The Design of Enforcement:

Collective Action and the Enforcement of International Law*

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Abstract

International organizations (IOs) play a vital role in enforcing international law. Many treaties are built on transnational enforcement, in which private actors challenge and litigate possible legal violations. Others feature international enforcement, in which only states can challenge possible violations. Some feature centralized enforcement, in which an IO has its own authority to challenge possible violations. I argue that collective action problems drive decisions about whether to enforce international law, and hence affect the optimal design of enforcement regimes. When cooperation generates concentrated benefits—such as compensation for the expropriation of foreign investment—transnational enforcement can work well because the cost and benefit of enforcement are both fully internalized by the litigant. However, when cooperation generates diffuse benefits—like a cleaner environment—individuals and even governments have incentive to free-ride on enforcement, avoiding the cost of litigation in the hopes that another actor will step up. In such circumstances, supranational enforcement is necessary to uphold international law. Finally, hybrid regimes, which contain multiple forms of enforcement, are most needed when an IO has members that vary in their ability to enforce, or regulates issue areas that vary in their diffuseness. I assess my argument by examining litigation in the European Court of Justice, and provide inductive evidence that the European Union is more likely to enforce EU laws that generate diffuse benefits, while private actors and governments are more likely to enforce EU laws that generate concentrated benefits.

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1 Introduction

When states create rules to promote international cooperation, they must decide how these rules will be enforced. Sometimes rules are enforced solely via informal institutions, like reciprocity and reputation. However, the international system has grown increasingly legalized, with states delegating authority to international organizations to adjudicate disputes (Abbott et al., 2000). Almost all international organizations have dispute settlement procedures, which create institutionalized ways to challenge state behavior. However, these procedures vary greatly in who is allowed to challenge possible legal violations.

Most international organizations (IOs) rely upon *international enforcement*, under which states can file complaints about possible legal violations. For example, the World Trade Organization (WTO) relies on its member-states to identify possible violations and file disputes. The WTO itself cannot sue its member-states. In contrast, sometimes states allow other actors to enforce international rules. Under *supranational enforcement*, states grant an international organization the authority to challenge possible legal violations. One example is the International Criminal Court (ICC). While cases can be referred to the Court's attention in various ways, neither individual victims nor the ICC's member-states can file lawsuits. The ICC's Office of the Prosecutor is responsible for all investigations and prosecutions, so the ICC itself chooses which cases to pursue and ultimately rules on a defendant's guilt. Under *transnational enforcement*, states grant private actors—including individuals, firms, and interest groups—the ability to enforce international rules. For example, bilateral investment treaties usually allow for international arbitration of investment disputes (Allee and Peinhardt, 2010, 2011). These arbitral bodies rely upon firms and individual investors to challenge possible legal violations. Arbitral bodies cannot themselves sue states for violating bilateral investment treaties. Finally, some international regimes, like the European Union (EU), use a *hybrid* of these three designs by allowing multiple kinds of actors to enforce international rules. Through various complex procedures, the EU allows private actors, member-states, and EU bodies to file lawsuits at the European Court of Justice. Why do we observe so much variation in the design of enforcement regimes, and what are the consequences of this variation?

Both supranational and transnational enforcement require that states surrender their traditional monopoly over enforcement by delegating the authority to enforce international rules to IOs

or private actors. Scholars usually associate greater delegation with stronger institutions, like the European Union and the World Trade Organization, which are viewed as relatively powerful and effective in promoting cooperation (Abbott and Snidal, 1998; Johns, 2015). Rational choice scholars have argued that states give IOs more power when they need to solve more difficult cooperation problems, such as severe enforcement problems or distributional conflicts (Koremenos, Lipson and Snidal, 2001). This suggests that supranational and transnational enforcement should be present in highly legalized and powerful IOs. Yet this relationship often breaks down in practice.

Even relatively weak institutions, which are viewed as ineffective and lacking authority over their members, often rely upon supranational or transnational enforcement. For example, each of the nine major UN multilateral human rights treaties has an administrative body with formal procedures for challenging possible treaty violations. These UN bodies are usually viewed as weak institutions because they draw little public attention and cannot issue legally binding rulings, one of the key attributes of legalized institutions. These bodies all use transnational enforcement by allowing individuals to file complaints, and most allow for international enforcement as well. Six of these nine UN bodies also allow supranational enforcement, in which the treaty-based body can make its own complaints against member-states.[1] In sum, weak IOs (like the UN human rights bodies) sometimes allow supranational and transnational enforcement, while more powerful IOs (like the WTO) do not. What then explains the design of enforcement?

I argue that the rational design of enforcement is affected by the underlying nature of legal violations. Any actor that challenges a possible legal violation must pay a private litigation cost. Sometimes enforcement generates a highly concentrated benefit, ensuring that the cost and benefit of enforcement are both fully internalized by the litigant. For example, when firms use investment treaties to file arbitration cases against a foreign government, they seek financial compensation for alleged treaty violations. In contrast, sometimes enforcement generates a highly diffuse benefit, such as environmental protection. While all potential litigants benefit from a cleaner environment, each has incentive to free-ride on the efforts of others, shirking on enforcement in the hopes that someone else will pay the cost of litigation.

I use a formal model to show that collective action problems affect decisions about whether

[1]See the ICESCR Optional Protocol Art. 11, CEDAW Optional Protocol Art. 8, CAT Art. 20, CRC Optional Protocol on Communication Procedures Art. 13(1), CRPD Optional Protocol Art. 6, CED Art. 33.

to enforce international law. I examine how *diffuseness*—the distribution of enforcement benefits across actors—affects decisions by strategic actors about whether to challenge possible violations of international rules. I show that diffuseness produces two competing effects. On the one hand, cases that produce more diffuse benefits have more potential litigants, each of whom has incentive to enforce. This suggests that diffuseness might increase the likelihood of enforcement. On the other hand, cases that produce more diffuse benefits induce free-riding: each potential litigant will be less likely to challenge a possible legal violation in the hope that another actor steps in and bears the litigation cost. This suggests that diffuseness might decrease the likelihood of enforcement. Diffuseness therefore has a mixed effect on collective behavior—the likelihood that someone provides enforcement. I argue that when litigation is relatively cheap, increasing the number of potential litigants outweighs the temptation to free-ride, meaning that the overall effect of diffuseness is to increase the probability of enforcement. However, when litigation is relatively costly, the free-riding problem becomes more severe and outweighs the effect of having more potential litigants, meaning that the overall effect of diffuseness is to decrease the probability of enforcement. The impact of diffuseness is conditional: collective outcomes are shaped by the combination of diffuseness and the relative magnitude of litigation costs.

My argument suggests that transnational enforcement—in which private actors can challenge legal violations—is optimal when litigation generates highly concentrated benefits at a relatively low cost. In contrast, supranational enforcement—in which a centralized IO can enforce rules—is optimal when litigation generates highly diffuse benefits at a relatively high litigation cost. The traditional mode of international enforcement by states is optimal when the diffuseness of benefits and the relative costs of enforcement lie between these two extremes. Finally, my argument suggests that hybrid enforcement—in which multiple types of actors can enforce—is best suited to regimes in which either there is variation in either the diffuseness of benefits or the relative cost of enforcement. Hybrid regimes therefore should be most beneficial in providing enforcement when these regimes either involve multiple issue areas that vary in the diffuseness of their benefits, or govern states that differ significantly in their political or economic development.

The next section contains numerous examples of international regimes that vary in both their enforcement design. These examples illustrate the implications of my argument. However, a quantitative analysis of variation across institutions is not possible because of the relatively

small number of IOs, the difficulty of comparing institutions that differ on multiple attributes, and endogeneity concerns. Nonetheless, I am able to provide suggestive evidence for my theory using variation within an institutional.

Namely, I examine litigation at the European Court of Justice, which allows international, supranational, and transnational enforcement of its rules. This evidence shows that transnational enforcement—by individuals, firms, and interest groups—is most likely for laws that generate highly concentrated benefits; while supranational enforcement—by EU bodies—is most likely for laws that generate highly diffuse benefits. This evidence suggests that the EU focuses its enforcement efforts on those legal violations that private actors are unlikely to challenge. This behavior, in turn, suggests that the optimal design of enforcement is shaped by the diffuseness of the benefits of enforcement.

2 The Design of Enforcement

The diffuseness of enforcement benefits varies dramatically across issue areas. In investment arbitration, successful foreign investors receive private rewards from litigation that offset the cost of enforcement. Successful challenges usually cause host-governments to pay investors substantial compensation (Johnston, 2013; Maurer, 2013). However, these arbitration cases rarely generate benefits for other foreign investors. Investment arbitration often involves firm-specific treatment and hinges on the interpretation of firm-specific contracts with the host-government. Arbitrators have been slowly building a body of case law, but international investment law does not formally allow for *stare decisis* or precedent (Schill, 2014). Investors can invoke prior judgments in their legal arguments, but they cannot avoid litigation costs by simply asking a tribunal to directly apply a prior award to their case. Investment arbitration accordingly provides large, highly concentrated rewards to successful investors, but little benefit for others.

In contrast, sometimes enforcement generates a highly diffuse benefit for all actors that favor international cooperation. For example, the growth of human rights law shows that most governments and transnational actors believe that governments must respect basic individual rights. By making a government liable for human rights violations, the international community upholds its commitment to individual rights. In addition to punishing governments, many human rights

IOs, like the Inter-American Court of Human Rights (IACHR), require that violators change their domestic laws to prevent future human rights violations, creating a highly diffuse benefit. Similarly, the enforcement of EU environmental rules provides a collective benefit to all EU members (and non-members, too).

Of course, enforcement is never a purely private or public good. Even if enforcement generates mostly private rewards, all actors that favor compliance with international law benefit from enforcement if it deters future legal violations. For example, even though investment arbitration generates a private reward, all foreign investors benefit if arbitration deters future expropriation. Similarly, enforcement that yields largely public benefits can also provide some private rewards. For example, individuals who prevail at the IACHR often receive monetary compensation. Nevertheless, there is variation in the ratio of public benefits and private rewards of enforcement. Overall, human rights and environmental litigation generate more diffuse benefits than investment arbitration.

The relative cost of enforcement also varies dramatically across both actors and issue areas. For example, states often pay millions of dollars to litigate international trade disputes, causing many to argue that the WTO is fundamentally biased against developing states, which have fewer resources to challenge trade violations (Bown, 2009; Davis and Bermeo, 2009). Weak states also fear the political cost of challenging a strong state at the WTO, particularly when they are vulnerable to trade retaliation and/or dependent on foreign aid (Bown, 2005; Johns and Pelc, 2016*a*). Similarly, investment arbitration imposes sizable costs on firms and individuals that choose to challenge a foreign state. In the *Loewen* case against the US—one of the earliest and most famous NAFTA investment cases—a Canadian firm argued that it was treated unfairly by a US court, effectively forcing the firm to pay a large settlement.[2] The firm filed an arbitration case against the US, but years of costly litigation ultimately forced the firm to declare bankruptcy before the NAFTA tribunal ruled on the case. In her recent analysis of public investment arbitration, Wellhausen (2016) finds that foreign investors demand on average US$884 million in damages, and a prior analysis by Franck (2011) finds that average reported investment litigation costs are 10% of the value of the award. This suggests that the cost of enforcement for a foreign investor is often tens of

[2] *Loewen Group, Inc. and Raymond L. Loewen v. United States of America*, ICSID Case No. ARB(AF)/98/3. See Weiler (2003) for an overview of the case.

millions of dollars. Not surprisingly, this affects which investors actually file cases. In their recent analysis of investment disputes, Van Harten and Malysheuski (2016) find that most investment cases are filed by companies with annual revenues of over US$1 billion.

Relative costs also affect non-economic disputes. Courts like the European Court of Human Rights (ECHR) and the Inter-American Court of Human Rights have arguably flourished in large part because most of their member-states have relatively high levels of economic development and well-functioning democratic institutions. Individuals who file cases at the ECHR and IACHR do not fear government retaliation, and member-state transparency ensures that it is relatively easy to collect evidence of legal violations. In contrast, human rights victims in Darfur, the Democratic Republic of the Congo, and other conflict zones often cannot afford to secure international justice, and can be coerced by their abusers. Additionally, the practical details of mounting lawsuits—such as interviewing witnesses and collecting forensic evidence—are often insurmountable for individual private actors in conflict zones.[3] Under these scenarios, it is difficult (if not impossible) for human rights victims to enforce their rights: the relative cost of doing so is simply too high.

Both the diffuseness of benefits and the relative cost of enforcement affect the decisions of individual strategic actors about when to uphold international law. Consider trade law enforcement at the World Trade Organization as a baseline example. When a trade law violation affects only one state, that state fully internalizes both the cost and benefit of enforcement. All else equal, a state will be more likely to enforce when the relative cost of doing so is lower. However, the affected state need not consider the strategic behavior of others when others are not harmed by the violation. In contrast, when a trade law affects many states, the benefit of enforcement is spread out. Any state that files a WTO dispute must pay a private cost to provide a public benefit. This mismatch between the cost and benefit of enforcement mean that states must carefully consider the strategic behavior of other affected states. When a dispute generates relatively diffuse benefits, possible litigants face a collective action problem (Olson, 1965). Even though strategic actors may value the enforcement of international law, they aren't necessarily willing and able to pay the cost of this enforcement, especially if they believe that someone else might provide enforcement. Strategic actors therefore have incentives to free-ride on the effort of others: rather than challenging

[3]See "New UN team to collect evidence for Syria war crime prosecutions", *The Guardian (UK)*, 16 February 2017; and "UN human rights panel concludes ISIL is committing genocide against Yazidis", UN Press Release, 16 June 2016.

a possible legal violation, they will be tempted to wait and see if someone else steps up. Johns and Pelc (2016*b*) provide evidence that such free-riding occurs in the filing of WTO disputes. They find that cases with a highly diffuse effect challenge policies that have been in effect for longer than cases with a highly concentrated effect. This suggests that states have more incentive to delay filling challenges of more diffuse legal violations.

While diffuseness induces free-riding at the individual level, its impact on the collective outcome—whether someone provides enforcement—is mixed. When enforcement creates more diffuse benefits, it increases the number of actors who benefit from enforcement, expanding the pool of possible litigants. For example, investment disputes provide a concentrated benefit, meaning that there is little incentive to free-ride, but only one firm that may be willing to enforce. In contrast, environmental regimes provide diffuse benefits, meaning that many individuals and special interest groups may be eager to uphold environmental laws, even though each of these actors has incentive to free ride. The overall impact of diffuseness on the collective outcome is determined by which of these effects—free-riding vs more potential litigants—is strongest. In the model below, I show that the strength of these two competing effects is determined by the relative cost of enforcement. When the litigation cost is relatively small, the positive effect of having more potential litigants outweighs the negative effect of free-riding. Under these circumstances, diffuseness increases the probability of enforcement. However, when the litigation cost is relatively high, the negative effect of free-riding outweighs the positive effect from more potential litigants, such that diffuseness decreases the probability of enforcement.

Which institutional design—international, supranational, or transnational enforcement—yields the most enforcement of international rules? My argument suggests that the design of a regime's enforcement system should depend on two key factors: the diffuseness of cooperative benefits and the relative cost of enforcement.

When the benefits of cooperation are highly concentrated, there is no collective action problem. In such situations, states are likely to benefit most from transnational enforcement: giving individuals, firms, and interest groups the ability to enforce international law allows states to avoid the political and economic costs of enforcement without generating severe collective action problems. Relatively *ad hoc* institutions, like investment arbitral tribunals, can create effective remedies for individuals. Of course, states inevitably loose the power to serve as a gate-keeper

over litigation. But this effect is most likely to be outweighed when the benefits of cooperation are highly concentrated at the sub-national level.

When the benefits of cooperation are more diffuse, individuals, firms and interest groups have more incentive to free-ride on the efforts of others. Holding the relative cost of enforcement constant, this should lead to less enforcement. Under these circumstances, a state is better able to enforce rules than private actors by internalizing the impact of a policy on all of its citizens and espousing their legal claims. States must now bear the cost of international enforcement, but they can reduce the free-riding problem that is faced by private actors. Of course, states can never fully escape the collective action problem themselves. When enforcement occurs at the international level, states are tempted to free-ride on the efforts of other states.

As the benefits of enforcement are more diffuse, the collective action problem amongst states also becomes more severe. When the benefits of enforcement are extremely diffuse, supranational enforcement yields more enforcement if an IO internalizes the impact of a violation across its member-states and has authority to challenge violations. States must still bear a share of the cost of enforcement, but they ensure that there is not under-provision of enforcement.

All else equal, my formal model suggests that transnational enforcement is most effective when enforcement yields highly concentrated benefits. As the benefits of enforcement become more diffuse, we should expect international enforcement. And when cooperative regimes generate extremely diffuse benefits (like the criminal prosecution of war crimes), we should expect that states will rely on supranational enforcement by an IO (like the International Criminal Court).

My model also implies that the relative cost of enforcement affects which institutional design is most effective at providing enforcement. All else equal, I find that transnational enforcement is optimal when litigation costs are relatively low because the positive effect of expanding the set of actors who can enforce outweighs the negative effect of free-riding. As the relative cost of enforcement increases, the free-riding problem becomes more severe, meaning that international enforcement is optimal when litigation costs are relatively moderate. Finally, supranational enforcement is optimal when litigation costs are relatively high.

These effects imply that the design of enforcement can vary even within a specific issue area. As described above, regional human rights institutions have been relatively successful in Europe and Latin America. Individuals within those societies can bear the litigation costs, meaning that

transnational enforcement can yield relatively high levels of enforcement. However, transnational institutions will be of little help to individuals who live in poverty or in conflict zones. These victims rely upon the international community as a whole, particularly the ICC Prosecutor, to hold leaders accountable for their actions. Supranational enforcement is necessary when the cost of enforcement is relatively large.

I don't explicitly model variation in the power or wealth of different states, but it is certainly possible that a more powerful state, with the capacity to pay for enforcement, will attempt to solve the free-rider problem by enforcing on behalf of weaker states, who cannot afford to enforce. However, if multiple powerful states benefit either directly from enforcement or indirectly by protecting less powerful states, we should still expect that these powerful states face the same basic strategic problem: multiple states can provide enforcement (possibly on behalf of those who cannot), but each would rather that another state bear the cost of this public good. Unless there is truly only one hegemon in the international system (Kindleberger, 1986), the dynamics that I identify should be in effect. My model suggests that an IO with supranational authority to enforce international rules can serve as a substitute for a hegemon.

The varying impact of diffuseness and relative costs on institutional design suggest that hybrid regimes—in which there are multiple modes of enforcement—may be needed to promote cooperation in regimes with high variation in diffuseness or relative cost. For example, the European Union regulates an immense number of issue areas. Some of these areas, like trademarks, generate incredibly concentrated (and even firm-specific) benefits, suggesting that transnational enforcement can be effective. Other areas, like environmental regulation, generate incredibly diffuse benefits for all members of the EU, suggesting that supranational enforcement may be most effective. In between these two extremes, some issue areas generate moderately diffuse benefits, such as the regulation of national policies toward state aid (the EU term for subsidies), suggesting an important role for international enforcement. Similarly, the UN's human rights treaty-based bodies oversee the behavior of states that vary dramatically in their level of economic development and government repressiveness. Individuals living in relatively rich and democratic states, like France, can more easily pay the cost of enforcement than individuals living in relatively poor and autocratic states, like the Central African Republic. Transnational enforcement may be possible for some, but impossible for others, suggesting the need for multiple modes of enforcement. In such scenarios,

enforcement is most effective if the IO uses its resources for supranational enforcement on those cases that generate highly diffuse benefits at a relatively high cost, and allow private actors to pursue cases that generate highly concentrates benefits at a relatively low cost. States can then use international enforcement to pursue cases that lie between these two extremes.

My argument does not require that we assume that actors are greedy and opportunistic, seeking to receive financial benefits from the effort of others. Human rights victims and their families rarely appear to be motivated by financial rewards—they seek justice. Yet they face the same strategic problem as actors that want to enforce international rules for trade, the environment, and other issue areas. The theory of collective action applies not only to the opportunistic behavior of profit-seeking firms, but also to non-monetary concerns about global justice, in which costly enforcement provides large societal and global benefits.

3 Theoretical Argument

3.1 Formal Model

I present an infinite-horizon game with discrete time periods ($t = 1, 2, \ldots$). In this model, a set of n players have been harmed by a possible violation of an international rule. I refer to this possible violation as the defendant's "policy". This policy might be a trade barrier, a human rights violation, or any other perceived violation of international rules. Under international enforcement, the players are states that wish to uphold international cooperation. Under transnational enforcement, the players are private actors—such as firms, individuals, and interest groups. Finally, if we assume that there is only one player ($n = 1$), then the model represents supranational enforcement by an IO that internalizes the full impact of enforcement on its members. I denote the total benefit of enforcement by $T > 0$, and assume that the individual benefit of enforcement for a given player i is $\tau_i > 0$.

To identify the impact of diffuseness, I must make an assumption about the distribution of the individual benefits of enforcement. If increasing diffuseness simply entailed giving new individual benefits to new players, then increasing diffuseness would be equivalent to increasing the overall benefits of enforcement. We would not be able to isolate the impact of diffuseness. I therefore wish to examine changes in the distribution of benefits while holding the total benefit,

T, constant. To simplify my analysis, I assume that $\tau_i = \frac{T}{n}$. In the most extreme scenario, the benefits of enforcement are so concentrated that only one player has incentive to enforce ($n = 1$). As these benefits become more diffuse, the total benefit of enforcement is shared by more strategic actors. Diffuseness reduces each individual's incentive to enforce, but also increases the number of players with some incentive to enforce. I therefore isolate the impact of diffuseness, independent of the total benefit of enforcement.

In each period t, Nature chooses the type of each player i for that period, which I denote by α_{it}. This type is player i's private information. I assume that each player's type is independently and identically distributed according to the uniform distribution, $\alpha_{it} \sim U[0, A]$ with large $A > 0$. Each player's type represents strategic uncertainty about its willingness to enforce. In international trade, type could represent stochastic political or economic pressure on a government to challenge a protectionist policy. In human rights, type could represent uncertainty about an individual's desire to punish a government. If player i does not challenge the policy in period t, it receives the payoff $-\alpha_{it}\tau_i$, which can be interpreted as player i's political or economic cost from failing to enforce in period t. Parameter α_{it} therefore represents the unit cost of failing to enforce, and the magnitude of the overall cost depends on a player's individual benefit from enforcement, τ_i.

After observing its type, each player simultaneously decides whether to enforce the underlying international rule at an international body. Since different international bodies use different terminology for their dispute settlement processes, I refer generally to player choices about whether to "file a dispute" that triggers "litigation". If a player files a dispute, it must pay a litigation cost $k > 0$. In international trade, enforcement could entail filing a WTO dispute. In human rights, it could entail filing a complaint at one of the UN's treaty-based bodies. This is not a one-time decision: if no player files a dispute in period t, then all players can file in the next period, $t+1$. If no player ever files, then the game continues forever, meaning that the defendant's policy remains in effect in every period. However, if at least one player files, then the dispute goes to an international body—such as an arbitral body, court, dispute settlement panel, etc.—and the strategic interactions in my model end.

Since my focus is on decisions about whether to enforce, and not the enforcement process itself, I model the interactions in the international body in reduced form. I don't assume that every challenge is successful—sometimes the international body may decide that the defendant has not

violated an international rule. Each player's *ex ante* assessment of the benefit of filing a dispute is shaped by its expectations about how the dispute process will unfold. Some legal violations might be more easily challenged than others; e.g. because there is a precise body of international law and clear evidence of a violation, for example. Additionally, some institutions might be better able to channel disputes into actual changes in the defendant's behavior. Rather than making assumptions about how the dispute process works, I define a parameter $r > 0$ that I refer to as the expected *common reward* of litigation. If someone files the case, every player receives the payoff $r\tau_i$ in future periods. Higher values of r therefore represent better cases, stronger institutions, etc., while lower values of r represent the opposite. Even if a player files a dispute with highly diffuse benefits, the complainant can still sometimes gain an expected *individual benefit*, $b \geq 0$. Namely, I assume that a player that files receives an additional $b\tau_i$ payoff in all future periods. For example, WTO litigation often yields both common rewards and individual benefits. Under WTO rules, all trading partners must be treated as a most-favored nation, so a successful challenge of a trade barrier creates a common reward by removing the barrier for all trading partners. While discriminatory settlements are illegal under WTO rules, complainants can often secure individual benefits, such as technical assistance funds.[4] Similarly, successful human rights litigation ideally stops a continuing violation and prevents future ones, providing a common reward. But human right victims can also receive individual benefits, like compensation.

This model is not an infinitely-repeated game because some strategy profiles allow the game to end. This infinite-horizon framework generates considerable technical complexity, but it is necessary for my substantive question. In a one-shot game, players cannot wait and see how other players behave: the opportunity for enforcement is now or never. In an infinite-horizon game, decisions can unfold over time, which more accurately reflects international behavior. Additionally, by using an infinite-horizon game, I ensure that my arguments aren't being driven by the assumption that players only have one opportunity to enforce. Because infinite-horizon models require complex notation that will be of little interest to the general reader, I specify the utility functions (which are discounted streams of payoffs) in the Appendix. I solve the model for its symmetric weak perfect Bayesian equilibrium.[5]

[4] See Johns and Pelc (2016*a*) for numerous examples of these private benefits.

[5] This solution concept requires that strategies are sequentially rational and beliefs are consistent with Bayes' Rule where possible. Since types are independent across time and players choose actions simultaneously, I don't need

Proposition 1. *When players are relatively impatient, there exists a symmetric weak perfect Bayesian equilibrium in which each player adopts a cutpoint strategy: conditional on reaching period t, high types will file a dispute and low types will not file.*

Given the model's structure, I must constrain the discount factor to identify a reasonable equilibrium. To understand why, suppose that the players are extremely patient (δ is large). Then an infinite stream of minuscule expected individual benefits will outweigh the one-period litigation cost, and all players will immediately file a dispute. This behavior is substantively implausible. More plausible behavior occurs when players are relatively impatient (δ is small) because the one-period litigation cost deters some types from filing.

Rather than examining all of the comparative statics of the model, I focus on my key interest, which is the impact of diffuseness on the likelihood of enforcement. My first main result reflects the free-riding incentives that are inherent in my model framework:

Proposition 2. *As the benefit of enforcement grows more diffuse, each player becomes less likely to file a dispute.*

The benefit of enforcement becomes more diffuse when the total benefit is spread across more players. In my model, this is equivalent to increasing the number of players. Greater diffuseness therefore reduces the individual benefit from enforcement, $\tau_i = \frac{T}{n}$. This effect, in turn, reduces the magnitude of both the per period payoff from not filing, $-\alpha_{it}\tau_i$, and the per period benefits of filing, $r\tau_i$ and $b\tau_i$. These effects reduce each player's stake in the dispute, making each player less willing to pay the litigation cost. While every player still expects to benefit from litigation, there is a free-rider problem. Each player is less willing to file, both because her own benefit from enforcement has decreased and because she hopes that someone else will pay the litigation cost.

However, the presence of a free-rider problem does not necessarily mean that there will be less overall enforcement of international rules. After all, because diffuseness increases the number of players that benefit from enforcement, it also increases the number of actors who may be willing to file a dispute. Even if each individual player wants to free-ride, having more possible litigants can increase the overall probability that *someone* challenges a possible violation. Which effect

to specify off-the-equilibrium-path beliefs. The refinement of symmetry ensures that when players are in identical strategic situations (i.e. have identical types), they behave in the same way.

dominates—free-riding versus more potential litigants—depends on the size of the enforcement cost, k:

Proposition 3. *As the benefit of enforcement grows more diffuse: the likelihood of enforcement increases when k is small; and the likelihood of enforcement decreases when k is large.*

To understand this result, examine Figure 1(a). The x-axis represents the size of the litigation cost, and the y-axis represents the probability that at least one player enforces by filling a dispute. The thick line shows the probability of enforcement in equilibrium when there is no diffuseness: only one player benefits from enforcement. The thin line shows the probability of enforcement when there is low diffuseness: two players benefit. At the threshold value $\widehat{k}$, changing the level of diffusion has no impact on the overall probability of enforcement. If the litigation cost is small ($k < \widehat{k}$), then the free-rider problem isn't very severe. So the marginal effect of having more potential litigants outweighs the marginal effect of free-riding: more diffuseness increases the probability of enforcement. However, as litigation becomes more costly, the temptation to free-ride grows larger and ultimately outweighs the marginal effect of having an additional potential litigant. So for high litigation costs ($k > \widehat{k}$), more diffuseness decreases not only the individual probability that each player files, but also the overall probability that someone files.

[Insert Figure 1 here.]

As diffuseness grows even larger, the free-rider problem becomes exacerbated even more:

Proposition 4. *As the benefit of enforcement grows more diffuse, the free-rider problem becomes more severe.*

Examine Figure 1(b), which adds a dashed line to show the equilibrium probability of enforcement when the benefit from enforcement is more diffuse. In this simple example, I assume that four players benefit from enforcement. The logic from Figure 1(a) still holds when we consider a change from low diffuseness to high diffuseness. Now the threshold value—the point at which the increase from low to high diffuseness has no effect on the probability that someone challenges—is $\tilde{k}$. For small costs ($k < \tilde{k}$), moving from low to high diffuseness increases enforcement because diffuseness creates more potential litigants; but for large costs ($k > \tilde{k}$), the increase in diffuseness decreases enforcement because of free-riding.

The negative impact of free-riding outweighs the positive impact of more potential litigants when the litigation cost is high, so we can compare the two threshold values ($\widehat{k}$ and $\tilde{k}$) to understand the severity of the free-rider problem. As diffuseness increases, the associated threshold value decreases (i.e. $\tilde{k} < \widehat{k}$), meaning that diffuseness decreases enforcement for a larger range of parameter values (values of k). The free-rider problem becomes more severe as diffuseness increases.

How robust are my findings? My findings are conditional on the assumption that diffuseness has two effects on strategic behavior in the game above. First, more diffuseness increases the number of potential litigants. This effect alone will make each player less likely to file, which is standard behavior under public goods arguments. Second, because I control for the total benefit of enforcement, diffuseness affects the distribution of enforcement benefits: controlling for the total benefits, more diffusion means that each individual player receives a lower benefit. This element is not part of standard collective action arguments, which assume that a public good is non-rivalrous.

Suppose that we set aside this operationalization of diffuseness, and instead assumed that the individual benefit from enforcement does not change as diffuseness increases.[6] This would increase (rather than control for) the total benefit of enforcement. As shown in the Supplemental Appendix, this scenario would lead to the same results about individual behavior: each individual player will be less likely to file as diffusion increases. However, since increasing diffusion also increases the total benefits from enforcement, the overall likelihood of enforcement will increase as diffuseness increases. Thus my formal results are driven not only by free-riding, but also by the distribution of enforcement benefits across a population.

The analysis above focuses on diffuseness, but other parameters in the model can be interpreted as elements of institutional design.[7] I show in the Supplemental Appendix that either reducing the litigation cost (k) or increasing the individual benefits of litigation (b) generates more enforcement. This suggests that states have multiple ways of trying to ameliorate the impact of diffuseness. Namely, states can try to boost enforcement by reducing barriers to litigation or increasing private awards for successful enforcers.

[6] I thank Cliff Carrubba for suggesting this approach.

[7] I thank Lisa Martin for this suggestion.

3.2 Implications for Institutional Design

Given these strategic incentives, what institutional design generates the most enforcement of international law? It is important to recognize that the institutional design does not change the underlying diffuseness of the benefits of enforcement. Rather, the institutional design changes how these benefits are aggregated to affect decision-making. As a simple example, suppose that the defendant's policy is a trade barrier that affects four exporting firms. Additionally, suppose that two of these firms is located in state A, and the other two are located in state B. Consider Figure 2, which replicates the equilibrium behavior in Figure 1(b). Under transnational enforcement, individual firms would have standing to challenge the barrier, meaning that the total benefits of enforcement would be divided over four potential firm litigants. Therefore, the dashed line, which shows strategic behavior when there are four players, represents the outcome of transnational enforcement. Under international enforcement, states would have standing, so the total benefits of enforcement would be divided between two potential state litigants (each of which internalizes the impact of its two firms). Accordingly, the thin solid line, which shows strategic behavior when there are two players, represents the outcome of international enforcement. Finally, under supranational enforcement, a single IO would internalize the impact of the trade barrier on all four firms across the two states. The thick solid line, which shows optimal behavior when there is only one player, represents the outcome of supranational enforcement. Figure 2 shows that transnational enforcement will yield the most enforcement when litigation costs are low ($k < \tilde{k}$). Recall that these are the situations in which the positive effect of having more potential litigants outweighs the negative effect of free-riding. At the other extreme, when litigation costs are high ($\widehat{k} < k$), supranational enforcement yields the most enforcement because these are the situations in which the negative effect of free-riding outweighs the positive effect of having more potential litigants. International enforcement is optimal when relative litigation costs are moderate ($\tilde{k} < k < \widehat{k}$).

[Insert Figure 2 here.]

It is not possible to derive a clear formal result about the optimal institutional design without making extreme assumptions about the distribution of enforcement benefits across multiple units of analysis (such as assuming that each of two states contains two firms). However, Figure 2 illustrates a set of broad implications of my formal model:

Implication 1. *Holding constant the diffuseness of the enforcement benefit, the institutional design that is likely to yield the most enforcement is: transnational enforcement when the litigation cost is small; international enforcement when the litigation cost is moderate; and supranational enforcement when the litigation cost is high.*

My formal model also generates implications about how the optimal institutional design will change as a function of a change in diffuseness. Consider Figure 3. The lowest line graph (labelled as "low" diffuseness) shows the optimal institutional design for the scenario that generates Figure 2: enforcement benefits four firms that are equally divided between two states. Now suppose that we increase diffuseness so that the possible violation affects nine firms that are equally divided among three states. The optimal institutional design for this scenario is shown in the middle line graph (labelled as "medium" diffuseness). As before, transnational enforcement is best for low costs, international enforcement is best for moderate costs, and supranational enforcement is best for high costs. However, the cutpoints in this line graph have shifted to the left: transnational enforcement is optimal for a smaller range of litigation costs, and supranational enforcement is optimal for a larger range of litigation costs than when there is low diffuseness. This reflects the logic of Proposition 4: greater diffuseness exacerbates the free-rider problem, which changes the optimal institutional design. Finally, we can increase diffuseness even more by assuming that enforcement benefits sixteen firms that are equally divided between four states. The same pattern emerges, as shown by the top line graph in Figure 2 (labelled as "high" diffuseness). Transnational enforcement continues to be optimal for low litigation costs, but only for a very small range of litigation costs; and transnational enforcement is optimal for a much larger range of high litigation costs. Figure 3 graphically illustrates the second set of broad implications of my formal model:

Implication 2. *When the diffuseness of enforcement benefits increases, transnational enforcement is less likely to yield the most enforcement, and supranational enforcement is more likely to yield the most enforcement.*

[Insert Figure 3 here.]

Finally, my formal model has implications for hybrid regimes, which allow multiple forms of enforcement. As described above, the UN's various human rights bodies, which oversee complaints

about human rights violations, rely upon a blend of all three forms of enforcement. Similarly, the European Union, which is discussed at length in the next section, has multiple pathways by which private actors, member-states, and EU bodies can challenge possible legal violations at the European Court of Justice. My formal model suggests:

Implication 3. *A cooperative regime is most likely to use hybrid enforcement when the regime:*

- *contains members that vary in their ability to pay litigation costs; or*
- *regulates issue areas that vary in benefit diffuseness or litigation costs.*

The major UN human rights treaties are all large multilateral treaties that aspire to universal membership. In some treaty members, like highly-developed democracies, private actors can bear the cost of challenging possible violations relatively easily. These individuals do not fear retribution from their government, government policies are relatively transparent, evidence is relatively easy to collect, and civil society groups can function relatively freely to assist individuals with the complaint process. However, in other treaty members, like less-developed autocracies, private actors cannot bear the relative cost of challenging a government. Fear of retribution, lack of transparency, weak domestic institutions, and limits on civil society all hinder the enforcement of human rights law. This diversity in membership suggests that a hybrid regime is necessary for successful enforcement. In contrast, EU members are relatively homogenous—EU membership is conditional on having democratic institutions, economic stability, and commitment to fundamental EU values. However, as described below, the EU oversees a host of issue areas the vary greatly in their diffuseness. While private actors have incentive to uphold some EU rules, like intellectual property rules, they have less incentive to uphold others, like environmental regulations.

My formal model suggests that we should observe certain patterns of behavior in hybrid regimes that successfully enforce international rules. All bureaucracies face constraints on their time and resources. Even when an IO has the authority to challenge possible legal violations, it cannot challenge every possible legal violation. Accordingly, we should expect that an IO will target its resources on those possible violations that others will not. This suggests the following:

Implication 4. *In hybrid regimes:*

- *Private actors should be most likely to litigate when they can more easily pay the litigation cost, and when enforcement provides relatively concentrated benefits.*

- *An IO should be most likely to litigate when other actors can less easily pay the litigation cost, and when enforcement provides relatively diffuse benefits.*

For example, the European Commission is one of the largest and most powerful international bureaucracies, yet it regularly faces constraints in terms of the number of cases that it can pursue. Accordingly, it must choose its battles wisely. When faced with multiple possible cases, it must consider: who else would be willing to enforce EU law? For example, the Commission has little incentive to get involved in trademarks disputes, which provide firm-specific benefits—it would be wasting its resources if it were to help those private actors that can help themselves. Instead, the Commission's resources are better spent on possible violations that are unlikely to be challenged by others. The next section builds on Implication 4 by examining behavior at the European Court of Justice.

4 Assessing the Argument: Enforcement in the European Court of Justice

I assess my argument by examining within-institution variation in enforcement. Under this approach, I must identify an IO that oversees a diversity of laws, some creating diffuse benefits and others creating concentrated benefits. This IO must have multiple channels of enforcement that reflect the conceptual difference between international, supranational, and transnational enforcement. Finally, this IO must have enough enforcement cases to assess whether apparent patterns are statistically significant, and not random or idiosyncratic. Only one IO meets these criteria: the European Court of Justice.

As the judicial arm of the European Union and its predecessor IOs, the ECJ has overseen decades of regional integration.[8] The EU began as a regulatory regime for coal and steel production. Over time, it developed into a single economic market, with the goal of removing all barriers on the internal movement of goods, capital, and people. The EU has occasionally addressed social issues, but it has primarily focused on economic policy, including regulatory harmonization, fair competition, and intellectual property.

[8]For simplicity, I use the term "EU" to describe both the modern IO and its predecessor organizations. Similarly, I use the term "rules" to describe EU directives, legislation, and regulation

In 1954–2009, the ECJ issued over 8,200 judgments. During this period, ECJ staff coded every judgment using an alpha-numeric system so that judges and lawyers could search ECJ judgments for relevant case law.[9] I collected these issue area codes for all 1954–2009 judgments under the EU's various economic agreements and the Convention on the Jurisdiction and Enforcement of Judgments. Some issue areas had too few cases to be useful from a statistical perspective and others involved procedural matters that are not relevant for my analysis, leaving the 19 issue areas in Table 1.[10] Because these codes are not mutually exclusive—some cases involved multiple issue areas—I transformed the data into judgment-issue pairs. For example, a judgment that involved both transportation and agriculture appears in my data as two observations. This approach allows us to consider how different actors distributed their effort across the 19 different issue areas, while still ensuring that these proportions sum to one for the sake of basic statistical analysis.

[Insert Table 1 here.]

These codes were not generated based on whether the case involved diffuse or concentrated benefits, so not every category generates a clear theoretical prediction. I am accordingly examining the data from an inductive perspective. For example, we would expect that cases involving the environment (*environ*) had the most diffuse effect, while cases that involved trademarks (*trademark*) and the cross-national enforcement of individual judgments (*judgconv*) had the most concentrated effects. The rest of the issue area codes are more ambiguous. In the text below I perform supplemental coding in order to examine individual categories in greater detail.

Despite the EU's tremendous growth, the design of the ECJ remained relatively stable in 1954–2009. However, the ECJ did undergo two changes during this period. First, the Court's growing case-load led EU members to create a lower court, called the Court of First Instance (CFI), in 1989. The CFI ruled primarily on cases brought by private actors against EU bodies. For the reasons discussed below, I do not include such cases in my analysis. Second, the EU created a Civil Service Tribunal in 2005 to handle employment disputes between the EU and its staff. Since EU

[9] In 2009, the Treaty of Lisbon reorganized the EU's legal system, leading to a new classification system for all judgments beginning in 2010. I exclude these judgments because there is no authoritative method for converting codes across the two systems. I collected codes at the two-digit level. My selection criteria excluded employment disputes filed against the EU by its staff, and a few cases involving the European Atomic Energy Community.

[10] The Supplemental Appendix includes details on all two-digit categories, and explanations for excluded issue areas.

employment disputes did not involve substantive EU rules, I exclude them from my sample for all periods.

4.1 Challenging Governments

If an EU member-government is believed to have violated EU rules, it can be challenged in two different ways.[11] First, the European Commission can file a dispute known as *infringement proceedings*.[12] If the dispute is not resolved—because the Commission believes that the government has broken EU rules and the government will not change its behavior—the Commission can sue the government at the ECJ.

Second, private actors can challenge a member-government's behavior using the member's own domestic courts. These lawsuits can be filed against the government or between two private actors that disagree about the interpretation or application of EU rules. Domestic courts can then refer these cases to the ECJ through what is called the *preliminary reference* procedure.[13] The ECJ does not rule on the cases directly, but its judgments are considered binding interpretations of EU rules that a domestic court must use when subsequently resolving the case. Even though the litigants in these domestic cases are sometimes two private actors, these cases are the primary way of challenging government compliance with EU rules (Alter, 2003; Carrubba and Murrah, 2005).

As shown by Table 2(a), over 6,000 of the ECJ's judgments in 1954–2009 challenge government behavior.[14] To assess my argument, I calculated the percentage of judgment-issue pairs for each type of plaintiff, which are listed in Table 3. These data show how actors distributed their effort in enforcing EU rules in the 19 different issue areas, while controlling for the fact that private actors challenge governments more frequently than the Commission. I then conducted difference-in-means tests to determine whether there were statistically significant differences in how private actors and the Commission allocated their enforcement efforts. The fourth column of Table 3 shows the p-value for each of these tests. The last column identifies which kind of actor was the primary

[11] Technically, there is a third way to challenge member-governments. Under Article 227 EC, member-states are allowed to sue other member-states at the ECJ. However, this occurred only three times in 1954–2009. EU experts view Article 227 EC as arcane and textbooks on EU law usually ignore the provision, merely mentioning it in passing (e.g Chalmers and Tomkins, 2007, 349).

[12] See Article 226 EC.

[13] See Article 234 EC. Sometimes preliminary references can indirectly challenge EU bodies (Chalmers and Tomkins, 2007, 411). However, the primary procedure for challenging EU bodies is the annulment process.

[14] Histograms that are included in the Supplemental Appendix show that there are no major discontinuities in case frequency around the 1989 Court re-organization.

enforcer for each issue area in which there was a statistically significant difference (at the 0.05 level).

[Insert Tables 2 and 3 here.]

The cases with arguably the most concentrated benefits are those filed under the Convention on Jurisdiction and the Enforcement of Judgements (*judgconv*). This agreement ensures that legal orders issued in one member-state can be enforced in other member-states. For example, if a French court rules that a German exporter has broken a contract with a French company, German courts must recognize the French order and allow the French company to seize the exporter's assets in Germany. All of the ECJ cases in this category were filed by private actors. The Commission saw no reason to become involved in disputes over specific legal orders.

Not surprisingly, private actors are the primary enforcers for those rules that affect individual firms, including agriculture (*agricult*), commercial policy (*commerce*), business competition (*compete*), and trademarks (*trademark*). Private actors are more likely than the Commission to enforce labor protection rules, which are called "social policy" (*social*) by the ECJ. While these cases sometimes have externalities that affect other actors, they also all create well-defined benefits for individual litigants that have relatively large resources for enforcement. The Commission has little reason to help private actors who can help themselves.

Finally, private actors are the primary enforcers of disputes involving the Association of Overseas Countries and Territories (*overseas*). These disputes have an incredibly concentrated impact: most involve import taxes on specific goods, like coffee, entering the EU from small overseas countries and territories (OCTs), like the Netherlands Antilles. The only cases in this category that did not involve an import tax on a specific good involved procedural and voting rights of EU citizens living in Aruba and French Polynesia.[15]

In contrast, the issue area that is overwhelmingly enforced by the European Commission is the environment. The Commission dedicates nearly eight times as much effort to these cases than private actors. Even when the Commission is challenging a single country's policy, its lawsuit has externalities for all other EU members and the benefit of enforcement is highly diffuse. Roughly two-third of the environmental cases that challenge governments (140 out of 217 cases) were filed by

[15]See C-100/89, *Kaefer and Procacci / French State* (1990); and C-300/04, *Eman and Sevinger* (2006).

the European Commission despite the fact that the Commission files far fewer lawsuits than private actors do. Private actors were able to challenge the environmental policies—as demonstrated by the 77 cases filed by private actors—they just rarely choose to do so.

The European Commission also takes the lead in a few other issue areas. First, the Commission is more likely than private actors to enforce rules that prohibit national subsidies, called "state aid" (*aid*) in the European Union, which can distort the efficient provisions of goods and services across the EU as a whole. The primary beneficiaries of such cases are firms throughout the EU that cannot fairly compete in the market, suggesting their need for assistance from the Commission. The Commission is also more likely than private actors to enforce the country-specific implementation of EU rules, which the EU calls the "approximation of laws" (*approx*). These cases usually involve conflicting interpretations of regulations, which can affect the functioning of the EU market as a whole.

Finally, the Commission is the primary enforcer for finance (*finance*) and transportation (*transport*) disputes. Almost all (30 out of 32) of the finance disputes involved attempts by the Commission to get governments to pay funds that were allegedly owed to the EU. While these cases did not have diffuse effects, they clearly involved the self-interest of the EU itself. In contrast, roughly 56% (18 of 32) of the transportation cases challenged domestic policies with a discriminatory effect on foreign producers, such as bans on foreign service providers, and quotas and taxes on the movement of goods and people. These cases had the diffuse effect of opening markets and supporting European integration. An additional 37.5% (12 of 32) of the transportation cases challenged the ability of EU members to write international agreements with non-EU states that eased the movement of goods and people. The Commission believed that allowing individual EU members to write such international agreements harmed other EU members who were not included. These cases also allowed the Commission to assert over time that the EU had the exclusive authority to negotiate international agreements on behalf of EU members.

This leaves one issue area with a significant difference that initially appears puzzling, especially given the transportation cases: Table 3 shows that private actors are more likely than the Commission to litigate cases involving international agreements (*treaty*). To understand this result, I coded all *treaty* cases that challenged member-governments. Most of the cases filed by private actors involved immigration. In over 36% of these cases, foreign nationals sued their host-governments

for residency and work permits, or to challenge deportation proceedings. An additional 12% of cases dealt with foreign national access to social security programs, such as disability payments and pensions. The other major category of private actor *treaty* cases involved business interests. Over 35% were international trade cases, which usually challenged extremely narrowly-defined trade policies, such as Italian tariffs on bananas from Somalia.[16] An additional 4.8% of these cases were intellectual property disputes. Accordingly, almost all of the *treaty* cases that were filed by private actors involved highly concentrated benefits for a small set of actors. In contrast, the *treaty* cases that were filed by the Commission focused on the scope of the EU's foreign policy authority. In almost 90% of the Commission's *treaty* cases, the Commission argued that EU rules either invalidated or took precedence over international agreements signed by individual EU member-states, thereby challenging member-government independence in foreign policy and creating precedents with highly diffuse effects.

One possible concern with my inductive analysis is that I include all preliminary references. As mentioned above, some of these cases involve two private actors suing each other in domestic courts. Legal scholars generally view these lawsuits as challenges of government behavior, even if the original domestic lawsuit did not include the government as a litigant. For example, in one of these cases, an Italian firm was required to paid a levy on imported wallpaper.[17] When the importer then resold the wallpaper to an Italian retailer, it tried to get the retailer to pay a portion of the import levy. The retailer refused to pay, prompting the importer to sue the retailer in an Italian court. The case became a preliminary reference when an Italian court asked the ECJ to rule on whether the original import levy was legal under EU law. Thus a case between two Italian firms in effect challenged the Italian government. However, such examples might not be representative of all lawsuits between private actors. To address this issue, I examined all of the domestic lawsuits that triggered the 4,276 preliminary references in my dataset. After coding court documents, I found that government bodies were litigants in nearly 80% of these underlying domestic lawsuits. I then replicated my analysis by only examining this subset of cases. As shown in the Supplemental Appendix, all of my results continue to hold on this restricted sample.[18]

[16] See C-369/95, *Somalfruit SpA and Camar SpA v Ministero delle Finanze and Ministero del Commercio con l'Estero* (1997).

[17] See C-74/77, *Iannelli & Volpi SpA v Ditta Paolo Meroni* (1977).

[18] I thank Cliff Carrubba for suggesting this robustness test.

4.2 Challenging EU Bodies

The ECJ can also hear cases that challenge EU bodies. These cases, which are known as *annulment* actions, can be filed by private actors, governments, and even EU bodies.[19] That is, one EU body can sue another EU body for violating EU rules. While private actors have consistently filed these cases over 1954–2009, cases were rarely filed by governments or EU bodies prior to the mid-1980s.[20] In the early decades of the ECJ, private actors primarily sued EU bodies to challenge firm-specific production quotas and fees that were imposed by the European Coal and Steel Community. Obviously, neither governments nor EU bodies had reason to file such cases themselves. The relatively high number of government and EU cases starting in the 1980s is probably explained by the transition to a single market, which occurred during the 1980s and imposed major changes on EU member-states. Additionally, this time period saw a dramatic growth in the power and size of EU bodies.

As shown in Tables 2(b)-(c), most cases that challenge EU bodies are filed by private actors. However, these cases are highly problematic for assessing my argument because of ECJ jurisprudence. In theory, private actors can enforce all areas of EU rules, creating both diffuse and concentrated benefits. However, private actors face major restrictions when challenging EU bodies. In a seminal early ECJ case, a German firm, *Plaumann & Co.*, tried to challenge a tax on imported clementine oranges.[21] In its ruling, the Court found that the firm lacked standing to sue because multiple firms could import clementine oranges, and thus the case did not involve an "individual concern" as required by the relevant EU treaty.[22] This led to the formation of the *Plaumann* doctrine, which requires that private actors can only sue EU bodies at the ECJ "if they can distinguish themselves from all other persons, not only actually but potentially" (Chalmers and Tomkins, 2007, 420). This doctrine means that a private actor can only challenge an EU body if the case involves highly concentrated benefits. A private actor cannot challenge a policy with diffuse effects.

My argument implies that private actors will be more likely to challenge policies with a

[19] See Article 230 EC.

[20] See the histograms in the Supplemental Appendix.

[21] Case T-25/62, *Plaumann & Co. v Commission* (1963).

[22] See Article 230 EC: "Any natural or legal person may ... institute proceedings against a decision addressed to that person or against a decision which, although in the form of a regulation or a decision addressed to another person, is of direct and *individual concern* to the former" (emphasis added).

highly concentrated impact, and less likely to challenge policies with a diffuse impact. Including private actor lawsuits against EU bodies in my inductive analysis would therefore bias my results in favor of my theory because the *Plaumann* doctrine does not allow private actors to challenge diffuse policies. I therefore focus on the behavior of governments and EU bodies. Nevertheless, one piece of information in Table 2(c) about private actors is informative. Note that private actors have filed a large number of lawsuits against the Office for Harmonization in the Internal Market (OHIM). This EU body has one task: it oversees the registration of trademarks and related intellectual property. By its very nature, OHIM's activities produce highly concentrated, firm-specific benefits. Not a single case has been filed by a government or EU body against OHIM, showing that governments and EU bodies do not use their resources to generate these firm-specific benefits. Similarly, as shown in Table 4, neither governments nor EU bodies filed cases involving the enforcement of judgments (*judgconv*), which generates highly concentrated benefits for individuals and firms.

[Insert Table 4 here.]

The data show that governments were more willing than EU bodies to use annulment actions to challenge rules involving agriculture (*agricult*) and state aid (*aid*), which limit the ability of a government to protect its agricultural sectors and provide subsidies to domestic producers of goods and services. In both of these areas, firms and industry associations can exert political pressure on their home governments to challenge EU regulations, which are intended to promote market liberalization that benefits the EU as a whole. Similarly, governments were more willing than EU bodies to file lawsuits over competition policy (*compete*). In seven of these ten lawsuits, governments challenged EU attempts to create greater competition in protected industries, including airport operations, telecommunications, and waste disposal services. One of the remaining competition lawsuits challenged EU intervention in a specific corporate merger. Governments were therefore challenging policies with highly concentrated effects when they sued EU bodies over competition policy. Finally, governments were more willing to enforce rules relating to OCTs (*overseas*). Almost all of these cases challenged import taxes for specific goods, such as sugar and bananas.

In contrast, EU bodies took the clear lead in filing environmental cases, which create highly diffuse benefits across all EU citizens. Yet EU bodies also spent great effort on cases over financial

issues (*finance*), transportation policy (*transport*), and international agreements (*treaty*). Why are EU bodies so much more active in filing these kinds of cases against other EU bodies than against member-governments (with *finance* cases increasing from 3.04% to 14.29%, *transport* cases increasing from to 3.04% to 8.57%, and *treaty* cases increasing from 2.75% to 12.86%)?

Once again, I carefully read all of the cases from these categories to understand differences in enforcement. Almost all of the *finance*, *transport*, and *treaty* cases filed by EU bodies against other EU bodies involved disagreements over the relative authority of these bodies. Almost all of the *finance* cases challenged budgetary authority, such as whether the Parliament could amend particular provisions of the EU budget.[23] Similarly, cases that were ostensibly about transportation policy (*transport*) appear to be driven by concerns about relative power. For example, in multiple *transport* cases the Parliament argued that the Council was "disregarding the Parliament' s right to participate in the Community legislative process".[24] Finally, in the *treaty* cases, both the Commission and the Parliament routinely sued the Council for overstepping its authority in making international agreements. A pessimistic interpretation of these cases would be that they were internecine battles between bureaucrats trying to promote their own narrow interest in having more power. A more optimistic interpretation would be that these cases have broad and diffuse importance because they clarify the general policy-making powers of various EU institutions. Either way, EU bodies are clearly not upholding the interests of private actors or specific member-governments when they file cases in these issue areas against other EU bodies.

5 Conclusion

When the benefit of enforcement is highly concentrated, an actor can fully internalize both the cost and benefit of enforcement. However, when the benefit of enforcement is diffuse, each potential litigant must pay a private cost to provide benefits to others. Diffuseness therefore has two competing effects: it increases the number of potential litigants, while also creating incentives for individuals to free-ride on the effort of others. When litigation is relatively cheap, the positive effect of having more potential litigants outweighs the negative effect of free-riding, ensuring that diffuseness increases the likelihood of enforcement. But when litigation is costly, the negative effect

[23] See C-284/90, *Council / Parliament* (1992).
[24] See para. 9 in the judgment for C-388/92, *Parliament / Council* (1994).

of free-riding outweighs the positive effect of more potential litigants, meaning that diffuseness decreases the likelihood of enforcement.

Because diffuseness and the litigation cost affect the likelihood of enforcement, they also influence the optimal design of enforcement institutions. When the benefits of enforcement are relatively concentrated or the litigation cost is relatively small, transnational enforcement will yield the most enforcement. In contrast, when the benefits of enforcement are relatively diffuse or the litigation cost is relatively large, supranational enforcement will yield the most enforcement. International enforcement is best suited for intermediate levels of diffuseness or litigation costs.

My formal model provides a normative account of how institutions should be designed if states wish to maximize enforcement. Of course, states don't always have this objective—sometimes states purposely design institutions with weak enforcement in order achieve competing objectives, like institutional stability (Downs and Rocke, 1995; Johns, 2015; Rosendorff, 2005). Nonetheless, the design of actual IOs suggests that my theory also has positive value: it helps us to understand the reasons why IOs look the way that they do.

Transnational enforcement is standard in the realm of international investment law, where powerful multinational firms can sue their host-governments to provide firm-specific compensation for mistreatment. Transnational enforcement has also been successful in promoting human rights within relatively democratic and developed regions, like Europe and Latin America. In contrast, supranational enforcement has become the standard model for prosecuting human rights violations and war crimes in societies that lack democratic institutions and economic development. The International Criminal Court, and other *ad hoc* international and hybrid criminal tribunals, seek to enforce international rules when victims cannot enforce on their own behalf. In between these two extremes lie institutions like the World Trade Organization's dispute settlement procedures. WTO litigation is sufficiently costly that individual firms and industries are unlikely to fully bear the costs of enforcement, but states have sufficient resources to do so. Additionally, the benefits of enforcing international trade law are sufficiently diffuse that states are willing to espouse the claims of their own firms, but still sufficiently concentrated that the effort of enforcing international trade law is worthwhile.

My formal model also suggests that hybrid regimes, which allow multiple forms of enforcement, are best suited to IOs that either contain members that vary in their ability to pay litigation

costs, or regulate issue areas that vary in benefit diffuseness or litigation costs. We should expect to see hybrid enforcement in IOs that aspire to universal membership, but contain members that aren't wholly committed to the regime's goals, such as the UN's human rights bodies. We should also expect to see hybrid enforcement in IOs that oversee diverse issues, such as regional integration bodies.

While this illustrative evidence provides some support for my arguments, making claims based purely on cross-institution evidence is fraught with difficulties because IOs vary on so many different attributes. Additionally, if states do indeed care about the optimal design of institutions, then the observable outcome is endogenous. Nonetheless, I am able to examine the usefulness of my theory by assessing within-institution variation in how actors use a hybrid enforcement system.

Litigation patterns at the European Court of Justice provide inductive evidence for my theory. Despite filing the vast majority of lawsuits overall, private actors focus their efforts on disputes that generate relatively concentrated benefits. Private actors rarely dedicate their effort to upholding the EU's environmental rules, for example. In his cross-national study of environmental regulation, Kelemen's explanation for the EU's relative lack of decentralized enforcement echoes my own: "most environmental regulation concern matters of diffuse public interest ... private parties often lack the individual incentive to commerce legal action to secure enforcement" (Kelemen, 2004, 49). In contrast, the EU Commission appears to target its limited resources on enforcing laws that generate diffuse benefits. Qualitative evidence suggests that this is not merely an anomaly. In his study of EU adjudication, Kelemen (2011) argues that the growing emphasis on private actors is driven by the EU's limited resources for supranational enforcement. He writes: "the EU is encouraging the spread of adversarial legalism as a mode of governance that can harness private litigants and national courts for the decentralized enforcement of European law" (Kelemen, 2011, 8). That is, transnational enforcement by private actors is meant to supplement international and supranational enforcement. By encouraging private actors to enforce laws that generate concentrated benefits, the EU Commission has more resources to devote to providing enforcement with diffuse, EU-wide effects.

Appendix

Let $\delta \in (0,1)$ represent the common discount factor, and ρ_{-i} denote i's belief about the probability that no other country will file. Let V_i denote i's continuation value. Then conditional on reaching t, the expected utility functions for player i are:

$$\begin{aligned} EU_{it}\left(\text{file}|\alpha_{it},\tau_i\right) &= \frac{\delta}{1-\delta}\left(r+b\right)\tau_i - k \\ EU_{it}\left(\text{don't file}|\alpha_{it},\tau_i\right) &= -\alpha_{it}\tau_i + \left(1-\rho_{-i}\right)\frac{\delta}{1-\delta}r\tau_i + \rho_{-i}\delta V_i \end{aligned}$$

Proof of Proposition 1. Player i has incentive to file iff:

$$\begin{aligned} & \frac{\delta}{1-\delta}\left(r+b\right)\tau_i - k \geq -\alpha_{it}\tau_i + \left(1-\rho_{-i}\right)\frac{\delta}{1-\delta}r\tau_i + \rho_{-i}\delta V_i \\ \Leftrightarrow \quad & \alpha_{it} \geq \frac{k}{\tau_i} - \frac{\delta}{1-\delta}b - \rho_{-i}\frac{\delta}{1-\delta}r + \frac{\delta\rho_{-i}}{\tau_i}V_i \equiv \overline{\alpha}_i \end{aligned} \tag{1}$$

Equilibrium behavior is therefore monotonic and player i's best response function is characterized by the value of $\overline{\alpha}_i$ implicitly defined in equation (1). This ensures that:

$$\rho_i = \Pr\left(\alpha_{it} < \overline{\alpha}_i\right) = F\left(\overline{\alpha}_i\right) \quad \text{and} \quad \rho = \prod_k \rho_k = \prod_k F\left(\overline{\alpha}_k\right) \quad \text{and} \quad \rho_{-i} = \prod_{j\neq i}\rho_j = \frac{\prod_k F\left(\overline{\alpha}_k\right)}{F\left(\overline{\alpha}_i\right)}$$

In an interior equilibrium—an equilibrium in which $\overline{\alpha}_i \in (0,A)$ for all i—player i's continuation value is:

$$\begin{aligned} V_i &= \int_0^{\overline{\alpha}_i}\left[-\alpha\tau_i + \left(1-\rho_{-i}\right)\frac{\delta}{1-\delta}r\tau_i + \rho_{-i}\delta V_i\right]f\left(\alpha\right)d\alpha + \int_{\overline{\alpha}_i}^{A}\left[\frac{\delta}{1-\delta}\left(r+b\right)\tau_i - k\right]f\left(\alpha\right)d\alpha \\ &= \rho_i\left[\left(1-\rho_{-i}\right)\frac{\delta}{1-\delta}r\tau_i + \rho_{-i}\delta V_i\right] + \left(1-\rho_i\right)\left[\frac{\delta}{1-\delta}\left(r+b\right)\tau_i - k\right] - \tau_i\int_0^{\overline{\alpha}_i}\alpha f\left(\alpha\right)d\alpha \end{aligned} \tag{2}$$

Manipulating equation (2) to isolate V_i yields:

$$V_i = \frac{1}{1-\delta\rho}\left[\left(1-\rho\right)\frac{\delta}{1-\delta}r\tau_i - \left(1-\rho_i\right)\left(k - \frac{\delta}{1-\delta}b\tau_i\right) - \tau_i\int_{\alpha_L}^{\overline{\alpha}_i}\alpha f\left(\alpha\right)d\alpha\right] \tag{3}$$

Substituting equation (3) into equation (1) yields:

$$\begin{aligned} \overline{\alpha}_i = {} & \frac{k}{\tau_i} - \frac{\delta}{1-\delta}b - \rho_{-i}\frac{\delta}{1-\delta}r \\ & + \frac{\delta\rho_{-i}}{\tau_i\left(1-\delta\rho\right)}\left[\left(1-\rho\right)\frac{\delta}{1-\delta}r\tau_i - \left(1-\rho_i\right)\left(k - \frac{\delta}{1-\delta}b\tau_i\right) - \tau_i\int_{\alpha_L}^{\overline{\alpha}_i}\alpha f\left(\alpha\right)d\alpha\right] \end{aligned} \tag{4}$$

If we manipulate equation (4), we can see that cutpoint $\overline{\alpha}_i$ is implicitly defined by:

$$\Psi^i \equiv \overline{\alpha}_i (1-\delta\rho) - (1-\delta\rho_{-i}) \left(\frac{k}{\tau_i} - \frac{\delta}{1-\delta} b \right) + \delta\rho_{-i} r + \delta\rho_{-i} \int_0^{\overline{\alpha}_i} \alpha f(\alpha)\, d\alpha = 0$$

To see that this best response function can generate an interior equilibrium, note that:

$$\Psi^i_{\overline{\alpha}_i} = \overline{\alpha}_i \left[-\delta\rho_{-i} f(\overline{\alpha}_i) \right] + (1-\delta\rho) + \delta\rho_{-i} \overline{\alpha}_i f(\overline{\alpha}_i) = 1 - \delta\rho > 0$$

Because Ψ^i is monotonically increasing in $\overline{\alpha}_i$, if there exists a value $\overline{\alpha}_i$ that satisfies $\Psi^i(\overline{\alpha}_i) = 0$, this value is unique. Also:

$$\lim_{\delta \to 0} \Psi^i = \overline{\alpha}_i - \frac{k}{\tau_i} = 0 \quad \Leftrightarrow \quad \lim_{\delta \to 0} \overline{\alpha}_i = \frac{k}{\tau_i}$$

Recall that by assumption, $\frac{k}{\tau_i} \in (0, A)$ and α has full support over $[0, A]$. So player i has a unique interior cutpoint, $\overline{\alpha}_i \in (0, A)$, for small $\delta > 0$. Since this argument holds for an arbitrary player i, there exists a Bayesian Nash equilibrium for small $\delta > 0$ in which equilibrium strategies are implicitly defined by the system of n equations with n endogenous variables $\overline{\alpha} = (\overline{\alpha}_1, \overline{\alpha}_2, \ldots \overline{\alpha}_n)$:

$$\begin{aligned} \Psi^1(\overline{\alpha}) &= 0 \\ \Psi^2(\overline{\alpha}) &= 0 \\ \cdots \quad &\cdots \quad \cdots \\ \Psi^n(\overline{\alpha}) &= 0 \end{aligned}$$

If we assume that each player's trade stake is identical (namely, that $\tau_i = \frac{T}{n}$ for every i), then there exists a symmetric Bayesian Nash equilibrium for an n-player game for small $\delta > 0$ in which every player's cutpoint, $\overline{\alpha}_n$, is implicitly defined by one equation with one endogenous variable:

$$\Psi^n(\overline{\alpha}_n) = \overline{\alpha}_n \left[1 - \delta F(\overline{\alpha}_n)^n \right] - \frac{kn}{T} + \frac{\delta}{1-\delta} b + \delta F(\overline{\alpha}_n)^{n-1} \left(\frac{kn}{T} - \frac{\delta}{1-\delta} b + r + \int_0^{\overline{\alpha}_i} \alpha f(\alpha)\, d\alpha \right) = 0$$

□

Proof of Proposition 2. By the proof of Proposition 1, the unique cutpoint for the n-player game is defined by $\Psi^n(\overline{\alpha}_n) = 0$ and:

$$\lim_{\delta \to 0} \Psi^n = \overline{\alpha}_n - \frac{kn}{T} = 0 \quad \Leftrightarrow \quad \lim_{\delta \to 0} \overline{\alpha}_n = \frac{kn}{T}$$

Since this holds for any n:

$$\lim_{\delta \to 0} \Psi^{n+1} = \overline{\alpha}_{n+1} - \frac{k(n+1)}{T} = 0 \quad \Leftrightarrow \quad \lim_{\delta \to 0} \overline{\alpha}_{n+1} = \frac{k(n+1)}{T}$$

So $\lim_{\delta \to 0} \overline{\alpha}_n < \lim_{\delta \to 0} \overline{\alpha}_{n+1}$, which means that each player is less likely to file when the number of players increases and δ is small. □

Proof of Proposition 3. Let ϕ_n denote the *ex ante* probability that no player files in period t (conditional on reaching period t):

$$\phi_n \equiv \Pi_{i=1}^{n} F\left(\overline{\alpha}_i\right) = F\left(\overline{\alpha}_n\right)^n$$

For an interior equilibrium, define difference function:

$$\begin{aligned} \Gamma_n(k) &\equiv (1-\phi_{n+1}) - (1-\phi_n) = \phi_n - \phi_{n+1} \\ \text{So: } \lim_{\delta\to 0}\Gamma_n(k) &= F\left(\frac{kn}{T}\right)^n - F\left(\frac{k\left(n+1\right)}{T}\right)^{n+1} = \left(\frac{kn}{AT}\right)^n - \left(\frac{k\left(n+1\right)}{AT}\right)^{n+1} \end{aligned}$$

Note that $\Gamma_n(k=0)=0$. And for $k \neq 0$:

$$\Gamma_n(k)=0 \quad \Leftrightarrow \quad \left(\frac{kn}{AT}\right)^n = \left(\frac{k\left(n+1\right)}{AT}\right)^{n+1} \quad \Leftrightarrow \quad k = \frac{ATn^n}{\left(n+1\right)^{n+1}} \equiv \kappa_n$$

Recall that we have an interior solution if $\frac{kn}{T} < A \Leftrightarrow k < \frac{AT}{n}$ for all values of n. So: $k < \frac{AT}{n+1}$. Note that $0 < \kappa_n$ and:

$$\kappa_n = \frac{ATn^n}{\left(n+1\right)^{n+1}} < \frac{AT}{n+1} \quad \Leftrightarrow \quad n^n < \left(n+1\right)^n$$

So κ_n is an interior value for our parameter-space. Now note that:

$$\begin{aligned} \frac{\partial \Gamma_n}{\partial k} &= n\left(\frac{n}{AT}\right)^n k^{n-1} - (n+1)\left(\frac{(n+1)}{AT}\right)^{n+1} k^n \\ &= \left(\frac{n^{n+1}}{A^n T^n}\right) k^{n-1} - \left(\frac{(n+1)^{n+2}}{A^{n+1}T^{n+1}}\right) k^n \\ \Rightarrow \frac{\partial \Gamma_n}{\partial k} \geq 0 \quad &\Leftrightarrow \quad \left(\frac{(n+1)^{n+2}}{A^{n+1}T^{n+1}}\right) k^n \leq \left(\frac{n^{n+1}}{A^n T^n}\right) k^{n-1} \\ &\Leftrightarrow \quad k \leq \frac{n^{n+1}AT}{\left(n+1\right)^{n+2}} \equiv \gamma_n \end{aligned}$$

where $0 < \gamma_n$ and:

$$\begin{aligned} \gamma_n < \kappa_n \quad &\Leftrightarrow \quad \frac{n^{n+1}AT}{\left(n+1\right)^{n+2}} < \frac{ATn^n}{\left(n+1\right)^{n+1}} \\ &\Leftrightarrow \quad n < n+1 \end{aligned}$$

So $\Gamma_n\left(k\right)$ is non-monotonic: it is strictly increasing for $k \in (0, \gamma_n)$, and strictly decreasing for all $k > \gamma_n$. When combined with the fact that $\Gamma_n(k=0) = \Gamma_n(\kappa_n) = 0$, this implies that $\Gamma_n > 0$ for $k < \kappa_n$ and $\Gamma_n < 0$ for $k > \kappa_n$. So increasing the number of players: (i) increases the likelihood of enforcement when $k < \kappa_n$, and (ii) decreases the likelihood of enforcement when $k > \kappa_n$. □

Proof of Proposition 4. Recall that free-riding occurs when $k > \kappa_n = \frac{ATn^n}{(n+1)^{n+1}} > 0$. Define the following functions over the domain $\mathbb{R}_{++}$, $y\left(x\right) \equiv x^x$ and $z\left(x\right) \equiv \left(x+1\right)^{x+1}$. We can use the

properties of the natural log function and implicit differentiation to determine the derivatives of $y(x)$ and $z(x)$:

$$\begin{aligned} \ln[y(x)] = x\ln(x) \quad &\Rightarrow \quad y'(x) = y(x)[\ln(x)+1] = x^x[\ln(x)+1] \\ \ln[z(x)] = (x+1)\ln(x+1) \quad &\Rightarrow \quad z'(x) = z(x)[\ln(x+1)+1] = (x+1)^{x+1}[\ln(x+1)+1] \end{aligned}$$

Now define $f(x) \equiv \frac{y(x)}{z(x)}$ over the domain $\mathbb{R}_{++}$. Note that:

$$f'(x) = \frac{y(x)z(x)[\ln(x)-\ln(x+1)]}{[z(x)]^2} < 0 \quad \Leftrightarrow \quad \ln(x) < \ln(x+1)$$

This holds for all $x > 0$. Now note that $\kappa_n = ATf(n)$. So $ATf(n) > ATf(n+1)$ for all $n \in \mathbb{N}$, which implies that $\kappa_n > \kappa_{n+1}$ for all $n \in \mathbb{N}$. So cutpoint κ_n is decreasing in n. □

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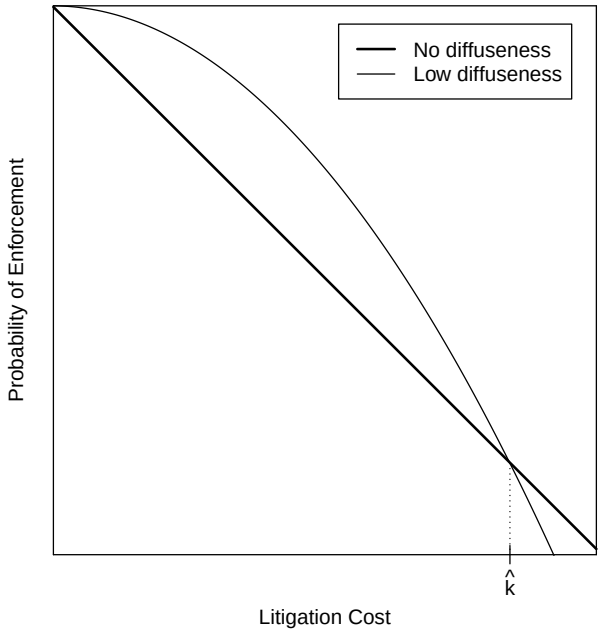
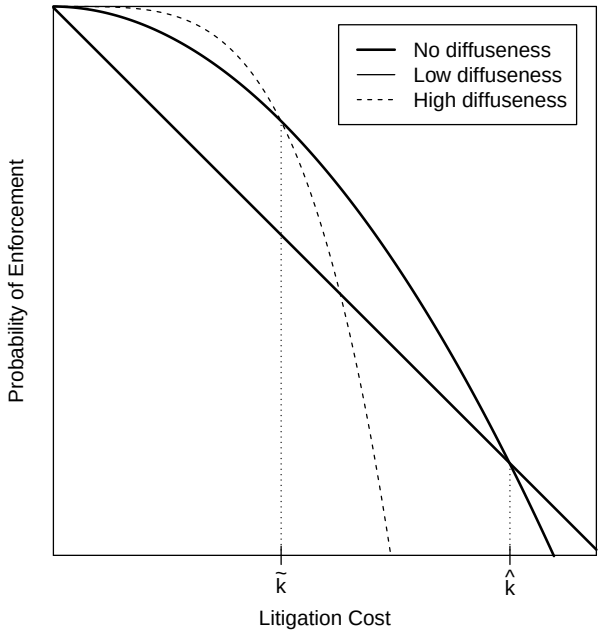
Figure 1: Impact of Diffuseness

(a) Low Diffuseness

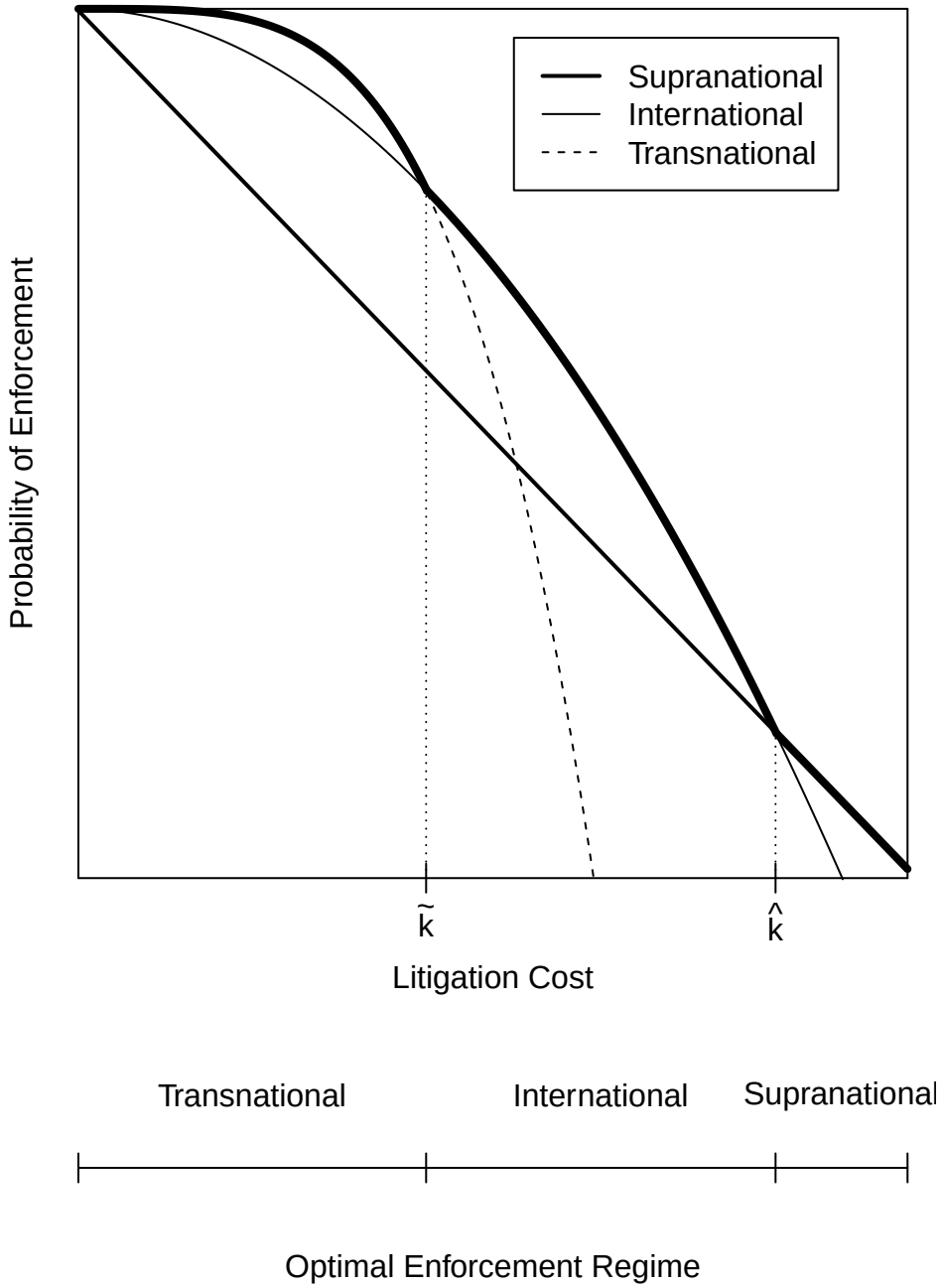


(b) Higher Diffuseness



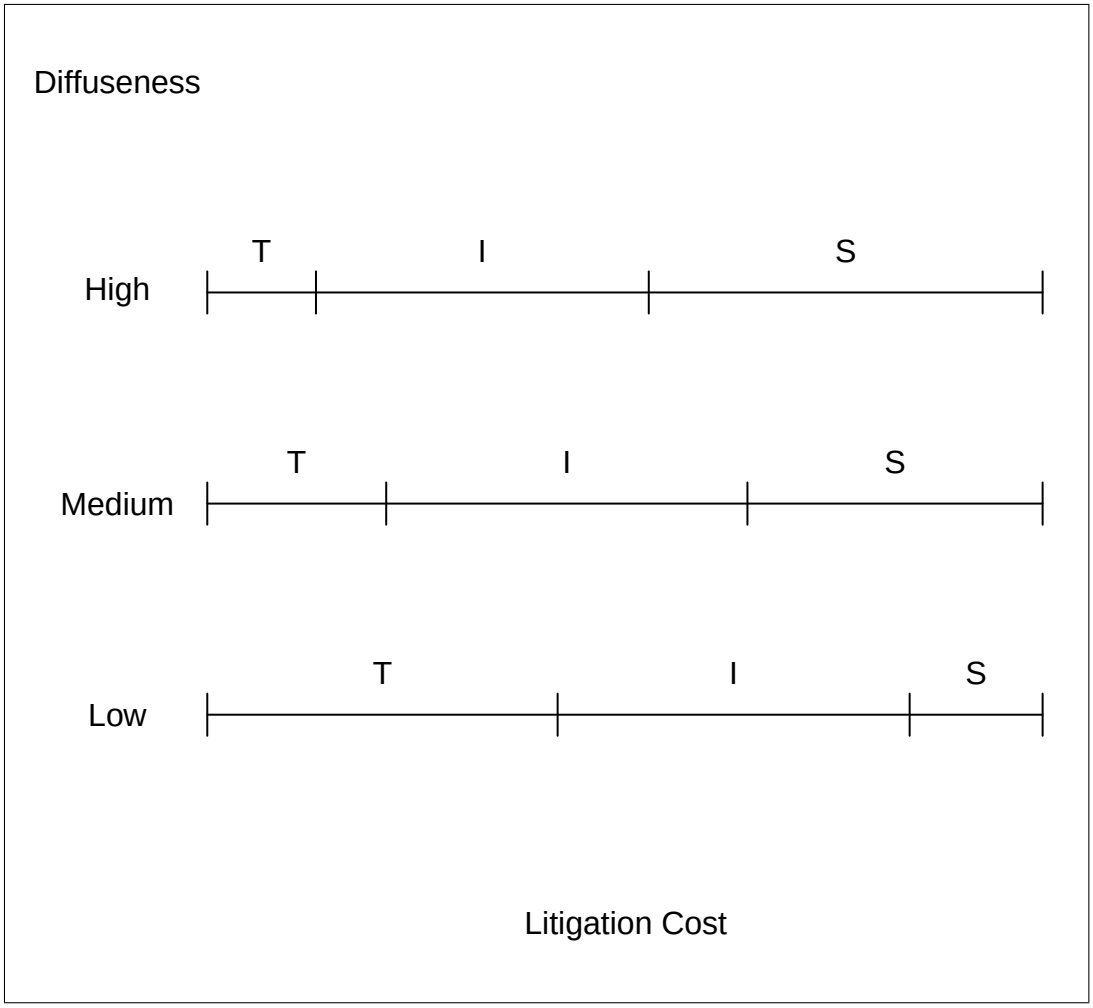
These figures were created in R from simulations of equilibrium behavior.

Figure 2: Maximizing Enforcement



This figure was created in R from simulations of equilibrium behavior.

Figure 3: Impact of Diffuseness on Institutional Design



This figure was created in R from simulations of equilibrium behavior.

Table 1: Issue Areas and Their Frequency

Variable	Meaning	n
access	Accession of new Member States	85
agricult	Agriculture	1,148
aid	State aid	217
approx	Approximation of laws and uniform laws	474
commerce	Commercial policy	128
compete	Competition	350
conjbop	Conjunctural policy and balance of payments	18
environ	Environment	228
finance	Financial provisions	150
judgconv	Convention on jurisdiction and the enforcement of judgments	138
movecap	Free movement of capital and freedom of payments	83
movegood	Free movement of goods	960
moveind	Free movement of persons and services	1,236
overseas	Association of Overseas Countries and Territories	21
social	Social policy	350
tax	Tax provisions	610
trademark	Community trade mark	48
transport	Transport	134
treaty	International agreements	194

Table 2: Frequency of ECJ Judgments

(a) Challenging Governments

Plaintiff	1954-1988	1989-2009	Total
Private actor *(preliminary references)*	1,442	2,834	4,276
European Commission *(infringement proceedings)*	341	1,519	1,860
Total	1,783	4,353	6,136

(b) Challenging EU Bodies

Plaintiff	1954-1988	1989-2009	Total
Private actor *(annulment)*	389	319	708
Government *(annulment)*	117	293	410
EU body *(annulment)*	19	62	81
Total	525	674	1,199

(c) Challenging EU Bodies: Detailed Break-down

	Plaintiffs				
Defendants	Private actor	Government	Commission	Council	Parliament
Commission only*	495	315	.	0	3
Commission and Council**	17	3	.	.	1
Council only	61	63	38	.	27
Council and Parliament	0	11	5	.	.
Council and Other	1	0	0	.	.
Parliament only*	2	6	0	4	.
ECSC High Authority	87	11	0	0	0
OHIM	45	0	0	0	0
Other only	0	1	3	0	0
Total	708	410	46	4	31

* Includes cases with other non-EU defendants.

** Includes both orderings of names.

Table 3: Challenging Governments: Percentage of Judgment-Issue Pairs

Issue Area	Type of Plaintiff		Difference in Means	Primary
	Private actor	Commission	p-value	Enforcer
access	0.94	0.95	0.97	.
agricult	17.32	7.41	0	Private actor
aid	1.59	3.23	0	Commission
approx	7.57	9.50	0.05	Commission
commerce	1.13	0	0	Private actor
compete	3.81	0.95	0	Private actor
conjbop	0.22	0.19	0.85	.
environ	1.68	13.30	0	Commission
finance	1.54	3.04	0.01	Commission
judgconv	3.00	0	0	Private actor
movecap	1.41	1.61	0.64	.
movegood	16.82	15.38	0.25	.
moveind	21.41	22.60	0.40	.
overseas	0.24	0	0	Private actor
social	6.40	3.70	0	Private actor
tax	10.31	12.35	0.07	.
trademark	0.09	0	0.05	Private actor
transport	1.83	3.04	0.03	Commission
treaty	2.70	2.75	0.92	.

Note: The table shows the percentage of judgment-issue pairs for cases filed by the given plaintiff-type. "Primary enforcer" in displayed for p-values at or below the 0.05 level of significance.

Table 4: Challenging EU Bodies: Percentage of Judgment-Issue Pairs

Issue Area	Type of Plaintiff		Difference in Means	Primary
	Government	EU body	p-value	Enforcer
access	5.01	4.29	0.79	.
agricult	49.08	8.57	0	Government
aid	19.53	4.29	0	Government
approx	4.49	11.43	0.08	.
commerce	3.69	8.57	0.17	.
compete	2.37	0	0	Government
conjbop	0.53	0	0.16	.
environ	0.79	10.00	0.01	EU body
finance	2.64	14.29	0.01	EU body
judgconv	0	0	.	.
movecap	0.26	0	0.32	.
movegood	2.11	5.71	0.22	.
moveind	1.85	5.71	0.18	.
overseas	1.85	0	0.01	Government
social	1.58	1.43	0.92	.
tax	0.26	4.29	0.11	.
trademark	0	0	.	.
transport	1.58	8.57	0.05	EU body
treaty	2.37	12.86	0.01	EU body

Note: The table shows the percentage of judgment-issue pairs for cases filed by the given plaintiff-type. "Primary enforcer" in displayed for p-values at or below the 0.05 level of significance.