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WITHDRAWN

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RENT DISSIPATION, FREE RIDING,
AND TRADE POLICY

by

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1 Introduction

Sunset industries are notoriously more successful at playing the political system for trade protection and other forms of government support than are sunrise industries. In many developed countries, declining industries such as textiles, footwear and steel have lobbied the government repeatedly for voluntary restraint agreements, orderly market arrangements, minimum price supports, and the like. The governments have almost always heeded their calls, providing sizable protection and income support long after conceding their nations' loss of comparative advantage in these activities. Meanwhile, expanding and profitable industries such as computers and biogenetic engineering have been much less vocal in demanding political favors. While policies to promote such industries do exist, they are generally limited to a few small programs to develop infrastructure and support R&D. On the whole, government trade and industrial policy in most countries seems to impart a status quo bias to the industrial structure and to impede a dynamic response to changing market conditions.

The ability of organized special interests to secure protective trade barriers and other particularistic benefits has been explored in recent work on the political economy of policy formation by ourselves and others.¹ Organized pressure groups can, for example, offer campaign contributions and other forms of political backing to politicians who have promised supportive policies or are willing to do so. Politicians, for their part, are keen to be re-elected and may value the financial and other support from the interest groups even if the inefficient policies they endorse cost them some votes among the general electorate. But none of this explains why interests in import or declining industries ought to be more successful in "buying" protection than those in export or expanding industries. Indeed, Levy (1993) has shown, in an analysis based on the model in Grossman and Helpman (1994a), that highly productive export industries ought to be, if anything, more capable of securing favorable trade

¹See, for example, Magee et al. (1989), Hillman (1989), Grossman and Helpman (1994a), and Helpman (1995).

treatment than otherwise similar, but less productive, import-competing sectors.

Baldwin (1993) has identified an asymmetry between sunrise and sunset industries that may account for their different fates in the political game. Whereas sunrise industries are profitable and so are attracting new investments in industry-specific skills, plant, and equipment, the returns in sunset industries are limited to quasi-rents to factors unable to leave. Baldwin argues that ongoing entry breeds rent dissipation; that is, if a profitable and expanding industry were to lobby the government successfully for support, the extra rents would be dissipated by even greater entry than otherwise, until the industry once again earned a normal rate of return. On the other hand, when the factors trapped in an unprofitable and declining industry undertake similar political activities, their successes only bring the rate of return closer to or perhaps up to the normal rate, and so do not attract newcomers wishing to share the rents.

This is an intriguing argument with some element of truth to it. In particular, the relative success of sunset industries relative to sunrise industries in the lobbying game may well have to do with the fact that the latter industries are attracting new entrants but the former are not. However, as we show below, it is not really the threat of *rent dissipation* that foils the potential political ambitions of expanding industries. An expanding industry will lobby for supportive policies in political equilibrium even if all participants expect only a normal rate of return at the end of the day, provided that early and late entrants will share equally in the cost of the political action. Rather, it is the potential for *free riding* that is the bugbear for expanding industries tempted to engage in costly lobbying. If an organized pressure group cannot prevent latecomers from entering the industry after a lobbying effort has been made and without contributing for its cost, then the early entrants will find little incentive to lobby in political equilibrium. This is true regardless of whether the new entrants dissipate all of the rents from lobbying or not. The prospect for free riding, while always a problem in collective action (see Olson, 1965), may be less insidious for

declining industries, since none of the potential beneficiaries of a lobbying campaign will be arriving on the scene after the effort has been paid for.

Our goal in this paper is to clarify the scope and applicability of Baldwin's (1993) argument. First, we examine equilibrium lobbying with rent dissipation but no free riding. Then we introduce the potential for free riding, with or without complete rent dissipation. Finally, we discuss the implications for the structure of protection. We conclude that in distinguishing between expanding and contracting sectors, Baldwin has identified a key variable that helps to explain political success and failure.

2 Rent Dissipation

Consider a profitable economic activity in which new investments are to be made. Let S denote the units of investment, where S may be the number of new firms that bear the fixed cost of entry into an industry, or the value of new machines installed in the industry, or the number of individuals who acquire industry-specific skills, or whatever. The reward to a unit of S is $V(S, \tau)$, where τ indexes the government's policy support for the industry. The policy variable might reflect, for example, the rate of tariff protection for an import-competing industry, or the rate of export subsidy for an exporting industry, or the rate of subsidy per unit of industry output. The reward $V(\cdot, \cdot)$ is an increasing function of the policy variable, τ , and a decreasing function of the total amount of investment, S . We normalize the policy variable so that $\tau = 0$ indicates an absence of government support.

Let $V_o(S, \tau)$ represent the opportunity cost of a unit of S ; this is the reward that investors could earn by deploying their resources elsewhere in the economy. The opportunity cost $V_o(\cdot, \cdot)$ might depend on S and τ through general equilibrium interactions. For example, if S is the number of workers who acquire sector-specific skills and if the sector in question will be large compared to the rest of the economy, then $V_o(S, \tau)$ might be an increasing function of S ; the more workers who train for the

expanding activity, the fewer will remain elsewhere in the economy, and the higher might be the marginal product of those who do remain there. The fact that the industry is expanding (or "profitable") implies that $V(0,0) > V_o(0,0)$.

Rent dissipation is reflected in the equilibrium condition $V(S,\tau) = V_o(S,\tau)$ and in the dependence of V on S . That is, if an interest group representing the investors succeeds in inducing the government to choose $\tau > 0$, there will be more entry than otherwise. This entry will continue until the reward to a unit of investment again equals the opportunity cost, V_o . If V_o happens to be independent of S and τ , then rent dissipation will be complete; the reward to the investors will be no higher in an equilibrium with $\tau > 0$ than it would have been with $\tau = 0$.

Now consider the following reduced-form representation of the political process. Suppose the group of investors in the expanding industry forms a special interest group to engage in political activity or "lobbying." At a cost of $C(S,\tau)$ per unit of S the group can induce the government to provide the support τ . We assume that $C(S,0) = 0$ and that $C_\tau(S,\tau) > 0$ for all S and τ .² We will make some further assumptions about $C(S,\tau)$ in a moment.³

In this section we do not allow any free riding on the investors' political expenditures. This may be for one of three reasons. First, it may be impossible (or very costly) for others to make new investments or the originals to make additional investments after lobbying takes place. Second, once a lobby forms, it may be able to prevent new entry as well as the expansion of capacity by members of the special interest group (e.g., using production quotas). Third, it may be that late investors can be made to share in the cost of any lobbying effort, just as if they had been

²These assumptions apply most readily to a situation of perfect competition, where an absence of intervention would be socially desirable. Otherwise, we should normalize around whatever policy the government would choose in the absence of pressure from the special interest group.

³The cost function $C(S,\tau)$ can be derived from some explicit model of the political economy, such as that in Grossman and Helpman (1994a). There, the interest group would need to compensate the politicians for the political cost of deviating from the aggregate-welfare maximizing policy.

around from the beginning. In either case, we assume that all investors pay a share of $C(S, \tau)S$ in proportion to the size of their ultimate investment. The lobby seeks to maximize the net return on investment after lobbying costs.

Will the industry participants, anticipating an equilibrium level of entry and associated rent dissipation, lobby the government for policy support? The answer, under fairly weak conditions, is 'yes'. Take the case where rent dissipation is complete, so that $V_o(S, \tau)$ equals the constant v_o . Define S^* , the equilibrium level of investment in the absence of government intervention; i.e., $V(S^*, 0) = v_o$. Now suppose that $V_\tau(S^*, 0) > C_\tau(S^*, 0)$, that is, the marginal benefit to the industry of the first bit of government support exceeds its marginal cost. Suppose too that the net benefit function $V_N(S) \equiv \max_\tau [V(S, \tau) - C(S, \tau)]$ is declining in S .⁴ This means that, as more entry occurs, the net benefit declines even after the optimal adjustment in lobbying effort. Then the equilibrium level of entry S_N must exceed S^* and the entrants do lobby to induce an equilibrium level of support $\tau_N > 0$.

These claims are evident from inspection of Figure 1. In the figure the downward-sloping net benefit function is depicted as VV . Note that the net benefit exceeds v_o at $S = S^*$. This follows from the fact that $V(S^*, 0) = v_o$, $C(S^*, 0) = 0$, and $V_\tau(S^*, 0) > C_\tau(S^*, 0)$. Then the equilibrium is at point E , where $V_N(S_N) = v_o$.

In the equilibrium, there is "excessive" investment, as the investors anticipate their ability to lobby the government for support. Were no lobbying to take place, the return on investment would fall short of the opportunity cost. But, in equilibrium, the industry's political activities restore a normal rate of return. Evidently, the prospect of rent dissipation does not eliminate lobbying when free riding is not a problem.

⁴Since $V(S, \tau)$ declines in S , a sufficient condition for $V_N(S)$ to be a declining function is $C_S(S, \tau) > V_S(S, \tau)$.

3 Free Riding

Now suppose that an initial set of investors cannot prevent others from enjoying the benefits of their political efforts. In particular, let a first wave of investors enter at level S_1 . Upon entry, these investors may organize into an interest group to lobby the government for support. There is no problem of free riding among them, and they share the political costs in proportion to their investments. However, once the lobbying has taken place and the government has committed to support at rate τ , there is the opportunity for a second wave of investment, S_2 . The latecomers pay an extra cost of ϵ per unit of investment to make up for their tardiness. However, they cannot be forced by the early entrants to contribute to the already-concluded lobbying effort. Instead, they take a free ride.

Will lobbying take place in an equilibrium in which the early entrants correctly anticipate the rate of protection they will collectively induce and also the extent of late entry? We examine this question for the limiting case where the extra cost of late entry ϵ is positive but arbitrarily close to zero.

Let S_{1F} and S_{2F} be the equilibrium levels of investment at each stage in this setting with potential free riding. Also, let τ_F denote the equilibrium policy. Assuming that there is some entry in the first stage (otherwise there is no lobbying and hence no government support for the industry), the net income of early entrants must equal their opportunity cost. The early entrants anticipate gross earnings per unit of investment equal to $V(S_{1F} + S_{2F}, \tau_F)$ and they expect to pay $C(S_{1F}, S_{2F}, \tau_F)$ per unit of investment S_{1F} as a lobbying cost. Thus,

$$V(S_{1F} + S_{2F}, \tau_F) - C(S_{1F}, S_{2F}, \tau_F) = V_o(S_{1F} + S_{2F}, \tau_F). \quad (1)$$

Next consider the problem facing the organized interest group that represents the owners of S_{1F} . The lobby group knows that if it demands a policy τ such that $V(S_{1F}, \tau) - \epsilon < V_o(S_{1F}, \tau)$ then there will be no late entry. Otherwise, late entry will occur so as to ensure that the per unit return of the late entrants matches their

opportunity cost; i.e., $V(S_{1F} + S_2, \tau) - \epsilon = V_o(S_{1F} + S_2, \tau)$. Therefore, the lobby representing the earlier investors chooses τ and (in effect) a non-negative S_2 to solve:

$$\max_{\tau, S_2} V(S_{1F} + S_2, \tau) - C(S_{1F}, S_2, \tau) \quad (2)$$

subject to

$$V(S_{1F} + S_2, \tau) - \epsilon \leq V_o(S_{1F} + S_2, \tau), \quad (3)$$

with strict equality in (3) whenever $S_2 > 0$. Equilibrium values of early and late investment and the policy variable are those that solve the maximization (2) subject to the constraint (3), while also satisfying the free-entry condition (1).

At any equilibrium, the free-entry condition (1) and the lobby's constraint (3) together imply $C(S_{1F}, S_{2F}, \tau_F) \leq \epsilon$. But, since lobbying costs are positive for any positive intervention, this implies that $\tau_F \rightarrow 0$ as $\epsilon \rightarrow 0$. Evidently, as the barriers to late entry disappear, so do the incentives for political action.

The explanation for our result is quite simple. Investors in the expanding industry realize that they can avoid the cost of lobbying by delaying their entry. When the penalty for delay is small, all prefer to wait rather than to bear a part of any positive lobbying cost. The only equilibrium, then, is one where the cost of lobbying is zero. In such an equilibrium, the group buys no favors from the government.

Note that this result is rather extreme, for it requires early entrants to believe that late entrants can free ride with probability one. Consider an alternative situation in which the early entrants organize into a special interest group that lobbies for protection, and the probability that late entry will occur is smaller than one. This probability may depend, for example, on how easy it is to imitate a new technology, or whether the lobby will succeed in convincing a regulator to forbid further entry. In this case the *expected* reward of the early entrants equals the opportunity cost $V_o(\cdot)$. As a result, early entrants lobby for protection, securing an ex-post reward that exceeds $V_o(\cdot)$ whenever late entry does not occur and an ex-post reward that falls short of $V_o(\cdot)$ whenever late entry does occur. The lower the probability of second

stage entry the higher the rate of protection. We see therefore that some protection of an expanding industry is viable even with $\epsilon = 0$, as long as early entrants are not entirely sure that free riding will occur.⁵

4 Discussion

It is no surprise that the potential for free riding can destroy the incentives for collective action. Indeed, beginning with Olson (1965), much of the literature on the determinants of the structure of protection has focussed on conditions that might allow an industry to overcome the free-rider problem associated with organized lobbying. For example, Olson reasoned that pressure group activity is more likely to take place when the number of members of the affected group is small, as it would be in more concentrated industries. Pincus (1975) further argued that geographic concentration improves an industry's prospects for overcoming free-riding, because it facilitates coordination and monitoring of political activities.

The message of this paper, inspired by Baldwin (1993), is that sunset industries may be better placed to overcome the free-rider problem associated with interest-group politics than sunrise industries. In a sunset activity the potential contributors are easily identified. They are the owners of factors stuck in the declining sector, such as industry-specific human capital, machinery and knowledge. Since the industry is declining, it presumably offers below normal rates of return on *new investment*. Thus, there are not likely to be new entrants into the industry who can free ride on the efforts of those with the sunk investments. In contrast, the potential beneficiaries of any government largesse directed to a sunrise activity are not so readily enumerated. They include, of course, the initial participants in the industry, but also those who will enter later on. Since the industry is expanding, there is incentive for new entry

⁵Another possibility is that new entrants are heterogeneous and they enter sequentially, with the most productive entering first. Then too a special interest group of early entrants lobbies for protection even if it expects late entry to occur.

even without supportive government policy. Latecomers often will be able to free ride on any political activities undertaken by those who came before.

This asymmetry in the ability of declining and expanding industries to overcome the free-rider problem in collective political action may have far reaching implications for an economy's long-run performance. We have argued elsewhere (Grossman and Helpman, 1994b) that innovation is the driving force behind much of economic growth. But Schumpeter aptly described innovation as a process of "creative destruction" in which new entrants destroy profits of earlier entrants. Consider this process in the light of the political analysis provided above.

One could easily imagine a growth model in which there are some sectors that succeed in making technological discoveries in every period. This technological progress would raise profitability in these sectors relative to the rest of the economy, thereby creating an incipient demand for new investment. But the new investors would find it difficult to lobby forcefully for supportive government policies, in view of the free-rider problem associated with ongoing entry. Meanwhile, the owners of sunk capital in sectors that do not experience rapid technological change would have incentives to lobby vigorously for government support. By doing so, they could slow the departure of mobile resources and so prevent the rapid decline of their quasi-rents. In the political equilibrium, government intervention would serve to slow the movement of resources to the most dynamic sectors of the economy, and to slow the rate of long-run growth. Alternatively, organized pressure groups in the expanding sectors might try to lobby the government for both industry support and barriers to entry, where the latter would protect their members from free riding by latecomers. If they were successful at this, the profitable sectors would lose their dynamism, as outsiders would not be able to add to their productivity growth. Again, political intervention would lead to slower growth.

In short, our analysis predicts faster growth in polities that are more resistant to special-interest pressures, a prediction that is certainly in keeping with the historical

evidence presented by Olson (1982) and Baumol (1990). It also points to the critical importance of political institutions for economic growth.

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Figure 1

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