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Publication Date

2022-12-14

Peer reviewed

Prescription: Political Preference Functions
Versus Social Welfare Functions

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PUBLIC POLICY:
EXPLANATION AND CONSTITUTIONAL PRESCRIPTION

I. INTRODUCTION

Available evidence taken from the experience of many countries strongly suggests that bad governments and institutions have been a serious, if not the most serious, obstacle to economic growth; and all public sectors pursue a mix of both predatory and productive activities—bad governments emphasizing the former, and good governments finding a way of promoting the latter. Depending upon your perspective, unfortunately or fortunately, participants in the public-sector policy process generally pay little attention to the advice and counsel of the economics profession. This, in part, is explained by the confusion that emerges from our profession over the role of the public sector. Some would have us believe that the government, or the public sector, is nothing more than a "clearing house" while still others advance frameworks that treat the public sector as a benign pursuer of the public interest.

The "clearing-house" perspective presumes that the government has no autonomy and is simply manipulated by influential interest groups. The "perfect" governmental intervention perspective flows from conventional welfare economics and the Bergsonian social welfare function. In this framework, the government is in the business of maximizing the total size of the pie and if equity concerns rise, the framework simply advocates pure transfers to achieve desirable levels of income distribution.

The confusion on a useful analytical approach to the public sector is sprinkled throughout the literature. For example, Gardner (1989, p. 1170), argues that Becker's view of the public sector as the vehicle for "efficient redistribution"

"... generates an 'everything is optimal' syndrome. It leaves the economist as a policy adviser in a position like that of a stockmarket guru when all securities' returns follow a random walk."

He also argues that the political preference function that is embedded in Becker's framework (1983, 1985) and has been empirically analyzed on many occasions (Rausser and Freebairn, 1974; Zusman, 1976; Rausser and Foster, 1990) "... has no apparent normative force" (Gardner, 1989, p. 1170).

One response to this dilemma is advanced by Tweeten, who suggests that, "to service the wider interests of society, economists need to begin to work on the professional equivalent of placing a man on the moon—specifying a social welfare function" (Tweeten, 1988, p. 142). This perspective sweeps aside Arrow's impossibility theorem, arguing that what counts is the utilities of the individuals comprising a particular economy.

In our view, the literature on normative and positive public policy analysis lacks clarity, is misleading, and fails to take advantage of a major opportunity for integrating new institutional economics and public policy analysis. Accordingly, we advance in this paper a paradigm that attempts to give both theoretical and empirical content to the constitutional determination of political preference functions or what is defined in the new institutional economic literature as the "governance" function. As yet, the literature has not recognized the potential relationship between the underlying constitution and "preference weights." The literature has, of course, recognized the role of preference weights in helping to explain endogenous selection of public policies.

To the extent that we must aggregate across individuals to arrive at a "governance" function, representing the criterion underlyng public sector actions, the social welfare function may be shown to be a special case of the political preference function. The paradigm will attempt to "... identify policy rules that are robust and are important not only economically but, in a fundamental sense, politically" (Aaron, 1989, p. 13). This framework will also recognize that some solution to the "preference weighting" problem is implicit or explicit in any public action that might be taken. As Steiner (1969) argued long ago,

> "Put formally, we now accept in principle that the choice of the weights is
> itself and important dimension of the public interest. This choice is sometimes

treated as a prior decision which controls public expenditure decisions (at least should), and sometimes as a concurrent or joint decision—as in inseparable part of the process of choice. "

As with much of the public choice literature, in the framework advanced here, interest groups rather than individuals are the unit of analysis. Essentially, the framework addresses group processes and attempts to model collective decisionmaking. Three relevant spaces are isolated: (1) the result space, which characterizes the outcomes of the economic system; (2) the policy instrument space, which represents the design and implementation of public actions; and (3) the constitutional or institutional space, which structures the collective-choice or constitutional rules. In terms of the policy instrument space, the paradigm provides a framework for generating testable propositions on government behavior, while for discrete collective-choice rules, the framework is prescriptive or normative.

At the core of the proposed framework, examination of constitutional economics can be quantified partly in terms of the expected transaction costs that arise in pursuing the public interest. This examination in a prescriptive context can cover the full gamut: voting rules, law and order, property law and property rights, contract law, laws governing exchange, the provision of public goods, conflict of interest laws, rules of competition, bankruptcy rules, etc.

In presenting the proposed framework, we first focus on the determination of government policy (section 2) followed by a concrete example structuring the tradeoff between the public and special interests (section 3), and finally a prescriptive investigation of alternative constitutional or collective-choice rules' (section 4). In essence, preference weights reflecting the influence and power of various interest groups play a critical role in sections 2 and 3. In turn, the preference weights are structured by the collective choice rules examined in section 4, and their boundaries can be set by the underlying constitution.

2. EXPLANATIONS OF PUBLIC POLICY

For the determination of public sector policy, two extreme perspectives within the economics profession have emerged over the years. The first is the public choice perspective which focuses on the allocation of public resources in the political market, emphasizing redistribution to powerful interest groups (Downs, Buchanan and Tullock, Olson, and Becker). This literature quite naturally has led to analysis of rent-seeking and directly unproductive activities (Tullock, Bhagwati) which generate social waste, or "government failure." In this paradigm, interest groups play the role of the proverbial 800-pound gorilla— they go where they want, they sit where they want, and they take what they want. In essence, this paradigm is limited by its profoundly cynical view of the political process. With the exception of Becker (1985), who admits both envy and altruism on the part of interest groups, all of these formulations generate predatory government activity.

This paradigm has the value of being able to explain policy outcomes that inhibit economic growth without having to assume ignorance, stupidity, or willful misbehavior on the part of citizens, policymakers, or bureaucrats. The predatory government perspective may, in fact, be an overreaction to the harm done by the paradigm at the other end of the spectrum (namely, the conventional welfare economics framework) where the state is a benign instrument for serving the public interest. Unfortunately, it provides no logical apparatus for prescription: i.e., moving from bad to more effective policy.

In many countries, market failures abound, and it would indeed be fortuitous if a benign instrument such as government intervention could be found for solving these problems. The market failures emanate from a number of different sources: unclear and insecure property rights, significant externalities, imperfect competition, informational imperfections, irreversibilities, sufficient need for and maldistribution of public and mixed goods, etc. The prevalent economist's paradigm for investigating these market failures is sourced largely in conventional welfare analysis. This framework presumes that "first-best outcomes" are

achievable. The poor performance of many countries argues against the achievability of first-best outcomes. Neoclassical economic theory, on which the conventional welfare economics paradigm is based, cannot account for such performance. Moreover, as North (p. 32) notes, this theory "simply assumes away all the relevant issues."

Throughout the world, the public sector is not the perfect benign instrument envisaged by conventional welfare economics. But neither is it the manifestation of powerful interest groups concerned only with their well-being. In the conventional welfare economics paradigm, all political power resides in the hands of a benign government that attempts to correct whatever market failures might exist. In the new political economy or government failure paradigm, all political power resides with interest groups and whatever actions are taken by the public sector can be characterized as predatory. Both of these paradigms represent extremes on a continuum. Either will make incorrect inferences of how policy outcomes are generated and thus should not be used in isolation to explain public policy.

Governments do more than either engage in the improvement of allocative efficiency through collective action or simply serve rent seekers and the politically powerful. Accordingly, an alternative paradigm is needed that recognizes that power is distributed between the various interest groups and government and that maldistribution of power can blunt any and all efforts at economic policy reform. Moreover, this paradigm must recognize that governments can have some separate autonomy and can seek "leadership surplus" (Froelich, Oppenheimer, and Young).[1] What is needed is an internally consistent framework which admits the possibility and necessity of accommodating various interests. An appropriate political economic model is needed to conceptualize the bargains, pacts, compromises, and efforts that are undertaken to shape policies acceptable not only to those that have the greatest capacity to obstruct the process but also to others who stand to benefit from the policies.

Effective governments pursue productive activities while engaging in predatory pursuits for political economic reasons. Specifically, predatory policies can compensate those groups

and individuals that have sufficient political power to limit or obstruct efficient policies which lower transaction costs in the private sector. What is needed is an integrated framework that recognizes the joint determination of both predatory and productive governmental interventions. This framework must admit the political economy perspective of public choice theorists (all predatory, no productive activities) and the conventional welfare economics perspective (all productive, no predatory activities) as two special cases.

To the casual observer, public sectors involve collective action by numerous individuals under conditions of uncertainty, complexity, bounded rationality, and imperfect information structures. The flow of information, decision processes, coordination, and the need to monitor individual and group action in implementation and enforcement call for a serious assessment of the "micro forces within organizations" (Williamson, 1989). As argued by Williamson (1975, p. 51), a simple wheel network consisting of a center linked with many subordinate peripheral participants, "can yield saving in both information transmittal and decision making respects." Accordingly, effective organizations for collective action with a large number of participants must involve some form of a "wheel network." The resulting organization consists of a "center," which directs the group actions, and peripheral participants, which are controlled by the center.

Supplanting an "all channel network" by a wheel network leads to a major restructuring of the social interactions among group members. In particular, what may be essentially an n-person, iterated Prisoner's Dilemma game is transformed into an $n+1$-person bargaining game played by the center and the n-peripheral participants where the bilateral relationship between the center and each of the other players is especially important. Furthermore, individual strategy spaces and the payoff functions are transformed as well. Various selective incentives are often made possible, and authoritative as well as legal enforcement actions are added to the strategy space, fostering cooperation.

The center's choices affect individual well-being so that the objective functions of the peripheral participants are, to some extent, expressed in terms of the center's decision

variables. Individual peripheral participants will, therefore, strive to influence the center's choices. However, the center also consists of individuals with their own private interests; and, while it is not unreasonable to expect central decision agents to fully internalize the group's goals, it would be unrealistic to ignore their personal interests. Consequently, the center is exposed to potential influence attempts by peripheral participants who are in a position to reward or penalize the center.

Peripheral participants may exercise influence as individuals or through pressure groups especially formed in order to enhance their social power. Peripheral participants reward the center by extending material benefits and political support, say, when the center's choices further their own interests and penalize the center—e.g., by withholding material benefits or by supporting the center's political opponents when these choices are contrary to the peripheral participants' interests. In this setting, as indicated elsewhere (Harsanyi 1962; Zusman 1976), an $n+1$-person bargaining game is created whose cooperative solution constitutes the organizational equilibrium. The equilibrium group choice is, in fact, a compromise among the participants' and center's interests reflecting their social power.

Variations in transaction costs and political power and influence mean that it must be possible to customize the new paradigm for the culture of each country. In the proposed paradigm, current policies are viewed as a rational outcome of a political economic process. This political economic process is one where the public sector can be viewed as a "central coordinator." A hierarchy structures the relationships between the authoritative center and the subordinate peripheral participants. The decision agents constituting the center are not oblivious to their own material well-being, social status, political power, etc. As a result, the center in this organizational setting is exposed to attempts by various interest groups to exert influence. In this framework, peripheral participants are narrowly self-interested and, thus, narrowly rational in their influence attempts on a government which may, in fact, have some autonomy is pursuing this public interest. Accordingly, from the standpoint of the public interests, organizational failure naturally arises.

III. A CONCRETE EXAMPLE

The paradigm presented in section II. can be simply illustrated in the context of the classic "tragedy of the commons" problem. Specifically, there is presumed a depletable common resource pool, whose size is normalized to one unit, which is utilized by n identical individuals. Let $x_i(t)$ denote the resource utilization rate by individual i at time t, p is the given constant market price of the output obtained in utilizing the resource; and $C(x_i)$ is the cost faced by individual i in utilizing the resource at the rate x_i. The average cost rate is assumed to be U-shaped so that, above a certain utilization rate, $C(\cdot)$ is monotone increasing and convex in x_i. The instantaneous rate of net individual income at time t is:

$$y_i(t) = y_i[x_i(t)]$$
$$= px_i(t) - C[x_i(t)].$$

It will be assumed that each individual seeks to maximize his/her net earning, v_i, during the entire utilization period, , and that every individual is indifferent as to his/her particular earning time profile. Thus,

$$v_i = \int_0^T y_i[x_i(t)]dt,$$

where T is determined by the equation

$$\int_0^T \left[\sum_{i=1}^n x_i(t)\right]dt = 1.$$

By symmetry, $x_i(t) = x(t) \ \forall i$.

In the stylized tragedy of commons' world, a competitive market exists where each resource user seeks to maximize his/her net income. Again, second-order cost-minimization consideration and time-indifferent individual preferences imply that $x_i(t) = x_i \forall t \varepsilon [0,T]$. It

must be recognized that, in pursuing their self-interests, each individual will treat T as given. Specifically, each individual will maximize

$$v_i(x_i;T) = \frac{[px_i - C(x_i)]}{\sum_{j=1}^{n} x_j} \tag{1}$$

and the corresponding decision rule for the maximum v_i is

$$p - C'(x_i) - y_i / \Sigma x_j = 0. \tag{2}$$

By symmetry, $y_i/\Sigma x_i \doteq (1/n)(y/x)$ for all i; and, since income per-unit resource, (y/x), is bounded, the last term on the left of (2) is negligible when n is sufficiently large. Hence, given large n, the optimal level of resource utilization by the ith individual, x_i^0, is given by[2]

$$p - C'(x_i^0) = 0 \tag{2'}$$

where, by symmetry, we have again, $x_i^0 = x^o \forall i$.

Given the above specification, the public interest or social welfare function can be represented as

$$V = \sum_{i=o}^{n} v_i$$
$$= n \int_0^T \{px(t) - C[x(t)]\} dt, \tag{3}$$

where T is defined by

$$n \int_o^T x(t) dt = 1 \tag{4}$$

Second-order cost-minimization considerations dictate that the optimal utilization rate should be in the interval of x where the cost function is convex. Since individual preferences are also time indifferent with respect to the earning profile, the convexity of $C(x)$ implies that the cost-minimizing value of x should be constant over time. Hence,

$$x(t) = x, \forall t \varepsilon [0, T]$$

and

$$T = 1/(nx). \tag{5}$$

As a result, V may then be rewritten as follows:

$$\begin{aligned} V &= [px - C(x)]/x \\ &= p - C(x)/x. \end{aligned} \tag{6}$$

Accordingly, the decision rule that maximizes V is,

$$-C'(x^*) + C(x^*)/x^* = 0 \tag{7}$$

where $-C'(x) \equiv dC/dx$. Thus, the socially optimal resource utilization rate, x^*, occurs where the marginal cost rate equals the average cost rate; namely, x, minimizes the average cost rate. This decision rule follows directly from the optimization of joint earnings or rents generated from finite, depletable common resource. Note that maximizing joint earnings is equivalent to minimizing the average cost rate.

With numerous agents, the above results suggest that every narrowly rational individual ignores the effect of his/her own utilization rate on the length of the resource utilization period, T^0, so that x^0 is selected to maximize the individual's instantaneous net income. The length of the resource utilization period is thus viewed as a collective good to which Olson's (1965) logic of collective action applies. The myopic bias characterizing individual narrow rationality derives from this view. Thus, when $p > C(x^*)/x^*$, we have $x^0 > x^*$ and $T^0 = 1/(nx^0) < T^* = 1/(nx^*)$; that is, the private utilization rate under competitive market conditions exceeds the socially optimal rate, and the resource utilization period under (market coordinated) private action is shorter than the socially optimal period—a classic

example of market failure due to the "tragedy of the commons." The potential value of productive improvements through the organization structure is

$$M(V^*, V^0) = n \int_0^T \{ p(x^* - x^0) - [C(x^*) - C(x^{0)})] \} dt \qquad (8)$$

which, in the policy space, is a function of the distance, $x^* - x^0$.

Whatever organization is set up to pursue the potential productive gains (8), it will feature a center and peripheral participants. Under the typical structure, the center decides, monitors, and enforces the rate of resource utilization by every participant while every peripheral participant seeks to influence the center's decision so as to maximize his/her private interest. Thus, let $i = 0$ index the center and $i = 1, 2, ..., n$ index the n peripheral participants. Assuming that the social goal is fully internalized by the center and recognizing the reciprocal power relationships in the organization, one may state the participants' influence relationships as follows: The center's objective function is

$$U_0 = V + \sum_{i=1}^{n} s_i(c_1, \delta_1) \qquad (9)$$

where

$$V = \frac{\sum_i [px_i - C(x_i)]}{\sum x_i}$$

and $s_i(c_i, \delta_i)$ is the "strength of power" of the ith peripheral participant on the center; c_i is the "cost of power" to the participant i; and δ_i is an indicator of whether a "reward" or "penalty" strategy is pursued by peripheral participant, i, in the attempt to influence the center. Thus,

$$s_i(c_i, \delta_i) = \begin{cases} \alpha_i(c_i) & \text{when a reward strategy is selected } (\delta_i = \alpha) \\ -\beta_i(c_i) & \text{when a penalty strategy is selected } (\delta_i = \beta). \end{cases}$$

Note that, while c_i is expressed in terms of the utility of the ith peripheral participant, $\alpha_i(\cdot)$ and $\beta_i(\cdot)$ are expressed in terms of the center's objective function.

The peripheral participants' objective functions are

$$U_i = v_i(x_i;T) - c_i$$

$$= \frac{px_i - C(x_i)}{T} - c_i \qquad i = 1, 2, ..., n \qquad (10)$$

where the effect of changes in x_i on the length of utilization period, $T = 1/\Sigma x_i$ is ignored by the individual peripheral participant.

In drawing out the implications of equations (9) and (10), a solution concept must be introduced. Here we follow the earlier work of Zusman (1976) who employed a multilateral bargaining game to derive a cooperative solution reflecting the social power and influence of various interest groups. The cooperative solution is found by applying the Nash-Harsanyi approach to the simple bargaining game in which the parties' disagreement payoffs are given (Harsanyi 1962). This solution maximizes the product of the differences between the cooperative value of each group's objective measure, U_i^* $(i = 0, 1, ..., n)$, and its corresponding disagreement value, $\bar{U}_i$. Specifically, the product,

$$\mathcal{L} = \prod_{i=0}^{n}[U_i^* - \bar{U}_i], \qquad (11)$$

is maximized with respect to $x, c_i, ..., c_n$. This is, of course, equivalent to maximizing $\ln\mathcal{L}$ since the latter measure is monotone increasing in $\mathcal{L}$. Hence, maximizing

$$\ln\mathcal{L} = \ln\left[V + \sum_{i=1}^{n} s_i(c_i, \alpha_i) - \bar{U}_0\right] + \sum_{i=1}^{n} \ln\left[v_i(x;T) - c_i - \bar{U}_i\right] \qquad (12)$$

results in the following first-order conditions, assuming an interior solution,

$$\frac{\partial \ln\mathcal{L}}{\partial x} = \frac{1}{(U_0^* - \bar{U}_0)}\frac{\partial V}{\partial x} + \sum_{i=1}^{n}\frac{1}{(U_i^* - \bar{U}_i)}\frac{\partial v_i(x;T)}{\partial x} = 0 \qquad (13)$$

and

$$\frac{\partial \ln\mathcal{L}}{\partial c_i} = \frac{1}{(U_0^* - \bar{U}_0)}\frac{\partial s_i}{\partial c_i} - \frac{1}{(U_i^* - \bar{U}_i)} = 0 \qquad i = 1, ..., n \qquad (14)$$

Multiplying all first-order conditions by $U_0^* - \bar{U}_0$, it is found that equations (13) and (14) are also those that would be derived in the maximization of

$$W = V + \sum_{i=1}^{n} b_i v_i(x:T)$$

(15)

where

$$b_i = \frac{U_0^* - \bar{U}_0}{U_i^* - \bar{U}_i} = \frac{\partial s_i(c_i, \alpha_i)}{\partial c_i}.$$

(16)

The organizational equilibrium follows directly from the maximization of equation (15). Identifying policymakers with the center and interest groups with the peripheral participants allows two interpretations of the power coefficient, b_i. First, this power coefficient can be interpreted as the utility gain to the center from cooperation (compared to disagreement) relative to the corresponding utility gain to the ith peripheral participant. Second, the b_i may be interpreted as the marginal strength of the power of the ith peripheral participant over the center in equilibrium. Note that, if the power coefficiernts vanish, W reduces to the social welfare function, (3).

What are the rates of resource utilization in the organizational equilibrium? Imposing a uniformity assumption where all peripheral participants or interest groups are assumed to be identical with respect to their social power over the center, i.e., $b_i = b$ for all i, the first-order conditions for the maximum of W with respect to utilization rates, x_i, are:

$$\frac{\partial W}{\partial x_i} = \frac{(1+b)[p - C'(x_i)] - \dfrac{\sum_j [px_j - C(x_j)]}{\sum x_j}}{\sum x_j} = 0, \qquad i = 1, 2, \ldots, n.$$

(17)

Introducing symmetry considerations so that $x_i = x$ for all i and rearranging equation (17) yields

$$C'(\hat{x}) - b[p - C'(\hat{x})] = C(\hat{x})/x. \tag{18}$$

The organizational equilibrium rate of resource utilization, $\hat{x}$, is the one satisfying (18). Figure 1 depicts the public interest solution, x^*, the special interest solution, x^0, and the political organization solution, $\hat{x}$. The socially optimal utilization rate, x^*, is the one minimizing average cost. The private utilization rate, x^0, is the one maximizing the instantaneous rate of net income—i.e., $C'(x^0) = p$. The broken line, *LL*, representing the function $f(x) \equiv C'(x) - b[p-C'(x)]$, where $b.> 0$ is constructed from the price line, *PP'*, and the marginal cost curve, $C'(x)$. It must pass through the point where $p = C'(x)$ and has a steeper slope than $C'(x)$, provided b is strictly positive. Since $\hat{x}$ is the utilization rate associated with the intersection of the broken line, *LL*, and the average cost curve, $C(x)/x$, we have the relationship

$$x^* < \hat{x}, < x^0. \tag{19}$$

Evidently, as individual peripheral participants in the organization have some power over the center, the organizational equilibrium involves a resource utilization rate exceeding the social optimum. Nevertheless, to the extent that the center internalizes the overall social interest, collective action may still improve on market-coordinated private action. The effect of special interests on the rate of resource utilization may be represented by degree of predatory behavior, viz.

$$M(\hat{V}, V^*) = n \int_0^T \left\{ p(x^* - \hat{x}) - [C(x^*) - C(\hat{x})] \right\} dt. \tag{20}$$

The social gain due to collective action depends on the intraorganizational power structure as reflected by the parameter, b, and the incentive to overutilize the resource
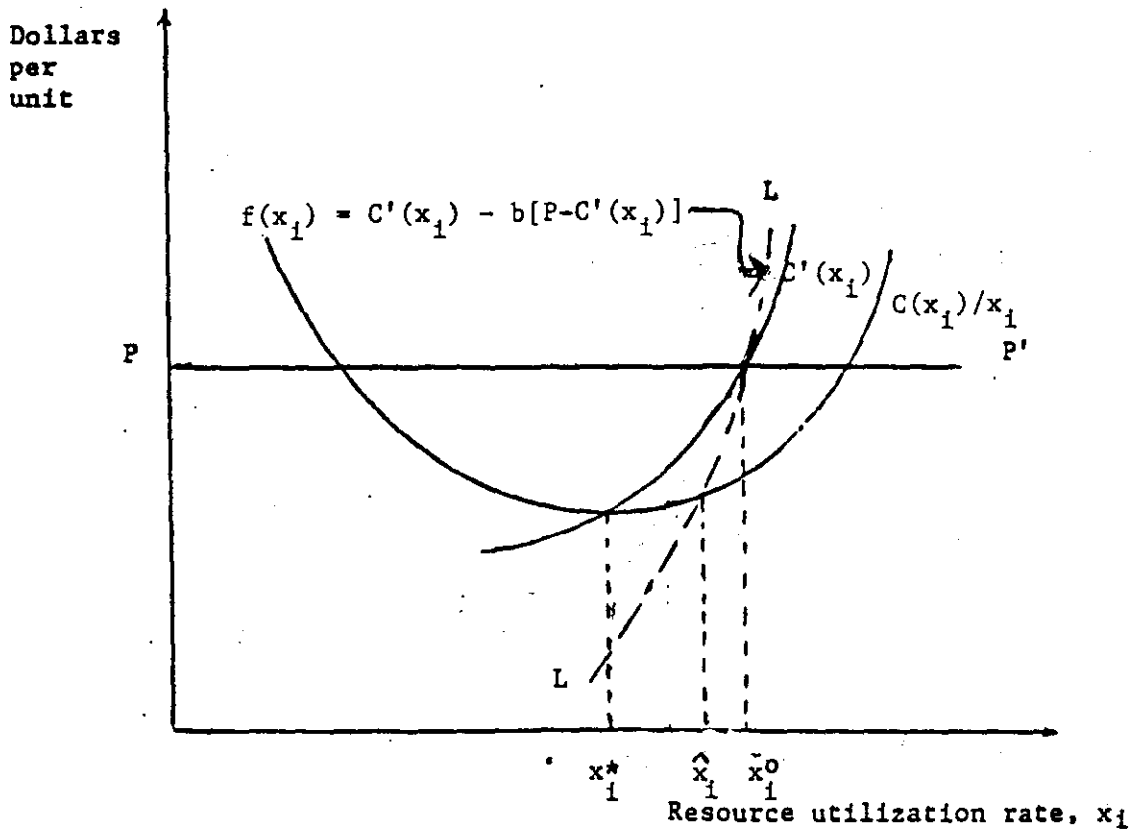
FIGURE 1

Equilibrium and Optimal Resource Utilization Rates

determined by the market price, p. From (18), we generate by total differentiation and rearranging,

$$\frac{d\hat{x}}{db} = \frac{p - C'(\hat{x})}{\frac{d}{d\hat{x}}\left\{C'(\hat{x}) - b[p - C'(\hat{x})] - \frac{C(\hat{x})}{\hat{x}}\right\}} > 0. \tag{21a}$$

and

$$\frac{d\hat{x}}{dp} = \frac{b}{\frac{d}{d\hat{x}}\left\{C'(\hat{x}) - b[p - C'(\hat{x})] - \frac{C(\hat{x})}{\hat{x}}\right\}} > 0. \tag{21b}$$

The positive effects arise because $p > C'(\hat{x})$, $b > 0$, and the denominators on the right-hand side of both (21a) and (21b) are positive as verified from Figure 1. The equilibrium rate of resource utilization thus increases as the power of the peripheral participants over the center and the market price of the output derived from the resource increase. Note that the power coefficient, b, is greater the smaller the subjective value of the social goal to the center relative to the value attached by decision agents in the center to their private personal gains. The effect of planning horizon length on the degree of predatory behavior or organizational suboptimality is investigated in Appendix A.

4. PRESCRIPTIVE EVALUATIONS

In terms of the above framework, full internalization of the group goal (V) by the center, leads to an organizational equilibrium with the following "governance weights":

$$b_i = \beta_i'(\bar{c}_i) = \alpha_i'(\hat{c}_i) = \frac{\partial V}{\partial \hat{x}_i}\left(-\frac{d\hat{x}_i}{d\hat{c}_i}\right), \qquad i = 1, 2, \dots, n$$

where $\tilde{c}_i$ is the equilibrium cost to i of his/her conflict strategy; $\hat{c}_i$ is the equilibrium cost to i of a reward strategy; and $\left(d\hat{x}_i / d\hat{c}_i\right)$ is the center's marginal rate of substitution between the agreed upon utilization rate of the ith peripheral participant, $\hat{x}_i$, and the cost to i of rewarding the center. Thus, governance weights, b_i, depend on the center's subjective evaluation of the group's objective in terms of the marginal reward/penalty it receives from the peripheral participants. The lower the value attached by the center to the overall group objective relative to the reward/penalty cost and the greater b_i, the greater the shift away from the group optimality and toward the individual, narrowly self-interested in the outcome. In the extreme case, when the personal interest of the center fully dominates the collective goal, the system is completely corrupted and narrow, self-interested, private action prevails. Under these circumstances, $M(\hat{V}, V^0)$, is at its minimal level.

The externalization of social costs and benefits by the narrowly-rational self-interested, peripheral participants; the internalization of group goals by the center; and the social power of the peripheral participants over the center are crucial forces in determining the degree of organizational failure. Obviously, if the center does not internalize the group goals, then the *raison d'être* of the collective action is not realized. Conversely, if the center does internalize the group's goals, and peripheral participants are unable to externalize and/or have no power over the center (i.e., $b_i = 0$, for all $i \geq 1$), then the public interest is maximized and the group action is optimal. In this instance, M achieves its maximum level and public sector behavior can be characterized as completely productive; predatory behavior vanishes.

An especially attractive feature of the governance or political preference function, W, is that it can be empirically constructed by revealed policy preference (Zusman and Rausser, 1990). Accordingly, it is possible to estimate the b_i's from historical data by any of a number of quantitative techniques (econometric, nonlinear programming, or bootstrap statistical methods). Validation tests have been designed (efficiency loss and sample impact multiplier tests) and hypothesis tests can be conducted. For example, the Stigler, Becker view that leadership doesn't matter or, equivalently, that the center has no autonomy, can be by testing

the null hypothesis that $b_0 = 0$. This test would, of course, involve normalizing on one of the interest group power coefficients rather than the "center." Similarly, to test the hypothesis that the government has total autonomy, the null to be tested is that $b_i = 0$ for $i \geq 1$).

In a quantitative empirical analysis it must be recognized that the b's can vary. Perhaps the most important conditioning element of this variability is the underlying collective choice rules or the constitutional space that dictates the decision making process. Representing an alternative collection of constitutional rules by r_j,the governance weights of interest become $b_i(r_j)$. The construction of these coefficients allows prescription to be performed across alternative r_j. These rules, e.g., the expert rule, the almost-expert rule, the tie-breaking chairman rule, the rule of the chairman and two aides, the restricted simple-majority rule, the multiple-majority rule, the simple-majority rule, etc. (Nitzan and Paroush, 1985), can be evaluated in terms of their effects on W and associated decision costs via enumeration. Rules that have been examined in the literature span a space from one member of the organization, having sole authority to make decisions on all policies and issues, through referendums over policy alternatives decided by simple majority with and without bargaining and coalition formation, to policy selections requiring unanimity of all members (Zusman, 1990).

Prescriptive evaluation of discrete alternative collective choice rules depends, of course, on whether a core exists. Possible outcomes within the core depend on the sensitivity of the governance weights to alternative r_j. Prescriptive selection across the alternative r_j's entails evaluation of their associated expected utility or W's and their bargaining costs. The bargaining costs and the costs of organizing can be expected to increase as we move from a sole decision maker to a unanimity rule.[3]

On the benefit side of the proposed constitutional evaluation, we must be concerned not only with the mean values of the political solutions under alternative r_j's but also their corresponding spreads, however defined. To illustrate the importance of this observation, let D_j denote the decisive group at the center of the organization for a particular r_j. When D_j is small, a political solution maximizing the well-being of members of D_j at the expense of those

not in D_j is easier to obtain. If D_j is large, its members preferences are more diverse and the solution agreed upon by members of D_j is less likely to maximize their preferences at the expense of the nonmembers of D_j. Consequently, the disparity between the utility level of a particular member of the organization (when he/she belongs to the decisive group and the utility level of member i when he/she does not belong) is greater the smaller is the size of the decisive group. The general pattern of variation in member's utility level under alternative r_j reflects the spread of the policy combinations under these rules. A measure of the spatial distribution of political solutions within that core can give rise to a "mean preserving spread" argument. For sufficiently risk-averse members, a "mean preserving spread" demonstrates that the unanimity choice rule can dominate all other rules, at least, in the benefit dimension of the proposed calculus.

The scope for prescription at the constitutional phase may be decided by different rules which are selected in accordance with the sensitivity of the members' expected utility to the ultimate decision and its associated cost. For example, the following assignment of r_j's to problem areas is often observed. The sole decision maker, r_j, exhibiting maximal spread but minimal bargaining costs, is usually confined to matters of less importance. The prime minister or president of a country may be granted full authority to decide on current operational problems; on the other hand, important policy issues are ordinarily decided by simple majority of the membership, cabinet or board members. Simple majority rules entail medium spreads and decision costs. Special·majority, or even unanimity, with minimal spread and maximum bargaining costs may be required when fundamental rights are at stake.

The above discussion focuses on the governance weights, treating the arguments of the political preference function, W, as given. Performance variables, however, are also determined by constitutional choice. To illustrate, consider the efficiency implications of the center's planning horizon arise in collective actions over time. As demonstrated in Appendix A, a short planning horizon entails efficiency losses. As expected, a short planning horizon causes group action to suboptimally favor the immediate over the distant.

Accordingly, an important prescriptive issue that arises is the constitutional choice of the length of time that policymakers are allowed to serve the organization.

If policymakers fail to pursue the public interest, as represented by V in the concrete example of section 2, and, instead, pursue some self-interested objective, constitutional rules may exist for selecting another set of agents to represent the center. Specifically, a constitutional democratic process could remove those agents at the center who fail to pursue the public interest. For this constitutional rule to effectively operate, however, other principles are required—namely, allowing human and civil rights so that members can assemble and speak out against or in support of those interests representing the "center." Another alternative is, of course, authoritarianism which, although it can sustain good economic policies by turning a deaf ear to protest, can also repress demand for reforms that serve the public interest.

In constructing of the governance function, W, simplifying assumptions made with regard to the performance measures representing each interest group should be noted. In particular, the members of the interest group are presumed to be homogeneous, with no entry or exit from one interest group to another being admitted.[4] To the extent that heterogeneity exists among members of a particular interest group, it is possible, through creative mixes of policies (predatory or productive) or the introduction of new political technology, to split interest groups as well as to form new coalitions of interest groups. For example, it has been shown by Gray et al (1990) that, if the principles provided by the constitution are reflected in an institutional structure that promotes resource mobility or asset diversification, an interest group structure will emerge that has little, if any, incentive to acquire political power and exercise influence.

5. CONCLUDING REMARKS

Countries or public sectors seeking sustainable reforms, reduction in rewards and penalties being imposed by peripheral participants on the center or, equivalently, reductions in wasteful rent-seeking activities should select constitutional principles and institutional structures that tend to foster resource mobility and ownership diversification. For the concrete example of section 2, this selection is expected to lead to an equivalence of x^* with $\hat{x}$. In the context of the current GATT negotiations, participating governments who wish to compensate those groups who lose from trade liberalization should design their compensation schemes so as to promote mobility and/or diversification of ownership of immobile resources. In this fashion, trade reform is more likely to be sustained since future rent-seeking behavior will be mitigated. This, of course, comes at the economic cost of foregone gains from diminished specialization.

The issue of interest group structure is also of immense importance in designing the transition path that might be traveled by the Soviet Union and Eastern European countries. As these centrally planned economies move toward more market-oriented systems, how ownership of state-owned resources will be transferred to private or quasi-private enterprises is of crucial importance. Transfers initially conducted to promote diversification of resource ownership without corresponding constitutional principles, whether shared widely by all citizens or advocated by effective leadership, and are not likely to be sustained. Constitutions (which treat education and economic freedoms as fundamental rights), when combined with effective institutions (which make public good investments in information, education, occupational adjustments), will foster resource mobility and asset diversification, and thus limit the formation of interest groups which may rent seek to inhibit economic reforms.

Finally, it should be noted that the constitutional space is not entirely exogenous. Induced policy reforms can and have been motivated by external events, especially

precipitous deterioration of the economic environment (e.g., the first 1980s oil crisis in Indonesia; the 1986-1989 economic crisis through out Eastern Europe and the Soviet Union; the 1985 hyperinflation in Bolivia). The role of these external events, e, can be conveniently separated from the prescriptive choice of r_j by representing $b_i(r_j,e)$. External effects may motivate more or less concentration of power. The structure of the relationship between external events and political power must also be assessed in any prescriptive evaluation of alternative r_j's. A descriptive theory of these structural relationships is presented in Appendix B.

THE ORGANIZATIONAL EQUILIBRIUM
UNDER ALTERNATIVE PLANNING HORIZONS

The degree of predatory behavior or deviation from the public interest depends critically upon the planning horizon of public officials. To illustrate the importance of this dimension on the organizational equilibrium, three cases will be examined in this appendix: (1) the center's planning horizon, θ, is at least as short as the resource utilization period in the unrestricted organizational equilibrium [i.e., $\theta \geq \hat{T} = 1/n\hat{x}$)]; (2) the center's planning horizon, θ, is at least as short as the resource utilization period under (market-coordinated) private action [$\theta \geq T^0 = 1/(nx^0)$]; and (3) the center's planning horizon, θ, is shorter than the utilization peroid achieved under the unrestricted organizational equilibrium but longer than the utilization period under (market-coordinated) private action ($T^0 < \theta < \hat{T}$).

In the first case, the planning horizon does not constrain the maximization of W and the attained organizational equilibrium is not affected by the length of the center's planning horizon. In the two other cases, the center's planning horizon affects the organizational equilibrium rates of resource utilization. Note that symmetry still holds and $x_i(t) = x(t) \forall i$. In principle, two subperiods may now be distinguished: the subperiod, $[0,\theta]$, corresponding to the center's planning horizon, and the postplanning horizon subperiod (i.e., $t > \theta$). Two distinct utilization rates corresponding to the two subperiods could, of course, occur. However, while the center is interested in the first subperiod alone, peripheral participants' interests span both subperiods. And, in any event, it must be recognized that the organization is not dismantled in the second subperiod, only a new center may be elected or appointed. Also, causal empiricism suggests that property rights established at some point in time are likely to be respected in the future. It shall, therefore, be assumed that, at least

from the peripheral participants' perspective, a single utilization rate is in force during both subperiods.

Consider first the case where the center's planning horizon is at least as short as the (market-coordinated) private utilization rate (i.e., $\theta \geq T^0$). By symmetry, second-order cost-minimization conditions, and individual time indifference, the horizon-restricted, organizational equilibrium, $\hat{x}_h$, is the one maximizing

$$W = n \int_0^{\min[\theta,1/(nx)]} [px - C(x)]\, dt + nb \int_0^T [px - C(x)]\, dt$$

(A.1)

$$= n[px - C(x)]\{\min[\theta, 1/(nx)]\} + nb[px - C(x)]T.$$

Suppose for a moment that $x = x^0$; then, since $\theta \geq T^0 = 1/(nx^0)$, W becomes

(A.2) $$W = n\{[px - C(x)]\theta(1 + b) + b[px - C(x)](T - \theta)\}.$$

Since individual peripheral participants perceive $T = 1/(nx)$ as a given collective good, the first-order condition for maximum W is

(A.3) $$\frac{\partial W}{\partial x} = n[p - C'(\hat{x}_h)](\theta + Tb) = 0.$$

Consequently, $p - C'(\hat{x}_h)$ and

$$\hat{x}_h = x^0;$$

and, indeed, $\theta \le 1/(n\hat{x}_k)$ as hypothesized. Hence, when the center's planning horizon is at least as short as the resource utilization period under (market-coordinated) private action, no effective control will be exercised by the center.

For the case where the center's planning horizon is shorter than the utilization period under the unrestricted organizational equilibrium but longer than the utilization period under private action (i.e., $T^0 < \theta < \hat{T}$), if $\hat{x}_k < 1/n\theta$, then $\theta < 1/(n\hat{x}_k)$ and equation (A.2) holds. Also, in this case, $\hat{x}_k < 1/(n\theta) < 1/(nT^0) = x^0$ and, by second-order cost-minimization conditions, $\hat{x}_k \ge x^*$; then

$$(A.4) \qquad \frac{\partial W}{\partial x} = n[p - C'(\hat{x}_k)](\theta + Tb) \ge 0.$$

Consequently, $\hat{x}_k < 1/(n\theta)$ cannot be an organizational equilibrium; and

$$(A.5) \qquad \hat{x}_k < 1/(n\theta)$$

Letting $\hat{x}_k > 1/(n\theta) > 1/(n\hat{T}) = \hat{x}$, then (A.1) becomes

$$(A.6) \qquad W = n[px - C(x)]/(nx) + nb[px - C(x)]T$$

and

$$(A.7) \qquad \frac{\partial W}{\partial x} = \frac{1}{x}\left(C(x)/x - \{C'(x) - b[p - C'(x)]\}\right) < 0$$

for $x > \hat{x}$, as can be verified from Figure 1. Hence, $\hat{x}_k > 1/(n\theta)$ cannot be an organizational equilibrium; and

(A.8) $$\hat{x}_{\lambda} \leq 1/(n\theta).$$

Combining (A.5) and (A.8) yields

(A.9) $$\hat{x}_{\lambda} = 1/(n\theta).$$

Hence, when the center's planning horizon is longer than the resource utilization period under private action but shorter than the utilization period under the unrestricted organizational equilibrium, the restricted organizational equilibrium leads to the full depletion of the resource precisely at the center's planning horizon.

As the center is interested in maximizing the group's net income during the center's planning period, it also favors increasing utilization rates as its planning horizon shortens. Since this conforms to the narrow rationality of the self-interested peripheral participants, the organizational equilibrium will behave accordingly. The functional relationship between the center's planning horizon, θ, and the rate of resource utilization, $\hat{x}$, is depicted in Figure A-1. It is obvious from the figure that an effectively short planning horizon induces excessive rates of resource utilization up to the rate arising under private action.
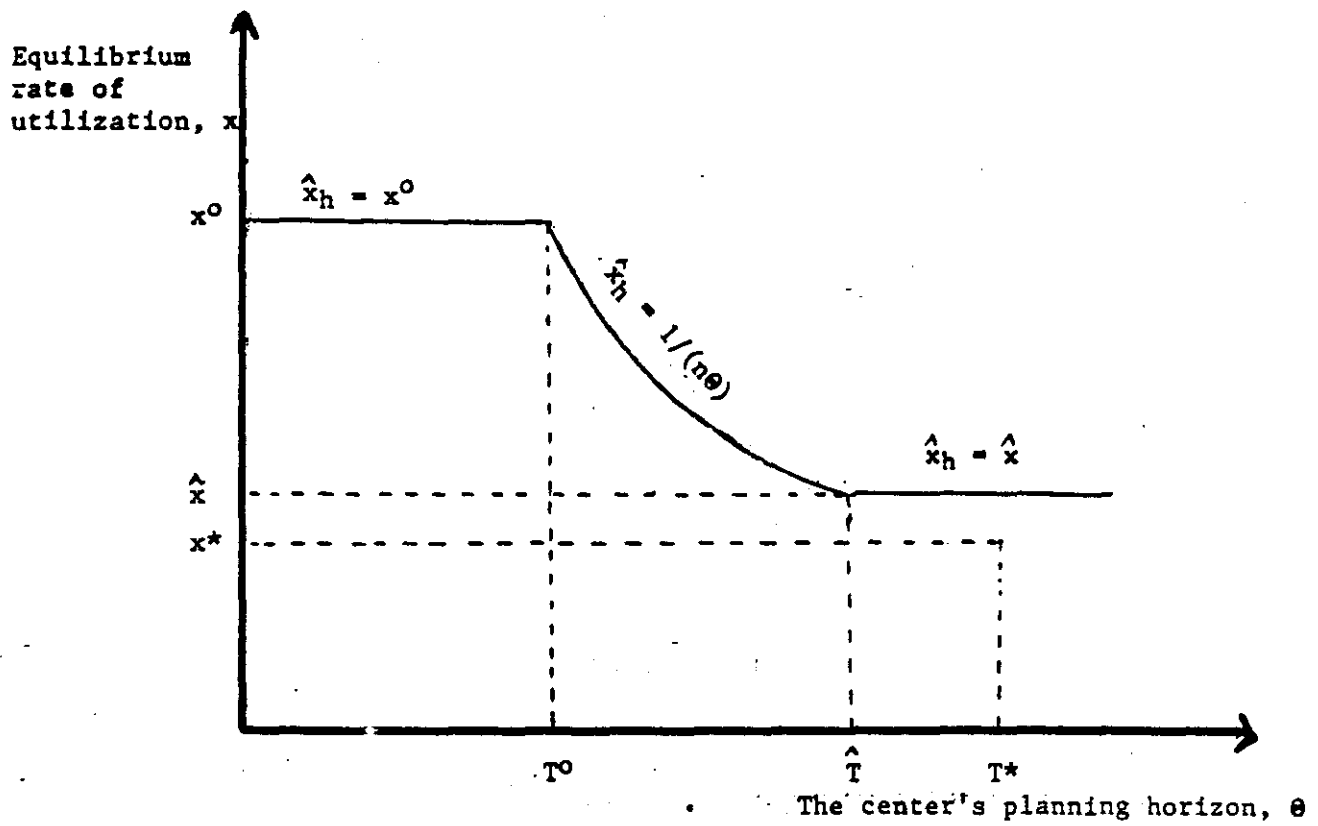
Equilibrium rate of utilization, x

$\hat{x}_h = x^o$

$\hat{x}_h = 1/(n\theta)$

$\hat{x}_h = \hat{x}$

x^o

$\hat{x}$

x^*

T^o

$\hat{T}$

T^*

The center's planning horizon, θ

FIGURE A-1
The Organization Equilibrium Rate of Resource Utilization
As a Function of the Center's Planning Horizon

A DESCRIPTIVE THEORY OF THE DYNAMICS OF POWER

A descriptive theory of power changes in response to internal and external developments may be based upon the following heuristic propositions:

1. The political power of participants in the political-economy is an increasing function of each group's bases of power.

2. A group's bases of power critically depend on the ability of a particular subset of individuals (the so-called "political entrepreneurs," the group's leadership) to mobilize the group. Effective group mobilization requires an appropriate organization capable of providing individual "selective incentives" or applying other measures designed to overcome group members' proclivity to "free ride" (Olson 1965). Hence, to be effective in forming and maintaining the group power bases, group leaders should have their own second order power bases (Elster, 1989).

3. There are several types of power bases of which legitimate authority, economic resources, and organizational-political resources feature highest.

4. The dynamics of change in power bases involves strong, positive feedback loops. When a group is sufficiently powerful to induce favorable policy choices, it also reinforces its own power bases. Some of the political gains may be directed to augment the group's economic and political power bases. Manifest political success along with more abundant economic resources may be used in campaigns designed to foster the group's legitimate power base by promoting beliefs, values, and behavioral norms consistent with the group interests.

5. Widely perceived successful performance of policies advocated by the group contributes to the group's legitimate power. Conversely, perceived failures of these policies detract from the group's legitimate power.

6. Beyond a certain point, diminishing returns in power formation set in; that is, marginal additions to the group's power, induced by equal increments to the group's power bases, decline progressively as power bases expand.

7. Finally, not unlike capital stocks in general, power bases deteriorate in the absence of maintenance efforts. Economic and political resources must be continuously expended just to keep the power bases at their current level. Efforts must continuously be made to keep the group mobilized, and promotion campaigns must be permanently sustained to just offset public forgetfulness and negative promotion efforts by opposing groups.

Holding the constitutional structure constant, from the above propositions a particular relationship between the current group's power, $b_i(e)$, and the change in the group's power, $db_i(e)/de$ can be offered. This relationship is presented graphically in Figure B-1 using a state-space description. Consider first the solid curve in Figure B-1. There are two stable equilibrium power levels, A_1 and A_2, and one unstable power level, R. The stable equilibria, $b_i = A_1$ and $b_i = A_2$, are *point attractors*; the unstable equilibrium, R, is a repeller. Commencing from any initial power, $b_i(0)$, to the right of R; $b_i(e)$ converges to A_2; while, from any initial power to the left of R, $b_i(e)$ converges to A_1. Hence, if feasible levels of power are restricted, i.e., $B_1 \leq b_i \leq B_2$ with $B_1 < A_1$ and $B_2 > A_2$, then the interval $[B_1, R)$ constitutes the low power *basin* (i.e., A_1's basin), while the interval $(R, B_2]$ constitutes the high power basin (i.e., A_2's basin). This structure follows from the propositions stated above. Thus, the positive feedback loops operate in the interval $[A_1, A_2]$.

If the group's power happens to equal R [i.e., $b_i(0) = R$], then a small increase in power will induce successive augmentations of group i's power until $b_i(t) = A_2$. However, if $b_i(0) = R$ and a slight decline in the group's power occurred, $b_i(t)$ will continue to decline until $b_i(e) = A_1$ is reached. Note that, when group i power is in the neighborhood of A_2, $db_i(e)/de$ is a monotone decreasing function of $b_i(e)$ because the diminishing return effect in the formation
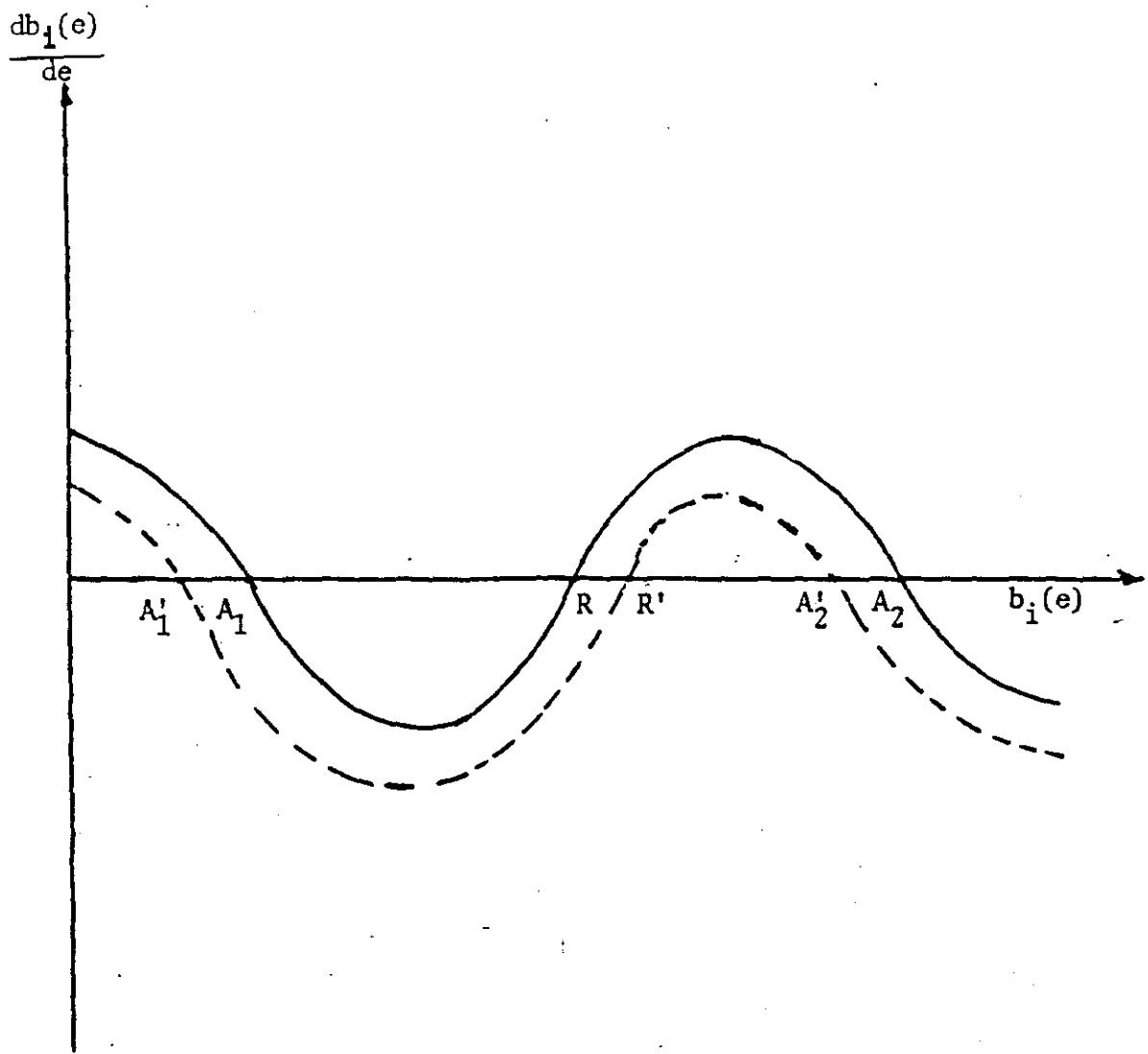
FIGURE B-1

THE DYNAMICS OF POWER

(A STATE SPACE DESCRIPTION)

of power becomes progressively more pronounced, and the cost of gross investment in power bases is no more justified by anticipated net future returns to the group from its incremental political power. To the right of A_I, even maintaining the power base is no more cost-effective. The behavior of $db_i(e)/de$ in the neighborhood of A_I reflects a similar relationship for groups opposing the ith group.

If, for some reason, the power bases of group i diminish, the dynamic relationship is shifted downward from the solid curve to the broken curve. The envisaged decline in group i power bases yields two important outcomes. The stable power equilibria move to the left from (A_I, A_2) to (A_I', A_2'), and the power of group i diminishes; and the low power basin expands while the high power basin contracts and the likelihood of the fast weakening or the persisting weakness of group i consequently increases. It is worth noting that should $b_i(e)$ happen to be in the interval (R, R') when the decline in group i power bases occurs, $b_i(e)$ will swiftly move to A_I' thus implying the steep fall from power of group i.

A change in a group's power bases may result from two principal causes: external environmental changes and endogenous effects. As indicated earlier, the political economy is strongly influenced by the external physical, social, political, and economic environment. Environmental changes are, therefore, likely to significantly impact the political economy in general and the political power structure in particular.

From a dynamic analytic viewpoint, endogenously induced changes in the power structure are especially interesting. Thus, if policies advocated by a group are widely perceived as failures on efficiency and/or distribution grounds, the legitimate power of the group is eroded. Highly predatory policies are condusive to severe economic failures. While this process may be protracted, it eventually leads to the weakening of the public sector's power and to major policy changes. The corresponding changes in the political economy are often quite dramatic.

The dynamics of power formation and change, especially the inherent positive feedback mechanisms, yield two important behavioral patterns. First, political economies tend to lock

in particular policies (policy "traps"). Attempts at significant policy alteration encounter stiff resistance from those benefiting from the status quo, who naturally are the more powerful groups. The local stability of political economic equilibria effectively blocks the way of successive incremental policy changes. Second, significant policy changes hinge on radical variations in the power structure which, in turn, depend on major shifts in the power bases. Such changes can come about either through large environmental variations, or by way of a sufficiently deep erosion of the legitimate power base of the status quo groups. When this happens, for either exogenous or endogenous reasons, the shift in power is large and swift. Political reforms are major policy changes which may be implemented only when preceded by major power shifts.

In Figure B-2, the dynamics of power formation and change is illustrated. At time zero, the ith group is powerful (i.e., $b_i(0) = A_2$). From $t = 0$ until $t = 5$ the power structure is subjected to random shocks, none of which is sufficiently strong to shift b_i to the low power basin. Deviations from A_2 are dampened back to A_2. However, at $t = 5$, two events concurrently happen: b_i is subjected to a powerful negative random shock; and group i's power bases are significantly eroded (through delegitimation, say). Consequently, $b_i(5)$ is pushed over to the low power basin and rapidly converges to the new low attractor A_i'. Thus, group i falls from power and policies adopted under group i's past powerful pressure may now be reformed. Notice that, as long as b_i was located at the high power basin, such reforms were politically impossible.

Thus, our dynamic theory of power offers the following predictions:

1. Political economies tend to lock in particular policies.

2. The adopted policies are fairly stable, admitting only minor incremental alterations which do not add up to a significant policy revision.

3. Major policy reforms occur in infrequent "bursts" involving large power shifts.

4. Political bursts are triggered by changes in the underlying power bases induced by environmental variations and/or erosion of status quo group's legitimate power in

consequence of widely perceived policy failures. Such policy failures often stem from the ruling group's narrow-rationality.
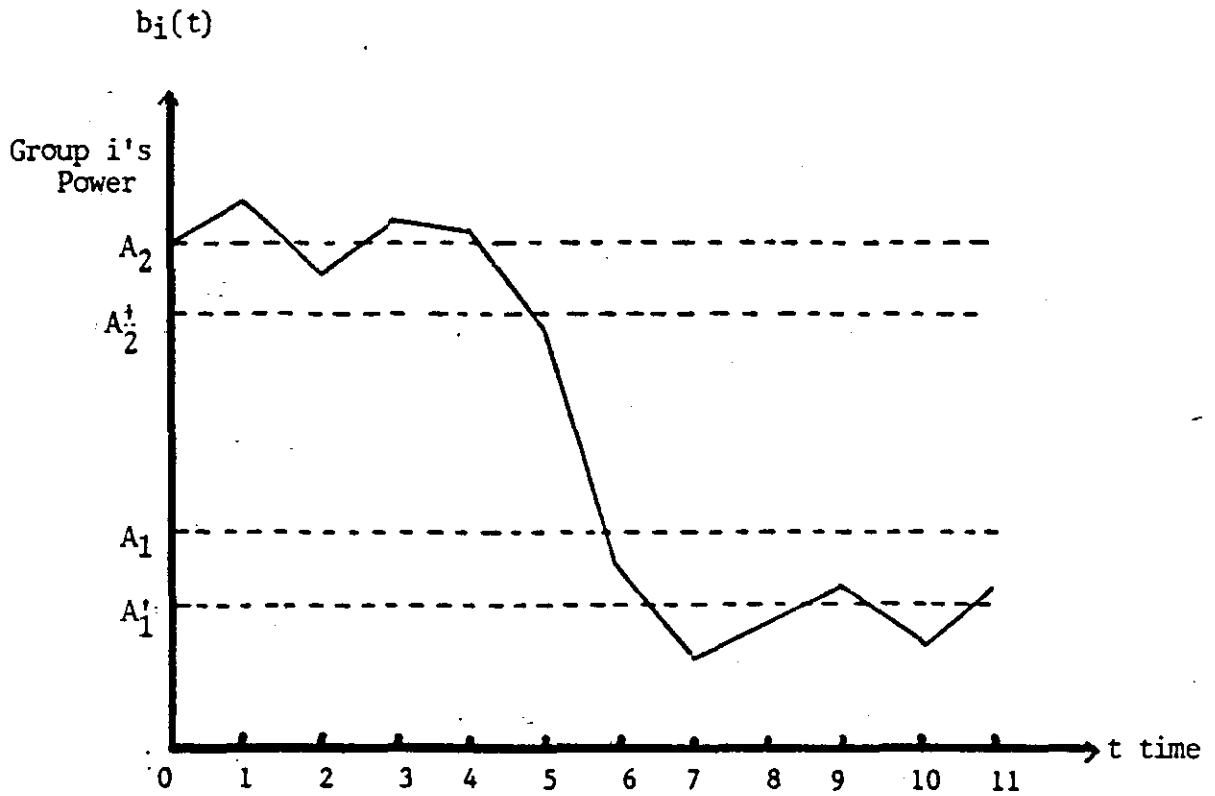
FIGURE B-2

BEHAVIOR OF POWER OVER TIME

(AN ILLUSTRATION)

FOOTNOTES

[1]In the Froelich, Oppenheimer, and Young framework, leaders compete with other potential leaders for ascendancy and, once in office, maximize their surplus or profit by providing collective goods against taxes, donations, or purchases promised in the election process.

[2]The condition (n) that is given (no entry or exit is allowed) is relaxed in section 4. In the meantime, it should be noted that, if free entry is allowed, a bad situation is made even worse, with x_0 expanding to the point were average cost equals market price.

[3]Buchanan and Tullock (1962) analyze in some detail the relationship between the size of the decisive group (winning coalition) and the "decision cost." They conclude that the two are positively related.

[4]These assumptions are implicitly imposed in all of the public choice literature focusing on government failure and rent-seeking behavior.

REFERENCES

Aaron, Henry J. "Politics and the Professors Revisited," *American Economic Review*, Vol. 79 (1989), pp. 1-15.

Becker, Gary S. "Public Policies, Pressure Groups, and Deadweight Costs," *Journal of Political Economics*, Vol. 28 (1985), pp. 329-347.

Becker, Gary S. "A Theory of Competition Among Pressure Groups for Political Influence," *Quarterly Journal of Economics* Vol. 68, No. 3 (1983), pp. 371-400.

Bhagwati, Jagdish N. "Directly Unproductive Profit Seeking Activities," *Journal of Political Economy* Vol 90 (1982), pp. 988-1002.

Buchanan, James M. , and Gordon Tullock. *The Calculus of Consent*. Ann Arbor: University of Michigan Press, 1962.

Downs, Anthony. *An Economic Theory of Democracy*. New York: Harper and Rowe, 1957.

Elster, J. *The Cement of Society: A Study of Social Order*. Cambridge: Cambridge University Press, 1989.

Froelich, N. J., A. Oppenheimer, and J. Young. *Political Leadership and Collective Goods*. Princeton, New Jersey: Princeton University Press, 1971.

Gardner, Bruce L. "Economic Theory and Farm Politics," *American Journal of Agricultural Economics* (December, 1989), pp. 1165-1171.

Gray, Richard, Gordon C. Rausser, and William E. Foster. "Resource Mobility, Diversification of Ownership, and Political Rent Seeking Incentives." Unpublished manuscript, Department of Agricultural and Resource Economics, University of California at Berkeley, 1990.

Harsanyi , J. C. "Measurement of Scoial Power in *n*-Person Reciprocal Power Situations." *Behavor Science*, VII, pp. 81-91.

Harsanyi, J. C. *Rational Behavior and Bargaining Equilibrium in Games and Social Situations*. Cambridge: Cambridge University Press, 1977.

Williamson, O. E. *Markets and Hierarchies: Analysis and Antitrust Implications*, New York: The Free Press, 1975.

Williamson, Oliver E. "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives." Unpublished Manuscript, University of California at Berkeley, November, 1989.

REFERENCES

Aaron, Henry J. "Politics and the Professors Revisited," *American Economic Review*, Vol. 79 (1989), pp. 1-15.

Becker, Gary S. "Public Policies, Pressure Groups, and Deadweight Costs," *Journal of Political Economics*, Vol. 28 (1985), pp. 329-347.

Becker, Gary S. "A Theory of Competition Among Pressure Groups for Political Influence," *Quarterly Journal of Economics* Vol. 68, No. 3 (1983), pp. 371-400.

Bhagwati, Jagdish N. "Directly Unproductive Profit Seeking Activities," *Journal of Political Economy* Vol 90 (1982), pp. 988-1002.

Buchanan, James M. , and Gordon Tullock. *The Calculus of Consent.* Ann Arbor: University of Michigan Press, 1962.

Downs, Anthony. *An Economic Theory of Democracy.* New York: Harper and Rowe, 1957.

Elster, J. *The Cement of Society: A Study of Social Order.* Cambridge: Cambridge University Press, 1989.

Froelich, N. J., A. Oppenheimer, and J. Young. *Political Leadership and Collective Goods.* Princeton, New Jersey: Princeton University Press, 1971.

Gardner, Bruce L. "Economic Theory and Farm Politics," *American Journal of Agricultural Economics* (December, 1989), pp. 1165-1171.

Gray, Richard, Gordon C. Rausser, and William E. Foster. "Resource Mobility, Diversification of Ownership, and Political Rent Seeking Incentives." Unpublished manuscript, Department of Agricultural and Resource Economics, University of California at Berkeley, 1990.

Harsanyi , J. C. "Measurement of Scoial Power in *n*-Person Reciprocal Power Situations." *Behavor Science*, VII, pp. 81-91.

Harsanyi, J. C. *Rational Behavior and Bargaining Equilibrium in Games and Social Situations.* Cambridge: Cambridge University Press, 1977.

Nitzan, Shmuel, and Jacob Paroush. *Collective Decision Making: An Economic Outlook.* Cambridge: Cambridge University Press, 1985.

North, Douglass C. "Institutions and Economic Performance." Paper presented at the conference on Government and Economic Growth and Development, Institute for the Study of Free Enterprise, September 15-16, 1989.

Olson, Mancur. *The Logic of Collective Action.* Cambridge: Harvard University Press, 1965.

Tullock, Gordon. "The Welfare Costs of Tariffs, Monopolies, and Theft." *Western Economic Journal* Vol 5 (1967), pp. 224-232.

Tweeten, Luther. "Domestic Food and Agricultural Policy Research Directions." In *Agriculture in Rural Areas Approaching the 20th Century*, R. J. Hildreth et al (eds), pp. 121-44. Ames: Iowa State University Press, 1988.

Rausser, Gordon C., and William E. Foster. "Political Preference Functions and Public Policy Reform," *American Journal of Agricultural Economics*, Vol. 72, No. 3 (August, 1990), pp. 642-652.

Rausser, Gordon C., and J. W. Freebairn. "Estimation of Policy Preference Functions: An Application to U. S. Beef Import Policy," *Review of Economics and Statistics*, Vol. 56, No. 4 (November, 1974), pp. 437-449.

Steiner, P. O. "The Public Sector and the Public Interest," in *An Analysis and Evaluation of Public Expenditures: The PPB System.* Commendium of papers submitted to the Subcommittee on Economy and Government of the Joint Economic Committee. Congress of the United States, Vol. 1 (1969), pp. 14-65.

Stigler, George. "The Theory of Economic Regulation," *Bell Journal of Economics*, 1971.

Williamson, O. E. *Markets and Hierarchies: Analysis and Antitrust Implications*, New York: The Free Press, 1975.

Williamson, Oliver E. "Comparative Economic Organization: The Analysis of Discrete Structural Alternatives." Unpublished Manuscript, University of California at Berkeley, November, 1989.

Zusman, P. "The Incorporation and Measurement of Social Power and Economic Models," *International Economic Review*, Vol. 17 (1976), pp. 447-462.

Zusman, P. "Constitutional Selection of Collective-Choice Rules in a Cooperative Enterprise." *Journal of Economic Behavior and Organization*, forthcoming, 1990.

Zusman, Pinhas, and Gordon C. Rausser. "Endogenous Policy Theory: Political Structure and Policy Formation." Working Paper No. 537, Department of Agricultural and Resource Economics, University of California at Berkeley, 1990.