

**Resource Mobility, Diversification of Ownership,
and Political Rent-Seeking Incentives**

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RESOURCE MOBILITY, DIVERSIFICATION OF OWNERSHIP, AND POLITICAL RENT-SEEKING INCENTIVES

Introduction

The current round of negotiations of the General Agreement on Trade and Tariffs (GATT) represents a major initiative of economic reform. Initiatives for trade reform are far from new. A facilitative framework has been proposed which ranks policies according to their level of price distortion—the least distorting policies are favored over the more distorting. Policies which are regarded as highly distortionary are termed, "red light policies;" those policies which are least distortionary and, therefore, most acceptable from an international perspective are "green light policies;" "yellow light policies" fall between these two extremes. This policy ranking scheme, at least in theory, is based on the degree of trade distortion each policy creates (Rausser and Nielson, 1990). In addition to the degree of trade distortion, the political sustainability of the reform policy should influence the ranking (Rausser and Irwin 1989); a reform policy which is likely to be politically sustainable is more desirable than an equally distortionary policy which is not likely to be sustainable. We show that policies which promote diversification of ownership and mobility of the factors of production can reduce the incentive of agents to seek protectionist trade policies. Therefore, we argue that all use the same policies which promote the mobility of factors and the diversification of ownership of immobile factor should be ranked above those which do not.

Economists have developed models of rent seeking to explain socially wasteful government policy of wealth redistribution (Becker 1982; Bhagwati 1981; Mayer 1984; Tullock 1967; Kruger 1974; etc.). In these models, interest groups seek and promote government policies which increase their wealth at the expense both of others and of the level of total social welfare. If any one person is to gain from a socially wasteful transfer policy, the rents from the policy must go to a limited number of individuals. All rent-seeking models

share this "limited access" characteristic. In most models, limited access usually derives from the ownership of some fixed resource but could also derive from a particular set of preferences which differentiates one group from another in society.

An understanding of the incentives motivating trade distortions requires an analysis of the welfare effects of the trade distortion; such studies have long been conducted. Some focus on the effects at the industry level (Corden 1969; Meade 1955; Bhagwati 1971 ~~???~~), while others concentrate on the implications of reform on returns to resources employed in production (Heckscher 1949; Jones 1970; Stolper and Samuelson 1941). The effects of resource mobility have been extensively analyzed and have become central to neoclassical trade theory (Jones 1975). From a policy perspective, another important dimension is the diversification of resource ownership in the economy. While resource mobility may be largely determined by technical relationships, diversification of individual portfolios may be a function of the economic regulation, and subject to political influence. Government promotion of diversification of resource ownership and the existence of markets for contingent claims may be vehicles for increasing the propensity for trade reform. In this paper, we examine the effect of the diversification and the mobility of resource ownership on the incentives for rent seeking; in particular, on the political-economic equilibrium within the economy.

Hypothetical Economies

To examine how resource mobility and diversification can affect the political economy of a country, we first consider two hypothetical economies—one in which all resources are mobile, and the other in which all non-mobile resources are held in equal proportions by all individuals. It can easily be shown that in either of these extreme configurations the incentive for rent seeking is eliminated. To consider the effect of the mobility on the incentive to rent seek, consider the extreme case where all output in an economy is produced by a

single, perfectly mobile resource. As a further simplification, also assume all individuals have identical homothetic preferences but not identical resource endowments. Given the resource mobility, rental rates are equated across all sectors in the economy. The rental rate of the resource will have to equal the total value of output in the economy divided by the total number of units of the resource in the economy. Given this relationship, the rental rate is maximized when the total value of output in the economy is maximized.

If the economy is at a competitive equilibrium, any attempt to expand one sector of the economy at the expense of another in order to increase the returns in that sector will, in fact, lower returns. The increase in the returns to the resources employed in that sector will be more than offset by a movement of resources from shrinking sectors of the economy. This movement will occur until the rental rate within the expanded sector reflects the new lower rental rate in the distorted economy. Thus, even if rent seeking were a costless activity, the incentive to rent seek would be eliminated if resources were perfectly mobile. Therefore, the only type of policies which would be pursued within such a framework are PERTS (Rausser 1982) which will expand the size of the economy. Thus, perfect resource mobility would be sufficient to eliminate rent seeking.

The physical characteristics of the resources and the underlying technology will limit the mobility of resources. In most economies, the degree of mobility is also restricted through institutional and regulatory barriers.¹ Complete mobility, although a sufficient condition, is not a necessary condition for the nonexistence of incentives to seek rents. Diversification of ownership can also eliminate the incentives to rent seek. Consider the case where each individual owns a portfolio of resources in exact proportion to the economy as a whole. In this case, the income of each individual is directly proportional to national real income. Any activity which reduces national income will, therefore, also reduce any individual's income. Once again, with identical, homothetic preferences, the incentive to seek trade distortions is

eliminated: any rent-seeking activity which reduces nation real income will also reduce the income of all individuals.

In these two rather extreme hypothetical situations, it is in the self-interest of all individuals to oppose policies which distort the economy. Nevertheless, these hypothetical constructs are polar cases which illustrate an important point. Simply stated, mobility of resources and diversification of ownership of immobile resources must, at least in the limit, reduce the incentive for agents in the economy to seek rents.

There are, of course, important qualifications to the above analysis. The first is that preferences are unlikely to be identical or homothetic. As trade restrictions are relaxed, the change in the relative prices of consumption goods may harm those whose consumption basket is most heavily weighted toward export-oriented goods. And likewise, trade liberalization would benefit those who consume relatively greater amounts of the imported good than the representative, "average" person. In sum, generally personal rates of inflation are not the same as the economy's representative rate. The second qualification is that resources, although mobile, are not likely to be identical, nor individual portfolios that are miniature versions of the economy. The gains or losses to individual portfolios will, therefore, depend on the relative intensity of resource use in industry.

Rent-Seeking Models

In order to analyze the marginal effect of ownership diversification and mobility of resources on rent seeking and protectionism within an economy, we use a standard, two-sector trade model of a small, open economy integrated with a very simple rent-seeking component.

In our rent-seeking model, a single distortion (a level of import quota) is lobbied for by the owner of the factors in the import-competing sector. All import quota rents are returned

to the factor owners with the import-competing sector in proportion to the factor ownership. A level of rent-seeking expenditure, E , is used in directly unproductive activities (DUP) (Bhagwati 1981) for the sole purpose of lobbying for restrictive import quotas. It is assumed that the money for the lobbying expenditure is raised through taxes in proportion to the income generated in the import-competing sector. For simplification, it is assumed that other sectors of the economy do not engage in DUP activities or other strategic behavior or, at the very least, DUP activities in other sectors do not decrease with increases in the expenditure, E .² The reduced form of the political support function (Rausser and Foster 1990) is such that the level of quota Q will be a decreasing function of the aggregate expenditure on expenditure lobby, E . Then, as shown in Figure 1, the level of quota will also be assumed be concave in the rent-seeking expenditure, E ; i.e., increasingly restrictive quotas meet stronger and stronger voting opposition from the rest of the society. The slope of the function in Figure 1 represents the marginal expenditure required to increase the level of quota by one unit for any existing level of quota. Stated algebraically, $Q = f(E)$, $\partial Q/\partial E < 0$, $\partial^2 Q/\partial E^2 > 0$.

The economic model emphasizes diversification of resource ownership, and thus provides a different focus than previous models (e.g., Staiger and Tabellini 1987; Mussa 1982; Mayer 1984; Eaton and Grossman 1985). The economy of N persons is represented in a two-sector (goods A and B) open-economy model. The country produces A_x and B_x , consumes A_c and B_c , imports $A_c - A_x$, and exports $B_x - B_c$. Imports and exports are carried on with rest of the world at fixed world prices. Prices are determined in competitive markets, implying that the domestic and world prices of good B will be equal in equilibrium, regardless of quota (or tariff) on good A . The wedge between the domestic price of A and its world price will reflect the restrictions on trade. There exists a quota, Q , on the imports of good A ; that

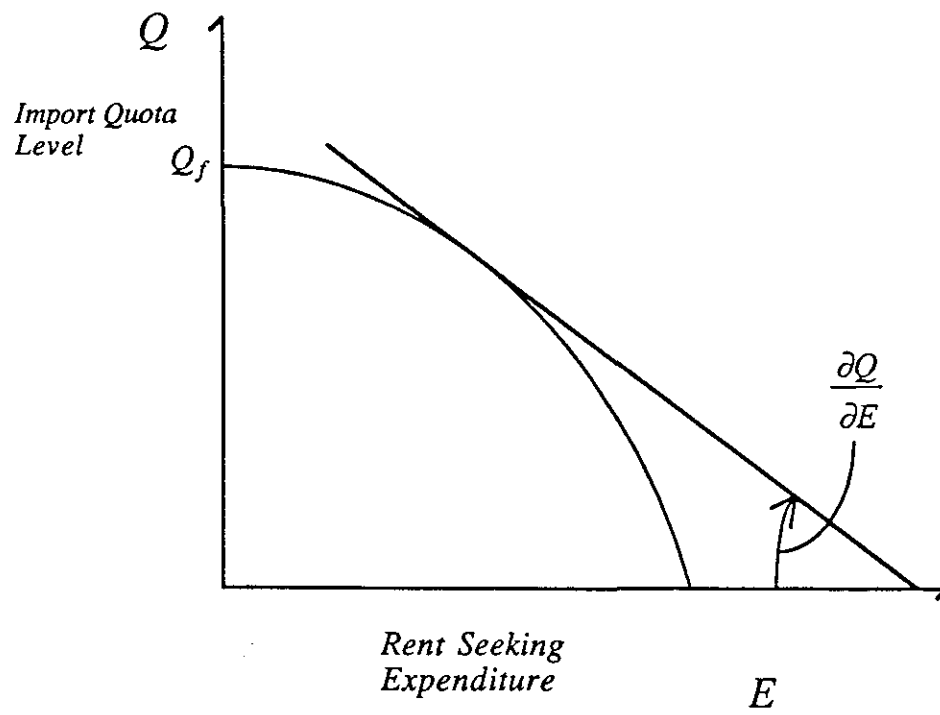


Figure 1: Rent Seeking Expenditure versus Quota

is, $Q \geq A_c - A_x$ without loss of generality. Prices are normalized such that the world and domestic prices of good B are equal to one; and P_w and P represent the world and domestic prices of good A .

The production of A_x and B_x takes place in competitive sectors of the economy with identical and homogeneous, degree-one production functions (thus eliminating the Stolper-Samuelson effect). Production takes place in both sectors using positive levels of two inputs: a mobile resource, L (the returns to which equilibrate across sectors); and an immobile resource, K . For example, the two types of resources may be thought of simply as labor and capital, or as capital (perhaps human capital) not specific to an industry and capital specific to each industry. The inputs devoted to the import industry, L_A and K_A , and those devoted to the export industry, L_B and K_B , are constrained by the total resource available to the economy. Units are chosen such that there is one of each of L , K_A , and K_B in the economy. In the decentralized, competitive economy, income is a function of the general level of prices (which are functions of the level of quota employed) and the share of each resource in each sector. The gross income in sectors A and B , respectively, is:

$$Y_A = P A_x + (P - P_w) (A_c - A_x) - E, \quad (1)$$

and

$$Y_B = B_x. \quad (2)$$

In this formulation, the import quota rents are a part of the income in the import-competing sector, A . Accordingly, the rent-seeking expenditure is deducted from the income in this sector. Note that, once again it is assumed that these expenditures are deadweight losses and have no social value. Given a binding quota, national income is defined by

$$Y = P A_x + (P - P_w) Q + B_x - E. \quad (3)$$

The per-unit wages earned by the mobile resource, w , is common across industries; and firm managers use the input until its marginal product equals the wage, $P \partial A_x / \partial L_A = w = \partial B_x / \partial L_B$. As a simplification of the model, consider the case where the factor share of the mobile input is equal to α in both sectors A and B.³

In this economy, the consumption and the utility of individuals is determined by their preferences, the prices they face, and their incomes. In a general-equilibrium setting, their incomes will be determined by the resources each individual owns and the aggregate output and trade of the general economy and the expenditure on lobby effort [equilibrium ???], E . The output of the economy will, in turn, be a function of prices which is a function of the level of import quota. Using these linkages, it is possible to determine the effect that trade policy has on individual utility. The primary tool of analysis will be the indirect utility function of individuals. Let V_j represent the indirect utility function of individual j :

$$V_j = V_j [P(Q), Y_j(Q)]. \quad (4)$$

The effect of an incremental change in the expenditure on rent seeking, E , on V_j is found by using the chain rule:

$$\frac{dV_j}{dE} = \left[-A_{cj} \frac{\partial P}{\partial Q} \frac{\partial Q}{\partial E} + \frac{\partial Y_j}{\partial Q} \frac{\partial Q}{\partial E} + \frac{\partial Y_j}{\partial E} \right] \cdot \frac{\partial V_j}{\partial Y_j} \quad (5)$$

where the individual demand for the import good, A_{cj} , is found by applying Roy's identity: $-A_{cj} = (\partial V_j / \partial P) (\partial V_j / \partial Y_j)^{-1}$.

Define λ_j as the j^{th} person's share of the mobile resource in the economy and θ_j as the share of the immobile resources in the economy. Furthermore, let μ_j equal the proportion of immobile resources which the j^{th} individual owns, K_A . The proportion of an individual's income originating from each sector can be defined as $\omega_j^A = \alpha \lambda_j + \theta_j \cdot (1 - \alpha) \cdot \mu_j$ and $\omega_j^B = \alpha \lambda_j + \theta_j \cdot (1 - \alpha) \cdot (1 - \mu_j)$. Using this notation, expression 6 can be examined in parts;

$$\frac{\partial Y_j}{\partial Q} = \left\{ \omega_j^A \left[\frac{\partial P}{\partial Q} A_c + P \frac{\partial A_x}{\partial Q} + (P - P_w) \right] + \omega_j^B \cdot \frac{\partial B_x}{\partial Q} \right\}, \quad (6)$$

$$\frac{\partial Y_j}{\partial E} = -1 \cdot \omega_j^A. \quad (7)$$

Using this information, we can rewrite the expression as,

$$\frac{dV_j}{dE} = \left[-A_{ej} \frac{\partial P}{\partial Q} \frac{\partial Q}{\partial E} + \left\{ \omega_j^A \left[\frac{\partial P}{\partial Q} A_c + P \frac{\partial A_x}{\partial Q} + (P - P_w) \right] + \omega_j^B \cdot \frac{\partial B_x}{\partial Q} \right\} \frac{\partial Q}{\partial E} - 1 \cdot \omega_j^A \right] \cdot \frac{\partial V_j}{\partial Y_j} \quad (8)$$

or

$$\frac{dV_j}{dE} = \left[\left\{ (P - P_w) + \left(1 - \frac{\gamma_j}{\omega_j^A} \right) \frac{\partial P}{\partial Q} A_c + \left(P \frac{\partial A_x}{\partial Q} + \frac{\omega_j^B}{\omega_j^A} \cdot \frac{\partial B_x}{\partial Q} \right) \right\} \frac{\partial Q}{\partial E} - 1 \right] \cdot \frac{\partial V_j}{\partial Y_j} \cdot \omega_j^A. \quad (9)$$

This equation provides the necessary relationship to describe the desirable level of rent-seeking effort, E , for any individual in society as a function of resource mobility and ownership. The four terms of (9) represent the four channels by which individual welfare is altered by a change in the rent-seeking expenditure. Consider the case of a small increase in E , and a subsequent decrease in the level of the quota. First, there is a decrease in revenue due to importing a unit for less than its domestic sale price. This is represented by the term $(P - P_w)$, and this loss would eventually vanish as the quota becomes non-binding. Second, there is a change in real purchasing power due to change in the import price that benefits the individual as a consumer differently than it harms the individual as a resource owner. This purchasing-power effect is positive as the individual consumes a greater share of the import good and earns a lesser share of the revenues produced by the import industry. Although the individual has fewer dollars from the import industry, the purchasing power of those dollars has increased. The third way in which individual welfare is affected by the change in quota is through the effect on income produced from changes in the domestic production of the two goods, apart from changes in relative prices. Income from the domestic production of the

good A increases as quota decreases and allows more imports to substitute for domestically produced goods. On the other hand, income from the export-oriented production of good B decreases. If the individual is completely diversified, $\omega_j^A = \omega_j^B$ and the loss of income from domestic production of the import-competing good balances with the gain of income from production in the export-oriented industry. As the individual's assets are more concentrated in the import-competing industry, the less his gain from trade liberalization, or the greater his loss. The fourth term (-1) is, of course, negative; reflecting the cost of the increased expenditure on rent seeking.

At the point where $dV_j/dE = 0$, the level of expenditure on the rent-seeking activity is at an optimum for this individual. Consider the case where preferences are such that $I = \gamma_j/\omega_j^A$, which removes the real price effect on the consumption. In this case, $dV_j/dE = 0$ when

$$(P - P_w) + P \frac{\partial A_x}{\partial Q} + \frac{\omega_j^B}{\omega_j^A} \cdot \frac{\partial B_x}{\partial Q} = \frac{\partial Q^{-1}}{\partial E} \quad (10)$$

The effects of changes in proportion of mobile goods in the portfolio, $\tilde{\lambda}_j = \lambda_j / \lambda_j + \theta$; and the effects of diversification in the fixed inputs μ_j can be derived by substituting ω_j^A and ω_j^B into expression (10) and dividing each by $1/\lambda_j + \theta_j$;

$$(P - P_w) + P \frac{\partial A_x}{\partial Q} + \frac{\alpha \tilde{\lambda}_j + (1 - \tilde{\lambda}_j) \cdot (1 - \alpha) \cdot (1 - \mu_j)}{\alpha \tilde{\lambda}_j + (1 - \tilde{\lambda}_j) \cdot (1 - \alpha) \cdot \mu_j} \cdot \frac{\partial B_x}{\partial Q} = \frac{\partial Q^{-1}}{\partial E} \quad (11)$$

Proposition 1: For any individual who has ownership of immobile resources concentrated in the import-competing sector and desires protection, an increase in the diversification of ownership in the immobile resources will decrease that individual's desired level of rent seeking and level of protection in the sector.

Proof: This proposition is easily proven from equation (11). For any $\mu_j > 1/2$, an increase in the proportion of mobile resources (i.e., a larger λ_j) implies an increase in the ratio, ω_j^B/ω_j^A .

Given that $\partial B_x/\partial Q$ is positive, this implies an increase in the left-hand-side, which implies that the right-hand-side must be less negative. Given that Q is decreasing in E and concave in E , this implies that the desired level of E must fall with an increase in λ_j . This reduction in the desired level of rent-seeking expenditure also implies a decrease in the desired level of protection or an increase in the desired level of import quota for this individual. In Figure 2, the utilities of individuals with different portfolios are shown as a function of quota levels. Individuals who are diversified, or have ownership concentration in the export sector, achieve the highest level of utility at the free-trade level of import quota. These individuals, therefore, do not have an incentive to seek quotas and may, in fact, oppose quotas. The individuals whose ownership is concentrated in the import-competing sector favor a restrictive import quota. The point of tangency represents the point at which the marginal cost of reducing quota is just equal to its associated margin benefit.

Proposition 2: With either the ownership of only completely mobile resources or the complete diversification of the ownership of immobile resources, an individual will desire a zero level of expenditure on rent seeking.

Proof: Either complete mobility, $\tilde{\lambda}_j = 1$, or complete diversity, $\mu_j = 1/2$, implies $\omega_j^B/\omega_j^A = 1$. As ω_j^B/ω_j^A approaches one, either because of diversity or mobility, the left-hand side of the expression approaches $(P - P_w)$, which is positive as long as the quota is binding and is equal to zero only when the quota is non-binding. This implies a maximum of the indirect utility at corner point where Q becomes non-binding. Note that this is also true for any individual where $\omega_j^B/\omega_j^A > 1$.

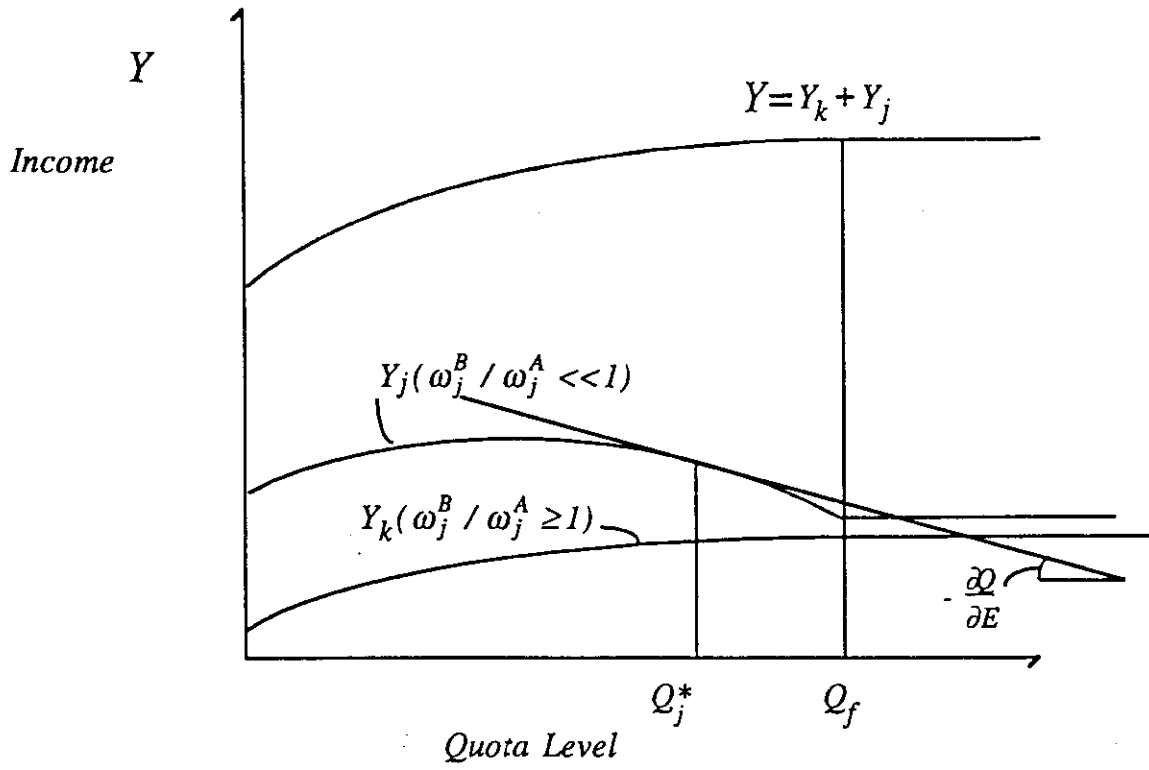


Figure 2: Income versus Quota Level

Q^* = Desired level by *j*th individual

Q_f = free trade level, desired by *k*th individual

Proposition 3: For any individual who has a positive desired level of rent-seeking expenditure, an increase in the diversification of the portfolio of the immobile resources will decrease the desired level of rent seeking.

Proof: From proposition 2 the conditions of this proposition implies that $\tilde{\lambda}_j < 1$ and $\mu_j > 1/2$. An increase in the diversification of the immobile resources, i.e. $\mu_j \rightarrow 1/2$, implies an increase in the ratio, ω_j^B/ω_j^B . Given that $\partial B_x/\partial Q$ is positive, this implies an increase in the left-hand side which then implies the right-hand side must be less negative. Given that Q is decreasing in E and concave in E , this implies the desired level of E must fall with an increase in λ_j .

Policy Implications

Governments seeking sustainable reform and a reduction in wasteful rent-seeking activities should, therefore, pursue policies which tend to foster resource mobility and ownership diversification. A natural corollary is that governments should tend to discourage policies which tend to reduce mobility and increase the concentration of the ownership of resources.

In the context of trade reform these observations may be particularly relevant. In a fully open economy, price movements in the international economy cause both winners and losers within the domestic economy. The losers within the open market seek and obtain protection from the vagaries of the world market. If at any point in time the government is considering a trade-reform policy, then the policy should be chosen in such a way as to mitigate future rent seeking which leads to future deadweight losses. Thus, policies which are sustainable should be preferred over those which are not. *A natural extension of the above argument is that, if trade reform is to be sustained, compensation for current reform should be paid in such a way as to promote mobility and diversification of ownership of immobile resources.*

Many of the centrally planned economies of the world are rapidly moving from a system of a tightly controlled, centrally planned economy to a more market-oriented system. One of the most difficult decisions faced by these countries is how to transfer the ownership of state-owned resources to the people. *The analysis above would suggest that, if the ownership of the resources were diversified, this would limit the formation of interest groups which may rent seek to inhibit economic reforms.* Thus, successful economic reform may be dependent on the distribution of the current state-owned assets.

Summary

In the current discussion of government policy, particularly trade-reform policy, mobility and/or diversification of ownership are seldom considered as relevant dimensions of government policy. In this paper, we present a very compelling argument for doing so. Simply put, resource mobility and diversification of ownership reduces the rewards to rent seeking in society. Reduced rent seeking reduces DUP and economic distortions in the economy. Therefore, policies which foster diversification of ownership and mobility of resources should, in general, be promoted over those which do not.

Footnotes

¹For example, state or provincial laws may reduce the movement of factors within a country. One of the most significant economic effects in Canada of the Canada-U.S. Free Trade Agreement will be the dismantling of inter-provincial trade barriers.

²This framework would be fully consistent to the case where the other sector did engage in rent-seeking activity but not a function of the rent-seeking expenditure in the import competing sector. For an example of a model where both groups simultaneously determined rent-seeking expenditure see Rausser and Foster (1990).

³A equal factor share of the mobile input in both sectors removes the Stolper-Samuelson effects.

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