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Asset Specificity, Corporate Protection and Trade Policy: Firm-level evidence from antidumping petitions in 19 jurisdictions

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We provide firm-level evidence that policy-makers tailor trade policy to suit selected firms. We argue that firms with relatively higher levels of specific assets find it more costly to reorganize production, and are hurt more by international competition. In response, policy-makers grant more trade protection to firms with fixed assets. Since protectionism is costly, firms compete for it, which creates diffusion dynamics where protection granted to one firm affects protection granted to others. To test this claim, we utilize the special role antidumping duties (ADDs) play in international trade, and combine petitions for ADDs with financial data on the firms filing them in a unique dataset. Using spatial autoregressive models, we find that firms with specific assets are granted more protection. However, diffusion dynamics differ within and between groups of firms producing the same good. This suggests that firms can partly shape their own level of trade protection.

Research on the political economy of international trade has always emphasized the role of business in shaping protectionist policies[1]. We contribute to this literature by examining how firm-level asset specificity shapes their success in petitioning for antidumping trade protection. For firms with capital fixed in specific assets like factories and buildings ("immobile firms"), the costs to reorganizing production are comparatively high. This makes them more vulnerable to international competition, and more likely to gain trade protection when petitioning for it. We also provide a link between protection afforded to individual firms and groups of firms by showing that the protection gained by companies with specific assets diffuses to other firms producing the same product ("same-good producers"). These results suggest that policy-makers are more responsive to the preferences of companies with specific assets. For this reason, immobile firms can play a part in shaping their own level of trade protection. Since protection diffuses, this has consequences well beyond their own purview.

To test this claim, we marshal evidence on the role of antidumping duties (ADDs) in shielding individual companies against international competition. ADDs are temporary tariffs that importing countries impose on foreign products, and which are intended to provide protection to domestic producers against predatory pricing. However, they also constitute a potent political weapon that governments employ as protectionist measures favoring targeted domestic actors. ADDs are imposed with a high level of discretion and granularity by domestic authorities and trade jurisdictions after domestic companies file complaints that foreign competitors are charging predatory prices. Importantly, this institutional setup allows us to investigate why some firms are successful when actively seeking trade protection, while others are not. By mapping decisions regarding ADDs onto the characteristics of complainant firms in 19 WTO jurisdictions, we construct a uniquely granular dataset, which allows us to investigate ADD protection at the firm level. To empirically model the spatial dynamics of firm-level protection, we utilize spatial

[1] Grossman and Helpman 1994; Manger and Shadlen 2015; Ballard-Rosa, Carnegie, and Gaikwad 2018.

autoregressive (SAR) models, which enable us to estimate how protection afforded to one company affects the likelihood that same-good producers will receive protection too.

Our paper thereby provides new insights on the firm-level determinants of successful petitions for protectionist policies. While recent years have seen an impressive growth in research examining the role of firms in the politics of trade[2], we shed new light on the broader literature on determinants of firm-level political influence and the political economy of trade[3]. These issues have become even more pertinent with the recent application of "new-new trade theory" to trade protection [4], which has documented extensive firm-level heterogeneities and other incongruences with established industry-level theories. This suggests that firms may be more important in shaping protectionist policies than industry-level factors[5]. By investigating how asset specificity—which previously was thought mostly to matter mainly at the industry-level[6]—shapes antidumping protection, we show how the firm is a key player in shaping contemporary protectionism and trade policy.

Asset Specificity and Firm-level Trade Protection

The costs of trade liberalization are carried by different actors, depending on whether factors of production are assumed to be immobile (the Ricardo-Viner model) or not (the Heckscher-Ohlin model). By implication, the costs of international trade are increasing in the degree of an actor's asset immobility[7]. While this insight has normally been applied at the industry-level[8], it also holds for immobile firms, as liquidating capital that is fixed in specific assets is costly. In the face of international competition, this means that firms carry significant costs if they cannot easily reorganize production[9].

To see how asset specificity might be relevant at the firm-level, consider a policy-maker that cares about protecting vulnerable firms. Different firms petition for protection, but the policy-maker needs to learn which firms are truly threatened by foreign competition. Looking at firm characteristics – including the level of asset specificity – may serve as a signal of the costs a firm incurs from international trade. Since protection is costly, however, policy-makers will attempt to apply protectionist measures where the return is highest. For firms with specific assets, filing complaints against companies that are known to engage in campaigns of predatory pricing might signal to policy-makers that the return to protection is relatively high. In these situations, the deadweight loss to protection is small. However, for firms with highly mobile assets, filing legitimate complaints might not matter for the policy-maker: If the firm can relocate its production at a relatively low cost, there is less reason to provide them with protection. The implication is that firms with more liquid assets are less likely to get protection even if their complaints are legitimate.[10]

[2]E.g. Alt et al. 1999; Bombardini 2008; Kim 2017; Osgood et al. 2017; Ballard-Rosa, Carnegie, and Gaikwad 2018.
[3]Rodrik 1995.
[4]E.g. Bombardini 2008; Kim 2017.
[5]Kim 2017.
[6]Hiscox 2002.
[7]Hiscox 2002.
[8]Hiscox 2002.
[9]Alt et al. 1999.
[10]While policy-makers have a high degree of discretion in imposing ADDs, they are constrained by the WTO that can repeal the most unfair duties. Therefore, policy-makers have an incentive to pursue cases that are relatively easy to prosecute. This may induce immobile firms to forego cases where the foreign firm actually dumps its price, but dumping

Besides vulnerability, there are a number of reasons why asset specificity might translate into more trade protection. First, if governments' prime concern is re-election, trade policy will tend to be more restrictive, since the median voter generally is endowed with immobile assets[11]. This mechanism is likely to be important at the company-level, making policy-makers more responsive to firms with specific assets, because jobs in those companies are more vulnerable. Second, as immobile firms are easier to tax[12], policy-makers who are motivated by fiscal concerns may want to shield firms with specific assets, as they can gain a significant tax premium from keeping them alive and profitable.

Asset specificity and the competition for protection

Granting trade protection is costly. This forces policy-makers to trade off producer interests against those of consumers[13]. When a company is successful in having duties placed on its international competitors, it drains from society's pool of protective measures. Because of this competitive dynamic, ADDs should diffuse from firms with specific assets, affecting the protection afforded to entire producer groups. This could make ADDs a local public good: When policymakers have agreed that trade in a product is harmful, it becomes easier for all producers of that product to gain protection. However, when one firm is protected, it could also leave less protection available for other same-good producers, inducing a common pool problem, where all firms—even same-good producers—compete for protection.

If protection takes the form of a local public good, competition for protection means that ADDs will be concentrated among certain products. This implies that ADD protection initially offered to the immobile firm will diffuse to other (comparatively less mobile) firms producing the same good. This would imply positive diffusion of ADDs from immobile firms to other same-good producers. However, same-good producers might also compete among themselves for protection. In that case, we would expect relatively immobile firms to win the competition. This would imply negative diffusion among same-good producers. Importantly, both of these dynamics can be at work simultaneously. That is, we cannot rule out that protection will be concentrated on certain products, and—at the same time—that firms producing highly protected goods compete to distribute that protection between them.

Context, Methods and Data

Antidumping investigations are typically initiated when a domestic firm files a complaint against a foreign competitor. Domestic authorities have a high degree of discretion in decisions on ADDs, and can impose duties with an extremely high level of granularity, singling out the company mentioned in the complaint, but also specific products it exports. While this provides an ideal setting for investigating which firms are successful in gaining protection, ADDs also constitute important trade barriers in their own right: They increase the market power of domestic companies to such a degree that they are among the costliest trade protection measures[14] and have been

is difficult to prove. Instead, they can pursue cases where the foreign firm obviously uses predatory pricing. Thereby, the firm incurs a cost to help the decision-maker pursue an easily prosecutable case.

[11] Mukherjee, Smith, and Li 2009.

[12] Genschel and Schwarz 2011.

[13] Rodrik 1995.

[14] Blonigen and Prusa 2003, 271.

linked to large suppressions of international trade[15]. These features make ADDs ideal targets for companies that seek to use political means to shield themselves against international competition. Therefore, ADDs are also ideal for researchers seeking to elucidate effective firm-level strategies for obtaining political protection. In Appendix A, we describe in more detail how ADDs are imposed.

We use the Global Antidumping Database[16] to measure ADDs in two ways. First, we construct a binary indicator, which takes the value one (1) if the policy-maker decides that the foreign competitor has dumped its prices, and zero (0) otherwise. Second, to gauge the extent of protection, we use the percent of the sales price that is added as duty. Whenever no duties are imposed, this variable takes the value zero. Both measures are shown in Figure 1.

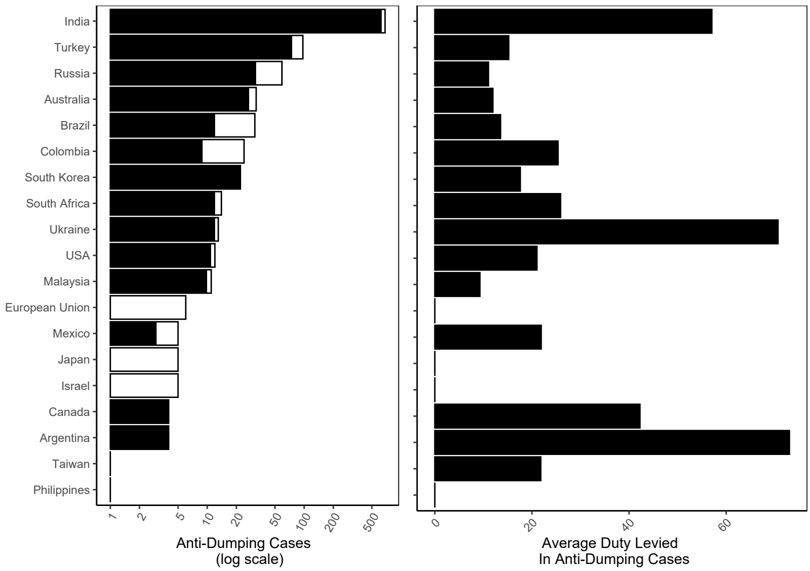

Figure 1: Anti-Dumping Cases and Their Successfulness Across the World.
Note: Left: Total number of anti-dumping cases (white), and how many of them that are successful (black). Right: Duty size (average percent of original sales price.)

Bown (2016) is an extremely detailed data source, which reports the names of the complainant firms. We match these companies with the Orbis (2016) database of firm finances. This allows us to measure asset specificity as US$ invested in fixed assets as a proportion of the firm's total assets. The distribution is shown in Figure 2. This measure captures the basic intuition in our argument: As the ratio of fixed assets—defined as investments in property, plant and equipment—to total assets increases, so do the costs of relocating production[17].

We also construct a measure of how often the foreign firms engage in broad campaigns of predatory pricing, using the average number of complaints filed against each foreign firm in our sample. A foreign firm that engages in campaigns of predatory pricing will be subject to a larger number of independent complaints from domestic firms, which we take as an indicator of predatory behavior of foreign firms. We use this to test the theoretical implication that domestic

[15]Bown and Crowley 2007.
[16]Bown 2016.
[17]Alt et al. 1999.

firms can file complaints about clearly predatory foreign firms to signal need for protection to policy-makers.

As controls, we include year fixed effects, and firm-level data on total assets, revenue, total capital and taxes paid (all logged). In total, we are able to get data on all covariates for 1030 firm-complaint observations from 19 WTO jurisdictions. The data and controls variables are described in further detail in Appendix B.

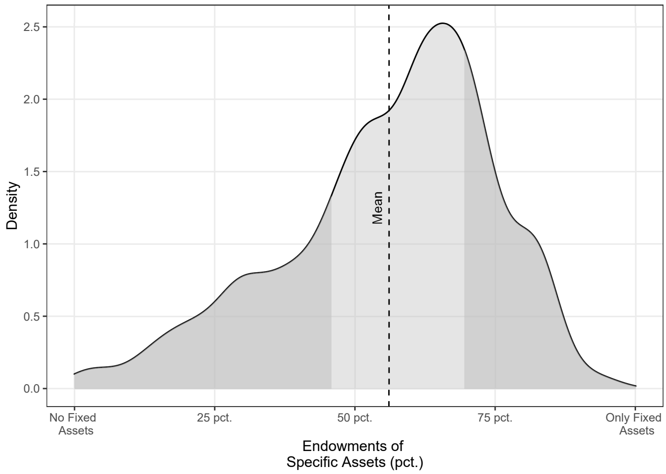

Figure 2: Distribution of Asset Specificity.
Note: Dark areas below the 25th and above 75th percentiles.

Estimating competition for protection

To capture the diffusion of ADD protection, we construct a 1030x1030 (NxN) connectivity matrix, where two firms are connected if they a) have filed separate antidumping petitions b) to have the same product (ten-digit HS codes) protected against c) different foreign companies, and d) have done so in the same year and home-country. This creates the network of domestic competitors seeking ADDs placed on the same good, which is depicted in Figure 3.

We use the connectivity matrix to include a spatial lag of the dependent variable in a series of SAR models. This allows us to estimate how protection afforded to one company impacts the likelihood that other companies are protected too. In particular, we investigate how ADDs diffuse among firms that are active on the same domestic market, but have different foreign competitors. We can tease out two separate quantities of interest: a) the direct impact of asset immobility on the company's own trade protection, and b) the additional indirect effect asset specificity has because the immobile company's own success changes the likelihood that same-good producers are successful in petitioning for ADDs[18].

Because the complainants seek protection for the same good—but do so separately and against different foreign firms—they are almost certainly competitors on the domestic market. This leads us to what may be the most important implication of this measurement strategy: If one firm

[18] LeSage and Pace 2014.

gains protection against foreign competition, but other competing firms do not, this will markedly change domestic competitive dynamics.

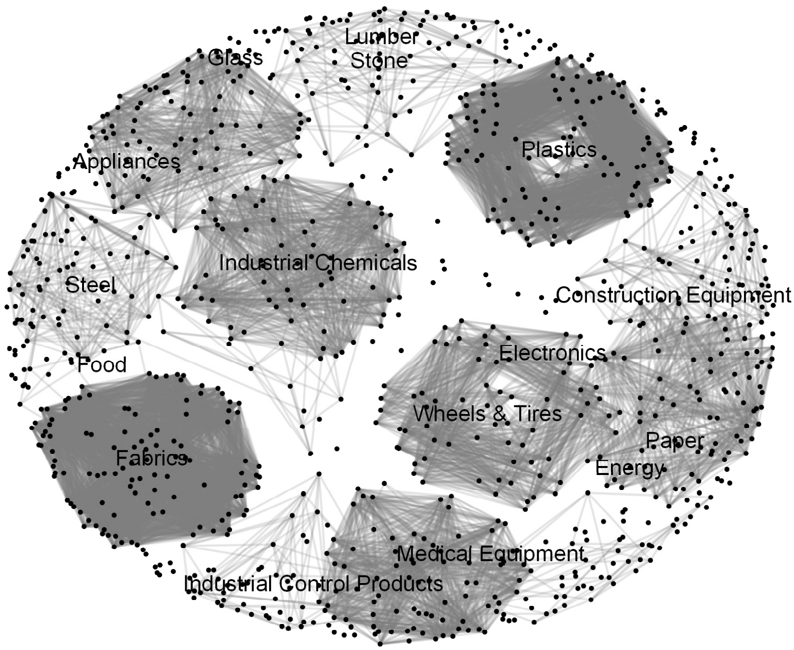

Figure 3: A Network of Firms Seeking Protection for the same Product.

Figure 3 clearly shows the dense clustering of firms in their pursuit of ADDs. Producers of the same products tend to seek protection separately and do so recurrently. For most companies, domestic competitors seek protection as well. Because of the sheer density of the network of protection-seeking firms, ADDs shielding firms with specific assets may have vast consequences. Descriptives and diagnostics on the spatial lag parameter are available in appendix C.

Results

For presentational purposes, we show the results graphically. Appendix D presents the coefficients in table form. Panel A shows the results from models with dumping decision as the outcome. Panel B shows models with duty size as the dependent variable. Models are linear SARs estimated using maximum likelihood. We simulate average direct (left) and indirect (right) effects using the parametric bootstrap[19]. Details on the model are available in Appendix D.

When using dumping decision as the outcome variable, our results show a clear positive and statistically significant relationship between firm-level asset specificity and ADDs. Adding, first, firm-level controls and year fixed effects, and then product fixed effects strengthens this conclusion. When using duty size as the dependent variable, firm-level asset specificity becomes

[19]LeSage and Pace 2014.

statistically significant only when control variables are included. The results suggest that if a firm increases the specificity of its assets by 18 percent (one standard deviation), we would expect an increase in the likelihood of gaining ADDs of six percentage points, and an increase in the size of the duty placed on its foreign competition of 19 percent.

The spatial lag parameter, ρ, indicates that firms compete for ADD protection. When a firm manages to increase its level of protection, other firms—that produce the same good—gain protection, too. Specifically, an increase in asset specificity of a standard deviation increases a same-good producer's probability of being protected by 11 percentage points.

Adding product fixed effects—and only investigating diffusion within product groups—changes the results: Within-product diffusion is negative. That is, within groups of same-good producers, protection for one firm detracts from the protection available to others.

The fact that diffusion is positive between groups of same-good producers but negative within those groups indicates that both competitive dynamics we have discussed are at play. That is, ADD protection is concentrated on certain products, and producers of those highly protected goods compete to distribute that protection among themselves. First, ADD protection is concentrated on specific products—some goods are protected at the expense of others. This implies that mobile firms can gain *some level of* protection if they petition for ADDs on a product that an immobile firm recently was successful in having protected. This produces the positive diffusion among same-good producers, when we compare all companies. Second, even though protection is concentrated on specific products, policy-makers are not willing to afford unlimited ADDs to any one good. Therefore, when one company is successful in gaining protection, it will leave less protection available for other producers of that good. This creates competition *within* groups of same-good producers—not just between them. Importantly, immobile firms typically win this competition: When they gain protection, same-good producers with more liquid assets are less likely to be protected. This produces the negative diffusion when we only compare same-good producers. Overall, this implies a hierarchy of ADD protection where relative immobile firms come out on top, while relatively mobile same-good producers gain some protection—and mobile producers of other goods lose out.

Robustness Checks

In the appendix, we conduct a number of robustness checks. First, reverse causality may be an issue if firms anticipate that they can obtain protection by investing in specific assets. However, as shown in Appendix E1, firms do not invest very strongly in specific assets when protection for a good was high in the previous period. Second, firms with specific assets might also be targets of campaigns of predatory pricing more often. If decision-makers are more responsive when claims are legitimate, our results could be driven by this. In Appendix E2, we show that campaigns of predatory pricing do not drive our results. Third, if firms from certain countries are more likely to dump their prices, this could also drive our results. However, Appendix E2 shows that including fixed effects for the foreign firm's country of origin does not change the results. Fourth, in Appendix E3, we show that the results are robust to excluding atypical countries and firms. Finally, in Appendix E3, we collect data on Chinese firms seeking ADD protection. Since all complainant firms gain protection in China, there is no variation to test whether ADD decisions are affected by asset specificity. However, the results successfully replicate when looking at duty size.

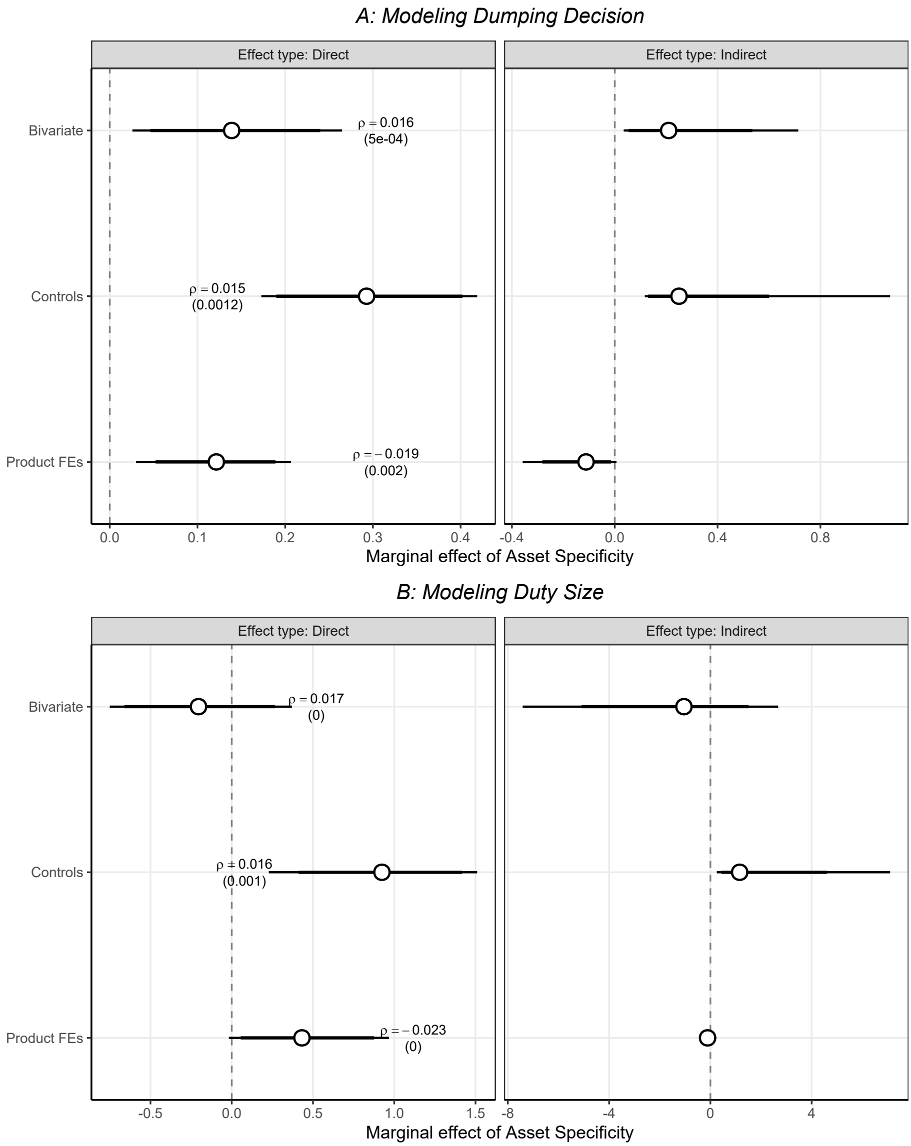

Figure 4: Asset Specificity and Antidumping Duties.
Note: Note: Dependent variables: Dumping Decision and Duty Size (logged). Circles are the medians of the bootstrapped distribution. Lines are the 90% (thick) and 95% (thin) bootstrapped confidence intervals. For ρ, standard errors are in parentheses. Country fixed effects included in all models. Controls include: year fixed effects, total assets, revenue, total capital and taxes paid (all logged).

Mechanisms

The core of the argument presented here is that decision-makers grant more protection to firms with specific assets because they are vulnerable. It is not clear, however, that vulnerable firms with strong financial performance need protection. This suggests an important observable implication: Firms with specific assets that also exhibit poor financial performance should obtain more ADD protection, because competition could be a threat to their survival. In Panel A of Figure 5, we investigate this by interacting firm revenue with asset specificity. This shows a strong interaction effect, suggesting that policy-makers react not only to vulnerability, but also to the threat competition poses to the firm.

Another important implication is that the responsiveness of decision-makers to immobile firms should be strongest when the foreign firm is *clearly* predatory. In Panel B, we leverage our measure of predatory pricing campaigns to examine this implication. We find a strong interaction: Decision-makers only grant protection to vulnerable firms when the foreign firm is mentioned in many other complaints. The flip-side of this (shown in Panel C) is that policy-makers do no react to campaigns of predatory pricing unless the domestic firm is immobile—mobile firms are left to fend for themselves.

The remaining question is whether policy-makers are able to gauge this themselves, or if vulnerability induces firms to lobby more intensively. While our data do not allow us to examine this directly, evidence from single-country studies shows that firms with more specific assets do lobby more intensively[20], and that lobbying intensity translates into more protection[21].

[20] Alt et al. 1999.
[21] Evans and Sherlund 2011.

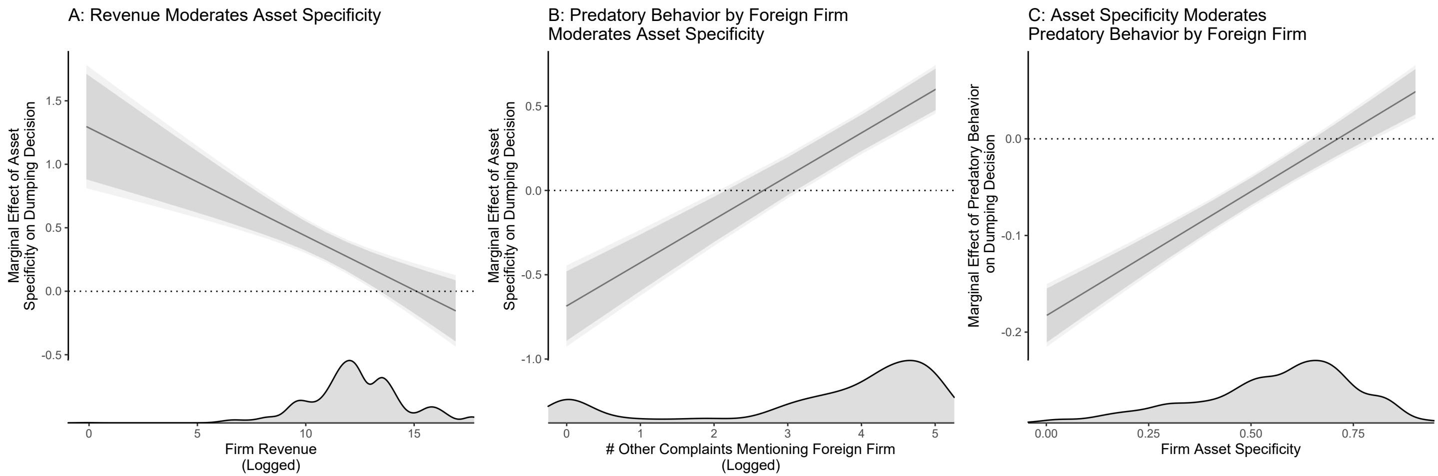

Figure 5: Heterogeneous Effects.
Note: The figure shows marginal SAR coefficients conditional on a moderator in each panel. Shaded areas are 90% (dark) and 95% (light) confidence intervals

In Appendix F, we provide evidence on the a number of other potential mechanisms. First, following Mukherjee, Smith, and Li (2009), we should expect immobile firms to be more successful if they also are large employers. We find no such evidence (Figure F1). Second, if decision-makers primarily respond to fiscal concerns, we would expect asset specificity to matter only if the firm is a large taxpayer as well. We find no evidence of this (Figure F1). Third, supply-side factors could explain the patterns we observe here. For instance, because of electoral concerns, democracies may be more responsive to voters and firms employing large numbers of voters. If supply-side factors at the aggregate level make decision-makers more responsive to immobile firms, we would expect significant country-level differences in effects. We find limited evidence that this is the case (Figure F2).

Conclusion

In this paper, we have examined two important dynamics of firm-level antidumping protection. First, trade policy-makers tailor their provision of ADDs to protect vulnerable firms—those owning assets that are difficult to liquidate and relocate in the face of international competition. The concentration of protection among these firms is so strong that firms with less specific assets might not gain protection—even if they actually are the target of predatory pricing campaigns. Our results lend credence to the view that decision-makers grant trade protection because it furthers the interests of a specific group of companies. Second, since protection is a scarce resource, ADDs afforded to these immobile firms diffuses. This indicates that same-good producers have the common goal of increasing protection for their product at the expense of other goods. However, once the overall levels of protection are decided, they still have to compete amongst themselves to be the final recipient of ADDs. Because of the sheer density of the network of protection-seeking firms, ADDs shielding firms with specific assets may have vast economic consequences. Most obviously, it has the direct effect of distorting the competitive environment by keeping foreign competition to immobile domestic firms out. However, since this changes the probability that same-good producers are protected as well, the diffusion of antidumping protection further distorts the domestic competitive environment beyond the initial first-order effect.

These results suggest avenues for future research. First, while we have explored a number of plausible explanations of why decision-makers are more responsive to immobile firms, future work should focus more on uncovering the mechanisms linking asset specificity to trade protection. Second, the diffusion dynamic explored here is likely to be an important reason why ADDs have large economic effects. Further explorations of why the dynamics differ within and between product groups will be important for future research on trade protection. Finally, while the association between asset specificity and trade protection should not be limited to certain types of protection, more work is needed to uncover how asset specificity affects ADD relative to other policies of trade protection.

Supplementary material. Data replication sets are available in Harvard Dataverse at `https://doi.org/10.7910/DVN/1WZRY2` and online appendices at: [INSERT LINK TO BJ.Pol.S web site].

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Online Appendix for:

Asset specificity, corporate protection, and trade policy

Contents

A Further Description of Antidumping Procedures

A.1 How Antidumping Cases are Decided

Antidumping tariffs are imposed by national governments and trade jurisdictions as temporary tariffs on import-competing products and companies from foreign countries. Ideally, they are construed as a means of protecting companies against predatory pricing by foreign competitors. However, although the outcome of an antidumping investigation is decided bureaucratically, the regulators are not insulated from these political pressures. For firms, pressuring the bureaucracy (Gordon and Hafer 2005), or even enlisting sympathetic politicians to do so on their behalf (Hall and Miler 2008) is an effective means of gaining leeway over the bureaucracy. This also holds for the bureaucratic agencies that decide on antidumping investigations. Indeed, Blonigen and Prusa (2003, p. 253) argue that antidumping "no longer has anything to do with predatory pricing ... it is simply another tool to improve the competitive position" of the domestic industry. Antidumping measures help domestic companies increase their market power to such a degree that they are among the costliest trade protection measures in the US (Blonigen and Prusa 2003, p. 271) and have been linked to large suppressions of international trade in general (Bown and Crowley 2007).

Antidumping investigations are initiated when a domestic firm files a complaint against a foreign competitor. At their own discretion, domestic authorities can impose duties with an extremely high level of granularity, singling out the company mentioned in the complaint, but also specific products it exports. Under the WTO Agreement, a company is said to be dumping a product when it sells it at a lower price in the importing country than on the company's home market in the ordinary course of trade (WTO 2018). When no such data is available, domestic authorities make their antidumping rulings based on constructed normal prices (WTO 2018). Imposition of antidumping measures are allowed insofar as it has been established that an exporting company is dumping the price of its product, and that this is causing injury to companies on the importing market. They are repealed after a period of five years (WTO 2018).

A.2 Institutional Variations Between Countries

While decisions regarding antidumping duties are decided administratively in all settings, countries can design their antidumping statutes as they see fit (WTO 2018). This results in large cross-country differences in how antidumping investigations are conducted and decided upon. For instance, the WTO agreement specifies that imposition of antidumping duties require evidence for dumping, injury to a domestic firm, and a causal link between the two. However, the investigative process is implemented differently across jurisdictions – some locating all decisions with a single agency, while others divide them between agencies.

In the European Union (EU), for instance, complaints from firms are first examined by an advisory committee consisting of a representative from each member state and the Commission. If this initial investigation confirms that dumping has occurred, the Commission conducts its own investigation into both dumping and injury. It then issues its preliminary ruling, possibly imposing initial ad valorem duties, after which the Council of Ministers makes the final decision (Bjørnskov et al. 2009). The US, on the other hand, has bifurcated the antidumping decision process. The determination of dumping is carried out by the Department of Commerce, while the International Trade Commission determines injury (Blonigen and Prusa 2003). Additionally, there are large differences between the two jurisdictions in how shielded the decision is from political pressure. While the decision in the EU directly involves political actors, and is highly intransparent, US regulators are formally independent from both executive and legislative pressures. However, since both those branches of government hold great sway over budgetary decisions, antidumping measures are no less politicized in the US than in the EU (Blonigen and Prusa 2003). These large differences in the institutions governing the antidumping process constitute one reason why the extent of its use varies widely between jurisdictions (Blonigen and Prusa 2003).

B Further Details on the Dataset

In this section of the appendix, we describe in further detail our two main data sources and how they were matched. We also details on the patterns of missingness, variable definitions and descriptive statistics.

B.1 Data Sources

The Global Antidumping Database

The (Bown 2016) database sources national documentation on the use of antidumping instruments, including targeted products (HS codes), the names of petitioning and punished firms, the investigative procedure and outcomes (decisions and the size of the punitive tariffs) in 24 countries and the European Union (EU). In the case of the EU, it dates back to the 1970s, but mostly it extends only to the 1990s or 1980s. Due limitations of the Orbis financial data, we only include 19 trade jurisdictions after 2006. The database is expected to have good coverage, and include approximately 95% of all antidumping cases in these countries.

As explained in the main text, as all companies included in the sample petition for antidumping protection, this allows us to measure whether they are successful in their lobbying endeavor and to which extent. Importantly, we can use the product information to estimate diffusion and take product-level, time-invariant confounders into account into account. The database also allows us to include fixed effects for country and year.

The Orbis Database

We manually match the names of petitioning firms from the Bown database to the commercial Orbis database of company finances.

Bureau van Dijk – the operators of Orbis – contract with local actors to get standardized company-level accounting information, normally from the firm's own annual reports.

Our main variable – asset specificity – is the ratio of fixed to total assets. Fixed assets are investments in plant, property and equipment, which cannot be liquidated within a year.

As reporting requirements vary vastly between countries, and firms may not comply with them, we are unable to get full coverage of the financial characteristics of petitioning firms in the Bown database. We are able to get data on approximately half of all companies (about 2,370) on asset specificity (our main variable), and about 20% (1,030 observations) for our full number of covariates. To make sure results are comparable between models (i.e. are not driven by the inclusion of different subsets of observations), in our main results we rely on the observations, where we have full coverage. However, our results are robust to this choice.

B.2 Missing Data

While the Orbis database does provide the best possible financial data, we still are unable to get financial data on a number of petitioning firms. To alleviate concerns that systematic patterns of missingness may be driving our results, we first construct an indicator for whether an observation is missing for each of the variables included in our main models. We then regress this indicator on the variables in the model. Results are presented in Table B.1. In some instances, we had to drop a covariate, because no coefficients could be estimated.

Missingness for each of our covariates is largely orthogonal to other factors in our models. This reassures us of two things: first, that missingness is not driving our main results. Second, that only including the same observations in all models – to ensure comparability – does not drive our results.

Table B.1: Missingness Does Not Correlate with Observables

	Dependent variable:			
	Missing Specificity	Missing Taxes	Missing Revenue	Missing Assets
	(1)	(2)	(3)	(4)
Revenue	0.000	0.000		−0.000
	(0.000)	(0.000)		(0.000)
Total Assets	−0.000	−0.000	−0.000	
	(0.000)	(0.000)	(0.000)	
Taxation	0.000		0.000	−0.000
	(0.000)		(0.000)	(0.000)
Asset Specificity		0.020	0.007	
		(0.025)	(0.009)	
Constant	0.001	0.045***	0.003	0.008***
	(0.001)	(0.014)	(0.005)	(0.002)
Observations	2,229	2,352	2,242	2,246
R^2	0.0001	0.003	0.001	0.0003
Note:				*p<0.1; **p<0.05; ***p<0.01

B.3 Variable definitions

Table B.2: Definitions of variables included in the models

Variables	**Description**	**Data source**
Dependent variables		
Dumping Decision	Binary: equals 1 if a firm's petition to have AD duties placed on foreign competition is successful.	Bown (2016)
Size of AD Duty	Percent of sales price added as AD duty (logged)	Bown (2016)
Primary Explanation		
Asset Specificity	A firm's fixed assets as a proportion of total assets.	Orbis (2016)
Firm-level Controls		
Total Assets	A firm's total asset holdings (USD, logged).	Orbis (2016)
Revenue	A firm's revenue (pre-tax, USD, logged).	Orbis (2016)
Taxation	A firm's total tax payments (USD, logged).	Orbis (2016)
Capital	A firm's total capital holdings (USD, logged).	Orbis (2016)
Fixed Effects		
Country	Full set of dummies capturing the home-country of the complaining firm.	Orbis (2016)
Year	Full set of dummies capturing the year of an AD decision.	Bown (2016)
Product	Full set of dummies indicating which product (HS10 code) the firm seeks protection for.	Bown (2016)
Spatial variables		
Spatial weights matrix	A binary, NxN connectivity matrix, where all companies from the same country, that seek protection for the same good within the same year, but against different competitors, are connected.	
Spatial lags of DV	DVs multiplied by the weights matrix. Used for capturing diffusion of protection among neighboring companies.	
Spatial lags of Xs	Covariates multiplied by the weights matrix. Used for capturing effect of company i's resources on j's protection (e.g. counter lobbying etc.).	

B.4 Descriptive statistics

Table B.3: Descriptive Statistics

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Pctl(75)	Max
Dumping Decision	1,030	0.839	0.368	0	1	1	1
Duty Size	1,030	43.860	67.459	0	10.1	45.2	380
Asset Specificity	1,030	0.561	0.187	0.001	0.458	0.693	0.941
Total Assets	1,030	3,154,105.000	10,749,869.000	1.320	78,599.880	784,971.800	91,389,640.000
Revenue	1,030	2,159,927.000	7,225,859.000	0.900	75,597.420	769,345.900	46,991,646.000
Taxation	1,030	40,358.080	163,505.300	−119,067.300	77.510	17,858.000	1,245,837.000
Capital	1,030	253,557.100	876,432.200	0.000	4,599.150	28,031.030	5,931,748.000
SL Specificity	1,030	10.344	12.558	0	0	17.9	38
SL Revenue	1,030	53,145,261.000	155,355,969.000	0	0	14,431,371.0	582,508,524
SL Total Assets	1,030	66,112,739.000	189,296,679.000	0	0	14,568,003.0	704,291,378
SL Tax	1,030	1,052,244.000	3,087,621.000	−5,970	0	303,881.9	11,598,693
SL Capital	1,030	1,331,586.000	3,821,088.000	0	0	503,999.2	25,881,016

Note: 'SL' is an abbrevation of 'spatial lag'. To show the raw distributions, all variables are presented in their untransformed form.

B.5 Pairwise correlations

Table B.4: Correlations among covariates

	Asset Specificity	Revenue	Total Assets	Taxation	Capital	SL Specificity	SL Revenue	SL Assets	SL Tax	SL C
Asset Specificity	1									
Revenue	0.341	1								
Total Assets	0.423	0.974	1							
Taxation	0.071	0.209	0.223	1						
Capital	0.312	0.678	0.718	0.083	1					
SL Specificity	0.243	0.126	0.112	0.080	-0.024	1				
SL Revenue	0.070	0.042	-0.001	-0.008	-0.044	0.620	1			
SL Assets	0.080	0.058	0.018	-0.005	-0.025	0.618	0.998	1		
SL Tax	0.073	0.025	-0.019	-0.018	-0.059	0.629	0.996	0.990	1	
SL Capital	0.156	0.200	0.204	0.067	0.135	0.364	0.628	0.666	0.571	1

C The Process of Tie Formation and Spatial Autocorrelation

Besides asset specificity, our main focus is on how protection afforded to immobile firms diffuses to firms that seek protection for the same good. Because of this, it is worthwhile to discuss further a) how often firms seek protection for the same good, b) when the competition decides to seek protection for the same good, and c) more closely examining how protection afforded to one firm reacts to protection afforded to others.

C.1 How Often Do Same-Good Producers Seek Protection As Well?

In this section, we describe the spatial weights matrix and investigate which companies are most likely to compete for antidumping duties – i.e. the correlates of tie formation.

Figure C.1 shows the distribution of ties in the network of protection-seeking firms. As could be guessed from viewing the descriptive statistics in Table B.3, the distribution is skewed. That is, a little less than half of the firms included do not have domestic competitors seeking protection for the same good. Most firms, however, have many domestic competitors seeking protection as well – and once you have some, you are likely to have many.

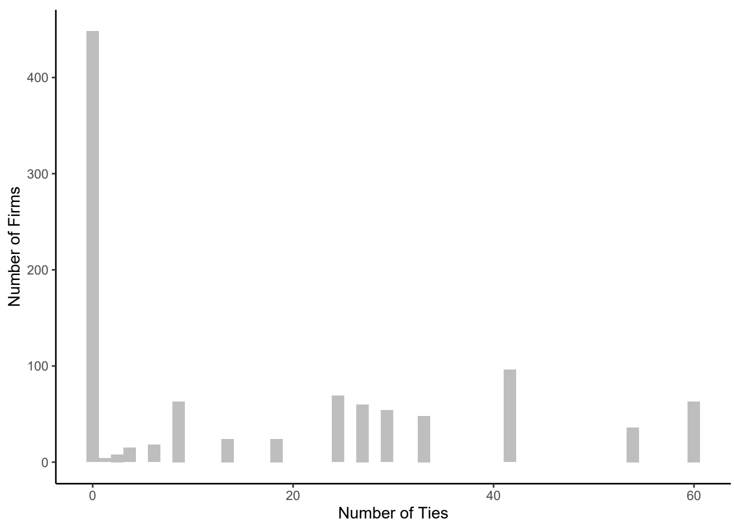


Figure C.1: The Distribution of Same-Good Producers Seeking Protection. *Note: A histogram of the distribution of ties in the network of same-good producers seeking protection for the same good, i.e. our spatial weights matrix.*

C.2 When Do Same-Good Seek Protection As Well?

In Figure C.2, we investigate the firm-level correlates of having domestic competition seeking protection for the same company. As we can see from Panel A, *between* groups of same-good producers, firms with specific assets tend to have many competitors seeking protection at the same time as them. However, when product fixed effects are included, this correlation disappears. This suggests that competition for protection is primarily localized among products, where all firms have high levels of asset specificity.

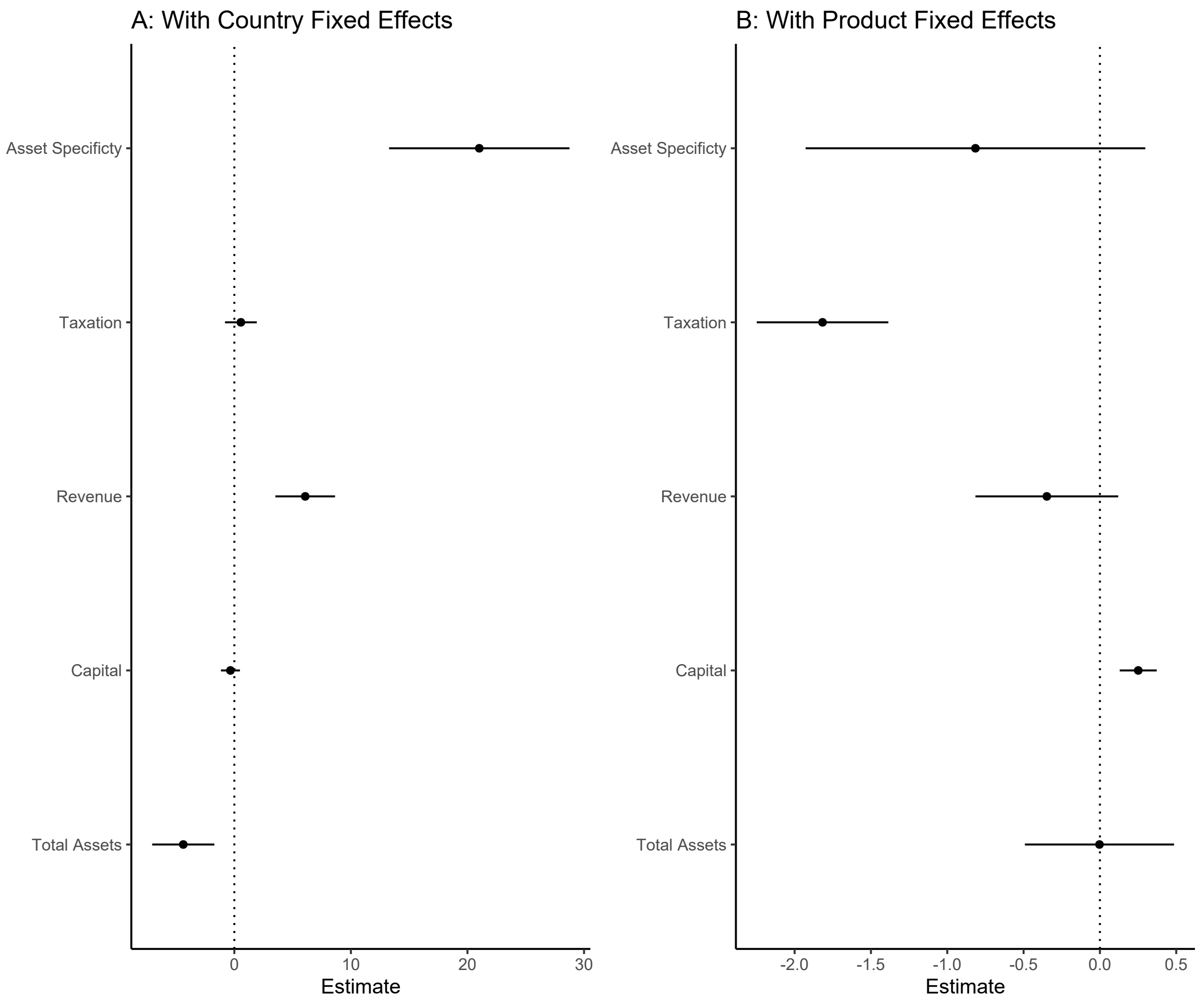


Figure C.2: The Correlates of Seeking Protection Simultaneously. *Note: The figure presents the coefficients from an OLS regresison of tie counts on firm financial characteristics. All predictors are logged to facilitate comparisons. Panel A includes country fixed effects, while Panel B also has product fixed effects. Lines are 95 percent confidence intervals.*

Investigating how tie formation is associated with the financial characteristics of the firm's competitor – by regressing tie formation on the spatial lags of the predictors – provides some interesting results. As we can see, the firms, whose *competitors* have highly specific assets, are much more likely to have many ties – even if we only look at within-product variation. This indicates that when a firm with highly specific assets seeks protection, same-good producers also petition for antidumping duties. That is, how many other firms a company competes against to gain protection does not react to the firm's own level of asset specificity – but the asset specificity of its competitors. This suggests that a firm chooses to seek protection, when it has immobile competition that does so – as a reaction to its immobile competition. This provides an interesting nuance to how the competition for protection arises.

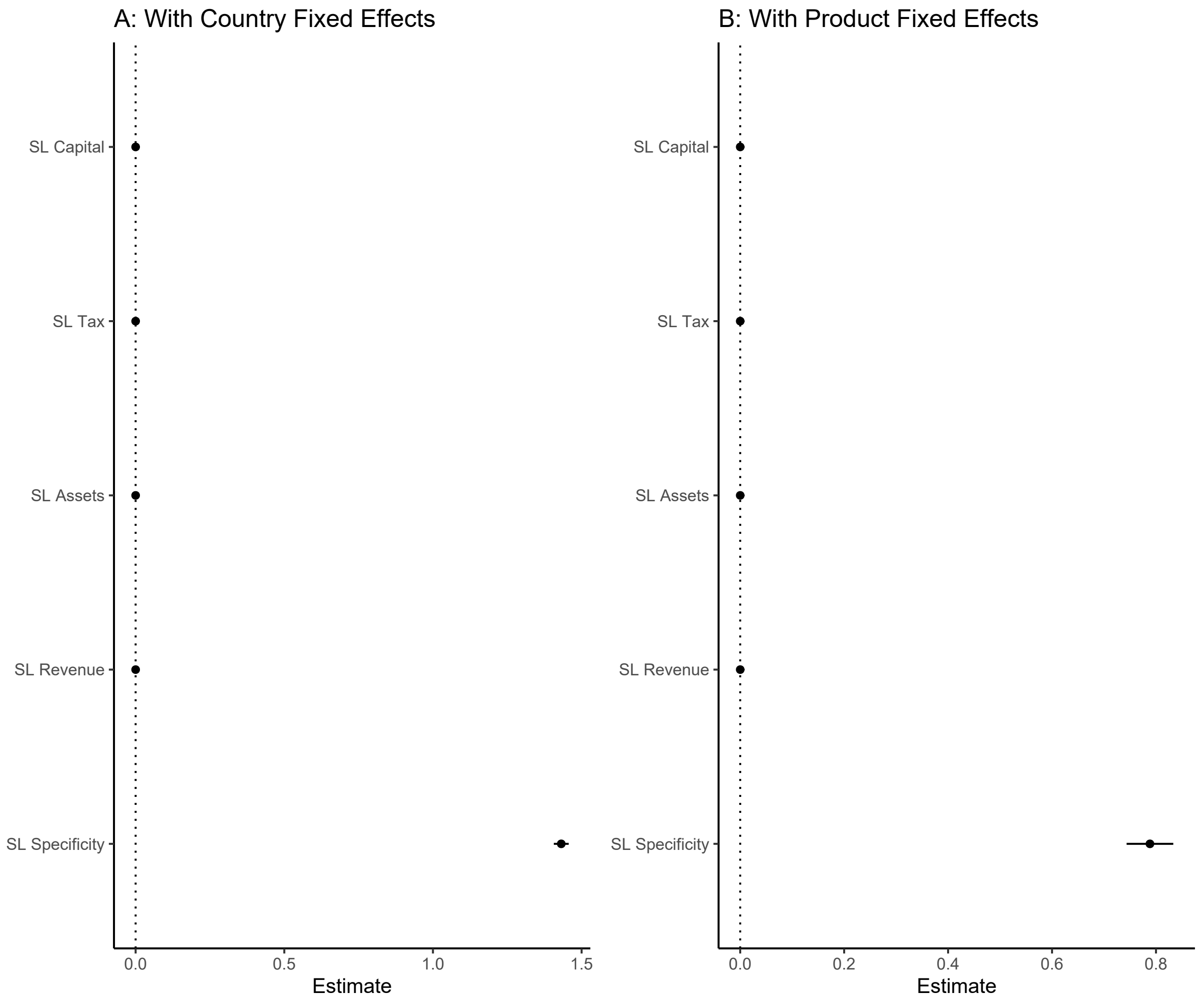


Figure C.3: The Correlates of Seeking Protection Simultaneously. *Note: The figure presents the coefficients from an OLS regresison of tie counts on the financial characteristics of a firm's competitors – i.e. other firms producing the same good. Panel A includes country fixed effects, while Panel B also has product fixed effects. Lines are 95 percent confidence intervals.*

C.3 How Does Protection of One Firm React to Protection of Others?

While looking at the estimated parameter gives an indication of how strong spatial autocorrelation is, it is worthwhile taking a closer look. Here, we present diagnostics on the spatial dynamics of antidumping duties that also allow us to look at the individual firm.

Figure C.4 shows two Moran scatterplots, where the spatial lags of the dependent variables are on the vertical axis, while their non-lagged version are on the horisontal. The contemporaneous autocorrelation is clearly present for both dumping decision and dumping duty – if same-good producers gain protection, you are likely to do so as well, and as their duty size increases, so does yours. Furthermore, this is not driven by the presence of single outlying observations, but is a general trend across the sample.

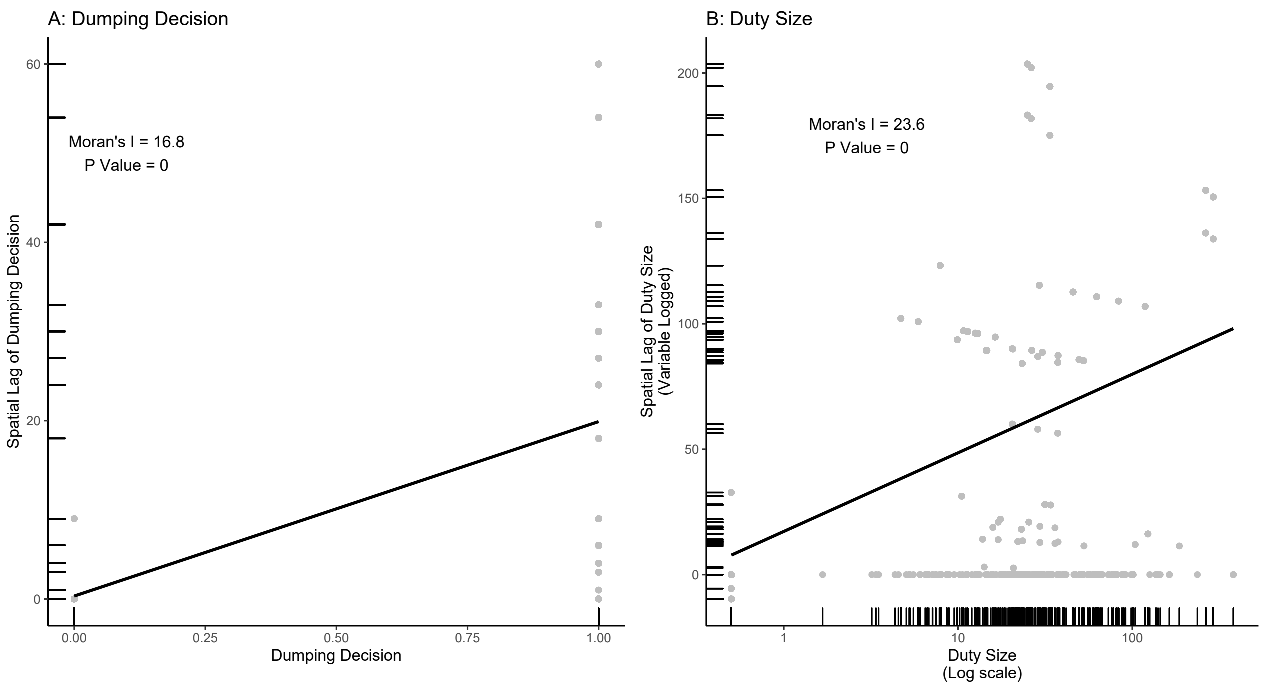


Figure C.4: Diagnosing Spillover of Antidumping Duties. *Note: The figures show Moran Scatterplots of the spatially lagged dependent variables (Dumping Decision in Panel A, Dumping Duty in Panel B) against their non-lagged counterparts. The slope of the fitted line is equal to the global Moran's I (printed in the top left corners), and each points position gives their local Moran's I.*

D Details of the SAR Model Specification

We consider variations of the following linear SAR model with spatial lags of the covariates:

$$y_{fct} = \rho(\omega y_{fct}) + \gamma M_{fct} + \beta_1 X_{fct} + \beta_2(\omega X_{fct}) + \lambda_{fc} + \phi_t + \alpha_{fct} + \epsilon_{fct} \qquad (1)$$

Where y_{fct} represents the regulator's response to company f's complaint, c, at time t. This can either be a binary decision of whether dumping has occurred or not, or the (logged) duty levied on the foreign competitor's product. M represents the asset mobility of the firm. γ measures the association between antidumping protection and asset specificity.

ωy_{fct} is the spatially lagged dependent variable, which allows us to estimate inter-firm dynamics. ρ is the estimate of the spillover effect from company f's success in its antidumping complaint to its neighboring firm's chance of gaining protection as well. Due to a very high number of parameters relative the number of observations, we estimate the model using a linear link function. Using the spatial probit estimator in this case would either cause severe bias due to incidental parameters, or cause the estimation not to converge at all.

We also include ωX which is a full set of spatial lags of the covariates. Besides allowing us to estimate spatial dynamics, this model is also appealing from a causal inference point of view. Less mobile companies are likely to be clustered together in industries where trade protection in the aggregate evolves together according to a common trend. Estimating a spatially autoregressive model with distributed spatial lags of the covariates accommodates this potential confounder by allowing firms that produce the same product to follow such similar trends in antidumping protection, and by allowing firm characteristics to affect the outcomes of other companies.

λ is a set of country fixed effects, capturing the home country of the complainant. This removes the influence of all time-invariant confounders at the country-level. ϕ is a set of year fixed effects, controlling away the effect of common shocks with homogeneous effects. α, the full set of fixed effects for the products. While industry fixed effects could deal with the fact that industries vary in their baseline levels of protection, they would leave out the important complication that there are large intra-industry differences. Since no product changes industry in our sample, including product fixed effects also controls away industry-invariant factors. Finally, ϵ constitutes a random error term.

Table D.1 is a regression table with the coefficients. These are converted to marginal effects and presented as a figure in the main text.

Table D.1: SAR Coefficients

	Dependent variable:					
	Dumping Decision			ln Duty Size		
	(1)	(2)	(3)	(4)	(5)	(6)
Asset Specificity	0.139**	0.285***	0.119***	−0.188	0.922***	0.400*
	(0.059)	(0.065)	(0.045)	(0.269)	(0.294)	(0.220)
Revenue (log)		0.108***	0.003		0.573***	−0.009
		(0.022)	(0.018)		(0.097)	(0.093)
Total Assets (log)		−0.094***	−0.014		−0.526***	−0.045
		(0.023)	(0.019)		(0.102)	(0.099)
Taxes (log)		−0.034***	0.091*		−0.078	0.322
		(0.011)	(0.052)		(0.050)	(0.267)
Capital (log)		−0.024***	0.002		−0.076**	0.013
		(0.007)	(0.004)		(0.031)	(0.023)
Constant	0.937***	1.299***	0.302	4.324***	5.549***	0.378
	(0.151)	(0.201)	(0.583)	(0.691)	(0.876)	(3.044)
ρ	0.016***	0.015***	-0.019***	0.017***	0.016***	-0.023***
	(5e-04)	(0.0012)	(0.0023)	(1e-04)	(9e-04)	(4e-04)
Country FE?	Yes	Yes	Yes	Yes	Yes	Yes
Year FE?	No	Yes	Yes	No	Yes	Yes
Product FE?	No	No	Yes	No	No	Yes
Observations	1,030	1,030	1,030	1,030	1,030	1,030

*Note: Dependent variable in columns (1)-(3) is Dumping Decision. Dependent variable in columns (4)-(6) is Duty Size (logged). Coefficients are from linear SAR models. Standard errors in parentheses. *, ** and *** indicate statistical significance at the 10, 5 and 1 pct. levels, respectively.*

D.1 Results without spatial lags

Table D.2: Capital Immobility and antidumping protection at the firm-level

	Dependent variable:					
	Dumped or not			Duty (logged)		
	(1)	(2)	(3)	(4)	(5)	(6)
Mobility	0.162**	0.425***	0.432***	−0.755**	0.878**	0.867**
	(0.020, 0.303)	(0.265, 0.585)	(0.267, 0.597)	(−1.488, −0.023)	(0.109, 1.648)	(0.088, 1.646)
Revenue (logged)		0.177***	0.168***		1.081***	1.052***
		(0.120, 0.234)	(0.112, 0.225)		(0.824, 1.338)	(0.794, 1.310)
Total Assets (logged)		−0.183***	−0.156***		−1.121***	−1.049***
		(−0.242, −0.124)	(−0.214, −0.097)		(−1.380, −0.863)	(−1.315, −0.783)
Taxation in USD			−0.028***			−0.115***
			(−0.047, −0.010)			(−0.188, −0.043)
Total Capital in USD			−0.022**			−0.047
			(−0.040, −0.004)			(−0.119, 0.025)
Country FE?	Yes	Yes	Yes	Yes	Yes	Yes
Year FE?	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,030	1,030	1,030	1,030	1,030	1,030
Adjusted R^2	0.328	0.369	0.377	0.239	0.308	0.311

*Note: Dependent variable in columns (1)-(3) is Dumping Decision. Dependent variable in columns (4)-(6) is Duty Size (logged). Coefficients are unstandardized LPM and OLS estimates, respectively. Robust 95 pct. confidence intervals in parentheses. ** and *** indicate statistical significance at the 5 and 1 pct. levels, respectively.*

E Robustness Checks

E.1 Do Firms Increase Specificity When they Expect Protection?

There is an important strategic dimension to the interactions between decision-makers and firms: If the company knows that it will gain protection, if it invests more in specific assets, it is more likely to make those investments. It is important to note, however, that if firms invest in fixed assets is a best response in expectation of protection, then asset specificity has to affect antidumping decisions. Therefore, while the reverse causality induced by strategic investments will bias our results upward, the true effect of asset specificity can never be zero.

While this suggests that the true impact of asset specificity should be bounded between zero and our baseline estimate, it is still important to deal with the bias to get a better idea of the relationship between asset specificity and protection. To device a strategy for doing so, we consider how information about the likelihood of protectio might be dispersed. How will firms know that they are likely to gain protection, if they petition for it? We use the outcomes of antidumping cases regarding the project the firm wants protected in the previous years. If a given product has received a high level of protection, this will be a good indicator to the firm that they are likely to receive protection as well.

Table E.1 presents the results of a number of robustness checks building on this idea. Column 1 and 2 regresses asset specificity on the previous year's probability that the product mentioned in the firm's petition is protected. As we can see from column 1, an increase of one percentage point in the probability of being protected is associated with an increase of 0.5% of a standard deviation in future fixed asset investments. Including country and year fixed effects in the next column reduced the estimate slightly. While this estimate is very precisely estimated, it is also *very* small. This makes sense – it seems unlikely that a company will base the majority of its investment decisions on the protection awarded to a single product. The small size of the effect suggests that while strategic investments *do* happen, they are unlikely to be the main driver of our findings.

In columns three and four, we include prior protection for the product as a control in our baseline models with controls and country as well as year fixed effects. The table presents the coefficients from the SAR models – for reference, the baseline coefficients are 0.34 and 0.85, respectively. Hence, as we can see, the results maintain. However, the estimates are smaller, consistent with some degree of strategic investment happening.

Table E.1: Strategic Investment Under Expectation of Protection

	Dependent variable:			
	Asset Specificity		Dumping Decision	Duty Size
	OLS		*SAR*	
	(1)	(2)	(3)	(4)
Asset Specificity			0.275***	0.650**
			(0.061)	(0.286)
Previous Level of Protection	0.005***	0.003***	0.002***	0.008***
	(0.001)	(0.001)	(0.0002)	(0.001)
Country FE?	Yes	Yes	Yes	Yes
Year FE?	Yes	Yes	Yes	Yes
Firm Covariates?	No	No	Yes	Yes
Observations	1,030	1,030	1,030	1,030

*Note: Dependent variable in columns (1)-(2) is Asset Specificity (mean-centered and rescaled by standard deviation). Dependent variable in columns (3)-(4) is Dumping Decision and Duty Size (logged). Coefficients are unstandardized OLS and SAR, respectively. ** and *** indicate statistical significance at the 5 and 1 pct. levels, respectively.*

E.2 The Role of Foreign Firms and Countries

Some firms and countries might engage in predatory pricing more often – this will mean that the antidumping cases are legitimate, and not to shield the domestic company against fair competition. Additionally, there are a number of factors in the relationships between countries that might shape decisions regarding protection.

Particularly the legitimacy of an antidumping case is difficult to capture. In this appendix, we deal with these threats to identification in two ways. First, we include fixed effects for the country of origin of the foreign firm. In addition to our baseline controls, this is a powerful set of fixed effects. Along with the country and year fixed effects, this means that we control away all time-invariant factors in the relations between countries and that respond similarly to common shocks. Additionally, this deals with the propensity of some countries to engage more in predatory pricing. These results are presented in columns 1 and 2 of Table E.2.

Some foreign firms might use predatory pricing strategically to get a foothold on a foreign market. This might be a particularly effective strategy, if the competitors on the market the firm wants to enter has very specific assets. However, we can measure if firms engage in broad strategies of predatory pricing – if they do, they are likely to be mentioned in many strategies over time. To capture this, we collect data on the foreign firms that are mentioned in antidumping petitions, and compute how often they each are mentioned. For each of our antidumping cases, we then compute the average number of times each foreign firm is mentioned in another complaint throughout our period of investigation. In columns three and four, we include this as a control – the results maintain.

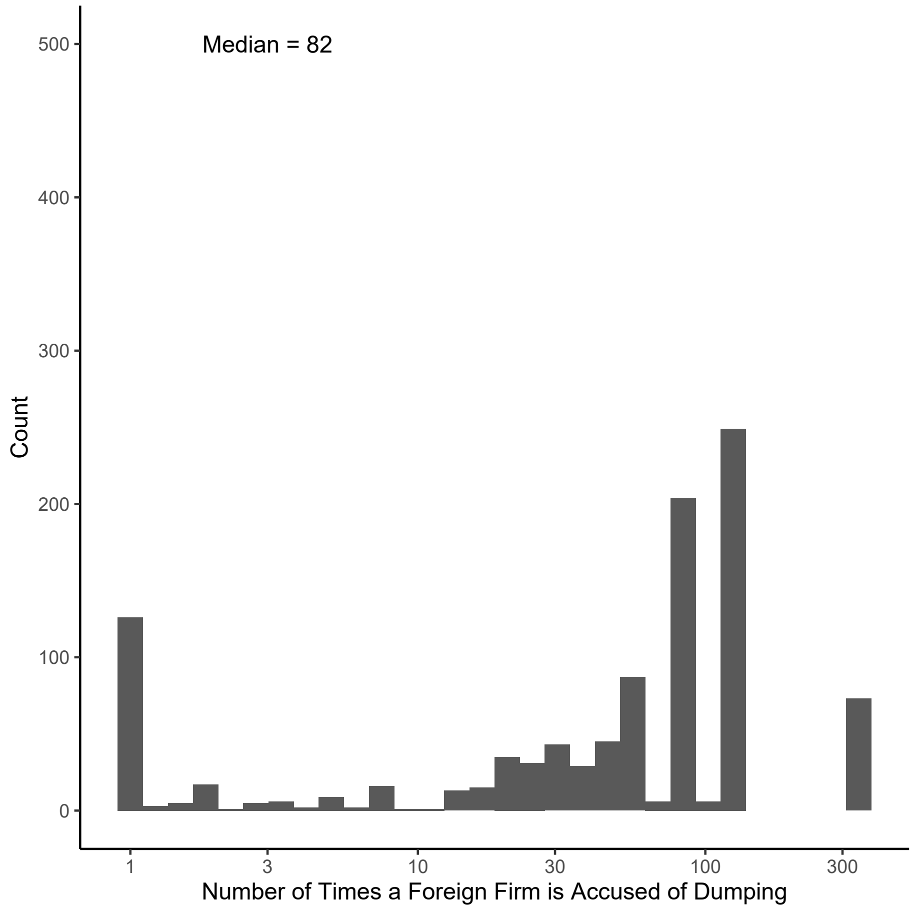
To delve deeper into the dynamics between domestic, complainant firms and foreign firms, Figure E.1a plots the distribution of times each foreign firm is mentioned in other complaints. As we can see, at the case-level, there is plenty of variation, and the median case mentions firms that are mentioned in 82 other cases.

Additionally, in Figure E.1b we show the association between asset specificity of complainant firms and the number of times the foreign firms mentioned in a case are parties of other antidumping cases. As we can see, the correlation between the two variables is very weak. This suggests that to the extent that foreign firms do engage in broad campaigns of predatory pricing, they are not typically aimed at firms with more specific assets.

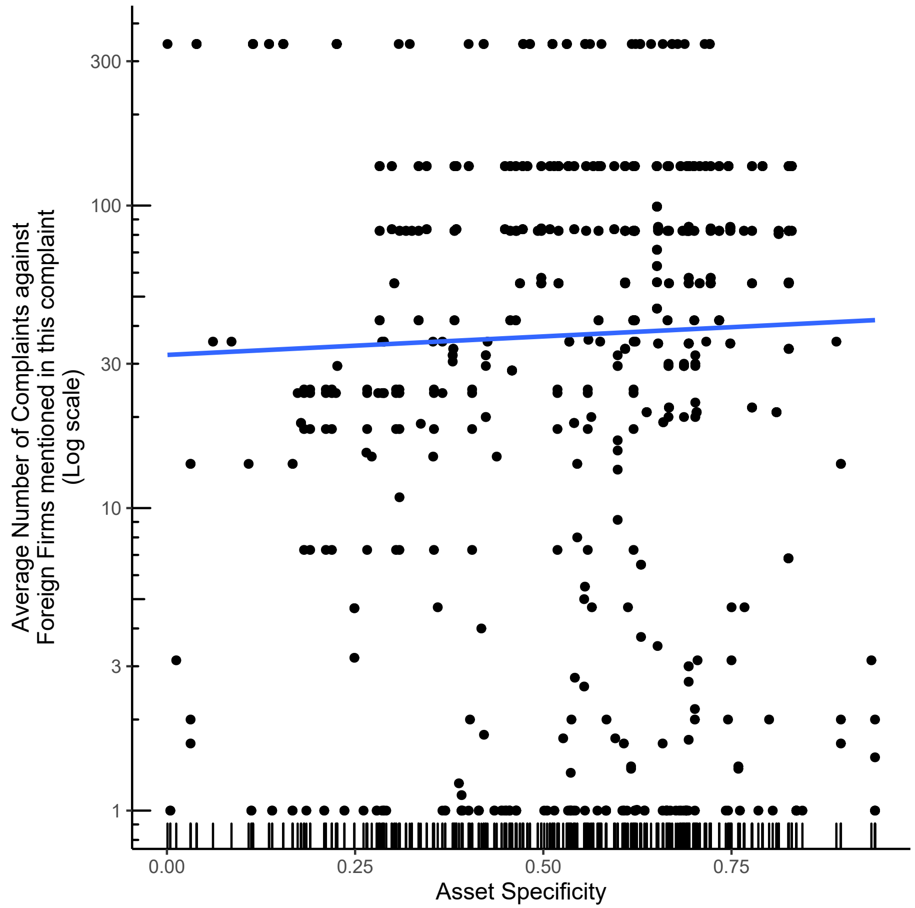
Table E.2: Characteristics of Foreign Firms and their Countries of Origin

	Dependent variable:			
	Dumping Decision	Duty Size	Dumping Decision	Duty Size
	(1)	(2)	(3)	(4)
Asset Specificity	0.303***	0.753***	0.261***	0.522*
	(0.057)	(0.256)	(0.064)	(0.293)
Other Complaints Re. Foreign Firm			−0.065***	−0.273***
			(0.009)	(0.039)
Country FE?	Yes	Yes	Yes	Yes
Year FE?	Yes	Yes	Yes	Yes
Firm Covariates?	Yes	Yes	Yes	Yes
Observations	1,030	1,030	1,030	1,030

*Note: Coefficients are unstandardized SAR, respectively. *, ** and *** indicate statistical significance at the 10, 5 and 1 pct. levels, respectively.*



(a) Distribution of Times the Same Foreign Firm is Mentioned in Other Complaints



(b) Do Repeat Dumpers Target Firms With Specific Assets?

Figure E.1: The Role of Repeat Dumpers. *Note: Panel A: Shows the distribution of our measure of repeat dumping. This captures important aspects of engaging in broad campaigns of predatory pricing ('repeat dumpers'). Panel B: Investigates whether repeat dumpers target firms with specific assets. On the vertical axis, we use the average number of times firms accused of dumping have been mentioned in other complaints (log scale). Asset specificity is on the horizontal axis. The association is very weak.*

The interpretation of the measure of campaigns of predatory pricing relies on complaints being independent. If they are, foreign firms that are often accused of dumping prices are likely to actually be predatory pricers. However, domestic firms might use antidumping measures strategically—if so, they can file repeat complaints against foreign competitors to keep them out of the market. As we show in Figure E.2, this does not seem to be the case—domestic firms almost never file repeatedly against the same foreign firm.

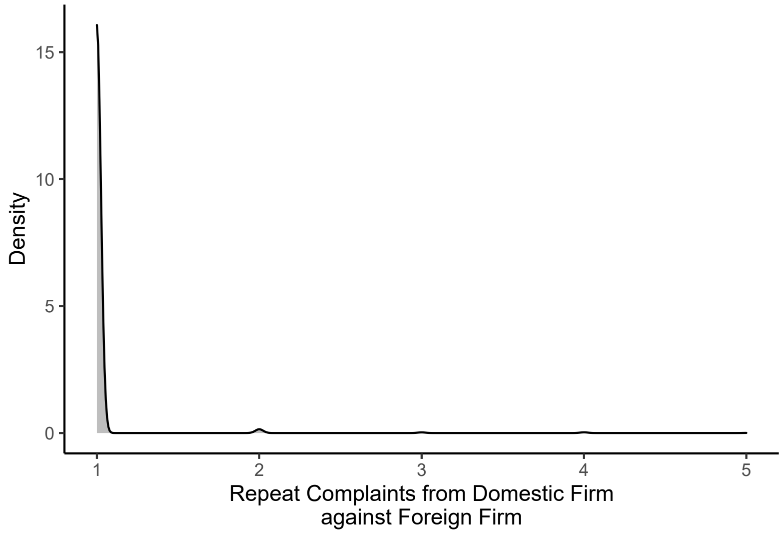


Figure E.2: Density of Repeat Complaints by Domestic Firm.

E.3 Dealing with Atypical Cases

Figure 1 in the main text reveals that some countries are outlying in their antidumping behavior. Japan, Israel and the European Union see a substantial number of complaints, but have imposed very few punitive duties in our sample. Taiwan and the Philippines only have one case each in our sample. Some of this behavior can be explained by examining the countries more closely. For example, Japan has a history of applying antidumping duties very moderately – before 2008 the country had only dealt with three antidumping complaints (Nakagawa and Hirose 2008). This indicates that in some settings, petitioning for antidumping duties might not be a best response strategy for firms. Taiwan and Israel are interesting cases to see when this might be the case. The Taiwanese government has traditionally been extremely conservative in its imposition of antidumping duties (Lo and Luo 2006). The overarching philosophy in the country's trade policy has been that while domestic producers deserve protection when they are hard pressed, open trade and integration into the international system ultimately promotes growth. Viewed through this lens, antidumping duties are undesirable, as they distort free trade. This has been at the core of Taiwan's use of antidumping duties (Lo and Luo 2006, p. 197). Israel has moved closer to the Taiwanese strategy. Originally, the country followed a protectionist and bilateral strategy, imposing antidumping duties on foreign firms to protect the domestic industry. In the mid-2000s, however, trade policy shifted towards a more multilateral approach of working within the international institutions. This was complemented by new antidumping legislation which mirrored international standards more closely, and a more restrictive use of punitive duties (Harpaz 2006). Looking to the EU, the EU Commission deals with antidumping complaints, and treats them in a highly bureaucratic manner. This might explain the low success rate. However, we do not have a complete picture of EU antidumping behavior in our sample.

While this explains the idiosyncratic cases, it is still important that they do not drive our results. To make sure that this is not the case, we re-estimate the baseline models but exclude these countries. The results from these models are presented in Table E.3. As we can see, these atypical countries are not decisive for our results.

Table E.3: Excluding Non-Typical Countries

	Dependent variable:	
	Dumping Decision	Duty Size
	(1)	(2)
Asset Specificity	0.352***	0.921***
	(0.065)	(0.296)
Country FE?	Yes	Yes
Year FE?	Yes	Yes
Firm Covariates?	Yes	Yes
Observations	1,012	1,012

*Note: Models excluding firm-cases from Taiwan, the Philippines, the European Union, Japan, and Israel. Coefficients are from unstandardized SAR models. *** indicate statistical significance at the 1 pct. level.*

Chinese firms do not figure in our main dataset. This choice is made based on a combination of China's atypical role in the international trade system and limited data availability on the firms. China's recent accession to the WTO, means that the country is still developing its strategy for the use of non-trade barriers (Messerlin 2004). Indeed, for the first many years, China hardly used antidumping measures (Messerlin 2004). While we have seen above that other countries change their behavior over time, too, this was known about China up front. Therefore, we did not include Chinese companies in the main models.

There is no reason, however, that the theory presented here should not apply to Chinese trade policy. Indeed, China presents an interesting out-of-sample case on which we can test the theory of asset specificity. Therefore, we collect the same data in Chinese firms as we have done for other WTO jurisdictions, and estimate the correlation between asset specificity and protection in China. Due to the small number of firm-complaints where we can get data on all covariates, we do not estimate SAR models, but rely on OLS instead. The results are presented in Table E.4. First, it should be noted that *all* Chinese cases in our sampling period were adjudicated in favor of the domestic company – there are no cases that were not ruled as dumping. This results in the weird results in column one where all coefficients are zero. There is, however, variation in duty sizes, which we leverage in column 2. Importantly, we estimate almost exactly the same coefficient as in the baseline model. For Chinese firms, the coefficient is 0.853, whereas the OLS estimate from the full sample is 0.867. This suggests that asset specificity plays a similar role in China as in the WTO jurisdictions in our sample.

E.3.1 Sensitivity to Individual Firms

This shows that our results are not driven by the idiosyncrasies of these countries. However, individual firms might still exert a large influence on our models.

To probe robustness to important firms, we pursue a broad strategy. We exclude each firm in our sample in turn and re-estimate the main models. Examining the resulting coefficient distributions will give us an idea about how much our estimates are driven by individual firms.

Figure E.3 shows the resulting distributions. As we can see, the estimates in Panels A through C are extremely concentrated around the baseline. The distributions in Panel D is more flat, but most of the estimates are actually larger than the baseline. Additionally, the coefficients below the baseline of are all above 0.0152. This suggests that the results are highly robust to the experiences of individual firms and countries.

Table E.4: Results for Chinese Firms

	Dependent variable:	
	ADD Decision	ADD Duty
	(1)	(2)
Asset Specificity	0.000	0.853**
	(0.000)	(0.329)
Revenue (logged)	−0.000	0.046
	(0.000)	(0.088)
Total Assets (logged)	−0.000	−0.073
	(0.000)	(0.096)
Taxation (logged)	−0.000	−0.127
	(0.000)	(0.141)
Constant	1.000***	4.423***
	(0.000)	(1.298)
Observations	74	74
R^2	0.506	0.111

*Note: Models base on Chinese firm complaints only. Coefficients are from unstandardized OLS models. ** indicate statistical significance at the 5 pct. level.*

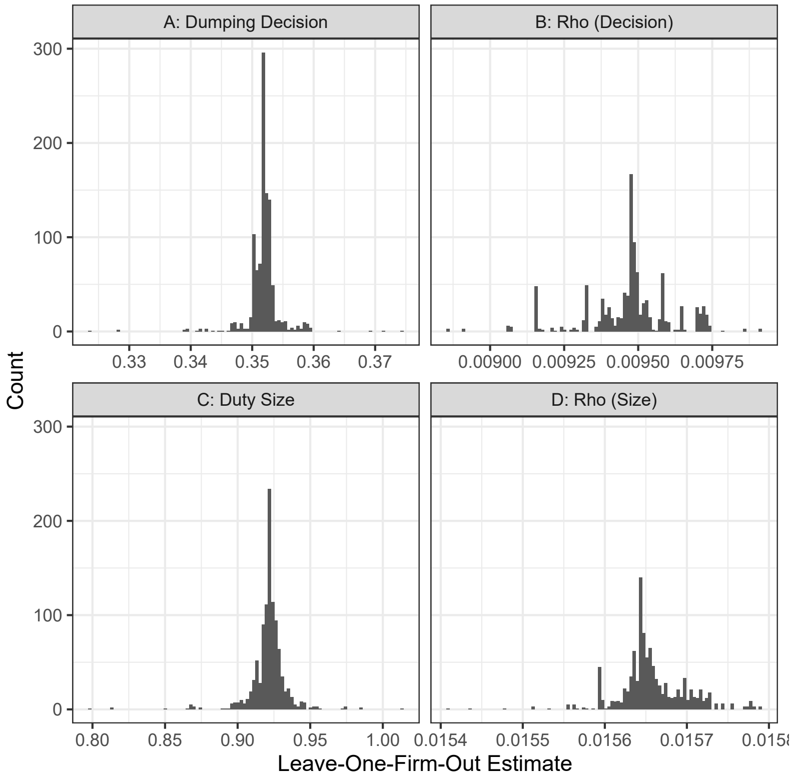


Figure E.3: Robustness to Excluding Firms. *Note: Histograms are coefficient distributions from specifications that leave one firm out at the time and re-estimate the baseline SAR models. 100 bins used. Horizontal axis limited at the minimum and maximum coefficient estimates. Firm-level covariates, country and year fixed effects are included.*

F Investigating the Mechanisms

In this section of the appendix, we present the evidence on the mechanism that we discuss in the main text. We do so in two steps.

One prominent explanation of trade policy stems from the median voter theorem (Mayer 1984; Mukherjee, Smith, and Li 2009). In these models, governments' prime concern is re-election, which implies that trade policy is determined by the median voter. Since the median voter's endowment of capital is almost always lower than the mean capital endowment, trade policy will favor labor interests (Gawande and Krishna 2003; Mayer 1984). Similarly, the median voter will also prefer trade protection as his/her main factor endowment – labor – becomes increasingly immobile (Mukherjee, Smith, and Li 2009). However, if governments mainly respond to electoral interests – rather than corporate lobbying – we should expect the correlation between immobility and protection to come about, because jobs in immobile companies are more vulnerable. When an immobile company, that also employs a lot of people, claims to be injured by international competition the government is likely – out of concern for its re-election chances – to heed its wishes and grant it protection.

In Panels C and D of F.1, we investigate this by interacting asset specificity and number of employees. We plot the marginal effect of asset immobility on Dumping Decision (Panel C) and Duty Size (Panel D) for varying levels of number of employees. It is clear that there are no statistically significant interactions.

A different – but more general – way of thinking about this mechanism is that decision-makers only accommodate companies that are fiscally consequential. Because politicians are dependent on taxes they can extract from the private sector (Bates and Lien 1985; Tilly 1985), the taxes a company pays are a highly salient way to gain political leverage. Politicians may simply disregard the preferences of immobile companies, if they do not also pay a lot of taxes. Thus, if the association between immobility and protection is driven by high-taxed companies, it may be due to the decision-maker's fiscal concerns. In panels A and B, we test this by interacting the log of taxation with asset immobility. Note that we exclude one outlying observation with negative tax payments, which would otherwise have skewed our results. Again, we are unable to reject the null of no moderating effect.

Additionally, there are a number of supply-side factors that could potentially be driving our results. If, for instance, democracies are more attuned to the preferences of their citizens, they may be more likely to use antidumping measures to circumvent inequalities induced by international trade. Should this be the case, we would expect the effect of asset specificity to vary markedly across countries, while being comparable in the context of similar political regimes. In Figure F.2, we test this proposition by using

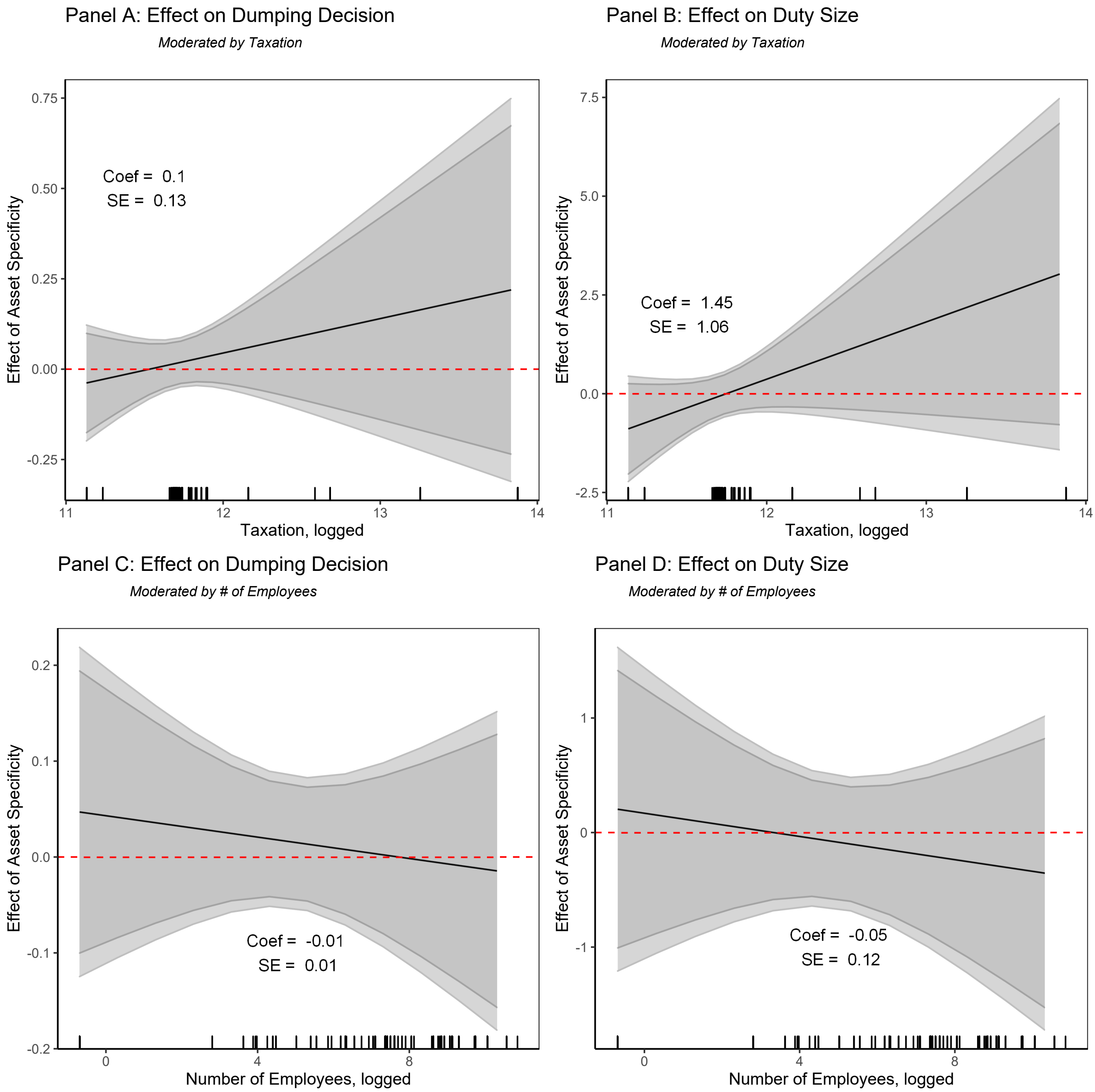


Figure F.1: Assessing Alternative Mechanisms. *Note: The figure plots the marginal effects of asset specificity with taxation (Panels A and B) and number of employees (Panels C and D), respectively, held constant at varying levels. Effects on Dumping Decision are shown in Panels A and C, while effects on Duty Size are shown in Panels B and D. Marginal effects calculated using bootstrapped coefficients. Shaded grey areas are, respectively, 90 pct. (dark) and 95 pct. (light) pointwise confidence intervals. Country and year fixed effects as well as all covariates included.*

hierarchical mixed effects models with random slopes by country, baseline controls and country fixed effects. This provides us with a general test of all supply-side explanations

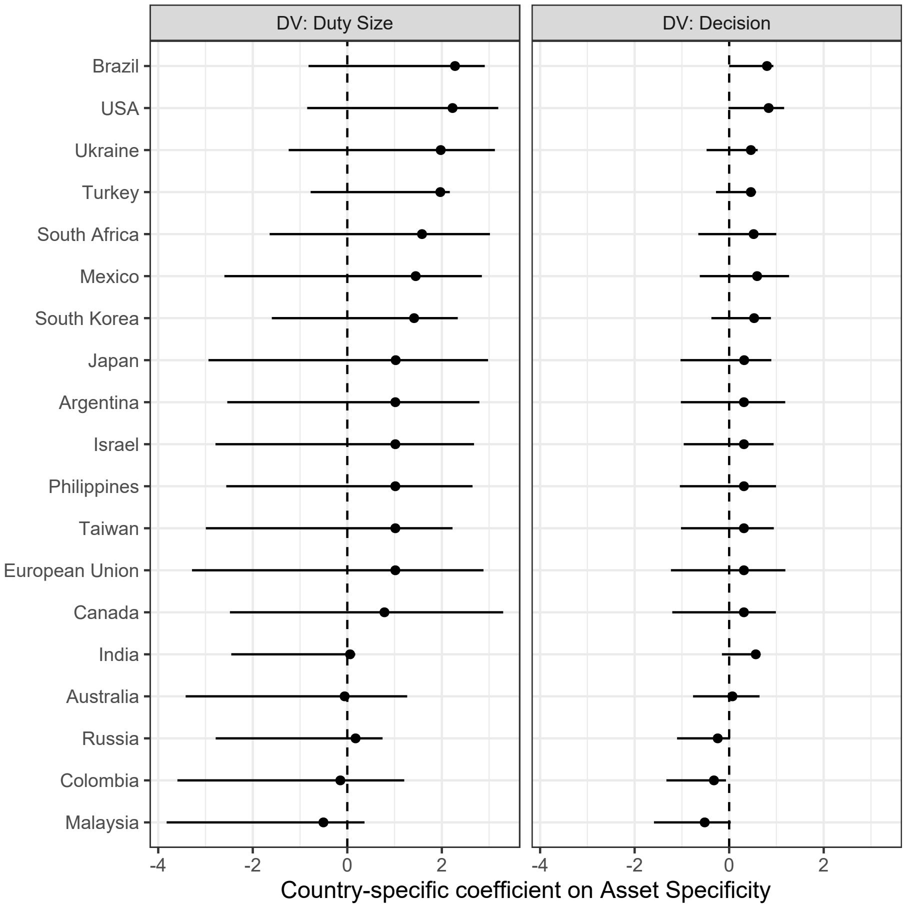


Figure F.2: Random slopes by country. *Note: Point estimates are from a linear mixed effects model with random slopes by country and all baseline controls and fixed effects included. Uncertainty estimates are 95 pct. credible intervals, which were computed by simulating 100 draws from the model, using the arm package in R.*

that would cause different effects across countries. To get uncertainty estimates for each country level coefficient that takes country-specific variation into account, we simulate 100 draws from the model posterior distribution. We use this to generate credible intervals around each estimate.

The results show that across most countries there is little variation in the effect of asset specificity – the bulk of coefficients, no matter political contexts, are clustered around very similar sizes. Three countries (Russia, Malaysia and Colombia) stand out in that they have negative coefficients, and four (Brazil, USA, Ukraine and Turkey) have somewhat larger positive coefficients than the rest. The estimates in all cases are very noisy, however. Furthermore, there are no clear commonalities in the political systems within these two groups of countries, nor are the differences between them systematic. Hence, it is not clear that these differences can be ascribed to factors at the regime level instead of simple country-level idiosyncrasies.

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