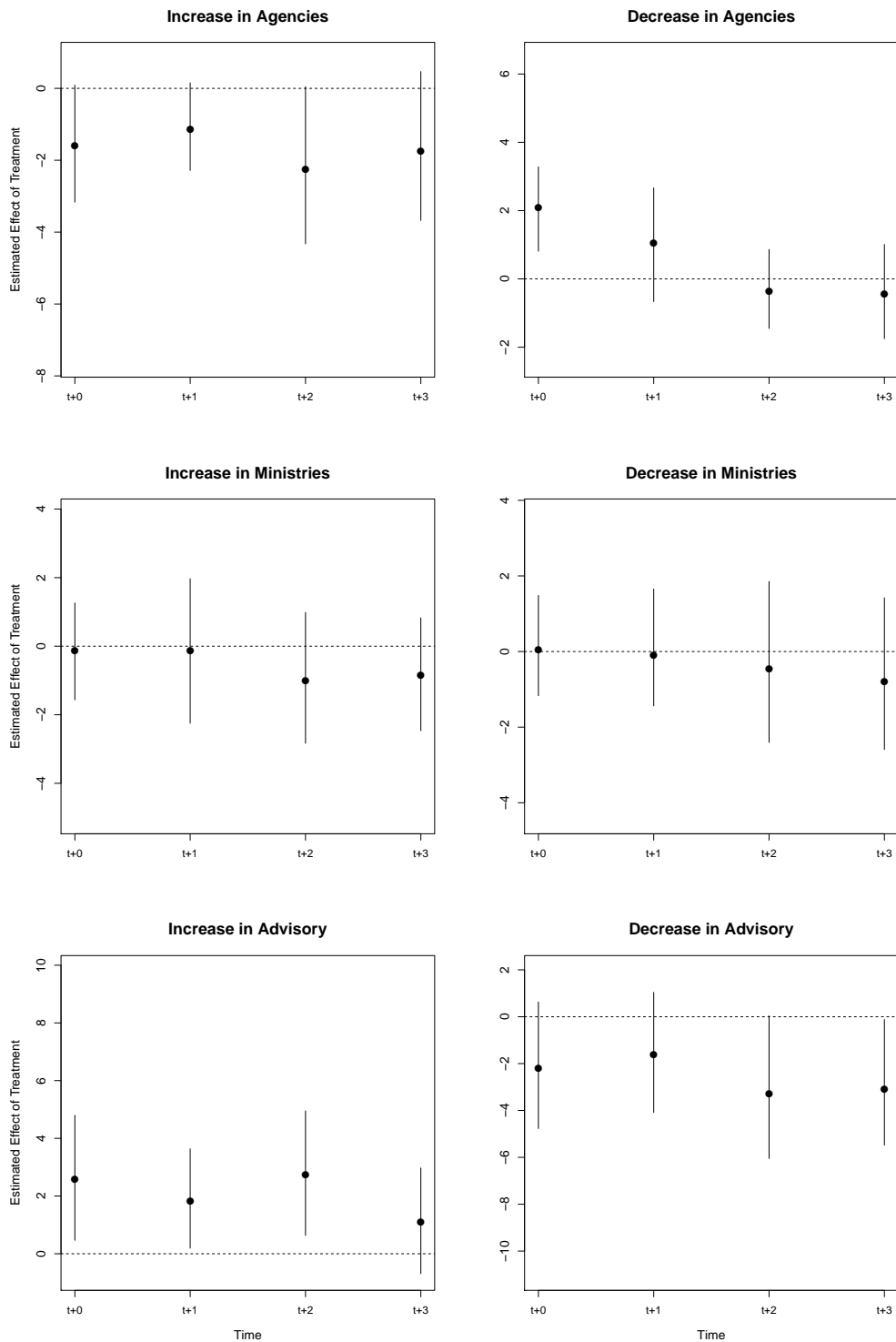
The graphs show covariate balance after matching on pre-treatment covariates for each of the 6 treatment conditions: increase (decrease) in agencies; increase (decrease) in ministries; increase (decrease) in advisory groups. Plots show the standardized mean differences between covariates in the treatment and control groups. Each line represents a control variable.

Figure 8: Frequency Distribution of the Number of Matched Control Units



The gray bars show the number of matched control units with similar treatment history as a treated observation for three years prior to the year of treatment. The red lines at 0 indicate the number of treated observations for which the matched set size is zero. The figure shows frequency distributions for 6 treatments: increase (decrease) in agencies; increase (decrease) in ministries; increase (decrease) in advisory groups.

Figure 9: Estimated ATT Effect of Bureaucratic Change on TTB Initiations



The dependent variable is TTB initiations (count). The 6 treatment conditions—increase (decrease) in agencies; increase (decrease) in ministries; increase (decrease) in advisory groups—are indicator variables that take the value 1 if an increase (decrease) in the number of agencies, ministries, or advisory groups occurred in a particular country-year. The x-axis shows the treatment effect up to 3 years after a country experienced institutional changes. Treated observations are matched using their outcome histories for 3 years prior to bureaucratic changes. Matched sets are further refined using the full range of control variables, including controls for the number of agencies, ministries, and advisory groups. The bureaucratic variables corresponding to the treatment (e.g., agencies for the treatment increase (decrease) in agencies) are lagged. 95% Confidence Intervals are constructed with bootstrapping.

democratic accountability; nevertheless, most governments allow bureaucrats to play a large role in designing, implementing, and regulating policy. Interest groups and politicians thus try to shape policy by controlling the bureaucrats who implement it. Such control is often imperfect, and conditional on the type of bureaucracy in place. Yet we do not know much about how different bureaucratic arrangements affect trade policy outcomes. Bureaucracies tend to be black boxed in existing scholarship on trade policy despite evidence that they are crucial in other policy areas, such as monetary policy or security policy.

If bureaucrats are central to the conduct of trade policy, why has existing research failed to study their impact? Existing research in IPE assumes that all bureaucracies are equally susceptible to this pressure from interest groups and politicians. If bureaucrats were fully responsive to the demands of their principals, policy would simply reflect the desires of interest groups and politicians. In contrast, my work demonstrates that some structures of bureaucracy are more permeable than others to external influence in ways that are consequential for policy outcomes.

In addition, the study of bureaucratic impact on foreign economic policy has been hobbled by the lack of data on how bureaucracies vary across different administrative traditions and over time. Comparing bureaucracies across countries is a challenging task since bureaucracies are complex organizations with differences in many aspects of their design. This paper provides a measurement strategy that allows cross-national examination of the role of bureaucracies in trade. I gather original data that quantifies bureaucratic structure for a large sample of countries and years. Using this unique dataset, I investigate how different bureaucratic structures aggregate competing demands into policy. I find that bureaucracies with apolitical expertise are less protectionist than those that engage active industry participation. This provides evidence that bureaucracies shape trade policy.

As we have seen in the theoretical discussion as well as descriptive analysis of bureaucratic structure, on average there is meaningful variation between bureaucratic types—ministries, agencies, or advisory groups—with respect to their underlying characteristics/design features. Scholars interested in studying the effect of bureaucracy on policy can further use the dataset introduced in this paper to identify the specific bureaucracies involved in trade policy by issue area.

Since, as this paper has argued, bureaucracies and their structure are consequential for the design and conduct of trade policy, further understanding these institutions is central to understanding trade policy creation and variation in trade policy across countries. In studying how stakeholders interact to create trade policy, the more recent IPE literature

has focused on either firm-based or public opinion explanations. We now know much more about interest groups preferences and their lobbying activity. However, firms and other special interests do not directly make policy; the road to policy influence runs through the bureaucracy. We therefore need to understand how decision-makers integrate these demands into a coherent policy framework.

From a policy perspective, answering this question would contribute valuable understanding of the extent to which improving trade policy outcomes is a function of reforming bureaucracies rather than creating better trade agreements. The need to reform the bureaucracy has been front and center in political discourse around the world for many years now. But the benefits of different restructuring proposals remain unclear if we do not understand the mechanisms under which bureaucracies shape trade policy.

Appendix

A Independence Index Operationalization

The index of independence used for Figure 1 is an additive measure that aggregates responses to strategic and operational management autonomy items from the COBRA database into ten indicator variables that take the value 1 for a ‘yes’ answer and 0 for a ‘no’ answer.³¹ Managerial autonomy refers to “the choice and use of financial, human and other resources” (COBRA 2010, p. 23, available online). The survey questions distinguish between strategic and operational autonomy. Strategic autonomy refers to autonomy over general, organization-level rules over resource usage: wages, promotions, evaluation, appointments or dismissal general policy at the organization’s level. For each of these categories, survey questions followed the general form: “Can the organization set general policy for the organization without prior consent of ministers and departments concerning most aspects of ...” (COBRA p. 24). Operational autonomy refers to autonomy over decisions concerning individual staff members: wages, promotions, evaluation, appointments or dismissal of specific employees. For each of these categories, survey questions followed the general form: “Can your organization decide without prior consent by ministers or departments on the following for most individual members of staff ...” (COBRA p. 25). Observations in the original dataset are at the organization - survey item level. The dataset is a cross-section of responding organizations across multiple countries. It does not have any time component, as data was collected once per organization. I create an index of independence by adding over the strategic and operational management autonomy items described above. I then classify the organizations into 3 categories: ministries (units of central government), sub-unit of ministries (agencies or bodies without legal independence, at arms-length from parent ministry), and agencies (legally independent organizations, statutory bodies). For classification, I rely on survey questions on organizational type, as identifying information on the organizations has not been released to the public.

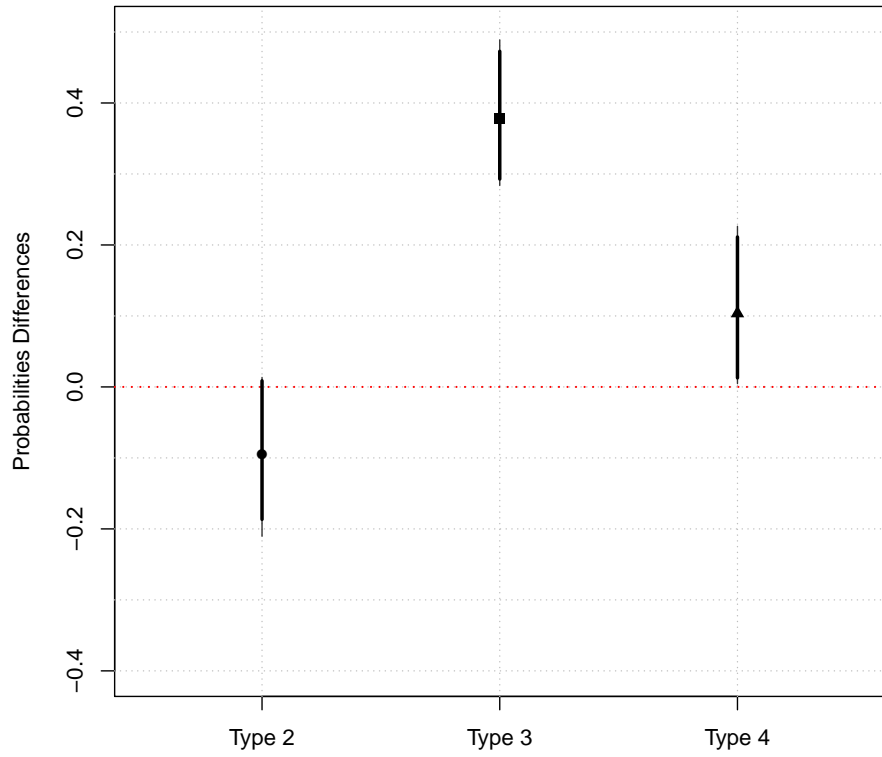
B Administrative Categories’ Distinction

To test whether the differences in Figure 1 are statistically significant, I compare whether the probability of scoring 1 on an independence item differs between ministries and the other bureaucratic types. While in this paper I group all agencies under one category, agencies

³¹The COBRA codebook is available at https://soc.kuleuven.be/io/cost/survey/surv_core.pdf.

can further be disaggregated by their legal type: public law, hybrid, or private law (Verhoest et al. 2004). I exclude externally autonomous public organizations with private law legal personality from the analysis due to a much lower number of available observations. I compute the probabilities difference from a binomial regression by subtracting the coefficient on the reference category—ministries—from the coefficient on the other formal-legal bureaucratic types plus the intercept. As such, a negative probabilities difference indicates the bureaucratic type has less independence than ministries, while a positive probabilities difference the opposite. Figure 10 shows type 2 bureaucracies—within ministry organizations without legal personality—have a lower probability of independence than ministries. Similarly types 3 and 4, equivalent to the agency category in table 1, have a higher probability of independence than ministries. All differences are significant at the 10% confidence interval, with type 3 and 4 significant at the 5% confidence interval as well.

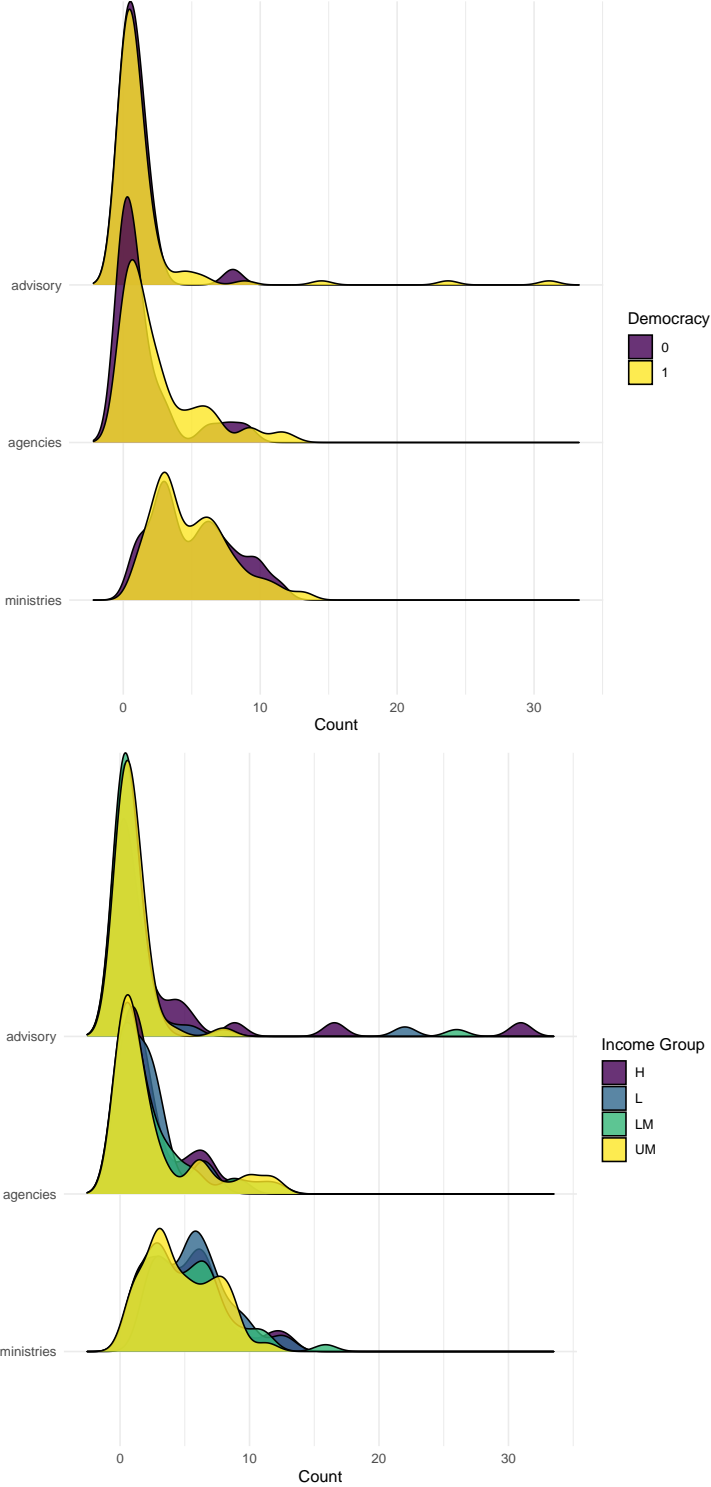
Figure 10: Probabilities Differences in Independence Score by Bureaucratic Type



Effect of bureaucratic type on independence score. Binomial regression model. The dependent variable is independence score. The x-axis shows bureaucratic type, as follows: type 2 refers to sub-units of ministries; type 3 and type 4 refer to public law and hybrid agencies. Negative probabilities differences indicate a lower probability of independence compared to the reference category ministries. 95% Confidence Intervals, with 90% Confidence Intervals denoted in bold.

C Descriptive Analysis

Figure 11: Distributions of Bureaucracy Variables by Regime Type and Income Level



D Empirical Analysis

D.1 Regression Coverage

Table 4: Zero Inflation Negative Binomial Model: Country and Year Coverage

Unit	Observations	Period Covered
Argentina	18	1996-2013
Armenia	7	2004-2010
Australia	19	1997-2015
Bahrain	12	2003-2014
Bolivia	20	1996-2015
Brazil	20	1996-2015
Bulgaria	4	2000-2003
Burundi	4	2009-2012
Cameroon	12	2002-2013
Canada	20	1996-2015
Chile	19	1996-2014
Colombia	17	1996-2012
Costa Rica	18	1996-2013
Cote d'Ivoire	3	2010-2012
Croatia	4	2007-2010
Cyprus	2	1996-1997
Czech Republic	5	1997-2001
Dominican Republic	13	2001-2009, 2011-2014
Egypt, Arab Rep.	17	1999-2015
Gabon	13	1999, 2001-2006, 2008-2013
Hungary	3	1996-1998
India	17	1997-1998, 2000-2014
Indonesia	18	1996-2013
Israel	12	2000-2010, 2012
Japan	20	1996-2015
Korea, Rep.	20	1996-2015
Lesotho	12	2002, 2005-2015
Macedonia, FYR	4	2010-2013

Malawi	9	2004, 2007, 2009-2015
Malaysia	18	1997-2014
Mexico	20	1996-2015
Moldova	4	2012-2015
Morocco	14	1998, 2001-2004, 2006-2013, 2015
New Zealand	19	1997-2015
Nicaragua	17	1996-2012
Nigeria	17	1996-2004, 2006-2007, 2009-2012, 2014-2015
Norway	17	1996-2012
Pakistan	18	1996, 1999-2015
Panama	16	1999-2014
Paraguay	20	1996-2015
Peru	16	1996, 1998-2012
Philippines	17	1996-2012
Romania	10	1996-2005
Russian Federation	3	2013-2015
Saudi Arabia	5	2010, 2012-2015
Singapore	20	1996-2015
South Africa	18	1997-1998, 2000-2015
Thailand	15	1996, 2000-2002, 2004-2012, 2014-2015
Togo	10	2003-2012
Tunisia	14	1996, 1999, 2001, 2003-2007, 2009-2014
Turkey	18	1996-2012, 2014
Uganda	12	2001-2012
Ukraine	7	2009-2015
United States	20	1996-2015
Uruguay	16	1996-2003, 2005-2012
Venezuela, RB	6	1996, 1998-2002
Zambia	11	1998, 2002-2011

This table shows the observations that entered the ZINB models. For those countries that do not cover the entire period of the analysis, this is due to missingness on one or more covariates included in the specifications.

D.2 OLS Results

Table 5: Ordinary Least Squares Model Results

	<i>Dependent variable:</i>					
	TTB stock			AD stock		
	(1)	(2)	(3)	(4)	(5)	(6)
Ministries	0.075*** (0.024)	0.027** (0.011)	0.013** (0.005)	0.018 (0.017)	0.007 (0.008)	0.004 (0.004)
Agencies	-0.051* (0.027)	-0.009 (0.007)	-0.008* (0.005)	-0.011 (0.019)	-0.009* (0.005)	-0.007** (0.004)
Advisory	0.019** (0.010)	0.018*** (0.006)	0.017*** (0.004)	0.028*** (0.006)	0.022*** (0.004)	0.022*** (0.003)
Exchange Rate	0.003* (0.002)	0.001 (0.001)		0.001 (0.001)	0.0003 (0.001)	
GDP Growth	-0.143 (0.124)	-0.015 (0.029)	-0.0003 (0.012)	-0.110 (0.087)	-0.015 (0.021)	-0.001 (0.009)
Veto Players	0.065 (0.178)	0.101 (0.103)		0.224* (0.125)	0.189** (0.076)	
Government Effectiveness	-0.123 (0.174)	-0.024 (0.091)		-0.373*** (0.121)	-0.119* (0.067)	
Constant	0.989* (0.556)	1.318*** (0.325)	1.606*** (0.191)	1.766*** (0.388)	1.735*** (0.234)	1.667*** (0.138)
Observations	310	614	1,078	319	623	1,090
R ²	0.818	0.853	0.839	0.903	0.914	0.896
Adjusted R ²	0.786	0.830	0.819	0.887	0.901	0.883

Note:

*p<0.1; **p<0.05; ***p<0.01

We regress TTB (AD) stock, a continuous variable that takes the value 0 if countries do not use TTBs (AD) in a particular year, and positive values otherwise on the counts of **agencies**; **ministries**; **advisory groups**, as well as controls for macroeconomic variables, regime type, veto players, and government effectiveness. Country and year fixed effects are included in all models.

D.3 Panel Match: Treatment Distributions

Figure 12: Treatment Distribution Across Units and Time, Agencies

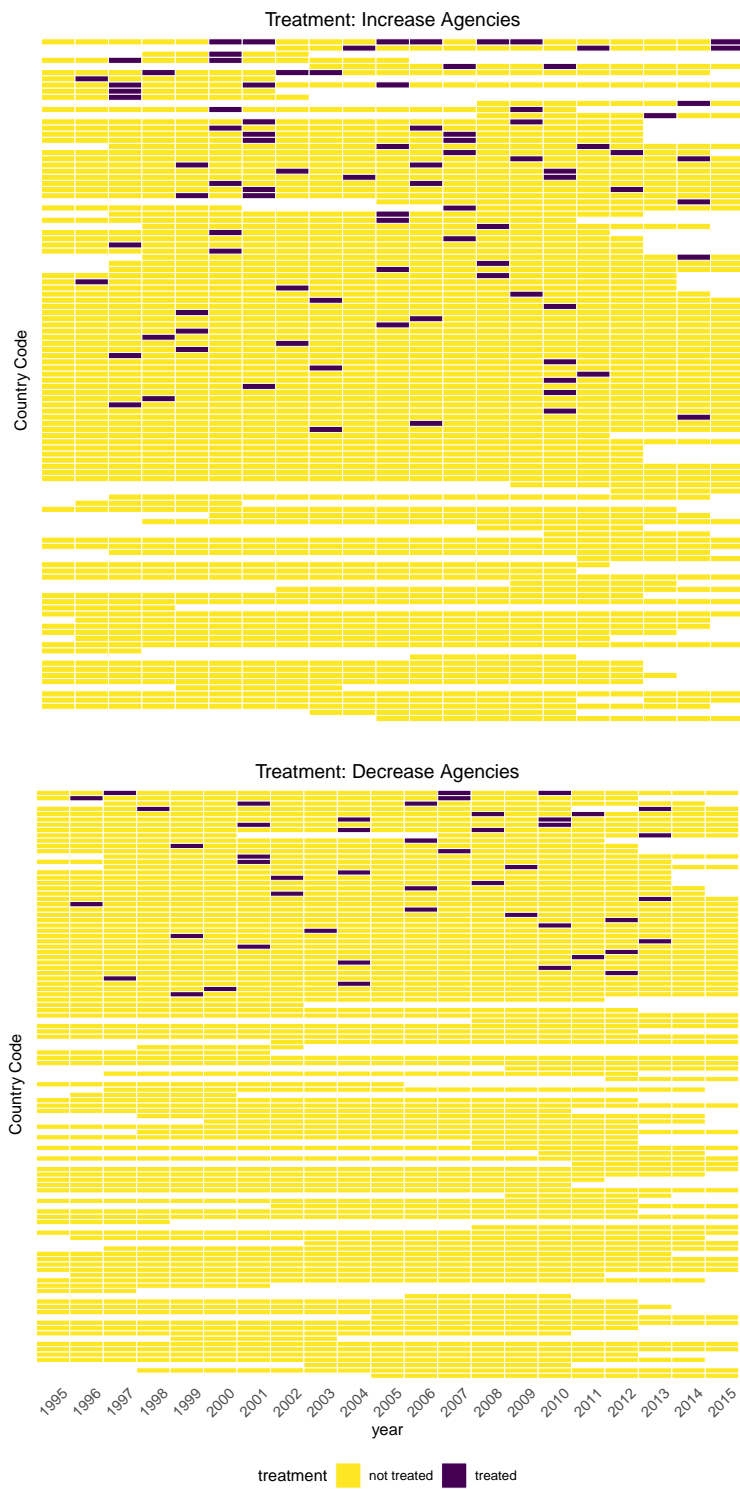


Figure 13: Treatment Distribution Across Units and Time, Ministries

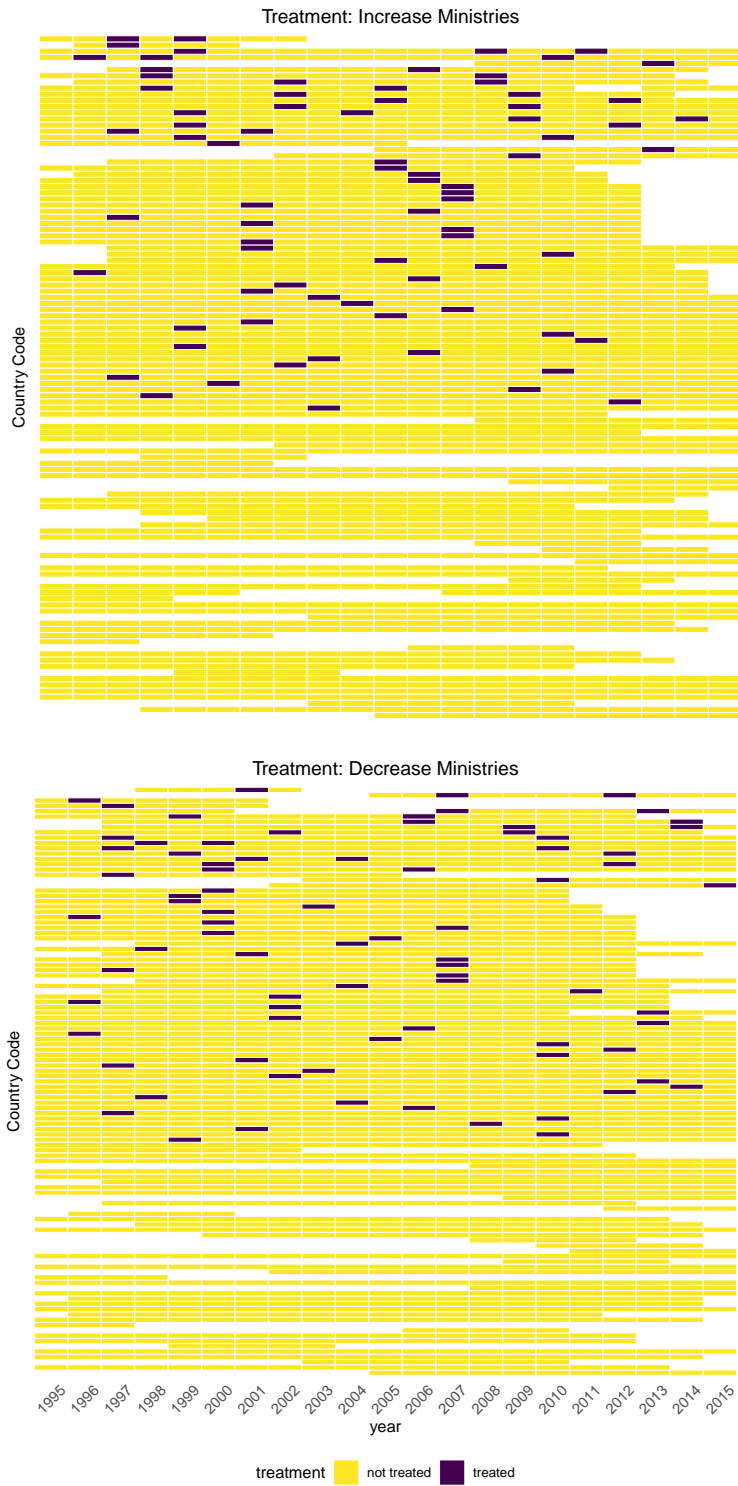
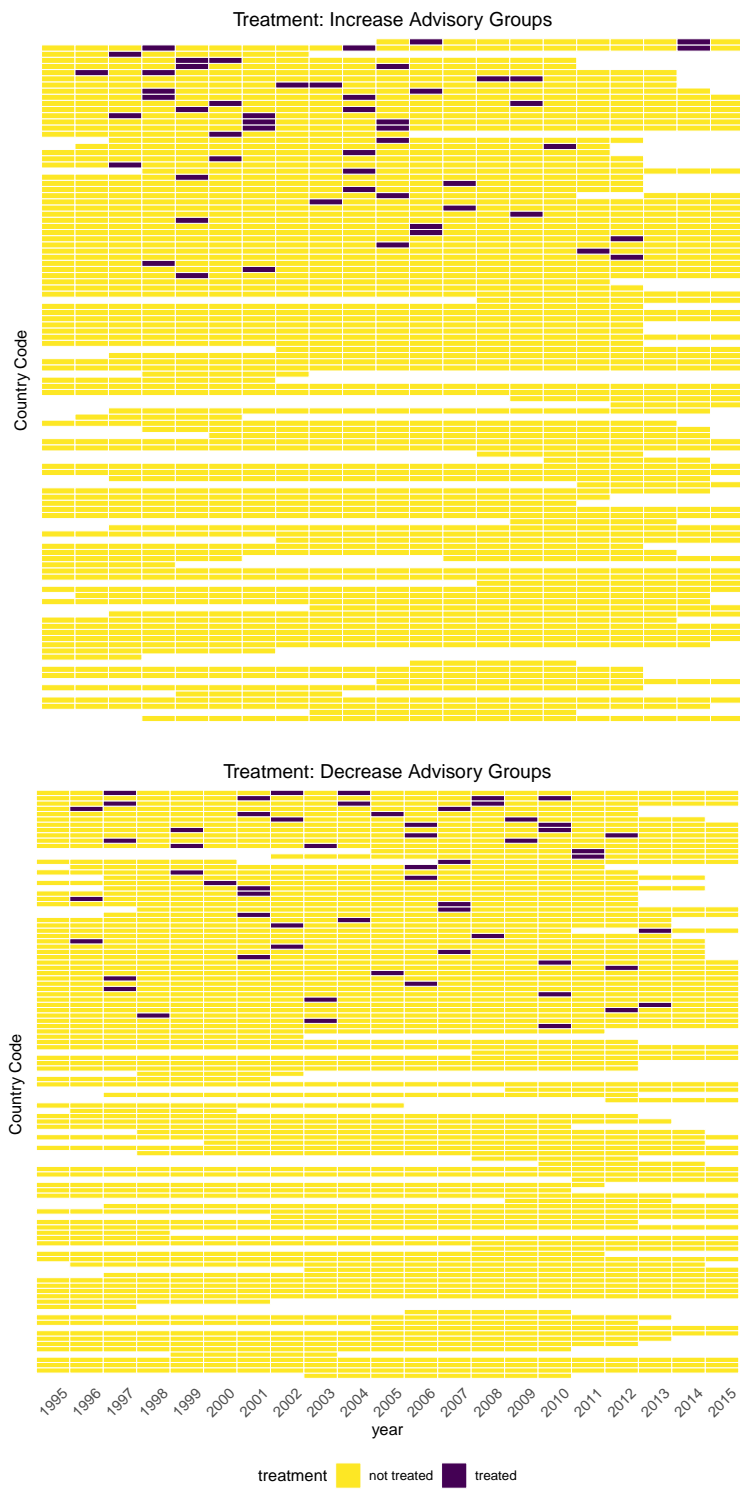


Figure 14: Treatment Distribution Across Units and Time, Advisory Groups



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