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Spurious Injury as Indirect Rent Seeking: Free Trade Under the Prospect of Protection

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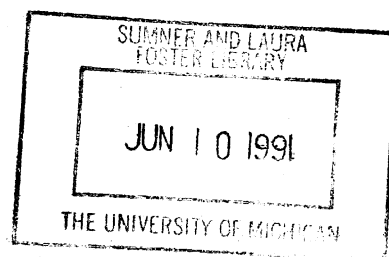
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**SPURIOUS INJURY AS INDIRECT RENT SEEKING:
FREE TRADE UNDER THE PROSPECT OF PROTECTION †**

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ABSTRACT

In the literature on *directly unproductive profit seeking* or *rent seeking*, intervention-seeking by labor and industry groups is generally restricted to *direct* lobbying activity. However, import-competing producers may have an additional instrument to influence the decision to grant protection. Under well-established injury criteria for protection import-competing producers have an incentive, either collectively or individually, to feign injury. To the extent that the free-rider problem can be overcome, orchestrating the appearance of injury is an intervention-seeking activity that may be complementary to DUP lobbying. When the established indicators of industry well-being include variables controlled by the prospective beneficiaries, therefore, free trade under prospect of protection is potentially accompanied by a concomitant *spurious-injury distortion*. Some of the positive and welfare implications of the theory of spurious injury are investigated in both a partial equilibrium framework and in the Heckscher-Ohlin model.

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1. Introduction

Under the auspices of the General Agreement on Tariffs and Trade (GATT) successive Multilateral Trade Negotiations (MTNs) have pursued the goal of liberalized trade. The political task has always been somehow to assuage the interest groups opposed to liberalization. One important way in which import-competing industry and labor groups have been accommodated is by offering them the *prospect of protection* should liberalization prove injurious. And this prospect, conditional on some showing of injury, is codified in the GATT and in the domestic laws of signatory nations.¹ Yet even though pockets of liberalized trade may arise under this framework it is becoming increasingly doubtful that free trade under the prospect of protection offers the potential gains traditionally identified by trade theorists. In fact, free trade under the *prospect of protection* (POP) often must be regarded as a state of affairs that is fundamentally distinct from that of free trade with no such prospect (hereinafter identified as *unconditional free trade*). The central theme of this paper is that the *prospect of protection* itself is distortionary when it is conditioned on injury criteria that can be managed by the industry standing to gain from protection. And this simple observation casts serious doubt on the usefulness and applicability of traditional welfare analyses of trade policy.

What distinguishes unconditional free trade from free trade under POP is that over the horizon lies the real possibility that government intervention will help to support the profitability of import-competing firms. Because this prospect usually means a period of supranormal profits, potential beneficiaries can be expected to try to influence the bureaucratic decision to grant protection. The literature on *intervention-seeking* behavior began with Tullock's (1967) incisive work on the social costs of tariffs and monopoly. As Tullock (p. 228) points out, "Generally governments do not impose protective tariffs on their own. They have to be lobbied or pressured into doing so by the expenditure of resources in political activity." This important observation is at the heart of the research in trade theory that Bhagwati (1982) unified under the acronym DUP (*directly unproductive profit*

seeking). The idea is that under existing protection or under the prospect of protection resources will be diverted from the production of goods and services to directly unproductive lobbying activity. This either enhances the likelihood of protection, or influences the distribution of intervention-generated revenues among competing interests. Included in the set of DUP activities is Krueger's (1974) well-known notion of *rent seeking*.² Bhagwati also places in the category of legal DUP activity: revenue-seeking lobbying (Bhagwati-Srinivasan, 1980), tariff-destroying lobbying (Findlay and Wellisz, 1982), tariff-seeking lobbying (Brock and Magee 1978, Bhagwati 1980, Feenstra and Bhagwati 1982, Findlay and Wellisz 1982), monopoly-seeking lobbying (Posner 1975), and zero-tariff-outcome lobbying (Tullock 1967, and Findlay and Wellisz 1982).

All of these activities entail a diversion of resources from directly productive to directly unproductive lobbying activities. This paper identifies and analyzes a kind of intervention-seeking behavior that involves not a *diversion of resources* to DUP activity, but a rational *reallocation of resources* in production. In particular, it is argued that, under well-established injury criteria for protection from foreign competition, import-competing producers often have an incentive, either collectively or individually, to feign injury. Orchestrating the appearance of injury is an intervention-seeking activity not unlike lobbying. This tactic can be likened to *indirect* as opposed to *direct* lobbying for protection.³ In both cases the likelihood of future intervention may be enhanced.⁴ Indeed, to the extent that the institutional constraint of demonstrable injury establishes a necessary condition for protection, intervention-seeking lobbying is doomed to failure without first satisfying the criteria for injury. If demonstrable injury is a well-defined binding institutional constraint, therefore, DUP lobbying under conditions of prosperity is manifestly irrational.⁵ Yet this important institutional consideration is absent from the literature on DUP.

The theory of spurious injury and indirect rent seeking under POP is set out formally in the remainder of this paper. Sections 2 and 3 discuss some of the salient issues related to the likely prevalence, extent, and form of spurious injury in the trading environment. A simple

two-period model of an import-competing firm facing free trade under POP is developed in Section 3. In this partial equilibrium setting the incentive for both *direct* and *indirect* rent seeking is studied under an employment-based injury criterion. Following this, in Section 4, the spurious-injury distortion is examined under a gross-value injury criterion in a general equilibrium framework. Implications for efficiency and social welfare are derived in the 2×2 , Heckscher-Ohlin-Samuelson (HOS) model. Section 5 summarizes and concludes with a brief discussion of the problem of establishing criteria for contingent protection that will minimize the scope for indirect rent seeking.

2. The Spurious-Injury Distortion

Adam Smith reminds us that, “people of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.”⁶ This leads to the expectation that those import-competing producers who stand to profit from protection will attempt to coordinate their activity to exhibit some amount of *spurious injury* during pre-intervention states, perhaps in conjunction with DUP lobbying efforts. When the established indicators of firm or industry well-being include variables under the control of the prospective beneficiaries, therefore, free trade under POP potentially will be accompanied by a concomitant *spurious-injury distortion* not present under unconditional free trade. This is a policy-imposed distortion. In this respect it is like a tariff, or a production tax, or any number of other policy-imposed distortions. An essential difference is that the spurious-injury distortion arises as a consequence of the prospect of intervention instead of being the effect of existing intervention. Because free trade under POP offers an advantage to contemporaneous injury not present under unconditional free trade, these two states must be regarded as analytically distinct.

Is the spurious-injury phenomenon likely to induce a significant departure from the equilibrium associated with unconditional free trade? That depends on the strength and nature of the incentives set up by the established injury criteria for protection, as well as

the extent to which these incentives can be internalized. The exact form taken by any case of spurious injury will, of course, depend on the precise specifications of the injury criteria. In defense-related sectors, for example, it is likely that the objective of national security will point to domestic production capacity as the primary summary statistic of industry health.⁷ Elsewhere, the politics of protection may be driven by a concern for displaced labor. Employment numbers will then play a prominent role in an injury investigation. Producers, being able to identify the “public-interest politics” applicable to them, can respond by moving incrementally toward the appearance of injury. That is, they can begin to give the bureaus precisely what they want, or need, in order to grant protection. They will do so efficiently, adjusting choice variables so as to conform most closely to established injury standards while interfering as little as possible with current profitability. Whether injury tends to be specified predominantly in terms of capacity, employment levels, gross sales or profits will determine the precise nature of an industry’s response.

The prevalence and extent of spurious injury will depend on factors related to the connection between injury and the likelihood of intervention, the magnitude of the supranormal profits expected to accrue under protection, and the extent to which the industry-wide incentive can be internalized. The final point is, of course, central. Are individual producers targeted for prospective protection or is protection granted only industry wide? When individual producers are targeted the value of feigned injury is clearly internal to the firm. Protection that is granted industry wide, however, has the characteristics of a public good and so the free-rider problem may arise.⁸ Internalizing the value of feigned injury when the industry is the smallest unit to be granted protection requires coordination and enforcement efforts similar to those involved in forming and maintaining a cartel. The greater the concentration of an import-competing industry the more likely the value of feigned injury is to be internalized. When the domestic industry is characterized by a low concentration ratio generally it will be much more costly to internalize the benefits of spurious injury. Pincus (1975) suggests that the geographical dispersion of firms within an industry is also likely to increase the cost of coordinating and enforcing agreements. The success and prevalence of

industry-wide agreements designed to cultivate the appearance of injury will likely depend, therefore, on geographical dispersion as well as on industry concentration. Other things equal, an industry that is highly concentrated in a single region of the country is more likely to exhibit spurious injury under POP than one that is geographically dispersed and atomistic.⁹

Identifying spurious injury empirically is no easy task. If it were, presumably it would be of less value as an intervention-seeking device. The authorities could simply discount that injury thought to be spurious.¹⁰ Because of this some indirect way of identifying spurious injury may be needed. Perhaps the best way to identify and measure it is in retrospect. An industry's ability to "recover" upon receipt of protection, other things equal, might well depend on whether or not its apparent distress was real or spurious. One might expect that instances of spurious injury will be characterized by more rapid rates of recovery than in otherwise equivalent cases of genuine distress.¹¹ After all, for the tactic to work well the industry must be poised to capture the supranormal profits available during protection. The kind of efficient modifications of behavior expected to characterize cases of spurious injury may be more conducive to nearly instantaneous "recovery". In contrast, under genuine distress injury is likely to be systemic and not quickly ameliorated by protection. If, therefore, a "protection" episode appears to have been unusually successful in restoring industry health, this may be evidence *post hoc* of spurious injury. Perhaps a more fruitful approach to uncovering evidence of spurious injury would be to investigate firms (or industries) whose petitions for protection were denied. If the fortunes of such firms show unusual increases in production, employment, investment expenditures, and the like, this may also provide indirect evidence of prior spurious injury.

3. The Residue of Monopoly Power Under POP

One of the most commonly cited advantages of moving from restricted trade to free trade is that domestic monopoly power is eliminated. All of the static and dynamic gains from increased competition can be expected to accrue, it is argued, under a regime of

liberalized trade. While this is certainly true under unconditional free trade, it is not likely to be the case when free trade is accompanied by the prospect of protection. Indeed, a residue of monopoly power can be expected to remain when free trade is accompanied by POP conditioned on manageable injury criteria. In this section, the incentive for direct and indirect lobbying for protection is formalized in a two-period partial equilibrium model. The case of a single import-competing firm is examined under the assumption that injury is assessed according to the level of period-one employment alone.¹² In the current period, the firm operates under the discipline of free trade and perfect competition, and hence is a price taker in period one. But the firm also faces the prospect of protection in period two.

The firm's period-one decision includes determining the extent to which it will engage in rent seeking. It does this by attempting to affect the probability of protection in period two. The firm can influence the probability of protection through two channels. First, it can lobby for protection directly. Second, the probability of protection can be influenced by manipulating the criteria established for assessing injury. In the case of an employment-based injury criterion, laying off a significant number of workers in the current period advances the firm's rent-seeking objective in two ways. It increases the likelihood of obtaining an affirmative ruling on the question of injury. And, perhaps as important, it creates a pool of workers whose job-loss appears to be a consequence of foreign competition. The joint political clout of this pool of workers, which might include the clout of their labor union and other politically aligned groups, may then be brought to bear in the form of additional non-firm direct lobbying for protection. What we have called *indirect* lobbying, therefore, influences the likelihood of future protection by improving the expected outcome of an injury investigation while potentially inducing additional direct lobbying for protection from outside (non-firm) sources. The expected present value of layoffs in the firm's overall strategy of rent seeking depends on the strength of these indirect effects.

The firm's direct and indirect rent-seeking measures can be represented in the following way. Let $\Gamma(N, I)$ be a twice continuously differentiable function that represents units of

direct lobbying output. This can be thought of as a lobbying production function. The argument N is the firm's level of employment for production purposes and l is the number of units of direct lobbying activity (units of professional lobbyists employed) engaged in by the firm. The partial derivative of Γ with respect to N , Γ_1 , reflects the sensitivity of total direct, outside (non-firm) lobbying to the firm's period-one employment choice. It captures the extent to which layoffs can generate induced lobbying by labor and allied groups. Hence Γ_1 is the marginal product (in lobbying units) of outside lobbying induced by the firm's employment decision. Its sign is negative for reasons stated above. The partial derivative of Γ with respect to l , Γ_2 , is the marginal product of direct firm lobbying. The partial derivative Γ_2 is generally positive under current laws and institutions. Observe that this formulation of the direct-lobbying production function allows for the likely possibility that direct lobbying for protection by import-competing firms may be viewed differently by trade-policy officials than direct lobbying for protection by labor and allied groups.

The firm's perception of the probability of receiving protection in period two is represented by the function $q = q(N, \Gamma)$, $0 \leq q \leq 1$. The first argument N captures the condition that for any given level of direct lobbying Γ , the probability of protection also depends on current employment levels, since "injury" is a precondition for protection. The partial derivative of q with respect to N , q_1 , is negative. That is, higher levels of employment generally correspond to a reduced chance of a favorable ruling on the question of injury and, therefore, a reduction in the probability of protection. Since direct lobbying tends to enhance the probability of protection, the partial derivative of q with respect to Γ , q_2 , is positive.

We abstract from intertemporal issues related to choosing the current capital stock in order to focus attention on the issue of indirect rent seeking. Hence, the capital stock is assumed fixed for two periods. A risk-neutral firm under free trade and the prospect of protection maximizes the expected present value of profit by choosing current employment,

N , and the amount of direct lobbying, l . The firm solves:

$$\max_{N,l} p^w f(N) - wN - w^*l + \beta \left[q(N, \Gamma(N, l)) \Pi_2^p + (1 - q(N, \Gamma(N, l))) \Pi_2^f \right], \quad (1)$$

where p^w is the world price of the firm's product, w is the wage of labor used in production, w^* is the wage of lobbyists, $\beta = 1/1 + r$ is the discount factor on period-two profits, Π_2^p is (the indirect) expected second period profit (function) under protection, and Π_2^f is (the indirect) expected second period profit (function) under ongoing free trade. $\Pi_2^p > \Pi_2^f$ under anticipated effective protection.

The first-order conditions are:

$$p^w f' - w + \beta(q_1 + q_2 \Gamma_1)(\Pi_2^p - \Pi_2^f) = 0, \quad (2)$$

$$-w^* + \beta q_2 \Gamma_2 (\Pi_2^p - \Pi_2^f) = 0. \quad (3)$$

The term $\beta(\Pi_2^p - \Pi_2^f)$ is the expected present value of excess profit under protection. The term $q_2 \Gamma_2$ in equation (3) is the marginal effect of an increase in units of direct lobbying by the firm on the probability of protection. This means that the term $\beta q_2 \Gamma_2 (\Pi_2^p - \Pi_2^f)$ is the present value of the expected marginal revenue from direct lobbying by the firm. Equation (3) indicates simply that the firm employs lobbyists up to the point where the expected marginal revenue equals the marginal cost. As indicated in equation (2), a unit increase in the level of domestic employment reduces the firm's probability of protection by the amount $q_1 + q_2 \Gamma_1$. This is just the total derivative of $q(\cdot)$ with respect to N . Thus $-\beta(q_1 + q_2 \Gamma_1)(\Pi_2^p - \Pi_2^f) \geq 0$ is the present value of the expected marginal revenue from *indirect* lobbying. It captures the effect of both induced direct lobbying by labor and the effect of spurious injury on the likely outcome of the injury ruling. Alternatively, the term $w - \beta(q_1 + q_2 \Gamma_1)(\Pi_2^p - \Pi_2^f)$ can be thought of as the firm's perceived marginal factor cost of labor employed in production. The expression $-\beta(q_1 + q_2 \Gamma_1)(\Pi_2^p - \Pi_2^f)$ captures the current marginal *loss* associated with hiring an additional unit of labor in terms of a reduction in the capitalized value of expected future profits.

The firm's employment decision under POP is contrasted with that under unconditional free trade in Figures 1 and 2. Under *unconditional free trade* the firm employs N^* units of

labor, hiring labor until the value of the marginal product just equals the wage. With free trade under POP and an employment-based injury criterion, the additional cost associated with employing labor throughout the “gray interval” indicates that the marginal factor cost of labor under POP exceeds the wage. As mentioned above, $MFC_{pop} = w - \beta(q_1 + q_2\Gamma_1)(\Pi_2^p - \Pi_2^f)$. The firm, therefore, employs \bar{N}^* units of labor under POP if conditions are as indicated in Figure 1. The difference between employment under unconditional free trade at N^* and free trade under POP at \bar{N}^* identifies the the extent of the distortion induced by the manageable injury criterion. The resulting lower level of domestic production, under a competitive world market and free trade, guarantees that imports will rise to fill the gap in demand. And this, incidentally, will support the credibility of the firm’s claim that “injury” is due to imports.

(Insert Figures 1 and 2 about here)

Consider the appearance of the MFC_{pop} curve. While there are no *a priori* restrictions on the curvature of the MFC_{pop} curve¹³, the shape shown in Figures 1 and 2 is probably the most plausible and, indeed, the most revealing analytically. The shape of the MFC_{pop} curve shown in Figures 1 and 2 indicates that at the extremes of employment the expected loss (gain) associated with hiring (firing) the next worker is small. This is likely to be the case at very low levels of employment since the firm may already be virtually assured of receiving a favorable injury ruling in this region. In addition, labor’s advocates are already likely to be engaged in forceful direct lobbying at such low levels of employment. Hence marginal increases in employment will hurt the firm’s chances of protection by just a small (perhaps negligible) amount at very low employment levels. The marginal cost of labor, therefore, will be at, or just above, the wage at such low levels of employment. This region is identified by the term *unambiguous injury*. Beyond some very high level of employment, the firm may become unambiguously prosperous (under the employment-based injury criterion). It is very unlikely to influence the outcome of an injury investigation in this neighborhood of high employment levels, and, again, it is not likely to induce much direct lobbying by labor in this region. Hence marginal changes in employment may have little effect on the

likely outcome of a petition for protection beyond some very high level of employment. This region is identified by the term *unambiguous prosperity*.

The firm will assign the greatest value to manipulating employment levels over a hypothetical “gray interval” in which the question of injury remains unclear. The gray interval of employment in Figures 1 and 2 corresponds to the region in which the most value is assigned to manipulating the labor-based injury criterion because it is here that the outcome of the injury ruling is most likely to be influenced. The less well-defined is the point at which injury occurs in current law, the larger is the gray interval. Figure 1 corresponds to a legal/institutional setting in which there is much uncertainty concerning what constitutes “injury”. In Figure 2, the gray interval has been narrowed sharply. This corresponds to a legal/institutional setting in which the definition of injury (based on current employment levels) is a bit more precise. That is, the regions of unambiguous prosperity and injury have widened substantially leaving a narrow gray interval.

Observe, however, that as the gray interval narrows, all of the value associated with influencing the probability of protection through the manipulation of employment levels becomes concentrated above the smaller interval. That is, the height of the MFC_{pop} curve increases as the gray interval of employment narrows. In the extreme case, where the definition of injury is narrowed to a single point, the MFC_{pop} curve becomes a spike of infinite height at that point. Crossing that point implies forgoing with certainty the present value of the excess profits of protection. Thus the firm will only cross that point if there is sufficient profit to be captured in the current period to offset the future loss. Of course, such a point is only of interest analytically. In practice, some ambiguity concerning what constitutes “injury” will always remain.

Some of the issues associated with narrowing the gray interval are captured in Figure 2. Points A, B, and C all satisfy the first-order conditions, equations (2) and (3). Point C violates the second-order condition and is, in fact, a local minimum. Hence A and B are candidates for the global maximum. Whether the spurious-injury distortion is small

(as at point B) or large (as at point A) under a narrow gray interval depends on the area above the value marginal product curve between points A and C relative to the shaded area between points C and B. That is, as the firm increases employment from point A to point C, it incurs an expected loss given by:

$$\int_{N_A}^{N_C} [w - \beta(q_1 + q_2\Gamma_1)(\Pi_2^p - \Pi_2^f)] dN - \int_{N_A}^{N_C} p^w f'(N) dN > 0. \quad (4)$$

While current profit is rising as employment is increased from A to C, the likelihood of future protection declines sharply over this interval. As the firm increases employment from point C to B it begins to recover some of the loss. The addition to the expected present value of profit associated with crossing the interval from C to B is given by:

$$\int_{N_C}^{N_B} p^w f'(N) dN - \int_{N_C}^{N_B} [w - \beta(q_1 + q_2\Gamma_1)(\Pi_2^p - \Pi_2^f)] dN > 0. \quad (5)$$

Hence the firm's choice between points A and B rests on the values of these integrals. If (4) exceeds (5), select N_A . If (5) exceeds (4), select N_B .

Several factors affecting the prevalence and extent of spurious injury are suggested by this simple model. First, the more important evidence of injury is to granting protection the more predictably a firm can force the hand of government by strategically feigning injury.¹⁴ If the present administration has been sympathetic to previous petitions for protection and has been influenced by the outcome of the injury investigation, the incentive to manipulate the injury criteria becomes more powerful than otherwise. It should also be noted that the effectiveness of indirect lobbying depends not only on the direct effectiveness of spurious injury (reflected in the the partial derivative q_1), but also on the extent to which laying off workers may be a least-cost way of inducing more direct lobbying (reflected in the term $q_2\Gamma_1$). In addition to this, the expected capitalized value of profits under protection relative to continued free trade also affects the firm's incentive to manipulate injury criteria. The expected present value of the profitability of protection will depend, of course, on the type and extent of protection expected to be granted, the expected duration of protection once granted (the two period model does not capture this explicitly),¹⁵ and the extent to which future domestic entry is impeded thereby allowing sustained supranormal profits

under protection. Finally, narrowing the gray interval over which the outcome of an injury investigation is unknown *ex ante*, may, but need not, reduce or eliminate the spurious-injury distortion. Whether such narrowing will succeed in eliminating the distortion depends on the likelihood of protection once “injury” has been found, as well as the anticipated magnitude of excess profits under protection. If the profits of protection are quite large and a finding of injury plays an important role in granting protection, then narrowing the gray interval will fail to eliminate the spurious-injury distortion. The issue of minimizing the scope for indirect rent seeking is discussed in the final section of this paper.

4. A Spurious-Injury Distortion in General Equilibrium

In this section some of the theoretical implications of spurious injury are examined in a general equilibrium framework. As in Section 3, in order to illustrate the kinds of distortions that can be introduced by manageable injury criteria under POP it is assumed that a formal investigation of injury is based on a single observable criterion. Specifically, for the sake of diversity, a gross-value injury criterion is introduced. That is, in making its determination of injury it is assumed that the government agency assigned to this task (the ITC in the U.S.) focuses on the value of domestic sales, and the industry *knows* this is the criterion being used.¹⁶ The problem of internalizing the value of feigned injury (or the opportunity cost of current prosperity) is assumed to be solved. Exactly how this is achieved is not modelled.¹⁷ The discussion in Section 2 does, however, point out the industry characteristics which make it more likely that internalizing will occur. In order to focus on the spurious-injury distortion in isolation, however, resource-using DUP lobbying activity is absent initially. After the spurious-injury distortion has been examined in isolation exogenous intervention-seeking and/or intervention-blocking lobbying is introduced. While the exogeneity of lobbying is a special case, it is quite useful as an analytical point of departure.

4.1. The POP Paradox

The gains from distortion-free unconditional free trade relative to autarky cannot ob-

tain under free trade with POP. Indeed the movement from autarky to free trade under the prospect of protection need not be welfare improving at all. A sufficiently large spurious-injury distortion may overwhelm the gains from trade. Under appropriate conditions (discussed in Section 2 and illustrated in Section 3), the spurious-injury distortion inextricably accompanies free trade under POP and hence the gains ascribed to distortion-free unconditional free trade can only be achieved under POP if government intervention actively offsets the spurious-injury distortion. In the case of a sales-based injury criterion, as we will see, the undistorted free trade solution is unattainable under POP unless an appropriate production-tax-*cum*-subsidy is in place. This is the *POP paradox*. Achieving the gains ascribed to distortion-free unconditional free trade requires distortion-eliminating government intervention when the prospect of protection accompanies otherwise free trade. It is surely paradoxical when the gains commonly ascribed to undistorted free trade can be attained under POP only by introducing a visible government-imposed distortion to offset the unobservable spurious-injury distortion.

Consider the standard 2×2 HOS model.¹⁸ Unlike the explicitly intertemporal problem analyzed in Section 3, the incentive for indirect rent seeking is introduced into the static HOS framework by introducing a loss function. The opportunity cost associated with the appearance of prosperity in the import-competing sector is captured by the loss function. All of the issues raised in Sections 2 and 3 that affect the expected capitalized value of protection are subsumed implicitly in this loss function. In assessing the well-being of the import-competing industry it is assumed that the authorities rely exclusively on the value of gross sales. Gross sales is then the only argument in the loss function that is controlled by domestic firms.¹⁹ The loss function, $\ell = \ell(p_2^w G(K_2, L_2))$, with $0 < \ell' < 1$, is assumed continuous so that what constitutes “injury” is not defined by some arbitrary cut-off point. Instead, increased evidence of injury is provided by any reduction in the value of sales. This corresponds to a wide “gray interval” in the terminology of Section 3. The restriction on ℓ' indicates that a dollar increase in current sales revenue results in something less than a dollar lost in the present value of expected future profits. Clearly this is the most likely

case. $G(K_2, L_2)$ is the production function in industry 2, the import-competing sector, and p_2^w is the world price of good 2. The positive first derivative of the loss function reflects a decline in the expected present value of future profits due to the diminished likelihood of protection that accompanies apparent improvements in industry well-being, with well-being summarized by the level of gross sales. The representative import-competing firm solves the following problem:

$$\max_{K_2, L_2} p_2^w G(K_2, L_2) - \ell(p_2^w G(K_2, L_2)) - wL_2 - rK_2. \quad (6)$$

The necessary conditions for optimality are:

$$p_2^w (1 - \ell') G_1(K_2, L_2) = r, \quad (7)$$

$$p_2^w (1 - \ell') G_2(K_2, L_2) = w. \quad (8)$$

Industry 1, the export sector, being perfectly competitive in world markets with no prospect of a sustained departure from normal profits whether or not protection from import competition is granted to industry 2, chooses output to satisfy:²⁰

$$p_1^w F_1(K_1, L_1) = r, \quad (9)$$

$$p_1^w F_2(K_1, L_1) = w. \quad (10)$$

It is immediately apparent that an injury criterion which relies on gross sales exclusively is analytically equivalent to an *ad valorem* tax on current production in the import-competing sector if, and only if, ℓ' is constant. This will be assumed for simplicity. Production continues to occur on the efficiency locus and so a point on the economy's production-possibilities frontier (PPF) is achieved. This follows, of course, from equations 7–10 which imply that:²¹

$$\frac{F_1}{F_2} = \frac{r}{w} = \frac{G_1}{G_2}.$$

The domestic marginal rate of transformation in production is not, however, equal to the marginal rate of transformation through trade. This is the spurious-injury distortion that

arises under a gross-value injury criterion. In particular, the spurious-injury distortion under a gross value injury criterion is characterized by:

$$DRT > FRT = DRS, \quad (11)$$

where DRT is the domestic marginal rate of transformation in production, FRT is the marginal foreign rate of transformation (which equals the marginal rate of transformation through trade under the small-country assumption), and DRS is the marginal rate of substitution in consumption.

Figure 3, using the device of social indifference curves, shows two illustrative zero-outcome equilibria under the spurious-injury distortion relative to autarky and distortion-free unconditional free trade, and without intervention-seeking or intervention-blocking lobbying. In the spirit of Bhagwati's DUP (pronounced "dupe") acronym—and with tongue placed securely in cheek—the tendency to feign injury under POP can be labeled as DOP activity (pronounced "dope") for *diminished output profit seeking*. DOP activity drives domestic production to a point on the production-possibilities frontier AB where

$$DRT = \frac{p_1}{p_2(1 - \ell')} = \frac{1}{1 - \ell'} p^w, \quad (12)$$

with p^w being the world terms of trade. The point P_{DOP} in Figure 3 is representative of a production point that can arise under the spurious-injury distortion. P_f and P_a are points of production under unconditional free trade and autarky respectively. The corresponding consumption points are indicated by the appropriate tangencies of the world price line with the highest attainable social indifference curve.

(Insert Figure 3 about here)

4.2. The Stolper-Samuelson Theorem Under POP

Opening the economy to free trade from autarky causes a reallocation of factors toward the production of good 1, the good in which the domestic economy has a comparative advantage. Production in the import-competing sector declines from P_a toward P_f in Figure

3. In the transition to free trade, therefore, industry 2 is diminished and, in this sense, “injured” to some degree. The *restrictive* version of the Stolper-Samuelson Theorem indicates that the adjustment to unconditional free trade from autarky leads to a decline in the real wage of the scarce factor. That is, as output in the newly import-competing sector falls and factors are released to be reemployed in the export sector, the factor used intensively in the import-competing sector experiences a decline in its real wage.

Under unconditional free trade this is the end of the story. Any appreciation at all of the principle of comparative advantage will lead policy makers to anticipate some amount of sector-specific “injury” under trade liberalization. Just how much will occur and how much is politically tolerable and sustainable is typically uncertain at the moment the policy is initiated. Under the prospect of protection conditioned on a manageable injury criterion it should come as no surprise, however, that the apparent injury in an import-competing sector probably will be sufficient to generate significant political pressure for protection. With the value of injury internalized as indicated by problem 6, production of good 2 falls below that associated with unconditional free trade toward point P_{DOP} where the probability of protection is enhanced. Offering the prospect of protection, thus, leads to a further release of factors from employment in the import-competing sector. This points to a provocative extension of the Stolper-Samuelson Theorem. Specifically, offering the prospect of protection under a gross-value injury criterion reduces the *contemporaneous* real wage of the factor used intensively in the import-competing sector.²² Conversely, eliminating the prospect of protection and thereby removing the spurious-injury distortion leads to an increase in the real wage of the factor used intensively in the import-competing sector.²³ This is not surprising since in its efforts to appear injured the import-competing sector releases factors in a ratio that cannot be absorbed efficiently by the export sector at existing factor prices.

An implication of this involves the tendency of indirect lobbying to generate direct lobbying as discussed in Section 3. Suppose the scarce factor (the factor used intensively

in the import-competing sector) is labor. As pointed out, moving from autarky to free trade under POP reduces the real wage of labor. Because this reduction is connected to the surge of imports, labor and its political allies can be expected to lobby directly for protection, in the expectation of restoring a higher real wage under protection. In this sense, the indirect lobbying orchestrated by import-competing firms may lead endogenously to additional direct lobbying for protection by labor. Recall that in Section 3 the partial equilibrium framework led to a similar conclusion. In that model, however, the real wage of labor was fixed. Instead it was argued that the expanded pool of unemployed labor in the import-competing sector may give rise to direct lobbying for protection by labor and politically aligned groups. In the current general equilibrium framework, a similar implication arises. It occurs not because of unemployment (the HOS model maintains full employment), but because of a reduction in the contemporaneous wage of labor in both sectors of the economy.

4.3. Welfare and Free Trade Under POP

As the economy overreacts in the sense of passing the point where real national income is maximized at world prices, welfare (under the compensation principle or assuming a suitable income redistribution policy) falls below that associated with unconditional free trade. The autarky-equivalent DOP distortion is indicated in Figure 3. If the distortion is sufficiently powerful, as it is at P_{DOP} , clearly the economy may become worse off in free trade under POP than in autarky.

It is apparent that the spurious-injury distortion depicted in Figure 3 can be corrected, and the gains associated with unconditional free trade achieved, by introducing an appropriate production tax-cum-subsidy (some combination of subsidizing current production of good 2 and taxing current production of good 1) with redistributed revenue.²⁴ This follows from an application of Bhagwati's (1971) proposition that optimal policy in the presence of distortions requires that a tax-cum-subsidy be addressed directly to the source of the distortion. Keep in mind that the appropriateness of a production tax-cum-subsidy is in-

dicated only under the specific gross-value injury criterion analyzed above. It, therefore, illustrates a hypothetical corrective policy without offering a comprehensive solution to the problem of indirect lobbying.

4.4. Exogenous DUP Lobbying: When is DOP Plus DUP Preferred to DOP Alone?

In this section, it is demonstrated that *zero-outcome* (the sought intervention has not been granted) intervention-seeking behavior, initiated from a nominally distortion-free situation—a state where no directly observable distortion exists—may be welfare improving due to the presence of a spurious-injury distortion. This work follows that of Bhagwati (1980, 1982) and Bhagwati-Srinivasan (1980, 1982). Continuing in the 2×2 HOS framework, including the small-country assumption, suppose exogenous intervention-seeking and/or intervention-blocking lobbying activity is introduced.²⁵ Since it is presently our purpose to analyze the *seeking* state, the zero-outcome assumption is maintained. Under the small-country assumption world prices are fixed and together with the sales-based spurious-injury distortion the underlying factor prices are determined if nonspecialization is assumed. Exogenous DUP lobbying results in the withdrawal of resources from directly productive activity. As this occurs the economy's production point moves inside the original PPF along a generalized Rybczynski line (defined at the factor prices associated with the spurious-injury distortion). The question addressed in this section is: Under what conditions might resource-using lobbying prove welfare enhancing when there is a spurious-injury distortion in place? This is nothing more than a problem in project evaluation.²⁶ If a resource-using project has no value whatsoever in the social utility function, such a project may still be welfare enhancing if the initial allocation of resources in production is distorted. Analogously, zero-outcome intervention-seeking may prove socially productive under the spurious-injury distortion.²⁷

This prospect is investigated in Figure 4. There P_A is the autarky consumption/production point, P_f and C_f are points of production and consumption respectively under unconditional free trade at the world price ratio p^w , and P_{DOP} and C_{DOP} are hypothetical production and consumption points under the spurious-injury distortion but without DUP activity. Observe that under the gross-value injury criterion and before DUP activity is introduced production occurs on the PPF southeast of P_f . Consumption occurs at world

prices along the world price line through the point of production. If, as shown in Figure 4, the spurious-injury distortion drives the economy to a point like P_{DOP} , there is a generalized Rybczynski line consistent with exogenous DUP lobbying being welfare improving. The R-line $P_{DOP}P_{DOP+DUP}$ is an example of this. Any R-line rotated clockwise from the world price line through P_{DOP} is consistent with welfare improvement. If resources are withdrawn to DUP lobbying in a ratio consistent with one such generalized R-line, the world price line through the point of production (the consumption possibilities line) shifts outward as the resource withdrawal occurs. The point $P_{DOP+DUP}$ is the optimal production point on the shrunk-in PPF (not drawn) under the ongoing spurious-injury distortion. Consumption occurs along the world price line through the production point at a point like $C_{DOP+DUP}$, which clearly dominates C_{DOP} .

(Insert Figure 4 about here)

The question remains: When might such a generalized R-line exist? To answer this, several well-known characteristics of generalized R-lines will be reviewed briefly. First, any R-line cuts the PPF through just one point. All generalized R-lines must lie below a line connecting the points P_{DOP} and A . Second, in order for the generalized R-line to be negatively sloped resources must be withdrawn to DUP lobbying in a capital-labor ratio greater than that employed in the capital intensive sector *or* less than that employed in the labor intensive sector. Suppose, for example, that capital and labor are withdrawn to DUP lobbying in the same proportion as that employed in sector 1. The full-employment constraints in the factor markets lead to a horizontal generalized R-line through P_{DOP} . If, instead, capital and labor are withdrawn to DUP lobbying in the same proportion employed in sector 2, the generalized R-line is vertical. Neither case can lead to a welfare improvement. If capital and labor are withdrawn to DUP lobbying in a ratio strictly between that used in production in sectors 1 and 2, the associated R-line has a positive slope, indicating that production of both goods 1 and 2 declines. Again, improvement is ruled out. Now suppose that resources are withdrawn to DUP lobbying in a capital-labor ratio in excess of that prevailing in the capital intensive sector, say sector 2. As the withdrawal of factors occurs

production of good 2 declines while that of good 1 rises. The R-line is negatively sloped through P_{DOP} toward point B . Once again this fails to satisfy the necessary condition for $DOP + DUP$ to be preferred to DOP alone. Evidently, only if factors are withdrawn to DUP lobbying in a capital-labor ratio less than that of the labor intensive sector (sector 1 in this case) will the generalized R-line be such that production of good 1 falls and that of good 2 rises. In this example, then, a necessary condition for $DOP + DUP$ to be preferred to DOP alone is that lobbying activity be relatively more labor intensive than the labor-intensive sector in production.

Several more points emerge from an examination of Figure 4. Because the generalized R-line must be rotated clockwise above the world price line in order for welfare improvement to occur, and since the generalized R-line must lie below the original PPF, Figure 4 indicates that a necessary condition for exogenous DUP activity to be welfare enhancing in the presence of a spurious-injury distortion is that the level of welfare under DOP alone be strictly less than that in autarky. If this is not the case, there is no generalized R-line that will expand the consumption possibilities set of the economy. In addition, if $DOP + DUP$ yields greater welfare than DOP alone it nevertheless must remain worse than autarky. In summary, when the spurious-injury distortion is small, so that welfare exceeds that under autarky, it is not possible for exogenous DUP lobbying to be welfare improving. When the spurious-injury distortion is quite large, however, the possibility arises that exogenous resource-using lobbying is welfare enhancing. This can occur, of course, since the resources are being withdrawn from a second-best situation. But it is the prospect of protection itself (joined with the manageable injury criteria) that makes the initial position *inherently* distorted.

4.5. Successful Tariff Seeking and Welfare Under a Spurious-Injury Distortion

The traditional welfare analysis of tariff intervention, before the emergence of the DUP/rent-seeking literature, compares welfare under an exogenous tariff to that under *laissez-faire* or unconditional free trade. The cost of the tariff is then identified as the dif-

ference between welfare under unconditional free trade and that under the tariff distortion. But if a tariff was imposed, presumably there existed some prospect of protection in the pre-tariff state. And if some prospect of protection did exist the appropriate comparison is not between unconditional free trade and the trade-tax-distorted equilibrium. Rather it is between the trade-tax-distorted equilibrium and the equilibrium under a spurious-injury distortion.²⁸ Having recognized this, the possibility that an exogenous tariff may be welfare enhancing (despite the absence of a terms-of-trade effect) follows immediately since the initial equilibrium is *necessarily* distorted.

This is illustrated in Figure 5. Once the goal of intervention has been achieved the duration of protection depends not at all on the ongoing appearance of injury. This follows from an asymmetry in the political process. Imposing and removing protection are achieved through entirely different means, under different institutional rules and public incentives.²⁹ The spurious-injury distortion is eliminated, therefore, the moment protection is granted. In the case of tariff seeking the spurious-injury distortion is replaced by a trade-tax distortion.³⁰ Because movement from the pre-tariff (seeking) state to the intervention state involves the replacement of one distortion for another, intervention may be welfare enhancing. Figure 5 shows a hypothetical pre-tariff state with DUP lobbying and the spurious-injury distortion indicated by $P_{DOP+DUP}$. The imposition of the *ad valorem* tariff simultaneously eliminates the spurious-injury distortion and introduces the tariff distortion. The economy is driven to P_i^t on the shrunk-in PPF. As drawn, potential social welfare under the tariff exceeds that under the spurious-injury distortion in the seeking state. That is, consumption possibilities at P_i^t are superior to those at $P_{DOP+DUP}$.

(Insert Figure 5 about here)

In the zero-outcome case it was determined that resource-using lobbying could be welfare improving if the spurious-injury distortion is large enough. Here, in order for the imposition of a tariff to produce a welfare gain it is required again that the spurious-injury distortion be sufficiently large. In Figure 5, as the spurious-injury distortion is reduced

the production point moves northwest along the shrunk-in PPF. This acts to shift the consumption-possibilities line outward. Eventually it will coincide with that under a tariff. And the concavity of the PPF guarantees that the possibility for improvement disappears as the spurious-injury distortion is diminished.

Observe that estimates of the cost of protection which fail to recognize that the pre-intervention state is often *inherently* distorted will tend to overstate this cost. This should not be construed as an argument for protection. Rather, it acknowledges that in some cases much of the damage to potential social welfare has already been done once the prospect of protection has been granted. This is especially true if the system of contingent protection imposes criteria which are manageable by import-competing firms.

5. Concluding Comments: Minimizing the Scope for Indirect Rent Seeking

The literature on DUP activity has profoundly influenced the way economists think about commercial policy. That the prospect of protection can lead to intervention-seeking and/or intervention-blocking lobbying is certainly well known. What has been neglected is the observation that POP together with manageable injury criteria may produce a concomitant distortion; the spurious-injury distortion. Once it is recognized that free trade under POP may produce an *inherently* distorted equilibrium the implications of resource-using lobbying and of protection must be reevaluated. In this paper some of the implications of free trade under POP and manageable injury criteria were presented. But the question remains: How might the spurious-injury distortion be minimized? That is, if as argued by most observers the formal process of trade liberalization *requires* (for reasons of political feasibility) that a system be in place to safeguard domestic producers from excessively “disruptive” import competition³¹, how might such a system be designed in order to minimize the incentive for indirect rent seeking?³²

Under current laws and institutions strong incentives for indirect rent seeking appear to exist. Indicators of injury under current U.S. law include market share, profits, capacity,

capacity utilization, import penetration, price underselling, and employment. While these variables will tend to be correlated with genuine injury, many can be manipulated by firms (some directly, like employment, and some indirectly, like import penetration) thus providing scope for indirect lobbying. In addition, the duration of a protectionist episode can be indefinite. As Sampson (1987, p 149) points out “the duration of Article XIX action is important because it was clearly never contemplated that actions under Article XIX should be indefinite or prolonged. Yet, some measures have been in existence, in one form or another, for many years”. Again, current practice creates an incentive for indirect lobbying by making the present value of the possible payoff nontrivial. Finally, the issue of causality arises. If the causality standard can be narrowed sufficiently, spurious injury will be of less help as an intervention-seeking device. But determining causality is a tricky business regardless of how demanding the causality standard might be. Under Section 201 of the Trade Act of 1974 (the U.S. escape clause), what had been a fairly demanding standard of causality was weakened substantially. The Trade Expansion Act of 1962 required that an industry prove that it had suffered serious injury, the “major cause” of which was import penetration (“major cause” was defined to mean greater than all other factors combined). Further, the Trade Expansion Act of 1962 required that a specific tariff concession under the GATT be cited as causing serious injury. Under the Trade Act of 1974, in order to make relief under the escape clause more accessible, imports need be only a “substantial cause of serious injury, or the threat thereof” (this was interpreted to mean “not less than any other cause”), and no tariff concession need be identified as causing injury.³³

A system of contingent protection can be designed in principle that will minimize these incentives for indirect lobbying. In principle, what must be done is one or more of the following: (1) remove the expectation of excess profits under protection (offering just sufficient protection to restore normal profits while also encouraging gradual structural adjustment), (2) establish strict “injury” criteria for protection which are not directly manageable by domestic import-competing firms, (3) return to the older, more demanding U.S. standard of causality established under the 1962 Trade Expansion Act. The first prescription removes

the payoff to rent seeking (direct or indirect). The latter two diminish the effectiveness of spurious injury as an intervention-seeking device.

In practice each of these remedies has difficulties. The strong causality standard of the 1962 Trade Act collapsed under political pressure precisely because protection was largely inaccessible under that standard (Jackson, 1989 pp. 161-162). Even if a *return* to the stronger causality standard were politically feasible, it is no more likely to be sustainable today than it was earlier. As to the question of eliminating the excess profits of protection, this runs into the same political difficulty as that of strengthening the causality standard. If only minimal protection were to be available to "injured" import-competing firms, then the same political pressure that moved the U.S. Congress to increase the accessibility of protection by weakening the causality standard, is likely to move them to restore the profitability of protection.³⁴ As has been suggested previously, the political dynamics of trade liberalization appear to require a system of accessible and genuine contingent protection. If the causality standard is too strong and the profits of protection are eliminated, for all intents and purposes the system of contingent protection does not exist.

This leaves one attempting to modify the injury criteria. Analogous to the work of Bhagwati and Srinivasan (1969), there may be an efficient criterion on which to base injury investigations which depends on the perceived non-economic objectives served by protection as well as the extent to which alternative criteria can be manipulated by firms. Whether this is true requires additional study. What is certain is that by establishing criteria for injury that are not directly controlled by import-competing firms (unlike many of the current indicators), the spurious-injury distortion could be reduced, if not eliminated. One such indicator of injury is the level of import penetration. While domestic firms may be able to indirectly influence this variable, we suspect that due to the uncertainty of the foreign response the incentive to attempt to influence the level of import penetration would be small. Nevertheless, an injury criterion based on import penetration is susceptible to manipulation (trying to avoid intervention) by exporters. The problem of an inherently

distorted equilibrium under POP remains.

No clear answer emerges from the analysis in this paper as to precisely what institutional/legal structure might minimize the scope for indirect rent seeking. Clearly more work is required. The analysis is suggestive, however. One must find criteria for protection which are not readily managed by import competing firms. Alternatively, the work in Section 3 suggests that by narrowing the gray area over which an affirmative injury ruling might be forthcoming and by setting the standard for injury at a sufficiently high threshold, the distortion could be eliminated. Nevertheless, such a policy prescription may not be feasible because it reduces the accessibility of protection. And accessibility may be a necessary component in any politically viable contingent protection scheme. While the question of the optimal design of a system of contingent protection is not readily answered, it is clear that in principle improvements on the status quo could easily be achieved. Current legislation allows greater scope for indirect lobbying than is necessary, not only because of the existence of multiple injury indicators but also because multiple instruments of contingent protection exist, allowing firms to engage in "forum hopping." Removing those indicators of injury which are most easily manipulated by firms, and making substitution between instruments more difficult would certainly constitute an improvement.

¹Article XIX of the GATT, the so-called *safeguards* provision, offers signatory nations an avenue to escape their GATT obligations and to erect protective barriers to trade under the condition that “product is being imported into the territory of that contracting party in such increased quantities and under such conditions as to cause or threaten *serious injury* to domestic producers in that territory’ (Article XIX[1][a]). The action may continue “to the extent and for such time as may be necessary to prevent or remedy the injury” (Article XIX[1][b]). An additional avenue of protection is provided in article VI of the GATT, supplementary provisions to article VI and in the Agreement on Implementation of Article VI of the GATT (commonly known as the Anti-Dumping Code). Again, relief under this article is contingent on a finding of injury; specifically a finding of *material injury* or the threat of such is required.

²Some authors apply the terminology “rent seeking” to describe any profit-seeking activity motivated by actual or prospective government intervention in markets which creates economic rent. See, e.g., Buchanan (1980). The kind of profit-seeking activity investigated in this paper is consistent with the broad interpretation of rent seeking adopted by the Public Choice School.

³Under U.S. law, section 201 of the Trade Act of 1974, indicators of injury include market share, profits, capacity, capacity utilization, import penetration, price underselling (i.e., the supply price offered by foreign firms is less than that of domestic import-competing firms), and employment. But not all of these indicators need to be effected. Investigators have a great deal of discretion in deciding which of these indicators to emphasize and which to downplay.

⁴ It should be clear that while evidence of injury due to import competition is the true prerequisite of protection, not “injury” *per se*, separating injury which is causally linked to foreign competition from that which is spurious would be a monumental task. In practice, since establishing causality is quite difficult, perhaps impossible, objective evidence of injury is identified without being able to pinpoint its proximate cause. As Grossman

(1986) observes, “Historically, the International Trade Commission, in making its Section 201 determinations, has relied heavily on the subjective testimony of industry experts and on other more casual forms of industry analysis.” Hence direct action that may influence the appearance of injury is clearly viable under current standards.

⁵While this proposition is not yet incorporated in the theoretical literature on DUP activity, it does have indirect empirical support. Takacs (1981) examines factors affecting the pressures for protectionism. As a proxy for *protectionist pressure* the number of petitions for protection in the U.S. under the “escape clause” set forth in section 201 of the Trade Act of 1974 (an example of domestic legislation derivative of article XIX of the GATT) is examined. The data generally support the proposition that *protectionist pressure* is positively related to various measures of economic activity such as employment levels, capacity utilization, and real output. In addition, import penetration was found to be positively related to both the number of escape clause investigations per year and the likelihood that a petition will be successful. This suggests that DUP lobbying activity is stepped up only when some indication of injury is present.

⁶Smith, p. 137 (1937).

⁷The work of Bhagwati and Srinivasan (1969) on non-economic objectives is applicable here. They point out that there is an optimal form of policy intervention that will achieve a given non-economic objective at the least cost. In the same way, under the prospect of protection there is an optimal criterion for establishing injury that accompanies a given non-economic objective. If the prospect of protection is offered because, say, it is felt that an industry has strategic value, assessing whether or not protection should be granted should depend exclusively on domestic capacity and not at all on labor employment or gross sales, for example. Allowing irrelevant factors to enter the decision to protect unnecessarily increases the instruments available to the firm to feign injury.

⁸Elaboration on this can be found in Baldwin (1982), pp 270–271.

⁹Section 201 of the Trade Act of 1974 specifically allows the ITC to narrow the market when undertaking its injury investigation as long as producers in that area “constitute a substantial portion of the domestic industry.” On this see Barcelo (1979, p. 55, footnote 12). In addition, “the narrowing process has gone further in dumping cases, even to the point of characterizing the market in a single urban area as an industry (Ibid., p. 55).” A clear implication of this paper is that any tendency to narrow the market in escape-clause and AD cases may facilitate the use of spurious injury as an intervention-seeking device.

¹⁰This need not be true. If the authorities simply *need* some evidence of injury in order to grant protection, whether that injury is demonstrably spurious may be irrelevant. It may simply serve a political function, acting as pretext for protection. That is, the appearance of injury may satisfy an institutional constraint which otherwise inhibits these officials from advancing their own interests. Both spurious injury and genuine injury may free the hands of public officials equally well.

¹¹This assumes that the duration of protection once imposed is independent of perceived industry health. This is the most likely case since the duration of protection is not linked by law to ongoing injury. The duration of protection is most likely to depend on lobbying efforts alone, both pro- and anti-protection. As Finger (1983/84) observes: “Though imposing and removing import restrictions are, in economic logic, opposite directions on the same scale, they are in government completely different processes.”

¹²A sales-based injury criterion is evaluated in Section 3 in a general equilibrium framework.

¹³The restriction imposed by the second-order condition requires that the derivative of equation (2) with respect to N be negative. As long as the short-run production function is concave in labor, the marginal factor cost under POP is free to be either rising or falling. Although, of course, a relative maximum is not achieved at a point where the MFC_{pop} curve cuts the value-marginal product curve from above.

¹⁴In the U.S., an industry may petition the International Trade Commission to conduct an injury investigation under the escape clause, Section 201, of the 1974 Trade Act. The ITC's findings and recommendations are presented to the President. If injury to the domestic industry due to imports has been found, the President is free to accept, reject, or modify the ITC's recommendations for remedial actions. Under the Trade and Tariff Act of 1984, the ITC's recommendations will be implemented over the objections of the President if both houses of Congress pass a joint resolution to this effect, with this resolution subject to a Presidential veto.

¹⁵While Article XIX actions are intended to be *temporary*, it is well known that "there are examples of surrogate measures that have been in existence, in one form or another, for several decades" (UNCTAD Secretariat, 1984, p. 14). In its current form, there is a great deal of latitude afforded nations concerning the duration of an article XIX action. Some analysts fear that the inclusion of a specific maximum duration will have the perverse effect of establishing a de facto minimum duration (see e.g., Sampson 1987, p. 149, and UNCTAD Secretariat 1984, pp. 14–15). Hence, currently the duration of a protectionist episode can be expected to be prolonged or indefinite.

¹⁶Other injury criteria are clearly possible, including mixed criteria. Grossman (1986), for example, attempts to assess injury based on labor employment, the case analyzed in Section 3.

¹⁷This is a common assumption in the research on DUP lobbying activity. See e.g. Findlay and Wellisz (1982), p. 227. It is, of course, quite possible that the benefits attached to spurious injury will be internalized automatically, as the domestic industry may be comprised of a single firm as in Section 3. This is one case where internalizing the value of spurious injury is costless and automatic. In other cases, the coordination and enforcement efforts needed to internalize the benefits of spurious injury are similar to those facing a cartel. And it should be noted that it is highly unlikely that such a tactic would arouse the attention of the antitrust authorities. After all, the industry in question is *apparently* ailing, not

thriving. In principal, however, such a tactic may violate Section One of the Sherman Act. As pointed out in Waller (1985, p. 493), "Conduct undertaken with the purpose of producing an anticompetitive effect violates Section One even if such effects do not come to pass". Nevertheless, the anticompetitive outcome sought is one sanctioned by trade law. The observation that trade law and antitrust/competition law are often at odds is, by now, well known.

¹⁸The HOS model is employed here simply because so much of the work on DUP occurs within this framework. The concept of spurious injury is clearly applicable to strategic trade models under imperfect competition. This is a potentially fruitful area for further research.

¹⁹Direct lobbying activity, when it is introduced, is treated as exogenous. This simplifies the problem a great deal without losing the essential features of a spurious-injury distortion.

²⁰Under somewhat more general conditions it is possible that the export sector will want to block intervention in the import sector. Perhaps anticipation of foreign retaliation stimulates this interest. We might expect, therefore, that the export sector might engage in anti-protectionist lobbying (See, e.g., Destler and Odell, 1987) as well as undertaking an attempt to partially offset the efforts of the import-competing sector to appear injured by foreign competition. Even so (DUP lobbying aside), the spurious-injury distortion remains unless the production response of exporting firms *exactly* offsets that of import-competing firms, an eventuality that seems highly improbable.

²¹It is easy to see that had the injury criterion been based on employment levels as in Section 3, resource allocation would occur *off* the efficiency locus. The production point would lie below the PPF in this case.

²²The qualifier "contemporaneous" indicates that the intensive factor's real wage loss occurs during the "seeking" state. Once protection is granted, depending on the nature of that

protection the real wage available to the factor used intensively in the protected sector may recover.

²³The qualifier “contemporaneous” is no longer needed as the removal of the prospect of protection eliminates any attention that might have been directed to the “intervention” state.

²⁴While this appears to be a solution, there is some question about whether once the production tax-*cum*-subsidy is in place firms in the import-competing sector would continue to seek protection. They would, and the above analysis holds, only if under protection the tax-*cum*-subsidy is expected to continue. But most likely such would be expected since it doesn’t make much sense to eliminate a subsidy to the import-competing sector at the same time you are granting protection from foreign competition. In other words, for the above prescription to be appropriate the distortion must be independent of the corrective policy intervention.

²⁵It should be noted that since both spurious injury and direct lobbying are intervention-seeking activities the effectiveness of spurious injury as an intervention-seeking device and of direct lobbying may depend on the extent of each other as indicated in Section 3. Exogenous DUP activity is a very special case and, as such, is only suggestive of the kinds of possibilities that can arise once the spurious-injury distortion is joined with resource-using lobbying.

²⁶See, e.g., Srinivasan and Bhagwati (1978), Bhagwati, Srinivasan and Wan (1978), Bhagwati and Srinivasan (1981).

²⁷It should be noted that Bhagwati (1980, p. 380) points out that “lobbying that does not succeed in its intended target will leave the first-best situation undisturbed and hence will indeed represent welfare-worsening lobbying”. This conclusion must be qualified since the intervention-seeking state may be *inherently* distorted when there are manageable injury criteria.

²⁸There are a couple ways of resurrecting the traditional analysis. First, protection may be

imposed with *surprise*. That is, the prospect of protection may have been truly absent prior to the intervention. Then, of course, no spurious-injury distortion arises. This seems quite unlikely, however. A second possibility is that protection is granted under a political formula that does not include the appearance of injury which is *manageable*. Such a formula is inconsistent with current institutions.

²⁹See footnote 11 and Finger (1983/84).

³⁰The tariff revenue is assumed to be redistributed.

³¹At least two rationales have been suggested in the literature as to why a system of contingent protection might be required. The first is that a system of contingent protection is needed to appease those interests opposed to liberalization. This view is represented by the following comments from Meier (1978, p. 133): "...although the economist may admit to little, if any, economic justification for market safeguards, the political economist realizes that safeguard clauses allay some fears of the consequences of trade liberalization, and that their provision may be necessary to facilitate a reduction of trade barriers more generally." The second reason for asserting that a system of contingent protection may be necessary is attributable to Corden's (1974) notion of a conservative social welfare function. The idea is that governments (electorates) refuse to accept downward changes in sectoral real income (or proxies such as employment) that are too large or abrupt.

³²The more general problem of designing a system of emergency protection that is effective (i.e., works as intended), efficient (i.e., minimizes the social cost of the system), and fair (i.e., distributes the cost of intervention across affected parties in an equitable manner) is investigated in Hoekman and Leidy (1990). Minimizing the scope for indirect rent seeking is but one issue in the overall design of such a system. An example of the incentives facing exporting firms under the threat of antidumping duties (a particularly accessible form of contingent protection) is investigated in Leidy and Hoekman (1990). The general problem of designing a system of contingent protection that minimizes distortions must also include

the minimization of such distortions created in exporting sectors and take into account the substitutability of various instruments. For example, it has been argued that antidumping measures are used as alternatives to emergency protection (Hoekman and Leidy, 1989).

³³On this see Jackson (1989, pp 161-165).

³⁴Of course political dynamics can be changed. If the system of contingent protection had a national interest criterion requiring an impartial cost-benefit analysis of the economy-wide effects of protection, (see e.g., Laird and Sampson, 1987) and if the results were published (as suggested by Finger, 1982), this may be sufficient to enable officials to resist pressures for gratuitous protection.

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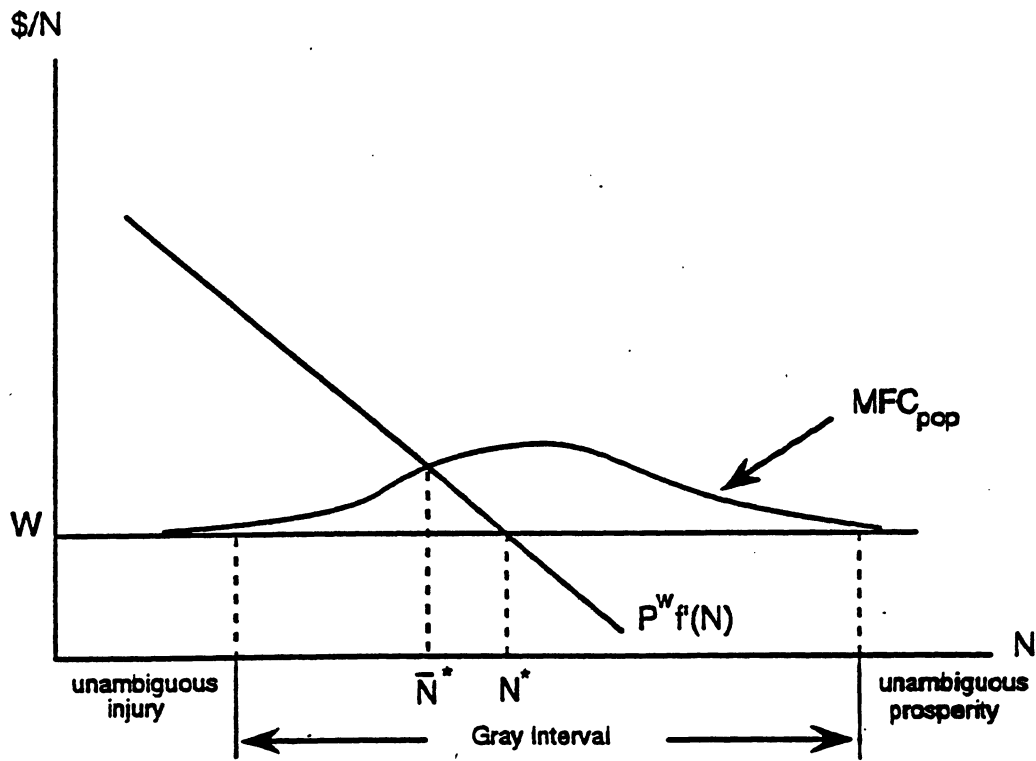


FIGURE 1: The Employment Decision Under a Labor-Based Injury Criterion (wide gray interval)

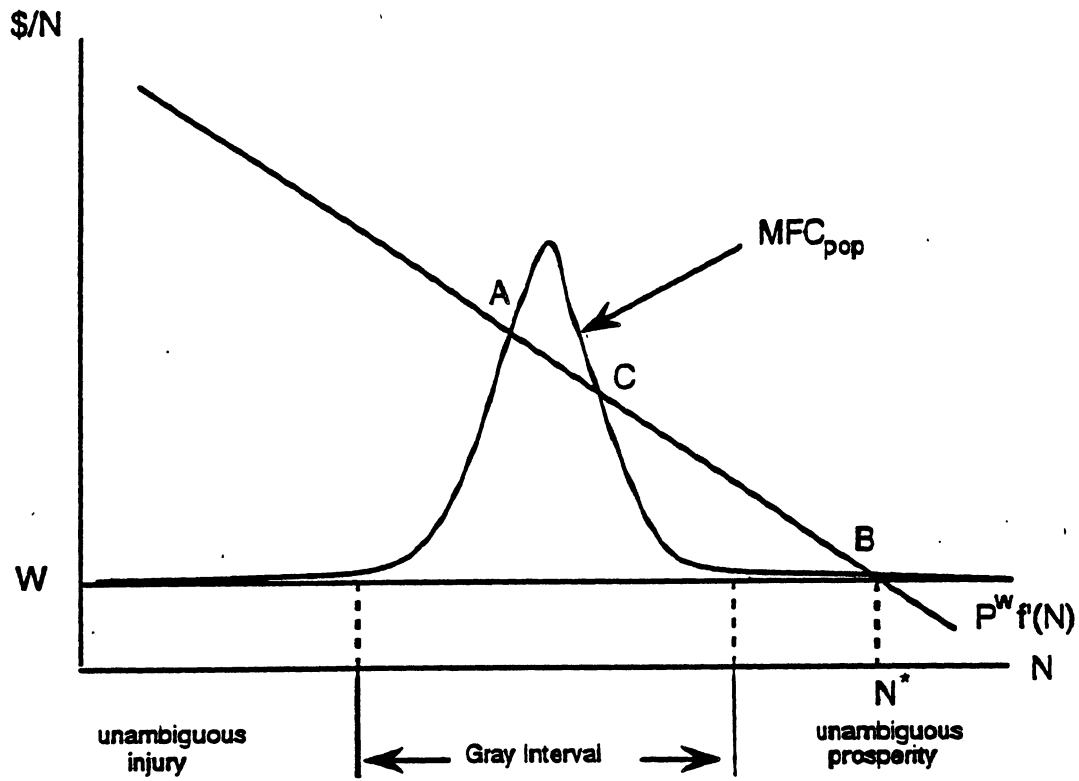


FIGURE 2: The Employment Decision Under a Labor-Based Injury Criterion (narrow gray interval)

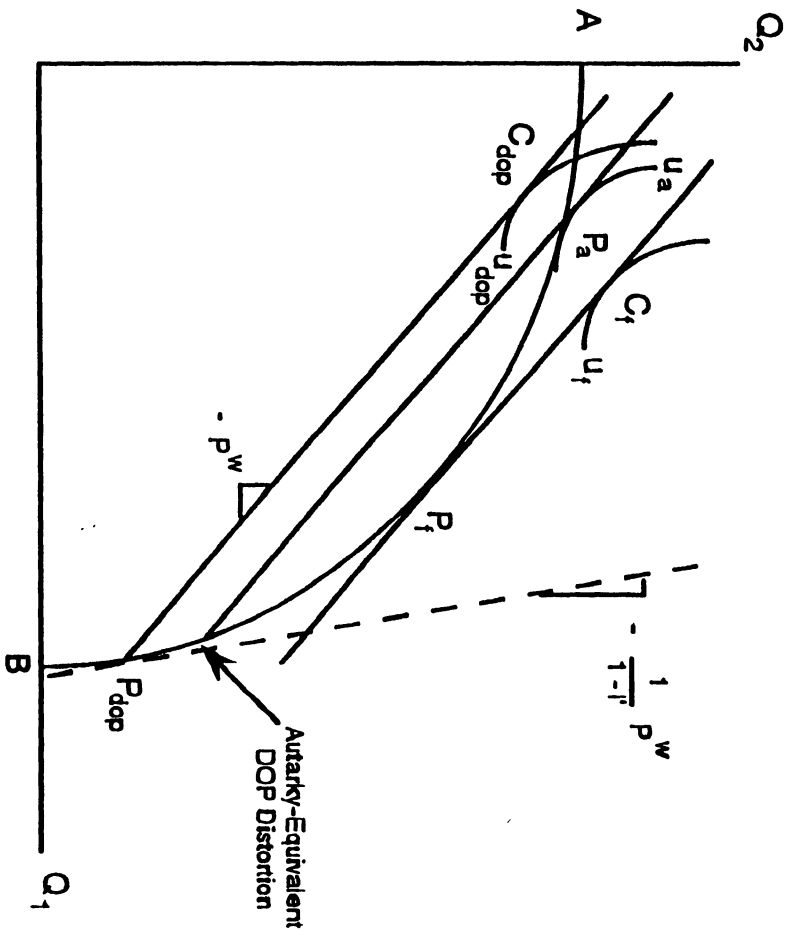


FIGURE 3

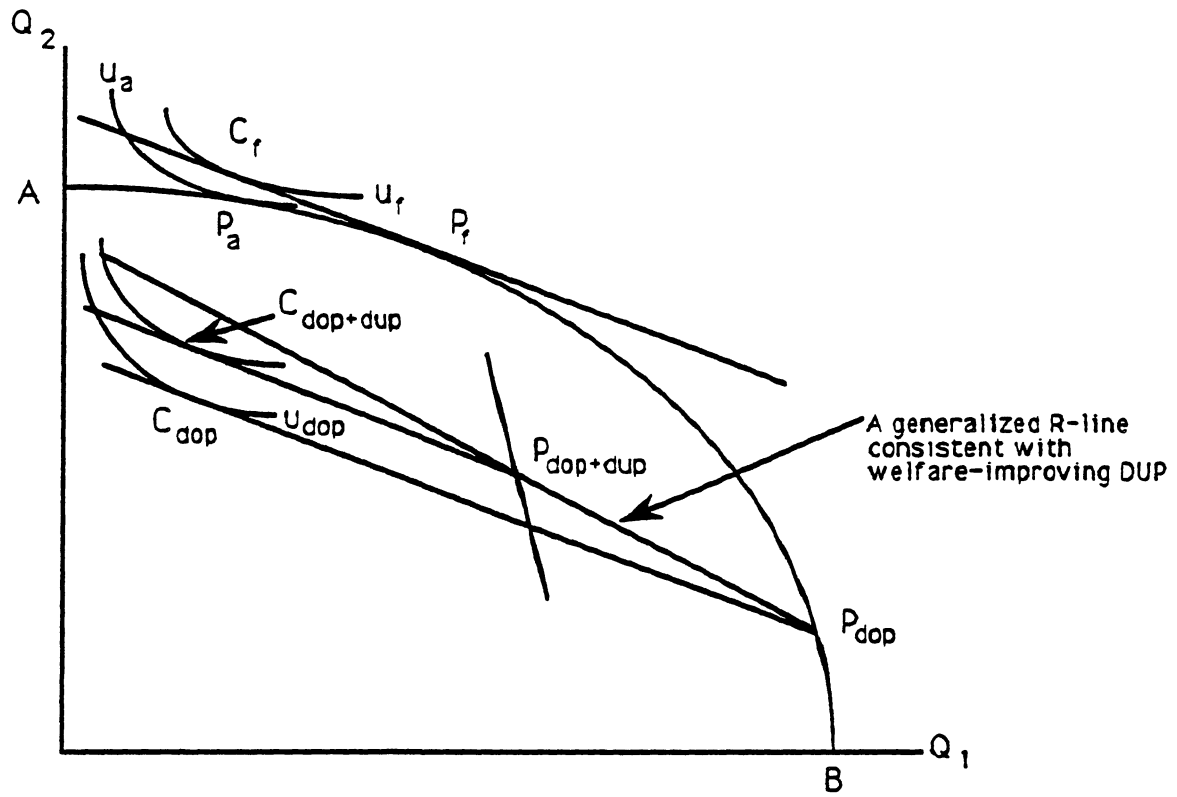


FIGURE 4

#273

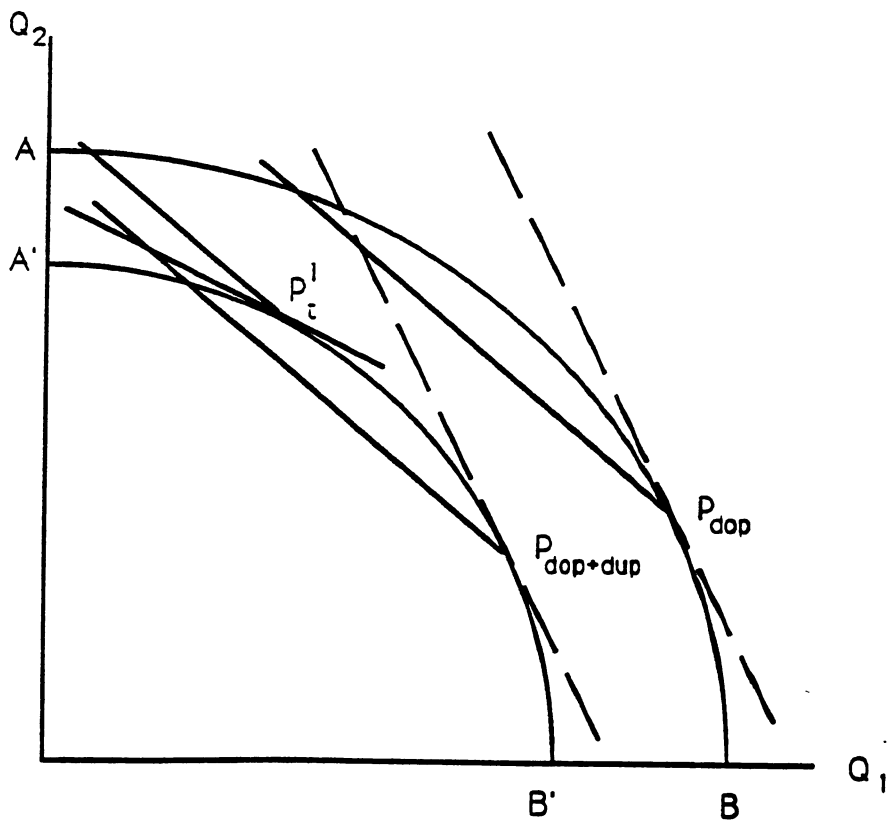


FIGURE 5

