Rent seeking

Autumn term 2011
Introduction

- Rent seeking: the pursuit of monopoly rents that the government can help provide. (Kruger, 1974)
- Monopoly: set price above competitive level
- Traditional view: deadweight loss occurs: Triangle L - R is simply a transfer from consumers to firm (no social loss)
- However, imagine there are a number of firms that could be granted monopoly status
- Competition (invested resources) for the monopoly rent R will create a social cost of monopoly
- three types of rent seeking
  1. Efforts and expenditures of potential recipients of the monopoly
  2. Efforts of government officials to obtain or to react to the expenditures of the potential recipients
  3. third-party distortions induced by the monopoly itself or the government as a consequence of the rent seeking activity
The theory of rent seeking

- \( n \) players that each invest \( I \) to capture a rent \( R \)
- Probability of an individual \( i \) capturing the rent is given by:

\[
\pi_i(I_i) = \frac{f_i(I)}{\sum_{j=1}^{n} f_j(I)}
\]

- Usually assume \( f_i(I_i) = I_i^r \) where \( r = 1 \) constant returns, \( r < 1 \) diminishing returns, or \( r > 1 \) increasing returns
- Expected gain is thus:

\[
\frac{I_i^r}{\sum_{j=1}^{n} I_j^r} - I
\]

- Symmetric equilibrium:

\[
I = \frac{n - 1}{n^2} rR \tag{1}
\]
Returns to effort

- Diminishing or constant returns. Player will only participate if
  \[ \frac{n}{n-1} \geq r \]  \hspace{1cm} (2)

- As we are concerned with minimum two players \( 1 < \frac{n}{n-1} \leq 2 \), which always holds: equilibrium always exists.

- Total invested is
  \[ nl = \frac{n-1}{n} rR \]  \hspace{1cm} (3)

  Dividing by the rent, we get the total amount invested as a fraction of rents sought:
  \[ \frac{n-1}{n} r \]  \hspace{1cm} (4)

- As \( n \to \infty \) rent is fully dissipated (minimum is \( 1/2 \))
- For \( r < 1 \) rent is always under dissipated
Increasing returns

- Let $1 < r \leq 2$.
- For $n \geq 2$ upper bound of $\frac{n-1}{n}$ is 2
- For existence of equilibrium: inverse relationship between $r$ and number of rent seekers.
- With $r > 2$, increasing returns are sufficiently strong that no pure strategy equilibria exists.
- Mixed strategy does exist
Sequential investments

- **Stackelberg game**: Leader moves first then follower

\[ \pi_L(I_L) = \frac{I_L}{I_L + \alpha I_F} \]

where \( \alpha < 1 \) implies leader’s investment is more effective and vice versa.

- Reaction functions of players are:

\[ I_L = \sqrt{\alpha RI_F - \alpha I_F} \]
\[ I_F = \sqrt{\frac{RI_L}{\alpha} - I_L} \]

- Solving this game we get:

\[ I_L = \frac{R}{4\alpha}; I_F = \frac{R}{2\alpha} \left(1 - \frac{1}{2\alpha}\right) \]
Relaxing the assumptions

- Risk Neutrality
- Rent Seeking among groups
- Probability of winning is not defined logistically
Rent seeking through regulation

- Price set for monopolist (by regulated) can be thought of as political struggle between consumers and producer (Peltzman, 1976)
- A vote-maximizing politician.
- Votes $V(U_R, U_C)$ are a function of utility from firm and consumers
  \[
  U_R = R; \quad U_C = K - R - L
  \]
- Regulator sets the monopoly price so that:
  \[
  \frac{\partial V}{\partial U_R} \frac{dR}{dP} = \frac{\partial V}{\partial U_C} \left( \frac{dR}{dP} + \frac{dL}{dP} \right)
  \]
- Vote-maximizing regulator sets price st marginal gain in support from producers for an increment in monopoly rents is just offset by the loss in consumer votes from a combined rise in $R$ and $L$
- Likely $\frac{\partial V}{\partial U_R}$ is large as easier to coordinate firms (less of them)
- Price is determined somewhere between perfect competition and monopsony
Endogenous protection models

- using rent seeking to provide protection against foreign competitors in terms of tariffs/quotas
- Grossman and Helpman (1994): Regulator’s objective function is weighted sum of utilities from all citizens and political contributions from lobbyists.
- Protection occurs for industries that have good organization of lobby groups and higher tariffs on products with more inelastic demand schedules
Welfare losses from rent seeking

<table>
<thead>
<tr>
<th>Study</th>
<th>Year</th>
<th>Welfare loss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Krueger</td>
<td>1974</td>
<td>7-15%</td>
</tr>
<tr>
<td>Posner</td>
<td>various</td>
<td>3%</td>
</tr>
<tr>
<td>Laband and Sophocleus</td>
<td>1985</td>
<td>50%</td>
</tr>
</tbody>
</table>

Two groups: (1) Proxies losses caused by tariffs and market power or increases in government spending (2) calculate lobbying costs

The latter does is much smaller that the first: BUT recall from the start of the lecture where the social losses occur—simply calculating lobbying costs does not account for all losses.