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

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Abstract

This article explores the conditions under which multinational corporations (MNCs) constrain host state sovereignty. We argue that MNCs with deep global value chain-integration in the host state have outsized leverage to shape domestic regulation. We employ a novel dataset of regulations disputed by MNCs under the Investor-State Dispute Settlement regime (ISDS). Should host states lose ISDS arbitration, they must compensate MNCs, but they are under no obligation to cancel the disputed regulations. Nonetheless, our data demonstrate that host states cancel some 24% of regulations disputed in ISDS (1987-2017). We present a variety of quantitative and qualitative evidence that supports our argument.

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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; 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 state. Johns and Wellhausen (2016) make this argument in the context of MNCs mitigating political risk. This argument could be stated more broadly, typifying the normative concern articulated by Strange: well-integrated MNCs could 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 probe 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, a foreign investor 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 investor takes issue with a particular regulation. In a novel dataset, we code these disputed regulations and trace what happens to them after the ISDS arbitration is filed (1987-2018). We find that host states cancel 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 cancel a disputed regulation. Why, then, would host states sometimes cancel their domestic regulatory choices and converge toward a foreign investor's preferences?

We connect our argument about the leverage claimants gain through GVC integration and pro-claimant regulatory change around ISDS. As data constraints make firm-level quantitative analysis unreliable, we build on previous findings on the pathways through which firm-level disputes aggregate into broader political risk. We focus on three potential mechanisms of political risk transmission: investors' nationality, investors' industry and the overall level of GVC integration in the host economy. This approach considers different levels of aggregation associated with potential negative spillovers that ISDS impose on the host state's economy and that go beyond the direct impact a disputed regulation has on the specific investor-claimant.

Regarding political risk transmitted by investor nationality, our expectation is that deeper GVC integration with the claimant's home state raises the stakes to the host state of doubling-down on a disputed regulation (Maurer, 2013; Wellhausen, 2015; Gertz, 2018). Such a stand would likely generate co-national political risk, threatening home-host GVC integration and its attendant benefits to the domestic political economy. Better to cancel the disputed regulation, even if the cancellation chips away at regulatory sovereignty. We find consistent support for the nationality pathway, as well as support for industry acting as a parallel transmitter of political risk (Pandya, 2014; Kerner and Lawrence, 2014; Malesky, Gueorguiev and Jensen, 2015; Bauerle Danzman, 2016).[1] We also find a positive and significant relationship between the host state's GVC integration as a whole and cancelled regulations. This result speaks to previous work highlighting heterogenous interests among MNCs but suggests that, in our setting, aggregating to GVC integration as a whole produces results consistent with lower levels of aggregation (Moehlecke, 2020; Baccini, Pinto and Weymouth, 2017; Osgood, 2016; Johns, Thrall and Wellhausen, 2019; Wellhausen, 2019).

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 foreign investors and host states give foreign investors the opportunity to sue for compensation for (alleged) property rights violations undertaken by the host state.[2] 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 the foreign claimants. 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).[3] Advocates

[1] Our results are not robust when combining both the nationality and industry mechanisms, although we caveat that this data is less comprehensive (see Appendix 8.2).

[2] International organizations tried and failed many of times to coordinate on investment protection, and the hodgepodge of decentralized IIAs, as well as some domestic legislation, grew up as an alternative to multilateral coordination (Jandhyala and Mansfield, 2011; Wellhausen, 2015; St John, 2018).

[3] Following Wellhausen (2016), we examine all public ISDS arbitrations, because the legal justification for filing – whether under an IIA or otherwise – is irrelevant to our argument. Thus, our data includes more arbitrations than those in the commonly used treaty-specific UNCTAD database.

of ISDS reform contend that the decentralized, overlapping, and frankly confusing set of host state commitments to ISDS push governments to choose between sovereignty and foreign investors' preferences.[4]

Questions swirl about the effects the de facto ISDS regime has on host state autonomy over regulatory policymaking (Waibel et al., 2010; Van Harten and Malysheuski, 2016; Van Harten, 2012; Milner, 2014). Arguments about "regulatory chill" raise the specter that ISDS deters host states from fully exercising their sovereign authority. Specifically, if a host state expects that enacting a potentially investor-unfriendly regulation risks ISDS, it may be "chilled" such that it chooses not to enact that otherwise preferred regulation (Simmons, 2014). Careful research provides evidence that "regulatory chill" is bounded, even in most-likely cases, which tempers the direst normative concerns (Moehlecke, 2020). Still, in our setting, a host state that enacts a controversial regulation, is sued in ISDS, and then cancels the regulation appears to be "chilled," albeit belatedly.[5]

Unquestionably, ISDS investment arbitration generates direct costs for host states, whether monetary, diplomatic, or reputational (Franck, 2019; Hafner-Burton, Steinert-Threlkeld and Victor, 2016; Gertz, Jandhyala and Poulsen, 2018; Allee and Peinhardt, 2011). Respondent host states may incur costs while bargaining with MNCs, via potential negative signals to market actors; in the arbitration process, due to legal costs and if ruled to pay compensation; and in potential fights over awards in post-arbitration litigation, which are especially costly absent the more efficient option of an appeals system. Direct ISDS costs are likely increasing as evolving legal standards broaden what host states had originally understood to be more limited commitments (Johns, Thrall and Wellhausen, 2019; Poulsen and Aisbett, 2013; Schultz and Dupont, 2014; Pelc, 2017). At the same time, more and more host states looking to limit exposure to ISDS are coming up against limitations on renegotiating treaty commitments (Thompson, Broude and Haftel, 2019; Haftel and Thompson, 2018) – not to mention what in the current climate appear to be insurmountable costs to exiting altogether (Peinhardt and Wellhausen, 2016). In short, the setting of ISDS and international investment law is one in which the benefits of privileging foreign investment and the direct and

[4]The UN Council on Trade and Development has been a major force behind coordinating reform efforts; see for example "UNCTAD's Reform Package for the International Investment Regime" (2018). New York and Geneva: United Nations.

[5]Note that it is possible that the host state gains enough benefits from this course of action such that the regulation, lawsuit, and cancellation is in fact what is known as efficient breach (Pelc and Urpelainen, 2015), but recent evidence suggests that only perhaps 31 percent of post-ISDS investment outcomes are consistent with the logic of efficient breach (Wellhausen, 2019).

indirect costs of doing so have come to a head.

That said, ISDS has a key characteristic that makes it a setting in which we can examine whether, and how, "Strange (1996)-inspired" mechanisms 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.[6] 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."[7]

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 cancelled the specific regulation(s) disputed by ISDS claimants, which we assume moves policy in the pro-claimant direction.[8] If states have made such changes – without a legal or norm-driven reason to

[6]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.

[7] 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`.

[8]Recall that competitive dynamics between MNCs, and between MNCs and host state firms, regularly make

do so – we see a clear puzzle to be explained by some other mechanism. Further, such evidence would bring with it normative implications: systematic evidence of pro-claimant regulatory changes by host states could support fears of a "race to the bottom," in which regulations move toward convergence with foreign preferences that observers might perceive 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.[9] Our coding of "regulation" is based on the dictionary definition of any "rule or directive made and maintained by an authority."[10] Coding relied primarily on case documents and, secondarily, on academic case notes and other reliable sources.[11] 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 the pro-claimant direction at any point after the ISDS filing through the end of the study period. We operationalize change dichotomously: cases are coded 1 if the regulation is "cancelled," meaning that there is a pro-claimant change in a disputed regulation at any point after the arbitration is filed through the end of the study period (through 2018, for ISDS arbitrations

MNCs' preferences over regulation heterogenous even in the same country setting (Gulotty, 2017; Bauerle Danzman, 2020). Thus, we are careful to label a cancelled regulation as a move in the claimant's direction, as it cannot be categorically assumed to be a move toward foreign investors' preferences as a whole.

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

[10]Google Dictionary.

[11]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.

filed 1987-2017).[12] 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 6). 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's preferences.[13] If we could not find conclusive evidence that a regulation had either changed or stayed the same, we code it as *no evidence*.[14]

We find that the host state made a pro-claimant change to the disputed regulation in 87 of the 370 ISDS arbitrations in which a specific regulation is disputed (23.5%).[15] This gives us prima facie corroboration that ISDS is sometimes associated with regulatory convergence toward ISDS claimant's preferences, 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 cancelled disputed regulations in the context of arbitrations that the claimant won. (The host state also cancelled 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 cancelled disputed regulations relevant to 20 cases that the state in fact won. That is, the state went through formal ISDS procedures, was ruled to not be liable for compensation to the claimant investor, and cancelled the associated, disputed regulation anyway. Further, the host state had cancelled changed the disputed regulation in 13 cases that remained pending at the end of the study period. These descriptive statistics cast initial empirical doubt on the notion that ISDS outcomes are the key cause of regulatory change; we consider the role of outcomes in detail in our empirical analyses.

[12]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.

[13]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`).

[14]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 12.

[15]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-claimant regulation cancellation, by case (filed 1987-2017, assessed 2018).** Notably, host states have cancelled disputed regulations even after winning the related ISDS arbitration.

ISDS Outcome	Regulation disputed (count)	Regulation cancelled (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%*

In Appendix 7, we provide further descriptive statistics summarizing variation in the 87 ISDS arbitrations associated with cancelled regulations. 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-cancellation arbitrations have been brought by US investors, relevant claimants have come from 23 other home states (Appendix Table 7). Additionally, while the modal claimant is in utilities (electricity, gas, water supply, sewerage, waste, and remediation services), relevant claimants have come from 14 other industries (Appendix Table 8). Twenty-eight host states have cancelled disputed regulations, including not only developing countries but also Canada (associated with six arbitrations) and the United States (associated with five arbitrations) (Appendix Table 9). Finally, it is not the case that arbitrations heard early in the study period have disproportionately high rates of regulatory cancellation by the end of the study period (Appendix Figure 4). However, we do 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. We carefully address the sensitivity of our results to including or excluding these cases (Appendix 8.4), although we highlight that these are meaningful observations for our purposes.

3 Theory: Cancelling Regulations 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 under ISDS, under what conditions is the host state more likely to cancel the disputed regulation? Our underlying expectation is that the host state is more likely to cancel the regulation, and thus move toward the preferences of the claimant, if maintaining the regulation imposes sufficient costs on the host state. The question becomes under what conditions does a host state face expected or realized costs that are sufficient for it to cancel its regulation. We can rule out the hypotheses that de facto international legal norms pressure host states to cancel regulations; rather, norms in civil society, at the UN, and even within the US government reinforce host states' sovereignty to maintain disputed regulations.[16]

Instead, we turn to another explanation for variation in regulatory change around ISDS, which derives from a feature (not a bug) of contemporary economic globalization: integration via global value chains (GVCs). GVC-enabled intermediate-goods trade has spread deeply and widely, and it is a key component of FDI in both net-capital-receiving and net-capital-sending states. Among forms of FDI, GVC integration carries notable host state benefits, for example as domestic entrepreneurs find opportunities to become suppliers along the GVC.[17] On the flip side, the greater dependence of GVC-linked domestic firms on foreign investors – often their monopsony buyers – raises the stakes of any disruption to that integration to host states. Johns and Wellhausen (2016) argue that the kinds of widespread, politically salient hardship that can come from disrupted GVC-linked FDI incentivizes host states to do more to mitigate political risks to this investment. Following this logic, we predict that a host state will differentially move its behavior closer to a foreign investor's preference when that foreign investor can more credibly cause substantial disruption to the host state's GVC integration. In our setting, the costs associated with doubling down on regulatory sovereignty, despite being sued, are likely to be compellingly high if doubling down seriously increases the expected value of GVC disruption. Therefore, we propose: *The more an ISDS claimant can provoke disruption to the host state's GVC integration, the more likely the host state is to cancel the regulation challenged by the claimant.*[18]

[16]See again footnote 7.

[17]For more benefits, see UNCTAD (2013). "Global Value Chains: Investment and Trade for Development." World Investment Report.

[18]This proposition implies that more GVC-linked foreign investors would be more likely to file for ISDS in the first place, all else equal. While our research design does not facilitate testing this implication, we do note that large MNCs are most likely to file for ISDS. Still, even if large MNCs' GVC integration plays a role in their filing choice, it is also the case that a bias toward large MNCs fits with the considerable expense of arbitration (Van Harten and Malysheuski, 2016; Franck, 2019).

We highlight several important takeaways from this proposition. First, the proposition implies that final-goods trade is not as important to MNC leverage over host state regulations as GVC-linked 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 can increase the price-competitiveness and domestic market share of domestic producers.[19] This caveat mitigates the political leverage of MNCs that export final goods into the host state relative to MNCs engaged in intermediate-goods trade.

Second, this proposition is different from one that says well-integrated MNCs transmit regulations across borders via their supply chain connections (Schiller, 2018). The ISDS claimant is not using its domestic suppliers to influence the host state's choice over whether and how to regulate. Rather, the influential ISDS claimant can threaten GVC integration without the direct involvement of domestic partners, pushing the host state toward its preferred regulatory outcome irrespective of domestic pressure (whether in support or protest).

Third, the proposition makes no reference to the development level of the host state. As such, we endeavor to show that this relationship is 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, 2019; Johns, Pelc and Wellhausen, 2019).

3.1 Operationalization

Our argument is most straightforward when posed in terms of a particular ISDS claimant. A claimant that itself has more GVC integration in the host state is more likely to get its disputed regulation cancelled, because the claimant has the power to disrupt its own GVC integration if, put bluntly, regulation does not get its way.[20] The corresponding empirical test would require a measure of each ISDS claimant's GVC integration by host state-year for the study period. While firm-level data is improving, including some time-series cross-sectional investment data for ISDS

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

[20] While invoking ISDS is a costly action (Franck, 2019), it is not necessarily a last resort for an investor, meaning that there is a likelihood rather than a certainty that a frustrated claimant would exit or otherwise disrupt its GVC in the absence of a cancelled regulation (Wellhausen, 2019; Pelc and Urpelainen, 2015).

claimants (Wellhausen, 2019), current hodgepodge time series-cross sectional data on these firms' intermediate-goods trade (in absolute or relative terms) is simply unreliable.[21] In the absence of reliable firm-level data, we turn to aggregate measures to grasp our proposed association between higher risk of disruption to the host state's GVC integration and the likelihood of regulatory cancellation. This approach focuses on the potential negative externalities of an ISDS arbitration for GVC integration in the host state more broadly, beyond its direct impact on the claimant.

Our first strategy is to leverage GVC integration aggregated via the claimant's nationality. According to Wellhausen (2015), political risk can be transmitted by nationality, as threats to one investor can spill over to co-national investors. Moreover, in the event of disruptions to bilateral GVC integration, domestic firms in bilateral GVCs incur costs as their customers dry up, and does their access to bilaterally-sourced foreign inputs.[22] We expect that host states are more likely to cancel regulations as the potential economic costs of bilateral GVC integration increases.[23] In other words, we expect a positive correlation between regulation cancellation and BILATERAL GVC IMPORTS FROM HOME: the total value of intermediates the host state imports from the claimant's home state in the year of ISDS filing (logged USD).[24]

Hypothesis 1. *The greater the bilateral intermediate-goods imports from the ISDS claimant's home state, the more likely the host state is to cancel the challenged regulation.*

Second, we consider GVC integration aggregated via the claimant's industry. Industry ties can be an important mechanism for political risk transmission (Pandya, 2013; Kerner and Lawrence, 2014; Malesky, Gueorguiev and Jensen, 2015; Bauerle Danzman, 2016). For instance, the resource curse literature indicates that resource-dependent economies display higher levels of political risk compared to more diversified economies (Jensen and Johnston, 2011; Wright and Zhu, 2018). We

[21]Some prominent FDI datasets rely on firm-level investment announcements from which we could possibly derive estimates of intermediate-goods trade; however, announcements are not equal to actual investments. Unpredictable heterogeneity in firm announcement strategies – especially for those firms in the midst of investor-state conflicts – would undermine our efforts.

[22]Our predictions around the fallout of such domestic shocks is consistent with the firm-level logic in Johns and Wellhausen (2016), in which it is the costs that violating the MNC's property rights would bring on domestic GVC partners that incentivize the host state to refrain from violating the MNC's property rights in the first place.

[23]Host states could also condition their regulatory choices on risks posed to other aspects of the bilateral relationship. To the extent these risks do not scale with bilateral economic integration, we employ estimation techniques to address non-randomness.

[24]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. OECD (2019); accessed January 2019. The OECD data cover 168 reporting states and 206 partner states in the years of our study (1987-2017), and the relevant variables are available for 727 of the 809 cases in our dataset (trade data missing for 82 observations).

expect that investors in the same industry are more likely to pay attention to, and therefore condition their GVC integration on, ISDS arbitrations filed by co-industry investors. Thus, we expect a positive correlation between regulation cancellation and GVC IMPORTS IN INDUSTRY: the total value of intermediates the host state imports in the claimant's industry in the year of ISDS filing (logged USD).[25] An important caveat to our expectation is that a foreign investor could gain competitive advantages, and perhaps even increase GVC integration, when its direct competitor is embroiled in a dispute (Wellhausen, 2015; Beazer and Blake, 2018; Gertz, Jandhyala and Poulsen, 2018). Nonetheless, we do not expect this potential heterogeneity to outweigh the importance of industry as a political risk transmission channel as a whole.

Hypothesis 2. *The greater the intermediate-goods imports in an ISDS claimant's industry, the more likely the host state is to cancel the challenged regulation.*

Third, we consider the possibility that a host state's total level of GVC integration, regardless of industry or nationality, may be relevant to the host state's decision-making. It could be that host states for whom GVC integration plays a larger role in their economies altogether (Vietnam, for example) are simply more sensitive to the possibility of hurting their reputations as GVC trade partners as well as good stewards of FDI (Pandya, 2016). This logic suggests a positive correlation between cancelled regulations and TOTAL GVC IMPORTS: the total value of intermediates the host state imports in the year of ISDS filing (logged USD).

Hypothesis 3. *The greater the intermediate-goods imports, the more likely the host state is to cancel a regulation challenged in ISDS.*

To be clear, we treat H3 as a way to clear up what we see as essentially an empirical question. On one hand, it is reasonable that ISDS arbitration sends relevant signals only to certain subsets of other investors – here, whether co-national or co-industrial.[26] This expectation is consistent with a large body of work in international political economy, which posits that domestic choices

[25] For example, in a case filed in 2013 where the claimant is a Norwegian company in the utilities industry and the respondent state is Poland, we take the value of exported intermediates in utilities from all countries in the data set to Poland. OECD (2019); accessed January 2019. Industry is at the 2-digit International Standard Industrial Classification (ISIC) level.

[26] Combining the logic for H1 and H2, we would expect a positive correlation between regulatory cancellation and the subset of investors with both co-national and co-industrial status with the claimant. However, necessary data are unreliable, in part because they can come quite close to the firm-level. Tests using available data are suggestive but not robust (see Appendix 8.2 for results and discussion).

can matter to international market actors, but not necessarily across all actors, or all the time, or in comparable magnitudes (Chaudoin, Milner and Pang, 2015). More specifically, there is growing evidence that MNC heterogeienty influences domestic political choices around trade (Baccini, Pinto and Weymouth, 2017; Osgood, 2016; Queralt, 2017; Meckling and Hughes, 2017; Osgood et al., 2017), monetary relations (Jensen, Quinn and Weymouth, 2015), and FDI (Johns and Wellhausen, 2016; Moehlecke, 2020; Johns and Wellhausen, 2020).[27] Therefore, aggregating our ISDS-based proposition to the level of the economy as a whole may suffer from ecological fallacy and could produce a null or opposite result for H3. That said, we see it as plausible that for some host states at some times, GVC integration is so key to their economies that governments are particularly sensitive to ISDS arbitration, because they fear that the signal sent by an arbitration could have more widespread consequences to their overall network of GVC ties. These concerns would prompt these host host states to cancel disputed regulations, regardless of whether they come from a particularly relevant home state or industry.

4 Quantitative Evidence

We examine the correlates of the cancellation of disputed regulations in a cross-national time-series analysis (ISDS arbitrations filed 1987-2017, with data assessed as of the end of 2018). In our 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-claimant cancellation of the disputed regulation at any point after the filing through the end of the study period and 0 otherwise.[28]

Recall that our firm-level proposition is that when the claimant's own GVC intermediate goods trade is more integrated in the host state, the more likely the host is to cancel the disputed regulation. Given that reliable firm-level data is not available, we leverage more aggregated mechanisms through which we hypothesize that political risk and threats to GVC integration flow. The first mechanism is co-nationality (H1), which we measure with Bilateral GVC imports from home.[29] The second is co-industry (H2), which we measure with Host GVC imports

[27]Even workers, voters, and the general public appear to be attentive to MNC heterogeneity (Kim and Margalit, 2017; Hicks, Milner and Tingley, 2014; Owen and Quinn, 2016).

[28]See again footnote 2 for robustness discussion, as well as Appendix 8.

[29]Appendix 7, Table 7 documents that cancelled regulations are associated with investors from 24 home states.

(claimant's industry).[30] We also test for the possibility that the total value of intermediates imports in the host state increases the likelihood of regulatory cancellation (H3), with Host GVC imports (total).[31]

We also control for several potential alternative explanations that could drive host states to cancel disputed regulations. First, we have good theoretical reasons to believe that the fact that a claimant wins a tribunal ruling does not in itself generate legal or normative pressure for the host state to cancel the regulation. Nevertheless, being ruled against could increase pressure on the host state to do so 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 cancellation.

Our argument is that more bilateral intermediate-goods imports incentivize host states to cancel regulations consistent with ISDS claimants' preferences, 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. This expectation does not hold for bilateral imports of final goods. If ISDS claimants were associated fewer bilateral imports of final goods into the host state, host state consumers would feel pain, but employment and productive capacity would not be so directly impacted. 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 imports from home (non-GVC), which is a measure of all other bilateral imports into the host state from the claimant's home state, subtracting out those in intermediates. Additionally, we control for Bilateral FDI flows to host to capture another aspect of economic integration that could affect the host state's regulatory choices.[32] 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.[33]

[30] Appendix 7, Table 3 documents that cancelled regulations are associated with 15 industries.

[31] For operationalizations, see again 3.1.

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

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

We must also control for domestic political factors that can affect the host state's tendency to change regulations.[34] 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).[35] The number of VETO PLAYERS in the host also clearly shapes the likelihood of regulatory change; we expect a higher number of veto players to be associated with a lower likelihood of cancellation.[36]

Next, 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.[37] 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, the variable BILATERAL GVC IMPORTS FROM HOME includes the summed values of imported intermediates between each of the investors' home states and the host state. We follow the same process for other FDI and 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 presume are additive. Put differently, a single case filed jointly by a US investor and a Cypriot investor receives the same value on GDP GAP as a case filed by a US investor alone.

Finally, in full specifications, we include industry and year dummies to assuage concerns that cancelled regulations are an artifact of specific industry characteristics or time. Appendix 7, Table 3 reports total cases and cases of cancelled regulations by industry. The largest absolute number of cases and cancellations takes place in utilities, although the percentage cancelled is higher in other industries. While patterns exist, it is not the case that any specific industry

reintroducing the negative sign.

[34] Appendix 7, Table 9 documents that regulations are cancelled in 28 host states.

[35] One might wonder whether turnover and changes in executive ideology link to cancelled regulations; unfortunately, such a covariate would introduce post-treatment bias. See replication files for details.

[36] 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).

[37] In five of these cases, the host state cancelled the disputed regulation.

monopolizes the use of ISDS, which is consistent with other work (Wellhausen, 2019). Regardless, the importance of GVCs, flexibility in GVCs, and competitive dynamics surely vary by industry, which makes industry fixed effects important. We account for time shocks with year fixed effects. Importantly, our estimation strategy requires us to make further choices with regard to time. In our main estimations, values on explanatory variables are assessed as of the year of filing (1987-2017), whereas we assess the status of the regulation as of 2018. We do this because our hypotheses do not make assumptions about the time-to-cancellation, especially as GVC-related disruptions could take some time to materialize. Appendix 7, Figure 4 supports our strategy, as there is no obvious pattern between early ISDS arbitrations and cancelled regulations as assessed at the end of the period. To probe this more systematically, in Appendix 8.3 we report a Cox proportional hazards model. We model the survival time from the year the disputed regulation was enacted to the year it was cancelled, such that regulations unchanged by the end of 2017 are coded as having "survived." Our results demonstrate that, as time goes by, the probability of survival indeed decreases, but our explanatory variables of interest continue to be significant and meaningful.

4.1 Results: Co-national GVC Integration (H1)

Table 2 displays the results of five logit models in which Bilateral GVC imports from home is our key explanatory variable.[38] 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 imports from home 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 one standard deviation increase in the host state's intermediate imports from the claimant's home state (USD millions, logged) increases the probability that the host state will change the disputed regulation by 7.9 percentage points [1.2, 14.7]. For context, the confidence interval overlaps with that for Investor win (14.8 percentage points [8.3, 21.4]).

We contrast the positive effect of Bilateral GVC imports from home with the significantly negative and large effect of Bilateral imports from home (non-GVC). This finding is consistent with our argument: it is a claimant's potential impact on the kinds of benefits associ-

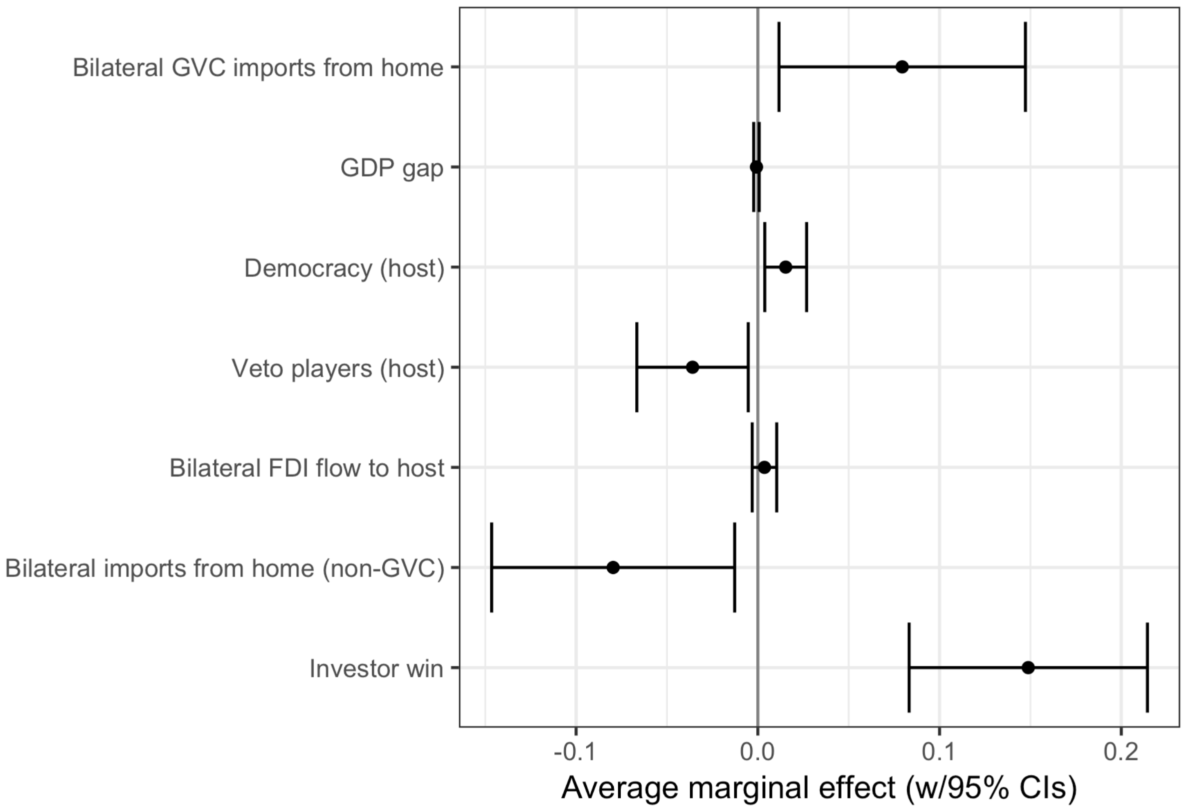
[38] See Appendix 7 Table 10 for correlation matrix.

Table 2: More bilateral GVC imports from the claimant's home state is associated with a higher likelihood that the host state cancels the regulation that the claimant disputed in its ISDS filing.

	Dependent variable:				
	Disputed regulation cancelled = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral GVC imports from home	0.080*	0.111**	0.832**	0.976**	1.101**
	(0.042)	(0.053)	(0.366)	(0.432)	(0.494)
GDP gap		−0.002	−0.007	−0.002	−0.010
		(0.006)	(0.009)	(0.010)	(0.011)
Democracy (host)		0.116**	0.171***	0.164**	0.212**
		(0.047)	(0.066)	(0.073)	(0.085)
Veto players (host)		−0.071	−0.283	−0.358*	−0.498**
		(0.136)	(0.178)	(0.202)	(0.224)
Bilateral FDI flows to host			0.047	0.047	0.050
			(0.042)	(0.044)	(0.048)
Bilateral imports from home (non-GVC)			−0.782**	−0.971**	−1.103**
			(0.351)	(0.428)	(0.488)
Investor win					2.062***
					(0.526)
Constant	−3.073***	−2.427*	−0.684	1.194	1.761
	(0.575)	(1.453)	(1.258)	(1.762)	(1.887)
Year Dummies	No	Yes	Yes	Yes	Yes
Industry Dummies	No	No	No	Yes	Yes
Observations	726	595	357	345	345
Log Likelihood	−260.270	−185.645	−105.348	−87.933	−79.248
Akaike Inf. Crit.	524.541	423.290	248.695	261.867	246.497

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

Figure 1: The marginal effect of bilateral GVC imports from the claimant's home on the likelihood of regulatory change is substantively meaningful. (Average marginal effects plot for Table 2, Model 5)



ated with GVC intermediate-goods trade, and not trade in finished goods, that is associated with cancellation. 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.[39]

Political covariates behave as expected. Host state Democracy is consistently positive and significant, suggesting that democratic states are more likely to cancel regulations in this setting, *ceteris paribus*. Additionally, an increase in Veto players is associated with a lower likelihood of cancellation. 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 regulatory cancellation in ways that conventional conceptions of state power do not.

[39]Bilateral FDI flows are associated with cancellation but not significantly.

4.2 Results: Co-industry (H2) and Total GVC (H3)

Table 3: More GVC imports by the host, both in the claimant's industry and overall, is associated with a higher likelihood that the host state cancels the regulation that the claimant disputed in its ISDS filing.

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Host GVC imports (claimant's industry)	0.052	0.117^{**}	0.164^{***}	0.237^{***}	0.229^{***}
	(0.045)	(0.053)	(0.060)	(0.078)	(0.088)
Host GVC imports (total)	−0.038	0.039	2.516^{**}	2.954^{**}	3.082^{**}
	(0.086)	(0.128)	(1.087)	(1.253)	(1.253)
GDP gap		0.006	−0.0001	0.002	−0.003
		(0.007)	(0.008)	(0.009)	(0.009)
Democracy (host)		0.097^{**}	0.086^{*}	0.033	0.051
		(0.048)	(0.049)	(0.054)	(0.058)
Veto players (host)		−0.087	−0.048	0.079	0.003
		(0.148)	(0.157)	(0.165)	(0.174)
Host non-GVC imports (total)			-3.203^{***}	-3.846^{***}	-4.006^{***}
			(1.177)	(1.357)	(1.362)
Total FDI flows to host			0.618^{**}	0.753^{***}	0.805^{***}
			(0.248)	(0.279)	(0.297)
Investor win					1.598^{***}
					(0.403)
Constant	−1.832	15.862	24.514	28.330	27.818
	(1.284)	(3,956.181)	(3,956.182)	(10,754.010)	(10,754.010)
Year Dummies	No	Yes	Yes	Yes	Yes
Industry Dummies	No	No	No	Yes	Yes
Observations	584	482	475	475	475
Log Likelihood	−226.975	−162.588	−150.896	−134.246	−125.994
Akaike Inf. Crit.	459.951	377.175	357.793	370.492	355.988
Note:					*p<0.1; **p<0.05; ***p<0.01

We now turn to H2 and H3, focusing on unilateral rather than bilateral measures of host state GVC integration. We test H2 and H3 concurrently, as any model that includes total host state GVC imports in the claimant's industry but not total host state GVC imports in all industries would suffer from omitted variable bias. Table 3 reports the results of five logistic regression models, each estimated with different combinations of control variables and fixed effects. Note that both the Host GVC imports (claimant's industry) and Host GVC imports (total) variables are positive and significant in our fully specified models.

Figure 2: Total host state GVC imports in the claimant's industry and total host state GVC imports (all industries) are significant predictors of disputed regulation change.

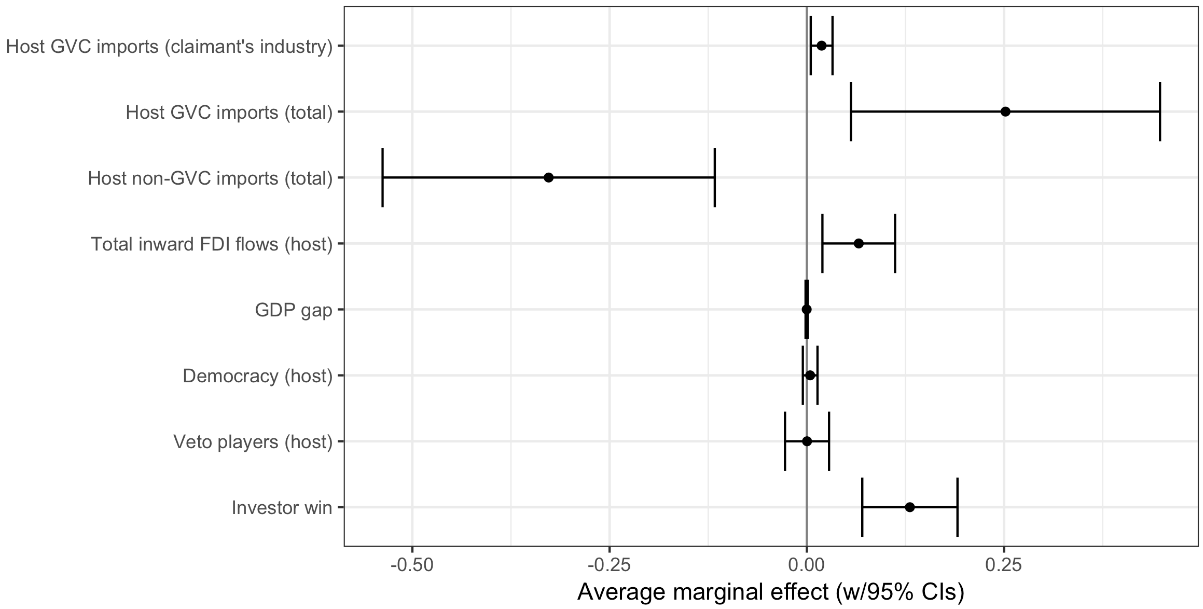


Figure 4.2 displays the average marginal effects of Model 5 from Table 3. Looking first at the Host GVC imports (total) variable, we see a positive and significant average marginal effect. The effect size is large, but imprecisely estimated: a one standard deviation increase in host total GVC imports would be associated with a 44 [27, 61] percentage point increase in the predicted probability of disputed regulation change. Looking next to the Host GVC imports (claimant's industry) variable, we see that the average marginal effect is substantively smaller but positive, significant, and more precisely estimated. A one standard deviation in this variable is associated with a 6.3 [3.9, 8.7] percentage point increase in the predicted probability of disputed regulation cancellation.

4.3 Results: Robustness

To ensure the robustness of the results reported above, we (1) manipulate our specifications,[40] (2) account for the role of Argentina in the data, and (3) address selection issues.

Regarding specifications (1), it is possible that ISDS arbitrations in which the claimant did not specifically challenge a regulation, such that a regulation could not be cancelled as a result, are systematically different from regulation-challenging cases. Therefore, we drop cases in which the claimant did not challenge a specific regulation (or such challenge is not public).[41] The results on our covariates of interest are consistent in this limited sample (Appendix 8.1 Table 11). Next, our data includes cases in which we are unable to determine the exact status of the disputed regulation as of the end of the study period; results are robust to excluding these cases as well (Appendix 8.1 Table 12). Our results are correctly signed and largely robust to manipulation of control variables including our trade and FDI measures (Appendix 8.1 Table 13). As noted above, our results are suggestive but not robust to disaggregating data to the bilateral-industry measure, although severe data issues temper the reliability of the analysis (Appendix 8.2). We also conduct a survival analysis so as to consider an alternative hypothesis that the patterns we see in regulation cancellations are not simply a product of time passing. Our approach measures the time each disputed regulation is "at risk," that is, from the year in which it is enacted to the end of the study period. Regulations that are not cancelled in this time "survive." Our GVC-integration covariates of interest remain positive and statistically significant. We also confirm that the reasonable expectation that, indeed, as time goes by the probability of regulatory cancellation increases overall (Appendix 8.3).[42]

Regarding Argentina (2), it is important for us to consider whether our results are influenced by a set of 25 ISDS arbitrations filed against Argentina that disputed their 2002 Emergency Law. That law gave special powers to the president over the management of fiscal and monetary policy in the context of the deep financial crisis that the country was facing.[43] As a result, a variety of foreign investors – from different home countries and in different industries – filed these 25 ISDS arbitrations against Argentina in 2003 and 2004. This set of cases have received particular

[40] For brevity, results in the Appendix focus on the co-nationality mechanism (H1. Full robustness results are available on request.

[41] See again footnote 2 for coding and explanation.

[42] See also the histogram in Appendix 8.4 Figure 4.

[43] We refer the reader to Post (2014) for an excellent analysis of the privatization and other issues that shape political economy outcomes in Argentina.

attention in the legal community, in addition to being meaningful to public opinion and election campaigns as they are tied to a massive shock in Argentina's exchange rate, not to mention their effects on Argentina's longstanding difficulty in accessing capital (Steinberg, 2017; Copelovitch and Singer, 2017). In 2018, Argentina's President Macri allowed the law to expire, which means that the disputed regulation was cancelled within the study period. How do these details relate to our arguments about GVC integration?

Our overall point is that it is appropriate for us to include these ISDS arbitrations in our dataset, as we have no expectation that the number of cases challenging a particular regulations would change our hypothesized mechanisms.[44] While in this instance the full law expired and thus caused a cancellation outcome for all 25 arbitrations, the situation could have been otherwise; Argentina could have chosen to keep parts of the law relevant to some claimants and not others. Further, these 25 cases do not introduce the same data point into the data 25 times. As these cases were filed by investors from a variety of home states, in a variety of industries, our covariates of interest vary within the set. Additionally, Argentina has infamously both won and lost ISDS arbitrations within this set, meaning that the value for INVESTOR WIN also varies.

One might worry that the 16 year passage of time from 2002 to 2018 – during which political turnover, new crises, and other issues naturally came to the forefront in Argentina – is a sufficient explanation for these cancellation outcomes. Our survival analysis (Appendix 8.3), as well as simply the pattern visible in the timeline in Appendix 8.4 Figure 4, provide evidence that time alone is not a sufficient explanation. Recall also that our results are robust to year dummies. Is there something about Argentina that would constitute an omitted variable undermining our results? On this point, we note that our regression analyses include controls that isolate the effects of domestic political institutions on outcomes. We also note that Argentina has also been sued in other instances beside these 25.

Nonetheless, we re-estimate our main models after dropping the 25 cases against Argentina filed in response to the 2002 Emergency Law (Appendix 8.4). In summary, coefficients of interest remain correctly signed, but results on full specifications are only robust with regard to industry (H2). With regard to H1: In our first three specifications, bilateral GVC imports in the host state are positive and significant as expected; however, in our fullest specifications, the coefficient

[44] There are other (much smaller) sets of cases in which the same or very similar regulations were disputed.

is positive but not significant (Table 16). Figure 5 presents the average marginal effects plots for Table 16 Model 5, demonstrating that the coefficient of interest loses significance in the full specification. Figure 8.4 displays the marginal effects of the full specifications of the co-industry and total GVC models re-estimated on the subsample.[45] The results on co-industry (H2) are robust to dropping the Argentina Emergency Law cases (significant at the $p < .1$ level). The magnitude of the co-industry coefficient remains substantively important: when Emergency Law cases are excluded, a one standard deviation increase in HOST GVC IMPORTS (CLAIMANT'S INDUSTRY) increases the predicted probability of disputed regulation cancellation by 4.7 percentage points. In contrast, HOST GVC IMPORTS (TOTAL) remains large and positive when the Emergency Law cases are excluded but is not robust.

Regarding selection (3), we certainly acknowledge that our data are observational and that ISDS cases do not occur at random: in particular, if GVC-integrated states are less willing to provoke ISDS litigation by enacting potentially controversial regulatory policies in the first place, then our results might suffer from selection bias. While we do not claim to have solved this tension, we argue that these concerns do not need to forestall analysis altogether. To summarize, we see that there are rational explanations to justify foreign investors' decisions to dispute regulatory policies in the host state even when they have strong ex ante expectations regarding the protection of their property rights.

First, the cases selected into ISDS are not uniformly egregious, "last ditch" efforts to recover some compensation from the host state. Wellhausen (2019) 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 foreign investors with relatively strong ex ante property rights protections might still select into ISDS when disputes over regulations arise, if the ISDS process could offer outcomes that facilitate "efficient breach" (Wellhausen, 2019; Pelc and Urpelainen, 2015).

Second, a body of literature describes how disputes can arise even in the presence of indicators of relatively strong ex ante property rights (Wellhausen, 2015; Tucker, 2018; St John, 2018).

[45] Full results available upon request.

Poulsen (2015) argues that host states, especially in the 1990s, set regulations that they did not foresee as potentially triggering ISDS. 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 foreign investors to file for ISDS arbitration. Foreign investors 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 foreign investors might sometimes face a regulation in a host state that they see as illegitimate and sue over it. Neither in theory nor in practice is the possibility or existence of ISDS cases between GVC-trading firms and host states wholly "selected out."

To summarize, while our main robustness tests are successful, we do find some sensitivity to manipulations of our sample, and we hedge but ultimately offer a mea culpa that we do not have a rigorous identification strategy to test our hypotheses through regression analysis. These results add to our motivation to provide evidence beyond regression.

5 Qualitative Evidence

We use two qualitative approaches to provide evidence in support of our argument that cancelled regulations in the context of ISDS arbitration are linked to risks for a host state's GVC integration. The first approach is a medium-n analysis, in which we consider whether descriptive statistics in our data are consistent with observable implications of our argument. Second, we trace vignettes that illustrate connections between GVC trade and cancelled regulations, as proof of concept that our argument is visible and notable to real-world actors.

5.1 Medium-n analysis

It is especially important to verify the plausibility of our argument with regard to the set of ISDS arbitrations in which the host state receives a pro-state tribunal ruling.[46] A pro-state tribunal ruling means that the host state is not liable for compensation to the claimant which, combined with the international norm pushing against cancellation, suggests that a host state would be less

[46] Recall that we find a significant and large correlation between Investor win and a cancelled regulation (Section 4).

likely to cancel, *ceteris parabis*. Further, given the state win, the likelihood of cancellation for the purpose of avoiding losses in future ISDS arbitrations over the same regulation is low. Note, however, that the risk is not zero: international investment law lacks strong norms of de facto precedent in international investment law, meaning that the host state cannot be confident that it would always win were the regulation to be challenged in another ISDS arbitration (Johns, Thrall and Wellhausen, 2019).[47] Our data document that in 79 instances, the state won and did not change the disputed regulation (1. This corresponds to host cancellation in 20 percent of cases they won, compared to 33 percent of cases they lost.[48] Thus, we find support for the intuition that pro-state rulings are significantly associated with more cancelled regulations.

What is particularly notable – and leaves room for an explanation other than pro-state rulings – is that in 20 instances, the host state cancelled the disputed regulation even though it won and, again, had no obligation to do so under international law or current norms. Table 4 provides details on the 20 instances in which the host state cancelled the regulation despite winning. First, notice that the 12 host states in this group include three developing countries but also nine OECD-member countries that cancelled regulations despite winning. This heterogeneity in host states suggests that cancelling-despite-winning is not obviously correlated with poorer or more economically vulnerable host states. Second, claimants are incorporated in 11 different host states. While claimants are of US-origin in six cases, heterogeneity in host states suggests that this is not only a story of US investors having more leverage over regulation in host states.[49] Third, cases take place in six industries, including the primary, secondary and tertiary sectors. This heterogeneity suggests that obsolescing-bargain dynamics and investor mobility do not obviously explain the data. Fourth, the relevant arbitrations were filed throughout the study period, such that learning (on the part of claimants or host states) does not obviously explain the data. Therefore, the data suggest that some other explanation is missing from the parameters considered in Table 4.

How plausible is our argument centered on GVC integration as a meaningful explanation of regulatory cancellation, particularly in these puzzling cases? Again, in the absence of reliable GVC firm-level data, we examine patterns in the data suggested by other means of political risk

[47]This lesser role of precedence (to date) contrasts with its role in international trade law (Pelc, 2014).

[48]Significant difference in chi-squared test of independence (p-value = 0.06).

[49]Nonetheless, the presence claimants from a number of wealthy states is in line with results in (Allee and Peinhardt, 2011, p. 247) indicating that a pro-state ruling has ambiguous effects on future FDI, such that reputation with other potential investors is not a clear motivation for state actions around ISDS.

Table 4: Pro-state ruling + Regulation cancellation. 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)

transmission: GVC integration measured by co-national, co-industry, and total variables. Figure 3 plots the average value of each of our three GVC variables according to two factors: whether the host state won or lost the case, and whether the host state cancelled or kept the disputed regulation.[50] That is, each bar averages the applicable GVC variable across the set of ISDS arbitrations that falls in that category. Table 3 shows that the average GVC integration, using any of our three measures, is the highest for these 20 puzzling instances of cancelling-despite-winning. The average drops off significantly among Win/Keep (76 instances), Lose/Cancel (37 instances), and Lose/Keep (77 instances).

The correlation between high GVC integration and cancelling-despite-winning is consistent with an explanation that GVC integration is especially relevant in puzzling cases in which other characteristics are less compelling, particularly those described in Table 4. Further, it is notable that cases of state wins, whatever the regulatory status, are associated with more GVC integration. While we have compelling reasons to expect state wins to correlate with maintained regulations by virtue of the state win, it is also true that GVC integration in Win/Keep instances is relatively high. Also consistent with our argument is the very low value of GVC integration in instances in which the investor wins but the state nonetheless maintains the regulation.[51] We can intuit that in these Lose/Keep instances, host states are less worried about either the costs of future litigation

[50] We code settlements as investor wins.

[51] Per our regression results, investor wins are highly correlated with cancelled regulations.

or the potential costs of GVC disruption.

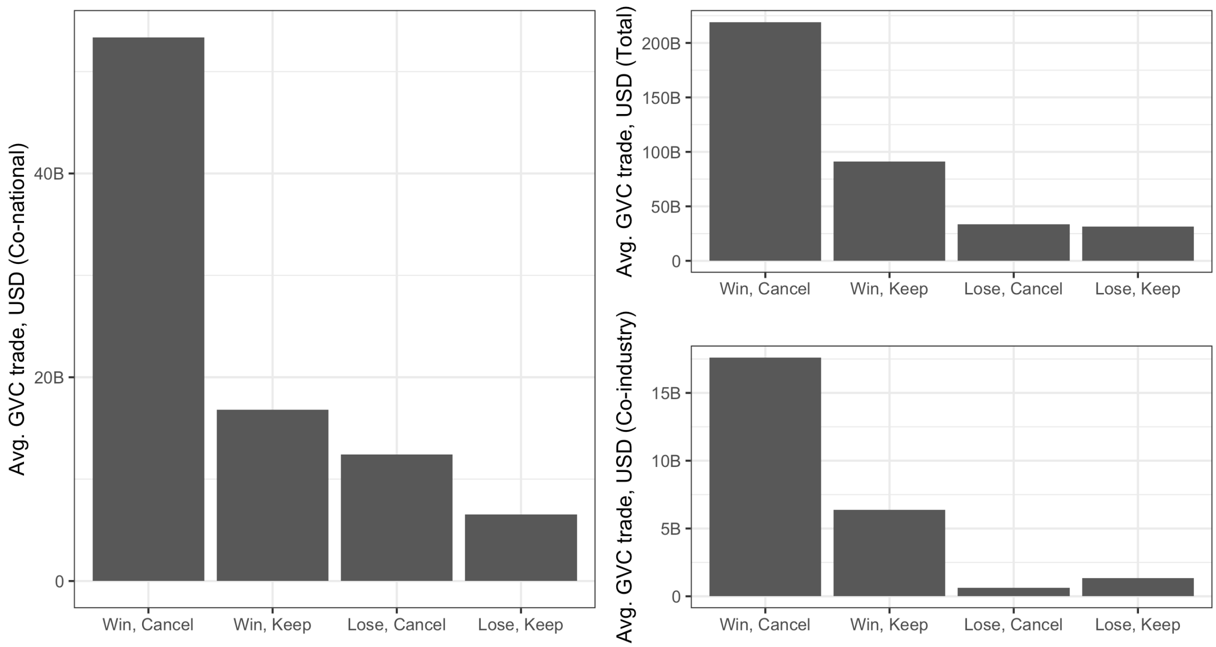


Figure 3: **Average co-national, co-industry, and total GVC imports in host, by host state win/lose and regulation cancel/keep.** Puzzling cases of cancellation-despite-willing are associated with higher levels of GVC integration.

Our last medium-n examination focuses on the ISDS arbitrations that remained pending at the end of the study period. Of these, in 13 instances the host state had already cancelled the regulation within the study period (12 percent). Even without knowing the outcome, the host state already took action to move in the pro-claimant direction. Why would the host state do this? Our argument implies that the risk of GVC disruption in these instances was so high that the host state decided it warranted action, whatever the ISDS outcome. Consistent with our argument, average co-national and co-industry GVC integration in these cancelling-without-outcome instances is higher than GVC integration in the set of pending arbitrations in which the host state had not (yet) cancelled the disputed regulation. Average levels of overall GVC imports were almost identical among host states who cancelled disputed regulations and those that did not. However, t-tests do not allow us to reject the null hypothesis that there is no difference between the two groups for any of the three GVC trade measures.

5.2 Illustrative Vignettes

Finally, we offer two vignettes in which an aggrieved foreign investor files for ISDS arbitration and the host state changes cancels the regulation. We trace these selected vignettes to illustrate connections between GVC trade and cancelled regulations, as proof of concept that our argument is visible and notable to real-world actors. We specifically choose examples in different kinds of industries (services and mining), involving home states at different development levels (Canada and Indonesia), and host states at different development levels (US and India). We present evidence that the narrative around regulatory cancellation necessitates a consideration of GVC integration, by various measures.

5.2.1 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.[52] 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 that it no longer provides preferential treatment to Canada Post. In our terms, this is a pro-claimant cancellation and 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 cancellation and change restored its competitiveness going forward.

Why did Canada cancel the PAP and create the CPF? UPS could certainly credibly claim

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

that, were Canada to keep the disputed regulation in place, its own business in Canada would be disrupted. The fact that Canada did not cancel the disputed regulation before the ruling, however, suggests that the threat of disrupting UPS's business alone was 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-Canada 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 is correlated with an increase the likelihood of cancellation and change (H1).

Moreover, evidence suggests that importance of integration between UPS and Canada is more than a co-national story. UPS is dedicated to postal and courier activities (division 53 on ISIC Rev 4.), which is part of the larger industrial group of transportation and storage.[53] GVC imports into Canada in transportation and storage correspond to about 6 percent of the country's overall GVC imports in intermediate goods.[54] This industry has the fourth-highest GVC imports into Canada, behind wholesale, retail trade and repair of motor vehicles; financial and insurance activities; and other business sector and services, each of which correspond to about 10 percent of the country's GVC imports. The high level of GVC intermediate goods (and services) imports into Canada in UPS's industry is consistent with H2. Maintaining rather than cancelling the disputed PAP regulation, which could suggest political risks to other players in the industry and thus GVC disruption, was again likely not the hill for Canada to die upon.

[53] In the OECD data, division 53 is aggregated with divisions 49-52.

[54] Unfortunately, we do not have the value of Canada's GVC imports in the postal and courier activities industry only.

5.2.2 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.[55] IMFA has a large stake in coal mining in the Indonesia, integrating Indonesian coal production into IMFA's GVC. In fact, Indonesia is the fourth-largest producer of coal and one of its top global exporters, underscoring the broader integration of the Indonesian coal industry as a supplier for a variety of international actors.[56] Moreover, coal is a reducing agent used in the production of iron alloys. IMFA's production of iron alloys in Indonesia therefore further integrates additional Indonesian industries as suppliers in GVCs – "from mining to smelting."

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.[57] In fact, while IMFA was the first to file for ISDS arbitration, the 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.[58] 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.[59]

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 change the 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 foreign investors' out-of-court frustrations played a role. Our intuition is that IMFA's ISDS filing increased the credibility – and thus political salience – of the threat that the disputed regulation posed to the coal, iron, and related industries' GVC integration, not just with IMFA but also with other partners and export markets.

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

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

[57] *Indian Metals & Ferro Alloys Limited (India) v. The Government of the Republic of Indonesia, Permanent Court of Arbitration*, https://pca-cpa.org/en/cases/144/.

[58] *Indian Metals and Ferro Alloys miner files USD 560 million claim against Indonesia*, https://in.reuters.com/article/indonesia-imfa-idINKCN0T700320151118

[59] *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/

Additionally, our intuition is that the Indian nationality of the claimant was relevant to the regulatory cancellation and change. In 2015, the year of the ISDS filing, India was Indonesia's eleventh-largest GVC intermediate-goods trading partner. Importantly, that relationship had been growing: India's intermediates exports to Indonesia were over six times larger by 2015 than they were around 2000. Notably, even as Indonesia was in the process of terminating and renegotiating its entire portfolio of BITs around this time, which included a BIT with India, Indonesia nevertheless respected and and participated in IMFA's ISDS arbitration.

After our study period ended, the arbitration went through to a ruling: Indonesia in fact 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."[60] Indonesia maintained a controversial regulation, cancelled and replaced it during the ISDS arbitration concerning that regulation, won the case, and defended its actions as consistent with openness to foreign investment. Perhaps this is a near-optimal outcome from Indonesia's point of view: protecting the role of key domestic industries in GVCs, taking actions consistent with respect for a growing trading partner, and avoiding paying compensation, too.

6 Constraints on Sovereignty

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 foreign investor challengers. When faced with ISDS arbitration, we argue that host states weigh the cost of forgoing their chosen regulatory policy against the potential cost of divestment and global value chain-diversion on the part of the claimant, as well as other sets of foreign investors sensitive to the claimant's realized political risk. All else equal, we expect that host states should be more willing to cancel regulations in response to challenges by claimants from home states responsible for more GVC integration in their economy, claimants in industries responsible for more GVC integration, and when GVC integration in the economy as a whole is higher. In line with our expectations,

[60] *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/`.

we find positive correlations between co-national, co-industry, and total GVC integration and the likelihood that the disputed regulation is cancelled. We support our quantitative analyses with qualitative evidence probing medium-n observable implications of our argument, as well as vignettes that demonstrate the real-world plausibility and visibility of our argument to involved actors. Taken together, the evidence supports the article's motivating premise: international market actors can sometimes constrain sovereignty by preventing states from keeping the policies they have chosen. Specifically, a foreign investor that can credibly disrupt GVCs in the host state has more leverage to get the host state to cancel what it sees as an unwelcome regulation.

In the contemporary era, the expansion and deepening of GVCs has shaped the path of economic globalization. Integration via GVC trade in intermediate goods has the potential to bring about benefits linked to trade, FDI, and beyond: long-term partners; resources to upgrade production processes; increased employment both directly and through spillover effects; technology transfer; opportunities to move up the supply chain; economic diversification with the promise of reliable export markets; and more. It follows that GVC integration has been a particularly sought-after means of participating in economic globalization. Yet we find evidence that states benefitting from this kind of economic globalization are those especially exposed to the preferences of foreign investors. Increased access to GVC benefits moves together with decreased access to sovereignty.

It is worth emphasizing that our setting of Investor-State Dispute Settlement (ISDS) is one that does have characteristics that could mitigate the dynamic of an integration-sovereignty tradeoff. In ISDS, both claimant foreign investors and respondent host states have agreed ex ante to third party arbitration. The burden is on claimants to prove their case that a disputed regulation in some way violates their property rights or otherwise constitutes an illegitimate action by the host state under the applicable law. Host states can be found "innocent," such that the regulation is not ruled to be illegitimate. Host states can be found "guilty," meaning that they are required to pay compensation to the claimant investor for costs associated with the illegitimate regulation. Crucially, even when found "guilty," host states have absolutely no obligation under the law to cancel the disputed regulation. International organizations and non-market actors involved with ISDS have found much to criticize in the current de facto regime. Nonetheless, these same international actors encourage host states not to cancel disputed regulations, pushing states to take advantage of the fact that agreeing to ISDS has never meant agreeing to change regulations.

This article's key empirical contribution is to document that, despite all this, a wide swath of host states – found "innocent," found "guilty," or before any ISDS resolution at all – have cancelled the disputed regulation regardless.

One way of looking at our findings is to imagine a bright side for international coordination. 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). Threats to maintaining heterogeneous policies may push host states to instead choose policies that improve international public goods provision. Whether it is normatively good for structural features of the international economy to be doing this work is an open question. Whether GVC-integrated MNC claimants do such public-good-enhancing work as they sue states is, we think, less of an open question.

Broadly, our findings are consistent with Susan Strange's underlying premise about the erosion of sovereignty in the face of deep economic integration. From that perspective, one could summarize the large and growing body of scholarship that documents the opposite as a literature concerned with "loopholes." The term "loophole" need not carry normative weight: surely, the savvy means by which states maintain autonomy despite the constraints of globalization are substantively meaningful in shaping outcomes in the international political economy. Still, there remains the nagging adage that the exception(s) prove the rule.

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Appendix

7 Descriptive Statistics and Discussion: Disputed Regulation Change

Table 5: **Branch(es) of host state national government tied to disputed and cancelled regulations, by case.** (Filed 1987-2017, assessed 2018.) The majority of disputed and cancelled regulations are tied to legislative and/or executive actions.

Branch	Disputed (count)	Cancelled (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: **Method of disputed regulation cancellation, by case.** (Filed 1987-2017, assessed 2018.) The most common method by which host states cancelled regulations is expiration.

Method	Cancelled (count)
Expiration	34
Repealed	13
Court action	16
Repealed and replaced	14
Amended	10
Total: Changed	*87*
Total: No change	*180*
Total: Insufficient evidence	*134*

Table 7 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 foreign investor's incorporation. Note that some cases involve claimants from multiple states; for this reason, cases do not sum to 87. The ranking in Table 7 suggests that OECD countries known for higher levels of outward FDI are generally associated with more regulatory cancellation in the context of ISDS arbitration. This mirrors the pattern of ISDS more generally, in which investors from these countries initiate more claims than others (Wellhausen, 2016; Van Harten and Malysheuski, 2016).

At the same time, Table 7 raises questions about "nationality-shopping" (Peinhardt and

Table 7: **Comparing cases of regulation cancellation to total cases, by claimant investor home country.** (1987-2017, assessed 2018.) The pattern suggests that more regulation cancellation is associated with cases brought by investors from OECD countries associated with more outward FDI and more ISDS cases in general.

Home Country	Cancelled (count)	Total cases (count)	% Cancelled
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%

Wellhausen, 2016). Foreign investors 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.[61] Recall that one mechanism which we expect to explain the incidence of cancellation of disputed regulation(s) relies on GVC 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.[62]

Table 8 categorizes the number of cases associated with a cancelled 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.[63] Around 40% of the cases where there has been a cancelled regulation belong to Electricity, Gas, Water Supply, Sewerage, Waste, and Remediation services. This is a tertiary, aggregated 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 cancel 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 nonetheless comprise an important proportion of the positive cases of change in our outcome variable. Several of the other notable industries are ones in which trade in intermediate GVC 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 which are associated with zero

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

[62] For evidence that "nationality-shopping" claimants still sometimes receive significant diplomatic and other support from such secondary home countries, see Wellhausen (2015).

[63] 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`

cases.

Table 8: **Comparing cases of regulation cancellation to total cases, by claimant investor industry.** (1987-2017, assessed 2018.) The pattern suggests that more cancellations are associated with utilities.

Industry	Cancelled (count)	Total cases (count)	% Cancelled
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%

Table 9 organizes the count of ISDS cases associated with a cancelled regulation by host state. Argentina accounts for an important number of cases, further motivating us to examine the sensitivity of our analyses to Argentina's inclusion (see Appendix 8.4). Also notable are cases involving Canada, the United States, and Mexico, which is consistent with deep economic integration among these three members of NAFTA and the repeated use of NAFTA's ISDS clause.[64] It is particularly noteworthy that the United States is on the list at all, not to mention so high: the

[64]The renegotiated 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).

United States has famously never lost a case (to date), but it has nonetheless cancelled regulations. This is one of the important motivations for our research question.

Table 9: **Comparing cases of regulation cancellation to total cases, by host country respondent.** (1987-2017, assessed 2018.) NAFTA countries are important, as well as Argentina (see Appendix 8.4).

Host Country	Cancelled (count)	Total cases (count)	% Cancelled
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%

Table 10: Correlation matrix for Table 2

	GVC exports	GDP gap	Polity	Veto	FDI	Non-GVC exports	Investor win
GVC exports	1.00						
GDP gap	-0.11	1.00					
Polity	0.30	-0.11	1.00				
Veto	0.35	-0.08	0.56	1.00			
FDI	0.36	-0.01	0.11	0.22	1.00		
Non-GVC exports	0.96	-0.07	0.30	0.31	0.36	1.00	
Investor win	-0.06	0.11	-0.04	-0.00	-0.02	-0.06	1.00

8 Robustness: Regression Analysis

For brevity, the robustness tests reported focus on one of our covariates of interest, Bilateral GVC imports in host. Results for other covariates of interest available upon request.

8.1 Manipulating the sample

Table 11: Total bilateral GVC intermediates trade and regulatory cancellation (Cases with disputed regulation(s) only)

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral GVC imports in 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 flows to host			0.019	0.007	0.005
			(0.048)	(0.057)	(0.059)
Bilateral imports in 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 12: Total bilateral GVC intermediates trade and regulatory cancellation (Excluded: Cases for which there is not definitive evidence of the status of the disputed regulation at the end of the study period)

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral GVC imports in 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 flows to host			0.029	0.040	0.042
			(0.044)	(0.048)	(0.054)
Bilateral imports in 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

Table 13: The effect of BILATERAL GVC IMPORTS FROM HOME is largely robust to manipulation of the control variables.

	Dependent variable:				
	Disputed regulation change = 1				
	(Table 2, Mod 5)	(2)	(3)	(4)	(5)
Bilateral GVC imports from home to host	1.101**	0.514**			0.031
	(0.494)	(0.224)			(0.092)
GDP gap	−0.010	−0.004	−0.015	−0.015	−0.014
	(0.011)	(0.007)	(0.010)	(0.010)	(0.010)
Democracy (host)	0.212**	0.108**	0.216***	0.217**	0.210**
	(0.085)	(0.054)	(0.084)	(0.085)	(0.084)
Veto players (host)	−0.498**	−0.102	−0.451**	−0.442**	−0.464**
	(0.224)	(0.156)	(0.219)	(0.223)	(0.225)
Bilateral FDI flows to host	0.050		0.053	0.055	0.048
	(0.048)		(0.046)	(0.048)	(0.047)
Bilateral imports from home to host (non-GVC)	−1.103**	−0.443**		−0.017	
	(0.488)	(0.216)		(0.094)	
Investor win	2.062***	1.756***	2.063***	2.065***	2.053***
	(0.526)	(0.377)	(0.522)	(0.523)	(0.523)
Constant	1.761	17.223	2.318	2.500	1.963
	(1.887)	(10,754.010)	(1.442)	(1.779)	(1.788)
Year Dummies	Yes	Yes	Yes	Yes	Yes
Industry Dummies	Yes	Yes	Yes	Yes	Yes
Observations	345	565	346	345	345
Log Likelihood	−79.248	−151.677	−82.105	−82.081	−82.040
Akaike Inf. Crit.	246.497	409.354	248.209	250.161	250.080
Note:					*p<0.1; **p<0.05; ***p<0.01

8.2 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 ISIC 24 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 the strongest signals from threats to home-industry-specific GVC ties suggested by an ISDS arbitration. Unfortunately, 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 14 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 as expected in all models. It is possible that we have failed to reject the null hypothesis (industry-specific supply chain integration is not associated with cancelled regulations) 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 correlated ($\rho = .59$), and thus multicollinearity is likely inflating our standard error estimates.

Table 14: Industry-specific bilateral trade in intermediates and regulation cancellation

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral-industry GVC imports to host	0.074**	0.041	−0.002	−0.078	−0.045
	(0.036)	(0.044)	(0.100)	(0.117)	(0.132)
Bilateral GVC imports in 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 flows to host			0.126*	0.153**	0.172*
			(0.066)	(0.078)	(0.096)
Bilateral imports in 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

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, GVC integration when deliberating over regulation cancellation around ISDS arbitration. As Wellhausen (2015) shows, foreign firms from the same home state are more likely to divest if one of their co-nationals is targeted by the host state, regardless of the targeted co-national's industry. If the same logic applies here, meaning that firms are more likely to divert their GVC integration in response to *any* co-national investor's grievance, then it follows that host states 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.

8.3 Survival Analysis

Is the relationship we attribute to GVC integration in fact simply a product of time passing? Broadly, we would be concerned if cancelled 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, rather than something about the passage of time. To address this, we estimate a Cox Proportional Hazards model.[65] This model contains all the covariates included in our fully specified model focusing on H1 (Model 5, Table 2), except for the year and industry dummies. This is because the introduction of fixed effects to survival models for non-repeated events leads to bias (Allison and Christakis, 2006). In our model, the survival time for each observation is the time elapsed from the year the underlying disputed regulation was enacted to the year the host cancelled it (we note a drop in the observations because, unfortunately, information on the year of enactment of all the underlying disputed regulations in our dataset is not available). This approach captures the time during which the regulation is "at risk" of being changed, which starts when it is enacted. The data is right-censored at the end of our period of analysis, that is, 2017 (with change evaluated as of 2018). Any regulation that does not go through

[65]Recall that we also use year-fixed effects in our empirical strategy.

any changes until 2017 is considered to have "survived." As we report below, the coefficient for Bilateral GVC Imports from Home remains positive and statistically significant (p-value 0.012). The main takeaway from this test is that host states cancelling regulations is not simply an artifact of time (as also suggested by the pattern in Appendix 8.4 Figure 4). That is, as time goes by, the probability that a law changes for different reasons certainly increases, but we show that Bilateral GVC Imports from Home consistently affects those hazards in the direction we expect.

Table 15: Cox Proportional Hazards model shows that more bilateral GVC imports from the home state increase the hazards that the host state cancels the disputed regulation.

	Dependent variable:
	Years to change in regulation
Bilateral GVC imports from home	1.067**
	(0.425)
GDP gap	−0.029***
	(0.010)
Democracy (host)	−0.061
	(0.072)
Veto players (host)	0.178
	(0.180)
Bilateral FDI flows to host	0.023
	(0.035)
Bilateral imports from home (non-GVC)	−0.949**
	(0.396)
Investor win	0.955***
	(0.370)
Observations	156
R^2	0.142
Max. Possible R^2	0.845
Log Likelihood	−133.318
Wald Test	22.490*** (df = 7)
LR Test	23.896*** (df = 7)
Score (Logrank) Test	25.174*** (df = 7)
Note: Coefficients are not exponentiated.	*p<0.1; **p<0.05; ***p<0.01

8.4 Argentina and Emergency Law Cases

The disputed regulation(s) associated with the 16 cases filed in 2003 were cancelled 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. See Table 16 for the sensitivity of our results to the exclusion of these cases. We thoroughly discuss this sensitivity in the main text (Section 4).

Figure 4: **Count of cases associated with a cancelled regulation, by year of filing.** (1987-2017, assessed 2018.) Earlier cases are not disproportionately associated with cancelled regulations. The spike in cases in 2003 are associated with Argentina's Emergency Law.

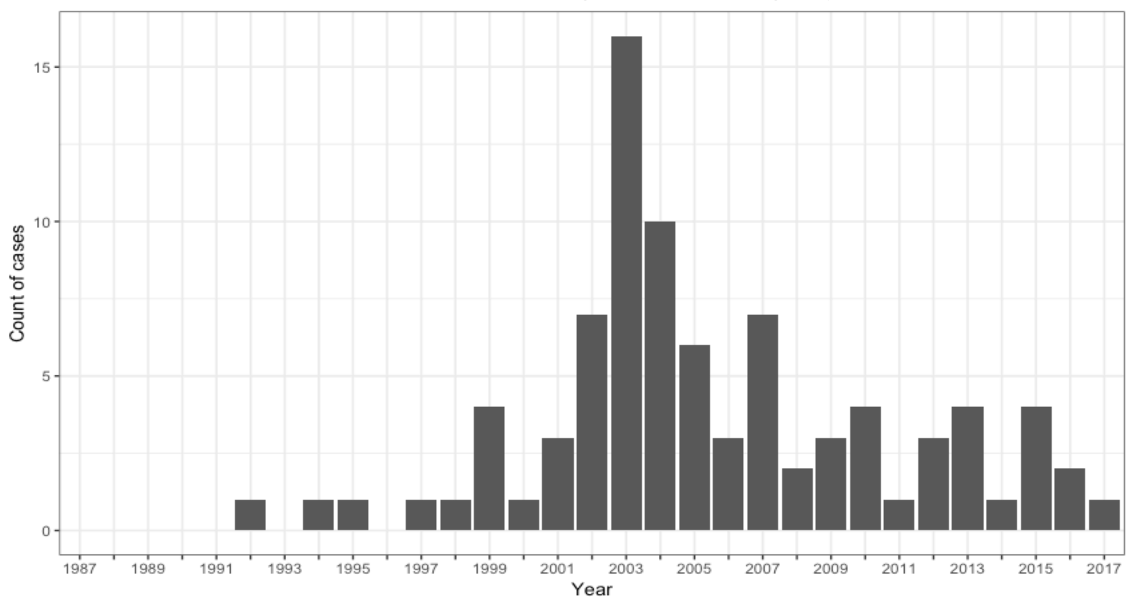

Table 16: Total bilateral GVC intermediates trade and regulatory cancellation (Argentine Emergency Law cases excluded)

	Dependent variable:				
	Disputed regulation change = 1				
	(1)	(2)	(3)	(4)	(5)
Bilateral GVC imports in 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 flows to host			0.047	−0.001	0.005
			(0.042)	(0.057)	(0.061)
Bilateral imports in 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

Figure 5: The marginal effect of bilateral GVC imports from the claimant's home is correctly signed albeit not fully robust to dropping Emergency Law cases.

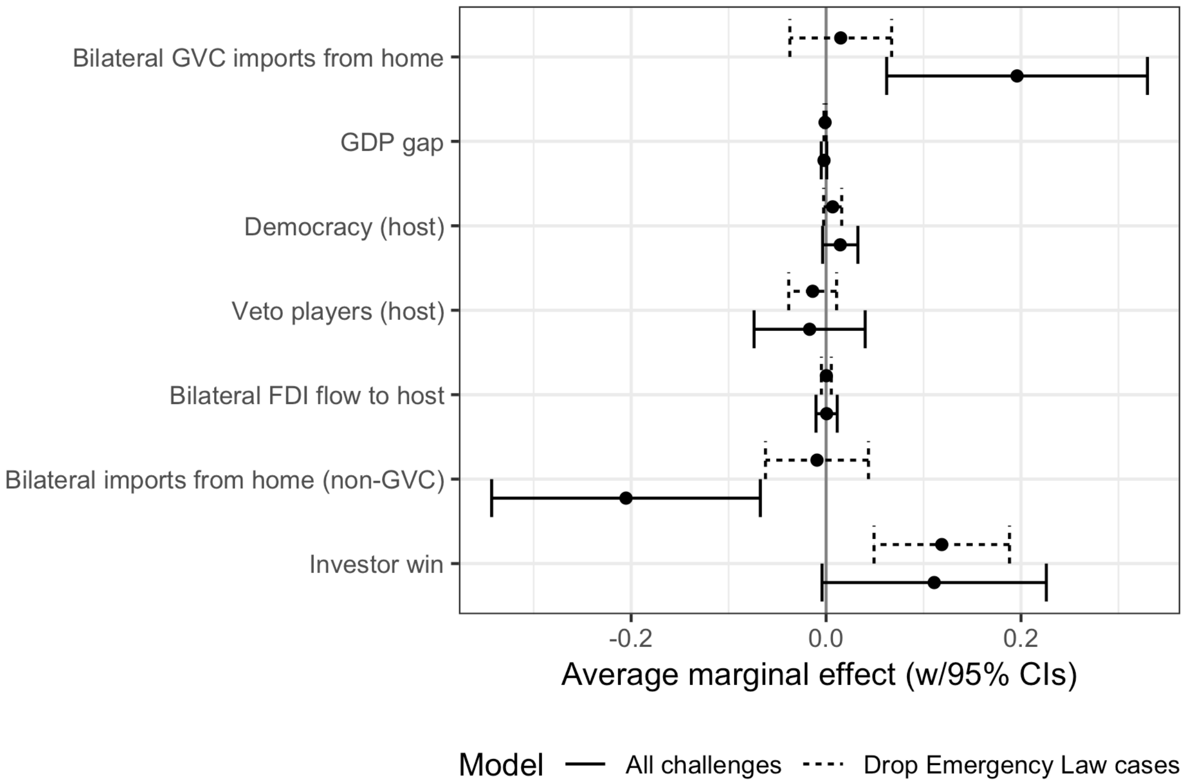

Figure 6: The effect of total host state GVC imports in the claimant's industry is robust; the effect of total host state GVC imports is sensitive to dropping Emergency Law cases.