I. Introduction. 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.

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

B. 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.

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

   ii. 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,

   iii. and Richard Posner (1975, *JPE*) attempted an empirical analysis of the dead weight loss of rent-seeking by would-be monopolists.

C. 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."

      c. (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".)

   ii. 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."

   iii. (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.)

D. 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.

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

      a. 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).

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

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

   ii. 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.

   iii. 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.

   ▼ 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.

B. 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."

   i. 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.

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

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

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).

- ▼ 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.

i. 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.

- ▼ 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.

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

iii. 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).

B. 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.

i. In his 1983 piece, Becker models a political influence game between two groups composed of self-interested net benefit maximizers.

ii. The redistribution takes place via taxes and subsidy interests which can be more or less efficient.

iii. 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).

iv. 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.)

v. 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 $F(Rt) \le R_t$. 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 $R_s \le G(R_s)$.

vi. Note that $n_t F(R_t) = n_s G(R_s)$ [all revenues collected are paid out as subsidies.]

vii. 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.

viii. 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.

ix. 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: $G^{-1}(G(R_s)) = R_s = G^{-1}(I_s/n_s)$

x. 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]

xi. These first order conditions can be used as the source of Cournot reaction functions for the political pressure game.

xii. One can get some sense of the comparative statics of the first order conditions.

a. [Diagram of a* at "MB"="MC"]

b. 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.

c. 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.

d. The more political pressure produced by an additional group expenditure, the higher the marginal benefits are and the greater a* is.

e. [Figure with Nash equilibria for typical members of each interest group, comparative statics]

xiii. 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.

B. 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.

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

ii. 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):

C. 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.

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

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

iii. [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.

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

▼ [Draw a figure with Harberger and Tullock losses from monopoly or tariffs.]

D. 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.

i. For example, 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. (Here D in the limit is zero, rather than negative.)

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

V. The Mathematics of Rent Seeking

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 deter-mine 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. Contrariwise, 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. Illustrating Game

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" contain-ing 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 $\Pi R_O / C = (R_i + R_O)^2$

- ▼ Player 1's best reply function is $R_i^* = -R_O \pm \sqrt{(\Pi R_O / C)}$
- ▼ (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 $R_i^{**} = -(N-1)R_i^{**} \pm \sqrt{(\Pi (N-1)R_i^{**}/C)}$.
- ▼ which implies that $N R_i^{**} = \sqrt{(\Pi (N-1)R_i^{**}/C)}$

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

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

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

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

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

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

C. 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.

i. 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.

ii. 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,
$$\mathbf{R}^{**} C = [\Pi/C] C = \Pi.$$

iii. 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.

D. 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 recent book on positional games and winner take all games.

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

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.