The Dynamic Effect of International Trade Institutions on Social Regulation*

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Abstract

How do international trade institutions shape social regulations? I develop a dynamic model of domestic regulation under international trade institutions. While international trade institutions invalidate harmful protectionist regulations, they could also indirectly increase regulation by inducing citizens to dismantle domestic institutional constraints on it. If the total effect is a reduction in regulation, international trade institutions weaken special interests by reducing the probability of regulatory protection in the long run. This positive reinforcement benefits societies that have previously chosen high levels of regulation. But if the total effect is an expansion of regulation, international trade institutions could increase regulatory protection and thus strengthen special interests. Paradoxically, the potential for negative externalities could also increase. This negative reinforcement hurts societies that have previously chosen low levels of regulation. The vicious circle stems from a previously unrecognized commitment problem in international politics and provides a novel rationale for market instruments in regulation.

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1 Introduction

Disagreements among major powers have brought multilateral trade negotiations to a grinding halt. Among the contentious issues, agriculture stands out as particularly virulent. The United States and the European Union have begun to champion "agricultural multifunctionality," whereby farm subsidies are used to promote rural development and control negative externalities. While agricultural multifunctionality could produce public goods, it is controversial because it also helps governments protect influential special interests against foreign competition (Mahé 1997; Potter and Burney 2002).

Agricultural multifunctionality exemplifies a broader turn towards "global governance" in international political economy (Dingwerth and Pattberg 2006). If governments are to achieve further liberalization, they must dismantle regulatory non-tariff barriers to trade without compromising legitimate social regulations (Kono 2006; Zürn 2004). Can the World Trade Organization and other international trade institutions handle this dilemma?

In this article, I address this question by formally investigating how international trade institutions influence the political economy of social regulation. My principal-agent model is based on the idea that citizens do not have enough information to evaluate the merits of the domestic regulations that the government enacts (Kono 2006; Maskin and Tirole 2004). Some regulations produce few societal benefits, so the government only uses them to protect influential special interests. Other regulations serve a valuable purpose, but they sometimes also accidentally discriminate against foreign competitors. If the citizens had enough information, they would accept legitimate and reject spurious regulations.

The model contains two new elements. First, it captures interactions between international and domestic institutions. Citizens anticipate the effect of international trade institutions and adjust the domestic institutional and political constraints on regulation accordingly. Most importantly, they could surrender additional public authority to the government if they believe international trade institutions invalidate spurious regulations and thus mitigate the "problem of faction" (Mansfield, Milner, and Rosendorff 2002; Maskin and Tirole 2004). Second, it has a dynamic dimension. If international trade institutions systematically invalidate and uphold social regulations, the total frequency of regulatory protection changes in the long run. Anticipating higher or lower profits, individuals shift productive assets towards or away from sectors that could potentially benefit from regulatory protection (Hathaway 1998; Maggi and Rodriguez-Clare 1998).

I find that the effect of international trade institutions on social regula-

tions is highly contingent. On the one hand, international trade institutions reduce the frequency of spurious regulations. If this direct effect is strong enough, profits in the previously protected sector *decrease*, so some producers abandon it. International trade institutions trigger a virtuous circle, whereby regulatory protection withers away and special interests are thus critically weakened in the long run. As individuals move production factors to other sectors, even the magnitude of negative externalities decreases. Surprisingly, international trade institutions actually promote such causes as environmental protection and social insurance. As I demonstrate below, this virtuous circle is highly relevant for agricultural multifunctionality in Europe.

On the other hand, international trade institutions could equally well increase the number of regulations. Citizens understand that international trade institutions now monitor and discipline the government, so they are less hesitant to accept intrusive social regulations. Even if these social regulations are legitimate, they could nevertheless also protect special interests, so that profits in the previously protected sector actually *increase*. Now individuals move production factors to this sector, so special interests grow stronger while the potential for negative externalities increases. In the long run, international trade institutions paradoxically enable regulatory protection while amplifying negative externalities. My case study below indicates that this vicious circle applies to agricultural multifunctionality in the United States.

The contribution is notable for three reasons. First, it shows how important it is that even valuable social regulations could accidentially discriminate against foreign producers. International political economists have previously argued that information asymmetry could prompt hidden regulatory protection, but they have not recognized that the hard core of the problem are legitimate social regulations that accidentally protect special interests (Kono 2006; Sturm and Ulph 2002). Second, it provides a new perspective to interactions between domestic and international institutions (Goldstein and Martin 2000). If democratic societies adjust domestic political institutions to accommodate the impact of international trade institutions, they could dynamically nullify the decrease in social regulations. Finally, it shows how dynamic adjustment processes can systematically strengthen or undermine the static effects of international trade institutions on social regulation. The literature has recognized the possibility that international institutionalization dynamically weakens special interests, but it has not foreseen that sometimes international trade institutions could both strengthen special interests and worsen the externality problem (Hathaway 1998; Lake 2009).

The article proceeds as follows. First, I review the record of agricultural multifunctionality in Europe and the United States. Second, I informally characterize the argument. Third, I present and solve the model. Finally, I discuss the theoretical and empirical implications.

2 Agricultural Multifunctionality

To motivate my formal analysis, I summarize the empirical record of agricultural multifunctionality. Both in Europe and the United States, agricultural multifunctionality is influenced by the WTO and strongly supported by public opinion. While agricultural multifunctionality is a natural continuation of extensive social regulation in Europe, it is a significant departure from aggressive deregulation in the United States. Similarly, agricultural multifunctionality appears to benefit special interests in the United States but not in Europe. The formal model that I employ provides a rigorous explanation for the opposite effects of international trade institutions on the totality of regulation in agriculture across the Atlantic.

Ever since the creation of the multilateral trade regime in the aftermath of the Second World War, agriculture has been among the most contentious and difficult issues in international trade. In recent years, the agricultural lobby has suffered several important defeats. Blatant discrimination against foreign producers, such as direct production subsidies, is in decline. During the Uruguay Round, the European Union (EU) implemented the MacSharry reforms that severed the tie between subsidies and production (Daugbjerg and Swinbank 2008, 632). In the United States, the Congress passed a "budget reconciliation act" that limited subsidies to large farms (Paarlberg 1997, 413). According to Mahé (1997, 481), these changes are so important that the WTO Agricultural Agreement "can be said to mark the end of a period."

The agricultural lobby has nevertheless secured important concessions. In the long run, the most important of these concessions is the general acceptance of the idea that public support for agricultural production can serve a variety of useful purposes, such as enhanced rural development and environmental sustainability (Hanley and Oglethorpe 1999; Mahé 1997). Indeed, the notion of multifunctionality is now at the heart of both multilateral trade negotiations on agricultural liberalization and farm policies in wealthy industrialized countries (Potter and Burney 2002; Potter and Tilzey 2007).

What is the problem? Given the complex nature of modern agricultural production and rural development, few citizens have the time or the ability

to verify that the myriad multifunctionality policies pass cost-benefit criteria (Kono 2006; Mahé 1997). Even if politicians advertise a particular agricultural policy as an effective means to control harmful externalities or produce public goods, it is equally possible that the policy produces few benefits but offers a convenient smokescreen for hidden income transfers to special interests (Bhagwati 2000; Coate and Morris 1995; Grossman and Helpman 2001; Kono 2006; Krueger 1999). The citizens must therefore rely on prior beliefs regarding the trustworthiness and integrity of the government (Maskin and Tirole 2004; Stasavage 2004). They could obviously impose stringent institutional constraints on regulations, but under imperfect information these constraints would also invalidate genuinely useful regulations. As Mahé (1997, 480) wrote regarding the role of agriculture in multilateral trade negotiations already in the aftermath of the Uruguay Round, "trade interests and lobby pressures will trigger a new protectionism based on non-tariff barriers, under the cover of objectives related to health, quality, environment and ethics."

In the WTO, agricultural multifunctionality is explicitly recognized as a legitimate reason for farm subsidies. While international trade law invalidates direct production subsidies and price support, Annex II of the WTO Agricultural Agreement contains a definition of admissible "green box subsidies." They must be minimally distortionary and address important non-trade concerns. Agricultural multifunctionality meets both criteria (Mahé 1997; Potter and Burney 2002).

The EU is the most vocal advocate of agricultural multifunctionality (Mahé 1997; Potter and Burney 2002; Potter and Tilzey 2007). The European Commission has for years sought to reduce distortions caused by agricultural subsidies, but the idea of further decreases in total fiscal support to framers has plainly failed to garner political support among member states. Accordingly, the European Council has decided to increase funding to activities that mitigate global warming, reduce water and air pollution, or preserve biodiversity.[1] This incentive structure will form the "third pillar" of the next period of Common Agricultural Policy that will enter into force in 2013.[2] Already in 2003, the European Commission and the European Council agreed to require that farm subsidies meet "crosscompliance" criteria. These criteria condition agricultural support on compliance with environmental and other standards. According to Marianne Fischer Boel,

[1] "Health Check: Current Situation, Commmission Proposal, and Council Outome." *European Commission* March 2009.

[2] "EU Farm Policies to Include Climate Pillar." *EurActiv* October 27, 2009.

Commissioner for Agriculture and Rural Development, "[d]irect payments will only be acceptable to the public if people can see that our farmers are being rewarded for carrying out vital tasks in the countryside."[3]

In the United States, agricultural multifunctionality finally grew prominent in the 2002 and 2008 farm bills. While continuing the extant system of direct subsidies to farmers, the Food, Conservation, and Energy Act of 2008 is estimated to add billions of dollars for conservation purposes and renewable energy production.[4] Equally important, the climate bill that the House passed in June 2009 contains a significant agricultural component. In addition to support for domestic renewable energy, it completely excludes agriculture from emissions reductions and allows farmers to sequester carbon in the soil for profit.[5] Given these benefits, agriculture is certainly among relative winners in burden sharing for new environmental regulations and probably also in absolute terms.

In Europe, agricultural multifunctionality is a natural continuation of extensive social regulation, but in the United States, agricultural multifunctionality is a significant departure from decades of deregulation (Vogel 2003; Young 2003). Following a number of salient regulatory scandals, such as the mad cow disease, Europeans have demanded that governments impose increasingly stringent regulations, especially on agriculture (Henson and Loader 2001; Otsuki, Wilson, and Sewadeh 2001; Vogel 2003). By contrast, the United States had given up its historical position as a pioneer in environmental and consumer regulation (Holzinger, Knill, and Sommerer 2008; Vogel 2003). Tellingly, Bradford (2003) empirically demonstrates that price distortions from non-tariff barriers to trade are a much greater problem in Europe than in the United States. As I show below, the different baselines will have important implications for the effect of international trade institutions on social regulation in Europe and the United States.

Agricultural multifunctionality is immensely popular in Europe and the United States. A 2008 Special Eurobarometer on agriculture shows that almost nine out of ten Europeans support a strong role for multifunctionality in the Common Agricultural Policy. Even in Bulgaria, where the support for multifunctionality is lowest, three out of four citizens are willing to condition agricultural support on crosscompliance.[6] Given such unassailable political

[3]"CAP Simplification: Commission Moves to Improve Cross Compliance System." *European Commission* March 29, 2007.

[4]"What is the 'Farm Bill'?" *CRS Report for Congress* September 23, 2008.

[5]"For the Farm Lobby, Too Much Is Never Enough." *Washington Post* June 26, 2009.

[6]"Europeans, Agriculture and the Common Agricultural Policy." *Special Eurobarometer* March 2008.

support in every member state, it is safe to expect that multifunctionality and crosscompliance will grow in importance. Modern economic valuation techniques also provide experimental evidence that many citizens in Europe are actually willing to incur substantial costs to ensure that multifunctionality succeeds (Kallas, Gómez-Limón, and Arriaza 2007).

In October 2007, a poll conducted by Zogby International for the Environmental Defense Fund showed that 76 to 86 percent of all respondents in five U.S. states supported shifting the onus of agricultural support from direct subsidies to conservation.[7] Another poll conducted by Knowledge Networks in March and April 2009 found that nationally, 77 percent of respondents supported subsidies for small farms while only 36 percent supported subsidies for large commercial farms. In that poll, of those who supported subsidies for small farms, 40 percent said they should only be given as social insurance in bad years.[8]

Although many scholars and commentators argue that multifunctionality allows regulatory protection in the shadow of international trade law (Mahé 1997; Potter and Burney 2002), a notable feature of European multifunctionality is that the agricultural lobby has expressed substantial reservations. Using data from a survey of East Anglian arable farmers, Dobbs and Pretty (2004) find that most of them reject the principle of crosscompliance and express reservations to multifunctionality. Similarly, the *Irish Farmers Monthly* writes that crosscompliance has a "bad reputation" both among Irish and German farmers.[9] This concern was explicitly recognized by Commissioner Boel who said in March 2007 that crosscompliance was not an effort to appease the agricultural lobby: "I am well aware that many farmers are very unhappy with Cross Compliance. But it is right and it is necessary and it is here to stay."[10] Far from being a plot to increase agricultural subsidies, multifunctionality appears to at most mitigate the negative effect of the WTO Uruguay Round on the farming lobby (Mahé 1997; Potter and Burney 2002; Potter and Tilzey 2007).

The WTO has also been a driving force behind agricultural multifunctionality in the United states.[11] In July 2007, the WTO ruled against the

[7]"ED Poll: U.S. Public Favors Conservation over Subsidies." *Forrest Laws Farm Press* October 12, 2007.

[8]"Public Opinion on Farm Subsidies." *Knowledge Networks* April 23, 2009.

[9]"Cross Compliance Upsets German Farmers Too." *Irish Farmers Monthly* February 2007.

[10]"CAP Simplification: Commission Moves to Improve Cross Compliance System." *European Commission* March 29, 2007.

[11]"Forces Driving Farm Bill Debate: Budget, WTO, Farm conditions and Politics." *Delta Farm Press* March 17, 2006.

United States in a dispute over cotton subsidies initiated by Brazil.[12] This dispute could be an important legal precedent in rendering conventional agricultural subsidies vulnerable to international legal challenges.[13] Similarly, the Congressional Research Service argues that agricultural multifunctionality is essential to reconcile WTO obligations and U.S. agricultural policy.[14] Against this backdrop, it is interesting that the 2008 farm bill did not dismantle the previous system of direct subsidies but instead added multifunctionality policies on top of them.[15] Similarly, I have noted that the climate bill contains substantial concessions to the farm lobby. In another clear contrast to Europe, it thus appears that agricultural multifunctionality actually benefits the farm lobby.

3 The Argument

If the government of one country imposes a social regulation, the business environment also changes in other countries, with significant distributional consequences (Drezner 2001; Vogel 1995). For some producers, these regulations could be a boon because they can easily adapt production techniques to new regulatory constraints for competitive advantage (Desombre 1995; Vogel 1995). For other producers, the same regulations are a bane because they cannot technologically adjust to new regulatory realities (Bhagwati 2000; Krueger 1999). These distributional consequences do not require that the social regulations be intentionally discriminatory or protectionist (Bhagwati 2000; Eckersley 2004; Esty 2001; Kono 2006; Mahé 1997). Table 1 illustrates this dilemma.

[TABLE 1 ABOUT HERE]

Although international trade law cannot remove all inconsistencies between international trade liberalization and regulatory sovereignty, it can usefully reduce the ability of "captured" governments to use spurious regulations to hide protectionism (Kono 2006; Mahé 1997; Stigler 1971). Even if a regulation is not really going to reduce negative externalities or produce public goods, it could be a convenient excuse. This is particularly important in

[12]"Brazil Claims WTO Cotton Victory." *BBC* July 27, 2007.

[13]"The US Farm Bill and the Doha Negotiations: On Parallel Tracks or a Collision Course?" *International Policy Council Issue Brief* September 2005.

[14]"WTO Compliance Status of the Conservation Security Program (CSP) and the Conservation Reserve Program (CRP)." *Congressional Research Service* May 21, 2007.

[15]"Farm Lobby Beats Back Assault On Subsidies." *Wall Street Journal* March 27, 2008.

the North-South context, as advanced Northern technologies ensure that appropriate regulations usually drive a wedge between the competitiveness of Northern and Southern producers (Henson and Loader 2001; Kono 2006; Krueger 1999).

Given this diagnosis, the standard prescription is that international trade institutions can help citizens distinguish between spurious and useful regulations (Kono 2006; Mansfield, Milner, and Rosendorff 2002; Sturm and Ulph 2002). If a dispute resolution mechanism allows exporters to litigate regulations, the cost of regulatory protectionism to a government increases. When the dispute resolution mechanism is endowed with proper incentives to invalidate regulations if and only if they are spurious, the ratio of spurious to useful regulations decreases. For example, many scholars believe that the WTO and the EU have been successful in this (DeSombre and Barkin 2002; Kelemen 2001; Thomas 2009; Young 2005). I label this the *direct effect* of international trade institutions.

This conventional view is somewhat naive because the presence of international trade institutions also shapes domestic institutional and political constraints on regulation. If citizens understand that an international trade institution is able to continuously monitor regulations, they have fewer reasons to worry that the government enacts spurious regulations that only benefit special interests. Consequently, they could delegation additional public authority to the government, so as to ensure competent policy implementation (Lupia and McCubbins 1998; Maskin and Tirole 2004). This *indirect effect* of international trade institutions increases the frequency of regulation, so it could partially or fully offset the direct effect that previous research has identified.

Consider again the case of agricultural multifunctionality. Citizens desire lower food prices, but they also understand that certain practices in the countryside could mitigate global warming or preserve biodiversity. If they believe that the WTO is able to invalidate spurious regulations, they should be reasonably confident that most multifunctionality policies enacted by the government are beneficial. Consequently, they have no reasons to artifically raise the cost of multifunctionality policies by erecting institutional barriers to new legislation. Notably, this argument is consistent with the strong public support for agricultural multifunctionality on both sides of the Atlantic.

I also introduce the dynamic effects of international trade institutions. The direct and indirect effects that I have summarized occur in the short run, so they could change the dynamic allocation of production factors in the economy. On the one hand, suppose that the direct effect dominates

and international trade institutions reduce the total frequency of regulation. Now regulatory protection is not supplied, so investors move assets to other activities that are less dependent on state intervention. Consequently, the international trade institution has dynamic implications that reinforce the direct and indirect effect identified above. This positive reinforcement is schematically represented in FIGURE 1.

[FIGURE 1 ABOUT HERE]

On the other hand, the indirect effect can dominate, so that the total frequency of regulation increases. Although the newly enacted regulations are useful, some of them are also inherently discriminatory and thus constitute regulatory protection that international trade institutions cannot possibly invalidate. This prompts an increase in expected profits, so investors move fewer assets away from that sector because they understand that the probability of regulatory protection increases. After all, no international trade institution is powerful enough to invalidate genuinely useful regulations simply because they also accidentally benefit organized special interests. Consequently, the dynamic effect undermines and potentially cancels out the beneficial direct and indirect effects of the international trade institution. Consult FIGURE 2 for an illustration.

[FIGURE 2 ABOUT HERE]

The contingent dynamic effects can explain why agricultural multifunctionality has such different consequences in Europe and the United States. In Europe, agricultural multifunctionality is a natural continuation of extensive social regulation. Since public opinion supported extensive regulatory intervention already previously, the main effect of international trade institutions is to remove spurious and discriminatory policies. This weakens the farm lobby, so Europeans stand to gain the most from international trade institutions. In the United States, agricultural multifunctionality is only newly popular, so it actually increases the total regulation of agriculture. These additional concessions strengthen the farm lobby and ease pressures to abandon unproductive activities, so international trade institutions could paradoxically strengthen the hand of special interests by relaxing domestic constraints on agricultural multifunctionality.

4 A Model of Domestic Regulation

I begin with a model of domestic regulation *without* international trade institutions. In the model, the citizens of a democratic country consume goods and suffer from a negative externality. The negative externality is produced by a sector that generates profits for a small number of capitalists. The government can correct the negative externality through regulation, but government intervention could discriminate against foreign competitors and thus increase prices. In equilibrium, citizens support social regulation only if they believe the government is probably not captured by special interests and the negative externality is sufficiently harmful.

4.1 The Economy

The economy produces and consumes two goods.[16] A large number of perfectly competitive firms produce a "numeraire" N using labor L and capital K. The production function is denoted by $F(L, K)$ and the price is normalized to $p^N = 1$. For example, the numeraire sector could represent a light industry or services. The other sector produces a "polluting" good D using capital k. The relative price is denoted by $p^D = p$. For example, the polluting sector could represent a heavy industry or agriculture. The citizens consume both goods to maximize the payoff from consumption,

$$d^N + u(d^D), \tag{1}$$

where d^j denotes the consumption of good j and u is an increasing and strictly concave function.[17]

Every citizen owns one unit of labor. In the numeraire sector, equilibrium wage is determined by marginal productivity $F_L(1, K)$. As the availability of capital increases, the value of labor decreases, so the wage must also decrease. Since citizens only own labor, the wage also determines the consumption budget.

A tiny fraction of all citizens are wealthy capitalists who also own a unit of capital. Since there are sofew capitalists, they can be meaningfully thought of as special interests. In the numeraire sector, the marginal returns to capital are $F_K(1, K)$. They decrease as more capital is made available. In the polluting sector, capital is the only factor of production, so marginal

[16] Constant returns to scale apply.

[17] The quasilinear utility representation facilitates exposition but is not necessary for the results.

returns to capital are given by the relative price p. In the short run, capital is immobile across sectors (Hiscox 2002; Maggi and Rodriguez-Clare 1998).[18]

The polluting sector is characterized by a binary negative externality $Z \in \{0, 1\}$. For example, commercial agriculture could reduce biodiversity or increase water pollution. The negative externality is probabilistic, so let $\lambda \in (0, 1)$ denote the prior probability that it really exists. Intuitively, the immense complexity of modern economic activity ensures that the citizens cannot be sure if the polluting sector really produces negative externalities that warrant regulation by the government.

If a negative externality exists, $Z = 1$, a binary "accident" $A \in \{0, 1\}$ could occur. For example, if agriculture really produces water pollution, fish in the rivers die with some probability. Given a negative externality, $Z = 1$, I assume the prior probability of such an accident is $\alpha \in (0, 1)$. The cost of an accident to the citizens is C without regulation and c otherwise, where $C > c > 0$. Intuitively, social regulation can reduce the cost of negative externalities.

The binary regulation enacted by the government is denoted by $T \in \{0, 1\}$. For example, consider emissions standards or crosscompliance regulations (Stavins 1998). Since the government observes the presence or absence of the negative externality Z, it can condition the regulation on it, $T = T(Z)$. However, it cannot directly condition it on the accident. If fish in the rivers have already died from water pollution, it is clearly no longer possible to prevent fish deaths.[19]

Following the literature on regulatory protectionism, the societal cost of regulation is an increase in the price of the polluting good D (Kono 2006). Implicitly, the binary regulation T prevents the importation of those "variants" of the polluting good D that violate the regulation. Only foreign producers who are equipped to comply with the regulation can continue to export to this country. This effect can be easily incorporated by supposing that the equilibrium price without regulation, denoted by p^0, increases to p^1 if the government regulates. While this simple modeling technique obviously does not constitute a full general-equilibrium analysis, it captures the key intuition in a particularly simple fashion.[20] Regulation has two effects. First, it mitigates the negative externality. Second, it increases prices. The first effect benefits the citizens, but the second effect only benefits the capitalists.

Importantly, the price increase from p^0 to p^1 can be interpreted as an

[18] For simplicity, I also assume each capitalist is only active in one sector.

[19] This formulation omits remedial measures.

[20] With specific factors, a continuum of equilibria exist such that $p^1 \in [p^0, \overline{p}]$, where $\overline{p} - p^0$ is the cost of regulation to foreign competitors.

expectation. For the results, it is not necessary that *all* regulations enacted by the government have protectionist overtones. As long as some of them do, so that regulation increases consumer prices and capitalist profits in expectation, all results hold. This convenient fact ensures that the results do not depend on implausibly strong assumptions regarding the discriminatory effect of regulation.

4.2 Politics

Given the economy, the payoff to a citizen can be written as

$$U(Z,T) = F_L(1,K) + u(d^D) - p^T \cdot d^D - \alpha \cdot Z \cdot (T \cdot c + (1-T) \cdot C)\,. \quad (2)$$

It consists of the consumer surplus and the expected cost of an accident.[21] Pressures from special interests notwithstanding, I use this payoff instead of social welfare to capture the electoral incentives of the government. All results hold even if social welfare is used instead, but exposition is complicated.

The only active players are the government and the citizens. Following Grossman and Helpman (1994), the government maximizes political support,

$$S = (1-\tau) \cdot U + \tau \cdot k \cdot p + \mathbf{r} \cdot R, \quad (3)$$

where $\mathbf{r} \in \{0,1\}$ and $\tau \in \{0,1\}$ are indicator functions while $R > 0$ is a "reward" that the citizens can confer to the government.

The government is potentially concerned with three issues. First, the payoff to the citizens, U, is important for electoral reasons (Bueno de Mesquita et al. 2003; Grossman and Helpman 1994). Second, profits in the polluting sector are important because they determine the political support from organized special interests (Grossman and Helpman 2001; Stigler 1971).[22] The organized special interests ignore consumer surplus and negative externalities because they form a tiny fraction of total population (Maggi and Rodriguez-Clare 1998).

The function $\tau \in \{0,1\}$ indicates whether the government is captured by special interests (Canes-Wrone, Herron, and Shotts 2001; Stasavage 2004). The binary formulation is unrealistic, as all democratic governments are probably captured to some degree, but it is useful because it is so simple. All results hold even if the degree of special-interest capture is continuous,

[21] Technically, this is a standard indirect utility function.

[22] Following Maggi and Rodriguez-Clare (1998), I assume only capitalists with assets in the polluting industry are organized.

as long as it is subject to uncertainty. Let $\beta \in (0,1)$ denote the prior probability that the government is captured, $\tau = 1$.

Finally, the representative citizen can directly condition political support on the presence or absence of regulation (Canes-Wrone, Herron, and Shotts 2001; Maskin and Tirole 2004; Stasavage 2004). Since special interests are involved, savvy voters could decide to support or oppose regulation even if they do not have enough information and expertise to actually evaluate the merits of government intervention. For example, the constitution prevents individual states from enacting discriminatory regulations in the United States (Weingast 1995). Equally plausible, they could give the government "free hands" by not conditioning the reward on the presence or absence of regulation. For example, most Europeans appear to believe the government should apply the "precautionary principle" and enact environmental regulations to control negative externalities even without compelling scientific evidence (Vogel 2003; Young 2003).

The game begins as the government learns its Bayesian type (τ, Z). Subsequently, the government decides on regulation $T = T(\tau, Z)$. Consumption and production follow. Recall that if there is a negative externality, $Z = 1$, the probability of an accident is α. Should an accident occur, the citizens learn about the presence of negative externality with certainty. Consequently, citizens can condition the political reward both on regulation and the accident. However, the potential for negative externalities is unobservable, so citizens cannot condition the political reward on it.

At the end of the game, the citizens decide on the political reward to the government by selecting the value of $\mathbf{r} = \mathbf{r}(T, A)$. The tiny number of capitalists notwithstanding, the citizens are identical, so I assume they all vote for or against. For tractability, I assume throughout that the reward R is high enough to influence the government. This assumption ensures that constitutional democracy is possible.

My solution concept is the perfect Bayesian equilibrium. The government conditions the regulation T on its type (τ, Z) while the citizens can only condition the reward $\mathbf{r}$ on the publicly observable outcome (T, A). Following the literature on democratic accountability, I assume the reward is chosen so as to maximize the expected payoff to the citizen given the allocation of capital for the short term (Ferejohn 1986; Maskin and Tirole 2004; Stasavage 2004). Notation is summarized in Table 2.

[TABLE 2 ABOUT HERE]

4.3 Analysis

The model can be solved as follows. First, I investigate the effect of regulation on payoffs to the citizens and capitalists. Second, I solve for how the government decides on regulation. Finally, I find the optimal reward rule that the citizens use to discipline the government.

To begin with, consider the effect of regulation on payoffs. As long as the price of the polluting good is not too high, each citizen allocates her income $F_L(1, K)$ so that the marginal utility of consumption is equalized across the goods. Similarly, each capitalist allocates her income to maximize the payoff. I assume this condition holds throughout.[23]

How do increases in the relative price p influence payoffs? In the short term, they have no effect on marginal returns to labor, $F_L(1, K)$, so the only effect on the citizens is reduced consumption surplus from the polluting good D. By contrast, this price increase results in higher profits to organized special interests in the polluting sector. In the absence of a negative externality, $Z = 0$, regulation is therefore unambiguously harmful to the citizens and beneficial to the organized special interests. My simple model thus captures the problem of regulatory distortion in international trade policy (Bhagwati 2000; Kono 2006).

What about regulation? To begin with, it is useful to note that the citizen has an unambiguous incentive to punish regulation failure if an accident really occurs, $A = 1$. Given that the marginal cost absent regulation, $\alpha \cdot (C - c)$, is high enough to warrant regulation, $T = 1$, the citizen has an incentive to encourage regulation if the government does perceive a genuine negative externality. We must thus have $\mathbf{r}(1, 1) = 1$ and $\mathbf{r}(0, 1) = 0$ in equilibrium.

How does the government decide on regulation? The marginal payoff from regulation can be written as

$$(1 - \tau) \cdot \Delta U + \tau \cdot k \cdot \Delta p \quad + \tag{4}$$

$$Z \cdot (\alpha + (1 - \alpha) \cdot R \cdot \Delta \mathbf{r}) \quad + \tag{5}$$

$$(1 - Z) \cdot R \cdot \Delta \mathbf{r} \quad , \tag{6}$$

where $\Delta U = U(1, Z) - U(0, Z)$ and $\Delta p = p^1 - p^0$ with $\Delta \mathbf{r} = \mathbf{r}(1, 0) - \mathbf{r}(0, 0)$. On the first line, the left term captures the effect on social welfare and the right term the effect on profits to special interests in the polluting sector. The second line gives the expected effect on the political reward if

[23] Technically, the equilibrium is interior.

the negative externality is present. The third line gives the expected effect of regulation on the political reward.

Since the citizen never benefits from spurious regulation, it is possible to immediately exclude any reward rule such that

$$\mathbf{r}(1,0) = 1 > 0 = \mathbf{r}(0,0). \tag{7}$$

This rule would reward the government for regulation in all circumstances. Consequently, the government would *always* regulate. This rule is strictly dominated by a "neutral" rule, $\mathbf{r}(1,0) = 1 = \mathbf{r}(0,0)$, that does not incentivize the government at all.

Only differences in expected utility that depend on behavior shape the equilibrium, so it is without loss of generality to compare

$$\mathbf{r}(1,0) = 1 = \mathbf{r}(0,0) \tag{8}$$

with

$$\mathbf{r}(1,0) = 0 < 1 = \mathbf{r}(0,0). \tag{9}$$

The former rule gives the government discretion over regulation while the latter rule simply prevents regulation in all circumstances. I label the former rule "discretionary" and the latter rule "constraining."

The discretionary and constraining rules have the following substantive interpretation. The discretionary rule captures the idea that the citizens trust the government. They delegate extensive regulatory authority to the government, so as to avoid the damage caused by negative externalities. The constraining rule represents the possibility that the citizens do not trust the government. They impose extensive constitutional or other constraints on the governemnt, so as to avoid spurious regulations that protect special interests at the expense of the public.

In equilibrium, the discretionary rule yields a regulation $T = 1$ if and only if there is a negative externality $Z = 1$ or the government is captured $\tau = 1$. With the reward R set high enough, the constraining rule yields no regulation $T = 0$ regardless of negative externalities Z and capture τ. Intuitively, the citizen can control the propensity for regulation through democratic accountability. By choosing the discretionary rule, the citizen ensures that environmental regulation is enacted if warranted. By choosing the constraining rule, the citizen reduces the probability of spurious environmental regulation, but also hamstrings the regulatory capacity of the government. The only tradeoff is therefore between consumer surplus and negative externalities.

It is now easy to uncover the conditions for discretionary and constraining rules. The discretionary rule allows the government to exploit information that is not available to the citizens, so it is optimal if capture is improbable, $\beta \to 0$ or the accident prohibitively is costly, $\alpha \cdot (C - c) \to \infty$. Conversely, the constraining rule prevents the government from engaging in regulatory protectionism, so it is optimal if capture is probable, $\beta \to 1$, and the accident largely irrelevant, $\alpha \cdot (C - c) \to 0$.

The logic of domestic regulation without international trade institutions can now be summarized as follows. On the one hand, if the citizens trust the government and are afraid of negative externalities, the government has free hands to enact regulations. Some of them are warranted and others are spurious. On the other hand, if the citizens distrust the government and discount the negative externalities, the government cannot regulate. Clearly, it would be better for the citizens if they could only retain useful regulations. Perhaps international trade institutions can help?

5 International Trade Institutions

The previous model does not contain an international trade institution. I now introduce it by adding a "dispute resolution mechanism" that allows foreign exporters to litigate a spurious regulation in the absence of a genuine negative externality. Building on the empirical record, my main assumption is that the international trade institution only invalidates regulations if they are clearly spurious (DeSombre and Barkin 2002; Neumayer 2004; Thomas 2009; Young 2005).

Formally, if the government enacts a spurious regulation, so that $(T, Z) = (1, 0)$, the international trade institution imposes an additional penalty X on the government. For simplicity, I let the penalty X be so large that the government never enacts a spurious regulation in equilibrium. This assumption is unrealistic, but it greatly facilitates the analysis and focuses attention on the consequences of international trade institutions. If international trade institutions hold influence, how do they shape domestic regulations?

I evaluate the static effect of international trade institutions in the short run, assuming that production factors are immobile. It is important to condition the effect on the reward rule $\Delta\mathbf{r}$ that the citizen had previously used in the absence of international trade institutions. This allows the possibility that international trade institutions indirectly influence domestic constraints on regulation.

Suppose first that the citizen had previously used the discretionary rule.

The international trade institution invalidates spurious regulations, so it amplifies the advantage of the discretionary rule over the constraining rule. The only benefit of the constraining rule is to prevent spurious regulations. But the international trade institution also does this, so the constraining rule is strictly dominated by the discretionary rule.

If the citizen previously used the constraining rule without an international trade institution, introducing an international trade institution overturns the advantage of the constraining rule. By preventing spurious regulations, the international trade institution ensures that the discretionary rule maximizes the payoff to the citizens.

This reasoning immediately proves the following proposition.

Proposition 1. Under an international trade institution, the citizen uses the discretionary rule.

A notable feature of this proposition is that the international trade institution is unambiguously beneficial. The citizen could improve her payoff simply by continuing to apply the previous rule, so that the only effect of the international trade institution would be to prevent spurious regulation. But if the citizen has previously used the constraining rule, she can do even better than that by using the discretionary rule instead.

How does the international trade institution influence the frequency of quality nontariff barriers to trade? If the citizen previously used the discretionary rule, based on the belief that the government is benevolent with high probability and the negative externalities are not overwhelmingly harmful, the conventional wisdom holds. The citizen retains the discretionary rule, so the probability of regulation upon negative externalities remains unchanged while the probability of regulation without negative externalities goes to zero.

This appears to be the case in the EU. Although agricultural multifunctionality has been accused of hidden protectionism, in reality it replaces previous policies that were more discriminatory. Consequently, the total frequency of protection is actually decreasing. This is exactly what the model predicts in societies that have previously chosen unusually high levels of regulation in the absence of international trade institutions.

Suppose now the citizen chose the constraining rule previously. Since the citizen now adopts the discretionary rule, the conditional probability of regulation upon negative externalities increases from zero to one. Simultaneously, the conditional probability of regulation without negative externalities remains fixed at zero. Contravening the conventional wisdom, the frequency

of quality non-tariff barriers to trade increases upon introducing the international trade institution. The citizen uses the international trade institution to relax domestic institutional constraints on regulation, and this leads to an increase in the overall frequency of regulation.

One example of the constraining rule is agricultural multifunctionality in the United States. Among industrialized countries, the United States does not have a recent history of extensive environmental and health regulations in agriculture, so my model predicts that agricultural multifunctionality should increase the total degree of protection in the agricultural sector. As my case study shows, this interpretation is plausible.

The rather surprising conclusion follows that while the international trade institution unambiguously improves the payoff to the representative citizen, it could do so *despite* raising additional quality non-tariff barriers to trade. By endowing the government with credibility, the international trade institution leads to a dismantling of domestic political constraints on regulation. This is unambiguously beneficial for the representative citizen, as she could have instead kept the domestic institutional constraints. Yet it could accidentally raise new quality non-tariff barriers to trade and thus contradict the spirit of international trade law.

This result depends crucially on the impossibility of fully separating useful and legitimate regulations. The reason why international trade institutions could enact new quality non-tariff barriers to trade is *not* that they somehow provide a cover for spurious regulations. Instead, they allow the government to enact regulations that both control negative externalities *and* conveniently discriminate against foreign producers.

The identified institutional interaction is itself notable because it goes against the received wisdom. Many scholars believe that international institutions aiming to liberalize international economic exchange are detrimental for democratic accountability, because they degrade the ability of democratically elected governments to enact social regulations (Grant and Keohane 2005). Gill (1995) argues that they promulgate "disciplinary neoliberalism" while Scharpf (1999) believes that they weaken the democratic accountability relationship between governments and citizens, especially in social democracies. However, exactly the opposite could be true in the present context. If international institutions can credibly promise to "audit" governments that are potentially enacting spurious regulations, citizens have greater incentives to widen and deepen the mandate of the government. Perhaps surprisingly, international institutions increase regulatory sovereignty by constraining it.

6 Dynamics

The highly contingent effect on regulation in the short run is only one part of the total effect of international trade institutions. Maggi and Rodriguez-Clare (1998) introduce a simple technique to endogenize the dynamic allocation of production factors across industries in the long run. I now augment the model by introducing a simple dynamic adjustment process and then solve the model for equilibria that are consistent with it.

6.1 The Model

Suppose capital allocation across the two sectors, (K, k), is determined as follows. Before the game begins, the expected marginal returns to capital across sectors are equalized,

$$F_K(L, K) = E(p). \tag{10}$$

The expectation $E(p)$ is defined over the negative externality $Z \in \{0, 1\}$. The left side is the deterministic profit in the numeraire sector, while the right side is the expected profit in the polluting sector. If capitalists hold "rational expectations" regarding equilibrium behavior in the short run, they allocate capital so that deviations are unprofitable. Intuitively, an equilibrium candidate must pass a consistency test: is the capital allocation sustainable in the long run?

For completeness, I introduce the possibility that the probability of a negative externality, λ, is itself a function of dynamic capital allocation, so that $\lambda = \lambda(k)$. Given that good D is produced in a polluting sector, it appears reasonable to assume that this probability λ is strictly increasing in production capital k. Intuitively, high capital concentrations in the polluting sector amplify the generation of negative externalities. For example, air and water pollution from agriculture increases with the number and size of farms.

This interdependence could prompt multiple equilibria. As new capital flows into the polluting sector, the probability of negative externalities increases. This increases the equilibrium probability of regulation in the short run, so the expected profits increase and even more capital flows into the polluting industry. This positive feedback effect is responsible for the multiplicity of equilibria for some parameter values.[24] For simplicity, I select the equilibrium to maximize the amount of capital allocated to the polluting sector. This is both plausible and useful. First, it is plausible because it

[24] Formally, the game is supermodular (Milgrom and Shannon 1994; Topkis 1998).

maximizes expected profits to the polluting sector, so that the capitalists would also select it if coordination was possible. Second, it is useful because it most clearly lays out the paradoxical consequences of international trade institutions.

6.2 Analysis

To begin with, it is useful to note two essential consequences of dynamic capital inflows to the polluting sector. First, these inflows reduce the equilibrium numeraire wage $F_L(1, K)$ because it is strictly increasing in capital K. For a fixed probability of negative externalities, λ, the citizens thus prefer to avoid additional capital concentration in the polluting sector. Second, for a given reward rule, these inflows unambiguously increase the expected probability of an accident, $\lambda(k) \cdot \alpha$. This is so because the probability of a negative externality increases. Intuitively, capital inflows to the polluting industry directly reduce the income to the representative citizen while increasing the bargaining power of special interests.

To evaluate the dynamic implications of international trade institutions, the next step is to characterize the dynamic allocation of capital in the absence thereof. With equation (10), one obtains a finite family of perfect Bayesian equilibria that pass the consistency test. Of these equilibria, I select the one that maximizes capital in the polluting sector.

Recall that in the absence of international trade institutions, the citizens adopt the discretionary rule if and only if the "problem of faction" pales in comparison to negative externalities. Suppose this is the case. As shown above, the citizen retains the discretionary rule because the international trade institution completely eradicates the possibility of spurious regulation. This prompts a decrease in the frequency of environmental regulation, so the expected profits $E(p)$ must decrease. The international trade institution renders the current level of capital in the polluting industry unsustainable.

Proposition 2. If the discretionary rule was optimal without an international trade institution, the international trade institution dynamically reduces capital in the polluting industry.

This result shows that dynamic adjustment greatly amplifies the beneficial effect of establishing an international trade institution for the citizens. In addition to avoiding spurious regulation, the international trade institution reduces arbitrage profits in the polluting industry. Dynamically, this

prompts capital reallocation away from the polluting industry. In addition to the static decrease in consumer prices, international trade institutions therefore dynamically increase the equilibrium wage and reduce the probability of negative externality.

The result could be particularly relevant for European agricultural multifunctionality. If agricultural multifunctionality reduces the total degree of protection in European agriculture by helping citizens hold governments accountable for the consequences of regulation, it could also weak the agricultural lobby and pave way for more ambitious liberalization in the future. This trajectory is particularly plausible in Europe given a history of extensive social regulation and agricultural intervention (Vogel 2003).

Previous research could have vastly underestimated the benefits of international trade institutions in circumstances characterized by severe negative externalities. If international trade institutions reduce the incentive to allocate capital to industries that are pollutive and capable of advancing the cause of protectionism in the political system, citizens reap a "triple dividend" from international trade institutions. In addition to the standard idea of reduced consumer prices, equilibrium wage increases and negative externalities decline. To my knowledge, previous research has failed to acknowledge these two beneficial dynamic effects.

A related positive dynamic feedback was recognized by Hathaway (1998) who argued that international trade institutions have critically weakened protectionist special interests in the United States. Similarly, Davis (2003) and Lake (2009) emphasize that international trade institutions have important dynamic implications that static political economies cannot capture. My theoretical analysis shows that previous research could have underestimated this impact in the regulatory arena, because scholars have so far failed to recognize that international trade institutions could even remove negative externalities by weakening the polluting industry.

What if the optimal rule without international trade institutions was previously constraining? Now the citizen abandons the constraining rule if there is an international trade institution. As shown above, this increases the total probability of regulation, so the effect of the international trade institution on expected profits $E(p)$ to special interests for any given capital allocation (K, k) is unambiguously positive.

Proposition 3. If the constraining rule was optimal without an international trade institution, the international trade institution dynamically increases capital in the polluting industry.

Since the citizen responds to the existence of an international trade institution by adopting the discretionary rule, the total probability of regulation increases. Now additional capital is allocated to the polluting industry. Unfortunately, this reduces the equilibrium wage and increases the probability of a negative externality. Since I have assumed the regulation is not perfectly effective, it is even possible that the expected damage from the negative externality increases. The citizen incurs a triple cost, as increased static equilibrium prices are accompanied by lower equilibrium wages and possibly greater negative externalities.

For the United States, this result has troubling implications. If agricultural multifunctionality increases the expected profits from agriculture, the farm lobby could grow stronger over time. In this case, the ability of the WTO or the executive to combat special interests could critically weaken. If the farm lobby manages to sufficiently increase the profitability of agriculture, it could paradoxically *worsen* externality control too. The scenario is particularly plausible because agricultural multifunctionality appears to emerge against a backdrop of limited regulatory intervention and as a complement to previous subsidy systems.

This possibility has so far eluded international political economists. Perhaps the most related argument is given by Goldstein and Martin (2000) who note that the "legalization" of international trade institutions, particularly the dispute resolution mechanism of the World Trade Organization, could paradoxically undermine political support for liberalization. They argue that increased "rule precision" and "obligation" could magnify political resistance to liberalization, as the distributional consequences of reform are clarified, and reduce the flexibility that governments need to accept in exchange for ambitious liberalization commitments. My theoretical analysis shows that for such negative reinforcement can stem from purely institutional changes at the domestic level. To my understanding, this causal mechanism is novel.

This negative reinforcement depends on an important commitment problem that scholars have not recognized so far. In the model, citizens are fully rational and therefore select the optimal reward rule so as to maximize their expected payoff in the short run. However, the citizen cannot credibly commit to a reward rule in the long run. If the citizen could credibly commit to a reward rule in the long run, she could avoid negative reinforcement simply by abandoning the discretionary rule in the short run. While she could not reap the triple dividend that I have identified, at the very least the society could choose between the lesser of static and dynamic evils. Such dynamic commitment capacity is quite implausible, however, because the commit-

ment to the conservative rule suffers from time inconsistency (Kydland and Prescott 1977). After the citizens observe the equilibrium allocation of capital, they have an immediate incentive to switch to the discretionary rule, because it alone allows regulation upon a genuine negative externality.

Finally, the analysis has a troubling normative implication that warrants a brief digression. As I have shown, the virtuous circle of positive reinforcement benefits societies that have previously chosen the discretionary rule. An important determinant of the discretionary rule is that the citizens perceive a low probability of capture by special interests. To the degree that this perception depends on the quality of regulatory governance in general, it appears plausible that advanced democracies are in a particularly good position to benefit from international trade institutions (Keohane, Macedo, and Moravcsik 2009; Majone 1997). In contrast, nascent and fragile democracies probably depend crucially on international institutions to credibly commit to good governance (Mansfield and Pevehouse 2006; Moravcsik 2000). In these countries, the demand for international constraints is most pronounced while the probability of negative reinforcement in the long run is highest. In other words, international institutions could improve the effectiveness of democratic governance where it is already highest and lead to deterioration elsewhere. This scenario undermines the notion that international institutions could serve as a global engine of economic and political development.

7 Implications for International Institutional Design

The dynamic analysis reveals that previous accounts of international institutional design omit an important element of the problem (Abbott and Snidal 1998; Koremenos, Lipson, and Snidal 2001). If states strategically engineer international institutions to address a given problem at hand, special interests and other constituencies adapt in anticipation. Since these adaptations are endogenous, theoretical and empirical analyses that treat the strategic environment as exogenous could prompt invalid conclusions and predictions.

In the short run, factor endowments are relatively immobile, so international institutions should be optimally engineered or instructed to solve the problem without considering the dynamic consequences. However, in the long run, this approach will have unintended consequences. At any given time, states have no incentive to consider the dynamic consequences, for the reason why dynamics are triggered is the *anticipated* increase or decrease in regulatory protection. Upon realization, dynamics are no longer relevant.

To avoid detrimental dynamic consequences, states would have to engingeer international institutions that are time inconsistent.

How should societies address the dynamic commitment problem? On surface, it appears that any imaginable policy response opens a can of worms. If a society decides to regulate entry to activities that are prone to generating negative externalities, the government has access to yet another immensely powerful pretext for protection (Djankov et al. 2002). If it is difficult for citizens to evaluate the merits of regulatory policies in the short run, how could they possibly form an informed opinion about the dynamic consequences of entry regulation?

In principle, governments could respond to the harmful dynamic consequences of international institutionalization by establishing a "ruthless" international trade institution that completely ignores externality control. Such an international trade institution would be committed to invalidating as many regulations as possible, so it cannot not inspire confidence in the ability of the government to only enact useful regulations. However, in addition to belonging to the realm of fantasy, such a device would inevitably also suffer from time inconsistency. If governments were to design it, they would also regard it useful as long as there are special interests that benefit from protection. If the international institution could inflict critical damage on these special interests, it would no longer serve any useful purpose, so the governments would have an incentive to abolish it. But if special interests anticipate this, they have no reason to believe that the commitment to playing by the rules of the international trade institution is credible.

The adoption of innovative economic instruments might nevertheless provide a simple but robust solution to this problem. The basic idea of economic instruments is that individuals must pay a price for negative externalities such as pollution or waste (Stavins 2003). In my model, the government enacts regulations without imposing fees or charges on the polluting industry that is responsible for the negative externality. But if the government could instead directly tax pollution and waste, the additional incentive to enter sectors that will be regulated in the future would diminish. Simply internalizing the marginal cost of negative externalities could simultaneously improve regulatory effectiveness and mitigate the paradoxical dynamic implications of international trade institutions. My analysis therefore has the additional virtue of providing a previously unrecognized rationale for replacing direct regulation with economic instruments.

Even the use of market instruments is nevertheless a partial solution at best. Unless countries can agree on the deeper principles of international exchange, they cannot fully solve the problem at hand. What one government

considers a legitimate regulation could appear redundant to another government. This problem might be particularly important now that new economic superpowers, most importantly China and India, are rapidly emerging and asserting their rights.

8 Conclusion

I have sought to explicate the dynamic consequences of international trade institutions for social regulation and quality non-tariff barriers to trade. According to my theoretical analysis, these consequences are contingent on the domestic political and institutional constraints on regulation prior to international institutionalization. Societies that have previously chosen to grant discretionary authority over regulation to the government are in a good position to benefit from dynamic adjustments that weaken protectionist special interests, whereas societies that previously imposed stringent constraints on regulation must now cope with dynamic adjustments that strengthen protectionist special interests.

This analysis is directly relevant to two broader questions in international politics. First, I have conducted one of the first rigorous formal analyses of global governance. Pundits and scholars broadly agree that international institutions have complex effects across multiple issue areas and levels, but the resulting strategic interactions have so far mostly eluded systematic analysis. My theory can be usefully extended to other issue areas, such as labor standards or the regulation of foreign direct investment (Mosley and Uno 2007; Neumayer 2001). It can help scholars understand how international institutions interact with the domestic constellation of preferences and institutions. A critical theoretical and empirical implication of my analysis is that the total effect of international institutionalization must encompass the indirect effect on the domestic regulatory landscape. With the notable exception of Goldstein and Martin (2000), previous research has regrettably ignored these indirect effects.

Second, the present analysis illuminates the dynamics of international institutionalization. International trade institutions influence behavior in the short run by invalidating and upholding social regulations. To the degree that economic actors correctly anticipate this effect, they respond by reallocating production factors away from activities dependent on regulatory protectionism that is vulnerable to challenges by the international trade institution. I have shown that even an elementary adjustment process can completely reverse the predicted effect of international institutionalization.

Unless states find innovative solutions to this problem, current efforts to design a system of global governance could have counterproductive unintended consequences.

International political economists have yet to fully grasp the new realities of global governance. While scholars have honed their collective perceptions of the conventional liberalization agenda by investigating the logic of trade and investment protection, the social sciences have made much less progress towards characterizing the problem of regulatory protection in a world where social regulations are an integral element of domestic and international governance. I hope the present analysis opens avenues for empirical and theoretical research that is genuinely relevant to the real challenges that politicians are now struggling with.

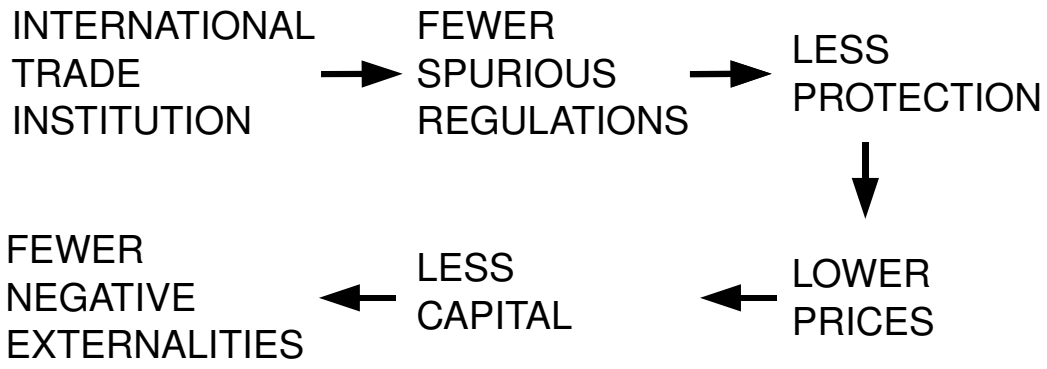

Figure 1. The virtuous circle. As spurious regulations disappear, capital flows out and reduces the potential for negative externalities.

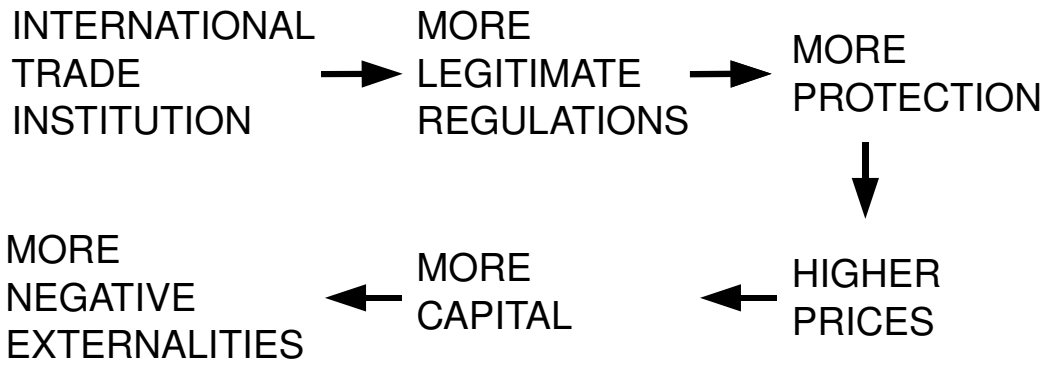

Figure 2. The vicious circle. Although new regulations mitigate negative externalities, capital flows in and creates potential for negative externalities.

Regulation

		Social Value: Yes	Social Value: No
Discrimination	Yes	X	X
	No	X	X

Tariffs and Quotas

		Social Value: Yes	Social Value: No
Discrimination	Yes		X
	No		

Table 1. The dilemma of regulatory protection.

Symbol	Interpretation
K, k	capital
L	labor
p^0, p^1	relative price
F	production function
E	expectation
Z	externality
T	regulation
A	accident
C, c	cost of accident
λ	prior probability of externality
α	conditional probability of accident
β	prior probability of capture
τ	government preferences
U	payoff to citizen
$\mathbf{r}$	reward function

Table 2. Notation.

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