Global Value Chains as a Constraint on Sovereignty: Evidence from Investor-State Dispute Settlement*

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Abstract

Inspired by Strange (1996), this article explores the conditions under which multinational corporations (MNCs) constrain host state sovereignty. We argue that MNCs with the potential to disrupt global value chains have outsized leverage to shape domestic regulation in host states. To do so, we draw on a novel dataset of regulations disputed by MNCs: those regulations at the basis of MNC litigation against host states in Investor-State Dispute Settlement (ISDS). Should a host state lose an ISDS arbitration, it must provide compensation to the MNC, but it is under no obligation to undo the disputed regulation. Nonetheless, our novel data demonstrate that host states undo some 24% of regulations disputed in ISDS (1987-2017). We provide a variety of evidence to demonstrate that host states are more likely to undo regulations when sued by MNCs from home states with deep global value chain-integration in the host state. Consistent with Strange (1996), such powerful MNCs are associated with limits on host state sovereignty and coordination on pro-foreign investor regulatory policies.

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1 Introduction

Power concerns the capacity to influence the behavior of others. Led by the pioneering work of Susan Strange, many analysts see today's multinational corporations (MNCs) as comprising a key locus of power with the ability to influence the behavior of governments not just at home, but also in the host states in which they invest (Strange, 1983, 2015). One priority in contemporary political science research is to understand the extent to which MNCs are in fact forcing a "retreat of the state" (Strange, 1996). What are the conditions under which foreign, private market actors shape regulatory policy in sovereign states?

MNCs can exert power over host states indirectly. For example, MNCs can lean on diplomatic support from their home governments when embroiled in conflict in a host country (Wellhausen, 2015*b*; Gertz, 2018; Gertz, Jandhyala and Poulsen, 2018). MNCs can also influence their home governments' behavior in international negotiations, shaping the priorities and content of international agreements with host states (Sell and Prakash, 2004). MNCs further indirectly influence host states when they invest in private governance, third-party monitoring, and other substitutes for traditional state-led regulation of their activities (Locke, 2013; Distelhorst and Locke, 2018; Malesky and Mosley, 2018; Markus, 2012). MNCs have been instrumental in building international regime complexes around climate change and other issues, which shape the regulatory activities of host states (Keohane and Victor, 2011; Vogel, 2008; Raustiala and Victor, 2004).

MNCs can also have direct power over policy outcomes in a host state. An important body of work extends insights about corporate lobbying to the case of foreign MNCs lobbying governments in host states (Weymouth, 2012; Hansen and Mitchell, 2000; Mitchell, Hansen and Jepsen, 1997). Other work focuses on the relationship between economic structure and firms' political leverage (Salamon and Siegfried, 1977). For example, Johns and Wellhausen (2016) connects MNC production networks and political power: an MNC with extensive enough supplier links in a host state can leverage that economic integration to exert direct power over the host government. Johns and Wellhausen (2016) make this argument in the context of MNCs mitigating political risk. Yet this argument can be stated more broadly, typifying the normative concern articulated by Strange: well-integrated MNCs can constrain autonomous host state policymaking to their own advantage.

In this article, we argue that global value chain (GVC) integration – increasingly dominant in the modern economy (see Kim, this issue) – generates pressures for host states to forego regulatory autonomy and converge to pro-foreign investor preferences. Suppose a host state chooses to set a regulation that an MNC doing business in the host state contests. We hypothesize that the host state is less likely to maintain the disputed regulation if the frustrated MNC has the potential to significantly disrupt GVC connections in the host state. Threats of exit, drawdown, or diversion of intermediate-goods imports into the host state threaten the productivity and employment benefits that GVC integration facilitates. Thus, GVC-based integration is an important point of leverage by which MNCs can constrain host state regulatory autonomy.

To make this argument, we turn to the controversial setting of Investor-State Dispute Settlement (ISDS), enabled by thousands of international investment agreements (IIAs) and investor-state contractual clauses. Under ISDS, an MNC has standing to sue the host state in which it is invested over an (alleged) property rights violation. In many of these cases, the claimant MNC takes issue with a particular regulation. In a novel dataset, we code these disputed regulations (1987-2018) and trace what happens to them after the ISDS arbitration is filed. We find that host states undo some 24% of disputed regulations. This is particularly notable, because the remedy in ISDS is compensation only: international investment law does not require the host state to change a disputed regulation. Why, then, would host states sometimes undo their domestic choices and converge toward foreign investor preferences?

We use both quantitative and qualitative methods to connect our argument about the leverage MNCs gain through GVC integration to variation in regulatory change around ISDS. In particular, we demonstrate that higher intermediate-goods exports from a claimant MNC's home state to the host state is associated with a higher likelihood of (pro-foreign) regulatory change. Our implicit assumption that one claimant MNC can impact the investment decisions of its "co-national" MNCs from the same home state builds on the finding that investor nationality is an important transmitter of political risk (Maurer, 2013; Wellhausen, 2015*b*).

This article's deep dive into a nuanced setting generates findings ultimately consistent with the broader point in Strange (1996): deeper economic integration is associated with a retreat of state sovereignty, in favor of convergence toward the preferences of international economic actors. The explosion in recent years of global production networks have proven important to the production and employment goals of host state governments, yet this particular form of integration comes with political constraints already foreseen decades ago.

2 ISDS Arbitration and Regulatory Change

Thousands of international investment agreements (IIAs) and contractual clauses between MNCs and host states give MNCs the opportunity to sue for compensation for (alleged) property rights violations undertaken by the host state.[1] Investor-State Dispute Settlement (ISDS) is the process of formal dispute resolution under international investment law, in which ad hoc tribunals rule on whether and how much compensation is owed to claimant foreign investors. Serious use of ISDS arbitration began in the mid-1990s, with exponential growth in cases in recent years; our dataset includes 809 public ISDS arbitrations (1987-2017).[2] Growing calls for ISDS reform focus on the lack of an appeals system and the reality of conflicting rulings given the decentralized, 3000-plus treaties and contracts that set the terms of these ad hoc adjudications.[3]

Questions about the effects the de facto ISDS regime has on host state sovereignty, in particular host state autonomy over regulatory policymaking, are swirling (Waibel et al., 2010). Advocates and scholars contend that ISDS dissuades host states from setting new regulations and, in general, that ISDS allows MNC preferences to overrule democratic policymaking.[4] States are renegotiating or withdrawing from existing treaty protections and attempting to limit the impact new treaties have on their "state regulatory space" in response to ISDS cases (Haftel and Thompson, 2013, 2018). Yet despite such controversy, states have not been eschewing ISDS altogether; in the current environment of multiple, overlapping treaty protections for foreign investors saturating the globe, it is difficult for any state to do so unilaterally (Peinhardt and Wellhausen, 2016). In short, ISDS and international investment law is a setting in which the idea of a contest between economic

[1]International organizations tried and failed dozens of times to coordinate on investment protection, and the hodgepodge of decentralized IIAs grew up as an alternative to multilateral coordination (Jandhyala and Mansfield, 2011; Wellhausen, 2015*b*; St John, 2018).

[2]ISDS arbitrations can be brought under international investment agreements (IIAs), including Bilateral Investment Treaties (BITs) and trade and other economic treaties that include ISDS clauses. Investors often also have recourse to ISDS written directly into contracts signed with the host state. Following Wellhausen (2016), we examine all public ISDS arbitrations, because the legal means of filing is irrelevant to our argument.

[3]Several recently-signed IIAs, especially the Canada-European Union Trade Agreement (CETA), include significant steps toward setting up a standing court. The UN Conference on Trade and Development (UNCTAD) has been a major force behind coordinating reform efforts.

[4]See, for example, Simmons (2014); Pelc (2017); Van Harten and Malysheuski (2016); Van Harten (2012); Milner (2014). For scholarship attentive to the limits of such concerns, see Moehlecke (N.d.); Johns, Thrall and Wellhausen (Forthcoming).

globalization and state regulatory sovereignty has come to a head.

ISDS has a key characteristic that makes it a useful setting in which to examine what, if any, "Strange (1996)-inspired" mechanisms might constrain host state sovereignty. That characteristic is the following: ISDS does not require the host (respondent) state sued in arbitration to change the regulation(s) that the claimant investor disputes. To repeat, there is no requirement whatsoever that the host state change its regulations if it loses an ISDS case. Rather, the host state meets its obligations when it pays the award (if any) that results from adjudication by the tribunal as compensation for the host state's property rights violation.[5] Further, there is not an established norm that host states should change a disputed regulation anyway. If anything, the norm among states and international organizations goes in the opposite direction, that ISDS should not infringe on states' sovereignty to pass and maintain the laws that they desire. For example, USTR Lighthizer testified that ISDS has "sovereignty issues...I'm always troubled by the fact that non-elected, non-Americans can make a decision that a United States law is invalid...I find that offensive." The Director of the Board of Investment in Sri Lanka criticized "bitter lessons from international arbitrations and the tendency for BITs to constrain domestic policy space" in advocating a "move away from BITs." In advocating for reform, the UN Conference on Trade and Development writes that "broad and vague formulations...have enabled investors to challenge core domestic policy decisions – for instance, in environmental, financial, energy, and health policies."[6]

Does this mean that ISDS has found the sweet spot – enforcing international regulatory convergence on respect for the rule of law via compensation awards, while allowing host states regulatory autonomy? We undertook a novel data collection effort to verify whether this is the case. Our starting point was to examine whether, in fact, host (respondent) states have in fact changed (in a pro-foreign direction) the specific regulation(s) disputed by foreign investors in ISDS. If states have made such changes – without a legal or norm-driven reason to do so – we see a clear

[5] In a handful of cases, tribunals have reached a pro-investor ruling but award zero monetary compensation. Also note that one point of controversy has been the subset of treaty protections that effectively award compensation for future lost profits, due to the host state's action (these concerns are related to "pre-establishment" clauses). Revisions to NAFTA Chapter 11 and now the USMCA, as well as other modern IIAs, attach some limits to such bases for compensation.

[6] Attributions: USTR Lighthizer to Senate Finance Committee members in response to Sen. Sherrod Brown's (D-Ohio) question on whether ISDS will be removed from NAFTA (21 June 2017). Champika Malagoda, Director of Research and Policy Advocacy Department, Board of Investment of Sri Lanka (16 October 2014). UNCTAD, "Chapter 3: Recent Policy Developments and Key Issues," World Investment Report 2017: Investment and the Digital Economy (9 May 2017). All quotations sourced from Public Citizen compilation, available here: `https://www.citizen.org/wp-content/uploads/isds-quote-sheet.pdf`.

puzzle to be explained by some other mechanism. Further, such evidence would bring with it normative implications: systematic evidence of pro-foreign regulatory changes by host states could support fears of a "race to the bottom," in which regulations move toward convergence with a global, pro-foreign standard that observers might percieve as a "bottom."

We first went through our dataset of 809 public ISDS arbitrations (filed 1987-2017) to identify if there is an underlying regulation disputed by the claimant, and if so, its characteristics.[7] Our coding of "regulation" is based on the dictionary definition of any "rule or directive made and maintained by an authority."[8] Coding relied primarily on case documents and, secondarily, on academic case notes and other reliable sources.[9] To qualify as a disputed regulation for our purposes, we require that the rule or directive be "on the books"; covert or extralegal government practices do not count. Further, we do not record instances in which the claimant accuses the host state of breaking its own regulation; we interpret this as a dispute over enforcement rather than the content of the regulation. We were able to confirm a specific, disputed host state regulation in 370 of the 809 ISDS arbitrations. The primary reason this number is far from 100% is that many ISDS arbitrations are filed in response to (alleged) contract violations, which are not our focus here. A secondary reason is that claimants sometimes do not specify the exact host state regulation that triggered the dispute. Third, claimants have broad abilities to keep the exact content of ISDS arbitration confidential (Hafner-Burton, Puig and Victor, 2017; Hafner-Burton, Steinert-Threlkeld and Victor, 2016). We do not attempt to infer which regulation(s) might be applicable when compelling documentation is unavailable. Thus, we bias toward undercounting specific regulations disputed in ISDS.

Our next step was to code the ISDS arbitrations in which the host state changes the disputed regulation in a pro-foreign investor direction at any point after the ISDS filing through the end of the study period. These ISDS cases are ones in which the host state change increases regulatory harmonization toward a more pro-openness, pro-foreign-investment position. We operationalize change dichotomously: cases are coded 1 if there is a (pro-foreign) change in a disputed regulation at any point after the arbitration is filed through the end of the study period (through 2018, for ISDS

[7] In the rare event that an investor cites multiple regulations in a single case, we record all disputed regulations.

[8] Google Dictionary.

[9] Academic case notes are published in journals such as *The ICSID Review.* Other news sources include *IA Reporter*, other business and legal news sources, and memos released by claimant firms and their legal representation.

arbitrations filed 1987-2017).[10] We coded change whenever we found evidence in governmental and/or specialized news sources that the disputed regulation had been amended, repealed, replaced, expired, or annulled/overruled by the domestic judiciary (for breakdown, see Appendix Table 4). We code 0 if we find definitive evidence that the regulation has not been substantively altered. We also code 0 if the regulation has been amended, but the amendment did not move the regulation toward the claimant investor's preferences.[11] If we could not find conclusive evidence that a regulation had either changed or stayed the same, we code it as *no evidence*.[12]

We find that the host state made a pro-foreign change to the disputed regulation in 87 of the 370 ISDS arbitrations in which a specific regulation is disputed (23.5%).[13] This gives us prima facie corroboration that ISDS is sometimes associated with regulatory convergence toward foreign-friendly standards, despite the absence of legal requirements or norm-driven pressure on host states to make such changes. Moreover, as revealed in Table 1, a subset of these 87 arbitrations are particularly puzzling. In the modal case, the host state changed disputed regulations in the context of arbitrations that the investor won. (The host state also changed disputed regulations in 17 instances of settled/discontinued arbitrations, which are commonly interpreted as wins for claimants [and their lawyers].) What is particularly surprising is that the host state changed disputed regulations relevant to 20 cases that the state in fact won: the state went through formal ISDS procedures, was ruled to not be liable for compensation to the claimant investor, and changed the associated, disputed regulation anyway. Further, the host state had already changed the disputed regulation in 13 cases that remained pending at the end of the study period. These descriptive statistics cast empirical doubt consistent with our theoretical skepticism that legal outcomes are a key cause of regulatory change.

In Appendix 6.2, we provide further descriptive statistics summarizing variation in the

[10] In the few instances in which the claimant disputes multiple regulations, we code 1 if any the disputed regulations have been changed. Note that we do not capture regulations that might have been changed in association with settlement negotiations undertaken before the claimant invoked ISDS.

[11] One example of this coding decision is in *GAMI v. Mexico* (2002). The claimant had shares in a Mexican holding company that owned five sugar mills in the country. It disputed a decree issued by the Mexican government that expropriated sugar mills owned by local subsidiaries, which had the stated purpose of revitalizing the sugar industry in the country. Since the arbitration was filed, the Mexican Expropriation Law has been amended several times, but none of the amendments touched on the core purpose of the law disputed by the investor, that is, the component that justified the seizure of private assets for public benefit (`http://www.diputados.gob.mx/LeyesBiblio/pdf/35.pdf`).

[12] In our primary regression analyses, we treat *no evidence* as equivalent to 0 (*no change*). We confirm that our results are robust to dropping these cases as well. See Appendix, Table 11.

[13] This is roughly 11% of all ISDS arbitrations in the data, including those in which no specific regulation is publicly disputed.

Table 1: **ISDS outcomes and pro-foreign regulation change, by case (filed 1987-2017, assessed 2018).** Host states have changed disputed regulations in a pro-foreign direction even after winning the related ISDS arbitration.

ISDS Outcome	Regulation disputed (count)	Regulation changed (count)	Pct
Investor win	113	37	32.7%
Settled	45	17	37.8%
State win	99	20	20.2%
Pending	113	13	11.5%
Total	*370*	*87*	*23.5%*

87 ISDS arbitrations associated with regulatory change. Disputed regulations include actual laws passed by the legislative branch, executive decrees, judicial rulings, or some combination of these. In the data, regulations ultimately resulting from legislative actions dominate, with executive actions also prominent (Appendix Table 5). Although the lion's share of regulation-change arbitrations have been brought by US investors, relevant claimant investors have come from 23 other home states (Appendix Table 6). Additionally, while the modal claimant is in utilities (electricity, gas, water supply, sewerage, waste, and remediation services), relevant claimant investors have come from 14 other industries (Appendix Table 7). Twenty-eight host states have changed disputed regulations, including not only developing countries but also Canada (associated with 6 arbitrations) and the United States (associated with 5 arbitrations) (Appendix Table 8). Finally, it is not the case that arbitrations heard early in the period have disproportionately high rates of regulatory change (Appendix Figure 4). However, it is important to note that the 2002 Emergency Law in Argentina accounted for 25 public ISDS arbitrations, and that law expired in 2018, giving Argentina and this set of arbitrations an outsized role in the dataset (for further detail, see Appendix 6.2). We carefully address the sensitivity of our results to including or excluding these cases.[14]

3 Theory: Pro-Foreign Regulatory Change to Avoid GVC Disruption

We use our novel ISDS dataset to examine the conditions under which foreign, private market actors can influence regulatory policy in the host states in which they invest. If the host state sets a regulation that the MNC considers to have violated its property rights, and the MNC sues

[14] See also Appendix 6.3 and 6.4.

under ISDS, under what conditions is the host state more likely to undo the disputed regulation? We expect the host state to be more likely to change the regulation, and move closer toward the MNC's preferences, if that MNC has more leverage over it. Our argument is that one salient form of leverage is the GVC integration that the MNC can credibly disrupt if the disputed regulation were to remain in place.

A growing body of scholarship focuses on the political implications of the structure of MNCs. In broad strokes, heterogeneous trade theory suggests that variation in firms' size and structure affect their success in the international economy (Melitz, 2003; Melitz and Redding, 2014). Political scientists are increasingly drawing out the implications of firm heterogeneity for government policy (Baccini, Pinto and Weymouth, 2017; Kim, 2017; Owen and Quinn, 2016; Queralt, 2017; Jensen, Quinn and Weymouth, 2015). Some of this work considers firm heterogeneity particularly in the context of fragmented production processes, broken up across firms and borders in complex global value chains. In particular, Osgood et al. (2017) consider the "charmed life of superstar exporters," using conjoint experiments to provide evidence that MNCs' preferences over government policy are shaped by the depth of their involvement in global production networks (see also Meckling and Hughes 2017).

Johns and Wellhausen (2016) connect a specific MNC's value chain integration in the host state to its ability to achieve a particular outcome in the host state – namely, to ensure protection of its property rights. Host states reap important, direct benefits in terms of increased production and employment when MNCs engage local partners in value chain relationships. In Johns and Wellhausen (2016), it is the costs that violating the MNC's property rights would bring on these partners that incentivize the host state to refrain from violating the MNC's property rights in the first place. An MNC with more economic links to suppliers in the host state benefits from an environment in which the host state is interested in keeping it happy, so to speak. Our article presents an argument consistent with Johns and Wellhausen (2016): should the host state set a regulation that an MNC disputes, the likelihood that the host state changes the regulation increases the more GVC-integration the MNC has in the host state. Note that the argument is different from one that says well-integrated MNCs transmit regulations across borders (Schiller, 2018). It is not that the claimant MNC is asking more of its suppliers in the host state. Convergence toward the MNC's preferences takes place because the host state is incentivized to avoid the high costs of

GVC disruption.

At the same time, this article moves the literature forward by focusing on GVC-related leverage not just from the MNC itself, but from any GVC integration that the aggrieved MNC could potentially interrupt. FDI scholarship has long examined channels through which one MNC's conflict with a host state can deter investment by others (Pandya, 2016). Wellhausen (2015*b*) argues that nationality is one important channel: an MNC of a given nationality in a given host state is more likely to see a "co-national" MNC's political issues as relevant for its own future success.[15] Relevant here, Wellhausen (2015*a*,*b*) provide evidence that after an MNC sues a host state under ISDS, directed FDI flows in that home-host dyad are reduced for several years.[16] One implication is that an ISDS claimant from a home state associated with more valuable FDI has powerful leverage over the host state, because the costs of losing that home state's FDI are high. (Note again that leverage comes from averting potential losses from the home state as a whole, not just the particular, aggrieved MNC.) This line of reasoning leads us to expect that a host state is more likely to change a regulation when that regulation is disputed by an MNC from a home state that brings particularly valuable FDI.[17]

In sum, a variety of scholarship establishes that being sued in ISDS can deter FDI, that political risk signals travel through nationality-tied networks of MNCs, and that GVC integration is particularly costly to host states if it is disrupted. We connect the pieces in the following proposition: *After being sued in ISDS arbitration, a host state is more likely to change a disputed regulation if the claimant MNC comes from a home state that engages in more GVC integration with the host state.*

We highlight two implications of this proposition. First, the proposition necessarily implies that final-goods trade is not as important to MNC leverage as GVC intermediate-goods trade. Disruption to final-goods exports from the home to the host state could certainly hurt consumers. However, disruption to final-goods trade can carry benefits for domestic producers, as disruption

[15] See also Maurer 2013; Gertz 2018; Gertz, Jandhyala and Poulsen 2018; for an alternative view, see Blake and Moschieri (2017).

[16] Allee and Peinhardt (2010) first established that being sued in ISDS can carry costs in terms of deterred future FDI in general; Wellhausen (2015*a*,*b*) find that effect is particularly driven by co-nationals.

[17] Beazer and Blake (2018) argues that complementarities between home and host state institutions make FDI from some home states more successful in a given home state. In our terms, Beazer and Blake (2018) identify a kind of "more valuable FDI." One contribution of our article is to identify another.

can increase the price-competitiveness and domestic market share of domestic producers.[18] This tradeoff should mitigate the political leverage of MNCs that export final goods into the host state.

Second, the proposition makes no reference to the development level of the host state. As such, we endeavor to show our purported mechanism at play even when host states are relatively richer. Indeed, the reality that developed host states are increasingly sued in ISDS has generated new waves of criticism of the de facto international investment regime, making the applicability of our argument to developed countries more important (Pelc, 2017; Johns, Thrall and Wellhausen, Forthcoming; Johns, Pelc and Wellhausen, 2019).

While this proposition is based on a signaling logic, we emphasize that the signal is limited. We are skeptical that changing a disputed regulation would send a meaningful, behavior-changing signal to current and potential foreign direct investors in general that the host state is willing to shape its regulatory environment favorably to them. Our skepticism is rooted in the fact that, despite many analysts' best efforts, signing onto ISDS-enabling treaties in the first place has been found to have a marginal impact on FDI at best (Kerner and Lawrence, 2014), and that, instead, ISDS-enabling treaties have generated serious costs, inspiring increasing numbers of renegotiations and withdrawals (Poulsen, 2015; Peinhardt and Wellhausen, 2016; Haftel and Thompson, 2018).

On the other hand, we account for one additional, particular signal that a given ISDS arbitration might send. It makes sense that host states are more likely to change regulations when they lose: a regulation for which the state had to compensate one claimant could be disputed by others in the future, multiplying legal and compensation costs. This is a realistic concern. For example, Spain has been sued 40 times, the Czech Republic eight times, and Italy three times in reference to national renewables energy regulations each of those countries set. It is true – and a key contemporary criticism of the system – that cases disputing the same regulation can have different outcomes. But legal fees, if not compensation, add up (Waibel et al., 2010; Franck, 2019).

4 Empirical Evidence

Our argument's key, testable proposition is nuanced. We deliberately take a mixed-methods approach to providing empirical evidence, intending the preponderance of the evidence to support

[18] Indeed, this is the result of tariffs that President Trump continually trumpets in his public comments (i.e. tweets).

our argument especially because of several, undeniable identification issues. Central among these is the issue of how disputed regulations get selected into ISDS. If GVC integration is associated with a lower likelihood of property rights disputes to begin with (Johns and Wellhausen, 2016), then what are we to make of the GVC-integrated cases that are selected into ISDS? We offer two comments that, while not resolving this tension, suggest that it need not forestall analysis altogether.

First, the cases selected into ISDS are not uniformly egregious, "last ditch" efforts to recover some compensation from the host state. Wellhausen (Forthcoming) provides relevant evidence: in about 31 percent of ISDS arbitrations, the claimant investor "reinvests" in the host state, either staying in despite arbitration or leaving and reentering (1987-2016). If ISDS sometimes operates in ways consistent with standard expectations of the law – in that formal procedures can facilitate returns to cooperation – then it is more reasonable to think that GVC-integrated MNCs with relatively strong ex ante property rights protections might still select into ISDS when disputes over regulations arise.

Second, disputes over regulations can reasonably arise even among such a set of MNCs with relatively strong ex ante property rights protections. A variety of political science literature catalogues the sources of investor-state disputes in general and ISDS litigation in particular (Wellhausen, 2015*b*; Tucker, 2018; St John, 2018). Poulsen (2015) argues that host states, especially early on, set regulations that they did not foresee as potentially triggering ISDS. Moehlecke (N.d.), Pelc (2017), Haftel and Thompson (2013, 2018) and others chronicle instances in which host states set health, environment, safety, and other regulations – supported by democratic publics and/or by international organizations – that go on to trigger MNCs to file for ISDS arbitration. MNCs from industries across the board, including industries like services and manufacturing that have traditionally been thought to carry less political risk, have filed for ISDS (Wellhausen, 2016). In short, we see theoretical and empirical reasons to believe that even ex ante powerful MNCs might sometimes face a regulation in a host state that they see as illegitimate and sue over it.

Nonetheless, with the mea culpa that we do not have a rigorous identification strategy, we use three types of evidence to support our argument – regressions, medium-n analysis, and vignettes. All three require us to operationalize GVC integration.

4.1 Key Explanatory Variable: Trade in GVC intermediate goods

Our argument focuses on GVC trade associated with the claimant MNC in the host state. Recall that our argument does not hinge on the importance of the claimant MNC in the host state alone. Rather, we argue that the host state will be more likely to change disputed regulations if the claimant's complaint is linked to a bigger set of economic transactions, which we capture via the claimant's nationality (Wellhausen, 2015*b*). When more economic activity is at stake, the host state have more incentive to change its regulations in order to forestall wider potential economic disruption – even if there is no legal requirement for the state to do so.

Our main approach to measuring claimants' relationship to GVC trade in the host state is to leverage data on bilateral trade in intermediates from the OECD.[19] Intermediate inputs are the goods and services imported into an economy and employed by it to produce items for both domestic consumption and export. We choose trade in intermediates over other statistics made available by the OECD, because this is the GVC trade that, if disrupted, would cause direct harm to domestic production and employment in the host state that depends on international connections. The OECD data cover 168 reporting states and 206 partner states in the years of our study (1987-2017), and the relevant statistics are available for 727 of the 809 cases in our dataset.

Our key variable is Bilateral GVC exports to host: the total value of intermediates exported from the home state to the host state in the year that the case was filed (logged USD). For example, in a case filed in 2013 where the claimant is from Norway and the respondent state is Poland, we take the value of exported intermediates from Norway to Poland in 2013. We expect more Bilateral GVC exports to host to be associated with a higher likelihood of the host state making a pro-foreign change to the disputed regulation.[20]

4.2 Regression analysis

First, we examine the correlates of change in disputed regulations in a cross-national time-series analysis (ISDS arbitrations filed 1987-2017, with change assessed as of end of 2018). In our

[19]OECD (2019); accessed January 2019.

[20]In the Appendix, Table 12, we explore an alternative measure: Bilateral-industry GVC exports to host. The sign on this covariate of interest is in the right direction but not consistently significant. We see these less robust results as consistent with the literature that host states are sensitive to investors categorized by nationality as a whole, not necessarily by nationality-industry. MNCs in the same industry may share risks, but they are also competitors, and one MNC can find opportunity when another's property rights are violated. See for example Wellhausen 2015*b*; Beazer and Blake 2018; Gertz, Jandhyala and Poulsen 2018.

dataset, the unit of analysis is an ISDS case, filed by an investor(s) from a given home state(s), in a host state-year. We estimate logit models, where the dependent variable is a binary measure that equals 1 if the ISDS case is associated with a pro-foreign change in the disputed regulation at any point after the filing through the end of the study period and 0 otherwise.[21]

4.2.1 Controls

Our argument is that more bilateral intermediate-goods imports incentivize host states to make regulatory changes consistent with ISDS claimants' complaints, because GVC trade particularly impacts production in the host state. Were domestic firms in the host state to be cut out of GVCs, their sales, profitability, and employment – perhaps most politically relevant – would be threatened. In contrast, if ISDS claimants were associated with reductions in the export of final goods from the home state to the host state, host state consumers would feel pain, but employment and productive capacity would not be as directly impacted. In short, it is important to our argument about the specific, powerful role of GVC trade in influencing government regulatory policy that we rule out the possibility that it is trade in final goods that has the consequential effect. To do so, we control for Bilateral exports to host (non-GVC), which is a measure of all other bilateral exports from the claimant's home to the host state, except for that in intermediates. Additionally, we control for the Bilateral FDI flow to host to capture another aspect of economic integration that could affect the host state's regulatory choices.[22] To address asymmetries between the home state and host state, which could speak to the kind of leverage the home state might more broadly have over policymaking in the host state, we construct GDP gap: the difference between the home and the host's GDP (World Bank WDI). All financial variables are measured in USD millions, logged.[23]

Because we are examining causes of regulatory change in the host state, we must also control for domestic political factors that can affect the overall tendency of the host state to change regulations. We control for Democracy, as, on the margin, we expect democracies to be more responsive to various societal demands and more frequently change their regulations (PolityIV, ranging from -10 to 10). The number of veto players also clearly shapes the likelihood of regulatory

[21] See again footnote 2 for robustness discussion.

[22] OECD (N.d.); accessed January 2019.

[23] To handle negative values, we follow Kerner (2009) in taking the natural log of the absolute value and then reintroducing the negative sign.

change; we expect a higher number of veto players to be associated with a lower likelihood of change. For optimal country and temporal coverage, we use the measure of checks and balances from the Database of Political Institutions (ranging from 1 to 6).

We have good theoretical reasons to believe that the fact that an MNC wins a tribunal ruling does not in itself generate legal or normative pressure for the host state to change the disputed regulation because of that ruling. Nevertheless, being ruled against could increase pressure on the host state to change the disputed regulation, if the ruling suggests an increased probability that other investors aggrieved by the same regulation will file – and win – in the future. Thus, we include a dummy variable that turns on if the ruling is an INVESTOR WIN, and we expect it to be associated with a higher likelihood of change.

Additionally, we account for particularities among ISDS claimants. While the majority of ISDS arbitrations are filed either by a sole investor or multiple investors from the same home state, there are 54 cases in our dataset that involve claimant investors from multiple home states.[24] Our argument implies that, when facing claimants of a variety of nationalities, the host state would be influenced by GVC integration between their economy and each of the claimants' home states. In particular, the effect of additional investors from additional home states should be additive; our argument attaches no importance to whether investors file singly or jointly. Therefore, for cases with claimants from multiple home states, we calculate BILATERAL GVC EXPORTS TO HOST by summing the values (USD millions, logged) of the exported intermediates between each of the investors' home states and the host state. We follow the same process for the FDI and other trade variables. To calculate the GDP GAP in these instances, we use largest GDP value among all investors' home states. We take this conservative approach, rather than summing GDP figures, because our intention in including the GDP gap variable is to capture power asymmetries between home and host states, which we do not see as clearly additive. Put differently, we do not code the data such that a single case filed by jointly by a US investor and a Cypriot investor receives a higher value on GDP GAP than a case filed by a US investor alone.

Finally, in full specifications, we include year and industry dummies to assuage concerns that changes in disputed regulations are an artifact of time or industry characteristics. Recall that values on explanatory variables are assessed as of the year of the ISDS case filing (1987-2017).

[24]In five of these cases, the host state changed the disputed regulation.

4.2.2 Results

Table 2 displays the results of five logit models in which Bilateral GVC exports to host is our key independent variable. We follow Lenz and Sahn (2018) in first reporting the bivariate relationship to help illustrate how our results change with the inclusion of covariates. As predicted, Bilateral GVC exports to host is positive and significant across specifications. Figure 1 reports average marginal effects for the fully specified Model 5 in Table 2; it demonstrates that the covariate of interest is substantively meaningful as well. A 1-unit increase in the home state's intermediate exports to the host state (USD millions, logged) increases the probability that the host state will change the disputed regulation by 8.00 percentage points [1.22, 14.78]. For context, this effect is similar in magnitude to that of Investor win (14.8 percentage points [8.27, 21.38]).

Figure 1: The marginal effect of bilateral GVC exports to the host on the likelihood of regulatory change is substantively meaningful. (Average marginal effects plot for Table 2, Model 5)

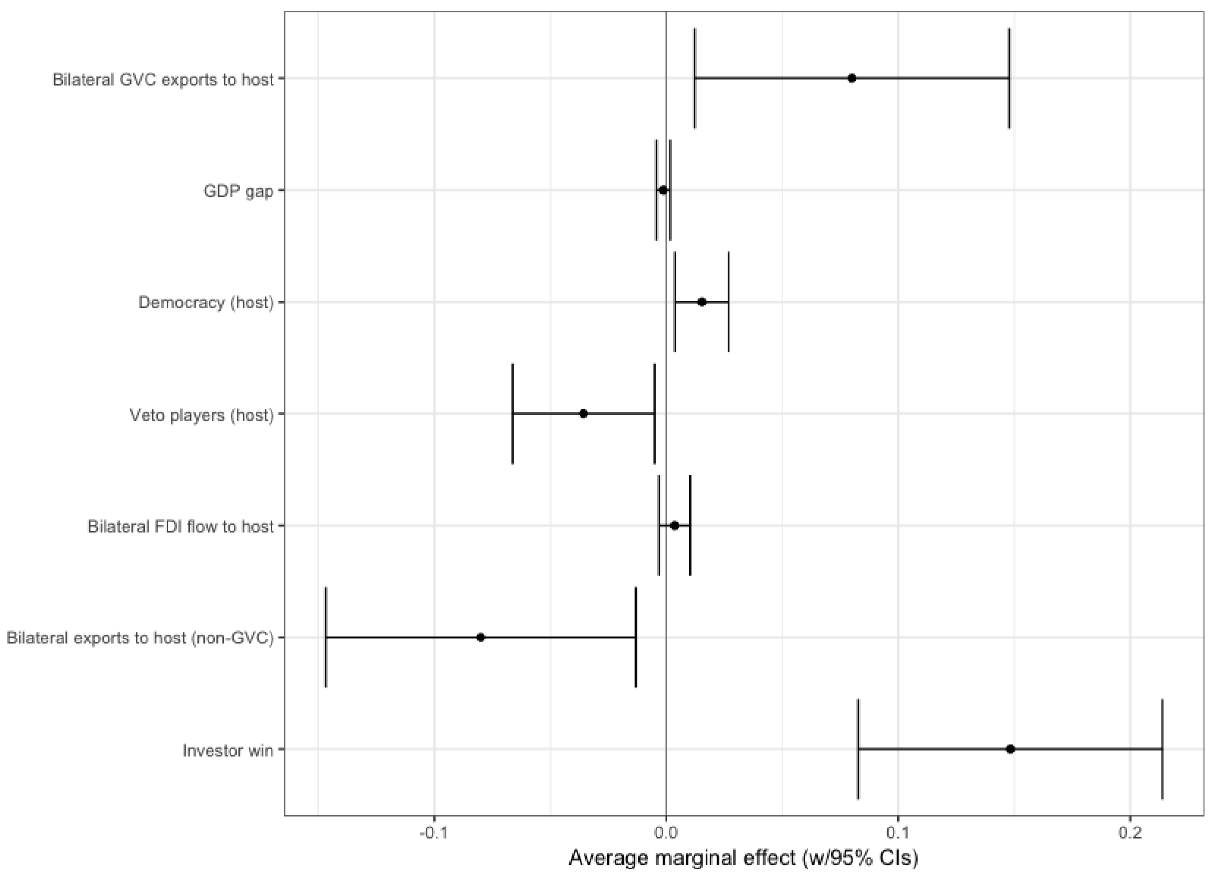
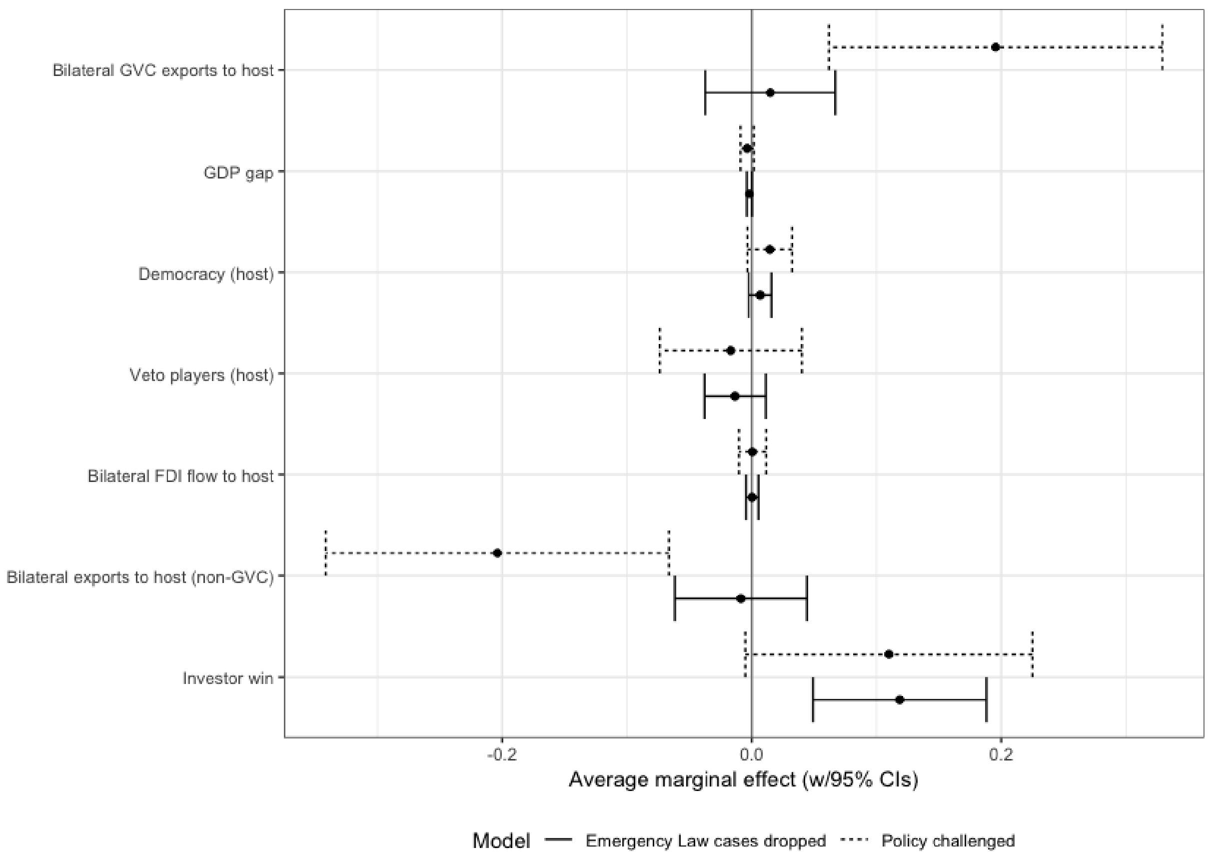


Table 2: More bilateral GVC exports is associated with a higher likelihood that the host state changes the regulation that the claimant disputed in its ISDS filing.

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral GVC exports to host	0.080*	0.111**	0.836**	0.981**	1.108**
	(0.042)	(0.054)	(0.366)	(0.432)	(0.494)
GDP gap		−0.002	−0.013	−0.003	−0.018
		(0.013)	(0.018)	(0.020)	(0.021)
Democracy (host)		0.116**	0.171***	0.165**	0.212**
		(0.047)	(0.066)	(0.073)	(0.085)
Veto players (host)		−0.070	−0.281	−0.358*	−0.494**
		(0.136)	(0.178)	(0.202)	(0.223)
Bilateral FDI flows to host			0.047	0.047	0.050
			(0.042)	(0.044)	(0.048)
Bilateral exports to host (non-GVC)			−0.786**	−0.975**	−1.108**
			(0.351)	(0.429)	(0.488)
Investor win					2.053***
					(0.526)
Constant	−2.520***	−1.679	−0.370	1.206	1.694
	(0.296)	(1.363)	(0.927)	(1.400)	(1.516)
Year Dummies	No	Yes	Yes	Yes	Yes
Industry Dummies	No	No	No	Yes	Yes
Observations	726	595	357	345	345
Log Likelihood	−260.270	−185.670	−105.401	−87.947	−79.319
Akaike Inf. Crit.	524.541	423.339	248.802	261.893	246.639
Note:					*p<0.1; **p<0.05; ***p<0.01

Turn now to the controls for other kinds of economic integration. Bilateral FDI flow to host is associated with more regulatory change, as disruptions to FDI inflows can have direct impacts on production and employment similar to our expectations of GVC disruptions. Contrast these positive effects with the consistently negative, and large magnitude, effect of Bilateral exports to host (non-GVC). This finding suggests, consistent with our argument, that it is a claimant's potential impact on the kinds of "goodies" associated with GVC trade, and not trade in finished goods, that motivates regulatory change. We see these competing effects as further evidence that GVC trade is a phenomenon with particular and different political implications than trade in, say, English cloth for Portuguese wine.

Figure 2: The marginal effect of bilateral GVC exports is correcly signed albeit not fully robust to manipulations of the dataset.



Political covariates behave as expected. Host state Democracy is consistently positive and significant, suggesting that democratic states are more likely to change their regulations in this setting, *ceteris paribus.* Additionally, an increase in Veto players is associated with a lower likelihood of regulatory change. We find no significant relationship between GDP GAP and change in disputed regulations, which gives us confidence that, in this setting, non-state, economic actors motivate pro-foreign regulatory change in ways that states and conventional conceptions of state power do not.

To ensure the robustness of the results in Table 2, we run two additional sets of regressions on different subsets of the full sample. First, we drop cases in which the claimant did not challenge a specific regulation (or such challenge is not public).[25] Second, we re-estimate after dropping the 25 cases against Argentina filed in response to the 2002 Emergency Law, which make up a large portion of instances of regulatory change in the dataset. Figure 2 presents the average marginal effects plots equivalent to Figure 1 for these subsamples.[26] The results on our covariate of interest, BILATERAL GVC EXPORTS TO HOST, are consistent when the sample is limited to cases where investors disputed specific policies. When the Emergency Law cases are dropped, however, the variable loses significance. This suggests that the results of our regression analyses are sensitive to the inclusion of this particular set of highly disputed regulations. We contend that these cases do belong in our sample (see Appendix 6.2 for detail). Nonetheless, this reduction in significance adds to our motivation to provide evidence beyond regression.

4.3 Medium-n Analysis

We now turn to a closer examination of the cases in our dataset to provide evidence consistent with the purported mechanism: regulatory change is linked to the implicit threat that maintaining the disputed regulation would risk disruption to the host state's GVC integration with MNCs from the home state.

We are especially interested in verifying the plausibility of our argument with regard to the set of ISDS cases on which the host state receives a pro-state tribunal ruling. We expect that the alternative mechanism of changing a regulation because of worries about future arbitration costs to be nearly non-existent when states win cases. A pro-state tribunal ruling means that the host state is not liable for compensation to the claimant investor. Such rulings can be made on the merits of the case, which we expect provide the strongest confirmation to the host state that the disputed

[25] See again footnote 2.

[26] See Appendix Tables 9 and 10 for full results.

regulation is not illegitimate. Given the lack of strong norms of de facto precedence in international investment law, this does not mean the host state would not be vulnerable to a different ruling in another case (Johns, Thrall and Wellhausen, Forthcoming).[27] Still, we expect the likelihood of change for the purpose of avoiding future litigation to be very low.[28] States can also win on jurisdictional grounds, meaning the tribunal does not explicitly comment on the legitimacy of the disputed regulation. In such instances, the host state can have confidence that similarly situated foreign investors would also lack jurisdiction, minimizing the risk of future litigation. Our dataset confirms these intuitions; states are significantly more likely to change regulations associated with losses than wins.[29]

Table 3: State Win + Regulation Change cases. Description and (count).

Host State	Home State	Industry	Filing Year
Argentina (4)	Belgium (1)	Agriculture, forestry and fishing (2)	1995 (2)
Canada (3)	Canada (3)	Chemical and pharma products (2)	1999 (2)
Egypt (1)	Chile (1)	Electricity, gas, steam and AC supply (7)	2000 (1)
Ghana (1)	Croatia (1)	Mining and quarrying (2)	2002 (1)
Hungary (1)	Germany (2)	Motor vehicles and trailers (1)	2003 (1)
Moldova (1)	Greece (1)	Other activities (6)	2004 (1)
Malaysia (1)	Luxembourg (1)		2005 (3)
Saint Kitts and Nevis (1)	Netherlands (1)		2006 (1)
Slovenia (1)	Poland (1)		2007 (1)
Spain (1)	United Kingdom (2)		2008 (2)
Turkey (2)	United States (6)		2009 (1)
United States (3)			2011 (1)
			2012 (2)
			2013 (1)

Nonetheless, in 20 instances the host state changed the disputed regulation despite winning the arbitration.[30] Table 3 summarizes key characteristics of these puzzling cases. Note that the 12 host states in this group include three developing countries but also nine OECD-member countries that changed regulations despite winning at arbitration. While six cases involve US firms, 14 do not; this does not immediately appear to be an American-power story. The industry composition of relevant claimants is also diverse, with representatives from the primary, secondary and tertiary

[27]Contrast the marginal role of precedence in international investment law with that in international trade law (Pelc, 2014).

[28]Results in (Allee and Peinhardt, 2011, p. 247) indicate that prevailing in an ISDS case does not have a clear effect on a host state's FDI.

[29]Per Table 1, host states have changed disputed regulations associated with only 20% of cases they won, compared to 33% of the cases they lost.P-value = 0.06 in chi-squared test of independence.

[30]In 79 instances, the state won and did not change the disputed regulation.

sectors. Finally, the relevant arbitrations were filed throughout the study period.

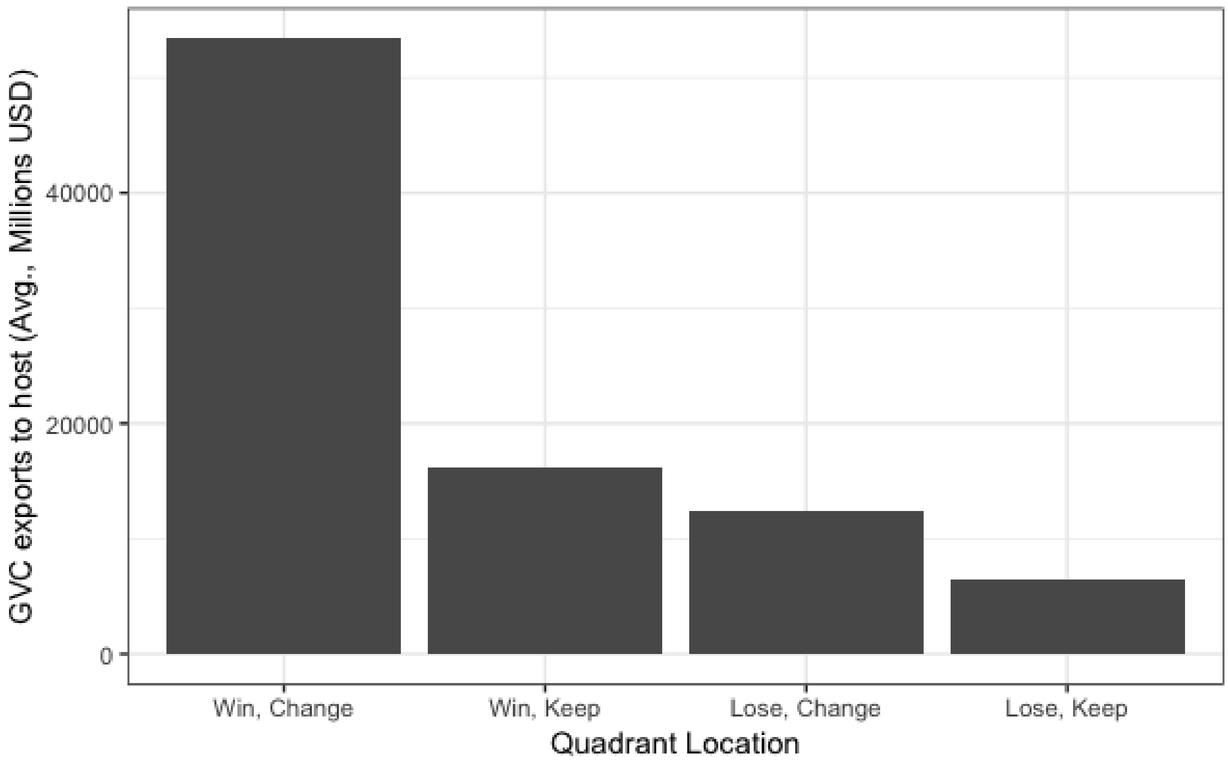


Figure 3: **Average Bilateral GVC exports to host by state win/lose and regulation change/keep.** Puzzling cases in which the host state changes the regulation despite winning are associated with high levels of bilateral GVC integration.

We consider the plausibility of our preferred hypothesis to explain these puzzling cases: deeper GVC integration between the MNC home state and host state create conditions in which the host state is more likely to change a disputed regulation. Figure 3 summarizes our key explanatory variable, home-host-year values of BILATERAL GVC EXPORTS TO HOST associated with cases in each of four categories. Consistent with expectations, the average level of GVC integration is highest for the puzzling Win/Change cases (20).[31] The average drops off significantly among Win/Keep, Lose/Change, and Lose/Keep.[32] It is consistent with our expectations that GVC integration is particularly low in this last category. We can intuit that in these instances host states are not worried about costs of future litigation; it follows that the potential costs of GVC

[31]The average for all 20 cases is around USD 55 billion. When subset on OECD member states, the average is even higher, USD 125 billion.

[32]The number of cases in each of these categories is 76, 37, and 77 respectively.

disruption should be low as well.

Finally, of 113 pending arbitrations in which a specific regulation is disputed, the host state has already changed the regulation in 13 instances (12%). The average Bilateral GVC exports to host for regulation-change cases is higher as expected, but not significantly so.

4.4 Vignettes

Here, we offer three vignettes in which an aggrieved MNC files for ISDS arbitration and the host state changes the disputed regulation. Our goal is to demonstrate the plausibility of our focus on bilateral GVC integration as an explanatory factor for regulatory outcomes, with regard to investors in different industries (services, manufacturing, mining) and host states at different levels of development (Canada, Poland, and Indonesia).

4.4.1 UPS v. Canada (2000)

UPS is an American parcel delivery service provider with investments in Canada. The dispute it brought against Canada in 2000, under NAFTA, arose from allegedly anti-competitive practices undertaken by Canada and the Canada Post Corporation (a state-owned company) in the Canadian postal services market. A key complaint in UPS's filing concerned Canada's Publications Assistance Program (PAP), which subsidized magazine distribution costs. Canada Post helped fund this program, and it in turn did most of the distribution, meaning that UPS did not benefit from the program and therefore was (allegedly) discriminated against.

The hearing on the merits took place in December of 2005. In 2006, before the ruling was issued, Canada Post announced its intention to stop funding the PAP, but it did not yet do so. In 2007, the tribunal released its award on the merits: its ruling was to dismiss all of the claims made by UPS, and UPS received no compensation.[33] Two years after winning the case, Canada terminated the PAP and replaced it with the Canada Periodical Fund two years later. This Fund is very similar to its predecessor, except for that it no longer provides preferential treatment to Canada Post. In our terms, this is a pro-foreign change on a key regulation disputed in the ISDS arbitration. UPS did not receive compensation in 2007, but it won in the sense that the 2009 regulatory change restored its competitiveness going forward.

[33] One strong dissenting opinion argued that the Publications Assistance Program provides benefits to Canada Post that are not available to UPS.

Why did Canada change the PAP? UPS could certainly credibly claim that, were Canada to keep the disputed regulation in place, its own business in Canada would be disrupted. The fact that Canada did not change the disputed regulation before the ruling, however, suggests that threats of disrupting UPS's business alone were insufficient to change Canada's behavior. The fact that the change took place two years after the arbitration ended suggests that UPS needed additional leverage beyond its own economic impact (especially given the pro-state ruling). We suggest that the fact that UPS is a prominent American corporation, and that the United States is by far Canada's biggest economic partner, helped UPS get both American and Canadian diplomats interested in the case and move the needle toward regulatory change. If we were flies on the wall, we would expect that discussions that led Canadian policymakers to change the regulation touched on the notion of maintaining strong economic relations with the United States (and that the PAP might not be the hill to die upon). In sum, the sequence of events, and the specificity of the change to the disputed regulation, is consistent with our argument that the structural importance of the claimant's home state in production and employment in the host state can increase the likelihood of change.

4.4.2 Cargill v. Poland (2004)

Cargill is a large American MNC that operates primarily in food manufacturing but also in many other industries, ranging from pharmaceuticals to finance. In Poland in the early 2000s, Cargill had invested as an owner and operator of isoglucose sweetener production facilities. In 2004, Cargill filed an ISDS case under the US-Poland Bilateral Investment Treaty. Cargill argued that Poland's imposition of quotas on isoglucose were unfairly detrimental to its investment. The final award came down in February of 2008, in favor of the investor. In the award, the tribunal detailed its view of the 2001 Sugar Law that Cargill disputed: the law had "deprived Cargill of its expectation that no quota would be imposed prior to Poland's accession to the European Union." Restrictions on subsequent quotas "frustrated Cargill's expectation." In particular, the Tribunal agreed with Cargill's claim that "in its accession negotiations, the Respondent failed to request from the EU a quota level high enough to reflect Cargill's capacity."[34]

Separately, the European Union began restructuring the sugar sector in 2006, while the

[34] Cargill, Inc. v. Republic of Poland, ICSID Case No. ARB(AF)04/02, Award dated Feb. 29, 2008, par. 428

Cargill arbitration was underway. By 2010, two years after the Cargill award, the EU had spent EUR5 billion on the endeavor. In 2013, the European Parliament and the Member States agreed to reform the Common Agricultural Policy (CAP) to eliminate sugar quotas. Finally in September 2017, sugar was "the very last agricultural quota system" in the EU to be eliminated.[35]

In short, an adverse regulation that Cargill challenged in 2004 was changed 13 years later, not because of Cargill's win at ISDS, but instead in the process of a liberalization effort in Poland and the EU as a whole. How does this outcome accord with our argument? The United States is a long-standing important ally of Poland, and Cargill is a powerful MNC with a worldwide presence. Neither were sufficient for Cargill to avoid the dispute to begin with or to get the regulation changed, even with the ISDS ruling on its side. Rather, EU politics drove the timeline for changing the regulation. We see this as consistent with the fact that Poland is far more economically integrated with its European neighbors, so EU priorities with regard to regulatory policy outweighed the priorities of Cargill and US economic interests. For example, in the year Cargill filed (2004), sixteen European states outranked US intermediates exports to Poland.[36] We see this case as consistent with a reality in which threats to deep economic integration with the United States were simply not a large enough incentive to change Poland's behavior.

4.5 IMFA v. Indonesia (2015)

India Metal & Ferro Alloys Limited (IMFA) is India's largest producer of iron alloys, "stradling the value chain from mining to smelting," with a global presence.[37] IMFA is an important integrated producer of iron alloys in Indonesia, with a large stake in coal mining in the country.[38] Indonesia is the fourth-largest producer of coal and one of its top global exporters.[39]

In 2015, IMFA filed a USD 600 million ISDS arbitration against Indonesia, claiming the permits IMFA had obtained could not be used because they were overlapping with seven other permits granted to other firms.[40] In fact, while IMFA was the first to file for ISDS arbitration, the

[35] *EU sugar quota system comes to an end*, European Comission Press Release Database, `http://europa.eu/rapid/press-release_IP-17-3487_en.htm`

[36] Germany alone exported USD 14 billion worth of intermediates to Poland in 2004, approximately 31 times the value of comparable US exports.

[37] *IMFA official website*,`www.imfa.in/index1.htm`

[38] Coal is a reducing agent used in the production of iron alloys and thus a key component of this product's value chain.

[39] *International Energy Agency profile for Indonesia*, `https://www.iea.org/countries/Indonesia/`

[40] *Indian Metals & Ferro Alloys Limited (India) v. The Government of the Republic of Indonesia, Permanent*

issuance of overlapping mining permits had become a problem since a 2009 law did not require the various permit-issuing agencies to use a harmonized map when drawing permit boundaries.[41] Just months after IMFA filed, the Indonesian Ministry of Energy and Mineral Resources put forward MEMR Regulation 43/2015 that aimed to solve the problem at the center of IMFA's claim: it established criteria for the resolution of overlapping permits.[42]

That Indonesia adopted Regulation 43/2015 while IMFA's arbitration was pending demonstrates that something other than a tribunal's decision caused it to choose to fix problematic regulation. On the other hand, the fact that Indonesia did not seek to resolve the issue during the six years in which it festered indicates that some leverage other than MNCs' out-of-court frustrations played a role. Our intuition is that Indonesia was influenced by the threat of economic disruption that became politically salient once the case was filed. Although we cannot observe a counterfactual world, we think the fact that IMFA is Indian was relevant, too. In 2015, the year of the filing, India was Indonesia's eleventh-largest intermediate-goods trading partner. That relationship was growing: India's intermediates exports to Indonesia were over six times larger by 2015 than they were around 2000. And even as Indonesia terminated most of its BITs – including the BIT with India – it continued to respect IMFA's ISDS process.

After our study period ended, the arbitration went through to a ruling: Indonesia won in March 2019. Indonesia celebrated that the tribunal accepted its argument that, because the problem of overlapping permits was known at the time IMFA acquired its permits, IMFA was not due compensation. Yet in announcing the ruling, the Minister of Finance specifically said "that the legal victory is not because the government does not care about investors."[43] Indonesia was able to change the disputed regulation, facilitating other foreign investment, from India included, while still defending itself in ISDS. Perhaps this is a near-optimal outcome from Indonesia's point of view?

Court of Arbitration, `https://pca-cpa.org/en/cases/144/`.

[41] *Indian Metals and Ferro Alloys miner files $560 mln claim against Indonesia*, `https://in.reuters.com/article/indonesia-imfa-idINKCN0T700320151118`

[42] *Mining Indonesia Procedures of Evaluation on Issuing IUP for Mineral and Coal Mining*, `http://www.indonesiamininglaw.com/indonesia-mining/mining-indonesia-procedures-of-evaluation-on-issuing-iup-for-mineral-and-mining/`

[43] *Indonesia Wins Legal Dispute against IMFA*, Office of Assistant to Deputy Cabinet Secretary for State Documents & Translation, `https://setkab.go.id/en/indonesia-wins-legal-dispute-against-imfa/`.

5 Conclusion

In this article we examine the effects of GVC integration on domestic regulatory policy change, using ISDS as a setting to identify controversial regulatory policies as well as their MNC challengers. When faced with ISDS arbitration, we argue that host states weigh the cost of forgoing their preferred regulatory strategy against the potential cost of divestment and global value chain-diversion on the part of the MNC and its co-nationals. All else equal, we expect that host states should be more willing to change regulations in response to challenges by MNCs from home states associated with more GVC-related investment in their economy. In line with our expectations, we find that when MNCs dispute regulations under international investment law, host states are more likely to change the disputed regulation if the MNCs home state exports greater levels of intermediate, GVC goods to the host state.

To further isolate the impact of GVC integration, we examine a subset of cases in which the hypothesized mechanism is most likely to be present: ISDS arbitrations in which the court ruled in the host states favor, but the host state nonetheless changed the disputed regulation. In such instances, arbitral tribunals decide that disputed regulations are not in violation of applicable international law; thus, it is unlikely that the threat of future litigation motivates host states to change disputed regulations anyway. Rather, we interpret that ISDS arbitration in these instances generates credible threats of exit that motivate host states to change regulations. We show that the kinds of MNCs involved in these state win/regulation change cases come from home states with particularly strong GVC integration in the host state. Finally, we examine three ISDS arbitrations in greater detail, providing deeper qualitative evidence that GVC integration represented by the claimant MNC and its home state plays a role in host state regulatory decision-making. In general, we hope that our qualitative focus on ISDS arbitrations in which the host state changed the disputed regulation – despite not being required to do so – convince other scholars that this subset of ISDS arbitrations is particularly relevant for political science.

While this article contains many moving pieces and implications, we highlight one implication in particular: if MNCs from more well-integrated home states have disproportionate leverage to get (perceived) adverse regulations changed, then this article provides evidence consistent with Susan Strange's motivating concern about the erosion of sovereignty in the face of deep economic integration (Strange, 1996).[44] On one hand, if deep GVC integration can underpin and push international regulatory coordination, it may provide a structural counterweight to contemporary challenges to the legitimacy of international coordination as a goal (Johns, Pelc and Wellhausen, 2019). On the other hand, whether it is normatively good for structural features of the international economy to be doing this work is an open question.

[44] The argument also implies that such powerful MNCs should be more likely to file for ISDS. This is consistent with the reality that very large firms are most likely to file for ISDS, although that bias is surely also a result of the considerable expense of arbitration (Van Harten and Malysheuski, 2016; Franck, 2019).

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6 Appendix

6.1 Sources and Methods of Change in Disputed Regulations

Table 4: Method of disputed regulation change. The most common sources of change are expiration and repeal.

Method	Number of cases
Expiration	34
Repealed	13
Court action	16
Repealed and replaced	14
Amended	10
Total changed	*87*
No change	180
No evidence	134

6.2 Descriptive Statistics and Discussion: Disputed Regulation Change

Table 5: **Branch(es) of host state national government tied to disputed regulation, by case (filed 1987-2017).** The majority of disputed regulations are tied to legislative and executive actions.

Branch	Regulation disputed (count)	Regulation changed (count)
Legislative	94	38
Executive	180	29
Legislative and Executive	37	12
Judicial	51	6
Judicial and Executive	5	1
Judicial and Legislative	3	1
Total	*370*	*87*

Table 6 organizes cases by home state. A claimant's home state is determined by the IIA invoked by the claimant; where the claimant does not invoke an international treaty, it is determined by the MNC's incorporation. Note that some cases involve claimants from multiple states; for this reason, the cases column of Table 6 does not sum to 87. Large economies of politically important countries are associated with more cases that resulted in the host state changing the law. This ranking also mirrors the pattern of ISDS more generally, where investors from large developed economies initiate more claims than others (Wellhausen, 2016; Van Harten and Malysheuski, 2016).

At the same time, Table 6 raises questions about "nationality-shopping" (Peinhardt and Wellhausen, 2015). MNCs often have ownership claims in multiple countries, which often allows them to access IIAs from a home country that might not be the one popularly understood as the home of the firm. For example, relatively permissive Dutch BITs have been under fire for facilitating "shopping"; in one case infamous in Venezuela, the Netherlands served as the home country for Exxon to sue the state, despite Venezuela not having a BIT with the United States.[45] Recall that one mechanism which we expect to explain the incidence of change in disputed regulations relies on trade relations between the claimant investor's home country and the host country. If claimants that engage in nationality shopping are somehow different or marginalized in their adopted home country, then their presence in the dataset would make it more difficult for us to identify home-host intermediate goods trade relations as a mechanism to explain changes in disputed regulations.[46]

[45] Mobil Cerro Negro Holding, Ltd., Mobil Cerro Negro, Ltd., Mobil Corporation and others v. Bolivarian Republic of Venezuela (ICSID Case No. ARB/07/27).

[46] For evidence that "nationality-shopping" claimants still sometimes receive significant diplomatic and other sup-

Table 6: Count of cases for which the disputed regulation has been changed vs. total, by home state

Home Country	Count (regulatory change)	Count (total)	% of total
United States	26	154	16.9%
Netherlands	9	86	10.5%
United Kingdom	9	72	12.5%
Canada	7	46	15.2%
France	7	41	17.1%
Germany	7	52	13.5%
Spain	6	39	15.4%
Luxembourg	4	32	12.5%
Chile	2	7	28.6%
Greece	2	16	12.5%
Bahamas	1	2	50%
Belgium	1	15	6.7%
Bermuda	1	2	50%
Croatia	1	2	50%
Cyprus	1	18	5.6%
Italy	1	35	2.9%
India	1	4	25%
Mauritius	1	7	14.3%
Panama	1	3	33.3%
Poland	1	6	16.7%
Qatar	1	3	33.3%
Russia	1	16	6.3%
Sweden	1	7	14.3%
Switzerland	1	25	4%

Table 7 categorizes the number of cases associated with a change in the disputed regulation by industry. We follow the OECD standard in using the International Standard Industrial Classification of All Economic Activities (ISIC) Rev 4, using ISIC's industry classifications rather than the individual codes.[47]

Table 7: Count of cases with a change in disputed regulation(s) vs. total, by industry

Industry	Count (regulatory change)	Count (total)	% of total
Electricity, gas, water supply, sewerage, waste and remediation services	32	167	19.2%
Mining and extraction of energy producing products	10	70	14.3%
Financial and insurance activities	7	66	10.6%
Telecommunications	7	39	17.9%
Agriculture, forestry and fishing	6	26	23.1%
Chemicals and pharmaceutical products	5	19	26.3%
Food products, beverages and tobacco	4	36	11.1%
Mining and quarrying of non-energy producing products	2	52	3.8%
Transportation and storage	2	32	6.3%
Construction	2	62	3.2%
Wholesale and retail trade; repair of motor vehicles	2	13	15.4%
Other business sector services	2	18	11.1%
Motor vehicles, trailers and semi-trailers	1	2	50.0%
Public admin. and defence; compulsory social security	1	2	50.0%
Publishing, audiovisual and broadcasting activities	1	12	8.3%
Mining support service activities	0	4	0.0%
Textiles, wearing apparel, leather and related products	0	6	0.0%
Other non-metallic mineral products	0	9	0.0%
Basic Metals	0	15	0.0%
Electrical equipment	0	2	0.0%
Machinery and equipment	0	5	0.0%
Other transport equipment	0	3	0.0%
Other manufacturing; repair and installation of machinery and equipment	0	3	0.0%
Accomodation and food services	0	8	0.0%
Real Estate Activities	0	27	0.0%
Human health and social work	0	3	0.0%
Arts, entertainment, recreation and other service activities	0	9	0.0%

Around 40% of the cases where there has been a change in regulation belong to Electricity, Gas, Water Supply, Sewerage, Waste and Remediation services. This is a tertiary, aggregated

port from such secondary home countries, see Wellhausen (2015*b*).

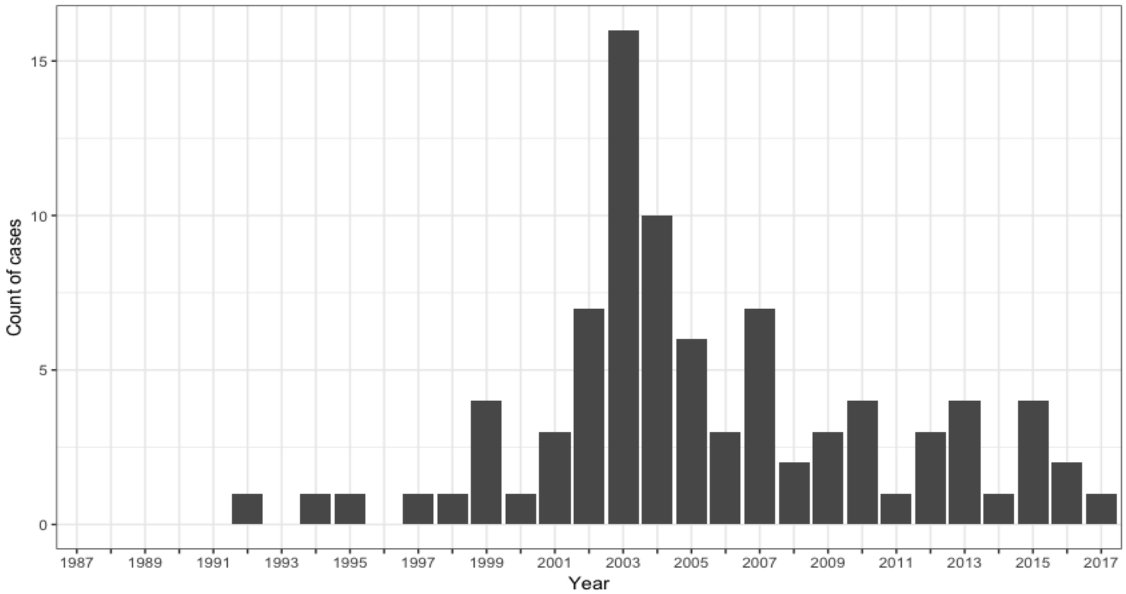
[47]ISIC defines an industry as "the set of all production units engaged primarily in the same or similar kinds of productive activity." - see `https://unstats.un.org/unsd/classifications/Econ/Download/In%20Text/ISIC_Rev_4_publication_English.pdf`

industry, and arguably very well-connected via a broad conceptualization of economic integration, since utility services are inputs into all other industries. Under our argument, one reason the host state would change disputed regulations in this industry is to minimize negative spillovers that would stem from the interruption of provision of such key, and effectively universal, inputs. We again emphasize the importance of Argentina; out of the 32 cases in this industry, 16 were filed against Argentina around 2003-2004 in response to the particular 2002 Emergency Law. The other ten events comprise an important proportion of the positive cases of change in our outcome variable. Many of the other industries with cases associated with changes in disputed regulations are ones in which trade in intermediate goods is at least anecdotally of importance, especially as compared to several of the ISIC classified industries such as real estate and health and social work associated with zero cases.

Figure 4 plots the count of ISDS cases associated with a change in a disputed regulation by the year in which the case was filed. For example, the disputed regulation(s) associated with 16 cases filed in 2003 was changed within the study period (through 2018). That spike in changes is due to a decision by President Macri of Argentina. An Emergency Law passed in 2002 gave special powers to the president over the management of fiscal and monetary policy in the context of the deep financial crisis the country faced. That regulation triggered ISDS arbitrations in 2003 and 2004 from a variety of foreign investors. President Macri allowed the regulation to expire in 2018, which fits with our coding scheme and causes the spike. Perhaps the passage of time, government turnover, and improving economic health in Argentina explain this particular change; we thoroughly examine whether our empirical analyses are robust to excluding Argentina. More broadly, we would be concerned if changes in disputed regulations systematically come about many years after the relevant ISDS arbitration. If this were true, we would be skeptical that the characteristics of the claimant investor have much at all to do with change. Figure 4 provides us confidence that this is not the case. In particular, it is not true that regulations disputed in older cases are disproportionately changed by the end of the study period. Thus, it is not ex ante obvious that temporal effects drive the outcome of interest, by employing year-fixed effects in the models reported in Table 2.

Table 8 organizes the count of ISDS cases associated with a change in disputed regulation(s) by host state. Again, we see that the Emergency Law expiration in Argentina accounts for an

Figure 4: Count of ISDS cases associated with a change in disputed regulation, by year of filing



important number of cases, again motivating us to examine the sensitivity of our analyses to Argentina's inclusion. An important number also relates to cases involving Canada, the United States, and Mexico, which is consistent with deep economic integration among these three members of NAFTA.[48] It is particularly noteworthy that the United States is on the list at all, not to mention so high: the United States has famously never lost a case (to date), but it has nonetheless changed disputed regulations. We probe why.

[48]Note that NAFTA provides access to ISDS. The draft USMCA scales down ISDS by limiting the scope of possible arbitration against the United States and Mexico and excluding Canada, although Canada has a variety of ISDS-enabling treaties with other countries. See Bodea, Cristina, Andrew Kerner, and Fangjin Ye, "There's a hidden cost in Trump's new trade agreement with Canada and Mexico" *Washington Post: Monkey Cage* (2 January 2019).

Table 8: Count of ISDS cases associated with a change in disputed regulation(s) vs. total, by host state

Host Country	Count (regulatory change)	Count (total)	% of total
Argentina	35	59	59.3%
Canada	6	21	28.6%
United States	5	15	33.3%
Mexico	4	23	17.4%
Turkey	3	11	27.2%
Venezuela	3	42	7.1%
Belize	3	4	75.0%
Egypt	3	29	10.3%
India	2	21	9.5%
Peru	2	13	15.4%
Poland	2	25	8.0%
Spain	2	34	5.9%
Zimbabwe	2	3	66.7%
Bolivia	1	15	6.7%
Ghana	1	3	33.3%
Hungary	1	14	7.1%
Indonesia	1	7	14.3%
Latvia	1	7	14.3%
Malaysia	1	3	33.3%
Moldova	1	8	12.5%
Mongolia	1	4	25.0%
Nicaragua	1	1	100.0%
Philippines	1	5	20.0%
Romania	1	13	7.7%
Saint Kitts and Nevis	1	1	100.0%
Slovenia	1	3	33.3%
Sri Lanka	1	4	25.0%
Ukraine	1	21	4.8%

6.3 Robustness: Regression Analysis

Table 9: Total bilateral trade in intermediates and regulatory change (Argentine Emergency Law cases excluded)

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral GVC exports to host	0.127**	0.111**	0.836**	0.386	0.345
	(0.053)	(0.054)	(0.366)	(0.551)	(0.625)
GDP gap		−0.002	−0.013	−0.028	−0.047*
		(0.013)	(0.018)	(0.025)	(0.027)
Democracy (host)		0.116**	0.171***	0.074	0.155
		(0.047)	(0.066)	(0.085)	(0.112)
Veto players (host)		−0.070	−0.281	−0.219	−0.315
		(0.136)	(0.178)	(0.270)	(0.297)
Bilateral FDI flow to host			0.047	−0.001	0.005
			(0.042)	(0.057)	(0.061)
Bilateral exports to host (non-GVC)			−0.786**	−0.238	−0.206
			(0.351)	(0.551)	(0.631)
Investor win					2.770***
					(0.895)
Constant	−3.315***	−1.679	−0.370	−18.618	−18.189
	(0.396)	(1.363)	(0.927)	(4,106.198)	(6,578.623)
Year Dummies	No	Yes	Yes	Yes	Yes
Industry Dummies	No	No	No	Yes	Yes
Observations	670	595	357	313	313
Log Likelihood	−177.428	−185.670	−105.401	−49.847	−43.820
Akaike Inf. Crit.	358.857	423.339	248.802	185.694	175.639
Note:			*p<0.1; **p<0.05; ***p<0.01		

Table 10: Total bilateral trade in intermediates and regulatory change (regulatory challenges only)

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral GVC exports to host	0.027	0.040	1.416**	1.942***	2.062***
	(0.042)	(0.061)	(0.574)	(0.739)	(0.792)
GDP gap		−0.007	−0.041*	−0.030	−0.040
		(0.015)	(0.024)	(0.029)	(0.030)
Democracy (host)		0.048	0.057	0.100	0.152
		(0.052)	(0.074)	(0.090)	(0.100)
Veto players (host)		0.100	0.005	−0.006	−0.179
		(0.153)	(0.217)	(0.287)	(0.308)
Bilateral FDI flow to host			0.019	0.007	0.005
			(0.048)	(0.057)	(0.059)
Bilateral exports to host (non-GVC)			−1.469**	−2.054***	−2.153***
			(0.578)	(0.767)	(0.817)
Investor win					1.159*
					(0.645)
Constant	−1.348***	−0.872	0.686	1.846	1.950
	(0.298)	(1.543)	(1.217)	(1.998)	(2.101)
Year Dummies	No	Yes	Yes	Yes	Yes
Industry Dummies	No	No	No	Yes	Yes
Observations	357	303	192	189	189
Log Likelihood	−194.577	−134.744	−72.194	−56.671	−54.978
Akaike Inf. Crit.	393.153	319.487	182.387	187.342	185.957

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

Table 11: Total bilateral trade in intermediates and regulatory change ("no evidence" cases excluded)

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral GVC exports to host	0.050	0.077	0.846**	0.938**	1.202**
	(0.042)	(0.056)	(0.372)	(0.445)	(0.550)
GDP gap		0.002	−0.009	0.001	−0.016
		(0.013)	(0.018)	(0.020)	(0.022)
Democracy (host)		0.118**	0.192***	0.183**	0.266***
		(0.049)	(0.068)	(0.075)	(0.097)
Veto players (host)		−0.089	−0.324*	−0.389*	−0.613**
		(0.141)	(0.181)	(0.207)	(0.243)
Bilateral FDI flow to host			0.029	0.040	0.042
			(0.044)	(0.048)	(0.054)
Bilateral exports to host (non-GVC)			−0.821**	−0.952**	−1.216**
			(0.357)	(0.442)	(0.543)
Investor win					2.924***
					(0.668)
Constant	−2.078***	−1.473	0.066	1.248	1.713
	(0.298)	(1.369)	(0.942)	(1.461)	(1.645)
Year Dummies	No	Yes	Yes	Yes	Yes
Industry Dummies	No	No	No	Yes	Yes
Observations	565	469	275	265	265
Log Likelihood	−235.052	−166.633	−93.378	−76.880	−64.210
Akaike Inf. Crit.	474.104	385.266	224.756	237.760	214.420
Note:			*p<0.1; **p<0.05; ***p<0.01		

6.4 Robustness: Bilateral-industry GVC measure

Here we report results for the same regression models employed in Table 2 in the paper, but using an alternative measure of GVC integration for robustness purposes: Bilateral-industry GVC exports to host. This measure is the value of the exported intermediates from the claimant's industry in the home country to all industries in the claimant's host country, measured in the year of filing. For example, in a case filed in 2013 where the claimant is from Norway, the respondent state is Poland, and the claimant's ISIC industry code is 24 (manufacture of basic metals), we take the value of exported intermediates from the metals manufacturing industry in Norway to Poland in 2013.

One benefit of this alternative measure is that it addresses the skeptical reader's concern that, perhaps, Norwegian investment in industries outside metals manufacturing is unlikely to meaningfully incentivize Poland to change the regulation disputed by the Norwegian metals manufacturer. Put differently, this measure assumes that Polish policymakers take signals from threats to home-industry-specific GVC ties suggested by an ISDS arbitration. The OECD data, disaggregated by industry, are less comprehensive than the total bilateral trade in intermediates data. However, we are still able to match bilateral-industry-specific values to 466 of the 809 cases in our dataset. Table 12 reports the results of five logit models. We employ the same set of covariates from previous models, with the addition of the now-relevant Bilateral GVC exports to host (outside claimant's industry).

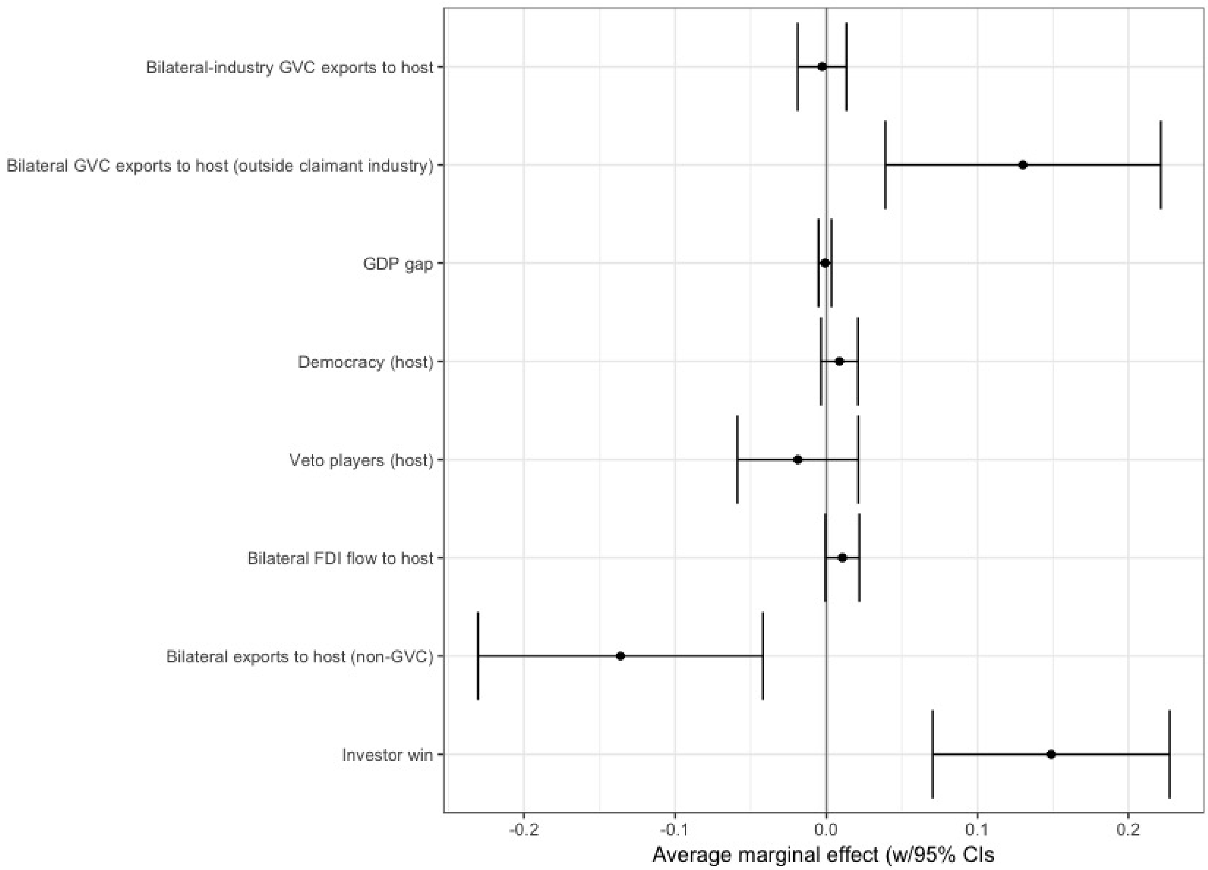
While the Bilateral-industry GVC exports to host variable is positive and significant in the bivariate model (1), the coefficient loses significance upon the inclusion of covariates. However, we note that the sign of the variable remains consistently positive in all models, and it is thus robust to this alternative measure. It is possible that we have failed to reject the null hypothesis (industry-specific supply chain integration is not associated with regulatory change) when the null hypothesis is in fact false, thus committing type II error. If this is the case, it is likely due to lack of data availability. As noted previously, OECD data on industry-specific bilateral trade in intermediates are not as comprehensive as the data on total bilateral trade in intermediates. As a result, not only do we have fewer degrees of freedom, but we also run the risk that the missing data points are systematically different than the non-missing values, which would add bias to our results. Further, the industry-specific and all other industries trade in intermediates variables are highly

Table 12: Industry-specific bilateral trade in intermediates and regulatory change

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral-industry GVC exports to host	0.074**	0.041	−0.002	−0.078	−0.045
	(0.036)	(0.044)	(0.100)	(0.117)	(0.132)
Bilateral GVC exports to host (outside claimant's industry)			0.740	1.247*	2.099***
			(0.502)	(0.637)	(0.815)
GDP gap		0.011	0.008	0.010	−0.014
		(0.016)	(0.025)	(0.033)	(0.035)
Democracy (host)		0.081	0.113	0.083	0.141
		(0.052)	(0.073)	(0.088)	(0.103)
Veto players (host)		−0.009	−0.102	−0.040	−0.303
		(0.158)	(0.223)	(0.297)	(0.333)
Bilateral FDI flow to host			0.126*	0.153**	0.172*
			(0.066)	(0.078)	(0.096)
Bilateral exports to host (non-GVC)			−0.736	−1.291**	−2.198***
			(0.490)	(0.658)	(0.847)
Investor win					2.399***
					(0.758)
Constant	−2.077***	17.806	−1.365	−0.405	−0.137
	(0.152)	(6,522.639)	(1.395)	(1.892)	(2.036)
Year Dummies	No	Yes	Yes	Yes	Yes
Industry Dummies	No	No	No	Yes	Yes
Observations	466	377	238	238	238
Log Likelihood	−167.016	−120.941	−67.889	−52.679	−46.584
Akaike Inf. Crit.	338.032	293.883	175.778	187.359	177.169

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

Figure 5: Average marginal effects plot for Table 12, Model 5



correlated ($\rho = .59$), and thus multicollinearity is likely inflating our standard error estimates.

On the other hand, it is possible that we have failed to reject the null hypothesis when the null hypothesis is indeed true. If this is the case, the implication is that host states are primarily concerned with general - as opposed to industry-specific - supply chain integration when deliberating regulatory change in response to facing arbitration. As Wellhausen (2015*b*) shows, foreign firms from the same home state are more likely to divest if one of their co-nationals is targeted by the host government, regardless of the targeted co-national's industry. If the same logic applies here, meaning that firms are more likely to divert their supply chains in response to *any* co-national investor's grievance, then it follows that host governments should pay greater attention to total bilateral supply chain integration than to integration in a single industry. This is precisely what our main results show in the paper, in Table 2.

Finally, most covariates retain their signs and significance levels from previous specifications; notably, the variable capturing intermediate exports from home to host state in all industries besides that of the investor remains statistically and substantively significant (see Figure A2).