The Dracula Effect: Voter Information and Trade Policy*

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Abstract

Trade barriers cause substantial deadweight losses, yet they enjoy surprising voter support. We develop an electoral model that accounts for this puzzling popularity of protectionism. Producers have incentives to acquire information about their own sector, while consumers do not. As a result, trade barriers are popular because they are disproportionately noticed by their beneficiaries. In equilibrium, politicians give every sector positive protection. This protectionist bias induces Pareto inefficiency if public information is too limited. Our model predicts a Dracula Effect: trade policy for an industry is less protectionist when public awareness of it is greater. We test this prediction empirically across U.S. manufacturing industries, exploiting the timing of industrial accidents relative to other newsworthy events as a source of exogenous variation in media coverage of each sector. As predicted by our theory, industries whose accidents occur on slow news days subsequently enjoy lower non-tariff barriers.

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1 Introduction

Barriers to trade are a wasteful way of redistributing from the many to the few: from the average citizen to insiders in protected industries. Their inefficiency is one of the least controversial propositions in economics.[1] And yet, protectionism remains surprisingly popular in the political arena. Lobbying can explain why governments enact inefficient trade policies (Grossman and Helpman 1994; Goldberg and Maggi 1999). The enduring puzzle, however, is that welfare-reducing trade barriers receive genuine support from the general public.[2] Voters' protectionism has long been recognized as an important determinant of U.S. trade policy (Taussig 1888). President Trump has specifically touted his adoption of anti-trade measures as a campaign promise kept, while his administration has faced lobbying pressure against those measures.[3] On the Democratic side, both Hillary Clinton and Barack Obama faced revelations that they had privately reassured business groups of their support for free trade, in spite of their public protectionist rhetoric on the campaign trail.[4]

In this paper, we provide an explanation for the puzzling popularity of protection. The cornerstone of our argument is that people are systematically more aware of the benefits than the costs of protectionism. This endogenous asymmetry in voter knowledge implies a distorted demand for trade barriers in all sectors. We analyze both theoretically and empirically how this asymmetry contributes to the equilibrium adoption of inefficient trade barriers, and what forces help mitigate such voter-driven inefficiency. In particular, we find that better public information about an industry and the costs of protecting it mitigates this distortion, lowering equilibrium protection for the industry towards the free-trade optimum.

We derive this conclusion from a formal model of tariff formation in which politicians choose trade policies to compete for the support of voters with endogenous heterogeneous

[1] E.g., 87.5% of PhD members of the American Economic Association agree that the United States should eliminate all remaining barriers to trade (Whaples 2006). Economists have long understood that losers from import competition can be compensated with feasible policy instruments that are less wasteful than trade barriers (Dixit and Norman 1980).

[2] E.g., in international surveys most respondents report protectionist views (Mayda and Rodrik 2005).

[3] The official Trump reelection campaign website `www.promiseskept.com` provides a list of "President Donald J. Trump Achievements" in the domain of "Trade & Foreign Policy" whose first two items are the imposition of tariffs on steel and aluminum imports and withdrawal from the Trans-Pacific Partnership. The financial press has widely documented the active concern of U.S. business with the President's protectionist bent, as witnessed by headlines such as "U.S. Businesses Ramp Up Lobbying Against Trump's Tariffs" (*Wall Street Journal*, September 12, 2018), "The Increasingly Futile Quest to Lobby Against Trump's Tariffs" (*Bloomberg News*, May 24, 2019), or "US Business Lobby Group Seeks to Curb Trump's Tariff Powers" (*Financial Times*, September 18, 2019).

[4] For example, leaked campaign emails showed that Clinton had told bankers: "My dream is a hemispheric common market, with open trade and open borders." A leaked consular memo reported that the Obama campaign had "candidly acknowledged" to Canadian officials that he was advertising a protectionist position in the primary campaign to align with voter sentiment, but would not follow through with protectionist policies if elected.

information. We present supporting evidence from the structure of protection across industries in the United States, exploiting cross-sector variation in implied media coverage driven by the plausibly exogenous timing of industrial accidents. Our results thus substantiate the conjecture formulated by Bhagwati (1988, p. 85) when he expressed his optimism that "the mere act of recognizing [protectionism] will help trigger a more corrective response. In these matters, we can count on assistance from what I call the Dracula Effect: exposing evil to sunlight helps destroy it."

In our theoretical framework, we study a canonical small open economy whose citizens differ in their endowments of industry-specific human capital. Producers whose factor endowment is specific to a given sector benefit from its protection through import tariffs (or export subsidies). All other citizens suffer as consumers (and taxpayers) because of the deadweight losses from these protectionist measures. Trade policies are set by office-seeking politicians through binding electoral promises that voters do not perfectly observe. Each voter has a chance of learning policy proposals for each sector exogenously, as a byproduct of media consumption. If they do not receive information about an industry exogenously, voters can acquire it endogenously at a small but positive effort cost.

Producers need to anticipate trade policy for their own industry in order to optimize their investment decisions. Thus, they rationally exert effort to become informed of proposals for their sector. On the contrary, consumers have no incentives to acquire information about any industry. Such information could only help them make a more informed voting decision, which has no instrumental benefit in a large election with a continuous electorate. As a result, in equilibrium people are systematically more aware of the trade barriers that benefit them as producers than of those that harm them as consumers. This information asymmetry makes protectionist proposals popular with voters.

Politicians strategically cater each policy to those voters who are more likely to be aware of it. A universal protectionist bias then emerges as the equilibrium outcome: every tradable industry receives positive protection. If the probability of getting exogenous public information is low enough, this protectionist bias is so strong that it induces Pareto inefficient equilibrium policy. Despite their political influence, at the margin all producers end up more harmed by protection of other industries than helped by protection of their own. Such Pareto inefficiency can arise because all producers have the knowledge and hence the power to obtain trade barriers for themselves, but not also to oppose wasteful trade barriers for others.

If media coverage induces greater public awareness of policies for a given industry, we find that equilibrium outcomes for that industry become more efficient, and thus its protection is lower. Trade barriers for other sectors, however, remain unaffected. This Dracula Effect across industries is the main and the most distinctive theoretical prediction of our model. In our empirical analysis, we bring it to the data and examine the effect of media coverage on the cross-section variation in trade barriers for U.S. manufacturing industries.

Assessing empirically how public scrutiny of an industry affects its trade policy faces an identification challenge because of reverse causation and omitted-variable bias. First, trade policy itself can attract attention to a sector. Second, characteristics of an industry such as its size or import penetration directly affect trade policy, but presumably also influence its public visibility. Thus, to establish a causal relationship we need a source of exogenous variation in public information about different industries. We address this challenge by relying on the plausibly exogenous timing of a category of unplanned sector-specific newsworthy events: fatal industrial accidents.

Minor news stories like fatal disasters and clashes abroad are less likely to be covered by U.S. media if they occur simultaneously with major newsworthy events such as the Olympic Games or presidential elections (Eisensee and Strömberg 2007; Durante and Zhuravskaya 2018). As a consequence, we can exploit Eisensee and Strömberg's (2007) approach and use their measure of daily news pressure combined with the timing of fatal industrial accidents in a particular sector as a source of exogenous variation in the implied media coverage of the sector.[5] Industries that suffer fatal accidents at times of low news pressure are exogenously more exposed to public scrutiny than industries whose fatal accidents happen at times of high news pressure. Although the variation in the prevalence of industrial accidents across sectors is endogenous, their timing can be considered exogenous, as their involuntary nature dispels the concern they might be intentionally and strategically timed.

To measure the level of protection across industries we rely on Kee et al.'s (2009) state-of-the-art estimates of trade barriers for the year 1999. In our baseline specification, we study how non-tariff barriers are affected by the timing of industrial accidents in 1998.[6] Our findings provide empirical support for our main theoretical prediction. Industrial accidents have a negative effect on trade protection. Crucially, their effect is significantly stronger if few other newsworthy events happen at the same time. In terms of magnitudes, one extra accident occurring in times of low news pressure makes subsequent trade barriers approximately 20% (i.e., around 2 percentage points) lower as compared with the effect of the same accident in times of high news pressure.

[5] We follow the recent literature on the political effects of mass media in using this "intention to treat" measure of sector-specific exposure to media coverage (e.g., DellaVigna and Kaplan 2007; Olken 2009; Enikolopov et al. 2011; La Ferrara et al. 2012; Yanagizawa-Drott 2014; Adena et al. 2015; Durante et al. 2019).

[6] This is the natural baseline because non-tariff barriers fit most plausibly a model of unilateral trade-policy determination (Goldberg and Maggi 1999), while voters' attention span and memory are notoriously short (Conconi et al. 2014). Our results are robust to considering total protection including tariffs, or the timing of accidents over the longer period 1995–1998.

This result provides evidence of a Dracula Effect. Higher implied media coverage of an industry leads to lower trade protection for the industry. Although media coverage of industrial accidents in a sector need not directly increase coverage of its trade policy, it is likely to make any existing information about the industry more accessible to people's minds by priming heightened public awareness of the sector through the well-established agenda-setting role of the media.[7] Lack of survey evidence on voters' differential awareness and understanding of trade policy for different industries prevents us from distinguishing if voters are primed to pay greater attention to what policy for a sector is, or rather to what its efficiency costs are. Either mechanism reflects a learning channel consistent with the Dracula Effect. To rule out the risk of confounding mechanisms, we conduct placebo studies of the impact on trade policy of the timing of future accidents (in 2000 or 2001). The corresponding estimates are small, flip signs, and always remain far from statistical significance—contrary to those for past accidents.[8]

Our theoretical predictions also find some support in the existing empirical literature. First, Stantcheva's (2020) experimental evidence shows that participants in a large-scale online survey report lower support for protectionism after watching instructional videos that explain the distributional and efficiency consequences of trade policy. Second, Hall et al. (1998) argue that women's suffrage caused a decline in U.S. tariff rates because in the 1920s women were more aware of the costs of protection for consumers, while men were more aware of its benefits for producers. Both Stantcheva's (2020) findings and the mechanism conjectured by Hall et al. (1998) are consistent with the Dracula Effect our theory predicts.

Furthermore, recent empirical studies have found that politicians' trade-policy positions are weakly tied to the preferences of voters at large, who are poorly informed about them (Guisinger 2009).[9] However, they respond instead to the preferences of subgroups of voters with a particular keenness on protection (Conconi et al. 2014; Feigenbaum and Hall 2015). This pattern is not confined to trade policy, but common to other secondary policy issues

[7] A substantial literature across behavioral economics, cognitive science, communication studies and social psychology has studied priming and agenda-setting as a result of media coverage, building on the leading theories of memory-based information processing and associative memory (e.g., Tversky and Kahneman 1973; Eagly and Chaiken 1993; Scheufele and Tewksbury 2007; Kahana 2012). In particular, this literature has shown that heightened accessibility reflects the mere fact of coverage and not its details. Critical media coverage of an industry or product raises generic consumer awareness of it, rather than specific awareness of its shortcomings that triggered the coverage (Scheufele and Tewksbury 2007; Berger et al. 2010).

[8] Confounding mechanisms are also theoretically unlikely. In particular, if media coverage of fatal accidents changed voter preferences instead of voter information, we should expect it to increase solidarity for workers in the affected industries. Such directed altruism would raise support for trade policies protecting workers in the sector, rather than lowering it.

[9] Conversely, the Cooperative Congressional Election Study, whose survey data Guisinger (2009) exploits, is not detailed enough to allow precise inference about producers' information and politicians' responsiveness to their preferences.

such as environmental protection or gun control (List and Sturm 2006; Bouton et al. 2020). Such evidence bears out our argument that voters who are keener on a secondary policy acquire more information about it and thus exert disproportionate political influence over it.

Our analysis contributes to several strands of literature. First, our novel emphasis on voter information and its endogenous heterogeneity contributes to the study of the electoral determinants of trade policy. Prior work focused primarily on the influence of pivotal voters (Mayer 1984; Yang 1995; Dutt and Mitra 2002; Grossman and Helpman 2005; Fredriksson et al. 2011; Ma and McLaren 2018). In contrast to this literature, the most distinctive property of voter knowledge is that, unlike either pivotality or lobby membership, it explains why different voters have disproportionate influence over different policies.

Second, another strand of literature has studied the influence of voter psychology on trade policy. Grossman and Helpman (1996) microfound the influence of lobbies through an electoral model in which imperfectly rational voters are swayed not only by policy proposals but also by costly campaign advertising. Freund and Özden (2008) and Tovar (2009) show that loss aversion makes both lobbies and voters keener on protection for declining industries than growing ones. Grossman and Helpman (2020) study how changes in social identification can drive sharp changes in demand for redistribution as inequality increases. Our focus on voter information complements such studies of voter preferences. Our finding of a Dracula Effect also admits a behavioral interpretation: consumer ignorance in our model can be interpreted not only as ignorance of policy proposals, but also as failure to understand their true costs.

Third, our paper contributes to the empirical literature on the cross-sector structure of U.S. trade protection, which has overwhelmingly focused on lobbying (Goldberg and Maggi 1999; Gawande and Bandyopadhyay 2000; Matschke and Sherlund 2006; Bombardini 2008; Tovar 2009). We contribute to this literature by extending this line of inquiry to voter-driven determinants of protection across industries; and by using an up-to-date approach to the identification of causal relationships, based on an exogenous source of variation in information about industries.

Finally, we contribute to a broader literature on the impact of media coverage and voter information on policy outcomes. This literature has shown that public-good provision improves when it is more transparent (Besley and Burgess 2002; Eisensee and Strömberg 2007; Snyder and Strömberg 2010), but also that more knowledgeable voters have disproportionate political influence (Strömberg 2004; Glaeser et al. 2005; Glaeser and Ponzetto 2014).[10] Prior work has focused mainly on exogenous differences in voter information driven by geography

[10] A parallel literature studies the impact of the media on voting behavior (DellaVigna and Kaplan 2007; Chiang and Knight 2011; Enikolopov et al. 2011; Gentzkow et al. 2011; Adena et al. 2015; Casey 2015).

(Majumdar et al. 2004; Gavazza and Lizzeri 2009; Boffa et al. 2016; Gavazza et al. 2019). We extend this line of research by studying the impact of (endogenous) voter-by-sector knowledge asymmetry on industry-level policy outcomes.

The rest of the paper is organized as follows. Section 2 presents our theoretical model and Section 3 our empirical evidence. Section 4 concludes.

2 Tariff Formation with Imperfectly Informed Voters

In this section, we introduce an electoral model of trade policy formation in which voters are imperfectly and heterogeneously informed. In our model, information about each sector can be acquired at an effort cost. As a consequence, information heterogeneity emerges endogenously. Producers choose to become informed about their own sector because a more accurate forecast of its market conditions, including trade policy, is valuable for their private investment decisions. Consumers, instead, find information about any sector useful only for their voting choice. As a result, they have no incentives to incur an effort cost in order to acquire it. Hence, they only learn about a sector if they happen to receive information about it as a byproduct of media consumption.

Unless such effortless media consumption suffices to provide full information, equilibrium policy provides positive protection to every sector. Moreover, if media coverage does not ensure enough public information about trade policy, this protectionist bias leads to a set of policies that are jointly Pareto inefficient. In equilibrium, industries that receive more media coverage have a lower level of inefficient protection. This is our key theoretical prediction of a Dracula Effect, which we test empirically in Section 3 below.

We begin by presenting the setup of the economy and of electoral competition, and we provide the timeline of the model. We then characterize the equilibrium structure of protection. We conclude by discussing its comparative statics.

2.1 Consumption Preferences and Production Technology

Our economic environment follows the canonical setting of a competitive small open economy whose residents have identical preferences but different factor endowments (Grossman and Helpman 1994). Consumer preferences are described by the quasi-linear utility function:

$$u(\mathbf{c}) = c_0 + \sum_{g=1}^{G} u_g(c_g), \tag{1}$$

where c_0 denotes consumption of the numeraire and c_g consumption of each non-numeraire good g, whose domestic price is p_g. Each sub-utility function $u_g(c_g)$ is twice continuously differentiable, strictly increasing and strictly concave. Each agent has enough income y to consume a positive amount of the numeraire in equilibrium. Therefore, each agent consumes an identical amount of each non-numeraire good, which is uniquely determined by its own price: $c_g(p_g) = u_g'^{-1}(p_g)$. The indirect utility function is:

$$v(y, \mathbf{p}) = y + \sum_{g=1}^{G} s_g(p_g), \tag{2}$$

where $s_g(p_g) = u_g(c(p_g)) - p_g c_g(p_g)$ denotes consumer surplus from consuming good g.

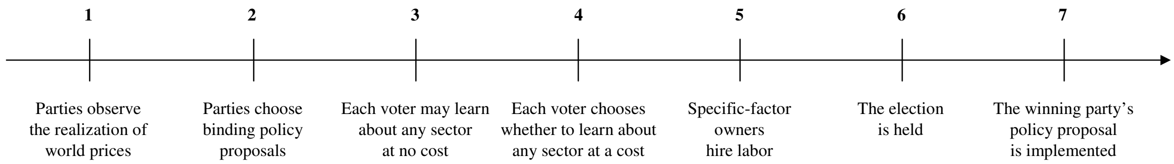
The production technology for every good has constant returns to scale and all domestic industries are perfectly competitive. The numeraire is produced employing one unit of labor per unit of output. The aggregate labor endowment is large enough that a positive amount of the numeraire is produced in equilibrium, fixing the wage at unity. Each non-numeraire good g is produced employing both labor and an industry-specific input. The specific factors are in exogenous, inelastic supply, so the only adjustment to the structure of production is the allocation of labor across sectors. For a fixed wage rate, the price of each good determines the labor intensity of its production. Therefore, the aggregate reward accruing to the specific factor for sector g depends only on the domestic price of good g. It is described by the twice continuously differentiable, strictly increasing and strictly convex function $\Pi_g(p_g)$.

Agent i inelastically supplies an amount $\ell^i > 0$ of labor and owns a fraction $\kappa_g^i \geq 0$ of the specific factor for sector g. The sector-specific factors consist of specialized human capital, so they cannot be traded by their owners and each agent owns at most one of them: $\kappa_g^i > 0 \Rightarrow \kappa_h^i = 0$ for all $h \neq g$. Owners of the specific factor for sector g comprise a fraction $\alpha_g > 0$ of the population. Some agents may own no specific factor, so $\sum_{g=1}^{G} \alpha_g \leq 1$.

The world prices of all non-numeraire goods are independent of domestic conditions and exogenously given by the vector $\mathbf{p}^*$. The domestic price vector $\mathbf{p}$ is determined by trade taxes and subsidies, the only policy instruments available to the government. Import tariffs for importing sectors and export subsidies for exporting sectors determine a positive wedge $t_g = \left(p_g - p_g^*\right)/p_g^*$. Conversely, import subsidies and export tariffs make this wedge negative. Net tariff revenues are rebated to citizens as a lump sum, or net trade subsidies are defrayed through a uniform poll tax. Thus, each agent receives (if positive) or pays (if negative) a net government transfer equal to:

$$r = \frac{1}{N} \sum_{g=1}^{G} \left(p_g - p_g^*\right) m_g, \tag{3}$$

Figure 1: Timeline of the Model



where N denotes the size of the population and m_g the country's net imports of good g.

2.2 Information Acquisition and Electoral Competition

Elections are a contest between two office-seeking parties that maximize their respective probability of winning a majority of the ballots cast by a measure-N continuum of atomistic voters. The parties run on platforms that include a binding trade policy proposal for each sector. However, not all voters learn all these proposals before the election. Their information is imperfect and reflects two sources of heterogeneity. First, all voters exogenously acquire some policy knowledge as a byproduct of their exposure to mass media. Some sectors may be more newsworthy than others, so policy proposals concerning them are more widely known. In addition, voters can endogenously invest effort in learning about particular sectors. Different voters may prefer to seek information about different sectors.

While knowledge of policy proposals helps any voter make a more informed choice at the ballot box, consumers and producers have different non-political incentives for information acquisition. Consumers do not need advance information about market conditions. Conversely, producers need to acquire information that helps them assess and forecast industry trends. Such information includes advance knowledge of proposed policies that will affect their sector. Formally, we assume that owners of the specific factors must hire labor before the election, based on their expectation of future prices. Ex ante, domestic prices are uncertain because so are international prices and because the political process can introduce additional uncertainty in tariff formation. We assume for simplicity that international prices as well as both domestic policy proposals for an industry can be learned with a small amount of effort at the interim stage, during the electoral campaign. Ex post, after the election, all prices are costlessly observable and agents make their consumption choices accordingly.

The timeline of events is the following, as summarized in Figure 1.

1. International prices $\mathbf{p}^*$ are realized and observed by the two competing parties, L and

R. The price realizations p_g^* are independent across sectors.

2. The parties simultaneously and non-cooperatively choose their binding policy proposals, $\mathbf{p}^L$ and $\mathbf{p}^R$ respectively.

3. A subset of voters exogenously receive information $\left(p_g^*, p_g^L, p_g^R\right)$ about sector g. The remainder remain uninformed about the sector and retain their priors about it. Denote by θ_g the share of voters owning no sector-g specific factor (i.e., with $\kappa_g^i = 0$) who exogenously receive information about the sector.

4. Each voter can endogenously acquire information $\left(p_g^*, p_g^L, p_g^R\right)$ about any sector g they aren't already informed about, by exerting a small amount of effort ε for each sector they choose to learn about.

5. Owners of the specific factors hire labor.

6. The election is held and all voters costlessly cast their ballots.

7. The winning party $W \in \{L, R\}$ implements its proposed policy $\mathbf{p}^W$. All agents observe it and choose their consumption basket.

Competitive markets clear at the end of the timeline, but domestic output is predetermined before the election as a function of the price expectations of specific-factor owners when they make their hiring decisions. Let agent i rationally anticipate an expected price $\bar{p}_g^i = \mathbb{E}_i\left(p_g^W\right)$ given the information they have acquired. Facing a unit wage, they set a labor intensity equal to $\Lambda_g\left(\bar{p}_g^i\right) = \bar{p}_g^i \Pi_g'\left(\bar{p}_g^i\right) - \Pi_g\left(\bar{p}_g^i\right)$ per unit of the specific factor κ_g^i they own. As a result, ex post their output per unit of the specific factor is $\Pi_g'\left(\bar{p}_g^i\right)$ and they earn a profit rate per unit of the specific factor equal to:

$$\pi_g\left(p_g^W, \bar{p}_g^i\right) = p_g^W \Pi_g'\left(\bar{p}_g^i\right) - \Lambda_g\left(\bar{p}_g^i\right). \tag{4}$$

The joint distribution of factor ownership κ_g^i and rational expectations $\bar{p}_g^i$ thus predetermines aggregate domestic output in sector g, which we denote by q_g. Ex post, net imports in the sector are then:

$$m_g\left(p_g^W, q_g\right) = N c_g\left(p_g^W\right) - q_g. \tag{5}$$

Every agent derives income ℓ^i from labor ownership, π_g^i from specific-factor ownership and r from government transfers, while enjoying consumer surplus $s_g\left(p_g^W\right)$ from each non-numeraire sector. As a result, policy preferences are summarized by the value function:

$$V^i(\mathbf{p}) = \ell^i + \sum_{g=1}^{G} \left[\kappa_g^i \pi_g\left(p_g, \bar{p}_g^i\right) + \frac{1}{N}\left(p_g - p_g^*\right) m_g\left(p_g, q_g\right) + s_g\left(p_g\right)\right]. \tag{6}$$

In addition to these policy preferences, voters have preferences over fixed characteristics of the competing parties, such as ideology or the personal qualities of party leaders, that cannot be credibly altered with the choice of an electoral platform. These non-policy preferences account for electoral uncertainty and for an intensive margin of voter support, following the probabilistic-voting approach (Lindbeck and Weibull 1987). Formally, in the election voter i votes for party R if and only if:

$$\mathbb{E}_i\left[V^i\left(\mathbf{p}^R\right) - V^i\left(\mathbf{p}^L\right)\right] \geq \Psi + \psi^i, \tag{7}$$

where $\mathbb{E}_i$ denotes the rational expectation conditional on i's information, while Ψ and ψ^i summarize non-policy preferences. Ψ denotes an aggregate preference shock that accounts for aggregate uncertainty in the outcome of the election. Its realization is drawn from a common-knowledge probability distribution that is symmetric around 0, so neither party has an exogenous electoral advantage. ψ^i denotes an idiosyncratic preference shifter that is i.i.d. across agents, with a uniform distribution on $\left[-\bar{\psi}, \bar{\psi}\right]$. This support is sufficiently wide that each voter's ballot is not perfectly predictable on the basis of policy considerations only.

The measure-N continuum of voters can be partitioned into a large but finite number of homogeneous groups $j = 1, 2, ..., J$. Group j comprises a fraction α^j of the population, and all its members have identical factor endowments (ℓ^j, κ^j). Although agents are atomistic, if they own a specific factor they own at least a strictly positive minimum: $\kappa_g^i > 0$ implies $\kappa_g^i \geq \underline{\kappa}$ for a threshold $\underline{\kappa} > 0$.

2.3 Equilibrium Policy Formation

Equilibrium policy proposals reflect an intuitive tug-of-war between producers who desire protection for their sector and consumers who oppose it. To highlight these distributional tensions, it is helpful to define the joint welfare of all factor owners in a given sector g. Denoting by L_g their total labor supply, if they all expect a domestic price $\bar{p}_g$ for their own industry, their joint welfare when policy $\mathbf{p}$ is enacted equals:

$$W_g = L_g + \pi_g\left(p_g, \bar{p}_g\right) + \alpha_g \sum_{h=1}^{G} \left[\left(p_h - p_h^*\right) m_h\left(p_h, q_h\right) + N s_h\left(p_h\right)\right]. \tag{8}$$

At the same time, denoting by L the aggregate labor endowment, overall social welfare equals:

$$W = L + \sum_{g=1}^{G} \left[\pi_g \left(p_g, \bar{p}_g\right) + \left(p_g - p_g^*\right) m_g \left(p_g, q_g\right) + N s_g \left(p_g\right) \right]. \tag{9}$$

In choosing their policy proposals, the two competing parties face a perfectly symmetric problem. Both parties have the identical goal of winning office. Each voter learns before the election either both proposals for any given sector, or neither of them. Non-policy tastes for the two parties are symmetrically distributed. As a consequence, following Grossman and Helpman (2005), it is natural to focus on a symmetric equilibrium in which all voters who do not learn directly about sector g rationally expect the rival parties to make identical proposals for it ($p_g^L = p_g^R = p_g$). Moreover, following Grossman and Helpman (1994), we assume that parties must propose domestic prices that lie within a bounded set $\mathcal{P}$ ensuring that every agent has sufficient income net of transfers to consume a positive quantity of the numeraire, and we focus on an equilibrium in which all prices lie in the interior of $\mathcal{P}$.

Provided that the effort required to acquire information is sufficiently small, an interior symmetric equilibrium has the following intuitive characterization.

Proposition 1 *Suppose the effort required to acquire information about a sector is strictly positive but not higher than a threshold $\bar{\varepsilon} > 0$. Then, in an interior symmetric equilibrium:*

1. *Agents exert effort to acquire information about the sector (if any) whose specific factor they own, but no others;*

2. *The policy proposal for each sector (p_g) depends only on conditions within the sector itself, and it is characterized by the political optimality condition:*

$$\theta_g \frac{\partial W}{\partial p_g} + \left(1 - \theta_g\right) \frac{\partial W_g}{\partial p_g} = 0,$$

   with perfectly informed factor owners ($\bar{p}_g = p_g$) and the resulting domestic output $q_g = \Pi_g' \left(p_g\right)$.

The first part of the proposition describes equilibrium information acquisition when information is sufficiently cheap but not free to acquire. Producers derive a direct, private economic benefit from better information about their sector. This benefit is strictly positive for all producers, since they all have a strictly positive factor endowment ($\kappa_g^i \geq \underline{\kappa} > 0$). Therefore, they are all willing to exert a strictly positive effort ($0 < \varepsilon \leq \bar{\varepsilon}$) in order to learn about policy proposals for their own industry. On the contrary, voters have no instrumental reason to invest in acquiring political knowledge. Each atomistic citizen has probability zero of influencing the outcome of the election and thus derives no benefit from making a better-informed voting decision.

As a result of these asymmetric incentives, information about each sector is asymmetrically distributed in equilibrium. Each policy proposal is observed by all producers in the sector. Consumers, instead, learn about politics only as a byproduct of their general media consumption (Graber 1984). Thus, only an exogenous fraction θ_g observe the proposals for sector g. This share of non-owners of the specific factor for sector g who exogenously receive information about it is a sufficient statistic for the whole distribution of information. The simplest possibility is that information about the sector reaches each voter with probability θ_g, independent of factor ownership. However, our results are valid for a generic distribution of exogenous information.

The second part of Proposition 1 shows that differences in political information translate directly into differences in political influence. Equilibrium policy proposals for each sector are chosen as if politicians were maximizing a weighted welfare function that weighs each group according to its information about the sector itself. In light of equilibrium information acquisition, producers in the sector have a weight of 1, but consumers one of θ_g only.[11]

The electoral incentives that turn voters' information into a source of political influence are intuitive. Office-seeking parties make policy proposals in order to attract votes. However, voters who fail to learn about a sector cannot be swayed by the respective proposals. As a result, politicians strategically cater mainly to those groups of voters they rationally expect to be most informed. This theoretical prediction is supported by empirical evidence on the geographic allocation of discretionary public spending. In the United States, both state governors and Congress allocate funds disproportionately to more informed regions (Strömberg 2004; Snyder and Strömberg 2010).

2.4 The Structure of Protection and the Dracula Effect

Proposition 1 describes the political solution to the distributional conflict described by the welfare consequences of marginal policy changes. Differentiating Equation (9) yields the impact of these changes on aggregate social welfare:

$$\frac{\partial W}{\partial p_g} = \left(p_g - p_g^*\right) \frac{\partial m_g}{\partial p_g}. \tag{10}$$

This equation describes the deadweight loss arising from distortions of the competitive price system. Since net imports decline with the domestic price ($\partial m_g/\partial p_g < 0$), aggregate effi-

[11] Both consumers' and producers' welfare are included in overall social welfare. Thus, the former has weight θ_g and the latter an overall weight $\theta_g + 1 - \theta_g = 1$ in politicians' implicit objective function.

ciency monotonically increases when the domestic price is brought into closer alignment with the world price ($\partial W/\partial p_g > 0 \Leftrightarrow p_g < p_g^*$). Thus, Equation (10) proves the well-known result that free trade uniquely maximizes social welfare for a small open economy whose domestic markets are free of distortions.

Differentiating Equation (8) shows the impact of trade policy on the welfare of specific-factor owners in each protected sector:

$$\frac{\partial W_g}{\partial p_g} = (1 - \alpha_g)\, q_g + \alpha_g \left(p_g - p_g^*\right) \frac{\partial m_g}{\partial p_g}. \tag{11}$$

The first term highlights that protection redistributes from consumers to producers, and thus from the general population to the owners of the sector-specific factor. As a result, specific-factor owners unambiguously gain when the domestic price of the good they produce rises marginally above its free-trade level.

The size of the transfer is proportional to the amount of domestic output (q_g). Moreover, it is decreasing in the population share of factor owners (α_g). The larger their group, the more it internalizes the consequences of protection for consumers and taxpayers (which its members also are), and thus the less protectionist it becomes.

Substituting Equations (10) and (11) into the equilibrium condition in Proposition 1 yields an explicit characterization of the equilibrium structure of trade policy.

Proposition 2 *In an interior symmetric equilibrium, the government sets trade taxes and subsidies for each sector g that satisfy:*

$$t_g = \frac{(1 - \alpha_g)\,(1 - \theta_g)}{\theta_g + \alpha_g\,(1 - \theta_g)} \frac{p_g q_g}{p_g^* m_g} \frac{1}{e_g},$$

where $e_g \equiv -\left(\partial m_g/\partial p_g\right) / \left(m_g/p_g\right)$ denotes the elasticity of net import demand, defined to have the same sign as net imports.

Every sector receives positive protection ($t_g \geq 0$). A sector receives lower protection if:

1. *Information about it is more widespread ($\partial t_g/\partial \theta_g < 0$);*

2. *Owners of its specific factor are more numerous ($\partial t_g/\partial \alpha_g < 0$).*

The pattern of protection predicted by our model matches the observed protectionist bias of trade policy (Rodrik 1995). Import barriers and export subsidies are widespread, whereas import subsidies and export taxes are very rare. Heterogeneous voter knowledge provides an intuitive explanation for this asymmetry. Even in the absence of lobbying, policy for every industry is captured by producers in the industry itself, because they alone have incentives to acquire information about their sector. Thus, every protectionist policy proposal is popular because it is more likely to be heard by the producers it benefits than by the consumers it harms.

While endogenous differences in voter information provide an especially clear-cut explanation for a universal protectionist bias, the most distinctive result in Proposition 2 is the presence of a Dracula Effect.[12] Public information is effective at mitigating the baseline protectionist bias. If a sector is exposed to greater public scrutiny, a greater share of consumers effortlessly learn about the policies proposed for it. Producers retain their endogenous information advantage, but the scope for superior insider knowledge shrinks. As a consequence, equilibrium policy proposals for the sector place a greater weight on social welfare and a lower weight on the preferences of industry insiders. Hence, the sector receives lower protection and policy for it gets closer to efficiency ($\partial t_g / \partial \theta_g < 0$).

Beyond highlighting the crucial role of heterogeneous voter information, Proposition 2 reflects two standard determinants of trade policy, which are common to the vast majority of models of tariff formation and have found robust support in the data (Grossman and Helpman 1994; Helpman 1997; Goldberg and Maggi 1999; Ethier 2013). First, equilibrium policy is less biased for larger sectors ($\partial t_g / \partial \alpha_g < 0$). When insiders are more numerous they are necessarily closer to the average citizen, so their demand for distortive redistribution is muted. Second, protection obeys a modified Ramsey rule. It is lower for industries with higher import demand elasticity (e_g), because the same tariff rate determines a larger deadweight loss if the demand function is more elastic. Likewise, tariff rates are lower for industries with greater import penetration because their politically advantageous distributive effects scale with domestic output ($p_g q_g$), whereas the inefficient distortions they cause scale with international trade ($p_g^* m_g$).

We close our theory section by assessing the welfare properties of equilibrium trade policy, and particularly how they change with public information provided by the media. We focus on two standard efficiency measures. The first is the maximization of utilitarian social welfare, which also coincides with the maximization of total surplus given quasilinearity of the utility function. The second is Pareto efficiency, the least demanding among standard efficiency criteria.

[12] Universal protection could also emerge when protection is sold to lobbies, if every tradable sector succeeds at organizing into a lobby while the non-traded sector fails to (Grossman and Helpman 1994). Moreover, an average protectionist bias emerges without lobbying from a legislature elected with a majoritarian system and constituencies with heterogeneous industrial specializations (Grossman and Helpman 2005). The ruling party certainly protects with trade barriers the majority of constituencies, and thus industries, that it represents. The minority of industries represented by the opposition party can face either trade subsidies or trade barriers in equilibrium.

Proposition 3 *For generic utility functions u_g and profit functions Π_g, and given equilibrium efforts to acquire information:*

1. *Equilibrium policy is welfare maximizing if and only if full information is costlessly available: $\theta_g = 1$ for all $g = 1, 2, ..., G$;*

2. *Equilibrium policy is Pareto efficient if and only if information is sufficiently common:*

$$\sum_{g=1}^{G} \frac{1}{\rho_g} \frac{\alpha_g}{\alpha_g + (1-\alpha_g)\,\theta_g} \leq 1,$$

   where $\rho_g \equiv N\alpha_g \max_j \kappa_g^j \geq 1$ denotes the ratio of maximum to average per-capita ownership of the sector-g specific factor among its owners.

The first result in Proposition 3 is an immediate corollary of Proposition 2. Social welfare is maximized by free trade. Absence of trade barriers is the equilibrium policy only for industries that consumers are fully informed about, despite their lack of individual incentives for costly information acquisition. Intuitively, therefore, aggregate surplus maximization requires that in every sector producers and consumers should be identically informed. This is an equilibrium only when shrouding disappears and every voter costlessly learns every policy proposal.

The second part of Proposition 3 provides a more striking result. If consumer ignorance is too prevalent, trade barriers are not merely high in every sector. They can reach an equilibrium structure that is Pareto inefficient across sectors. At the margin, producers themselves are more harmed by equilibrium protection for other industries than they are helped by equilibrium protection for their own.

Intuitively, the equilibrium pattern of protection can be Pareto inefficient because endogenous information enables all producers to obtain policy favors in their own sector, but not to oppose simultaneous policy favors to rival producers in other sectors that they are not as informed about. This is a distinctive possibility in our model relative to the literature, which predicts Pareto efficient—albeit rarely welfare-maximizing—trade policies. For instance, if producers buy influence through lobbying, rather than acquiring it through specialized knowledge, they bargain efficiently over all policies (Grossman and Helpman 1994). Negotiation between the politicians and lobbyists then ensures that the cross-industry structure of protection is always Pareto efficient—although the supporting lobbying contributions can themselves break Pareto efficiency, if they are dissipated in wasteful campaign advertising that raises nobody's welfare.

Formally, the efficiency condition in Proposition 3 implies that equilibrium tariffs are certainly Pareto inefficient if there are multiple tradable sectors ($G > 1$), factor ownership is homogeneous across all producers in a sector ($\rho_g = 1$ for all g) and consumers are completely uninformed about trade policy ($\theta_g = 0$ for all g). Increases in consumer information (θ_g) gradually reduce inefficiency and eventually suffice to restore Pareto efficiency, which is ensured for the welfare-maximizing case of full information ($\theta_g = 1$ for all g).

The potential for Pareto inefficiency also shrinks as inequality across factor owners (ρ_g) increases. This result does not reflect changes in equilibrium policy. Proposition 2 showed that equilibrium tariffs vary only with the number of sector-g producers (α_g), not with the distribution of factor ownership among them. However, any arbitrarily inefficient policy can be rationalized through the preferences of arbitrarily few people with arbitrarily high factor ownership ($\rho_g \to \infty$ for all g). In the limit, all the human capital in a sector might be concentrated in a single atomistic individual, who has measure zero and thus an unbounded per-capita ownership. Such a producer would be lexicographically keen on producer profits over consumer surplus and tax revenues.

The same kind of consideration explains the opposite sign of comparative statics with respect to sector size (α_g) in Propositions 2 and 3. As factor owners become more numerous, policy for their sector becomes less protectionist, but the overall protectionist bias remains. This bias always harms consumers with no sector-specific factor, so it can be Pareto efficient only if it benefits producers in tradable sectors. When the latter are more numerous (while producers of non-tradables are fewer) they must internalize more of the deadweight losses from trade barriers. Thus, they too are more harmed by the protectionist bias, so equilibrium policy is more likely to prove Pareto inefficient. In the limit, if all voters own some sector-specific factor ($\sum_{g=1}^{G} \alpha_g = 1$) and its ownership is homogeneous within each sector ($\rho_g = 1$ for all g), equilibrium policy is Pareto inefficient whenever it is not welfare maximizing ($\theta_g < 1$ for some g).

3 Media Coverage and Protection Across Industries

Our model yields the key theoretical prediction of a Dracula Effect across industries: sectors for which more public information is available enjoy lower trade protection. In this section, we test this prediction empirically in the cross-section of U.S. manufacturing industries.[13] More specifically, we aim to assess whether greater media coverage of an industry causes lower

[13] The structure of protection across manufacturing industries is the classic focus of empirical studies of the determinants of U.S. trade policy (Goldberg and Maggi 1999; Gawande and Bandyopadhyay 2000; Matschke and Sherlund 2006; Bombardini 2008; Tovar 2009).

trade barriers for that industry, as our model predicts.[14] To identify a causal relationship, we exploit the exogenous variation in implied media coverage of different sectors that arises from the precise timing of fatal industrial accidents.

Industrial accidents are unplanned events that can trigger news coverage and put an industry in the media spotlight. Such media coverage then attracts greater public scrutiny of the industry more generally and raises voters' awareness of all issues associated with it—including industry-specific policies such as trade protection.[15] Accordingly, there seems to be a negative relationship across industries between trade barriers and the number of fatal industrial accidents, as Figure 2 shows. Different industries, however, differ endogenously in their propensity to suffer industrial accidents, which might also be correlated with the level of trade protection. Such endogeneity implies that a mere cross-sector correlation between trade barriers and the frequency of industrial accidents is uninformative about causation.[16]

Instead, we rely on a complementary source of exogenous variation. Fatal incidents receive less media coverage if they happen to occur on the same dates as highly newsworthy events such as the Olympic Games, national elections, or major U.S. military operations (Eisensee and Strömberg 2007; Durante and Zhuravskaya 2018).

For example, on December 16, 1998 a machine operator at Midwest Pipe Coating, Inc., was caught in the rotating shaft of a conveyor and killed. Apparently, not a single newspaper devoted an article to this accident over the following week.[17] Media attention was entirely focused instead on war abroad and political turmoil at home. December 16–19 were the dates of Operation Desert Fox, the bombing of Iraq by U.S. and U.K. forces. On December 19, President Clinton was impeached by the House of Representatives. The strike against Iraq and the impeachment proceedings jointly took up 85% of the evening television news between

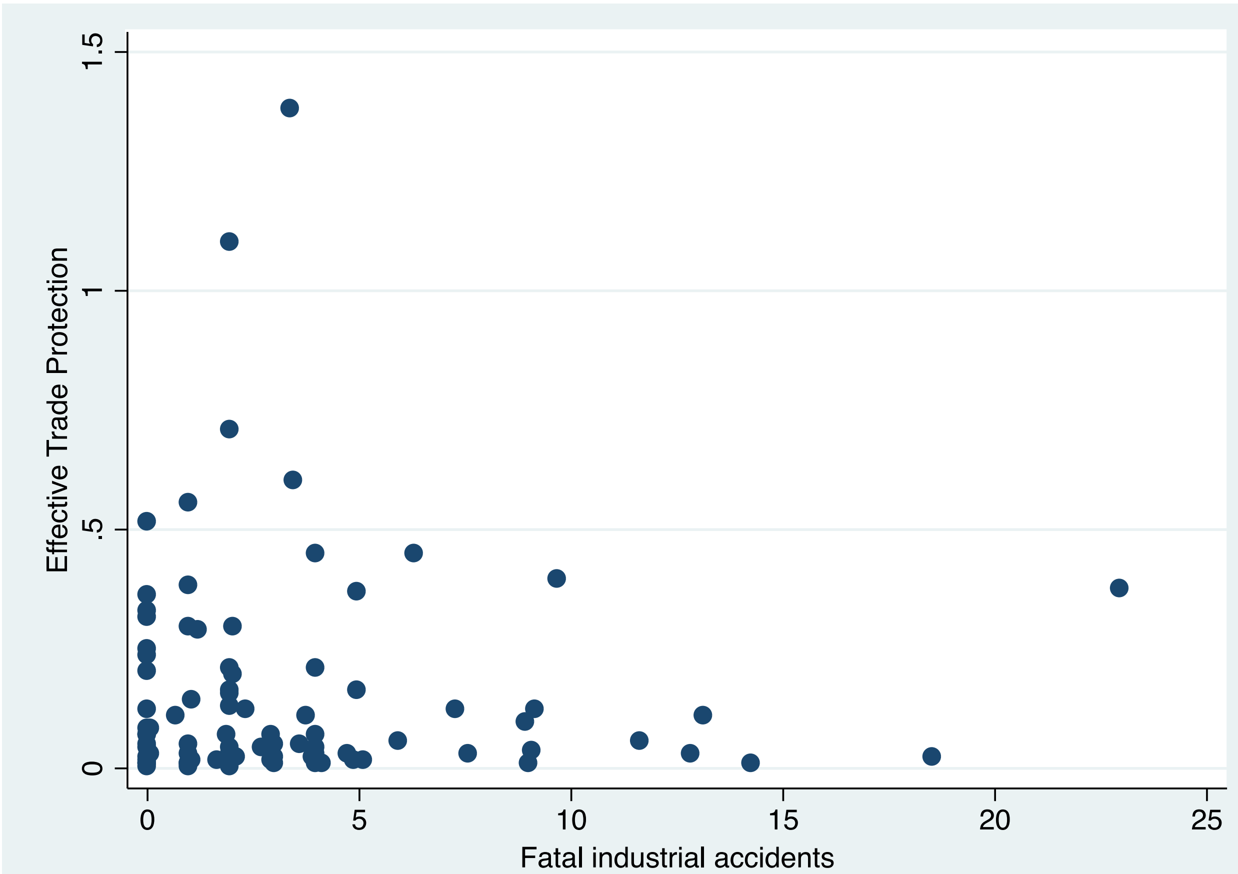
[14]Information provided by the mass media is the classic proxy for public information in empirical studies of the effects of voter information on policy-making (Besley and Burgess 2002; Strömberg 2004; Eisensee and Strömberg 2007; Snyder and Strömberg 2010; Casey 2015).

[15]Heightened public awareness of related issues beyond the specific events that trigger news coverage reflects the well-known agenda-setting and priming role of the media (e.g., Scheufele and Tewksbury 2007), as Section 3.3.3 discusses in greater detail.

[16]The prevalence of industrial accidents in a sector likely reflects how dangerous working in that sector is. Workers' safety could cause trade policy without the mediation of public information: e.g., the government could be setting trade barriers to redirect domestic employment towards less accident-prone industries; or conversely, to reward with policy favors workers exposed to greater occupational risk. Trade barriers and workers' safety could have common causes: e.g., sectors with more powerful trade unions could obtain both more protectionist trade policies and more protective workplace-safety regulations; or conversely, sectors with more powerful employer lobbies could obtain more trade barriers and laxer safety regulations. Trade policy could cause industrial accidents: e.g., greater exposure to foreign competition could push domestic producers to cut corners on workplace safety; or conversely, higher protection could lead producers to increase capacity utilization and thereby accidents.

[17]To be more precise, we could not find any articles about this accident in the Factiva archive of daily U.S. newspapers.

Figure 2: Trade Protection and Industrial Accidents



Notes: The number of fatal industrial accidents is reported for 4-digit NAICS industry groups in 1998. Effective trade protection is the sum of tariffs and ad-valorem tariff equivalents of non-tariff barriers in 1999, averaged across tariff lines in the industry group.

December 16 and December 20.[18] Faced with such towering national stories, newspapers did not find a fatal accident in the metalworking industry newsworthy enough to report.

Conversely, on December 23, 2001 a machine repairman at Kraft Foods Global, Inc., was overcome by ammonia fumes and killed. Over the next four days, this accident was covered by no less than seven articles across multiple newspapers. Competition for media attention from major news was relatively muted. The two main stories over December 23–27 were a failed shoe bomb attempt on a transatlantic flight on December 22 and the ongoing war in Afghanistan. Together, they accounted for only 41% of the evening TV news schedule. In

[18]These two major stories alone accounted for 98% of the schedule of the evening news broadcasts on December 17, which is the date with the highest news pressure in the entire year 1998 according to Eisensee and Strömberg's (2007) measure.

this fairly quiet news landscape, a fatal accident in the food processing industry deserved newspaper coverage.

Hence, we can identify exogenous variation in implied media coverage across industries by comparing sectors whose fatal industrial accidents took place on the days when major rival news stories were crowding out media attention, and sectors whose accidents took place instead on days with weaker competition for media attention. The joint timing of accidents and news pressure provides an "intention to treat" measure of exposure to media coverage, which is a common focus of the literature on the political effects of mass media (DellaVigna and Kaplan 2007; Enikolopov et al. 2011; La Ferrara et al. 2012; Yanagizawa-Drott 2014; Durante et al. 2019). Following these prior studies, we rely on implied media coverage rather than attempting to measure actual coverage.[19]

3.1 Empirical Methodology

To derive our empirical model, we begin by log-linearizing the equilibrium condition in Proposition 2:

$$t_g = \exp\left(\beta_0 + \beta_1 \ln \theta_g + \beta_2 \ln \alpha_g + \beta_3 \ln z_g + \beta_4 \ln e_g\right) + \varepsilon_g, \tag{12}$$

where t_g is the ad-valorem tariff equivalent of trade barriers for industry g, z_g its import penetration, e_g its import-demand demand elasticity and ε_g an error term.

We proxy the share α_g of the population that owns sector-specific human capital by total employment in industry g. We proxy public information θ_g by implied media coverage caused by fatal industrial accidents in sector g. As anticipated, endogeneity concerns prevent us from simply using industrial accidents as a proxy for public information about a sector. Instead, we exploit the quasi-random variation in the precise timing of industrial accidents. Accordingly, we estimate the following model:

$$t_g = \exp\left(\gamma_0 + \gamma_1 \sum\nolimits_d i_{gd} + \gamma_2 \sum\nolimits_d i_{gd} n_{d+k} + \gamma_3 \ln l_g + \gamma_4 \ln z_g + \gamma_5 \ln e_g\right) + \varepsilon_g, \tag{13}$$

where l_g is employment in industry g, i_{gd} is the number of fatal industrial accidents in industry g on date d, and n_{d+k} is Eisensee and Strömberg's (2007) measure of daily news pressure on day k after the event, which reflects how much media attention was distracted

[19] Such direct measurement would face two major obstacles. First, news archives have very limited data on local news in the period we examine: smaller local newspapers are underrepresented, and local TV and radio virtually unrepresented. Second, industrial accidents vary greatly, so keyword-based searches do not do a good job of identifying news items covering them.

by other newsworthy events in the aftermath of an industrial accident.[20]

In our baseline specification, we consider industrial accidents during the year preceding the measurement of trade barriers, in the light of evidence that voters have short memories (Conconi et al. 2014). We also check the robustness of our findings to the inclusion of accidents over a longer period (1995–1998) before the measurement of trade barriers.[21] In addition, we conduct a placebo analysis using future accidents instead of past accidents as the explanatory variable.

Our focus is on the interaction term (γ_2), which captures whether trade barriers are different for sectors whose industrial accidents happen during times of high news pressure, i.e., when media attention is low for exogenous reasons. Results in the literature indicate that news pressure affects voter information about disasters and fatalities (Eisensee and Strömberg 2007; Durante and Zhuravskaya 2018). In our case, if fatal accidents in an industry happen during times of low news pressure, implied media coverage of that industry increases. As a consequence, all information about the industry becomes more accessible to voters—including information about sector-specific policies such as trade barriers. If instead accidents happen on days of high news pressure, media coverage is lower and voters are less likely to learn or recall any additional information about the affected industry. Proposition 2 predicts that this lower voter knowledge about the industry should lead to higher trade barriers. Our key theoretical prediction of a Dracula Effect then means that the coefficient γ_2 should be positive.

We consider alternative lags of news pressure ($k = 0, 1, ..., 4$) to address variation in the timing of media coverage. Industrial accidents are likely to be covered with a brief lag after they occur. In particular, newspapers remain an important source of local news, and their coverage necessarily has at least a one-day lag.[22] Slightly longer lags, and at least a one-day lag in broadcast coverage as well, could also be expected because reporters may need time to prepare a story—for instance to interview relatives of the victims or officials conducting an investigation.[23] As a consequence, we expect γ_2 to be positive for the first lag ($k = 1$) and perhaps some subsequent lags ($k > 1$), but not for the day itself when industrial accidents occurred ($k = 0$).

Our identifying assumption is that, while the aggregate number of accidents in an indus-

[20]We do not include news pressure directly because it has no sector-level variation, so it is absorbed by the constant term (γ_0).

[21]We chose four years as a longer period as it is the length of the political cycle in the United States.

[22]Based on survey data on media consumption, the Federal Communications Commission (2003) estimated that in the period we consider Americans obtained local news in roughly similar proportions from television (33.8%), newspapers (28.8%) and the radio (24.9%), with the internet a distant fourth source (12.5%).

[23]This kind of in-depth reporting can also make follow-up coverage more salient and emotionally compelling than a same-day report of dry facts alone (Durante and Zhuravskaya 2018).

try may be endogenous, it is plausibly exogenous whether each accident happens to coincide with unrelated newsworthy events that distract the attention of the media and their audience. In other words, the interaction between fatal accidents and news pressure at the daily level is unrelated to sector-specific unobserved determinants of trade policy.[24] This assumption is credible because other determinants of trade policy identified by the literature, and particularly the organization of an industry lobby (Grossman and Helpman 1994; Goldberg and Maggi 1999), are slow-moving and unlikely to be affected by day-to-day changes in news pressure.

In addition to our distinctive prediction about γ_2, Proposition 2 also predicts that the coefficients γ_3, γ_4 and γ_5 should all be negative. Trade barriers should be lower in sectors with more numerous factor owners, higher import penetration and higher import-demand elasticities. Our model shares this latter set of predictions with almost all theories of the political economy of protectionism.

We estimate the log-linearized model in Equation (13) using Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimation technique. Their estimator has several desirable properties. Most important, it deals rigorously with observations for which the dependent variable equals zero. This is a common problem for international trade data in general, and in particular for the estimates of ad-valorem equivalents of trade barriers that we rely on.[25] The estimator also accounts efficiently for heteroskedasticity; it yields coefficient estimates that can be properly interpreted as elasticities; it enables the consistent estimation of a constant-elasticity model, with weak conditions on the error term; and its implementation is simple and transparent, since it is numerically identical to Poisson pseudo-maximum-likelihood estimation. We also check the robustness of our results to the even simpler strategy of estimating a log-linear model by ordinary least squares after adding a constant to the dependent variable to get rid of zeroes.

3.2 Data

Table 1 reports summary statistics for all the variables we use to estimate Equation (13).

3.2.1 Trade Policy

To study the pattern of trade policy across industries, we need an accurate measure of effective protection for each sector. Protectionist policies in the United States overwhelmingly

[24] To estimate γ_1 consistently too, we would need the more stringent identifying assumption that unobserved determinants of trade policy are unrelated to the overall frequency of industrial accidents. As discussed above, this assumption is likely to be unwarranted.

[25] In our sample, non-tariff barriers are nil for 30 out of 85 manufacturing industries.

Table 1: Summary Statistics

	Obs	Mean	Std. Dev.	Min	Max
A. By 4-digit NAICS industry group					
Non-tariff barriers (simple average), 1999	85	0.113	0.202	0.000	1.288
Log (Employment), 1999	85	4.904	0.885	2.715	6.757
Log (Import penetration), 1999	85	-1.906	1.175	-5.244	1.326
Log (Import demand elasticity)	85	0.499	0.558	-0.528	2.316
Number of fatal accidents, 1998	85	3.506	4.286	0.000	23.00
Number of fatal accidents × News pressure on the next day, 1998	85	27.53	35.55	0.000	199.4
B. By 6-digit NAICS industry					
Non-tariff barriers (simple average), 1999	389	0.105	0.245	0.000	2.077
Log (Employment), 1999	389	3.047	1.037	-0.105	6.312
Log (Import penetration), 1999	389	-1.899	1.656	-9.755	3.152
Log (Import demand elasticity)	389	0.394	0.801	-3.422	3.801

Notes: Non-tariff barriers from Kee et al. (2009); employment and import penetration from the US Census Bureau; import demand elasticity from Kee et al. (2008); fatal accidents by 4-digit NAICS industry group, from OSHA reports; daily news pressure from Eisensee and Strömberg (2007).

take the form on non-tariff barriers. As a consequence, the key step in constructing a measure of effective protection is aggregating across disparate policy instruments such as quotas, antidumping duties and technical regulations. We rely on Kee et al.'s (2009) state-of-the-art estimates of the ad-valorem tariff equivalent of non-tariff barriers for each tariff line in 149 countries at the turn of the twenty-first century. For the United States, the data underlying their estimates record non-tariff measures in 1999, which is therefore the year for which we can accurately measure U.S. trade policy for different industries.[26]

Following the consensus in the literature, in our baseline specification we focus on non-tariff measures because U.S. tariffs are set in international negotiations and are thus unlikely to be well explained by a model of domestic political economy alone (Goldberg and Maggi 1999; Gawande and Bandyopadhyay 2000; Matschke and Sherlund 2006; Bombardini 2008). We also check the robustness of our results to measuring protection as the sum of the ad-valorem equivalent of non-tariff barriers and the ad-valorem equivalent of effective applied tariffs, obtained from the UNCTAD TRAINS database via WITS.

Trade barriers are reported at a high level of disaggregation, by 6-digit Harmonized

[26] There are no accurate panel data describing the evolution of U.S. trade policy for each sector over the years before or after 1999. Empirical studies of the effects of lobbying on the pattern of U.S. trade policy have focused on explaining the cross-section of coverage ratios for non-tariff barriers in the single year 1983 (Goldberg and Maggi 1999; Gawande and Bandyopadhyay 2000; Matschke and Sherlund 2006; Bombardini 2008). Coverage ratios were the only data available for 1983. They are a very imprecise proxy for trade barriers, defined as the share of tariff lines within each industry that are affected by some non-tariff barriers. For 1999, instead, Kee et al. (2009) provide precise estimates of ad-valorem tariff equivalents, taking into account the differential impact of different non-tariff barriers.

System product. However, domestic employment, output and thus import penetration are reported only at the coarser NAICS industry level.[27] As a consequence, we need to aggregate product-level trade barriers to the sector level. In our benchmark specification, we use the simplest aggregation by taking unweighted averages of non-tariff barriers across all products in a sector. We check the robustness of our results to using import-weighted averages or the theoretically more sophisticated, but potentially noisier, trade restrictiveness indices computed by Kee et al. (2009).

3.2.2 Industry Characteristics

We use Kee et al.'s (2008) estimates of import-demand elasticities by country and tariff line, based on trade data for the period 1988–2001. These are also the values that underpin the estimation of non-tariff barriers by Kee et al. (2009).[28]

We obtain employment and output for each U.S. manufacturing industry in 1999 from the Annual Survey of Manufactures via the NBER-CES Manufacturing Industry Database, and U.S. imports in each tariff line in 1999 from official import statistics via Schott's (2008) dataset. Import penetration is measured as the ratio of the CIF value of general imports (at international prices, excluding U.S. duties) to the total value of shipments by U.S. establishments (at domestic prices).

3.2.3 Industrial Accidents

We use data on industrial accidents obtained from reports by the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor. We downloaded investigation summaries from the OSHA Fatality and Catastrophe Investigation Search, and we retrieved and recorded the date of each accident and the sector of the company at which it occurred.[29] We restrict our analysis to accidents in which at least one employee was killed because non-fatal accidents are unlikely to be newsworthy enough to generate media coverage.

OSHA data report the sector of each company and each accident at the detailed industry level.[30] We aggregate the data by 4-digit industry groups because a non-technical audience

[27] Domestic variables are reported by 6-digit NAICS industry, but in a few cases tariff lines cannot be assigned to a single 6-digit NAICS industry. In those cases, the analysis of trade data is based on a 6-digit "baseroot" that merges several industries within the same NAICS industry group (Pierce and Schott 2012).

[28] Following the authors' practice, when a U.S.-specific estimate is unavailable for a given tariff line, we use the average elasticity estimated for that tariff line across all high-income countries.

[29] OSHA Fatality and Catastrophe Investigation Summaries are available online at `https://www.osha.gov/pls/imis/accidentsearch.html`.

[30] Before 2003 the data is reported by 4-digit SIC industry, which is equivalent to the 6-digit NAICS industries for which employment and output are recorded by the Annual Survey of Manufactures since 1997.

necessarily perceives sectors to be distinct at a relatively coarse level. E.g., we could expect public attention to be focused separately on the plastics sectors (industry group 3261 – Plastics Product Manufacturing) or on the rubber sector (industry group 3262 – Rubber Product Manufacturing), but surely not to distinguish disaggregated subsets of the plastics sector (e.g., industry 326111 – Plastics Bag and Pouch Manufacturing, as opposed to industry 326112 – Plastics Packaging Film and Sheet Manufacturing). In 1998, 20 4-digit industries had approximately no fatal accidents, while 65 had some.[31]

3.2.4 News Pressure

We proxy for newsworthy events through Eisensee and Strömberg's (2007) measure of daily news pressure. This variable is constructed as the median length of the top three segments in the ABC, CBS and NBC nightly news programs. As both Eisensee and Strömberg (2007) and Durante and Zhuravskaya (2018) show, news pressure is higher when some important events happen, while in the absence of major news the channels choose to cover a large number of smaller, less important stories. For example, during 1998, the highest news pressure was recorded on December 17, during the bombing of Iraq by joint U.S. and U.K. forces in Operation Desert Fox. The lowest news pressure was on October 3, when the main piece of news was a meeting of the leaders of the world's biggest oil companies to discuss industry restructuring and the geopolitics of petroleum in Vienna——a meeting at which nothing important was decided.

3.3 Empirical Results

3.3.1 Baseline Results

Table 2 reports our baseline estimates of Equation (13). The interaction between the number of fatal industrial accidents and news pressure on the first day after their occurrence has a positive and statistically significant estimated effect (column 2). This interaction term implies that, as predicted, trade barriers are higher when the implied coverage of accidents

We cross-walked OSHA data to the contemporary 1997 NAICS classification, which was designed to provide a more accurate portrait of US manufacturing in the period we study. However, our results are robust to cross-walking instead the trade and industry data to the 1987 SIC classification that OSHA kept using.

[31] The number of fatal accidents in each industry is an approximation because the concordance between SIC and NAICS industries is imperfect. When OSHA recorded an accident in a SIC industry split into multiple NAICS industries, we assigned each NAICS industry a probability of suffering the accident equal to its share of employment in the SIC industry. The approximation turns out to be slight because most SIC sectors correspond mainly, if not exclusively, to a single NAICS sector. Thus, we know 13 industries certainly had no accidents and 50 certainly had some. Of the remainder, 7 had an estimated number of accidents below 0.09, and 15 above 0.72.

Table 2: Non-Tariff Barriers, Industrial Accidents and Daily News Pressure

VARIABLES	Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 1998	0.049	-0.532***	-0.785***	0.371	0.320
	[0.260]	[0.206]	[0.286]	[0.351]	[0.319]
Sum (Number of fatal accidents × News pressure on the same day), 1998	-0.008				
	[0.034]				
Sum (Number of fatal accidents × News pressure on the next day), 1998		0.061***			
		[0.023]			
Sum (Number of fatal accidents × News pressure 2 days later), 1998			0.092***		
			[0.033]		
Sum (Number of fatal accidents × News pressure 3 days later), 1998				-0.050	
				[0.046]	
Sum (Number of fatal accidents × News pressure 4 days later), 1998					-0.043
					[0.046]
Log (Employment), 1999	-0.051	-0.070	-0.075	-0.068	-0.119
	[0.205]	[0.199]	[0.197]	[0.211]	[0.212]
Log (Import penetration), 1999	-0.400*	-0.420*	-0.366*	-0.390*	-0.439*
	[0.230]	[0.231]	[0.195]	[0.211]	[0.250]
Log (Import demand elasticity)	-0.582	-0.689	-0.722*	-0.537	-0.680
	[0.437]	[0.455]	[0.426]	[0.358]	[0.457]
Observations	85	85	85	85	85
Effect of accidents at the 25th percentile of news pressure	-0.003	-0.157**	-0.215**	0.062	0.053
Effect of accidents at median news pressure	-0.012	-0.087	-0.107*	0.004	0.006
Effect of accidents at the 75th percentile of news pressure	-0.026	0.014	0.047	-0.080	-0.065

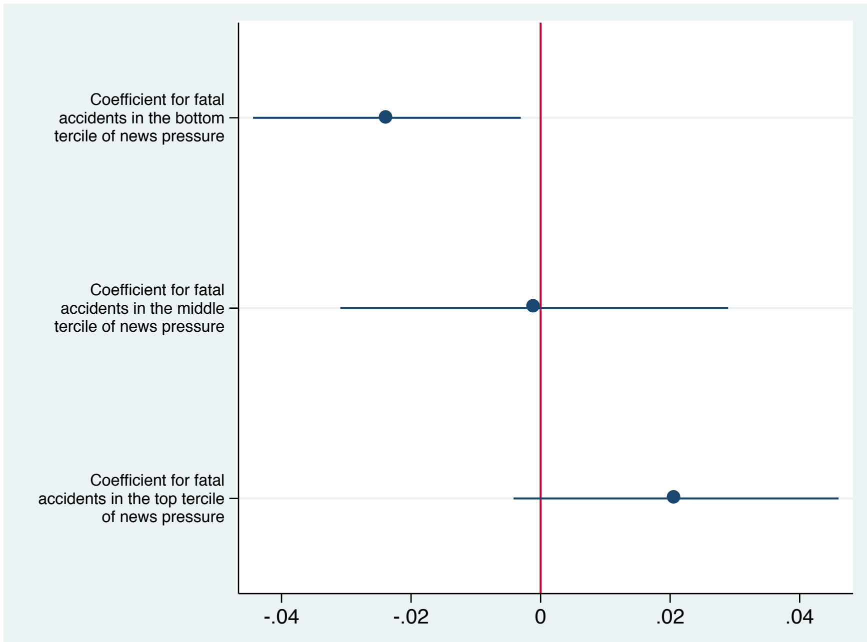
Notes: Non-tariff barriers from Kee et al. (2009); fatal accidents from OSHA reports; daily news pressure from Eisensee and Strömberg (2007); employment and import penetration from the US Census Bureau; import demand elasticity from Kee et al. (2008). Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimation. Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

is crowded out by higher news pressure. The interaction term for the second day after an accident remains positive and significant (column 3), while the coefficients for the third and fourth days fade away (columns 4 and 5).

To facilitate interpretation, the last rows of Table 2 report the estimated aggregate effects of accidents that took place before days with distinct percentiles of news pressure. The magnitude of the causal effect of heightened media scrutiny of a sector can be assessed by comparing the effects at lower and higher percentiles of news pressure. The differential effect of one fatal accident occurring at the 25th instead of the 75th percentile of news pressure reduces trade barriers by 17.1% to 26.2% (the estimates from column 2 and column 3, respectively). For the average level of our dependent variable, ad-valorem tariff equivalents of non-tariff barriers (11.3 percentage points), this differential effect would correspond to a reduction by 2 to 3 percentage points.[32] In sum, these results provide empirical support for

[32]The differential effect of accidents occurring at lower and higher news pressure is identified under the

Figure 3: Estimated Impact on Non-Tariff Barriers of Accidents Occurring in Different Terciles of Next-Day News Pressure



Notes: Coefficient estimates and 90% confidence intervals from a regression of non-tariff barriers in 1999 on the number of fatal accidents that occurred in 1998 and had next-day news pressure in each tercile. Non-tariff barriers from Kee et al. (2009); fatal accidents from OSHA reports; daily news pressure from Eisensee and Strömberg (2007).

our main theoretical prediction of a Dracula Effect.

Figure 3 illustrates a coarser version of these findings graphically. If fatal industrial accidents in an industry happen in times of low news pressure, so the media are likely to bring attention to the sector, the industry subsequently faces lower non-tariff barriers. In contrast, accidents that take place in times of medium or high news pressure are not significantly related to trade barriers.

The coefficient estimates for import penetration, import demand elasticity, and industry size in terms of employment are all consistently negative, as predicted theoretically. Some of these estimates are too noisy to be statistically significant, but they are never precisely estimated zeroes. Overall, the empirical findings in Table 2 and Figure 3 are consistent with the theoretical results in Proposition 2. They particularly confirm our main prediction:

plausible assumption that the synchronicity of accidents and news pressure is exogenous. However, as we discussed above in Section 3.1, the aggregate effect of accidents occurring at any given level of news pressure is identified under the much stronger and less realistic assumption that the occurrence of accidents is itself uncorrelated with unobserved determinants of trade policy.

higher implied public information about an industry leads to lower trade barriers.

3.3.2 Robustness Checks

In this section, we summarize the results of several robustness checks that make sure our baseline result is stable across different specifications. The corresponding tables are reported in the Appendix.

Placebo estimates. To check that our findings are not driven by unobserved heterogeneity, we estimate a placebo specification that tries to explain non-tariff barriers (measured in 1999) not with past industrial accidents but with future ones. Table A1 presents the estimates of such placebo specifications, using accidents in 2000 for Panel A and accidents in 2001 for Panel B. The coefficients for employment, import penetration and import demand elasticity remain negative as predicted, and significant in some specifications. The key coefficients for the interaction between accidents and news pressure on the next day and two days later flip signs in both panels, and they are always smaller in absolute value than the corresponding standard error. There is even a marginally significant negative (instead of positive) estimate of one coefficient for $\sum_d i_{gd} n_{d+3}$ for industrial accidents in 2000. Overall, the results in Table A1 are consistent with the premise that our baseline results capture the causal impact of implied media coverage on trade barriers, rather than being driven by unobserved industry characteristics explaining both.

Stability of the coefficients. A potential concern with our baseline specification in Equation (13) is that it includes a standard set of controls. These variables are grounded in theory, but they might serve as "bad controls" because they could depend on media scrutiny through its effect on policies other than trade barriers. By the logic of our Dracula Effect, increased attention to an industry is likely to affect not only trade policy, but also other sector-specific policies aimed at increasing the rents of industry insiders at the expense of consumers and taxpayers. E.g., greater voter awareness of a sector could entail political pressure to close its tax loopholes or crack down on its anti-competitive practices. Such endogenous policy changes would turn industry employment and output (and thus import penetration and possibly import-demand elasticity) into intermediate outcomes, so including them as controls might bias our coefficient of interest. To make sure that this concern does not have a material effect on our results, we check how our coefficients of interest change with the gradual addition of control variables. Table A2 shows that the interaction terms between the number of fatal accidents and news pressure on the next day or two days later are stable across specifications, and their statistical significance is virtually unaffected by the addition or omission of particular controls. Thus, we do not see evidence of any bias caused by the inclusion or exclusion of our control variables.

Accidents over 1995–98. Our baseline specification estimates the impact of implied media scrutiny of an industry during 1998 on its protection in 1999. Table A3 reports estimated effects of the implied coverage of accidents over a longer four-year period—the full length of a political cycle in the United States. The results are qualitatively analogous, although the coefficients are systematically smaller and less significant (even if standard errors are somewhat smaller too). This attenuation is consistent with the premise that voters have short attention spans and short memories (Conconi et al. 2014). As a consequence, policy for an industry reflects its recent public scrutiny more than temporary media coverage a few years previously.

OLS estimates. Our baseline specification uses Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimator. Table A4 checks the robustness of our results to the less sophisticated but simpler strategy of using ordinary least squares, dealing with the problem of zeroes by adding a small constant to the dependent variable before taking its logarithm.[33] The two estimators yield coefficient estimates for the key interaction effect that are equally significant and quantitatively very close.

Import elasticity on the left-hand side. Two of the variables we use in estimating Equation (13) are not directly observed in the data, but rather estimated in previous empirical studies. The first is the dependent variable: Kee et al.'s (2009) estimates of the ad-valorem tariff equivalents of non-tariff barriers. The second is an explanatory variable: Kee et al.'s (2008) estimates of import demand elasticities. Concerns with measurement error in older elasticity estimates prompted Goldberg and Maggi (1999) to move them to the left-hand side of their estimating equation. Table A5 replicates this strategy, which also imposes the theoretically predicted unit elasticity of trade barriers to import demand elasticity. Coefficient estimates for the key interaction effect are almost identical to those in our baseline estimation.

Estimates across 6-digit industries. Since our main variable of interest—implied public awareness of an industry—must vary at a relatively coarse scale, our baseline specification takes the conservative approach of estimating Equation (13) across 4-digit NAICS industry

[33] Table A4 reports OLS estimates adding one percentage point to the ad-valorem equivalent of non-tariff barriers, i.e., with the dependent variable: $\ln(t+0.01)$. Our results are qualitatively robust, and always have a significance level of at least 5%, if we use instead $\ln(t+0.001)$, $\ln(t+0.10)$, or $\ln(t+1.00)$.

groups. Table A6 exploits instead the finer variation in trade barriers, employment, import penetration and import demand elasticity by detailed 6-digit NAICS industry. We cluster standard errors by industry group, the level at which our key measure of industrial accidents varies. The coefficient estimates remain very similar to those in Table 2, in terms of both magnitude and statistical significance.

Alternative measures of non-tariff barriers. Trade barriers are set and measured at the detailed product level. As a consequence, measuring protection at the industry level poses an aggregation problem. In our baseline specification, we adopt the simplest strategy of aggregating by an unweighted average across products within a sector. Table A7 shows that our findings are almost unchanged when using three alternative aggregation strategies that address the obvious shortcoming of a simple average, by taking into account that some of an industry's products may be more important than others.

Panel A reports results for weighted averages using as weights the import shares of each product in the total imports of the sector. Import-weighting, however, mechanically underestimates trade barriers by assigning low weights to the most protected and therefore least imported products. The other two panels report results for theoretically correct second-order approximations following Kee et al.'s (2009) methodology, whose downside lies in relying intensively on estimated import demand elasticities. Panel B considers the "Overall Trade Restrictiveness Index," defined as the uniform tariff rate that, if applied to all products in the industry instead of their actual trade barriers, would yield the same aggregate volume of industry imports; and computed as: $OTRI_g = \sum_{h \in g} p_h^* m_h e_h t_h / \sum_{h \in g} p_h^* m_h e_h$. Panel C considers the "Trade Restrictiveness Index," defined as the uniform tariff rate that, if applied to all products in the industry instead of their actual trade barriers, would yield the same aggregate contribution to domestic welfare from the industry; and computed as: $TRI_g = \sqrt{\sum_{h \in g} p_h^* m_h e_h t_h^2 / \sum_{h \in g} p_h^* m_h e_h}$. In all three specifications, our key results are robust to using these alternative measures of trade barriers.

Tariffs and total protection. Non-tariff barriers are the main policy instrument used by the United States to protect domestic manufacturing industries from foreign competition. They are also the instrument that best fits a model of unilateral domestic policy-making like the one presented in Section 2. Tariffs have long been reduced to a secondary role: on average, they are below 5% whereas the ad-valorem equivalent of non-tariff barriers is above 10%. Most important, tariffs are set cooperatively in WTO negotiations. In light of these considerations, the empirical literature since Goldberg and Maggi (1999) has consistently focused on non-tariff barriers alone. Our baseline specification follows this standard approach.

Theoretically, however, preferences for non-tariff barriers should depend on the underlying structure of tariffs as agreed upon in international trade negotiations. To check that our empirical findings are robust to this consideration, Panel A of Table A8 estimates Equation (13) with total trade protection as the dependent variable, adding tariffs to the ad-valorem equivalent of non-tariff barriers. The results indicate that overall protection and non-tariff barriers alone depend similarly on industrial accidents and their interactions with news pressure. This similarity already suggests, as Panel B confirms explicitly, that conversely there seems to be no effect of implied media coverage on tariffs. This negative result is consistent with the theoretical prior that domestic political pressures alone are a poor predictor of policies set cooperatively in international agreements.

3.3.3 Discussion

Our results robustly show that industries face lower trade barriers if they experienced industrial accidents that happened to occur at times of lower news pressure. This pattern is indicative of a Dracula Effect: media scrutiny of an industry helps dissuade politicians from granting that industry welfare-reducing protection. Lack of data on voter knowledge about different industries, however, prevents us from tracing the exact mechanism of voter learning that mediates this impact of implied media coverage on policy outcomes.[34] In particular, we do not know if voters are becoming better informed about enacted and proposed policies for the industry, or rather about the full consequences of those policies. Either way, our findings indicate that greater voter knowledge leads to more efficient policy.

The key consideration that underpins this interpretation of our results is that media coverage of an industry translates into greater public awareness of the industry and greater accessibility of information about the industry in people's memory. This is an instance of the agenda-setting and priming role of the media, which is firmly established by studies of mass communication in general and political communication in particular (e.g., Eagly and Chaiken 1993; Scheufele and Tewksbury 2007). Exposure to news coverage makes an issue more salient for the public. As a result, people's judgements and decisions—including political judgments and voting decisions—are then more forcefully determined by the associations this issue brings to mind, as predicted by the leading social-psychology theory of memory-based information processing and associative memory (e.g., Tversky and Kahneman 1973; Kahana 2012).

This heightened accessibility does not depend on the specific details of media coverage.

[34] To the best of our knowledge, no survey asked about respondents' knowledge of and attitudes towards trade policies for particular industries during the period we study.

As Scheufele and Tewksbury (2007, p. 14) emphasize, "it is not information *about* the issue that has the effect; it is the fact that the issue has received a certain amount of processing time and attention that carries the effect." E.g., if consumer awareness of a company and its products is low to begin with, even negative publicity ends up having a positive effect on sales (Berger et al. 2010). The primary, persistent effect of bad publicity is to make people notice a company and pay attention to its products. Memory of the specific publicized defects is instead secondary and short-lived. Analogously, media coverage of fatal accidents in an industry should have as its main and longer-lasting effect increased public awareness not of those specific accidents, but rather of workplace safety across all industries, and of the affected industry across all domains.

The most immediate interpretation of such industry-focused priming corresponds exactly to the theoretical mechanism we described in Section 2. News coverage of an industry makes policies targeted to that industry more salient. Information about these policies becomes more accessible to voters' mind, and they are more likely to take it into account in their political behavior. Just like positive spillovers from negative publicity for lesser-known firms, this accessibility effect may be particularly important for secondary policy issues such as trade policy. Industry-specific policies typically have low salience for anyone but industry insiders. Hence, consumers are not only unwilling to exert effort to learn about them, as in Proposition 1; they are also likely to forget relevant information they may have come across.

In this light, the sufficient statistic for consumer knowledge in our model (θ_g) represents the share of consumers who have not only heard about policy proposals for a sector, but also recall them when choosing which party to support. Media coverage of industrial accidents need not increase media coverage of industrial policy, and of trade policy specifically. Nonetheless, it does raise public knowledge of it by priming the public to retain in memory, recall and take into account available information about sector-specific policies.

Moreover, heightened awareness of an industry may also lead voters to a more accurate understanding of the downsides of protecting it from foreign competition. In our model we adopted the standard assumption that all voters rationally anticipate all equilibrium consequences of trade policy. In practice, however, voter ignorance could take the form of ignoring or disregarding the negative impact of trade barriers on consumer welfare. Once again, these costs seem typically less salient than the benefits to industry insiders. Political rhetoric over protectionism focuses overwhelmingly on its benefits to workers rather than its costs to consumers, let alone its general-equilibrium consequences. Greater accessibility of information about an industry could help voters see through such propaganda and come closer to economists' more accurate and more critical assessment of trade barriers.

The potential for this alternative learning channel is demonstrated by Stantcheva's (2020) experimental evidence. Participants in a large-scale online survey report lower support for protectionism after watching instructional videos that explain the distributional and efficiency consequences of trade policy. This finding indicates that voter opposition to trade barriers in an industry should rise if media priming prompts people to think more carefully about their consequences.

Finally, we should also acknowledge a potential countervailing effect of news coverage that our theory did not consider explicitly. Learning about industrial accidents may change voter preferences as well as voter information. Our model adopted the standard simplifying assumption that voters are motivated purely by their own self-interest. In reality, however, other-regarding preferences are also likely to play a role in voting decisions. Media coverage of industrial accidents could then influence voter altruism. In particular, news of workplace fatalities seems likely to prompt more widespread sympathy for and solidarity with workers in the affected industry.

Such a heightened altruistic concern for workers' welfare would then lead to higher public support for trade barriers that raise their earnings. Hence, protection for the industry would rise in equilibrium. Our evidence robustly points to the opposite outcome: implied media coverage of industrial accidents lowers trade barriers rather than raising them. This empirical finding is hard to explain other than as a Dracula Effect arising from greater voter awareness of policy for the industry. However, it does not rule out a simultaneous role for greater voter sympathy for workers in the industry.

The simplest possibility is that more widespread altruism towards workers in an industry attenuates the effect of more widespread knowledge about policy for the industry, but does not overturn it. This ranking of the two effects is consistent with Berger et al.'s (2010) experimental evidence on negative advertising, which shows that changes in valence are shorter-lived than changes in awareness. Consumers quickly forget the publicized defects of a product, but retain a heightened memory of its existence and end up buying it. Likewise, sympathy for workers in an industry could quickly fade, while voters retain a heightened memory of the overall welfare-reducing consequences of protecting the industry.

A more optimistic possibility is that the two effects play out as complements rather than substitutes. Economists have long understood that trade barriers are a particularly inefficient way of making transfers to industry insiders. To the extent that better information helps the general public grasp this inefficiency too, it should lower popular support for protectionism irrespective of preferences for helping workers exposed to foreign competition. Greater altruism towards those workers should increase instead popular support for more efficient policies that redistribute towards them, such as trade adjustment assistance. This hopeful interpretation is consistent with Stantcheva's (2020) online experiment, which finds that better knowledge of the consequences of trade policy makes people more favorable towards trade openness, but also towards non-protectionist measures to compensate negatively affected workers.

4 Conclusion

We have presented a model of electoral competition in which producers systematically exert disproportionate influence over trade policy for their own industry as a result of their superior information. We have shown that a sector-specific knowledge gap emerges endogenously because producers have incentives to acquire information about their sector, whereas consumers only receive information exogenously as byproduct of media consumption. As a result, politicians maximize their popularity with voters by offering protection to all industries—even at the cost of Pareto inefficiency.

Our main contribution has been to derive theoretically and confirm empirically a Dracula Effect: greater public information about an industry causes a decline in its trade barriers, bringing its trade policy closer to the welfare optimum. Exploring this Dracula Effect for policies beyond protectionism seems a fruitful direction for future research, especially as growing inequalities are making distributive policies more salient in many countries. Our empirical methodology of identifying implied media coverage through the joint timing of news pressure and sector-specific incidents should also prove helpful to study the impact of heightened public scrutiny on other industry- or firm-specific policies that are typically noticed and understood only by their beneficiaries.

Our theory not only shows that a lack of public information can make inefficient protectionism popular even when everyone would benefit from freer trade. It also suggests a strategic rationale for politicians to enact redistribution through inefficient instruments. Producers acquire an information advantage over consumers precisely because trade barriers distort prices and investment decisions. The very inefficiency of protectionist policy is what gets it noticed by its beneficiaries and thus makes it popular. This novel result complements the prior finding that, symmetrically, inefficient redistributive measures may be preferred because they are more opaque to consumers and taxpayers bearing their cost (Magee et al. 1989; Coate and Morris 1995; Glaeser and Ponzetto 2014).

We have focused in this paper on an environment in which all producers can acquire full information about their industry at a small effort cost, and therefore choose to do so. Relaxing this assumption seems a promising avenue for further work studying variation in producer information within our framework. While we have shown that greater public information induces better policy, an important caveat is that an increase in the information of special-interest groups alone would lead instead to worse policy capture. Two applications seem particularly worth exploring, both theoretically and empirically.

First, voter information could vary not only across issues, but also across parties. In particular, a party's supporters may be more informed about its proposals than its rival's (Glaeser et al. 2005). A party with privileged information links to producers in a sector—e.g., because of the joint geography of employment in the industry and support for the party—would have electoral incentives to support higher trade barriers for the sector.

Second, a special-interest group could acquire privileged information through the activities of an organized industry lobby. Increasing group members' information would provide a mechanism for lobbies to gain control over policy without having to purchase it through costly campaign contributions. Consistent with this suggestive implication of our framework, providing information to group members is among the main activities of industry lobbies (Schlozman and Tierney 1986; Grossman and Helpman 2001). This relatively understudied channel of lobbying influence highlights the complementarity between our results and the classic theory of tariff formation based on lobbying (Grossman and Helpman 1994).

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A Proofs

A.1 Proof of Propositions 1 and 2

We solve the game by backwards induction, starting with producers' hiring decisions and voters' voting decisions given the international prices $\mathbf{p}^*$, the policy proposals $\left(\mathbf{p}^L, \mathbf{p}^R\right)$, and the distribution of information determined earlier in the game.

Agents' information is described by a probability distribution function for each group j, such that $n_\Omega^j \geq 0$ denotes the share of group-j members who have learned the triplet $\left(p_g^*, p_g^L, p_g^R\right)$ for all sectors $g \in \Omega$ but no others. $\sum_{\Omega \in 2^{\mathcal{G}}} n_\Omega^j = 1$, where $2^{\mathcal{G}}$ denotes the power set of the set of sectors $\mathcal{G} = \{1, \ldots, G\}$. Let $\Theta_g^j = \sum_{\Omega \in 2^{\mathcal{G}}: g \in \Omega} n_\Omega^j$ denote the share of members of group j who have learned $\left(p_g^*, p_g^L, p_g^R\right)$ for a particular sector g (and any others).

A.1.1 Hiring and Voting

An agent i with factor endowment (ℓ^j, κ^j) and information set Ω hires an amount of labor that predetermines their individual output $\kappa_g^j \Pi_g' \left(\mathbb{E}_\Omega \left(p_g^W\right)\right)$. Their expected policy value if party P wins the election P then equals:

$$\begin{aligned}\mathbb{E}_\Omega \left[V^j \left(\mathbf{p}^P\right)\right] = \ell^j + \sum_{g=1}^{G} \left[\frac{1}{N} \mathbb{E}_\Omega \left(p_g^* q_g\right) - \kappa_g^j \Lambda_g \left(\mathbb{E}_\Omega \left(p_g^W\right)\right)\right] \\ + \sum_{g=1}^{G} \left\{\mathbb{E}_\Omega \left(p_g^P\right) \kappa_g^j \Pi_g' \left(\mathbb{E}_\Omega \left(p_g^W\right)\right) - \frac{1}{N} \mathbb{E}_\Omega \left(p_g^P q_g\right) + \mathbb{E}_\Omega \left[\left(p_g^P - p_g^*\right) c_g \left(p_g^P\right) + s_g \left(p_g^P\right)\right]\right\},\end{aligned} \tag{A1}$$

where $\mathbb{E}_\Omega$ denotes the expectation conditional on the values $\left(p_g^*, p_g^L, p_g^R\right)$ for all sectors $g \in \Omega$ but no others.

The share of members of group j who vote for party R equals:

$$v_R^j = \frac{1}{2} + \frac{1}{2\bar{\psi}} \left\{\sum_{\Omega \in 2^{\mathcal{G}}} n_\Omega^j \mathbb{E}_\Omega \left[V^j \left(\mathbf{p}^R\right) - V^j \left(\mathbf{p}^L\right)\right] - \Psi\right\}, \tag{A2}$$

given the realization Ψ of the common preference shock. Party R wins an absolute majority of the votes if and only if:

$$\sum_{j=1}^{J} \alpha^j \sum_{\Omega \in 2^{\mathcal{G}}} n_\Omega^j \mathbb{E}_\Omega \left[V^j \left(\mathbf{p}^R\right) - V^j \left(\mathbf{p}^L\right)\right] > \Psi. \tag{A3}$$

A.1.2 Information Acquisition

With a continuum of voters, no individual can change the outcome of the election with a single vote. Thus, the distribution of p_g^W is independent of each individual's information. As a result, agent i's gain from adding a set of sectors Ω' to their existing information set Ω is:

$$\Delta^i_{\Omega'|\Omega} = \sum_{g=1}^{G} \kappa^i_g \mathbb{E}_\Omega \left\{ \mathbb{E}_{\Omega\cup\Omega'} \left[\pi_g \left(p^W_g, \mathbb{E}_{\Omega\cup\Omega'} \left(p^W_g \right) \right) \right] - \pi_g \left(p^W_g, \mathbb{E}_\Omega \left(p^W_g \right) \right) \right\}. \tag{A4}$$

This value is nil if agent i owns no specific factors: $\Delta^i_{\Omega'|\Omega} = 0$ if $\kappa^i_g = 0$ for all g.

Suppose instead agent i owns a positive amount $\kappa^i_g \geq \underline{\kappa} > 0$ of the specific factor for sector g. We focus on a symmetric equilibrium in which agents rationally expect convergent policy proposals $p^L_g = p^R_g = p_g$ for each sector they do not directly learn about. Therefore, agents understand $\left(p^L_g, p^R_g\right)$ as a sufficient statistic for p^W_g given $\left(\mathbf{p}^L, \mathbf{p}^R\right)$ because symmetric proposals for any other sector won't affect the parties' respective probabilities of victory. Thus, for agents who are informed about the sector whose specific factor they own, the value of any additional information is nil: $\Delta^i_{\Omega'|\Omega} = 0$ for all Ω' if $g \in \Omega$. Instead, if $g \notin \Omega$ the value of learning about one's own sector equals:

$$\Delta^i_{\{g\}|\Omega} = \kappa^i_g \mathbb{E}_\Omega \left[\pi_g \left(p_g, p_g \right) - \pi_g \left(p_g, \mathbb{E}_\Omega \left(p_g \right) \right) \right] = \kappa^i_g \left\{ \mathbb{E}_\Omega \left[\Pi_g \left(p_g \right) \right] - \Pi_g \left(\mathbb{E}_\Omega \left(p_g \right) \right) \right\} > 0, \tag{A5}$$

which is strictly positive unless p_g is deterministic because the profit function Π_g is strictly convex.

Thus, if no price p_g is deterministic there exists a threshold $\bar{\varepsilon} = \underline{\kappa} \min_{g,\Omega: g\notin\Omega} \{ \mathbb{E}_\Omega \left[\Pi_g \left(p_g \right) \right] - \Pi_g \left(\mathbb{E}_\Omega \left(p_g \right) \right) \} > 0$ such that, for all $\varepsilon \in (0, \bar{\varepsilon})$, in equilibrium all agents exert effort ε to learn about the sector (if any) whose specific factor they own, but no other. As a result, for factor owners $\Theta^j_g = 1$ if $\kappa^j_g > 0$, while for non-owners: $\sum_{j:\kappa^j_g = 0} \alpha^j \Theta^j_g = \left(1 - \alpha_g\right) \theta_g$.

A.1.3 Policy Proposals

For any distribution of the common preference shock Ψ, party R chooses $\mathbf{p}^R$ to maximize and party L to minimize the objective function:

$$\sum_{j=1}^{J} \alpha^j \sum_{\Omega \in 2^{\mathcal{G}}} n^j_\Omega \sum_{g=1}^{G} \mathbb{E}_\Omega \left\{ \begin{array}{c} \left[\kappa^j_g \Pi'_g \left(\mathbb{E}_\Omega \left(p^W_g \right) \right) - \frac{1}{N} q_g \right] \left(p^R_g - p^L_g \right) \\ + \left(p^R_g - p^*_g \right) c_g \left(p^R_g \right) - \left(p^L_g - p^*_g \right) c_g \left(p^L_g \right) + s_g \left(p^R_g \right) - s_g \left(p^L_g \right) \end{array} \right\}. \tag{A6}$$

In an interior symmetric equilibrium in which agents rationally expect convergent policy proposals $p^L_g = p^R_g = p_g$ for each sector they do not directly learn about, the equilibrium proposal p_g for each sector is characterized by the separable first-order condition:

$$\sum_{j=1}^{J} \alpha^j \Theta^j_g \left[\kappa^j_g \Pi'_g \left(p_g \right) - \frac{1}{N} q_g + \left(p_g - p^*_g \right) c'_g \left(p_g \right) \right] = 0, \tag{A7}$$

where rational informed agents perfectly foresee aggregate output:

$$q_g = N \sum_{j=1}^{J} \alpha^j \kappa^j_g \left[\Theta^j_g \Pi'_g \left(p_g \right) + \left(1 - \Theta^j_g \right) \Pi'_g \left(\mathbb{E} \left(p_g \right) \right) \right], \tag{A8}$$

given that agents either know exactly p_g or have no information about the sector and retain unconditional expectations $\mathbb{E}(p_g)$.

When all agents exert effort ε to learn about the sector (if any) whose specific factor they own, but no other, aggregate output is $q_g = \Pi_g'(p_g)$ and the first-order condition simplifies to:

$$(1-\theta_g)(1-\alpha_g)\Pi_g'(p_g) + [(1-\theta_g)\alpha_g + \theta_g]\left(p_g - p_g^*\right) N c_g'(p_g) = 0, \tag{A9}$$

recalling that the aggregate amount of each sector-specific factor is normalized to unity $(N\sum_{j=1}^{J}\alpha^j\kappa_g^j = 1)$.

An interior equilibrium must also satisfy the second-order condition for a maximum:

$$(1-\theta_g)(1-\alpha_g)\Pi_g''(p_g) + [(1-\theta_g)\alpha_g + \theta_g]\left[\left(p_g - p_g^*\right) N c_g''(p_g) + N c_g'(p_g)\right] < 0. \tag{A10}$$

Denoting the left-hand side by S_g to simplify notation, by the implicit-function theorem:

$$\frac{\partial p_g}{\partial \theta_g} = \frac{1-\alpha_g}{-S_g}\left[\left(p_g - p_g^*\right) N c_g'(p_g) - \Pi_g'(p_g)\right] < 0, \tag{A11}$$

and

$$\frac{\partial p_g}{\partial \alpha_g} = \frac{1-\theta_g}{-S_g}\left[\left(p_g - p_g^*\right) N c_g'(p_g) - \Pi_g'(p_g)\right] < 0. \tag{A12}$$

In light of Equations (8) and (9), the first-order condition can be rewritten as:

$$(1-\theta_g)\frac{\partial W_g}{\partial p_g} + \theta_g\frac{\partial W}{\partial p_g} = 0, \tag{A13}$$

for $\bar{p}_g = p_g$ and accordingly $q_g = \Pi_g'(p_g)$. Recalling furthermore that $t_g = \left(p_g - p_g^*\right)/p_g^*$ and $\partial m_g/\partial p_g = N c_g'(p_g)$, the condition can also be rewritten as:

$$t_g = \frac{(1-\alpha_g)(1-\theta_g)}{\theta_g + \alpha_g(1-\theta_g)}\frac{p_g q_g}{p_g^* m_g}\frac{m_g/p_g}{-\partial m_g/\partial p_g} > 0. \tag{A14}$$

A.2 Proof of Proposition 3

Any Pareto efficient policy can be characterized as: $\arg\max_{\mathbf{p}}\sum_{j=1}^{J}\omega^j\alpha^j N V^j(\mathbf{p})$, for an appropriate set of Pareto weights ω such that $\omega^j \geq 0$ and $\sum_{j=1}^{J}\omega^j\alpha^j = 1$.

When all agents are fully informed about the sector (if any) whose specific factor they own, every component of a Pareto efficient policy can be characterized as:

$$\arg\max_{p_g}\left\{\sum_{j=1}^{J}\omega^j\alpha^j N\kappa_g^j\pi_g(p_g, p_g) + \left(p_g - p_g^*\right) m_g(p_g, q_g) + N s_g(p_g)\right\}, \tag{A15}$$

and thus by the first-order condition:

$$\left(\sum_{j=1}^{J}\omega^j\alpha^j N\kappa_g^j - 1\right)\Pi_g'(p_g) + \left(p_g - p_g^*\right) N c_g'(p_g) = 0. \tag{A16}$$

For generic factor rewards and consumer utilities $\{\Pi_g, u_g\}_{g=1}^G$, equilibrium policy is Pareto efficient if and only if there exist Pareto weights such that:

$$\sum_{j=1}^{J} \omega^j \alpha^j N \kappa_g^j = \frac{1}{\alpha_g + (1-\alpha_g)\,\theta_g} \text{ for all } g = 1, 2, ..., G. \tag{A17}$$

This condition constrains only the Pareto weights for owners of sector-g human capital. Thus, equilibrium policy is Pareto efficient if and only if there are weights that satisfy the condition for each sector g, while also satisfying $\sum_{j=1}^{J} \omega^j \alpha^j = 1$ with a non-negative weight for individuals who own no sector-specific human capital.

Let $\hat{\kappa}_g = \max_j \kappa_g^j$ denote maximum per-capita ownership of sector-g human capital, and let $\hat{\alpha}_g$ denote the share of the population with precisely such ownership. The linearity of all constraints implies that equilibrium policy is Pareto efficient if and only if the Pareto weights that account for p_g through the influence of owners of $\hat{\kappa}_g$,

$$\omega^j = \frac{1}{\hat{\alpha}_g N \hat{\kappa}_g} \frac{1}{\alpha_g + (1-\alpha_g)\,\theta_g} \text{ if } \kappa_g^j = \hat{\kappa}_g, \text{ and } \omega^j = 0 \text{ if } \kappa_g^j \in (0, \hat{\kappa}_g)\,, \tag{A18}$$

are consistent with a non-negative weight for owners of no sector specific human capital:

$$\sum_{g=1}^{G} \frac{1}{\hat{\kappa}_g} \frac{1}{\alpha_g + (1-\alpha_g)\,\theta_g} \leq N. \tag{A19}$$

Welfare-maximizing policy is characterized by utilitarian weights $\omega^j = 1$ for all j. Thus, equilibrium policy is welfare-maximizing if and only if $\theta_g = 1$ for all g.

Table A1: Placebo Estimates

Panel A. Industrial accidents in 2000					
VARIABLES	Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 2000	0.488	-0.292	-0.010	0.382*	0.409
	[0.362]	[0.279]	[0.233]	[0.218]	[0.333]
Sum (Number of fatal accidents × News pressure on the same day), 2000	-0.064				
	[0.044]				
Sum (Number of fatal accidents × News pressure on the next day), 2000		0.032			
		[0.033]			
Sum (Number of fatal accidents × News pressure 2 days later), 2000			-0.002		
			[0.029]		
Sum (Number of fatal accidents × News pressure 3 days later), 2000				-0.050*	
				[0.027]	
Sum (Number of fatal accidents × News pressure 4 days later), 2000					-0.054
					[0.041]
Log (Employment), 1999	-0.085	0.026	-0.024	-0.099	-0.018
	[0.219]	[0.220]	[0.208]	[0.221]	[0.211]
Log (Import penetration), 1999	-0.405*	-0.394*	-0.391*	-0.366*	-0.370*
	[0.211]	[0.219]	[0.217]	[0.203]	[0.198]
Log (Import demand elasticity)	-0.669	-0.525	-0.571	-0.666	-0.549
	[0.447]	[0.446]	[0.439]	[0.447]	[0.380]
Observations	85	85	85	85	85
Effect of accidents at 25th percentile of news pressure	0.073	-0.086	-0.026	0.055	0.055
Effect of accidents at median news pressure	0.009	-0.054	-0.028	0.005	0.000
Effect of accidents at 75th percentile of news pressure	-0.108	0.004	-0.032	-0.087	-0.100

Panel B. Industrial accidents in 2001					
VARIABLES	Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 2001	0.410	0.219	-0.119	0.129	-0.001
	[0.292]	[0.316]	[0.265]	[0.326]	[0.247]
Sum (Number of fatal accidents × News pressure on the same day), 2001	-0.060				
	[0.037]				
Sum (Number of fatal accidents × News pressure on the next day), 2001		-0.038			
		[0.041]			
Sum (Number of fatal accidents × News pressure 2 days later), 2001			0.005		
			[0.033]		
Sum (Number of fatal accidents × News pressure 3 days later), 2001				-0.026	
				[0.042]	
Sum (Number of fatal accidents × News pressure 4 days later), 2001					-0.010
					[0.032]
Log (Employment), 1999	0.095	0.099	0.053	0.020	0.034
	[0.204]	[0.234]	[0.210]	[0.214]	[0.214]
Log (Import penetration), 1999	-0.427**	-0.400**	-0.426*	-0.454**	-0.444*
	[0.218]	[0.186]	[0.247]	[0.226]	[0.232]
Log (Import demand elasticity)	-0.442	-0.371	-0.508	-0.559	-0.534
	[0.418]	[0.358]	[0.461]	[0.439]	[0.442]
Observations	85	85	85	85	85
Effect of accidents at 25th percentile of news pressure	0.027	-0.020	-0.087	-0.040	-0.064
Effect of accidents at median news pressure	-0.054	-0.070	-0.081	-0.072	-0.076
Effect of accidents at 75th percentile of news pressure	-0.175**	-0.146	-0.071	-0.122	-0.095

Notes: Non-tariff barriers from Kee et al. (2009); fatal accidents from OSHA reports; daily news pressure from Eisensee and Strömberg (2007); employment and import penetration from the US Census Bureau; import demand elasticity from Kee et al. (2008). Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimation. Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A2: Gradual Introduction of Control Variables

Panel A. News pressure on the next day					
VARIABLES	Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 1998	-0.434**	-0.443**	-0.462**	-0.448**	-0.532***
	[0.186]	[0.189]	[0.182]	[0.191]	[0.206]
Sum (Number of fatal accidents × News pressure on the next day), 1998	0.052**	0.052**	0.052**	0.054**	0.061***
	[0.022]	[0.022]	[0.021]	[0.022]	[0.023]
Log (Employment), 1999		0.112			-0.070
		[0.188]			[0.199]
Log (Import penetration), 1999			-0.300		-0.420*
			[0.192]		[0.231]
Log (Import demand elasticity)				-0.366	-0.689
				[0.418]	[0.455]
Observations	85	85	85	85	85
Effect of accidents at 25th percentile of news pressure	-0.116**	-0.123**	-0.143**	-0.113*	-0.157**
Effect of accidents at median news pressure	-0.056	-0.063	-0.083*	-0.050	-0.087
Effect of accidents at 75th percentile of news pressure	0.030	0.023	0.003	0.040	0.014

Panel B. News pressures 2 day later					
VARIABLES	Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 1998	-0.727**	-0.750**	-0.656***	-0.829**	-0.785***
	[0.287]	[0.301]	[0.241]	[0.364]	[0.286]
Sum (Number of fatal accidents × News pressure 2 days later), 1998	0.087***	0.089***	0.076***	0.100**	0.092***
	[0.033]	[0.034]	[0.028]	[0.043]	[0.033]
Log (Employment), 1999		0.144			-0.075
		[0.193]			[0.197]
Log (Import penetration), 1999			-0.254		-0.366*
			[0.178]		[0.195]
Log (Import demand elasticity)				-0.465	-0.722*
				[0.447]	[0.426]
Observations	85	85	85	85	85
Effect of accidents at 25th percentile of news pressure	-0.191**	-0.203**	-0.186**	-0.212**	-0.215**
Effect of accidents at median news pressure	-0.089*	-0.099*	-0.097*	-0.095*	-0.107*
Effect of accidents at 75th percentile of news pressure	0.055*	0.048	0.030	0.072*	0.047

Notes: Non-tariff barriers from Kee et al. (2009); fatal accidents from OSHA reports; daily news pressure from Eisensee and Strömberg (2007); employment and import penetration from the US Census Bureau; import demand elasticity from Kee et al. (2008). Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimation. Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A3: Accidents over 1995–98

VARIABLES	Non-tariff barriers, 1999				
Number of fatal accidents, 1995-98	0.110	-0.246**	-0.049	-0.173	0.045
	[0.146]	[0.103]	[0.146]	[0.158]	[0.192]
Number of fatal accidents × News pressure on the same day, 1995-98	-0.016				
	[0.019]				
Number of fatal accidents × News pressure on the next day, 1995-98		0.030**			
		[0.013]			
Number of fatal accidents × News pressure 2 days later, 1995-98			0.005		
			[0.019]		
Number of fatal accidents × News pressure 3 days later, 1995-98				0.021	
				[0.021]	
Number of fatal accidents × News pressure 4 days later, 1995-98					-0.007
					[0.026]
Log (Employment), 1999	0.010	-0.028	-0.007	-0.044	0.005
	[0.209]	[0.206]	[0.207]	[0.215]	[0.216]
Log (Import penetration), 1999	-0.410*	-0.454**	-0.408*	-0.418*	-0.408*
	[0.215]	[0.228]	[0.217]	[0.224]	[0.213]
Log (Import demand elasticity)	-0.581	-0.622	-0.562	-0.572	-0.544
	[0.438]	[0.461]	[0.441]	[0.451]	[0.427]
Observations	85	85	85	85	85
Effect of accidents at the 25th percentile of news pressure	0.010	-0.057**	-0.018	-0.039	-0.001
Effect of accidents at median news pressure	-0.007	-0.024	-0.013	-0.016	-0.009
Effect of accidents at the 75th percentile of news pressure	-0.028	0.016	-0.006	0.013	-0.019

Notes: Non-tariff barriers from Kee et al. (2009); fatal accidents from OSHA reports; daily news pressure from Eisensee and Strömberg (2007); employment and import penetration from the US Census Bureau; import demand elasticity from Kee et al. (2008). Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimation. Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A4: Log-Linear OLS Specification

VARIABLES	Log (0.01 + Non-tariff barriers), 1999				
Sum (Number of fatal accidents), 1998	-0.312	-0.651***	-0.672***	-0.021	-0.087
	[0.263]	[0.201]	[0.203]	[0.283]	[0.252]
Sum (Number of fatal accidents × News pressure on the same day), 1998	0.038				
	[0.032]				
Sum (Number of fatal accidents × News pressure on the next day), 1998		0.078***			
		[0.025]			
Sum (Number of fatal accidents × News pressure 2 days later), 1998			0.082***		
			[0.025]		
Sum (Number of fatal accidents × News pressure 3 days later), 1998				0.001	
				[0.035]	
Sum (Number of fatal accidents × News pressure 4 days later), 1998					0.010
					[0.032]
Log (Employment), 1999	-0.044	-0.025	0.012	-0.037	-0.025
	[0.210]	[0.202]	[0.205]	[0.210]	[0.210]
Log (Import penetration), 1999	-0.005	-0.014	0.010	-0.010	-0.003
	[0.181]	[0.178]	[0.171]	[0.177]	[0.184]
Log (Import demand elasticity)	-0.212	-0.235	-0.187	-0.188	-0.168
	[0.343]	[0.336]	[0.330]	[0.342]	[0.355]
Observations	85	85	85	85	85
Effect of accidents at the 25th percentile of news pressure	-0.080	-0.169***	-0.167***	-0.012	-0.027
Effect of accidents at median news pressure	-0.036	-0.078*	-0.071*	-0.011	-0.016
Effect of accidents at the 75th percentile of news pressure	0.026	0.052	0.065	-0.008	-0.000
R-squared	0.016	0.079	0.079	0.006	0.007

Notes: Non-tariff barriers from Kee et al. (2009); fatal accidents from OSHA reports; daily news pressure from Eisensee and Strömberg (2007); employment and import penetration from the US Census Bureau; import demand elasticity from Kee et al. (2008). Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A5: Import Demand Elasticity on the Left-Hand Side

VARIABLES	Import demand elasticity × Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 1998	-0.044	-0.503***	-0.692***	-0.002	0.151
	[0.242]	[0.193]	[0.186]	[0.240]	[0.248]
Sum (Number of fatal accidents × News pressure on the same day), 1998	0.007				
	[0.031]				
Sum (Number of fatal accidents × News pressure on the next day), 1998		0.060***			
		[0.022]			
Sum (Number of fatal accidents × News pressure 2 days later), 1998			0.084***		
			[0.021]		
Sum (Number of fatal accidents × News pressure 3 days later), 1998				0.001	
				[0.030]	
Sum (Number of fatal accidents × News pressure 4 days later), 1998					-0.018
					[0.036]
Log (Employment), 1999	-0.171	-0.148	-0.145	-0.172	-0.193
	[0.193]	[0.184]	[0.170]	[0.195]	[0.189]
Log (Import penetration), 1999	-0.277	-0.278	-0.237	-0.279*	-0.290
	[0.177]	[0.172]	[0.160]	[0.170]	[0.180]
Observations	85	85	85	85	85
Effect of accidents at the 25th percentile of news pressure	-0.004	-0.133*	-0.175***	0.006	0.038
Effect of accidents at median news pressure	0.004	-0.063	-0.077	0.008	0.019
Effect of accidents at the 75th percentile of news pressure	0.015	0.037	0.063	0.010	-0.012

Notes: Import demand elasticity from Kee et al. (2008); non-tariff barriers from Kee et al. (2009); fatal accidents from OSHA reports; daily news pressure from Eisensee and Strömberg (2007); employment and import penetration from the US Census Bureau. Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimation. Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A6: Trade and Industry Data by 6-Digit NAICS Industry

VARIABLES	Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 1998	-0.004	-0.503***	-0.709***	0.304	-0.090
	[0.255]	[0.185]	[0.254]	[0.429]	[0.211]
Sum (Number of fatal accidents × News pressure on the same day), 1998	-0.005				
	[0.032]				
Sum (Number of fatal accidents × News pressure on the next day), 1998		0.055***			
		[0.021]			
Sum (Number of fatal accidents × News pressure 2 days later), 1998			0.081***		
			[0.030]		
Sum (Number of fatal accidents × News pressure 3 days later), 1998				-0.045	
				[0.056]	
Sum (Number of fatal accidents × News pressure 4 days later), 1998					0.006
					[0.026]
Log (Employment), 1999	-0.081	-0.076	-0.019	-0.106	-0.081
	[0.108]	[0.096]	[0.089]	[0.125]	[0.107]
Log (Import penetration), 1999	-0.144	-0.142	-0.119	-0.151	-0.143
	[0.116]	[0.115]	[0.115]	[0.120]	[0.117]
Log (Import demand elasticity)	-0.267	-0.273	-0.319	-0.249	-0.267
	[0.197]	[0.182]	[0.194]	[0.174]	[0.196]
Observations	389	389	389	389	389
Effect of accidents at the 25th percentile of news pressure	-0.033	-0.164**	-0.211***	0.026	-0.052
Effect of accidents at median news pressure	-0.039	-0.100**	-0.117**	-0.027	-0.045
Effect of accidents at the 75th percentile of news pressure	-0.046	-0.009	0.017	-0.102	-0.035

Notes: Non-tariff barriers from Kee et al. (2009); fatal accidents by 4-digit NAICS industry group, from OSHA reports; daily news pressure from Eisensee and Strömberg (2007); employment and import penetration from the US Census Bureau; import demand elasticity from Kee et al. (2008). Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimation. Robust standard errors, clustered by 4-digit NAICS industry group, in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A7: Alternative Measures of Non-Tariff Barriers

Panel A. Import-weighted average of non-tariff barriers

VARIABLES	Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 1998	-0.143	-0.512**	-0.794***	0.162	0.005
	[0.198]	[0.213]	[0.238]	[0.272]	[0.190]
Sum (Number of fatal accidents × News pressure on the same day), 1998	0.023				
	[0.023]				
Sum (Number of fatal accidents × News pressure on the next day), 1998		0.065***			
		[0.023]			
Sum (Number of fatal accidents × News pressure 2 days later), 1998			0.099***		
			[0.028]		
Sum (Number of fatal accidents × News pressure 3 days later), 1998				-0.015	
				[0.035]	
Sum (Number of fatal accidents × News pressure 4 days later), 1998					0.005
					[0.025]
Effect of accidents at the 25th percentile of news pressure	-0.001	-0.113	-0.181**	0.069	0.034
Effect of accidents at median news pressure	0.026	-0.037	-0.064	0.051	0.039
Effect of accidents at the 75th percentile of news pressure	0.064	0.070	0.101**	0.026	0.047

Panel B. Overall Trade Restrictiveness Index of non-tariff barriers

VARIABLES	Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 1998	-0.202	-0.602***	-0.853***	0.301	0.030
	[0.242]	[0.187]	[0.305]	[0.436]	[0.296]
Sum (Number of fatal accidents × News pressure on the same day), 1998	0.023				
	[0.029]				
Sum (Number of fatal accidents × News pressure on the next day), 1998		0.069***			
		[0.020]			
Sum (Number of fatal accidents × News pressure 2 days later), 1998			0.101***		
			[0.035]		
Sum (Number of fatal accidents × News pressure 3 days later), 1998				-0.040	
				[0.058]	
Sum (Number of fatal accidents × News pressure 4 days later), 1998					-0.005
					[0.039]
Effect of accidents at the 25th percentile of news pressure	-0.058	-0.176**	-0.232**	0.053	-0.003
Effect of accidents at median news pressure	-0.030	-0.096	-0.114*	0.006	-0.009
Effect of accidents at the 75th percentile of news pressure	0.009	0.019	0.054	-0.061	-0.018

Panel C. Trade Restrictiveness Index of non-tariff barriers

VARIABLES	Non-tariff barriers, 1999				
Sum (Number of fatal accidents), 1998	-0.233	-0.528***	-0.713***	0.128	-0.059
	[0.189]	[0.156]	[0.206]	[0.298]	[0.195]
Sum (Number of fatal accidents × News pressure on the same day), 1998	0.028				
	[0.021]				
Sum (Number of fatal accidents × News pressure on the next day), 1998		0.062***			
		[0.017]			
Sum (Number of fatal accidents × News pressure 2 days later), 1998			0.085***		
			[0.024]		
Sum (Number of fatal accidents × News pressure 3 days later), 1998				-0.017	
				[0.038]	
Sum (Number of fatal accidents × News pressure 4 days later), 1998					0.007
					[0.025]
Effect of accidents at the 25th percentile of news pressure	-0.058	-0.147**	-0.188***	0.025	-0.016
Effect of accidents at median news pressure	-0.025	-0.075	-0.089*	0.006	-0.009
Effect of accidents at the 75th percentile of news pressure	0.022	0.027	0.053	-0.022	0.003

Notes: The Overall Trade Restrictiveness Index approximates the uniform tariff rate that, if applied to all products in an industry instead of their actual trade barriers, would yield the same aggregate import volume. The Trade Restrictiveness Index approximates the uniform tariff rate that, if applied to all products in the industry instead of their actual trade barriers, would yield the same aggregate contribution to domestic welfare. Non-tariff barriers from Kee et al. (2009); fatal accidents from OSHA reports; daily news pressure from Eisensee and Strömberg (2007). Unreported explanatory variables include the logarithms of employment and import penetration in 1999, from the US Census Bureau; and of import demand elasticity, from Kee et al. (2008). Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimation. Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table A8: Tariffs and Total Trade Protection

Panel A. Total trade protection (Tariffs + Non-tariff barriers)

VARIABLES	Trade protection, 1999				
Number of fatal accidents, 1998	-0.099	-0.478***	-0.544**	0.290	0.232
	[0.203]	[0.158]	[0.221]	[0.292]	[0.256]
Number of fatal accidents × News pressure on the same day, 1998	0.008				
	[86.71]				
Number of fatal accidents × News pressure on the next day, 1998		0.053***			
		[0.018]			
Number of fatal accidents × News pressure 2 days later, 1998			0.063**		
			[0.026]		
Number of fatal accidents × News pressure 3 days later, 1998				-0.041	
				[0.038]	
Number of fatal accidents × News pressure 4 days later, 1998					-0.033
					[0.035]
Log (Employment), 1999	-0.232	-0.242	-0.252	-0.245	-0.287
	[0.174]	[0.172]	[0.174]	[0.179]	[0.190]
Log (Import penetration), 1999	-0.431**	-0.449***	-0.417***	-0.434***	-0.468**
	[0.177]	[0.174]	[0.158]	[0.166]	[0.194]
Log (Import demand elasticity)	-0.502	-0.583*	-0.579*	-0.449*	-0.565
	[0.329]	[0.348]	[0.340]	[0.270]	[0.354]
Observations	85	85	85	85	85
Effect of accidents at the 25th percentile of news pressure	-0.046	-0.149***	-0.157**	0.036	0.026
Effect of accidents at median news pressure	-0.036	-0.087*	-0.084*	-0.012	-0.010
Effect of accidents at the 75th percentile of news pressure	-0.022	0.002	0.020	-0.081	-0.065

Panel B. Tariffs

VARIABLES	Tariffs, 1999				
Number of fatal accidents, 1998	-0.409	-0.183	0.099	0.039	-0.035
	[0.362]	[0.235]	[0.207]	[0.190]	[0.231]
Number of fatal accidents × News pressure on the same day, 1998	0.045				
	[0.042]				
Number of fatal accidents × News pressure on the next day, 1998		0.017			
		[0.027]			
Number of fatal accidents × News pressure 2 days later, 1998			-0.018		
			[0.025]		
Number of fatal accidents × News pressure 3 days later, 1998				-0.010	
				[0.023]	
Number of fatal accidents × News pressure 4 days later, 1998					-0.001
					[0.029]
Log (Employment), 1999	-0.706***	-0.739***	-0.740***	-0.744***	-0.745***
	[0.211]	[0.238]	[0.236]	[0.239]	[0.256]
Log (Import penetration), 1999	-0.476***	-0.508***	-0.510***	-0.509***	-0.507***
	[0.157]	[0.174]	[0.176]	[0.176]	[0.186]
Log (Import demand elasticity)	-0.402	-0.414	-0.372	-0.375	-0.388
	[0.253]	[0.278]	[0.271]	[0.274]	[0.278]
Observations	85	85	85	85	85
Effect of accidents at the 25th percentile of news pressure	-0.129	-0.075	-0.010	-0.023	-0.039
Effect of accidents at median news pressure	-0.077	-0.055	-0.030	-0.035	-0.040
Effect of accidents at the 75th percentile of news pressure	-0.001	-0.026	-0.060	-0.052	-0.041

Notes: Tariffs from the UNCTAD Trade Analysis Information System; non-tariff barriers from Kee et al. (2009); fatal accidents from OSHA reports; daily news pressure from Eisensee and Strömberg (2007); employment and import penetration from the US Census Bureau; import demand elasticity from Kee et al. (2008). Santos Silva and Tenreyro's (2006) pseudo-maximum-likelihood estimation. Robust standard errors in brackets. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.