1 Repetition

Last time, we studied the rent-seeking model.

Let's repeat the basics as we are going to use it to study lobbying later today.

We now have 2 risk neutral agents only who compete for a rent ω.

Agent A may make investments, x_A, to increase her probability of winning the rent.

Her probability to win is given by

$$p_A = \frac{x_A}{x_A + x_B}.$$

So agent A solves

$$\max_{x_A} \frac{x_A}{x_A + x_B}\omega - x_A.$$

The first-order condition is

$$\frac{x_B}{(x_A + x_B)^2}\omega - 1 = 0.$$

Since agents are identical we can impose symmetry to get

$$\frac{x}{(2x)^2}\omega = 1.$$

Solving for x yields

$$x = \frac{\omega}{4}.$$

Total investments, $2x = X$, are equal to

$$X = \frac{\omega}{2}.$$

Exactly half of the cake is wasted in the competition for it.

2 Lobbying

We will start by discussing the “logic of collective action” (Olson 1965).

Individuals who have similar policy preference have much to gain from pooling their resources to pursue common political aims.

However, there is always the temptation to free ride, and hope that somebody else will do the costly lobbying investments.

2.1 Lobbying for a Pure Public Good (Katz, Nitzan and Rosenberg 1990)

Sometimes groups lobby for government support for getting a specific public good.

This can be attempts to persuade the government to

- impose taxes on competing industries.

- use more lax regulation.

- provide government institutions (to enhance employment in a region).

- locate a public good in a specific region (such as a park).

Consider the following model where individuals in two different districts want the government to remove pollution.

The government can however only clean up one of the two districts.

Lobbying (or rent seeking) activities by individual i in group 1 are given by X_i and lobbying activities by individual j in group 2 by Y_i.

The more the individuals in each group lobby, the larger is the probability that pollution will be removed in their district.

In particular, the probability for group 1 to be successful in the lobbying campaign is given by

$$\Pi_1 = \frac{\sum_{i=1}^{n} X_i}{\sum_{i=1}^{n} X_i + \sum_{i=1}^{m} Y_i}.$$

There are n individuals in group 1 and m individuals in group 2.

All individuals are risk neutral and identical.

Also, $\Pi_2 = 1 - \Pi_1$.

The cost of the removal is given by R, but each group values the removal at αR dollars.

Agent i in group 1 solves

$$\max_{X_i} V_i = \Pi_1 \alpha R - X_i.$$

That is,

$$\max_{X_i} V_i = \frac{\sum_{i=1}^n X_i}{\sum_{i=1}^n X_i + \sum_{i=1}^m Y_i} \alpha R - X_i.$$

The first-order condition is

$$\frac{\sum_{i=1}^m Y_i}{(\sum_{i=1}^n X_i + \sum_{i=1}^m Y_i)^2} = \frac{1}{\alpha R}.$$

Since agents are identical we get

$$\frac{mY}{(nX + mY)^2} = \frac{1}{\alpha R}.$$

Similarly for group two we achieve

$$\frac{nX}{(nX + mY)^2} = \frac{1}{\alpha R}$$

Adding these two equations we achieve total investments in lobbying

$$\frac{mY}{(nX + mY)^2} + \frac{nX}{(nX + mY)^2} = \frac{1}{\alpha R} + \frac{1}{\alpha R},$$

which simplifies to

$$nX^* + mY^* = \frac{\alpha R}{2}.$$

Recall the standard "Tullock model".

The solution was

$$X^{TULLOCK} = \frac{N-1}{N}\alpha R.$$

It can be shown that this model generates the same result as the current lobbying model.

To see this in the case of two individuals (since we have two groups), let $N = 2$. Then

$$X^{TULLOCK} = nX^* + mY^* = \frac{\alpha R}{2}.$$

Result: when two lobbies are investing to get a public goods, the total amount of their investments is identical to the case when two persons are investing to get a private good. This means that in large groups, the investments per person are very low!

Intuition: The free riding effect just counterbalances the public good effect.

The reason for this is that, whilst each new individual reduces the rent seeking done by others (i.e., free rider problem increases with group size), the rent seeking done by that individual is equal to the aggregate reduction of rent seeking done by others.

Now, by dividing $\frac{mY}{(nX+mY)^2} = \frac{1}{\alpha R}$ by $\frac{nX}{(nX+mY)^2} = \frac{1}{\alpha R}$ we get that

$$mY = nX.$$

The probability to win for the groups is therefore

$$\Pi^* = \frac{1}{2}.$$

Independently of group size, the probability to win the lobbying contest is identical.

However, if $n > m$ it is clear that investments per individual will be lower in group 1.

Here we see clearly the impact of free riding within the group.

2.1.1 Locations with different amount of wealth

Let's now consider the situation where one group is richer than the other.

Let 1 be the richer location so that $\alpha_1 > \alpha_2$.

The first-order conditions are now

$$\frac{mY}{(nX + mY)^2} = \frac{1}{\alpha_1 R}, \tag{1}$$

and

$$\frac{nX}{(nX + mY)^2} = \frac{1}{\alpha_2 R} \tag{2}$$

We therefore have

$$\frac{mY\alpha_1}{(nX + mY)^2} = \frac{nX\alpha_2}{(nX + mY)^2} = \frac{1}{R}$$

This implies that

$$\alpha_1 mY = \alpha_2 nX,$$

or

$$mY = \frac{\alpha_2}{\alpha_1} nX.$$

When $\alpha_1 > \alpha_2$ we have that

$$mY = \frac{\alpha_2}{\alpha_1} nX < nX.$$

The wealthier region invests more than the poorer region.

Hence, as we might expect, the likely winner of the clean-up is the wealthier region.

2.2 Lobbying in the Grossman & Helpman setting (chapter 4.1.1*, 4.1.2* and 5.1.1*)

We now shift focus from the costs of investments in lobbying to the information-distortion that lobbying may create.

We study a model in which a single lobby has information relevant to a policymaker's decision.

The welfare of a policymaker depends on the level of a policy variable p, and some facts about the world, captured by θ.

This could for example describe something about the voter's preferences.

The policymaker's objective function is given by

$$G(p, \theta) = -(p - \theta)^2$$

We note that the value of this function is maximized when $p = \theta$.

The interest group's (or similarly the lobbyist's) preferences are given by

$$U(p, \theta) = -(p - (\theta + \delta))^2$$

Thus, the group has an ideal policy of $p = \theta + \delta$, so there is a divergence among politicians and individuals.

It is assumed that the interest group has better information about the policy environment than the policy maker.

In particular, the lobbyist knows θ.

Assume there are only two states of the world, θ_H and θ_L .

The policy maker sets $p = \theta$ when the lobbying group reveals the true state of the world.

She sets $p = E\widetilde{\theta}$ when she remains uncertain about the state.

Now, will the lobbyist reveal the correct information?

Result:

- If the true state is θ_H then the lobbyist has no incentive to misrepresent the facts. This is because by claiming that the true state is θ_L the utility will be lower (see figure).

- If the true state is θ_L then the lobbyist has not incentive to misrepresent the facts if

$$(\theta_L + \delta) - \theta_L \leq \theta_H - (\theta_L + \delta),$$

which is the same as if

$$\delta \leq \frac{\theta_H - \theta_L}{2}.$$

Thus, when this condition is satisfied there exists an equilibrium with informative lobbying.

Note that for this to hold it is necessary to have a sufficient degree of alignment between the interests of the policymaker and the interest group (a small δ)!

If this condition is not satisfied (when $\delta > \frac{\theta_H - \theta_L}{2}$), then the lobbyist's report lacks credibility.

The politician knows that the lobbyist has incentive to announce the state θ_H no matter what the true state happened to be.

So the politician ignores the report prepared by the lobby and sets the policy

$$p = \frac{\theta_H + \theta_L}{2},$$

which matches her prior about the mean value of $\widetilde{\theta}$.

There is also a “babbling equilibrium” in this game in which the policy maker distrusts the interest group. In this case, she sets

$$p = \frac{\theta_H + \theta_L}{2}$$

independently of what the interest group says, and the interest group has no incentives to lobby.

2.2.1 Lobbying with fixed exogenous costs

Assume now that the lobbying groups has fixed exogenous costs of lobbying.

These can be payments to experts and lawyers who are needed to prepare the policy briefs and to argue the group's case.

There is again a single interest group, whose preferences are represented by the function

$$U = -(p - (\theta + \delta))^2 - l.$$

l is new and represents the cost of lobbying.

If the group does note choose to lobby, then $l = 0$.

Otherwise $l = l_f > 0$.

The policymaker has again the objective function

$$G(p, \theta) = -(p - \theta)^2$$

Timing:

(1) The interest group learns the true value of θ.

(2) It decides whether to bear the cost l_f.

(3) The policymaker updates her beliefs.

(4) The policymaker chooses the policy level to maximize her expected utility.

When $l_f = 0$, the problem is identical to the previous section.

As before, when the state is θ_H, there is no risk of false reporting, since the group would never wish to report a value for θ smaller than the actual one.

But when the state is θ_L the group may be tempted to misrepresent its case.

Suppose that in this case, the lobbying group does not find it worthwhile entering.

The policy maker now takes a group's willingness to lobby to imply that $\theta = \theta_H$ and a failure to lobby to means that $\theta = \theta_L$.

Paradoxically, the group might fare better when lobbying is costly than when it is not!

But let's first solve for the equilibrium.

The group is willing to pay the lobbying cost in state θ_H if and only if

$$-(\theta_H - (\theta_H + \delta))^2 - l_f \geq -(\theta_L - (\theta_H + \delta))^2,$$

which is the same as

$$-\delta^2 - l_f \geq -(\theta_L - (\theta_H + \delta))^2.$$

That is, if

$$l_f \leq (\theta_H - \theta_L)(2\delta + \theta_H - \theta_L) \equiv k_1$$

The group must also prefer to refrain from lobbying when the state is θ_L (which we initially assumed).

The condition for this is

$$(\theta_L - (\theta_L + \delta))^2 \geq -(\theta_H - (\theta_L + \delta))^2 - l_f,$$

which is the same as

$$-\delta^2 \geq -(\theta_H - (\theta_L + \delta))^2 - l_f.$$

That is, if

$$l_f \geq (\theta_H - \theta_L)(2\delta - \theta_H + \theta_L) \equiv k_2$$

Since $k_1 > k_2$ there is a range of lobbying costs for which both conditions are satisfied.

How do the policymaker and the interest group each fare in an equilibrium with costly lobbying compared to how they fare in an equilibrium with costless lobbying?

Recall that if

$$\delta > \frac{\theta_H - \theta_L}{2},$$

then the policymaker sets

$$p = \frac{\theta_H + \theta_L}{2},$$

which is not her ideal point.

When l_f lies between k_1 and k_2 the costly lobbying allows the policy maker to infer the true value of θ, in which case she achieves her ideal policy in both states of the world.

This is better than in the no-cost case when the politician sometimes gets distorted information.

What about the utility of the interest groups?

If

$$\delta > \frac{\theta_H - \theta_L}{2},$$

then their utility in the no-cost case is

$$U\mid_{l=0} = \frac{(\frac{\theta_H + \theta_L}{2} - (\theta_H + \delta))^2 + (\frac{\theta_H + \theta_L}{2} - (\theta_L + \delta))^2}{2}$$

In the case of positive costs, she achieves $-\delta^2 - l_f$ in state θ_H and δ^2 in state θ_L so

$$U\mid_{l>0} = -\delta^2 - \frac{l_f}{2}$$

Result:

$$U\mid_{l>0} > U\mid_{l=0} \text{ if } l_f < \frac{(\theta_H - \theta_L)^2}{2}.$$

Positive lobbying costs may enhance utility for interest groups!

The reason is that the policymaker knows that the costs reduce the incentives the interest group has to falsely report the low state of the world θ_L.

This implies that the policymaker more seldom sets the average policy $p = \frac{\theta_H + \theta_L}{2}$.

Because $p = \frac{\theta_H + \theta_L}{2}$ is a bad policy from the interest group's point of view it may be better off when there are costs of lobbying.