

POLITICAL GEOGRAPHY AND THE TRADE RESTRICTION BIAS

Lucy Goodhart
Columbia University
lmg2005@columbia.edu

September 2006

I am grateful to Christina Davis, Jeffry Frieden, Jeffrey Ladewig, Sean Ehrlich, Pablo Pinto, Howard Shatz and participants at the April 2006 meetings of the Midwest Political Science Association for comments and to Julien Demoulin-Smith for research assistance. All remaining errors are my own.

ABSTRACT

In their 1996 review article on the political economy of international trade, Alt et al ask, “why do trade policies on balance restrict, rather than augment, trade?” Why, in other words, do we see so many instances of import tariffs that reduce the volume of traded goods and so few export subsidies that increase trade flows? In this paper, I take on this intellectual puzzle and present an informal model explaining the anti-trade bias in trade policy. In this model, representatives from specific geographic constituencies are responsible for nominating trade measures in a national legislature. A representative will invest lobbying effort to secure tariffs or subsidies if he or she believes it will increase local output but gains nothing from expanded production out of district. In determining how to spend limited legislative effort, the representative selects from among a pool of local firms and industries on whose behalf they could work. The optimal selection strategy biases the representative towards industries that have recently experienced a decline in output. A tariff or export subsidy to an industry in this position will yield extra output in the district, rather than externally, because the firm will hire local labor to utilize slack or underused resident capital in the form of plant. I survey the existing literature to show that firms in the export sector grow faster, on average than a firm in the import-competing sector. Thus, the bias towards declining firms generates a preference against trade policy measures that would benefit exporters. The argument links the issue of trade policy and tariffs to an earlier, economic literature on the product cycle and explains why locally responsive representatives protect jobs via import tariffs but promote new employment with location-specific tax holidays and subsidies. Finally, the model helps to explain why, given the general rarity of export subsidies, they are a prominent feature in the agricultural sector.

I. INTRODUCTION

In 1996, a set of scholars working at the frontier of international political economy reviewed the intellectual agenda in their discipline (Alt et al, 1996). In their choice of subtitle, “Enduring Puzzles and an Agenda for Inquiry,” the authors indicated that they were at least as interested in the unresolved questions for future research as in summarizing current knowledge. They highlighted two central questions, at present not fully answered in the literature.¹ The first question is why policy-makers should employ price interventions, like tariffs, over more efficient mechanisms for redistributing resources to targeted industries. The second question, and the issue to which this paper is addressed is, “Why do trade policies on balance restrict, rather than augment, trade?” or, as Rodrik (1995) writes, “Why are trade policies biased against trade?”

Because we are so used to equating the analysis of trade policy with the study of endogenous tariff formation, the question itself may require some explication. While importers gain from tariffs, exporters benefit from export subsidies. In both cases, benefits are concentrated for the affected producers whereas costs are widely dispersed among consumers. Thus, both interest groups should be able to overcome the problem of collective action and lobby for trade policy to their advantage. Yet although free trade is regarded as a neutral, or non-interventionist policy, we almost always see interventions on one side of the possible continuum of active trade policy, with a strong, revealed preference for tariffs over export subsidies. Trade policies, in practice, are almost always biased against trade – meaning that they reduce the flow of traded goods -- and towards the consumption of home produced goods. It is this conundrum that I take up and seek to explain.²

The evidence for the bias in trade policy against exports is pervasive and extends from developed to developing countries. The most comprehensive information on policy

¹ An earlier review by Rodrik (1995) reviewed the equivalent intellectual terrain and posed the same questions while addressing the discussion mainly to economists.

² Trade policy, here, is synonymous with tax or subsidies applied to the price of tradable goods as they enter or exit the country. This set of possible interventions includes export subsidies or import tariffs, both of which increase the price of tradable goods for domestic consumers, and export duties or import subsidies (negative tariffs), both of which reduce the price of traded goods for domestic consumers.

instruments used in trade policy comes from the regular issuance of a *Trade Policy Review* for individual member countries of the World Trade Organization.³ The review for Malaysia, dated December 2005, is typical. It notes that Malaysia runs a comparatively open trade and investment regime and has made continuing steps to liberalize its policy. It still, however, applies an average rate of tariff in industry of 9.6 percent with applied tariffs above this rate in the sectors of chemicals, basic metals, fabricated metals (automotive), non-metallic minerals, textiles and leather, wood and furniture and paper, printing and publishing. On the other hand, Malaysia operates “no direct export subsidies”. Looking at the advanced, industrialized nations, the trade policy review for the European Communities (June 2004) reports an average applied tariff rate (for MFN or most favored nation partners) of 4.1 on non-agricultural items with particularly high tariffs in the food and beverage and textiles and apparel sectors. The prominent characteristic of EU trade policy is of course its considerable export subsidies for agricultural commodities with total export subsidies granted by the EU for agriculture reaching €2.5 billion (or approximately US\$2.375 billion) for the marketing year 2001/2002. By contrast, however, and similarly to Malaysia, the EU offers no direct export subsidies outside the agricultural sector. For comparison, the trade policy review for the United States (December 2003) reported an average applied tariff for MFN partners for non-agricultural goods of 4.2 percent and made no explicit reference whatsoever to export subsidies. If such subsidies exist in the case of the U.S., they are of such minimal significance within the full range of trade instruments that they do not bear mention.

Academic work reflects this near invisibility of export subsidies as a policy instrument; indeed, it often integrates the trade restriction bias into its very conceptualization of trade policy. For instance, studies on the political activities of export groups generally assume that the goal of their lobbying is free trade rather than policy interventions like subsidies

³ The trade policy review mechanism was introduced in the Uruguay Round and provisionally established at the Montreal Midterm Review of 1988 as a means of injecting transparency into the trade policy discussions occurring under the General Agreement on Tariffs and Trade (GATT) and, subsequently, the World Trade Organization (WTO). The four members with the largest shares in world trade (currently the EU, the US, Japan and Canada, or jointly “the Quad”) are reviewed every two years, the next 16 members every four years and the remaining members every six years. The reviews are based on a policy statement by the country in question and a report from economists in the Secretariat’s Trade Policy Review Division.

that raise the price received by exporters (Destler and Odell, 1987, Milner, 1988, and Busch and Reinhardt, 2000).⁴ In fact, exporters may adopt free trade as their proximate goal, considering that any more extensive benefits are unattainable; what is of interest is the characteristics of the political and economic landscape that make this “satisficing” behavior optimal for exporters.

Scholarly analysis of trade policy that is explicitly cross-national is often forced to acknowledge the full range of potential outcomes in trade policy. Given the dyadic and symmetric nature of trade, the industry that competes against imports in one country will be exporting in another. Thus, ailing Maine shoe factories are matched by an up-coming Brazilian footwear industry. Whatever intrinsic ability an industry possesses to lobby for trade policy should be applied equally in the fight for a tariff or subsidy, with the desired policy varying by country. Along these lines, Dutt and Mitra (2002) relate trade policy to government ideology and invoke a standard assumption that the left is responsive to the interests of labor and the right to the interests of capital owners (Hibbs, 1977). Labor gains from additional imports of goods that are capital intensive and loses when imports are labor intensive because of the impact of these imports on relative factor demands and real wages. The factor intensity of imports, however, varies across countries and so should partisan preferences over trade policy. Thus, left-wing governments should vote for negative (positive) tariffs when the import good is capital (labor) intensive with right-wing governments adopting the opposite position. Dutt and Mitra compare levels of protection in countries where the import good is labor intensive to countries where the import good is capital intensive, interacting this factor with government partisanship. Since we observe countries for whom the import good is capital intensive and in which the government is left-leaning, we might expect to observe negative tariffs but the authors allude to the ubiquitous reality of positive tariffs in the following aside:

“However, in the real world, there are possibly other components of the tariff (arising from other factors or considerations) which are, in combination,

⁴ Similarly, the formal models of Mayer (1984) and Hillman (1982) consider only political support from tariff requestors and do not allow for contributions from exporters.

always positive enough to make the overall tariff levels that we observe, positive in countries of all degrees of capital abundance or scarcity, and with governments of all ideologies.”⁵

Thus, although interventions like export subsidies that would expand trade are sometimes conceptually acknowledged, they are rarely observed in practice. Let us consider for a moment how hard this is to explain using the available political economy models of trade policy and the assumptions that they embody. First, as indicated by the examples above, it is hard to justify the trade protection bias using institutional models that focus on the aggregation of trade preferences. Simply put, we have no *a priori* explanation why benefits to the export sector should be accorded a lower weight in the social welfare function than benefits to the import-competing sector and the factors they employ. Second, and more concretely, models of policy coordination, in which domestic policy is constrained by prior, international commitments, would point to the differential regimes in place for export subsidies, which have long been illegal under GATT and then WTO, versus import tariffs. However, and as Rodrik astutely notes (1995, fn 14), similar prohibitions on quantitative restrictions for manufactured goods have not prevented countries from using them without incurring substantial penalties. Further, agreements on trade policy instruments are the result of strategic forethought; thus the readiness of WTO member states to proscribe export subsidies may indicate that this instrument is not of inherent value to domestic policy-makers rather than indicating political will. Finally, although Rodrik does not make this point, the prohibition on export subsidies has hardly constrained the continuation of heavy, trade distorting subsidies in the case of agricultural commodities favored under the EU’s Common Agricultural Policy.

Another set of models is distinguished by its focus on the demand side of trade policy lobbying and bases explanations of trade policy on the characteristics of different

⁵ Grossman and Helpman (2005) present a model where trade policy is influenced by the electoral system. Their argument yields positive protection in majoritarian systems whenever factor ownership varies across electoral districts and parties cannot discipline their members, because members implement protectionist measures to benefit factor owners in the districts that voted in the majority party. In this case, however, the term protectionist is used to cover *all* policies that reward the owners of specific factors, either an export subsidy or an import tariff, and cannot explain the observed bias against export subsidies.

industry groups, including their factor specificity, geographic concentration and level of output compared to trade flows (Grossman and Helpman 1994, Busch and Reinhardt, 2000, Hiscox, 2002). These factors are expected to affect the costs of lobbying and the size of contributions that sectors can offer to politicians. Yet there is little reason to believe that export industries are less geographically concentrated than import competitors or employ fewer specific factors, as would be required to justify the absence of effective lobbying for export subsidies. Further, we once again have to contend with the symmetric nature of trade: the export sector is composed of different industries in different countries. To justify the observed bias against export subsidies we would have to argue that industries that export their goods are *always* characterized by an inferior capacity for lobbying, despite the fact that the export sector worldwide includes *all* possible industries involved in tradable production.

The strongest argument, however, against using the “demand side” of the political market to explain the asymmetry in trade policy is that export industries have proved themselves an effective lobby for related, macro-economic policy goals. During the early years of the Reagan administration, when the U.S. Dollar appreciated sharply both in nominal and real terms, it was the CEO of an exporting company, Lee Morgan of Caterpillar, who proved the most resolute and connected representative of U.S. manufacturing in pushing the administration to lower the Dollar (Frankel, 1994).⁶ Morgan held some of the traditional advantages of any effective lobbyist. He and his company had contributed to the Republican election effort and Caterpillar’s headquarters in Peoria is located in the district that elected House Minority Leader Robert Michels. The point, however, is not that Morgan, or Caterpillar, were unusual in the strategic advantages they held but that they were able to translate these advantages into lobbying muscle like any other industry. They were not penalized on the basis of their categorization as an exporter. The fact that exporters do not invest time in lobbying for export subsidies could simply imply that they do not attribute a high probability of success to such endeavors. This realization prompts

⁶ Morgan also galvanized and directed broad lobbying efforts through a business roundtable and the National Association of Manufacturers (Frankel, 1994). The apparent success of their efforts was demonstrated by the administration’s negotiation of the Plaza Accords with major trading partners.

us to examine what Rodrik (1995) calls the supply-side of the policy market: the incentives and constraints of policy-makers.

One of the supply-side factors frequently used to explain the trade restriction bias is that tariffs (and trade) provide “an excellent tax handle” (Rodrik, 1995). This is particularly true for developing countries in which administrative capacities are not sufficiently advanced to implement a broad-based income or corporate tax. Indeed, developing countries generate a much higher percentage of their total revenue from trade than do the industrialized nations (Rodrik, 1995). From a fiscal perspective, export subsidies are obviously inferior both to tariffs and to free trade since they generate a cash outflow.⁷ The fiscal imperative can explain the asymmetry between import tariffs and export duties in developing countries, but is less applicable in the case of advanced, industrial economies. In these latter nations, there exist diverse mechanisms for fiscal extraction and a historic reliance on tariffs cannot explain current day policy unless we allow for a very high degree of persistence. Rodrik (1995) considers the potential for persistence through a status quo bias that is engendered via the model outlined in Fernandez and Rodrik (1991). In this case, policy reform away from the status quo is inhibited by individual uncertainty about who will gain from proposed new policies.

The combination of a prior reliance on import tariffs for public revenue and a status quo bias, however, is not fully persuasive for the case of trade policy because, as McGillivray (2004) notes in the case of tariffs, “Of course the beneficiaries know who they are...” (p. 3). The same points apply forcibly to export subsidies so that we have to explain not just why tariffs persist, but also why export subsidies never became an element of the status quo.⁸ This is not to impugn the argument made by Rodrik because it is, in fact, the *only* argument that has been offered to explain the imbalance in trade policy and serves to underscore the complexity of the task. If further rebuttal is required for theories based on

⁷ Despite the fiscal consequences, there are historic instances of policy-makers advocating subsidies to industries producing tradable goods. Alexander Hamilton, in his *Report on Manufactures* in 1791, recommended the use of “pecuniary bounties” or subsidies, to manufacturers to be paid for out of the proceeds of import duties for the purpose of stimulating manufacturing production. I am indebted to Erik Gartzke for this observation.

⁸ The status quo argument is also challenged by the fact that the U.S. government was able to repeal prior export duties.

the fiscal imperative and persistence, it would be provided by examples in which industrialized countries adopted new policies after World War II that required significant fiscal outlay. These include the payment by EU member states of €2.5 billion per annum on food export subsidies for financial year 2001-2002 (WTO, 2004), the estimated \$ 44 billion that 25 OECD members paid in direct subsidies to industry in 1993, accounting for 1.1 percent of their GDP (OECD, 1998), and payments to maintain the Commodity Credit Corporation (CCC), the mainstay of public support to U.S. agriculture, which by the 1980's reached \$25 billion 1997 dollars (Gardner, 2002). These latter examples indicate the ways in which industrial countries have targeted expenditures to assist particular sectors and groups; they simply do not do so via export subsidies for manufacturing industries in most if not all country cases.

The purpose of this *tour d'horizon* of political economy models of trade policy has not been to belittle an important and powerful body of work. Instead, the goal is to indicate that our models are insufficient to explain one of the prominent anomalies in trade policy, even with tweaking and prodding. There is, however, an un-remarked regularity in the provision of aid to exporters that may assist us in understanding the bias in trade policy favoring import competitors over export producers. Despite the near universal absence of export subsidies for particular commodities, governments have extended significant financial support to the export industry in general, via subsidies on inputs, concessionary credits and tax exemptions. For example, in the U.S., the Export-Import Bank provides loans, guarantees and insurance to exporters and their customers. In FY 2003, the Ex-Im Bank authorized a total of US\$10.5 billion in support for its export activities in the form of loans (US\$58 million), guarantees (US\$7.8 billion), and export credit insurance (US\$2.7 billion). The significance of this assistance, however, is dwarfed by the value of federal government concessions to exporting companies via tax exemption of certain "foreign trade" income of "foreign sales corporations" (FSC's). These benefits have been available to exporters since 1971, first through the establishment of a Domestic International Sales Corporation (DISC) and then, between 1984 and 2000, via an FSC. The exact mechanisms at work under the FSC are complex, but as explained by Desai and Hines (2004) proceed as follows. An American company selling a good to a buyer in

Italy can first sell the good to its foreign sales corporation located in Guam (or any other overseas location). The good does not need to be traded physically through the FSC, nor is it necessary that any substantial business be conducted at the location of the FSC. As a result, a portion (approximately 15 percent) of the export profit was attributed to the FSC and exempted from income tax. In November 2000, in the wake of an adverse WTO ruling, the U.S. government discontinued FSC's and replaced them by an automatic 15 percent exemption of "extraterritorial income" (ETI) from U.S. taxation.⁹ ETI consists of income earned by exporting goods from the U.S. as well as income earned by foreign affiliates operating abroad.¹⁰

A 15 percent exemption from income tax for the proceeds from export sales comprises a substantial advantage, and large implicit subsidy, for exporters.¹¹ The tax revenue foregone as a result of the FSC provisions was estimated by the U.S. government as US \$2.55 billion for the FY 2000 Budget and was expected to be US\$4.16 billion in the FY 2001 Budget.¹² The magnitude of benefits to exporters offered via federal tax concessions, in other words, overwhelms the value of export subsidies provided by EU member states under the Common Agricultural Policy.¹³ U.S. trade partners have not been indifferent to the existence of the subsidy, which has been under scrutiny by the WTO since 1998 following a complaint by the EU in 1997. In early 2002, the WTO's Directorate found the ETI tax provisions inconsistent with its agreements on subsidies and authorized the EU to take countermeasures at the level of US \$4 billion per annum in recognition of the implicit value of the export subsidy. In a recent development in the case, the EU was poised to re-impose retaliatory measures in the face of incomplete U.S. compliance with WTO rulings (Financial Times, February 13th, 2006).

⁹ The FSC scheme was ruled illegal by the WTO in February 2000 on the grounds that it constituted an implicit export subsidy. The ETI provision, however, retains most of the essential features of the FSC exemption (Desai and Hines, 2004).

¹⁰ This section relies substantially on Desai and Hines (2004).

¹¹ With the U.S. corporate income tax rate rising from 15 percent for businesses with small net income to a top rate of 35 percent, the exemption implies a reduction in tax payments (or increase in net, post-tax income) of 2.25 percent to 5.25 percent. The latter amounts to 8.08 percent of after-tax export profits.

¹² Cited in Desai and Hines (2004), FY 2000 Budget, p. 354, Table 34-4 and FY 2001 Budget, p. 382, Table 32-4. Available online at <http://w3.access.gpo.gov>.

¹³ The total cost of CAP to EU citizens was however larger because of the price supports and direct payments under this program. I am grateful to Christina Davis for this point.

In their conclusion, Desai and Hines (2004) note, “In a world where ad valorem subsidies are being negotiated away, corporate tax policies are increasingly viewed as instruments of international competition...” The point is quite valid, in that tax policy is being used to generate a de facto export subsidy. However, their conclusion elides the point of interest here. The U.S., like other countries, has never been associated with ad valorem subsidies on exports; it has initiated the tax concessions for exporters *de novo*. The federal government assists the export sector but, rather than offer specific and narrow benefits to particular industries, as it does for import competitors, it extends broad-based tax incentives that can apply to any export producer with positive tax liabilities.¹⁴

The insight to be drawn from this lurid tale of implicit export subsidies is that significant assistance to the export sector is not unknown, whether in developing or developed countries. Presumably, in providing this support, governments are responding to pressure from export lobbies since the differential tax treatment cannot easily be justified on the grounds of aggregate welfare. What is distinctive in the empirical pattern of support, however, is that it is implemented not via targeted price adjustments as with tariffs and subsidies, but via broad-based subsidies operating primarily through the tax system. The question, then, is why policy-makers select such radically different policy instruments by which to support import-competing and exporting industries.

The paper proceeds as follows. In the next section I lay out a model of trade policy-making based on the utility function of a representative with localized re-election incentives and indicate how it privileges the claims of declining industries to receive a tariff or subsidy. Section III explains why it is that import-competing industries are more likely than exporters to face significant decline. Section IV discusses the wider implications of the model and indicates how and why it can apply to political systems beyond the case of the United States. Section V concludes.

¹⁴ Nor are they alone in this. The Irish government introduced an exemption for export income in their corporate tax regime in 1956.

II. POLICY CHOICE BY LOCALIZED REPRESENTATIVES

In what follows, I present a model of trade policy formation that generates an asymmetry in the prevalence of import tariffs and export subsidies just as we observe in the world. A valued by-product of the theoretical setup is that it predicts one of the empirical findings noted in previous studies of tariffs in the advanced world, that an industry is more likely to receive protection if it has high or increasing import penetration or has been in decline (Marvel and Ray, 1983, Ray, 1991).

The theoretical approach I adopt eschews the use of a “political-support” function of the type originally developed by Peltzman and Stigler and incorporated into political economy models of trade policy since the seminal work by Hillman (1982).¹⁵ In this family of models, a single decision-maker determines tariff (or subsidy) levels across sectors with protection rising in the additional profitability enjoyed by affected sectors and falling in the costs felt by consumers as protection increases. Instead, the model presented here derives preferences over trade policy instruments from the utility of a local representative whose likelihood of re-election is related to output and employment in district. The model thus incorporates political geography into the process of trade policy-making because each representative runs for office in a given, spatially defined constituency. The representative for a given district is referred to throughout, and for convenience, as ‘he’.

The utility function for the representative is given by:

$$U_i = y_i(t) - \omega_i(t) \quad \text{where } i = 1, \dots, N \text{ districts} \quad [1]$$

The utility of the representative from district i is positively related to the real output of his district, y_i , and negatively related to legislative effort, ω_i . The representative can spend resources on advocating a particular policy, either a tariff or a subsidy, where both

¹⁵ For further instances of political economy models of trade policy that incorporate a political support function, see Grossman and Helpman (1994).

are indicated by t to stand for trade policy. Output rises if a tariff or subsidy is provided but the representative must expend effort to secure the subsidy and effort is increasingly costly as the level of the tariff or subsidy rises. Thus, $y_i'(t) > 0$, and $\omega_i'(t) > 0$. I also assume that $\omega_i''(t) > 0$ and $\omega_i''(t) \gg y_i''(t)$.¹⁶

The representative's utility function contains no negative price effect of the tariff on constituents' welfare. District members consume a diversified basket of goods so that the loss in consumer surplus arising from changed consumption as t rises is assumed to be negligible at the local level.¹⁷ The utility function thus embodies the concentrated benefits and dispersed costs that are so characteristic of interventions like tariffs or subsidies and exaggerates them because the impact of the tariff on consumers elsewhere never enters the utility function of the representative. Finally, the utility function treats the entirety of new output or employment as contributing to the representative's welfare rather than limiting gains to additional producer surplus. The form of the statement adopted here implies either that the representative (and his voters) are unaware of the effect of additional employment in bidding up prices for inputs like labor, or that under-employed inputs exist in the district or can be imported at no cost.

The positive relationship between utility and local output can be defended as the depiction of a representative democracy in which each representative works to maximize the aggregate welfare of his constituents. Further, direct political benefits, in terms of an increased likelihood of re-election, may accrue from rising local employment and a growing tax base. The empirical relationship between local economic conditions and re-election has been little studied (as noted by Wawro and Himmelberg, 2002) but studies from the U.S. and U.K. indicate that voters are able to distinguish economic conditions at the national and local or state level and that vote intentions are affected by perceived local conditions (Pattie et al, 1995, Brooks and Prysby, 1999, and Johnston et al, 2000). Finally, the assumption that voters respond to local conditions is a frequent component of

¹⁶ The last assumption, that the second derivative of the cost of effort is strictly greater than the second derivative of the output function is required to derive a finite solution to the level of the tariff or subsidy.

¹⁷ The effect of the tariff on real income via a change in the overall price index is also taken as insignificant.

political economy models (Weingast, Shepsle, and Johnson, 1981, McGillivray, 2004) indicating at least that it conforms to widespread and deeply grounded intuitions in the field. Incumbents seeking election notoriously refer to their jobs that they have “created”.

The representative can work to secure a tariff or subsidy that will benefit the district, but this requires precious political effort. Thus, I treat the district representative as in Hall and Deardorff (2006) as an actor who must maximize his legislative and policy output in the face of considerable scarcity of resources. The constraints on the legislative “enterprise” (Salisbury and Shepsle, 1981) come in the face of time pressures, limited staff resources and search costs of accessing specialized information. In the face of these constraints, the representative must make hard trade-offs to optimize the political benefits of legislative effort. The initial assumption is that if the representative undertakes legislative effort, a tariff or subsidy is enacted with certainty.¹⁸ For simplicity, it is also assumed that the representative will expend effort on only one policy instrument per session, either a tariff or a subsidy, before hitting strict constraints on legislative inputs.

Maximization of the representative’s utility function requires a two-stage optimization exercise. Because he is constrained to supply trade policy to just one beneficiary from among a pool of potential applicants, the representative must first calculate the optimal level of tariff or subsidy that he should supply to any particular industry in his district. In the second stage, he selects from among the potential set the industry for which trade policy (at its optimal level) will generate the greatest increase in his utility given output growth in district.

Thus, in the first stage, the representative sets:

$$\frac{\partial y_i}{\partial t} = \frac{\partial \omega_i}{\partial t} \quad \text{s.t. } y_i > \omega_i \quad [2]$$

¹⁸ It is also possible to relax this assumption and assume a probability distribution on passage.

In other words, the representative supplies trade policy until the marginal benefit of an increase in the proposed tariff or subsidy from extra output is just equal to the marginal cost of legislative effort, subject to the condition that net utility must be greater than zero.

It is worth briefly considering how the optimal inputs for a local representative will differ from a national counterpart. First, at the national level, the aggregate impact of a tariff on consumer surplus is non-negligible, so that a national policy-maker would always select a lower level of tariff or subsidy. Second, a national policy-maker is not concerned about the location of additional output, and so would optimize tariff policy by setting:

$$\frac{\partial y}{\partial t} = \frac{\partial \omega}{\partial t} \quad \text{s.t. } y > \omega \quad [3]$$

In this case, tariffs or subsidies will be granted to industries that have the highest expected gain from trade policy and no particular bias for or against declining industries, or for or against exporters, can be inferred.¹⁹ There is a difference, however, between the industries that would be selected for trade policy assistance at the national and local policy levels. This difference is driven by the disjuncture between ∂y_i and ∂y because local output decisions are “lumpy”, in that production cannot be infinitely expanded at a given plant or location.

To clarify what this means, let us consider how an industry that is located in the district will respond to an import tariff or export subsidy. Either instrument will raise the price received by the firm above the world price and the firm’s output will expand along the supply curve until price is once again brought into equilibrium with marginal cost at the new optimal output level, y^* .²⁰ In the short run, with given plant and infrastructure decisions fixed, the firm will expand production by adding variable factors, such as labor

¹⁹ Finally, the effect of trade policy on factor demands and costs is also non-negligible at the national level, meaning that a national policy-maker would compare marginal gains in producer surplus (rather than output) to the marginal costs of legislative effort.

²⁰ In this section, the terms firm and industry are used interchangeably. When an industry in a particular district is composed of multiple firms, the representative has to consider the likely behavior of the different firms aggregated together.

to existing plant in order to produce y^* . The average cost of so doing is depicted by the short-run average cost curve (See Figure 1). In the long run, however, the firm can expand production in a more cost-effective way by investing in new plant, if this investment is justified on the grounds of cost. At the point at which a firm decides to invest in new plant (or any fixed factor) the short-run cost curve is no longer operative and the firm moves along its long-run cost curve.

The relationship between short-run and long-run cost curves for a given industry that is marked by fixed inputs (ie: plant) and diminishing returns to scale is laid out in Figure 1. Each short-run average cost curve indicates the cost per unit of output when at least one of the inputs is fixed and we assume that the firm is currently on the second short-run average cost curve, marked SRAC2. The short-run cost curves are above the long-run cost curve everywhere except at the point of tangency. This point, marked by y^e , gives the output level at which the actual level of the fixed input is equal to the optimal level that would have been selected via cost minimization if all input levels were variable. Because of its implications for cost reduction, this point is known as the “efficient scale of production”. The short-run cost curves are above the long-run curve at all other points because at least one input is constrained and so input mixes cannot match the most efficient input combination that could have been selected.²¹

Where one short-run cost curve intersects with another, at y^+ , the firm is just indifferent between expanding output given current investment in plant or incurring the cost of new investment so that it can produce more efficiently. To the right of the intersection, which I term the reinvestment point, the firm will always invest in new plant.

A key question, for the firm and for the representative, is where this new plant (and the output it produces) will be located. If a firm invests in new plant, it may or may not be in the district. Although specific local factors may make additional investment in the

²¹ Some texts also designate the long-run average cost curve as the scallop edge given by the lower portion of the short-run cost curves below their intersection points to indicate that the long-run is not attainable except through capital or plant inputs that move the industry to a different short-run cost curve.

α district attractive, risk sharing between different locations, and nearness to diverse domestic markets will often favor location in a different district. Assuming a likelihood of reinvestment in the district of α if the firm invests in new plant, the additional output generated in the district is equal to:

$$\frac{\partial y_i}{\partial t} = \frac{\partial y}{\partial t} \quad \text{if } y^* \leq y^+ \quad \text{and} \quad \frac{\partial y_i}{\partial t} = \alpha \frac{\partial y}{\partial t} \quad \text{if } y^* > y^+ \quad [4]$$

What relevance does this balancing of short-run and long-run considerations hold for the local representative? Employment and output gains realized in another district are benefits foregone. If a firm (or industry's) expansion would push it past the point at which additional investment in plant is justified, so that $y^* > y^+$, the marginal benefits to the representative are discounted by the probability that new plant is located elsewhere. In effect, the supply curve for that industry, as it is perceived by the local representative, is kinked. Up to the reinvestment point, the increase in output that will come from trade policy is $\delta y / \delta t$, but after the reinvestment point the anticipated increase, and the marginal benefits from trade policy, are only $\alpha * \delta y / \delta t$. Expected gains are discounted by the probability that a new firm is located elsewhere. The first-stage optimization for the level of trade policy, for industries for which current output is close to y^+ , will often involve a corner solution, so that the representative supplies trade policy until y^* is just equal to y^+ . This ensures that the representative will not waste legislative effort on creating jobs in other districts, but the first round optimization drives a wedge between potential beneficiaries depending on their proximity to y^+ . Firms whose current level of output is closer to y^+ , will have more of their potential future output discounted by α , reducing the optimal level of trade policy and net benefits.

The impact of proximity to y^+ is shown in Figure 2. In this diagram, I show the legislative effort curve for the representative (given by ω) and the supply relationship between output in the district and the level of trade policy, t , for two industries. The solid

line represents the initial supply relationship when $\partial y_i = \partial y$ and output expands at existing plants while the dotted line section indicate the increase in local output for a given increase in t once output exceeds y^+ and the firm expands into new plants. For this level of output $\partial y_i = \alpha \partial y$, the dotted line section has a lower slope and there is a kink in the supply relationship as output moves past y^+ . Industry one and two show the same initial supply relationship and differ only in the extent to which they can increase output locally before reaching their particular reinvestment point y^+ . At its initial level of output, industry one is able to expand substantially before reaching y_1^+ and optimal trade policy is not affected by the prospect of reinvestment and potential relocation. For this industry, the representative sets optimal trade policy at t_1^* , where the slope of the supply relationship, y_{i1} , is just equal to the slope of the legislative effort function, ω . Were it not for the kink in the supply relationship, the representative would set trade policy at the same level for industry two because the solid section of the supply relationship has the same slope. The initial level of output in industry two, however, is closer to the reinvestment point y_2^+ , so that the supply relationship moves along the dashed line after only a small additional output gain in the district. Facing lower marginal benefits from additional legislative effort once output reaches y_2^+ , the representative sets the slope of the dotted section of y_{i2} equal to the slope of the cost curve at t_2^* , which is also the level of trade policy that would have been set by the corner solution. Because the point at which the marginal benefits of extra trade policy are discounted arrives sooner, the representative sets a lower optimal level of trade policy for the second industry creating smaller net benefits.

In the second stage, the representative must select between potential recipients of trade policy benefits by comparing the net benefits that are created at the optimal level of trade policy for each. The industry on whose behalf he takes on legislative effort must be sufficiently large (in comparison to the district) so that $\frac{\partial y_i}{\partial t}$ is significant – it makes little sense to incur costs to assist a small enterprise. On the other hand, it is much less

worthwhile to award a tariff or subsidy to an industry whose output is large *relative to their current level of plant*. In this case, the current level of output, y , will already be to the right of the efficient scale of production y^e and close to the reinvestment point y^+ meaning that a relatively small increase in local output will trigger investment in plant whose location is unknown. The representative can diminish the danger of the industry investing elsewhere by supplying a tariff or subsidy that would generate additional output just until the point at which $y^* = y^+$, but this yields a smaller net benefit than could be gained by supplying price intervention to another industry. By comparison, if an industry, or firm, has recently decreased its level of production, below the point y^e , the net marginal benefits of additional tariff or subsidy protection will be higher. Given the existence of underemployed plant inputs, the representative can be confident that there is the potential for significant output expansion in the home district. Legislative effort will not be wasted on jobs elsewhere and the home marginal benefits will be high. From this point of view, the most favorable signal for a local representative may be a statement by a local firm, “We will close down unless we get protection.” This statement, if credible, signifies that the local firm is almost at the point, y^- , at which the plant will be retired. In this case a tariff or subsidy can produce significant employment gains in the home district (relative to no action) before hitting the point at which the industry may expand into different locations. Put in different terms, a representative will prefer “saving jobs” to “creating jobs” because the location of new jobs is uncertain.

The results of this two-stage decision process for representatives who care about their re-election are clear. Industries that are in decline, or can realistically point to growing threats from imports, have an advantage in applying for trade policy measures. The industries possess this advantage because they can credibly commit to additional production in the home district in return for a tariff or subsidy relative to the counterfactual with no trade policy. This outcome conforms to the findings of Marvel and Ray (1983) and Ray (1991) that protection is higher when an industry has been in decline. Can the model also explain why it is that export industries are so rarely the recipient of trade policy assistance?

III. EXPORTS, IMPORTS AND INDUSTRY EXPANSION

In order to infer a preference for import-competing industries from the representative's bias towards declining industries, it is necessary to demonstrate that import-competing industries will, in general, be contracting, while export industries will be expanding. This is not to claim that the export sector as a whole is growing, but that any firm, taken at random from the export sector, has a higher likelihood of growth and lower likelihood of decline than any firm taken at random from the import-competing sector. There are two categories of arguments that I make to support this conjecture, one, theoretical, which posits a changing commodity mix of comparative advantage related to technological shocks, and one empirical, based on previous studies of exporting firms.

The first argument derives from the original work by Vernon (1966) on the product cycle. Findlay (1978) and Krugman (1979) later formalized the product cycle hypothesis in models of trade with technology shocks. Vernon's article was inspired by the intuition that "leading" countries, like the U.S., enjoy an advantage in technological innovation and therefore export goods that incorporate or rely upon new technology. Industries that form around these goods have a substantial potential for growth, starting with introduction to the domestic market and expanding until they supply customers worldwide. Over time, however, new technology becomes standardized and is more easily imitated and transferred. At this point, Vernon labels the good a "maturing product"; other advanced countries initiate production and even export to the U.S. market. The final state of the product market cycle involves exports to the lead country from less developed countries of goods whose production is now completely standardized and for which trade is determined by the relative cost of labor. Once the final stage is reached, industries in the U.S. that are still producing the good find themselves competing with lower-cost entrants. Unless they continue innovating within a given product-line, those industries will see their sales reduced and will cut production and employment. Failing adaptation to new products, the declining industries will ultimately face closure.

In their 1991 book, Grossman and Helpman introduced the concept of a “quality ladder” of innovation, so that industries could maintain their position by continuously upgrading the technological content of their goods. In terms of their implications for industries in the export sector, however, the first- and second-generation product cycle theories are similar. Exports from advanced countries are generated by technological innovation. This takes the form of launching new goods from concept stage through to full market saturation. Each technological innovation prompts growth in the industry that develops the technology. To export a new good, or a more sophisticated version of an existing good, a firm must produce more than it does for the domestic market alone. Thus, the export sector is continuously replenished by the entry of industries which must grow to increase supply. To remain in the export sector, industries must maintain innovation and the desirability of their product. If an industry fails to innovate, it will be supplanted by foreign contenders. At that point, its own output will contract, because it is no longer supplying foreign markets, and it will “leave” the sector. By comparison, an industry “enters” the import-competing sector once foreign firms start selling in the home market. At this point, the output of domestic firms will shrink because they are supplying a smaller share of home demand. If the penetration of the domestic market by foreign firms continues, the home industry will contract further and finally shut down.

The important difference between a static theory of comparative advantage, and the product cycle theory, in this context, is that the latter theory posits a continuous turnover in the export and import-competing sectors. This turnover implies a higher average growth rate for industries that export because of the characteristics of the companies that enter and exit. A firm must grow to become an exporter if it is not one already because it is supplying new markets. It will naturally contract if it leaves the sector and no longer supplies customers overseas. By contrast, a company will shrink if starts to compete with foreign suppliers in the domestic market (as an “import-competitor”) and may be reduced to bankruptcy if it cannot compete with them effectively. The only way in which it leaves the import competing sector is by raising its supply to meet the entirety of domestic demand. By implication, firms in the export sector are growing more rapidly than other firms because successful companies enter while others leave. The Markov

process is the reverse for the import-competing sector so that shrinking firms enter. The import-competing sector will become an “absorbing state” unless firms can innovate and expand, driving foreign competitors out of the domestic market. Given the different characteristics of firms entering and exiting the two different sectors, the export sector at any given time will be populated by a higher percentage of firms that are growing and will display a higher average rate of growth across firms.

Their work is not motivated by the product cycle theory, but empirical analysis by Bernard and Jensen (1999, 2004) finds significant differences in performance comparing exporting firms to firms that do not export. Firms that export display significant advantages over non-exporting firms in terms of total employment, shipments, productivity and wages. The superior performance of the sector is driven, however, by the qualities of the firms that enter (“good firms become exporters”) rather than by some intrinsic effect of the export market (“exporters become good firms”). Firms that later became exporters, had employment growth in the four previous years that was 1.4 percent higher per annum than firms that did not become exporters and growth in total shipments of 2.4 percent per annum. Firms that exported continuously did not, in general, display large differences in performance, except for employment growth, where they grew by 0.4-1.1 percent more than non-exporters. From the reverse point of view, firms in import-competing sectors, particularly those competing against low-wage countries, are shown to be significantly more likely to reduce employment and to close plants. Thus, Bernard and Jensen (2002) found that the probability of shutdown was significantly higher in industries that faced competition from low-income countries, especially for low-wage, labor-intensive plants within those industries. Similarly, Bernard, Jensen and Schott (2006) show that imports from low-wage sectors into a given sector are significantly associated with decreasing levels of output, falling employment, and a greater likelihood of plant closure.

The empirical analysis that has been undertaken to date, in other words, supports the conclusions of the product cycle theory.²² Export firms look “better” and grow faster in terms of employment than firms that are not exporters. This is partly due to the infusion into the export sector of firms that are on an extremely positive growth trajectory. While we cannot infer, from the work undertaken to date, the exact probability that a firm taken at random from the export sector will be growing or the same probability for a firm in the import-competing sector, we have very strong grounds for believing that the first probability is higher than the latter. As such, firms in the export sector are less able to command legislative effort from localized representatives for the same reason that robust individuals cannot extract services from the medical profession; they don’t look like they require attention. Firms in an import-competing sector have generally already endured a decline in their output and employment level. Given this previous decline, they can credibly commit to expanding production at existing plants when and if they receive protection.

IV. DISCUSSION

In Section II, I introduced a simple model that can explain why localized representatives would display a preference for industries that have experienced recent decline in output and employment when they select the beneficiaries of their policy effort from the pool of local firms or industries. Section III was given over to a discussion of the theoretical and empirical evidence supporting the claim that industries in the import-competing sector are more likely to match the profile of a declining firm than industries in the export sector. I next turn to a discussion of the wider implications and applicability of the argument.

First, with respect to the intellectual antecedents of this enterprise, astute readers will notice the reliance on uncertainty, which is also the crucial element of Fernandez and Rodrik (1991). In this case, however, the uncertainty is not over the beneficiary of trade

²² It is also consistent with a standard Heckscher-Ohlin model with declining costs of trade with countries whose comparative advantage is in the production of labor-intensive goods.

policy, which is easily deduced, but where those beneficiaries will *reside*, which is the main issue of concern for representatives who engage in home style politicking. Second, and as in Weingast, Shepsle and Johnson (1981), a sub-optimal level of trade policy is partially explained by the failure of localized representatives to internalize losses in consumer subsidy that are experienced elsewhere, in the districts beyond the home base. Finally, and as in the original article, the discrepancy between the incentives of a national and local policymaker, combined with a norm of universalism, can imply that tariffs rise with the number of electoral districts as each representative achieves the optimal level of trade policy for his district ignoring aggregate losses in consumer surplus.²³

A second set of points relates to the preference in trade policy towards declining industries. In previous work, this preference has been explained by risk sharing and redistribution (Hillman, 1982, Staiger and Tabellini, 1987). Rodrik(1995) also quotes Corden's (1974) term "conservative welfare function" to describe the incentives of a policymaker who wishes to forestall a real income loss in any sector of the economy. The expression relates closely to the argument I make here because it is the localized representative who is essentially "conservative". If the representative could offer himself for hire, and secure trade policy to benefit any particular group, in any particular location, he would once again provide trade policy to the industry with the highest elasticity of supply. It is because the representative has made investments in reputation in a given district, and cannot move those investments, that he spends legislative effort on behalf of industries that have greater potential for expansion in the locality.²⁴ If the beneficiaries of this assistance continue to decline, as product cycle theory suggests, the net welfare costs of the bias towards trade restriction grow over time, because given losses in consumer surplus protect rents for a smaller and smaller number of workers and firms.

Third, the argument as it is presented abstracts from an important end stage of trade policy making, in which representatives must coordinate in order to pass any particular tariff or subsidy. Readers may wonder if different assumptions about this end stage

²³ For an empirical analysis of the impact of number of districts, see Mansfield and Busch (1995).

²⁴ Trade policy should therefore matter more to older, and longer-serving, incumbents.

would change the conclusions of the argument. Within the current set up of the model it does not. The argument is that no industry in the export sector ever gets past the screening process by which localized representatives decide between potential beneficiaries of legislative effort. If we introduce a third stage, in which trade policy must be agreed by a certain number of legislators, we can even loosen the argument. Although export industries may sometimes experience sufficient decline to become a promising target for individual legislators, it is highly unlikely that exporting industries decline in a sufficient number of districts to get pass a threshold number of representatives who must all agree on trade policy.

Fourth, although the argument presented here helps to explain why localized representatives are biased towards declining industries and can indicate why exporting industries are less likely to be in decline, it does not address the first question posed by Rodrik (1995) and Alt et al (1996). Why do policymakers choose such inefficient methods to redistribute income? The consideration of legislative effort, however, may provide some leads. If a representative secures a tariff or subsidy, that measure survives until repealed, which requires effort on behalf of another legislator. Subsidies, on the other hand, require effort in order to be renewed yearly as part of the budget process.

Fifth, it is important to consider how well the argument travels beyond the U.S. case, for which it seems tailor made. Fiona McGillivray (2004) has made an important contribution to the field of political science by pointing out that electoral geography (in particular the dispersal and clustering of industries across electoral districts) matters, but it matters in different ways depending on domestic political institutions. It is these political institutions (including party strength and electoral laws) that determine the incentives for trade policy action. In decentralized party systems, like the U.S., in which trade policy must be supported by a coalition of willing legislators, benefits flow mainly to industries whose geographic spread encompasses enough districts to pass a coalition threshold. In strong-party, parliamentary systems, like the U.K., trade policy is proposed by a unified government, whose incentives are to target trade policy towards the marginal districts on which re-election depends. Even under P.R. systems, political parties may

use trade policy to support groups that are regionally concentrated, particularly if their support base is also regionally concentrated. Yet, in each case, so long as the utility of politicians or parties depends on economic gains in particular places, the mechanism I describe here could operate. Given constraints on legislative effort, politicians must decide between different local beneficiaries of trade policy action; priority is likely to go to those industries that generate policy benefits in the locality. This in turn privileges the claims of declining industries and, I argue, the import-competing sector. The argument would be least persuasive in P.R. systems composed of a single, national electoral district, because there is no possibility of “out of district” gains, and under closed-list systems, because these systems reduce the incentives for personalized campaigning. These institutional settings would provide an interesting case for further study.

Finally, and as noted by earlier readers, the model as laid out explains one of the other glaring anomalies of trade policy in developed countries. Although export subsidies are almost unknown in the manufacturing sector, they are a prominent feature of policy towards agriculture. The benefits afforded to agriculture, however, work in favor of localized representatives, because of the fixed and certain location of a key agricultural input -- land. Given a degree of certainty over where additional output will be located, representatives have expended effort on behalf of farmers as they have not for other exporters.

V. CONCLUSION

In first section of this paper, I introduced the issue of the trade restriction bias in trade policy, so that trade policies on balance reduce the flow of traded goods through their strong slant towards import tariffs over export subsidies. As I indicated, this bias is pervasive, appearing across different countries and political systems. In order to explain this phenomenon, therefore, we have to use arguments that are not reliant on particular industry characteristics, which vary across national settings. The model presented here has the characteristic that it is applicable in diverse contexts. One of the key features, the lumpiness of local and firm-level output growth is intrinsic to production. A second key feature, that local representatives invest legislative effort in order to create local gains

(and discount gains elsewhere) is particularly associated with majoritarian systems. Yet the same mechanism can operate even under PR systems as long as the electoral system involves more than a handful of districts and/or if politicians campaign partly on a local basis.²⁵

The implications of the model for other aspects of trade policy indicate the potential rewards from investigating the presence of a “negative” or, as Sherlock Holmes might put it, the curious incident of the dog that didn’t bark in the night.²⁶ The model of a localized representative optimizing policy effort explains why we see few if any instances of export subsidies, but also provides intuition for the preference given by representatives towards declining industries, and those that have recently seen greater import penetration. It is these cases that offer local legislators the starkest measure of the net benefits from legislative action, between possible plant closure without trade protection and secured local jobs with it. Finally, the model also corresponds to the pattern of policy instruments that are in fact used to benefit exporters. It is not that politicians are inherently biased towards industries in the export sector. It is simply that these industries rarely if ever make it through a representative’s screening process to select the firms that will expand in place if offered trade-based price interventions. On the other hand, exporters have been able to extract benefits at the national level through federal tax exemptions and at the local level via tax abatements that are specifically tied to a particular location. This last instrument offers a novel and effective means of circumventing the spatial uncertainty that arises when firms make their investment decisions and locks in the political benefits for localized policymakers.²⁷

²⁵ On local incentives in a PR system, see Ames (2001).

²⁶ Sir Arthur Conan Doyle, 1892, “The Adventure of Silver Blaze”. The short story appears in the collected work, *The Memoirs of Sherlock Holmes* (1893).

²⁷ On tax abatements tied to given locations, see McGuire and Garcia-Mila on Chicago’s \$50 million tax abatement to Boeing if it would locate its headquarters in the city.

BIBLIOGRAPHY

Alt, James E., Jeffrey Frieden, Michael J. Gilligan, Dani Rodrik and Ronald Rogowski, 1996, "The Political Economy of International Trade: Enduring Puzzles and an Agenda for Inquiry," *Comparative Political Studies*, 29:6, 689-717.

Ames, Barry, 2001, *The Deadlock of Democracy in Brazil*, Ann Arbor: Michigan University Press.

Bernard, Andrew and J. Bradley Jensen, 1999, "Exceptional Exporter Performance: Cause, Effect, or Both?" *Journal of International Economics*, 44:1, 1-25.

Bernard, Andrew B. and J. Bradley Jensen, 2004, "Why Some Firms Export," *Review of Economics and Statistics*, 86:2, 561-569.

Bernard, Andrew B. and J. Bradley Jensen, 2002, "The Deaths of Manufacturing Plants," NBER Working Paper No. 9026.

Bernard, Andrew B., J. Bradley Jensen and Peter K. Schott, 2006, "Survival of the Best Fit: Exposure to Low-Wage Countries and the (Uneven) Growth of U.S. Manufacturing Plants" *Journal of International Economics*, 68:1, 219-237.

Brooks, John and Charles Prysby, 1999, "Contextual Effects on Retrospective Economic Evaluations: The Impact of the State and Local Economy," *Political Behavior*, 21:1, 1-19.

Busch, Marc L. and Eric Reinhardt, 2000, "Geography, International Trade, and Political Mobilization in U.S. Industries," *American Journal of Political Science*, 44:4, 703-19.

Conan-Doyle, Sir Arthur, 1995 [1893], *The Memoirs of Sherlock Holmes*, USA: Oxford University Press.

Corden, William M., 1974, *Trade Policy and Economic Welfare*, Oxford: Oxford University Press.

Desai, Mihir and James Hines, 2004, "Market Reactions to Export Subsidies," NBER Working Paper No. 10233.

Destler, I.M. and J. Odell, 1987, "Anti-Protection: Changing Forces in United States Trade Politics," Washington D.C.: Institute for International Economics.

Dutt, Pushan and Devashish Mitra, 2002a, "Political Ideology and Endogenous Trade Policy: An Empirical Investigation," NBER Working Paper 9239, National Bureau of Economic Research. (article in 2005)

Dutt, Pushan and Devashish Mitra, 2002b, "Endogenous Trade Policy through Majority Voting: An Empirical Investigation." *Journal of International Economics*, 58:1, 107-133.

Feenstra, Robert and Andrew Rose, 2000, "Putting Things in Order: Trade Dynamics and Product Cycles," *Review of Economics and Statistics*, 82:3, 369-382.

- Fernandez, R. and Dani Rodrik, 1991, "Resistance to Reform: Status Quo Bias in the Presence of Individual-Specific Uncertainty," *American Economic Review*, 81:..., 1146-1155.
- Findlay, R., 1978, "Relative Backwardness, Direct Foreign Investment, and the Transfer of Technology: A Simple Dynamic Model," *Quarterly Journal of Economics*, 92:1, 1-16.
- Frankel, Jeffrey A., 1994, "The Making of Exchange Rate Policy in the 1980's" NBER Working Paper No. 3539.
- Garcia-Mila, Teresa and Therese J. McGuire, 2002, "Tax Incentives and the City," Brookings-Wharton Papers on Urban Affairs.
- Gardner, Bruce L., 2002, *American Agriculture in the Twentieth Century: How it Flourished and What it Cost*, Cambridge: Harvard University Press.
- Grossman, Gene and Elhanan Helpman, 1991, *Innovation and Growth in the Global Economy*, Cambridge: MIT Press.
- Grossman, Gene and Elhanan Helpman, 1994, "Protection for Sale," *American Economic Review*, 84:4, 833-850.
- Grossman, Gene and Elhanan Helpman, 2005, "A Protectionist Bias in Majoritarian Politics," Center for Economic Policy Research, Discussion Paper No. 5238.
- Hall, Richard L. and Alan V. Deardorff, 2006, "Lobbying as Legislative Subsidy," *American Political Science Review*, 100:1, 69-84.
- Hamilton, Alexander, 1964 [1791], "Report of the Secretary of the Treasury on the Subject of Manufactures presented to the United States Congress December 5th 1791" in *Reports of Alexander Hamilton*, ed. Jacob E. Cooke, New York: Harper and Row.
- Hibbs, Douglas, 1977, "Political Parties and Macroeconomic Policy," *American Political Science Review*, 71:4, 1467-1487.
- Hillman, Ayre, 1982, "Declining Industries and Political-Support Protectionist Motives," *American Economic Review*, 72:5, 1180-1187.
- Himmelberg, Charles and Gregory Wawro, 2002, "Is All Politics Local? National Elections and Local Economic Conditions," mimeo, Columbia University.
- Hiscox, Michael, 2002, *International Trade and Political Conflict: Commerce, Coalitions and Mobility*, Princeton: Princeton University Press.
- Johnston, Ron J., Charles J. Pattie, Daniel Dorling, Iain MacAllister, Helena Tunstall and David Rossiter, 2000, "Local Context, Retrospective Economic Evaluations and Voting: The 1997 Election in England and Wales." *Political Behavior*, 22:1, 121-143.
- Krugman, Paul, 1979, "A Model of Innovation, Technology Transfer, and the World Distribution of Income," *Journal of Political Economy*, 87:2, 253-266.

- Mansfield, Edward and Marc L. Busch, 1995, "The Political Economy of Nontariff Barriers: A Cross National Analysis," *International Organization*, 49:4, 723-4.
- Marvel, H.P. and E.J. Ray, 1983, "The Kennedy Round: Evidence on the Regulation of Trade in the U.S." *American Economic Review*, 73:1, 190-197.
- Mayer, W., 1984, "Endogenous Tariff Formation," *American Economic Review*, 74:4, 970-985.
- McGillivray, Fiona, 2004, *Privileging Industry: The Comparative Politics of Trade and Industrial Policy*, Princeton: Princeton University Press.
- Milner, Helen V., 1988, *Resisting Protectionism: Global Industries and the Politics of International Trade*, Princeton N.J.: Princeton University Press.
- OECD, 1998, *Spotlight on Public Support to Industry*, Paris: OECD Publications.
- Pattie, Charles J., E.A. Fieldhouse and Ron J. Johnston, 1995, "Individual Vote Choice and Constituency Economic Conditions at the 1992 British General Election," *Electoral Studies*, 14:3, 399-415.
- Ray, E.J., 1991, "Protection of Manufactures in the United States," in D. Greenaway, ed. *Global Protectionism: Is the U.S. Playing on a Level Field?* London: MacMillan.
- Rodrik, Dani, 1995, "Political Economy of Trade Policy, in *Handbook of International Economics*, Volume III, eds. Gene Grossman and Kenneth Rogoff, Amsterdam: Elsevier.
- Salisbury, Robert H. and Kenneth A. Shepsle, 1981, "U.S. Congressman as Enterprise," *Legislative Studies Quarterly*, 4 (November), 559-76.
- Staiger, Robert and Guillermo Tabellini, 1987, "Discretionary Trade Policy and Excessive Protection," *American Economic Review*, 77:2, 340-348.
- Vernon, Raymond, 1966, "International Trade and International Investment in the Product Cycle," *Quarterly Journal of Economics*, 80:2, 190-207.
- Weingast, Barry R., Kenneth A. Shepsle and Christopher Johnson, 1981, "The Political Economy of Benefits and Costs: A Neoclassical Approach to Distributive Politics," *Journal of Political Economy*, 89:4, 642-664.
- World Trade Organization, Report by the Secretariat, 2005, *Trade Policy Review: The European Communities*, 12th December 2005.
- World Trade Organization, Report by the Secretariat, 2005, *Trade Policy Review: Malaysia*, 16th June 2004.
- World Trade Organization, Report by the Secretariat, 2005, *Trade Policy Review: The United States*, 9th December 2003.

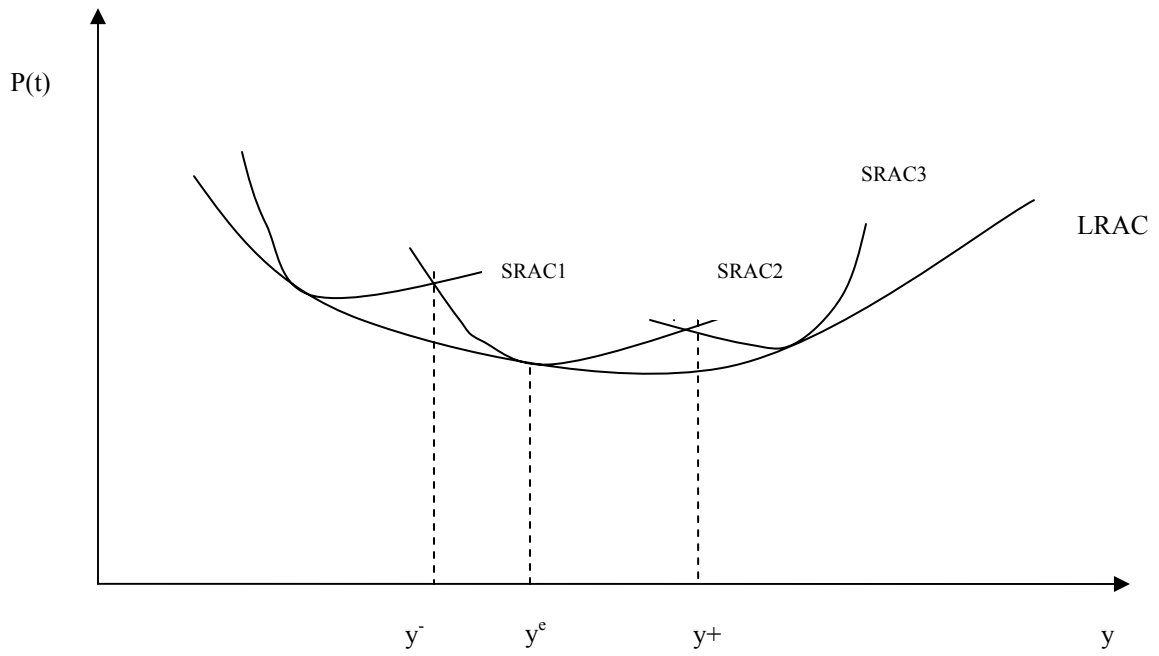


Figure 1: Short-run Average Cost Curves

Figure 2: Optimal Trade Policy with Different y^+ Levels

