

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

Carolina Moehlecke[†] Calvin Thrall[‡] Rachel L. Wellhausen[§]

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1 Descriptive Statistics

Table A-1: **Branch(es) of host state national government tied to disputed and abandoned regulations, by case.** (Filed 1987-2017, assessed 2018.) The majority of disputed and abandoned regulations are tied to legislative and/or executive actions.

Branch	Disputed (count)	Abandoned (count)
Executive	180	31
Legislative	94	37
Judicial	52	6
Legislative and Executive	37	12
Judicial and Executive	5	1
Judicial and Legislative	3	1
<i>Total</i>	<i>371</i>	<i>88</i>

Table A-2: **Method of disputed regulation abandonment, by case.** (Filed 1987-2017, assessed 2018.) The most common method by which host states abandoned regulations is expiration.

Method	Abandoned (count)
Expiration	34
Repealed	15
Court action	15
Repealed and replaced	14
Amended	10
<i>Total: Changed</i>	<i>88</i>
<i>Total: No change</i>	<i>167</i>
<i>Total: Insufficient evidence</i>	<i>116</i>

[†]Assistant Professor, Fundação Getulio Vargas, carolina.moehlecke@fgv.br

[‡]Postdoctoral Research Associate, Princeton University, cthrall@princeton.edu

[§]Associate Professor, University of Texas at Austin, rwellhausen@utexas.edu

Table A-3: **Comparing cases of regulation abandonment to total cases, by claimant investor home country.** (1987-2017, assessed 2018.) The pattern suggests that more regulation abandonment is associated with cases brought by investors from OECD countries, associated with more outward FDI and more ISDS cases in general. Some cases have investor-claimants from more than one home state.

Home Country	Abandoned (count)	Total challenges (count)	% Abandoned
United States	26	79	32.9%
Netherlands	9	46	19.6%
United Kingdom	9	32	28.1%
Germany	8	34	23.5%
Canada	7	26	26.9%
France	7	24	29.2%
Spain	6	16	37.5%
Luxembourg	4	19	21.1%
Chile	3	5	60%
Greece	2	8	25%
Bahamas	1	2	50%
Belgium	1	7	14.3%
Bermuda	1	2	50%
Croatia	1	2	50%
India	1	1	100%
Italy	1	9	11.1%
Mauritius	1	3	33.3%
Panama	1	2	50%
Poland	1	2	50%
Qatar	1	2	50%
Russia	1	4	25%
Sweden	1	5	20%
Switzerland	1	11	9.1%

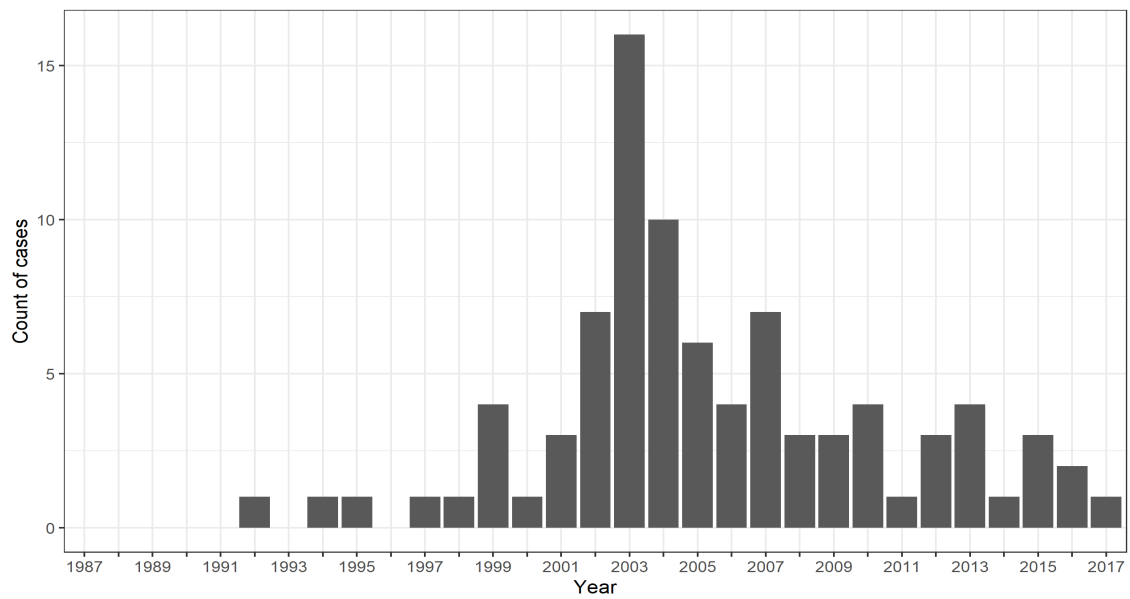
Table A-4: **Comparing cases of regulation abandonment to total cases, by claimant investor industry.** (1987-2017, assessed 2018.) The pattern suggests that more abandoned regulations are associated with utilities, but there is relevant variation.

Industry	Abandoned (count)	Total challenges (count)	% Abandoned
Utilities	32	91	35.2%
Mining and quarrying	12	70	17.1%
Manufacturing	10	47	21.3%
Information and Communication	9	28	32.1%
Finance and insurance	8	34	23.5%
Agriculture, forestry and fishing	6	13	46.2%
Transportation and storage	3	18	16.7%
Construction	2	14	14.3%
Professional and administrative services	2	9	22.2%
Wholesale and retail trade	2	7	28.6%
Public administration	1	1	100%

Table A-5: **Comparing cases of regulation abandonment to total cases, by host country respondent.** (1987-2017, assessed 2018.) NAFTA countries are important, as well as Argentina.

Host Country	Abandoned (count)	Total challenges (count)	% Abandoned
Argentina	35	43	81.4%
Canada	6	16	37.5%
United States	5	12	41.7%
Mexico	4	12	33.3%
Belize	3	4	75%
Egypt	3	8	37.5%
Turkey	3	4	75%
Venezuela	3	23	13%
Bolivia	2	9	22.2%
India	2	6	33.3%
Peru	2	8	25%
Poland	2	10	20%
Spain	2	27	7.4%
Zimbabwe	2	3	66.7%
Ghana	1	1	100%
Hungary	1	11	9.1%
Indonesia	1	3	33.3%
Latvia	1	5	20%
Malaysia	1	2	50%
Moldova	1	3	33.3%
Mongolia	1	2	50%
Nicaragua	1	1	100%
Philippines	1	3	33.3%
Romania	1	8	12.5%
Saint Kitts and Nevis	1	1	100%
Slovenia	1	1	100%
Sri Lanka	1	1	100%
Ukraine	1	10	10%

Figure A-1: **Count of cases associated with an abandoned regulation, by year of filing.** (1987-2017, assessed 2018.) Earlier cases are not disproportionately associated with abandoned regulations. The spike in cases in 2003 are associated with Argentina's Emergency Law.



2 Quantitative Analysis

2.1 Industry Data

Table A-6: **Unique industries included in industry-level analysis.**

D01 - Crop and animal production, hunting
D02 - Forestry and logging
D03 - Fishing and aquaculture
D05 - Mining of coal and lignite
D06 - Extraction of crude petroleum and natural gas
D07 - Mining of metal ores
D08 - Other mining and quarrying
D10 - Food products
D11 - Beverages
D12 - Tobacco products
D13 - Textiles
D14 - Wearing apparel
D15 - Leather and related products
D16 - Wood and products of wood and cork, except furniture
D17 - Paper and paper products
D18 - Printing and reproduction of recorded media
D19 - Coke and refined petroleum products [CD]
D20 - Chemicals and chemical products [CE]
D21 - Basic pharmaceutical products and pharmaceutical preparations [CF]
D22 - Rubber and plastics products
D23 - Other non-metallic mineral products
D24 - Basic metals
D25 - Fabricated metal products, except machinery and equipment
D26 - Computer, electronic and optical products [CI]
D27 - Electrical equipment [CJ]
D29 - Motor vehicles, trailers and semi-trailers
D30 - Other transport equipment
D31T32 - Furniture, other manufacturing [CM]
D35 - Electricity, gas, steam and air conditioning supply [D]
D36T99 - Other activities
D37T39 - Waste collection, treatment and disposal activities; materials recovery
D58 - Publishing
D59T60 - Audiovisual and broadcasting

2.2 Effects of matched set refinements on covariate balance

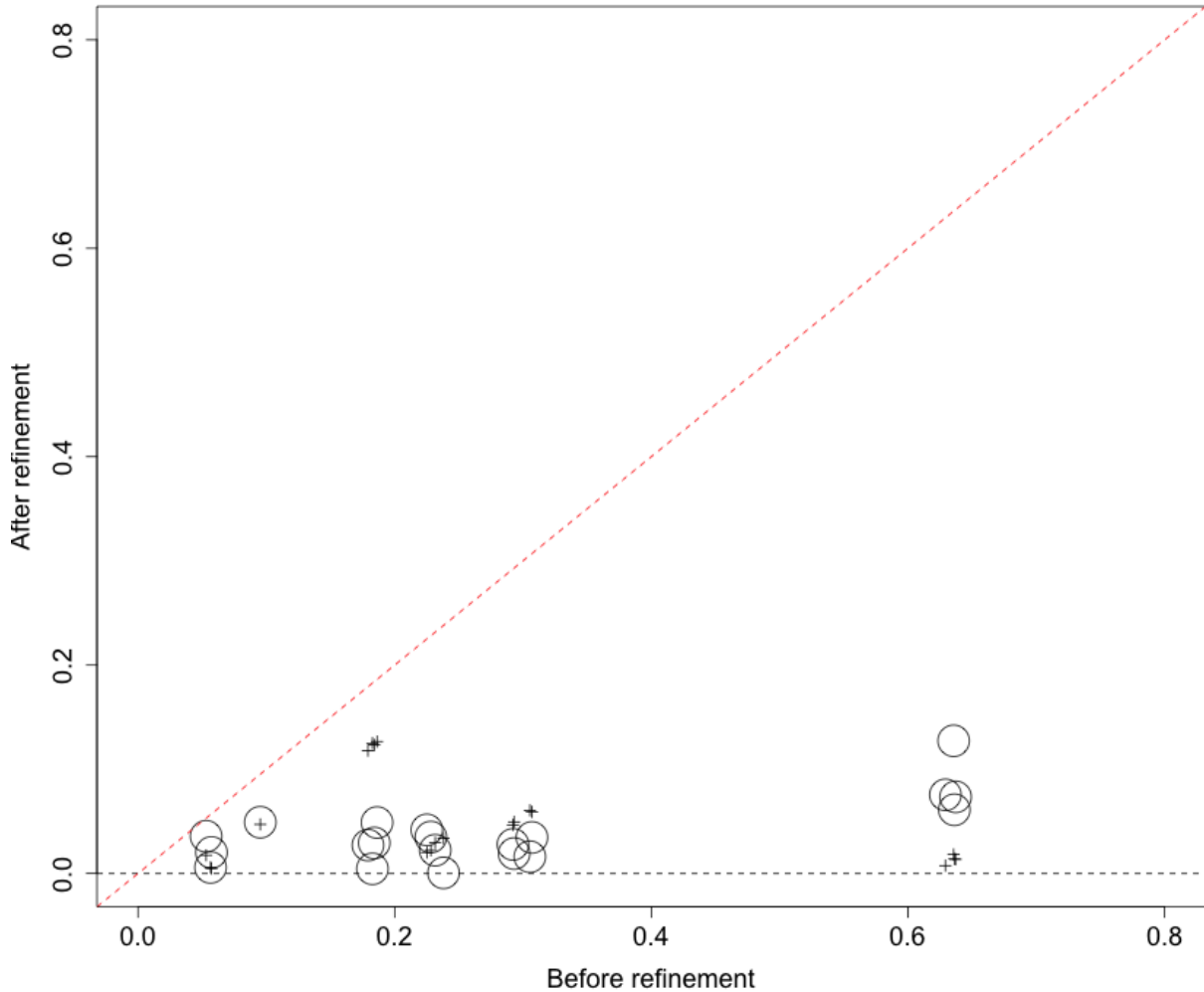


Figure A-2: **Both refinements dramatically increased covariate balance across treated and non-treated units.** Results presented for the industry-specific intermediates models (left panel of Figure 2).

There are three underlying models in this figure: the “benchmark” PanelMatch model in which the matched sets aren’t refined at all (not presented in the paper), the model that uses the Mahalanobis matching refinement, and the model that uses the propensity score weighting refinement. Each point on the graph is one covariate. Each axis is plotting the “standardized mean difference” between treated and non-treated groups for that covariate, where larger values mean more imbalance and smaller values mean more balance. The X-axis plots the level of imbalance prior to making the refinement (e.g., the level observed in the benchmark model), while the Y-axis plots the

level of imbalance that remains after the refinement is made. The graph shows that our refinements were very successful at balancing covariates: almost all of our covariates have a post-refinement imbalance level that is near 0, even if their pre-refinement imbalance was fairly high.

2.3 PanelMatch estimates in tabular format

DV: Industry-specific intermediate imports					
	t	$t + 1$	$t + 2$	$t + 3$	$t + 4$
	(1)	(2)	(3)	(4)	(5)
Panel A: Propensity score weighting refinement					
ISDS	-0.031	-0.111**	-0.094**	-0.132**	-0.149***
	(0.029)	(0.045)	(0.046)	(0.053)	(0.054)
Panel B: Mahalanobis matching refinement					
ISDS	-0.012	-0.105**	-0.059	-0.114**	-0.110**
	(0.031)	(0.048)	(0.046)	(0.049)	(0.052)
Treated country-industry-years: 269					
Average matched (control) set size: 2,892					

Table A-7: Estimates from Figure 2, left panel.

DV: Total intermediate imports					
	t	$t + 1$	$t + 2$	$t + 3$	$t + 4$
	(1)	(2)	(3)	(4)	(5)
Panel A: Propensity score weighting refinement					
ISDS	0.013	-0.009	-0.012	-0.006	0.052
	(0.021)	(0.034)	(0.039)	(0.048)	(0.065)
Panel B: Mahalanobis matching refinement					
ISDS	0.040	0.007	0.010	0.045	0.094
	(0.023)	(0.031)	(0.037)	(0.047)	(0.079)
Treated country-years: 142					
Average matched (control) set size: 50					

Table A-8: Estimates from Figure 2, right panel.

Note: * $p < .1$, ** $p < .05$, *** $p < .01$

DV: Industry-specific final good imports					
	t	$t + 1$	$t + 2$	$t + 3$	$t + 4$
	(1)	(2)	(3)	(4)	(5)
Panel A: Propensity score weighting refinement					
ISDS	0.035	0.018	-0.013	-0.037	-0.043
	(0.022)	(0.032)	(0.032)	(0.035)	(0.040)
Panel B: Mahalanobis matching refinement					
ISDS	0.043*	0.015	0.011	-0.025	-0.020
	(0.022)	(0.031)	(0.033)	(0.037)	(0.040)
Treated country-industry-years: 269					
Average matched (control) set size: 2,892					

Table A-9: **Estimates from Figure 3, left panel.**

DV: Total final goods imports					
	t	$t + 1$	$t + 2$	$t + 3$	$t + 4$
	(1)	(2)	(3)	(4)	(5)
Panel A: Propensity score weighting refinement					
ISDS	0.023	0.020	0.023	0.024	0.012
	(0.020)	(0.031)	(0.038)	(0.045)	(0.059)
Panel B: Mahalanobis matching refinement					
ISDS	0.030	0.024	0.027	0.034	0.008
	(0.019)	(0.032)	(0.038)	(0.044)	(0.056)
Treated country-years: 142					
Average matched (control) set size: 50					

Table A-10: **Estimates from Figure 3, right panel.**

Note: * $p < .1$, ** $p < .05$, *** $p < .01$

2.4 Bilateral Trade in Intermediates

For the bilateral sample, we use the OECD’s data on bilateral trade in intermediate goods and services. Our new outcome variable is (logged) intermediate exports from the investor(s)’ home state(s) to the host state.¹ To make sure that we are identifying investors’ actual home states, rather than the states in which they have incorporated their holding companies, we use Thrall (2021)’s coding of investor nationality rather than the nationalities that are listed on official case documents.² We also include a set of covariates: home and host state GDP per capita (logged), the population-weighted distance between home and host, the UN voting ideal point difference between home and host (Bailey, Strezhnev, and Voeten 2017), as well as variables indicating whether home and host have signed a BIT and a PTA together. We conduct the analysis using IKW’s estimator (Equation 3) with the same specifications as previous models.

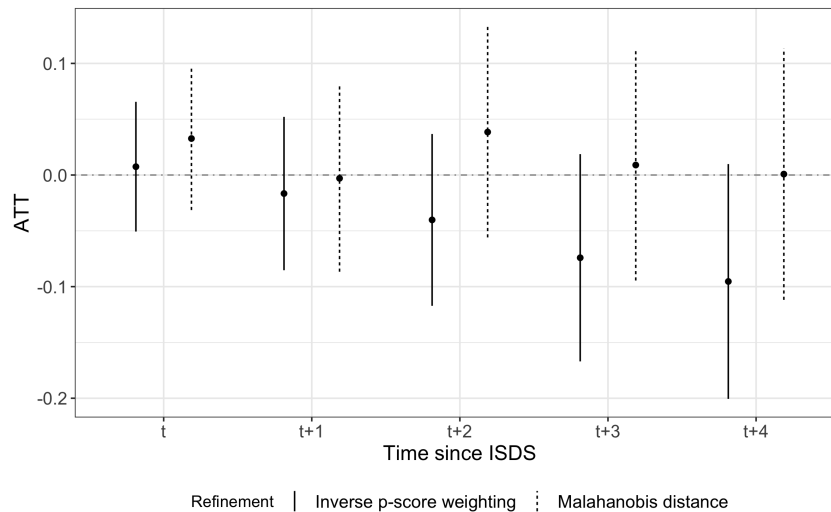


Figure A-3: **ISDS may have some negative effect on bilateral trade in intermediates, but it is sensitive to model specification.** ATTs estimated via Equation 3 and presented alongside 95% confidence intervals.

Figure A-3 presents the results. Unlike previous models, the choice of method that is used to refine the set of counterfactual observations that are selected for each treated observation meaningfully affects the results. When Mahalanobis distance matching is used, the ATTs are not statistically significant and are close to zero in magnitude. However, when inverse propensity score weighting is used the ATT declines steadily over time, nearing statistical significance ($.05 < p < 0.1$)

¹This measure is non-missing for approximately 74% of the dyad-years in our sample.

²For example, a U.S. oil company may use its Dutch shell company subsidiary to file a case against Argentina. While official case statistics would record the investor as being from the Netherlands, Thrall (2021) would code the investor as American.

and similar magnitude to the monadic industry-specific effect by the fourth year after the case was filed. Due to their sensitivity to the weighting scheme, we interpret these results as inconclusive; they provide neither strong evidence in support of nor strong evidence against the claim that ISDS arbitration negatively impacts bilateral trade in intermediates between the host state and the claimant’s home state. Results when excluding OECD host states are equivalent (available upon request).

2.5 Argentina Emergency Law Cases

A potential concern with our main results is that they are driven by the large number of cases filed against Argentina in response to its 2001 Emergency Law (which, among other things, imposed capital controls and “pesification” on foreign investors). If this were the case, it would suggest that we may be picking up GVC disruption that was caused by Argentina’s policies rather than by ISDS itself. To illustrate that our results are not driven by Emergency Law cases, we re-estimate our models after excluding Argentina from the sample. The results are nearly identical to the main estimates (Figure A-4); robustness with regard to other estimates available on request. Our findings are also robust to excluding OECD host states (results available on request).

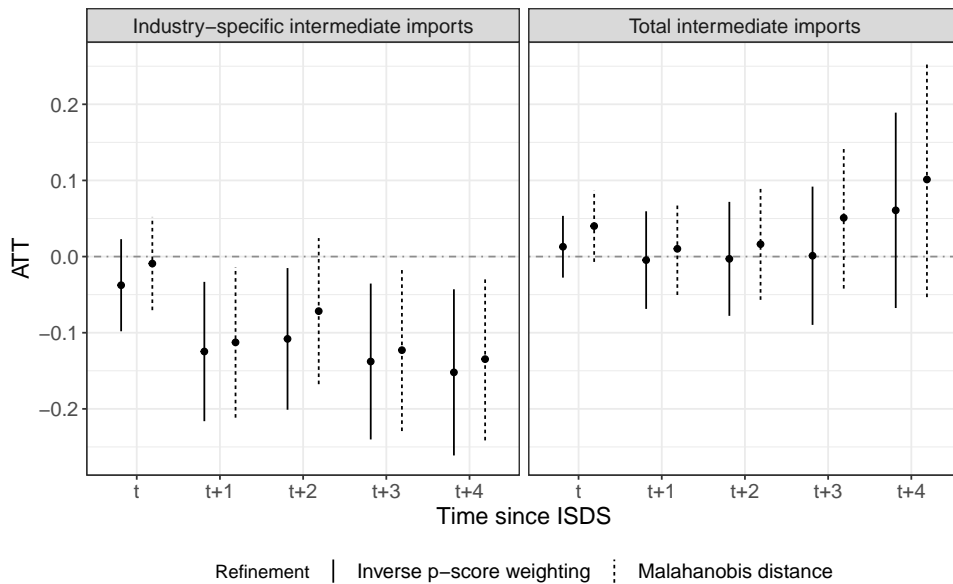


Figure A-4: **ISDS disrupts global value chains in the associated industries, but not outside them. Estimated per Figure 2 with Argentina excluded from the sample.**

3 Qualitative Analysis

Here we consider cases classified in four categories, according to whether the host state won or lost the case, and whether the host abandoned or kept the disputed regulation³. This yields the following categories: *Win, Cancel* = 20, *Win, Keep* = 78, *Lose, Cancel* = 39, *Lose, Keep* = 74. Our intuition is that deeper GVC integration should be high in the subset of surprising abandonment-despite-winning (*Win, Cancel*) cases considered above. We also expect GVC integration to be low in the subset of surprising keep-despite-losing case (*Lose, Keep*). Neither of these outcomes are consistent with the common-sense explanation that winners are vindicated and losers are not, so we are less concerned that patterns in GVC integration are epiphenomenal to this reasonable alternative hypothesis. We do not have clear expectations about patterns in the *Win, Keep* or *Lose, Cancel* categories.

To operationalize GVC trade, we mirror our quantitative approach in examining trade in intermediates at the *national level*, *across industries*, and *across investor nationalities*. Figure A-5 plots average GVC trade for each of the three measures, for each of the four categories. The first takeaway is that patterns are consistent with our expectation that average GVC trade is highest for the category of *Win, Cancel* cases (of which *Mesa Power v. Canada* is one. See again Section 7 on paper). This is true for all three of the aggregations of trade in intermediates suggested by the literature. Second, GVC trade is very low in the *Lose, Keep* category, and the difference between averages in *Lose, Keep* and *Win, Cancel* are nearly statistically significant for all three trade-in-intermediates measures.⁴

We also analyze the ISDS arbitrations that remained pending at the end of the study period (2018). Even without knowing the outcome, the host state moved the regulation in the pro-claimant direction in 14 instances (12.6% of applicable cases). Why would a host state do this? According to our argument, risk of GVC disruption in this subset of pending cases would be also high. If so, the host state has incentives to abandon the disputed regulation to avoid costs from GVC disruption – even in the presence of uncertainty over the eventual ISDS outcome. Figure A-6 replicates Figure A-5. We do not find any meaningful differences between the average of GVC trade for *Pending, Cancel* cases compared to *Pending, Keep* ones. This is unsurprising, given given layered selection effects as well as the small n (14 cases).

³We collapse settlements into investor wins.

⁴Because our hypothesis is directional, we run one-tailed t-tests between the *Win, Cancel* and the *Lose, Keep* categories. These yield the following p-values: across industries = 0.064; at the national level = 0.017 and; across investor nationalities: = 0.012.

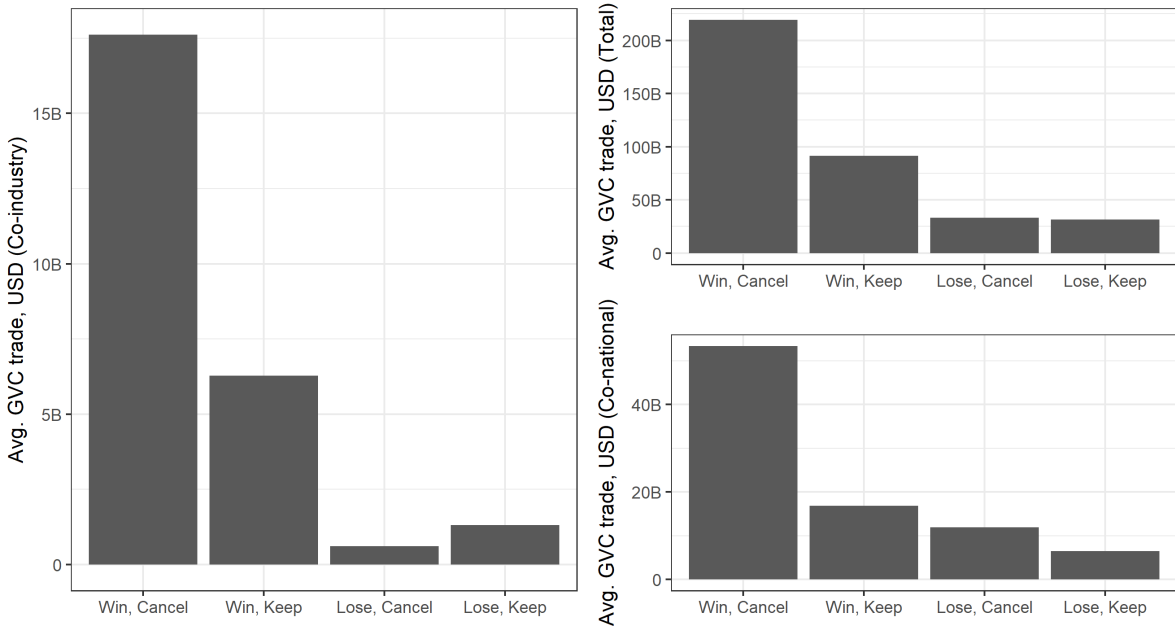


Figure A-5: **GVC integration (at the national-, industry-, or nationality-level), by ISDS and regulation outcomes.** Patterns in the puzzling abandoning-despite-winning (“Win, Cancel”) and keep-despite-losing (“Lose, Keep”) categories are consistent with our theory.

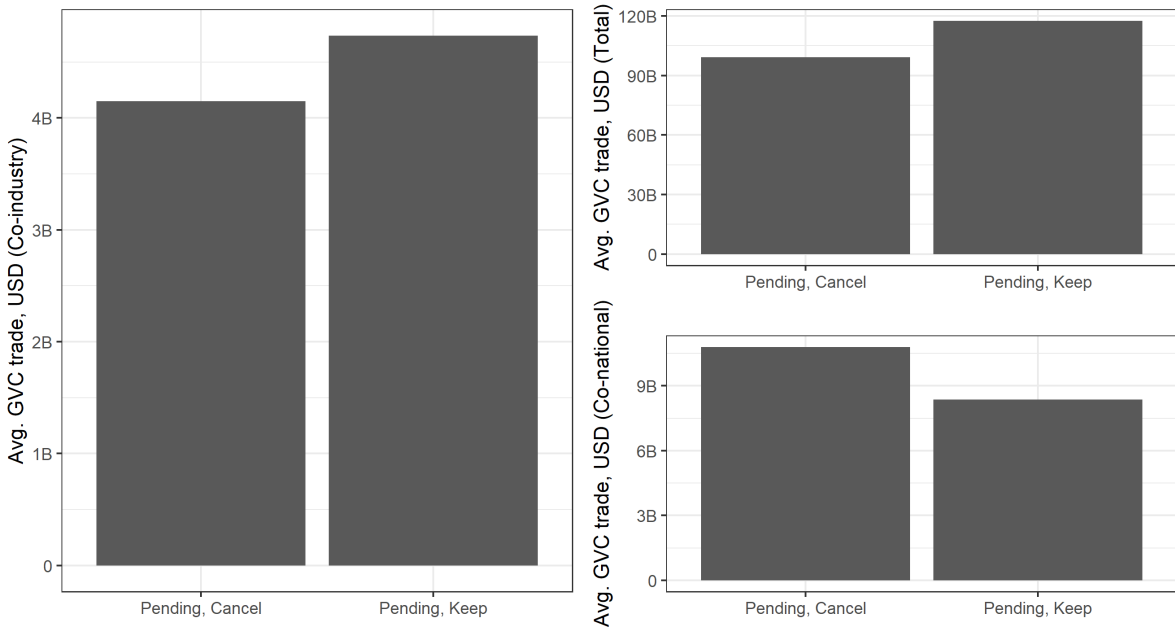


Figure A-6: **Average national-, co-industry, and co-national imports of intermediate goods and services in host for the subset of Pending Cases.**

References

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