I. Introduction.

A. During the 1960s and 1970s, a more or less separate literature on the politics of interest groups emerged which attempted to model the manner in which regulatory commissions would set regulations.

i. Much of this literature was linked to Mancur Olson's work on the *Logic of Collective Action* (1965).

ii. Another important contribution to the political economy of regulation is Tullock's (1967) analysis of the dead weight loss of political and other efforts to obtain monopoly power and tariff protection.

iii. That paper characterized dynamic losses from interest group and other activities that have come to be called Rent Seeking activities.

iv. Not much additional work was done within this framework until in the middle seventies when Anne Krueger (1974, *AER*) independently reinvented the idea and named the phenomena rent-seeking, and Richard Posner (1975, *JPE*) attempted an empirical analysis of the dead weight loss of rent-seeking by would-be monopolists.

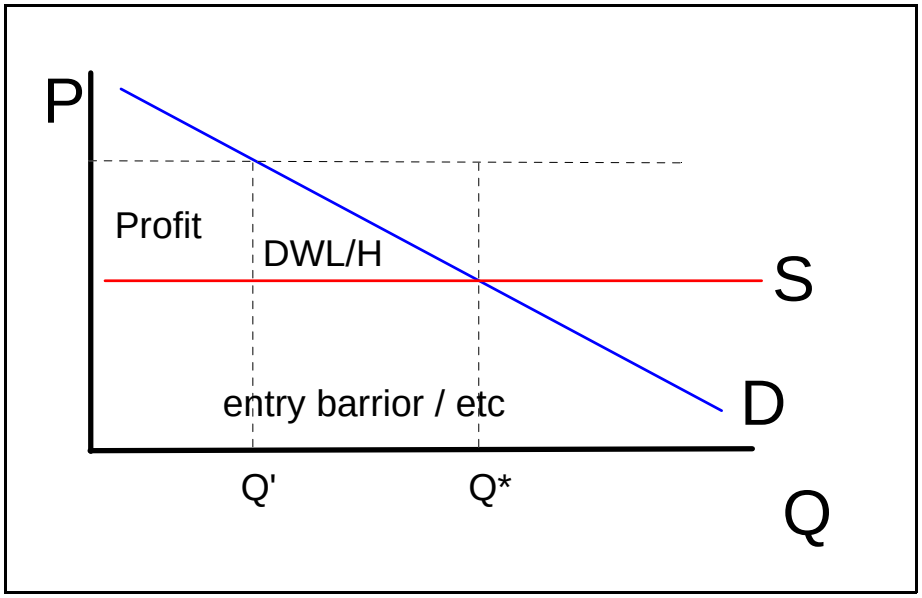
B. The analysis of the political economy of regulation was also pushed forward by Chicago economists with an interest in industrial regulation.

i. For example, Stigler's (1971, Bell J of E) argued that "the central tasks of the theory of economic regulation are to explain who will receive the benefits or burdens of regulation."

a. Perverse economic regulations emerge as a consequence of electoral threats on the part of large enterprises. "If the [elected] representative denies ten large industries their special subsidies of money or governmental power, they will dedicate themselves to the election of a more complaisant successor." ... "

b. The industry which seeks regulation must be prepared to pay with two things a [political] party needs: votes and resources."

ii. This theory is sometime summarized as the **capture theory** of regulation,because teh "regulated" industries are able to get the regulations that they want. See also some of Stigler's earlier work on the "capture theory".



iii. Peltzman (1976) argues that "what is basically at stake in a regulatory process is a *transfer of wealth*. The transfer, as Stigler points out, will rarely be in cash, but rather in the form of a regulated price, and entry restriction and so on." He goes on to argue that:

a. "[T]he costs of using the political process limit not only the size of the dominant group but also its gains."

b. "[Elected politicians] maximize net votes or majority in his favor. There is no presumption that the marginal utility of a majority vanishes at one...Greater majorities are assumed to imply greater security of tenure, more logrolling possibilities greater deference from legislative budget committees and so on."

iv. (Although these "Chicago" ideas are clearly extensions of the public choice literature of the 50's and 60's essentially no mention is made of those literatures beyond a passing citation of Olson's work on collective action.)

v. The Chicago approach took a new controversial direction in 1983 with the publication of Gary Becker's "A Theory of Competition Among Pressure Groups for Political Influence" (*QJE*) where the interest group approach to regulation was extended to encompass all political policies.

a. Becker argues in that piece that all policies that emerge would *tend to be efficient.*

b. This provocative claim was softened in later work, but he continues to argue that "no policy that lowered social output could survive if all groups were equally large and skillful at producing political influence" (1985, J Pub E).

c. Even this claim ignores the Rent-seeking losses that such a process would generate.

d. [See also Donald Wittman (1989, 1995).]

vi. Work in the Chicago interest group and rent-seeking "traditions" continues to the present time, with surprisingly little cross referencing of research using other approaches.

C. The "new political economy" perspective on interest group politics began with Helpman and Grossman's (1994) very widely cited analysis of trade regulations.

II. Olson's Logic of Collective Action

A. Olson's original work on interest groups was part of a broader analysis of collective action to provide public goods.

i. In that work he notes that collective action to solve public goods problems is itself an area of behavior that is prone to free riding.

ii. Difficulties in organizing collective action, lead him to predict that interest groups are more likely when there are a small number of persons or firms (actors) that with relatively large private stakes in the collective outcome.

a. The large stakes create incentives for collective action, while the small number reduces the extent of the free rider problems that must be solved.

b. It is for such reasons that firms are more likely to be organized than consumers are.

iii. He notes that solutions will be required to induce collective action including what he calls "selective incentives" that are available only to "club" members, and perhaps some source of encompassing interest for "club organizers."

III. The Chicago Regulation Models

A. The Peltzman model of regulation is the most widely used model from the Chicago school (and it clearly affected the Grossman Helpman model).

i. It is a model of regulation in a setting where regulatory commissions are assumed to have some discretion but be politically obliged to take the interests of both consumers and the regulated into account.

ii. One simple and widely used version of the Pelzman model, argues that the regulator maximizes his "political support" (often characterized with the regulator's utility function) which is defined over the welfare of consumers and firms subject to the regulation.

a. Regulators and/or elected representatives need political support willingness to provide desired political support to the regulators (or elected representatives) increases with the welfare of the groups affected by the regulated.

iii. Regulators/Legislators set regulations (and transfers) to maximize political support (campaign contributions and the like).

iv. Many forms of regulation can be considered in a Peltzman model. Consider for example a decision to set some regulated price, P.

a. Let support be characterized as: $S = \Sigma_i \; S_i(P)$

b. Differentiating with respect to P we find that P will be set such that

$$\Sigma_i \; S_{ip} = 0 \; ,$$

c. which implies that P is set (raised) so that the marginal reduction in support from those favoring lower prices equals the marginal increase in support from those favoring higher prices.

d. In cases where the policy variable is a vector and many different groups are affected by that policy, and all of their interests, as expressed with promises of " support," are balanced off against each other at the margin.

e. Not much attention is given to the incentives of groups to directly lobby for regulatory preference, rather industry effectively reacts to proposals of the regulator (by making larger or smaller campaign contributions).

v. The Becker model is essentially similar and broader, except that the model has no obvious policy maker. Individual's contribute to politically active groups on be basis of their influence production functions.
   a. In his 1983 piece, Becker models a political influence game between two groups composed of self-interested net benefit maximizers.
   b. The redistribution takes place via taxes and subsidy interests which can be more or less efficient.
   c. The mechanism which determines the extent to which a the taxed group is taxed and the subsidized group receives a subsidy is called political influence: $I_s = -I_t = i(P_s, P_t, X)$ where Ps is the pressure from group s, Pi is the pressure from group i and X is other variables that matter (say institutions).
   d. Political pressure is the result of group membership size, n, and resources devoted, m, to generating pressure P = p(m, n). (If a is average member expenditure, then m= na.)
   e. The total tax burden of the taxed group is $n_t R_t$ where n_t is the number of members of group t, and R_t is the tax burden imposed on a typical member of group t. $F(R_t)$ is the amount of revenue actually raised by the tax, net of dwl, so $F(Rt) \leq R_t$. The total subsidy cost of transfers given to the subsidized group is $n_s G(R_s)$ where n_s is the number of members in group s and G(Rs) is the subsidy expenditure per group member. R_s is the amount actually received net of the dwl so $R_s \leq G(R_s)$.
   f. Note that $n_t F(R_t) = n_s G(R_s)$ [all revenues collected are paid out as subsidies.]
   g. The full income of a typical member of each group is $Z_s = Z_s + R_s - a_s$ for the subsidized group and $Z_t = Z_t + R_t - a_t$ for the taxed group.

vi. Individual will contribute the amounts, a_s and a_t respectively, which maximizes their income so that a_t^* is s. t. $R_t a_t = 1$ and as is s.t. $R_s a_s = 1$, e. g. each person contributes to their groups political activity up to where the marginal increase in money's received (or losses avoided) equals one dollar.
   a. Given that $I_s = n_s G(R_s)$ and $I_t = n_t F(R_t)$. $G(R_t) = I_s/n_s$ and moreover using the definition of an inverse function: $G^{-1}(G(R_s)) = R_s = G^{-1}(I_s/n_s)$
   b. Differentiating R_s with respect to a_s yields:
      - $Rs_{as} = [dG^{-1}/d(I_s/n_s)]\ [(dI/dPs\ dP_s/dm\ n_s)]/n_s$ since $dG^{-1}{}_R \approx 1/G_R$
      - a_s^* will be such that $[I_{Ps}\ Ps_m] / G_{Rs} = 1$ [note that this just restates viii above]
      - and a_t^* will be such that $[I_{Pt}\ Pt_m] / G_{Rt} = 1$ [again see viii above, f. o. c. again]
   c. These first order conditions can be used as the source of Cournot reaction functions for the political pressure game.
   d. One can get some sense of the comparative statics of the first order conditions.
   e. [Diagram of a* at "MB"="MC"]
   f. The higher the marginal cost of the subsidy (the less efficient the subsidy program) the lower the marginal benefit curve is and the smaller a* is.
   g. The greater the groups relative ability to create influence from pressure, I_{Ps}, the higher the marginal benefits of political contributions and the higher a* is.
   h. The more political pressure produced by an additional group expenditure, the higher the marginal benefits are and the greater a* is.
   i. [Figure with Nash equilibria for typical members of each interest group, comparative statics]

vii. Efficient policies are the best policies from the vantage point of both interest groups and those policies will call forth the most political pressure.

IV. Rent Seeking and Better Estimates of the Cost of Interest Group Activities

A. A quite different conclusion about the effects of interest groups is suggested by the rent seeking literature (See Congleton, Hillman, and Konrad 2008.)

   i. The rent seeking literature begins with a piece by Gordon Tullock (1967) "The Welfare Costs of Tariffs, Monopolies and Theft" *Economic Inquiry*.
      a. The focus of that piece was on the manner in which resources may be invested and said to be wasted in unproductive activities such as (i) crime, (ii) lobbying for tariff protection, (iii) lobbying for entry barriers or monopoly privileges.

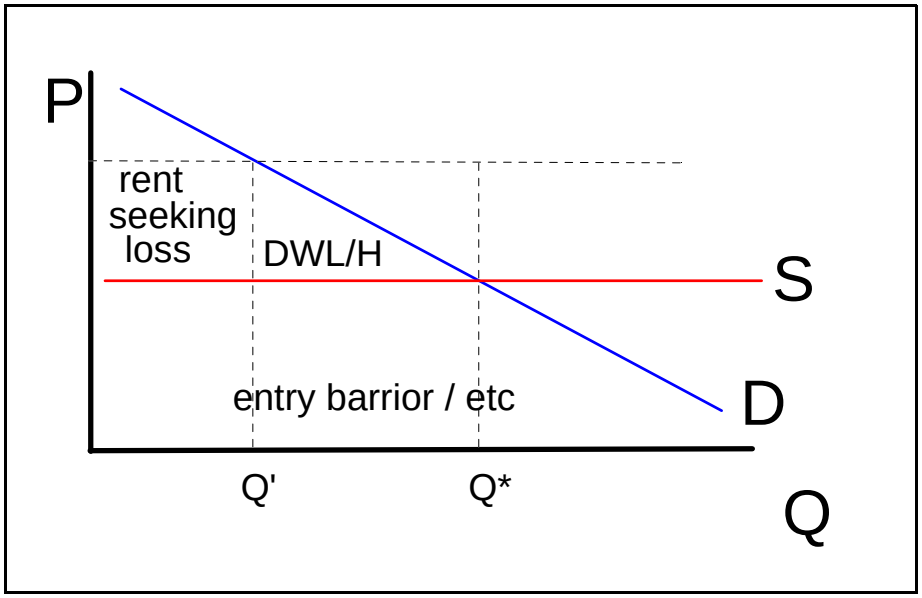
b. That resources could be wasted in through such "conflict" was an idea that had been totally neglected by mainstream welfare economics.

ii. The logic of Tullock's normative analysis is based on the difference between productive and unproductive activities.

a. The Tullockian intuition: suppose that R units of a scare economic resource can be employed to produce an output valued at V dollars or employed to create an output valued at D dollars where V>0 and D<0.

b. *If R is employed to create D, one can say that the resources have been wasted: e. g. consumed in a value decreasing process.*

c. Rent seeking is one of the many unproductive processes by which resources may be wasted in this sense (the process of political rent seeking is taken up below):



iii. Interpreted as a rent seeking activity, the "value created" by investing R in some political influence game (lobbying) is D and its opportunity cost is V. So the net benefit generated by this employment of R is D - V < 0.

a. *D-V can be considered the social cost of using resource* R *in this manner.*

b. (Note that D is the "net value" of the output which may include some positive results, e. g. the successful monopolist's profits.)

c. [In the case of monopoly, D would be the Harberger dead weight loss triangle, and V the economic value of the alternative output that might have been produced with the resources committed to the political monopolizing process.

d. V will be approximately rectangle "T," the Tullock rectangle, under assumptions explored below.]

- Note that a *dead weight loss from employing R to produce D exists as long as D < V.* Thus, even somewhat productive political activities may have a rent-seeking loss associated with them.

iv. The above figure has the conventional Harberger and also Tullock losses from an entry barrier or monopoly privilege, in an otherwise competitive market.

- The case illustrated and the case developed in Tullock (1967) is the so-called "complete dissipation" case.
- Not every rent-seeking game has complete dissipation (See Tullock 198) or Congleton 1980) but many do (See Hillman and Katz 1984).

v. Rent-seeking losses would arise even in a Becker, 1983, type model where the eventual policy adopted *efficiently* transfers resources from one party to another.

a. (Here D in the limit is zero, rather than negative.)

b. One difference between the Virginia and modern Chicago (Becker/Whittman) views of interest group activity is that the Virginia school is not very optimistic about the normative properties of the outcome of interest group competition.

c. (Early Chicago analysts seem to share this pessimism.)]

V.The Basic Mathematics of Rent Seeking Contests

A. The rent-seeking literature has used a game theoretic framework for its analysis, which like that of the Chicago models, is more focused on "lobbying" than on elections.

i. The core rent seeking model regards the process to be analogous to a lottery.

ii. The special favors which may be obtained through government--tax breaks, protection from foreign competition, contracts at above market rates etc.-- are the prize sought by rent seekers.

iii. The process by which these prizes are awarded is considered to be complex in that a wide variety of unpredictable personalities and events may ultimately determine who gets which prize. None the less, it is believed that the more resources are devoted to securing preferential treatment (e. g. the better prepared and more widely heard are the "rationalizations" for special preference) the more likely it is that a particular rent-seeker will be successful. Contrari-wise, the greater the efforts of alternative rent-seekers, the less likely a particular rent-seeker is to succeed.

iv. As a first approximation of this political influence game, investments in political influence are often modeled as if they were purchases of lottery tickets.

B. An Illustrative Rent-Seeking Contest

i. Suppose that N risk neutral competitors participate in a rent seeking game with a fixed prize, Π.

ii. Each player may invest as much as he wishes in the political contest.

iii. The prize is awarded to the player whose name is "drawn from a barrel" containing all of the political lottery "tickets." So, the expected prize for player i is

- $\Pi[R_i / (R_i + R_O)]$,
- where R is the value of the prize, R_i is the investment in rent seeking by player I and t_O is the investment by all other players.

iv. If the rent seeking resource, R, cost C dollars each, player 1's *expected reward* for a given purchase by all other players can be determined by:

- $\Pi^e = \Pi[R_i / (R_i + R_O)] - CR_i$
- Differentiating with respect to Ri and setting the result equal to zero allows the number of tickets that maximizes expected income to be characterized:
- $\Pi [1 / (R_i + R_O) - R_i / (R_i + R_O)^2] - C = 0$

v. This implies that: $\Pi [R_O / (R_i + R_O)^2] - C = 0$ or

$$\Pi R_O / C = (R_i + R_O)^2$$

- Applying the quadratic formula implies that Player 1's best reply function is $Ri^* = -Ro \pm \sqrt{(\Pi R_O / C)}$
- (Only the positive root will be relevant in cases where Ri has to be greater than zero.)

vi. In a symmetric game, each player's best reply function will be similar, and at least one equilibrium will exist where each player engages in the same strategy.

vii. Thus, if there are N-1 other players,

- at the Nash equilibrium, $R_o^{**} = (N-1)R_i^{**}$.
- which implies that $Ri^{**} = -(N-1)R_i^{**} \pm \sqrt{(\Pi (N-1)R_i^{**}/C)}$.
- which implies that $NRi^{**} = \sqrt{(\Pi (N-1)R_i^{**}/C)}$

viii. or squaring both sides, dividing by Ri^{**} and N^2 and gathering terms, that:

- $Ri^{**} = [(N-1)/N^2] [\Pi/C] = [(1/N) - (1/N^2)] [\Pi/C]$
- For example if N = 2 and C = 1, $Ri^{**} = (\Pi/4)$

ix. Total rent seeking effort is N times the amount that each player invests

a. Thus in the two person unit cost case, **R** = $\Pi/2$.

b. Half of the value of the prize is consumed by the process of rent seeking. [Illustrating Figure]

c. In the more general case, **R** = $[(N-1)/N] [\Pi/C] = [1 - 1/N] [\Pi/C]$

d. The effect of entry on individual and total rent seeking expenditures can be determined by inspection or by differentiation the results above above with respect to N.

x. It is clear that individual contributions fall as the number of rent seekers increase, but also clear that the total amount of rent seeking "dissipation" increases.

xi. In the limit, as $N \Rightarrow \infty$ the total rent seeking investment approaches the level where the value of those resources, RC, equals to the entire value of the prize,
$\mathbf{R}^{**} C = [\Pi/C] C = \Pi$.

xii. The effect of increases in the cost of participating in the political influence game and/or changes in the value of the regulation to the rent-seeker can also be readily determined in this game.

C. The basic model can be generalized to cover cases where the prize is endogenous and where the probability of securing the prize varies, and to cases where the prize is shared rather than awarded to a single "winner take all" winner.

i. For example, $R_i^e = P(R_1, R_2, ...R_N)\Pi_i(\mathbf{R})$ encompasses many of these features.

ii. The affects of economies of scale may also be examined in this general framework and in the earlier explicit one.

VI. Competitive Process, Institutions, and Competitive Waste

A. The previous analysis should make it clear that the main losses of rent seeking activities arise for two reasons: (1) the process used to influence policy is costly and does itself not generate value. Much of the rent-seeking literature stresses the redistributive consequences of such political games. (2) Losses increase because of competition between groups. Outside of price competition in markets, the merits competition can not be taken for granted but have to be analyzed on a case by case basis.

B. Institutions, including the distributional rules of the rent-seeking contest, *implicitly* determine the type of activities that must be undertaken by potential rent-seekers, and the extent to which persons are free to compete in a particular contest.

i. Generally speaking, the losses from games where the rents are shared are below those in games where the rents all go to a single victorious group or individual.

ii. The rules of the game can also encourage the use of rent-seeking technologies which minimize their cost, or cause the process of rent-seeking to confer benefits of some sort on other parties. (Awarding the king's daughter to the Knight that wins an entertaining tournament.)

iii. If the rules, eligibility criteria, discourage opposing efforts from potential losers or from potential beneficiaries of similar policies (others who might also secure monopoly power), resources invested in the political influence game tend to decrease.

iv. The losses from rent-seeking games can be considered special cases of the "waste" generated by the use of resources in *nonbeneficial competitive processes*.

C. The basic structure of rent-seeking political influence games also applies to many other kinds of contests, as for example attempts to maximize personal status.

i. See my 1980 paper in the first rent seeking collection and in the over priced Tollison-Congleton collection.

ii. Also see various works by Robert Frank, including his book (1995) on positional games and winner take all games.

iii. Bagwatti (1982) calls such activities: Directly UnProductive Efforts: DUPE.)

D. The fact that rent seeking efforts vary according to the institutional structure creates incentives to adjust institutions.

i. One may hope that institutions are adopted so that rent-seeking losses are minimized.

ii. However, this may not be the case.

iii. And moreover, even in cases where rent-seeking losses are minimized, the institutions may simply encourage "efficient rent-seeking" so that all the rent-seeking efforts are EXTRACTED by the targets of those efforts (eg. politicians)

iv. See McChesney (1987) or (1997) for a somewhat cynical annalysis of political incentives to encourage rent seeking activities--eg to maximize rent extraction.

v. Congleton and Lee (2007) analyzed how a revenue maximizing government would create entry barriers to extract the maximal revenues from rent seekers. (Their math is developed at the end of this handout.)

VII. Rent Seeking Estimates and Evidence

A. Several studies have tried to quantify the extent to which losses might have been generated by political rent seeking.

i. In the study where the term rent-seeking was invented, Ann Krueger, 1974, argues that up to 7.3% of GNP in India (1964) and about 15% of GNP in Turkey (1968).

ii. Posner, 1975 estimates the DWL of monopoly in the US to be 3.13% and 2.209% of GNP respectively. Both these estimates are significantly higher than Harberger's estimate of 0.1% of GNP.

B. Perhaps the most ambitious of the efforts to estimate the deadweight losses of transfer seeking activities is the study of Laband and Sopholeus, 1992 *QJE*.

i. They attempt to use an GNP accounting method to characterize all of the activities which are under taken in order to secure or prevent transfers from taking place. This include such things a the court system, trade protection, national defense, locks, etc. To this they add actual transfers realized.

ii. They estimate that approximately 25% of GNP (950 million dollars) is involved in the transfer industry.

VIII. Appendix on Rent Extraction: On the Mathematics of Rent Extraction as a source of Revenue in Authoritarian Regimes (from Congleton and Lee 2009)

A. A smaller literature that has paralleled the rent seeking literature is that on rent extraction (McChesney 1987, 1997), which argues that states often purposely create and dispense rents in exchange for campaign support or bribes.

i. Note that this argument is the opposite of the Stigler argument that suggests that firms manipulate the state to obtain policies that generate rents for them (eg. entry barriors of various kinds).

ii. Here it is the state that is the beneficiary of the rents and the first mover.

B. Consider the case in which national government is independent of its citizens--as in a pure authoritarian regime--and interested in maximizing long term revenue from "its" country.

i. Suppose that it can tax its people and/or sell off monopoly privileges.

ii. The latter can be done explicitly and also implicitly, by determining the general extent of monopoly power, M, through broad polices such as anti-trust enforcement.

iii. A government's net revenues, N, in this case can be characterized as:

$$N = y(G, M, t, L, R)\, t - c(G) + \alpha r(M) \qquad (1)$$

iv. Where y is the national production function, G is the government service level, M is the degree of monopolization encouraged, L is the exogenous labor stock, R is the exogenous natural resource base, t is the proportional sales or income tax, c(G) is the cost of government services, and $\alpha r(M)$ is the revenue generated from would be monopolists. N is assumed to be strictly concave.

v. Differentiating with respect to government service level G, t, and M, allows us to characterize the net revenue maximizing combination of government services, tax rates *and monopoly policies*.

$$tYt + Y = 0 \qquad (2.1)$$

$$tYG - CG = 0 \qquad (2.2)$$

$$tYM + \alpha rM = 0 \qquad (2.3)$$

vi. Subscripts denote partial derivatives of the variables subscripted.

C. The revenue maximizing government selects its policies over government services, tax rates, and monopolization policies to satisfy the three first order conditions simultaneously.

i. Equation 2.1 implies, as in the Buchanan-Brennan model, that tax rates will be set to maximize tax receipts (with ideal government service levels and monopolization throughout the economy).

ii. Equation 2.2 implies, as in the Olson-McGuire model, that productive government services will be provided by a revenue maximizing dictatorship up to the point where marginal tax revenues equal the marginal cost of those services.

iii. It bears noting that Leviathan produces *fewer* government services than required to maximize national income when optimal marginal tax rates are less than one hundred percent.

- (The later reinforces the Buchanan-Brennan argument favoring progressive income taxation under Leviathan.)

iv. Equation 2.3 implies that *monopolization will be encouraged* up to the point where the marginal loss of tax receipts equal the marginal gains from rent-seeking receipts induced by those policies.

a. A net revenue-maximizing Fisc has a direct interest in the industrial organization of its domain that is not entirely benevolent.

- The marginal increase in revenues generated by increased monopolization, αrM , varies with the institutional setting, characterized by α, and with the extent to which increased monopolization induces rent-seeking by would be monopolists, rM.
- The marginal cost of inducing rent-seeking revenues varies with effectiveness of the tax system, tYM , and the rate at which national income is reduced by the monopoly grants conferred, YM.[1]

b. Given optimal government service levels, G*, and tax rates, t*, equation 2.3 implies that the larger is the marginal increase in rent seeking revenues received by those with policy making power and the smaller the marginal tax loss, the greater is the government's ideal extent of monopolization.

v. It bears noting that the inequality forms of equation 2.3 allow the possibility of two corner solutions.[2]

vi. First, there is a corner solution where no inefficient monopolization takes place.

vii. National income maximizing monopoly policies are adopted when the marginal tax cost of rent seeking is larger than marginal receipts, $- tYM > \alpha rM$, for all M.

a. In this case, the Fisc's "encompassing interest" in the size of the tax base causes monopoly power to be allowed or promoted only insofar as it adds to national income.

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[1] We interpret t as the effective tax rate, which may differ from both the statutory tax rate and the marginal tax burden. Opportunities to avoid paying taxes vary with the ability of the Fisc to police the tax law and opportunities to legally avoid paying taxes. It also bears noting that in some tax systems, tax revenues may actually increase as monopoly profits increase. For example, sales, value added, and profits tax revenues tend to increase as prices and monopoly profits increase. In such cases, rent-seeking possibilities may be expected to affect the choice of tax system as well as the degree of monopolization. We leave consideration of Leviathan's preferred tax *system* for future analysis. The income-based tax used in our analysis has been widely used in previous Leviathan models.

[2] We assume that the Fisc's objective function is strictly concave and that his constraint set is convex; consequently the Arrow Enthoven sufficiency conditions are satisfied. These imply that the corner solutions to the optimization problem with inequality constraints can be completely characterized using the Kuhn-Tucker first order conditions. The Kuhn-Tucker first order conditions imply that in cases where the conditions for an internal maximum or tangency condition are not satisfied, e.g. $- tYM \neq \alpha rM$ for $0 \leq M \leq 1$, the maximal values of the objective function lie along the constraints as discussed above.

b. Tradable copyrights, patents and exclusive land grants might be created, but other monopolies would be prevented by state action as with antitrust enforcement.

c. This is the only case where Leviathan will adopt the policies recommended in textbook discussions of optimal patent, trade and antitrust policies.

viii. The other extreme policy analogous to the Ekelund-Tollison interpretation of mercantilism is adopted when the marginal receipts from induced rent seeking exceed tax losses over the entire range of interest, e.g. when $tYM < \alpha rM$ for all M.

a. Complete monopolization of the economy can arise when the tax losses induced by monopolization are relatively small or when tax instruments are relatively ineffective sources of revenue (possibly because of shift of activities into the underground economy as in Marcouiller and Leslie, 1995).

b. In cases where tax losses are insignificant, the net revenue maximizing state attempts to *maximize* the size of rent seeking expenditures whenever $\alpha > 0$. Olson (1993) and Anderson and Boettke (1997) suggest that a good deal of the industrial policies of the former Soviet Union can be understood as such a corner solution.

ix. The intermediate cases between these corner solutions are the focus of the present analysis.

a. In this range, governments use a combination of tax, government services and monopolization policies to maximize net receipts.

b. Potential rent-seeking revenues lead government to adopt policies that induce *greater* monopolization than is consistent with maximizing national income, $YM < 0$ at M*, but the economy is not completely monopolized.

x. The implicit function theorem allows the relationships describing the Fisc's preferred vector of tax, government service and monopoly policies to be characterized as:

$$G^* = g(L, R, \alpha) \quad (3.1)$$

$$T^* = t(L, R, \alpha) \quad (3.2)$$

$$M^* = m(L, R, \alpha) \quad (3.3)$$

D. **Proposition 1**: *The greater is the possibility of obtaining additional revenues from rent-seekers, the more inclined the Fisc is to adopt policies that promote "inefficient" monopolization, e.g. to use rent-seeking games as a source of government revenue even though such policies reduce national income.*

i. The ideal monopolization policy, as characterized by equations 3.3, is of special relevance for the purposes of this paper.

ii. Using the implicit differentiation rule to differentiate M* with respect to α yields:

$$M^*_\alpha = \frac{\begin{vmatrix} tYGG - CGG & tYtG + YG & 0 \\ tYtG+YG & tYtt + 2Yt & 0 \\ tYMG & tYtM + YM & -t\alpha rM \end{vmatrix}}{\begin{vmatrix} tY_{GG} - C_{GG} & tYtG + YG & tYMG \\ YG+ tYGt & tYtt + 2Yt & tYtM + YM \\ tYGM & tYtM + YM & tYMM + \alpha rMM \end{vmatrix}} = \frac{[(tY_{GG} - C_{GG})(tY_{tt}+2Y_t) - (tYtG+YG)2\,](t\alpha rM)}{|H|} > 0 \quad (4)$$

iii. The derivative (equation 4) is unambiguously greater than zero in the case where the net revenue function is strictly concave.

a. (The second order condition of the original optimization problem requires $|H|<0$ and the bracketed term of the numerator to be greater than zero.)

b. The last term in the numerator is also negative under the assumption that greater rent's induce greater rent seeking revenues.

c. Consequently, the leviathan model unambiguously implies that policies oriented toward increasing monopolization expand as the government's ability to profit from induced rent seeking efforts, α, increases.

E. **Proposition 2**: *regulations or monopoly grants that provide protection in output markets are generally more valuable to prospective rent-seekers than are protected production processes (patents) for firms in a given industry.*

i. A monopoly privilege that grants the exclusive right *to sell* a specific product allows a firm to profit from production within its protected sphere, without fear of price competition from close rivals.

ii. Grants of patent protection for specific production processes similarly allow firms to realize extra-ordinary returns by ensuring their position as a low cost producer.

a. A patented production process yields a Ricardian rent or inframarginal profits if the patented process is more cost effective than those not protected.

b. However, the rent associated with a patent is smaller than the profit associated with a monopoly in the same output market(s) insofar as the profitability of any production process clearly increases if one is able to manipulate price as well as output.[3]

iii. The most valuable patents are those which generate such dramatic cost savings over other available methods that a monopoly results in the specific output markets, as patents on specific production processes occasionally do.

a. Moreover, output monopolies are more readily enforced than production methods are insofar as sales of outputs usually take place in public whereas production normally takes place in private.[4]

iv. **Consequently, a revenue maximizing Fisc will be inclined to grant monopoly protection to output markets rather than production processes, other things being equal.**

F. **Proposition 3**, **Ramsay Monopolization**: *the markets granted the most protection by the Fisc are those in which the demand for goods and services is least price sensitive. Consequently, the revenue maximizing pattern of monopolization tends to resemble a Ramsey tax.*

i. Monopolization of the least price sensitive markets maximizes the level of rent seeking induced because it maximizes the profits generated by a given degree of protection while minimizing the tax revenues lost by reduced output.

ii. To see this, we now disaggregate the original model of monopoly power within a market as a whole and focus on individual markets and revenues.

iii. Suppose there are *n* final goods markets that can potentially be granted a degree of monopoly power.

a. We represent the extent of monopolization generated by government policies in a particular industry as "monopoly mark up," mi , while retaining our assumption that government output is a pure public good and that the tax system is a broad based sales or proportional income tax.

b. We assume that in the absence of monopolizing regulation, the markets in question would be conventional competitive markets with constant marginal and average costs, $Ai = ai(t, G)$.

c. Tax rates and government services affect the average cost of producing output in market *j*.

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[3] This can be demonstrated mathematically as follows. Profit is revenue less cost. Consider the maximal profit associated with a given degree of monopoly power, M, and production technology, T. $\Pi^* = R(Q^*, M) - C(Q^*, T)$ Totally differentiating and appealing to the envelope theorem yields: $D\Pi^* = dM\,(\delta R/\delta M) - dT\,(\delta C/\delta T) > 0$ .Maximal profit rises as production technology improves (allowing lower production costs) and as monopoly power increases allowing greater revenues.

[4] A patent for a production process that can be used to produce products for *several* markets can be more valuable than an output market in any *single* market. Thus, to the extent that the Fisc protects production processes, we would expect such *broadly applicable* processes would attract the interest of a revenue maximizing Fisc before narrower markets. Protecting production methods does have the political advantage of being less observable than output protections. Of course, as noted above, this also makes patented production methods more difficult to protect.

iv. Average cost is increased by tax rates which reduce the effective real return to capital and labor, and is decreased by government services which lower transactions and transport costs.

a. Industry *i*'s output can thus be represented as, $Q^*i = qii(Pi,t,G)$ *where* $Pi = Ai + mi$.

b. Monopoly profits and total rent-seeking efforts in market *i* are miQ*i. Net revenue for the Fisc is now:

$$R = \Sigma i\ (t\ PiQ^*i + \alpha\ miQ^*i\ ) - c(G) \qquad (5)$$

v. In the case of a sales tax, monopolization can increase nominal tax receipts by increasing the value of output in the affected markets if total revenues or industrial income increases with price. Differentiating with respect to t, G and mi yields the first order conditions that characterizes the government's vector of taxation, services, and monopoly policies.

$$\Sigma i\ (\ PiQ^*i + t\ PiQ^*it\ ) = 0 \qquad (6.1)$$

$$\Sigma i\ (t\ PiQ^*iG\ ) - CG = 0 \qquad (6.2)$$

$$\Sigma i\ [t\ (Q^*i + PiQ^*iPi\ ) + \alpha\ (Q^*i + miQ^*iPi\ )] = 0 \qquad (6.3)$$

vi. Given t* and G*, equation 6.3 is satisfied when mi is such that:

$$\alpha m^*i + t^*Pi = (\ t + \alpha)(Q^*i\ /\ -\ Q^*iPi\ ) \quad for\ all\ i \qquad (7.1)$$

or

$$m^*i/\ Pi = [(\ t + \alpha)/\alpha\ ]\ [Q^*i\ /\ -\ Pi\ Q^*iPi] \ -\ t^*/\alpha \qquad (7.2)$$

vii. Given ideal tax and service policies, equation 7.2 indicates that the revenue maximizing vector of monopoly mark ups (as a percentage of the original price) is proportional to the price elasticity of demand in every market.

- (Recall that $\eta i = Q^*i\ /\ -\ Pi\ Q^*iPi$.)
-

IX. Empirical Evidence on the Magnitude of Interest Group Effects on Public Policy

A. The magnitude of interest group effects on public policy relative to those of electoral pressures is itself an empirical question.

i. There is, as a consequence, a fairly large empirical literature on the effects of interest groups on policies.

a. Much of the empirical research reminds me of the story about the economist who has lost his keys.

- A passerby notices an economist looking for something under a street light and asks if he can help, the economist accepts the offer, and the passerby asks where exactly he lost his keys.
- The economist replies over there by the car. I am looking over here because the light is so much better.

b. Much of the empirical literature does not clearly distinguish between electoral and interest group effects on public policy.

- And much of it provides only indirect evidence of interest group effects.

c. A good survey of the first two decades of empirical work on the effects of interest groups is Potters and Sloof (1996, EJPE).

ii. Much of the empirical literature focuses on campaign contributions:

- whether campaign contributions from interest groups affects their probability of being elected,
- and whether it subsequently appears to affect the voting behavior of elected candidates to office.

a. Most studies use data about US Congressional elections, although there are a few other studies.

b. These papers generally find:

- (i) that incumbents raise more money than challengers.
- (ii) that incumbents win most races for office
- (iii) that the marginal productivity of campaign resources tends to be higher for challengers than incumbents
- (iv) that interest groups tend to support incumbents over challengers.

c. There is, however, considerable debate over whether the policy positions of candidates are affected by contributions and whether those winning office vote in a manner that runs against their district-state interests.

d. See, for example, Stratmann (1991, 1992, 1995, 2006), Kroszner and Stratmann (AER 1998), Jacobson (1980, 1985, 2000), Potters, Sloof, and Van Winden (1997).

- See Morton and Comeron (1992) for an early survey of the election finance literature.

iii. The first case in which a change in voting behavior was identified statistically was Dennis Coates (PEEP 1996, U Mich Press), although in this case the votes that were switched by campaign contributions did not affect the legislative outcome.

B. There are also a few papers that analyze methods through which interest groups may affect Congressional decisions.

i. Here, anecdotes are more common than statistical evidence.

- Senior bureaucrats are often invited to testify in Congress and participate in executive decisionmaking which allows them to "frame" policy debates and strategically supply information.
- Senior bureaucrats often play a critical role in producing and disseminating the information in environmental, health care, energy, nuclear, and defense policies.
- The information provided by the bureaucracies often appear to play an important (direct and indirect) role in public policy debates and thereby national and state elections

ii. There are also a few fairly clear statistical evidence of effects

a. Statistically significant effects of interest groups on regulations are found, for example in:

- Cropper, Evans, Berardi, Ducla-Soares, and Portney (JPE 1992)[http://www.jstor.org/stable/2138811]
- Balla and Wright (AJPS 2001) [http://www.jstor.org/stable/2669325]

b. There are also a few papers that conduct international analysis of the effects of interest groups.

- Knack, S. (PC 2003) "Groups, Growth, and Trust: Cross-Country Evidence on the Olson and Putnam Hypotheses"
- Coates and Heckelman (PC 2003) [http://www.jstor.org/stable/30025909]

c. We'll take a close look at a few of these papers in this lecture, in part to see what the results look like and in part to get a sense of the "craftmanship" of solid empirical papers.

iii. "The Determinants of Pesticide Regulation: A Statistical Analysis of EPA Decision Making," Maureen L. Cropper, William N. Evans, Stephen J. Berardi, Maria M. Ducla-Soares, Paul R. Portney The Journal of Political Economy, Vol. 100, No. 1 (Feb., 1992): 175-197.

- This is a well-crafted paper that explores the extent to which interest bureaus maximize net benefits (or at least take costs and benefits into account), the influence of interest groups on regulatory decisions, and the extent to which "institutionally induced preferences" trump the ideological inclinations of senior bureaucrats.
- Their results support the first two hypotheses but not the last.
- Benefits and costs are taken into account, but interest groups affect the regulatory outcomes, and the marginal cost of lives saved tends to be very high and somewhat inconsistent across chemicals.

a. Abstract:

- This paper examines the EPA's decision to cancel or continue the registrations of cancer-causing pesticides that went through the special review process between 1975 and 1989.
- Despite claims to the contrary, our analysis indicates that the EPA indeed balanced risks against benefits in regulating pesticides: Risks to human health or the environment increased the likelihood that a particular pesticide use was canceled by the EPA; at the same time, the larger the bene- fits associated with a particular use, the lower was the likelihood of cancellation.
- Intervention by special-interest groups was also important in the regulatory process. Comments by grower organizations significantly reduced the probability of cancellation, whereas comments by environmental advocacy groups increased the probability of cancellation.

- Our analysis suggests that the EPA is fully capable of weighing benefits and costs when regulating environmental hazards; however, the implicit value placed on health risks-$35 million per applicator cancer case avoided-may be considered high by some persons.

b. The first third of the paper discusses the EPA's regulatory mandate and practices.

c. Page 183 summarizes the models that Cropper et. al. will use to determine the effects of cost-benefit analysis and interest groups.

- There is also mention of some of the "clever" data sources that they will use.
- (pg 186) risk and benefit data are published for each substance challenged.
- losses to producers from canceling a particular pesticide are also published (but not reduce consumer surplus from higher prices).
- Comments on recommendation an decisions are also collected and their authors can be classified by occupation.
- There is also a dummy variable for a particular controversial EPA head (pg 187).

d. Page 188-9 provides a table of their main estimates:

- They find that cost and benefits matter and have the expected sign,
- Comments by pro-regulation academics and environmentalists also matter and have the expected sign.

e. Given that the EPA appears to take account of risks and benefits, they next attempt to determine the extent to which they do this and the factors that seem to influence their decisions.

- (pg 191) "the ratio of its coefficient (cancer risks, suitably scaled) to that of producer benefits implies a value per statistical cancer case avoided of roughly $35 million (1986 dollars)."
- "By contrast, risks to mixers are insignificant in determining the probability of cancellation, and dietary risks are significant at conventional levels only in column 3. The value per cancer case avoided implied by this coefficient, however, is only $60,000."

f. Interest groups seem to quite influential: (pg 192) "The dramatic increase in the log of the likelihood function when interest group variables are added to the model attests to the importance of interveners in the regulatory process."

- They also note (pg 192-3) that the probability that interest groups comment on proposed regulations (cancellation of a pesticide) increases for "pesticides that pose a danger to marine life."
- (Indeed, more so than for reproductive effects, see estimates on pg 193.)

iv. "Interest Groups, Advisory Committees, and Congressional Control of the Bureaucracy." Steven J. Balla and John R. Wright, American Journal of Political Science, 45, No. 4 (Oct., 2001):799-812.

- This is an interesting paper, because it identifies and analyzes a fairly subtle channel through which Congress and interest groups can influence regulators (the bureaucracy), namely by influencing appointments.
- They paper analyzes a fairly narrow example of appointments to an advisory committee of the EPA.
- Again part of the purpose of focusing on the paper is to get a sense of the craftmanship and state of the art in the empirical papers on this subject.
- (Obviously, much more work could be done on this.)

a. Abstract:

- We propose that Congress controls the flow and content of information to the bureaucracy by creating federal advisory committees with membership rights for general categories of interests.
- We use data on the appointment of members to the National Drinking Water Advisory Council (NDWAC), an advisory committee within the Environmental Protection Agency to test whether the active interest in the legislative debate over drinking water are represented on the advisory committee,
- and thus in the EPA's policymaking process.

- Although agency officials are responsible for appointing members of NDWAC, we find that public endorsements by interest groups are influential in the agency's selection process.
- These groups provide reliable information to Congress about the applicant's true policy preferences.

b. [Here it bears noting that the authors seem to use "control" when the actually mean "influence." Agencies will normally have information available to them beyond that provided by advisory committees.]

- What attracted my attention to the paper was the rather subtle avenue through which interest groups are able to influence agency outcomes--through recommending persons to advisory boards--and their effort to estimate this influence.
- They note that there are currently about 1000 advisory committees in operation (pg 802).
- They also note (pg 803) that "which legislative interests are represented on advisory boards depends critically on the appointment process."

c. Their test is fairly extreme.

- They argue that past research (Gilligan and Krebiel 1989, Austin-Smith, 1992, Epstein and O'Halloran 1995) implies that advisory committees are more informative if they represent (all) opposing interests.
- They test to see whether Congress biases the information available to the EPA by selecting members of advisory boards that systematically under-represent some interests (pg 803).
- [Although a short model is proposed, most of their paper concerns the institutions of advisory agencies and the NDWAC in particular.]

d. Table 1 lists the 8 political active interest groups that testify in Congress on drinking water issues (re SDWA amendments) and classify the interests represented (pg 806).

- Table 2 lists endorsement of particular members of the NDWAC advisory committee by those groups (pg 807).
- (pg 808) "All the interests that actively participated in the development of the SDWA amendments were represented on NDWAC."
- (E.g. every member was endorsed by at least one of those groups.)
- The attempt to assess the relative influence of the interest groups with statistical methods and report the results in table 4 (pg 810).
- This influence varied somewhat (indeed some had negative effects) which suggests that not all interests were given equal weight.

e. Some of their conclusions do not seem to fit their results, but they regard the influence of interests group as benign in this case, because opposing views were evidently well represented (pg 811)

v. "Growth and Trust: Cross-Country Evidence on the Olson and Putnam Hypotheses ," Stephen Knack, Public Choice 117 (Dec., 2003): 341-355.

a. This is an interesting paper on interest groups in that it explores the effects of both "nasty" interest groups (Olsonian groups) and "benevolent" interest groups (Putnam groups).

- Knack is an Olson student and is widely cited in the development-growth literature, for his empirical work that introduced institutions, trust, and social capital into growth models.
- It is a paper that shows good craftmanship and addresses an interesting question.

b. The paper provides nice overviews of interest group-based analysis of economic development, the trust-social capital literature, and of the available international data that tries to measure some relevant variables.

- The data is not the best (as is common for international studies) and the results are not as strong as normal for published papers, but are none the less quite interesting.
- (Publication of such results was probably easier in this case, because it was included in a special volume of Public Choice devoted to reflections and analyses of Mancur Olson's work.)

c. Abstract:

- Olson (1982) and Putnam (1993) provide sharply conflicting perspectives on the impact of private associations on economic well-being and social conflict.
- Olson (1982) emphasized their propensity to act as special interest groups that lobby for preferential policies, imposing disproportionate costs on the rest of society.
- Putnam (1993) viewed memberships in horizontal associations as a source of generalized trust and social ties conducive to governmental efficiency and economic performance.
- Using cross-country data, this paper investigates the impact of associational memberships on generalized trust and economic performance, finding little support for Olson's view of the impact of groups, and only mixed support for the Putnam perspective.

d. The empirical analysis undertakes cross-country investment and growth regressions, augmented by various measures of interest group activities (pg 348).

- Knack finds only weak support for interest group effects on investment, but none on growth.
- Surprisingly, "Putnam groups" had negative effects (or at least correlations) with investment during 1980-1999.
- Property rights and the initial value of per capita income were more important determinants of growth and investment.
- Education had statistically significant effects on investment but not growth.
- R-squares range from .54-.35.

e. [It bears noting that the empirical research on growth is enormous, and although Knack (especially with Kiefer) has done a good deal of work in this area, the results vary quite a bit among studies.]

- The estimation strategy is very straight forward and does not try to account for interdependencies among the variables focused on.
- The sample of countries for which sufficient data was available was fairly small, which evidently limited one's choice of estimation techniques.

vi. "Interest Groups and Investment: A Further Test of the Olson Hypothesis," Dennis Coates and Jac C. Heckelman Public Choice, Vol. 117, (Dec., 2003):333-340.

a. This paper is essentially a quick comment on the Knack piece by other Olson students.

b. It shows provides evidence that Olsonian groups matter.

- The paper is interesting both as an example of friendly disagreements among academics and because it explores systematic differences between OECD and nonOECD nations.
- Although the paper does not really explain why, their results suggest that institutions matter.

c. Abstract:

- Mancur Olson's institutional sclerosis hypothesis may be evident in the effects of interest groups on investment in physical capital.
- To test this proposition, we use cross sectional data on 42 countries for which information on the number of interest groups is available to estimate the effect of those groups on the share of GDP that goes into physical investment.
- The results indicate that interest groups have a different effect on physical investment in OECD and non-OECD countries.
- In the OECD countries, we find support for the hypothesis that interest groups harm investment in physical capital.
- In developing countries, interest groups either have no effect on physical investment or they have a slight beneficial impact.
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X. Bureaucracy as Another Interest Group: An Overview of Political Agency Problems within Governments (and other organizations)

A. We often treat governance in same manner that we look at the production in most economic model of firms: as if governance took place mechanically and automatically. The electorate votes for a referendum, a legislature enacts a policy, a court makes a decision, and whatever is specified actually is adopted as government policy. In the end, all such policy decisions are implemented by unelected, and largely invisible, people working within government agencies. What ever "decision" is reached by an electorate, legislature or court, it is "the Bureaucracy" that implements it.

B. If bureaucrats entirely disinterested in policy and the "decisions" reached by political decision makers always crystal clear and specific, the bureaucracy could be considered a rather uninteresting area of public choice research.

i. If neither of these assumptions hold, bureaus will often exercise considerable discretion in the design and implementation of policy. Here, analysis of bureaucratic decision making will be required to understand many policy decisions.

ii. The public choice literature generally assumes that bureaucrats are no more public spirited than ordinary voters are and just as interested in income and public policies.

iii. Among the classic works on Bureaucracy are books by Tullock (1965), Downs (1967), and **Niskanan** (1971).

- ►Of these, Niskanan's approach, as extended and critiqued by Breton and Wintrobe (1975), was by far the most influential.
- ►It postulated the "**budget maximizing model**" of bureaucratic decisionmaking.
- ►All three volumes pioneered the literature on what later would be called the "principal-agent" model a decade or so later.

C. Bureaucrats will have at least some discretion over the implementation of policies for several reasons.

i. First, monitoring can never be perfect. That is to say, bureaucrats will possess some discretion over the implementation of policy simply because it is impossible to punish them for every possible error in implementation. (For example, some laws may go unenforced, at least on occasion, because no law enforcing agent has an incentive to enforce such laws. No one else knows who the guilty parties are or whether any such parties exist. Consequently there are neither specific rewards for performing one's duties nor penalties for malfeasance in many cases.)

ii. Of course a good deal of discretion over policy is explicitly delegated to the bureaucracy. The bureaucracy often has expertise--at the very least knowledge of time, place and circumstance--which policy makers lack. Because of this bureaus are often granted significant discretion to interpret and implement "the policy" in the manner that seems appropriate. In many cases, the actual writing of laws (deciding targets for pesticides and food additives) are delegated to the agencies.

iii. Politicians may also delegate decisions to the bureaucracy, not because of the bureaucracy's expertise or comparative advantage, but rather to avoid making public commitments on controversial regulations.

a. In the end, all agencies have at least some discretion over the implementation of their assigned duties. In cases where the aims of bureaucrats differ from those of the legislature or electorate, an agency problem may be said to exist.

b. That is to say, bureaucrats may decide to exercise their discretion in ways that fail to maximize the net advantage of their "sponsors" (the legislators or electorate).

- ►[Figure: Simple Shirking Illustration of a Principal-Agent problem.]
- ►[Shirking with monitoring example: Max Ue = P(L)U(Y , L) + (1-P(L)) U(Y-C,L)]
- ►Bureaucratic Inertia and Bias (Congleton, PC, 1980) [Figure]

iv. The modern literature on principle agent problems and contracts (which emerged well after the modern literature on bureaucracy)

suggests that there are a wide range of contractual means by which agency problems may be addressed.

a. For example, employees (bureaucrats) may be required to post a performance bond which they may redeem upon successful completion of an assigned task. Wages and salaries might be based on output (bridges built, cases handled, money's dispensed appropriately) rather than the quantity of an input (time spent on the job).

b. However, beyond prospects for promotions, such incentives are rarely used within the bureaucracy.

- Most bureaucrats are paid a straight salary which is largely independent of day to day performance.
- [In fact, you might argue that, given the method of compensation, agency problems in the US and most OECD countries are surprisingly small.]

XI. Niskanen (1971, 1975) proposes a Budget Maximizing model of bureaucratic behavior.

A. Why maximize a budget? Niskanen argues that bureaucrats have a direct personal interest in the size of their organization's budget because:

i. Opportunities for promotion tend to increase, and thereby expected salaries, as budgets increase

ii. Working conditions tend to improve--computers, office furniture, secretarial support, etc.-- as budgets increase.

iii. Non-pecuniary compensation tends to increase as resources become available for travel or projects of particular interest to a given bureaucrat.

iv. Moreover, to the extent that public employees are interested in the mission of their agency or bureau, they will gain additional satisfaction by being better able to advance the agency's mission as their budget increase. (Even very public spirited bureaucrats generally have an interest in larger budgets.)

a. Informational Asymmetries. The bureaucratic interest in larger budgets would not be significant, if they had no methods by which they might achieve higher budgets. Niskanen argues that the bureaucrat's superior knowledge of production methods, policy alternatives, (statistical) public demand for specific services, provides them the ability to make all or nothing offers to their sponsors (or oversight committees). In most cases, budgetary requests originate with the bureaucracy.

b. Implications. To the extent that bureaus can use all or nothing offers to secure budget increases, they will tend to have budgets that are larger than those which maximize net benefits for their sponsors (ultimately voters or interest groups).

v. In the case where marginal cost and the demand for the public service under their agency's power are linear, the maximum budget implies that twice as much of the service is provided as would maximize net benefits. [FIGURE from lecture]

a. There are many critics of the Niskanen model. For example:

b. Critiques: Migue and Belanger, 1974 argue that his objective function is too narrow, they suggest discretionary budgets rather than total budgets are maximized.

c. Critiques: Breton and Wintrobe, 1975, note that competition and monitoring limit opportunities to use all-or-nothing offers and reduce opportunities to manipulate information.

d. Critiques: Weingast and Moran, 1983, argue that if budgets are of particular interest to bureaucrats, then conditional budgets can be used to control their behavior. They provide evidence of this for the FTC (federal trade commission).

- [Changes in the political composition of Congress and oversight committees account for about half of the variation in FTC case loads (pg. 796.)
- [http://www.jstor.org/stable/1837369]
- The Weingast and Moran (1983) based research program on the bureaucracy and relations between the bureaucracy and Congress is quite large and generally supports their hypothesis that oversight works fairly well.
- Although, of course, not all models or empirical work reaches that conclusion.

B. An extension of the Niskanen approach to bargaining with Congress.

i. One of many extensions of the Niskanan approach was the "Full-Line Forcing" bargaining tactic analyzed by Mackay and Weaver (QJE, 1983)

ii. Mackay and Weaver extend the Niskanen type analysis to a setting in which the bureau produces multiple outputs.

a. Homogeneous citizens maximize Ui = u(Ci, X1i, X2i) where Ci is private consumption by individual i, X1i is consumption of service X1 by "i", and X2i is consumption of X2 by I.

b. They are constrained by a budget constraint: Yi = Ci + Ti, where tax payment Ti is a constant share of the total budget spent on government services. Here Ti = ti(B1+B2).

iii. Expenditures on government services can be restated in terms of budget share, k, so that B1 = kB and B2 = (1-k)B where B is the total budget.

- This allows the voter's choice to be written as: Ui = u(Yi-tiB, kB, (1-k)B).
- (Note that we have implicitly assumed that both government outputs cost one dollar each.)

iv. Differentiating with respect to B and k, we find that the ideal budget level and service mix will satisfy:

a. $UC(-t) + kU_{X1} + (1-k)\,U_{X2} = 0$ and $U_{X2} = U_{X1}$ simultaneously.

- [Illustration of first order conditions.]

b. These first order conditions are the reference point for the M&W analysis.

v. In their model, the bureau controls the budget mix and the "voter" controls the budget level.

a. If voters can take the budgetary mix as given, only the first f. o. c. is relevant, UC(-t) + kUX1 +(1-k) UX2 = 0, and the ideal budget level can be written as: Bi* = b(k, Yi)

b. The Bureau is assumed to set k to maximize its budget. From the implicit function differentiation rule, we know that Bi* k = 0 when

$$Ucc(-t)2 - 2ktUcX1 - 2t(1-k)UcX2 + UX1 + k2U_{X1X1} - U_{X2} + (1-k)2U_{X2X2} = 0$$

- This is very unlikely to be the same point as required to maximize the "sponsor-voter's" welfare.

c. [Illustrating figure with B* function and k* functions, based on "Va" above, contrasted with revenue maximizing B and k.]

- In cases where voters are not homogeneous, the voting rule becomes relevant. Here they must optimize over the win set of the status quo rather than with respect to a single representative (or median) person's welfare. [Figure]
- Note that most models of agency problems can be applied here. For example, the bureau/bureaucrat may have policy preferences, or different degrees of risk aversion. [add bureaucrats indifference curves to figure drawn for d.]

vi. M & W clearly demonstrate that the ability of bureaucrats to affect public policy clearly depends upon the range of authority that the institutional and economic environment allows it.

XII. Other Analysis of Bureaucratic Agency Problems

A. Political Oversight: is limited, because voters (and most interest groups) cannot "afford" to devote very much time to monitoring bureaucracies.

i. Instead, they rely for the most part on "fire alarms" that bring bureaucratic failures to their attention (Lupia and McCubbins 1994, Hopenhayn and Lohmann 1996).

ii. Fire alarm models generally imply that the risk of "shirking" being detected is less than 1 and the penalties are often small, so the expected cost of "shirking" tends to be fairly small.

iii. Fire alarms constrain but do not eliminate opportunities to exploit information asymmetries between voters, Congress, and the bureaucracy.

B. The bureaucracy, like other interest groups, can influence policy outcomes through persuasive campaigns.

i. They have a good deal of power to do so, because government agencies are the principal source of many kinds of

information--including economic statistics, environmental quality, terrorist risks, etc...

- This potentially allows the bureaucracy to manipulate the the demand for their services (Congleton and Fabiano, 1997 working paper).

ii. In some policy areas, the bureaucracy directly controls regulations.

iii. In other policy areas, the bureaucracy is a direct producer of "private" services and can engage in predatory pricing (Lott, 1990, J. Pub.E.)

C. There is a neglected form of principal-agent problem that tends to arise when a government attempts to hire the most-qualified person for every job in the public sector.

a. Agents hired under objective productivity standards often have policy interests that differ systematically from those of elected principals and/or the electorate.

b. This tension over policy is an entirely natural consequence of career choices by individuals and hiring decisions within the bureaucracy.

c. Moreover, this tension between agents and principals can be in the interest of a well-functioning government.

- Agent-principal differences over policy can be a source of significant agency problems in policy areas where agent control problems are severe, as in the case of international treaties. (Congleton, 2002, 2006)

D. Overall, the bureaucracy is just one of many interest groups with policy aims that differ from those of the median or average voter.

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