

I. Introduction.

- A. One of the core intuitions that economists develop from their exposure to micro-economics courses over the years is that competition is "good." It tends to increase innovation and productivity, while lowering production costs and prices for consumers. Barriers to entry are "bad," because they interfere with competition.
- B. The rent-seeking literature points out, perhaps surprisingly, that competition is not always good. Competition that does not directly produce public services or enhance the net value of final goods, can **waste** rather than create valuable resources.
- C. The rent seeking literature began with a piece by Gordon Tullock (1967) "The Welfare Costs of Tariffs, Monopolies and Theft." The focus of Tullock's analysis was on competitive circumstances in which resources were evidently wasted in value **reducing** contests such as (i) crime, (ii) lobbying for tariff protection, (iii) lobbying for entry barriers or monopoly privileges.
 - i. That resources could be wasted in this manner was an idea that had been totally neglected by mainstream welfare economics.
 - ♦ Tullock argued that in addition to the dead weight loss triangle of Harberger's analysis of monopoly, additional resources were wasted by monopolists striving to erect legal barriers to entry.
 - ♦ That is to say, prior monopolizing activities should also be counted as part of the dead weight losses of monopoly.
 - ii. Initially, this idea was largely ignored--until it was rediscovered by Anne Krueger and Richard Posner about ten years later in the mid 1970s.
 - ♦ (Here we see the benefits of reinventing the wheel! Who knows whether it would ever have been picked up as an important field of research without these rediscoveries.)
 - iii. Tullock's original idea has since been extended in a number of ways over the years to embrace interest group politics, the role of institutions in shaping competitive processes, anarchy models, and the evolution of culture.
- D. The logic of Tullock's normative analysis is based on the difference between **productive and unproductive activities**.
- E. Illustration: suppose that R units of a scarce 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 resources with value V have been used to create D, one can say that the resources have clearly been wasted: e. g. consumed in a value decreasing process, in the sense that value has been reduced rather than created by this investment.
 - ii. $D - V$ can be considered the social cost of using resource R in this manner.

- iii. Rent seeking is one such unproductive process. Resources may be wasted in the sense that the final result of successful rent-seeking is worth less than the resources originally invested.
- iv. This is most obvious in cases in which the final result reduces rather than increases social net benefits, or, better, when the result is Pareto inferior to the original pre-rent-seeking state.
- v. Suppose resource R is devoted to a political influence game (lobbying) to obtain D. If the opportunity cost of those resources is $V(R)$, then the net benefit generated by this rent-seeking activity is $D - V(R) < 0$.
 - ♦ Notice that this loss always exists if $D < 0$ and $V > 0$, but will also exist if $D > 0$, if $D < V(R)$.
 - ♦ (D is the "net value" of the result of lobbying, which may include some positive results, e. g. the successful monopolist's profits.)
- vi. [In the case of monopoly, the "net gain," D , is 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 monopolizing process.]
- F. Because a *dead weight loss from employing R to produce D exists as long as $D < V(R)$* , even somewhat productive political activities may have a rent-seeking loss associated with them.
 - i. Bhagwati (1982) calls such uses of resources: *Directly UnProductive Efforts*. DUPE
 - ii. 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.)
 - iii. [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. Earlier Chicago analysts seem to share this pessimism, Stigler/Peltzman.]

II. A Rent Seeking Game

- A. The rent-seeking literature has used a game theoretic frame of analysis to analyze the extent to which resources will be invested in a rent-seeking contest..
- B. The most widely used rent-seeking models assume that the process of lobbying (persuasion) is similar to a **lottery**.
 - i. The special favors obtained from or through government--tax breaks, protection from foreign competition, contracts at above market rates etc.--are assumed to be awarded to a single contest winner.
 - ♦ Rent seeking games are usually modelled as winner take all games.
 - ♦ Exceptions include Congleton (1980/1983) and Long and Voudsen (1987), who examine rent-sharing games as well.]
 - ii. The size of the "rent" is normally assumed to be exogenous.

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.
- Contrariwise, the greater the efforts of alternative rent-seekers, the less likely a particular rent-seeker is to succeed.
- As a first approximation of this political influence game, investments in political influence are generally modeled as if those efforts were **purchases of lottery tickets**.

C. Illustrating Rent-Seeking 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" 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, the number of tickets that maximizes player 1's *expected reward* for a given purchase by all other players can be determined by differentiating the expected rent $\Pi^e = \Pi [R_i / (R_i + R_o)] - CR_i$ with respect to R_i and setting the result equal to zero.

v. which yields: $\Pi [1 / (R_i + R_o) - R_i / (R_i + R_o)^2] - C = 0$

- Which implies that: $\Pi [R_o / (R_i + R_o)^2] - C = 0$ or $\Pi R_o / C = (R_i + R_o)^2$

vi. Solving for R_i allows player i's best reply function to be characterized as

- $R_i^* = -R_o \pm \sqrt{(\Pi R_o / C)}$ Of course, only the positive root will be relevant in cases where R_i has to be greater than zero.

vii. 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.

- 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 $NR_i^{**} = \sqrt{(\Pi (N-1)R_i^{**} / C)}$ or squaring both sides, dividing by R_i^{**} and N^2 and gathering terms, that the typical rent seeker invests:

$$R_i^{**} = [(N-1)/N^2] [P/C] = [(1/N) - (1/N^2)] [P/C]$$

units of resources in the game at a cost of C dollars each.

viii. **Total rent seeking effort** is N times the amount that each player invests times its cost: $NCR_i^{**} = [(N-1)/N^2] [P/C] = [(1 - N)/N] [P]$

- ◆ Example: In the two person unit cost case, $R = \Pi/2$. Half of the value of the prize is consumed by the process of rent seeking. [See the class notes.]

- ◆ Exanoke: In the limit as N gets large, the resource invested in the contest approach the total value of the prize!

D. The affect of entry on individual and total rent seeking expenditures can be determined by inspection or by differentiation Cvii with respect to N.

- 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.
- The effect of increases in the cost of participating in the political influence game and changes in the size of the RENT obtained by the winning rent-seeker can also be determined by differentiating with respect to C and P, respectively.

- ◆ (A surprising property of this game is that C does not affect the magnitude of the rentseeking investment, only N and R do!)

E. The basic model can be generalized to cover cases where the prize is endogenous and where the probability of securing the prize varies among players, and to cases in which the contest involve several stages.

III. Competitive Process and Competitive Waste

A. The previous analysis should make it clear that the main losses of rent seeking activities arise for two reasons:

- 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.
- Losses increase because of competition between groups, because competition induces larger investments.
 - ◆ The merits competition can not be taken for granted but have to be analyzed on a case by case basis--outside of price competition in ordinary private markets.

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

- 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.)
 - ◆ 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.
 - ◆ 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.

- ♦ Losses also fall if the process by which the rents are allocated can not be influenced--as with an equal share rule or random assignment of the prize.

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

- i. 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.
- ii. (See my 1980 paper in the first rent seeking collection and in the over priced Tollison-Congleton collection. Also see various works by Robert Frank, including his recent book on positional games and winner take all games.)

IV. 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, and Schwartzman estimate 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 Sopher, 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.