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Working Paper

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Working Paper, No. 35

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Suggested Citation: Becker, Gary S. (1984) : Public Policies, Pressure Groups, and Dead Weight Costs, Working Paper, No. 35, The University of Chicago, Center for the Study of the Economy and the State, Chicago, IL

This Version is available at:

<https://hdl.handle.net/10419/262437>

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CENTER FOR THE STUDY OF THE ECONOMY AND THE STATE
WORKING PAPER SERIES

PUBLIC POLICIES, PRESSURE GROUPS,
AND DEAD WEIGHT COST

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Working Paper No. 035

November 1984

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Public Policies, Pressure Groups,
and Dead Weight Cost

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June, 1984

Revised,
September, 1984

Prepared for the Nobel Symposium on the Growth of Government, August 15-17, 1984. My research was supported by the Center for the Study of the Economy and the State at the University of Chicago. I had valuable assistance from Gale Mosteller, and useful comments from Robert Barro, Michael Munger, Richard Posner, and George Stigler. Let me also express appreciation to the discussants, James Mirrlees and Ingemar Ståhl, and to other participants at the Symposium for excellent comments.

1. Introduction

The activities of governments have grown remarkably rapidly in all Western countries during the twentieth century, especially during the last fifty years. This growth cannot be entirely explained by benevolent governments maximizing social welfare because subsidies to agriculture, restrictions on entry into the airline, trucking and other industries, duties on Japanese imports, and many other regulations and public activities are not consistent with any traditional social welfare function.

This failure of theories of benevolent government induced economists to join political scientists in searching for alternative ways to analyze actual government behavior. The usual alternative is a model of majority rule voting, either among the electorate or the legislature, as best illustrated by median voter theory. Another approach assumes that bureaucrats have the power to determine the enactment and implementation of many regulations and other legislation.

A third approach stresses the capacity of pressure groups to influence political outcomes as they jockey for political power. This approach received an early and vigorous formulation by Bentley [1908] that greatly affected the thinking of political scientists. I recently [1983] published a paper that tries to model the competition among pressure groups for political influence in a more rigorous way. This paper extends the analysis and develops many implications. To concentrate on pressure groups, I ignore bureaucrats and do not give much attention to voters, although, of

course, I recognize that bureaucrats must be induced to implement policies, and votes are necessary to pass legislation.

The next section presents a somewhat generalized version of this model that permits pressure groups to be altruistic and envious as well as selfish. The "representative" member of a group maximizes his utility by spending resources on political activities to create pressure that affects his subsidies or taxes. These expenditures compete with expenditures by other pressure groups because of the basic government budget constraint that the total amount collected in taxes must equal the total amount paid out as subsidies.

The pressure exerted by a group is determined by the effect of its political expenditures on the utility of members through the effect on subsidies and taxes. The effect on utility is crucially related to the dead weight (or social) costs or benefits of taxes and subsidies. Section 3 uses dead weight costs and benefits to reformulate the "Compensation Principle" of welfare economics as a major tool in the analysis of actual, as opposed to normative, public policies.

Sections 4 and 5 consider various examples of the effect of dead weight costs and benefits on actual policies. These include the deregulation and privatization "movements" in the United States and some other countries, the effects of recessions and other declines in demand on tariffs and trade barriers, the apparent lower efficiency of public firms than of private firms, the taxation of farmers in developing countries and subsidization in rich countries, the effect of altruism and envy on taxes and subsidies, and whether pressure groups are responsible for sluggish economic growth.

2. A Model

Any relevant model of the political sector must incorporate a political budget constraint because subsidies are obviously limited by taxes. Indeed, if all taxes (T) were explicit levies, as with property and income taxes, and if all subsidies (S) were explicit transfers, as with welfare payments and veterans' bonuses, the political budget constraint would simply be

$$S = T \tag{1}$$

Implicit taxes and subsidies due to regulations of activities are less simply related, but equality between taxes and subsidies provides a convenient point of departure to begin the formal analysis. If n_s identical persons were subsidized and n_t identical persons were taxed, this political budget constraint can be written as

$$S = n_s \sigma = n_t \tau = T, \tag{2}$$

where σ and τ are the subsidy per member of s, and the tax per member of t.

The term τ should be interpreted as the tax collected from a member of t, net of any subsidy to him; similarly, σ is the subsidy to a member of s, net of any tax paid by him. Since τ and σ can be negative as well as positive, I need not specify a priori which group on balance pays taxes or receives a subsidy. However, I do assume that the characteristics defining membership in a group -- such as age, income, or occupation -- are exogenously determined, so that a member of t cannot convert into a member of s, and, similarly, for a member of s.

A crucial assumption of my approach is that taxes and subsidies are influenced, but not fully determined, by constitutions and other aspects of political systems. They are also influenced in important ways by taxpayers and recipients who exert pressure on voters, legislators, and others involved in political decisions to further their own interests through the political process. A simple way to incorporate the effects of political pressure is to relate the amount of taxes levied and subsidies transferred to the source and magnitude of political pressure, and to other variables:

$$S = T = I(p_s, p_t, \frac{n_s}{n_t}, x), \quad (3)$$

where I is the "influence function," p_s and p_t are pressures by recipients and taxpayers, n_s/n_t is the relative number of individual recipients, and x refers to the political system and other relevant considerations. My earlier paper [1983] started with separate influence functions for taxes and subsidies, and showed that the equality between taxes and subsidies reduced these two functions to the single function in equation (3).

Since selfish taxpayers would only exert pressure to lower taxes, and selfish recipients would only exert pressure to raise subsidies, pressure from selfish groups would be positive only in regions where

$$\frac{\partial I}{\partial p_s} = I_s \geq 0, \text{ and } \frac{\partial I}{\partial p_t} = I_t \leq 0. \quad (4)$$

The influence function probably also positively depends on the ratio of recipients to taxpayers, even if they are unorganized and exert no pressure,

because an increase in that ratio would raise the likelihood voters and legislators would approve proposals to raise subsidies. That is,

$$\frac{\partial I}{\partial (n_s/n_t)} \geq 0. \quad (5)$$

However, this does not guarantee that an increase in the relative number of recipients raises subsidies because pressure exerted by organized recipients would fall relative to that exerted by organized payers (see section 5).

More detailed properties of the influence function are determined by constitutions, judicial traditions, and other aspects of the political structures. Fortunately, for the limited purposes of this paper, it is not necessary to examine further the "black box" of political structure. I only need to assume that the influence function is stable over time, so that the "contest" between s and t has a stable foundation.

If payoffs from political activities do not distinguish between identical members of s and identical members of t , subsidies and taxes would be public goods to recipients and payers, who then have strong incentives to share costs by exerting pressure collectively. To capture the group exertion of pressure, I introduce a pressure production function for each group that depends on its total political expenditures and on the number of members:

$$p^i = p^i(m_i, n_i), \text{ with } m_i = a_i n_i, \quad i = s, t \quad (6)$$

$$\frac{\partial p^i}{\partial m_i} = p_m^i \geq 0, \text{ and } p_n^i \leq 0,$$

where m_i is the total expenditure of money, time, and effort by a group on campaign contributions, lobbying, advertisements, and other political activities, and a_i is the expenditure per member. Even violence is permitted as a form of political pressure (see Mirani [1985]), as long as political outcomes are stably related to violence as well as to other kinds of pressure.

Free riding and shirking increase the cost of producing pressure. If the incentive to free ride increases with the number of members, the pressure produced by a given total expenditure (m) would decline as the number of members increased because the cost of "collecting" m would rise. The second inequality in (6) captures the effect of numbers on free riding and the cost of producing pressure.

The utility function of each person depends on his tax or subsidy, and his expenditure on the production of pressure:

$$U^s = U^s(\sigma, a_s), \text{ with } \frac{\partial U^s}{\partial a_s} = U_a^s < 0 \quad (7)$$

$$U^t = U^t(\tau, a_t), \text{ with } U_a^t < 0.$$

Clearly, taxes hurt and subsidies benefit:

$$\frac{\partial U^S}{\partial \sigma} = U^S_{\sigma} > 0 \quad \text{and} \quad U^t_{\tau} < 0. \quad (8)$$

With altruism toward the other group, U^t would depend positively on σ , and U^S would depend negatively on τ ; with envy, these signs would be reversed.

I assume that each group chooses its expenditure on political pressure to maximize the utility of its members, where optimal expenditures are also conditional on the political budget equation and pressure production functions, including incentives to free ride. The interaction between groups is modeled simply as a Cournot-Nash noncooperative game. Equilibrium conditions for this game are the utility maximizing condition for each group with respect to its expenditures on political pressure, conditional on the pressure exerted by the other group:

$$\frac{dU^t}{da_t} = 0 = U^t_a + U^t_{\tau} \frac{\partial \tau}{\partial p_t} p^t_m n_t \quad (9)$$

$$\frac{dU^S}{da_s} = 0 = U^S_a + U^S_{\sigma} \frac{\partial \sigma}{\partial p_s} p^s_m n_s$$

or

$$-F(\tau, \sigma) = -\frac{U^t_a}{U^t_{\tau}} = I^t_t p^t_m \quad (10)$$

$$G(\sigma, \tau) = -\frac{U^S_a}{U^S_{\sigma}} = I^S_s p^S_m$$

The optimal expenditures on pressure, and hence the optimal levels of pressure, are determined by these equations (see Becker [1983] for a discussion of second-order and stability conditions in a simpler model). The equilibrium level of taxes and subsidies is then determined by the influence function in equation (3). Optimal expenditures and pressure by a group would be zero, and the group would not organize politically, if the gain in lower taxes or higher subsidies were less than the cost of exerting pressure; one or both of these equations would then be replaced by inequalities.

The right-hand side of (10) measures the effect on influence of additional expenditures on pressure, while the left-hand side is determined by the monetary value of the change in utility from changes in taxes and subsidies, respectively. If s and t were both selfish, and if taxes and subsidies adversely affected the allocation of resources, the monetary value of the utility cost of taxes would exceed the amount paid ($F < 1$), and the value of subsidies would be less than the amount received ($G > 1$). If taxes or subsidies improved the allocation of resources -- perhaps by promoting public goods or reducing pollution, or because t were sufficiently altruistic toward s -- then either $F > 1$, $G < 1$, or both.

The effect of taxes and subsidies on the allocation of resources can be brought out explicitly by writing

$$F = 1 - d^t(\tau, \sigma),$$

$$G = 1 + d^s(\sigma, \tau),$$
(11)

where d^t is the marginal dead weight or social cost to taxpayers from taxes equal to τ and subsidies equal to σ , and d^s is the marginal social cost to recipients from subsidies equal to σ and taxes equal to τ . If marginal taxes or subsidies raised efficiency, then d^t , d^s , or both would be less than zero. These functions depend on the level of taxes and subsidies because marginal distorting effects tend to rise, and marginal improving effects tend to fall, as the rate of taxation and subsidization increase. With altruism, envy, and public goods or externalities, d^t depends on subsidies as well as taxes, and d^s on taxes as well as subsidies.

Substitution of equation (11) into the optimality conditions in (10) immediately shows that expenditures on political pressure by taxpayers tend to be greater when the social cost of taxes to them is greater. This seems surprising and counterintuitive when taxpayers are selfish and not concerned about society as a whole. However, since pressure by taxpayers is assumed to reduce tax collections (by equations (3) and (4)), the effect of additional pressure on their utility depends on the effect of lower taxes on their utility, which is positively related to the social or dead weight costs from taxation. Similarly, optimal expenditures on pressure by recipients are smaller when the social cost of subsidies is greater because the effect of subsidies on their utility depends negatively on the social cost of subsidies.

Since marginal social costs of subsidies tend to rise, and any marginal social benefits tend to fall, as subsidies increase, recipients would be discouraged from exerting additional pressure as subsidies increased, even without any reactions by taxpayers. Moreover, increased subsidies and taxes would encourage taxpayers to exert additional pressure

by raising the marginal social cost of taxes. That is, higher subsidies and taxes tend to raise the "countervailing political power" of taxpayers.

If all taxes and subsidies adversely affected efficiency, taxing and subsidizing each group would involve inefficient "cross-hauling" because both could be made better off by equal reductions in their taxes and subsidies until one group were only subsidized and the other only taxed. Fortunately, a group does have an incentive to reduce the amount of cross-hauling because the incentive to exert pressure to lower taxes tends to exceed the incentive to exert pressure to raise subsidies. The reason is that the monetary value of a dollar reduction in taxes collected exceeds a dollar because of the dead weight cost of taxes, whereas the value of a dollar increase in subsidies received is less than a dollar because of the dead weight cost of subsidies. If, as a result of these incentives, s exerted enough pressure to eliminate its taxes, cross-hauling would be eliminated for both groups since the subsidy to t would also be eliminated. Cross-hauling could remain only if both groups were more productive in exerting pressure to raise subsidies than to lower taxes.¹

Aggregate efficiency should be defined not only as net of dead weight costs and benefits of taxes and subsidies, including any cross-hauling, but also as net of expenditures on the production of political pressure ($m_s + m_t$) since these expenditures are only "rent-seeking" inputs into the determination of policies. Therefore, efficiency would be raised if all groups could agree to reduce their expenditures on political influence. Restrictions on campaign contributions, registration of and monitoring of lobbying organizations, limitations on total taxes and public expenditures, and other laws may be evidence of cooperative efforts to reduce "wasteful" expenditures on cross-hauling and political pressure.

Unfortunately, little is known about the success of different kinds of political systems in reducing the waste from competition among pressure groups.

Cournot behavior is especially wasteful because each group is assumed to believe that pressure by other groups is fixed and independent of its own pressure, whereas in the model, increased pressure by one group tends to stimulate countervailing pressure from other groups by raising their taxes or reducing their subsidies; see the positively sloped reaction curves in Becker [1983]. A more realistic model of behavior would permit each group to consider these reactions when determining its own "strategy" (its own reactions). A noncooperative equilibrium incorporating consistent reactions (see, e.g., Bresnahan [1981]) would appear to have less pressure than a Cournot equilibrium because each group would be discouraged from raising its pressure by the positive reactions of other groups. If so, fewer resources would then be wasted on the production of pressure. Mutually beneficial reductions in pressure might be expected also if groups were engaged in a "repeated game." Such games may also explain how groups limit free riding by members, and why groups may prefer their subsidies and taxes to be spread out over time (see Smith [1984]).

Although the equilibrium level of taxes and subsidies may be greatly affected by the interaction between groups, dead weight costs of subsidies appear to discourage pressure by subsidized groups, and dead weight costs of taxes encourage pressure by taxed groups, in very different models of this interaction. The apparent robustness of these effects of dead weight costs (and benefits) on the behavior even of selfish groups suggests that they are important determinants of actual taxes, regulations, and other public policies.

3. The Compensation Principle and Public Policy

The new welfare economics developed the compensation principle to determine whether public policies are socially beneficial. Some of the pioneers even claimed² that a policy is beneficial as long as gainers could compensate losers, regardless of whether compensation is actually paid. This view is untenable except when the political process has equalized the marginal social "worths" of gainers and losers, which begs the question of what determines actual policies, as opposed to policies evaluated by "social welfare functions." Nevertheless, most assessments of the harm from monopoly and other "market failures," and evaluations of public policies continue to neglect distribution, and essentially consider only whether gainers could compensate losers.

Yet, somewhat paradoxically, the potential to compensate is important to positive analyses of political behavior that do not rely on social welfare functions. To show why, assume that taxes on t are positive even when neither s nor t exert pressure, [$I^0 = I(0,0) > 0$], and that both must decide whether to exert pressure to change taxes by say \$100. Clearly, s would not be willing to spend more than $100/(1+d_0^s)$ on pressure because this amount measures their monetary gain from an additional subsidy of \$100; for the same reason, t would not be willing to spend more than $100/(1-d_0^t)$. Hence, the maximum that s would spend exceeds, equals, or is less than the maximum that t would spend as

$$\frac{100}{1 + d_0^s} \begin{matrix} > \\ < \end{matrix} \frac{100}{1 - d_0^t},$$

or as

$$d_0^s + d_0^t \begin{matrix} < \\ > \end{matrix} 0.$$

(12)

The second inequality is precisely the condition that determines whether gainers (s) could compensate losers (t). If both taxes and subsidies were socially costly (d_0^s and $d_0^t > 0$), gainers could not compensate losers, and the maximum expenditure by losers to block an increase in taxes would exceed the maximum expenditure by gainers to support the increase. Similarly, if both taxes and subsidies were socially beneficial (d_0^s and $d_0^t < 0$), gainers could compensate losers, and the maximum expenditure by gainers would exceed that by losers. More generally, the sign of $d_0^t + d_0^s$ determines whether gainers could compensate losers, and hence whether the maximum expenditure by gainers would exceed or would be less than that by losers.

Since the effect of political activities on aggregate (or social) output equals the sum of the gains and losses to all persons, the maximum expenditure by gainers to support a policy would exceed the maximum expenditures by losers to oppose the policy if, and only if, social output would be raised. This link between social output and the incentive to exert pressure does not presume pressure groups are altruistic, nor that compensation is paid to losers, nor a politically relevant social welfare function, but holds even in a noncooperative game without side payments between competing and selfish pressure groups.

I have been careful to refer to the maximum expenditure on political pressure because actual expenditures depend also on the right hand side of equation (10): on the cost of producing pressure and the effect of pressure on political influence. If both groups were equally efficient at producing pressure when they spent equal amounts, recipients have an incentive to spend more to raise subsidies and taxes than payers spend to reduce them only if additional subsidies and taxes raised social output. If

gainers did spend more because social output rose, the value of the influence function would increase above its initial level, and taxes and subsidies would increase; conversely, if losers spent more because social output fell when subsidies to s rose.

The equilibrium conditions for both groups given by equations (10) and (11) imply that if the productivity of s and t in producing influence were equal, only policies that raised social output would result from the pressure of s and t . However, some policies that raised social output but harmed t might be blocked by the countervailing pressure of t . Moreover, the net effect on social output of various implemented policies could be negative after subtracting the rent-seeking expenditures by s and t to support or oppose these policies.

Some policies might raise social output only because of altruism by taxpayers or envy by recipients. Redistributions from altruists are Pareto-improving as long as the money value of the gain to altruists from the additional resources of beneficiaries exceeds the reduction in the resources of altruists. However, even when altruists are harmed by further redistribution, the gain to beneficiaries would exceed the harm to altruists as long as their harm were reduced by the gain to beneficiaries. Beneficiaries would then be willing to spend more on political pressure to increase the amount redistributed beyond Pareto-improving levels than altruists would be willing to spend opposing such an increase. If beneficiaries were no less efficient at producing influence than altruists, beneficiaries would have more political power, and redistributions would exceed the Pareto-improving level (the same conclusion is reached by Roberts [1982]). A similar argument leads to the expectation of political redistributions from the envied to the envious.

Of course, some policies that reduce social output (even without netting out rent seeking expenditures) would be undertaken if gainers were sufficiently effective at producing influence to offset their relatively small gains. In particular, socially costly redistributions of income are more likely when those benefiting are well organized, as stressed in the collective choice literature (see e.g. Olson [1965]). In addition, despite the complaints of economists and others about the dead weight costs of various regulations and programs, policies with high social cost would not survive the competition among pressure groups unless those benefiting were exceedingly powerful politically. More commonly, surviving policies would have low social cost relative to the millions of proposals that fail to gain political support. Similarly, public goods with large social benefits, such as protection against crime, tend to survive the competition among pressure groups, but some public goods with modest social benefits would not survive because those opposing are too powerful politically.

The compensation principle also suggests some tendency for the political sector to use the most efficient methods available to redistribute resources from one group to another. This is clear enough when both groups are better off with the efficient method, yet there is also this tendency when one group would be worse off.³ Since social output is likely to be largest with the most efficient method, those benefiting from the efficient method would be willing to spend more on pressure in its favor than losers would be willing to spend in favor of another method. A good empirical example is Gardner's [1983] comparison of output subsidies and acreage restrictions as methods of redistributing resources to farmers. He shows not only that acreage restrictions are much more frequently used in the

United States, but also that they are usually more efficient mainly because elasticities of supply for particular crops tend to be sizable.

A fuller analysis of the choice of methods must consider several other issues as well, including whether the influence function itself depends on the method used -- perhaps because some methods hide private and social costs from taxpayers --, and whether taxes and subsidies are designed not only with regard to efficiency, but also with regard to free riding by beneficiaries and taxpayers. The tendency from the compensation principle to use efficient methods may well be dominated frequently by other considerations.

Nevertheless, I do believe that the increasingly popular view of the public sector as an inefficient producer and redistributor is sometimes based on a misperception of the intent of public activities. For example, casual impressions and some systematic evidence (see Borchering [1982]) appear to indicate that public enterprises are less efficient than private enterprises producing the same products. Yet, if employees (or other inputs) in nationalized and regulated industries are paid relatively well (see the evidence on regulated industry in Moore [1978] and Pergamit [1983]; the evidence in Robinson and Tomes [1984] on public enterprises is somewhat mixed), public and quasi-public enterprises may only appear to be less efficient because they are instruments for redistributing resources to employees and others. Redistribution should be included among the measured "outputs" of public enterprises before one can determine whether they are less efficient than private enterprises, or whether other methods could redistribute to these groups more efficiently.

4. Regulation, Deregulation, and Privatization

This section discusses the effect of dead weight costs of taxes and subsidies on regulations and other policies that redistribute wealth. Subsidies affecting prices of outputs and inputs cause smaller dead weight loss when elasticities of supply are lower, or when capital and labor are less mobile. Short run mobility and elasticities of supply are lower when workers and firms invest in capital specific to a firm or industry. Therefore, workers and firms with sizable specific investments should be relatively successful at receiving government protection through tariffs, loans, unemployment benefits, and even nationalization against temporary and unexpected declines in demand. Several studies have found, for example, that tariffs and other import restrictions do increase during recessions and at other times when domestic industries decline (see, e.g., Hillman [1982] and Marvel and Ray [1983]). Since this explanation of why depressed firms and industries are often successful at obtaining political assistance does not assume irrationality (or even altruism), it appears to meet Bernholz's [forthcoming] challenge to find an explanation consistent with rational political choice.

Workers and firms with specific investments are also vulnerable to taxes, such as "excess profits" taxes, when demand for their services rises temporarily or unexpectedly because groups with specific investments are not willing to spend much exerting pressure opposing such temporary taxes. Although a considerable literature argues that factors with inelastic supplies should be heavily taxed,⁴ as in Henry George's single tax on land, the theory developed in this paper implies that inelastic factors are also in a good position to obtain subsidies because these are relatively cheap to society. Therefore, whether resources are redistributed toward or away

from inelastic factors depends, as with other groups, mainly on their access to political influence relative to the access of other groups. However, inelastic factors probably bear a heavier burden of the financing of public goods because factors with elastic supplies usually resist such taxation more since the dead weight cost of their taxes is greater.

Small open economies have little international monopoly power because they face elastic supplies of imports and elastic demands for exports. Since the dead weight cost to countries imposing tariffs or export taxes is greater when these elasticities are greater, industries and consumers who benefit from tariffs or export taxes should have less political power in small open economies than in large self-sufficient economies, or in open regions of an economy than in self-sufficient regions (see Maloney, McCormick and Tollison [1984]). Anne Krueger [1983] uses a related argument to explain why Hong Kong, Taiwan, Singapore, South Korea, and a few other developing countries were among the earliest to reject the emphasis prevailing in the 1950's on import substitution and self-sufficiency in favor of international specialization.

Protection to firms and workers from adverse conditions is likely to be incomplete because marginal social costs rise as the degree of distortion increases. In my approach (but apparently not in others, such as Peltzman's [1976]), rising social costs curtail the power of firms and other subsidy recipients even when the political power of consumers and other taxpayers is unchanged. Although taxpayers are more likely to organize and exert pressure when dead weight costs are greater, additional pressure by subsidy recipients is discouraged by higher social costs even when taxpayers remain unorganized (see section 2).

Dead weight costs of regulations and other redistributions often rise over time as labor and capital become more mobile, as substitutes develop for products that have been made more expensive, and as other socially costly methods of evading and avoiding the effects of particular regulations are discovered. For example, the social cost of regulating security transactions rose significantly as institutional investors with elastic demands became important (see Jarrell [1984]), the social cost of regulating airline travel rose as airline travel expanded into new and diverse markets (see Spiller [1983]), the cost of banking regulations grew because interest rates became higher and more variable, and new methods of intermediation were invented (Carron [1983]), and high marginal tax rates encouraged shelters, the underground economy, and other "loop-holes."

Since the model in section 2 implies that regulations and other redistributive programs decline as their social cost increases, the movement to deregulate airlines, banks, security firms, and some other industries is not surprising. However, adaptations to shifts in technology and demand are slowed by regulations because they slow the depreciation of specific capital, and encourage investments by beneficiaries in capital and skills devoted to maintaining and strengthening favorable regulations (see Noll and Owen [1983]).

This analysis implies that regulations and other public programs are moderated as their social costs increase in any political system, no matter how totalitarian, where pressure groups have substantial political influence. In particular, the trend in Communist countries away from collective farms to private plots, and away from "sharing the same rice bowl" to proper incentives appears to be a response to the large and perhaps growing social cost of these programs. Growing social cost reduces the

political feasibility of a program even when farmers, consumers, and others harmed have no political power since the power of bureaucrats, party members, and other beneficiaries declines as social costs increase.

The recent deregulation of the securities, airlines, trucking, banking, and a few other industries in the United States (see the catalog in Noll and Owen [1983, Table 1-1]) has been called a "movement." However, the total amount of regulation probably did not decline in recent years because expanded environmental, energy, safety, civil rights, labor, import, and other regulations replaced the regulation of these industries. I suspect that the appearance of a deregulation "movement" is largely an echo of the regulatory "movement" of the 1930's (itself a response to the Great Depression), when the securities, airline, banking, and many other industries became regulated. If the social cost of these regulations grew over time at not so different rates, the decline in the political power of beneficiaries would become apparent at similar times.

The large growth of the public sector during recent decades raised the dead weight burden of additional taxes,⁵ which, in turn, raised the incentive of taxpayers to exert pressure to counter further increases. Such pressure would slow the growth of public expenditures and regulations, and prune those programs with relatively large social cost that cannot compete successfully for public support when tax rates and social burdens are high.

5. Competition Among Many Pressure Groups

Many countries have hundreds, and some have thousands, of active pressure groups; for example, over 3000 Political Action Committees (PAC's) are active in the United States (U.S. Federal Election Commission [1982]). A natural generalization of the influence function that determines taxes and

subsidies with only two pressure groups are separate influence functions for the taxes and subsidies of each of many groups:

$$T^i = I^{t_i}(p_1, \dots, p_k, n_1, \dots, n_k) \quad i = 1, \dots, k \quad (13)$$

$$S^i = I^{s_i}(p_1, \dots, p_k, n_1, \dots, n_k),$$

where p_i is the pressure, and T^i and S^i are the taxes collected from and subsidies given to the i th group, with n_i identical members. Cross-hauling of taxes and subsidies tends to increase as the number of distinct groups increases because a group may sometimes be subsidized and sometimes get taxed when other groups obtain subsidies. An example is the subsidy to railroad conductors as a by-product of regulation raising the price of air travel, and the tax on conductors as a by-product of subsidies to build highways.

Although taxes and subsidies are not equal for each group, the total amount collected in taxes must equal the total paid in subsidies:

$$\sum S^i = T = \sum T^i \quad (14)$$

This government budget equation implies that one of the influence functions in equation (13) can be determined from all the others, and that increased pressure by a group that lowers its taxes or raises its subsidies must raise the taxes or lower the subsidies of other groups to maintain equality between total taxes and total subsidies.

If these groups did not cooperate, the pressure exerted by each, including perhaps no pressure, would be determined from conditions similar to those in equation (10) that depend on utility functions and pressure production functions, as well as on influence functions and the government budget equation (see Becker [1983]). Some groups may cooperate, however, because coordinated lobbying, log-rolling in the legislature, and other cooperation sometimes raise their subsidies and lower their taxes. I will not try to model political cooperation because the main implication of noncooperative behavior used in this paper -- namely, the effect of dead weight costs on subsidies, taxes, and political pressure -- appears to be highly relevant also to cooperating groups who do not use side payments. Even with cooperation from other groups, the gain to a group from spending on pressure is greater when the social cost of its subsidies is smaller, and when the social cost of its taxes is larger.

Small groups may have especially strong incentives to cooperate with other groups because they do not have enough members to support favorable referenda and legislation. This apparent disadvantage of small groups motivates models of the median voter, of legislative log-rolling (see Buchanan and Tullock [1962]), and of competition for votes in cooperative political games (see, e.g., Aumann and Kurz [1977]).

I believe, however, that the political handicaps of small groups are exaggerated by these models because voters are assumed to be well informed and to vote in favor of their interests. As is well known, however, the same majority rule that motivates these models implies that voters are not well informed, and have only weak incentives to vote their interests (see, among others, Becker [1983], and Brennan and Buchanan [1984]). Small groups may be able to acquire political support without

cooperating with other groups by persuading others to vote in their favor (Denzau and Munger [1983] develop an explicit model combining unorganized votes and expenditures on pressure). If many voters are vulnerable to persuasion, the size of a group would be less important than its capacity to persuade others.

Moreover, small groups have certain advantages in the competition for influence that may swamp any adverse effects of size on number of voters. Small groups may be able to overcome more easily the free riding and shirking of members. In addition, groups that are small relative to those taxed to finance their subsidies face less countervailing political pressure because an increase in the number of taxpayers lowers the tax per payer, and thereby discourages taxpayer pressure against a given subsidy by reducing the marginal dead weight loss to each payer (see the proof in Becker [1983, pp. 384-85]). Note that this conclusion is another implication of the effect on behavior of dead weight costs, and does not assume that pressure groups neglect small taxes and subsidies.⁶

That relatively small groups may be effective competitors for political influence is consistent with the evidence for different countries that farmers are more likely to be subsidized when farming is less important, and more likely to be taxed when more important (see Bates [1981], Binswanger and Scandizzo [1983], and Miller [1984]). The political "importance of being unimportant" also predicts that the rapid aging of Western populations will reduce rather than raise social security and other subsidies to older persons, even though the old will have more votes.

The fear of the masses as suffrage has been extended is essentially a fear that the numerous poor will out-vote others and tax away much of the wealth of the rich and middle classes. Yet the net redistribution to

the poor appears to be modest, at least in the United States (see Reynolds and Smolensky [1977]). This fear has not materialized because the large number of poor is also a political handicap: sizable redistributions to the poor would impose a sizable cost on each of the less numerous taxpayers.

Even without envy, the rich are politically handicapped by their wealth because the marginal dead weight cost of taxes is lower when taxes are a smaller fraction of the incomes of payers. The middle classes provide a compromise between numbers and wealth since they are less numerous than the poor and less wealthy than the rich. Hence "Director's Law" of redistribution to the middle classes from the rich and poor (see Stigler [1970]) is, I suspect, further evidence that dead weight costs are more important politically than numbers of voters.

6. Summary and Discussion

A model has been presented of competition among special interest groups for political influence. Each active group exerts pressure to affect its subsidies and taxes, where the activities of different groups are related because of the equality between the total amount raised in taxes and the total amount paid out in subsidies. The influence of a group on political outcomes depends on its control over free-riding members, and on other factors determining group behavior stressed in the literature on collective choice.

This paper argues that dead weight (or social) costs and benefits of taxes and subsidies are also fundamental to the determination of political outcomes. An increase in the dead weight cost of taxing a group encourages pressure by that group because the cost of higher taxes on members is increased. Similarly, an increase in the dead weight cost of subsidizing a

group discourages pressure by the group because the benefit from higher subsidies to members is reduced.

The "Compensation Principle" of welfare economics turns out to be a significant part of this theory of actual political choices. If the gain to groups benefiting from a policy exceeded the loss to groups harmed -- so that gainers could compensate losers --, and if access to political influence were otherwise the same for all groups, gainers would be willing to outspend losers on political pressure. Note that the capacity of gainers to compensate losers, not actual compensation, is crucial since losers do not receive any compensation.

If gainers could not compensate losers, a policy would not be implemented unless gainers had much better access to political influence. Therefore, the Compensation Principle combined with an analysis of the production of political pressure and influence by different groups provides a unified approach to the political feasibility both of public goods and other policies that raise social output (where gainers could compensate losers), and of policies that reduce output by redistributions to favored groups (where gainers could not compensate).

This emphasis on dead weight costs is reminiscent of Ramsey pricing and the theory of optimal taxation, where marginal dead weight costs are related to marginal "social worths". A fundamental difference, however, is that optimal tax theory uses dead weight costs to prescribe optimal public policies, whereas this analysis uses dead weight costs and benefits to explain actual policies in a world of competing and possibly selfish pressure groups. Still, if dead weight costs (and benefits) are important determinants of actual policies, the many calculations of dead weight costs in the applied welfare literature, and many analytical results of welfare

economics and optimal tax theory, would be relevant also to positive theories of political behavior.⁷

The almost universal condemnation of special interest pressure groups includes the recent allegation by Olson [1982] that they are responsible for sluggish growth and the eventual decline of nations. Much of the condemnation is, like Olson's, based on the many redistributions to special interest groups that clearly reduce social output because of dead weight costs of taxes and subsidies. I have tried to show, however, that competition among pressure groups also contributes to efficiency because actual political systems do not have social welfare functions, benevolent dictators, or other political procedures that automatically choose the optimal production of public goods, optimal effluence taxes, and other public policies that raise output and efficiency. Competition even among selfish interest groups does tend to produce pressure in favor of policies raising social output because groups favorably affected tend to spend more promoting such policies than groups harmed spend opposing them.

Indeed, if all groups have the same number of members and the same skill at producing influence, costly redistributions would not survive the political process because losers would be willing to spend more opposing them than gainers would spend supporting them. Under these circumstances, pressure groups contribute to rather than thwart policies promoting efficiency and growth. On the other hand, if groups have highly unequal access to political influence, costly redistributions would be common, and many programs that raise social output would not be undertaken because of strong opposition from powerful groups who would be harmed.

If special interest groups are crucial to the political process, then a political system would be largely defined by their activities and

opportunities. Democracies would have free competition among groups with relatively equal political strength; totalitarian and other nondemocratic systems would have restricted competition among groups with highly unequal strength. Explicit redistribution in democracies would be guided not by social welfare functions or other measures of aggregate utility, but largely by the altruism, selfishness, envy, and morality of interest groups. Moreover, if judicial decisions are also greatly influenced, if only indirectly, by interest groups (see Landes and Posner [1975]), the common law and other judicial traditions would emphasize efficiency (see Posner [1977]) when governments do little redistributing of resources, as during the nineteenth century in Great Britain and the United States.

I will conclude by considering briefly the implications of the analysis in this paper for the theme of the Symposium: the expansion of government in Western democracies during the last hundred years. Improved methods to collect taxes and distribute subsidies encouraged government expansion by reducing the resistance of taxpayers and raising pressure from potential recipients. Industrialization and the accompanying division of labor multiplied groups with separate interests, and some of them acquired political influence partly because they were small relative to the number of taxpayers. The development of radio, television, and other methods of communication gave small groups additional opportunities to influence the revealed "preferences" of voters and legislators. Undoubtedly, the decline in laissez faire ideology also contributed to the growth in government, but much of the change in ideology was probably induced by the arguments and other efforts of the many groups seeking public largess.

These changes facilitated government growth in all countries, but the crucial question is whether they can explain the details of growth

documented in the papers by Bernholz [forthcoming], Borcharding [forthcoming], Lindbeck [forthcoming], Musgrave [forthcoming], and others, especially the rapid increase in transfer payments during the last twenty years. Although a discussion of this question is far beyond the more modest goals of my paper, I believe that changes in the access of interest groups to political influence is the heart of the answer.

FOOTNOTES

¹Formally,

$$n_s \sigma_s = n_t \tau_t = I^t(p_s^0, p_t^1)$$

$$n_t \sigma_t = n_s \tau_s = I^s(p_s^1, p_t^0),$$

where σ_j and τ_j are the subsidies and taxes to each member of the j th group ($j = s, t$), p_j^0 and p_j^1 are the pressures by j to raise its subsidies and lower its taxes, respectively, and I^t and I^s are the influence functions for subsidies to s and t . Equilibrium conditions for t are

$$\frac{\partial I^t}{\partial m_t^1} \frac{\partial U^t}{\partial \tau_t} \leq \frac{-\partial U^t}{\partial a_t^1},$$

and

$$\frac{\partial I^s}{\partial m_t^0} \frac{\partial U^t}{\partial \sigma_t} \leq \frac{-\partial U^t}{\partial a_t^0},$$

with similar conditions applying to s . Since $-\partial U^t / \partial \tau_t > \partial U^t / \partial \sigma_t$ because of the dead weight cost of taxes and subsidies, expenditures to reduce taxes are more productive than expenditures to raise subsidies unless $-\partial I^t / \partial m_t^0$ is sufficiently larger than $\partial I^t / \partial m_t^1$.

²For example, Kaldor wrote, "Whether the landlords, in the free-trade case, should in fact be given compensation or not, is a political question on which the economist, qua economist, could hardly pronounce an opinion. The important fact is that, in the argument in favour of free

trade, the fate of the landlords is wholly irrelevant: since the benefits of free trade are by no means destroyed even if the landlords are fully reimbursed for their losses." (Kaldor [1939, pp. 550-51], my italics). I owe this reference to Chipman and Moore [1978] who have an excellent review of the issues.

³An example of this is given in Becker [1983, p. 386].

⁴I am indebted to Robert Barro for raising the issues discussed in this paragraph.

⁵See, e.g., estimates by Browning and Johnson [1984], and Stuart [1984] of the sizable burden of income taxes in the United States, and by Lindbeck [1983] of the huge burden of income taxes and transfer payments in Sweden.

⁶A recent model of the politics of tariff formation by Wellisz and Wilson [1984] also implies (for somewhat different reasons) that being small is advantageous.

⁷For example, Barro [1984] uses optimal tax theory to explain actual government deficits.

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