Section 8

Accountability, Selection and Pandering

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Plan for today

- Say a bit more about sanctioning vs selection.
- Do the exercise of finding the false leadership equilibrium in the pandering model.

Moral hazard

Recall the standard static moral hazard problem we saw in lecture.

- The principal wants an agent to perform an action a.
- The action is unobservable, but an outcome y is.
- Solution: an incentive contract.
  - The principal commits to make a payment contingent on y.
  - E.g., flat wage + bonus contingent on stock price (or stock options).

Can we think of electoral accountability in this way?

Contract theory

What does contract theory say?

- The payment should be a function of all relevant information, even if it's about outcomes that the agent doesn't control [Hölmstrom, 1979].
  - E.g., performance of others in order to account for common shocks.
- "You get what you pay for."
  - If there are multiple actions, the agent will work harder on the actions that the reward is most sensitive to [Holmstrom and Milgrom, 1991].
  - The principal shouldn't pay for outcomes just because they are easier to measure.
- If multiple principals offer incentive contracts without cooperating, then incentives are weak [Dixit, 1997].

Retrospective voting as an incentive contract?

A retrospective voting rule can be thought of as an incentive scheme: induce politicians to do what the people want.

However, voting is not like a standard static incentive contract:

- Politicians do many things.
- Voters care about different issues, so if they do not cooperate they provide weak or null incentives [Ferejohn, 1986, Nannicini et al., 2013].
- Voting is a very blunt instrument compared to, say, piece rates.
  - But this is not such as a big deal [Anesi and Buisseret, 2021].
- Voters can't commit.
  - So we need voters to be indifferent between the incumbent and the challenger.
    - Big problem since politicians are heterogeneous [Fearon, 1999].
  - Or an infinite-period game, e.g., Ferejohn [1986], Duggan [2000].

Selection

In sum, it's not clearly a good idea to think of retrospective voting as an incentive contract.

What if voters use past performance to update beliefs about the incumbent's type?

It becomes a signaling game.

Signaling can create incentives to perform well.

The obvious way is in a two action, two types pooling equilibrium: the good type implements the right policy, the bad type strategically imitates, so both types do the right thing and the voter reelects.

With a continuum of actions more interesting things happen.

Selection creates incentives

Let's see a model where selection provides incentives in a "separating" equilibrium.

- At each period, the officeholder of type $\theta \in \{0, 1\}$ chooses a policy $a \in \mathbb{R}$ and receives a benefit $u(a; \theta) = -(a - \theta)^2 + R$. If she doesn't hold office, her payoff is 0.
- The policy is an input in the voter's benefit $y = a + \epsilon$, where $\epsilon \sim N(0, \sigma^2)$. The voter doesn't observe a.
- Given y, the voter forms beliefs about a, and then about θ_I, the type of the incumbent. She reelects if she believes that the incumbent is at least as good as the challenger.
- Then the world ends. Common discount factor $\delta \in (0, 1]$.

Timing

1. Nature draws $\theta_I, \theta_C \in \{0, 1\}$ independently, with $\Pr(\theta = 1) = \mu$.
2. The incumbent chooses $a \in \mathbb{R}$.
3. The voter observes $y = a + \epsilon$ and decides to reelect or not.
4. The new officeholder chooses $a_2 \in \mathbb{R}$.
5. The voter observes $y_2 = a_2 + \epsilon_2$.

We look for a PBE in pure strategies.

In the second period, the politician chooses $a_2 = \theta$, where θ is her type. So, when choosing a, the incumbent's expected utility is

$$u_I(a) = -(a - \theta_I)^2 + R + \Pr(\text{Reelection} \mid a)\delta R.$$

The voter receives $\mathbb{E}[\theta_I \mid y] = \Pr(\theta_I = 1 \mid y)$ if she reelects, and otherwise $\mathbb{E}[\theta_C \mid y] = \Pr(\theta_C = 1) = \mu$. So, she reelects iff $\Pr(\theta_I = 1 \mid y) \geq \mu$.

Voter's decision

The voter reelects iff $\Pr(\theta_I = 1 \mid y) \geq \mu$.

Let a_0^*, a_1^* be the actions taken in equilibrium by an incumbent of types $0, 1$, respectively.

We have

$$\begin{aligned}
\Pr(\theta_I = 1 \mid y) &= \frac{p(y \mid \theta_I = 1)\Pr(\theta_I = 1)}{p(y \mid \theta_I = 1)\Pr(\theta_I = 1) + p(y \mid \theta_I = 0)\Pr(\theta_I = 0)} \\
&= \frac{p(\epsilon = y - a_1^*)\mu}{p(\epsilon = y - a_1^*)\mu + p(\epsilon = y - a_0^*)(1-\mu)} \\
&= \frac{\phi\left(\frac{y-a_1^*}{\sigma}\right)\mu}{\phi\left(\frac{y-a_1^*}{\sigma}\right)\mu + \phi\left(\frac{y-a_0^*}{\sigma}\right)(1-\mu)},
\end{aligned}$$

so $\Pr(\theta_I = 1 \mid y) \geq \mu$ iff $\phi\left(\frac{y-a_1^*}{\sigma}\right) \geq \phi\left(\frac{y-a_0^*}{\sigma}\right)$, i.e., $|y - a_1^*| \leq |y - a_0^*|$. Assuming $a_0^* \leq a_1^*$, this is $\boxed{y \geq \frac{a_0^* + a_1^*}{2}}$.

Incumbent's decision

The incumbent choosea a to maximize his expected utility

$$u_I(a;\theta_I) = -(a-\theta_I)^2 + R + \Pr(\text{Reelection} \mid a)\delta R.$$

She is reelected iff $y \geq \frac{a_0^*+a_1^*}{2}$, so

$$\begin{aligned}\Pr(\text{Reelection} \mid a) &= \Pr\left(y \geq \frac{a_0^*+a_1^*}{2} \mid a\right) = \Pr\left(a+\epsilon \geq \frac{a_0^*+a_1^*}{2}\right) \\ &= \Pr\left(\epsilon \geq \frac{a_0^*+a_1^*}{2} - a\right) = \Phi\left(\frac{1}{\sigma}\left(a - \frac{a_0^*+a_1^*}{2}\right)\right)\end{aligned}$$

and

$$u_I(a;\theta_I) = -(a-\theta_I)^2 + R + \Phi\left(\frac{1}{\sigma}\left(a - \frac{a_0^*+a_1^*}{2}\right)\right)\delta R.$$

We have

$$u_I'(a;\theta_I) = -2(a-\theta_I) + \phi\left(\frac{1}{\sigma}\left(a - \frac{a_0^* + a_1^*}{2}\right)\right)\frac{1}{\sigma}\delta R$$

and

$$u_I''(a;\theta_I) = -2 + \phi'\left(\frac{1}{\sigma}\left(a - \frac{a_0^* + a_1^*}{2}\right)\right)\frac{1}{\sigma^2}\delta R \leq -2 + \frac{1}{\sqrt{2\pi e}}\frac{1}{\sigma^2}\delta R < 0$$

if $\sigma^2 > \frac{\delta R}{2\sqrt{2\pi e}}$, and let's assume it.

Hence $u_I'(a;\theta_I) = 0$ iff a is the maximum, so equilibrium requires $u_I'(a_0^*;0) = 0$ and $u_I'(a_1^*;1) = 0$, i.e.,

$$a_0^* = \frac{1}{2\sigma}\phi\left(\frac{a_0^* - a_1^*}{2\sigma}\right)\delta R, \text{ and } a_1^* - 1 = \frac{1}{2\sigma}\phi\left(\frac{a_1^* - a_0^*}{2\sigma}\right)\delta R,$$

which implies $a_1^* = a_0^* + 1$ and

$$a_0^* = \frac{1}{2\sigma}\phi\left(\frac{1}{2\sigma}\right)\delta R, \quad a_0^* = 1 + \frac{1}{2\sigma}\phi\left(\frac{1}{2\sigma}\right)\delta R.$$

Takeaway

Even though the voter didn't offer an incentive contract (i.e., didn't specify a retrospective voting rule in advance), the fact that she wants to reelect only the good type induces her to reelect iff past performance is better than some threshold.

Both types do more for the voter than what they would prefer.

The bad type tries to mimic the good type, but the latter exerts more effort in order to differentiate. This chase goes on until some point.

The driver of incentives is future office rents.

Note that if there were only "good" types, incentives would disappear.

False leadership in the pandering model

Let's do the exercise proposed in the lecture.

In the pandering model we assume $\rho_A = 0$, $\rho_B > 0$, $\pi_I < \pi_C$.

We want to construct an equilibrium where $\sigma_B^L = 1$ and $\sigma_A^L < 1$.

Pandering model

Recall the model:

1. Nature draws s_1 with $\Pr(s_1 = A) = p > \frac{1}{2}$, and τ_I, τ_C with $\Pr(\tau_I = H) = \pi_I$, $\Pr(\tau_C = H) = \pi_C$. Also, $x_1 = s_1$ if $\tau_I = H$ and $\Pr(x_1 = s_1 \mid s_1, \tau_I = H) = q > p$.
2. Incumbent observes x_1 and chooses $a_1 \in \{A, B\}$.
3. Voter observes a_1, also observes s_1 with probability $\rho(a_1)$, and decides to reelect or not.
4. Nature draws s_2 and x_2, new officeholder sees x_2 and chooses a_2.
5. Payoffs realized.

In 4 we have $a_2 = x_2$, so the voter gets 1 if $\tau_2 = H$, q otherwise. Hence the voter reelects the incumbent if $\Pr(\tau_I = H \mid a_1) > \Pr(\tau_C = H) = \pi_C$.

We saw that an incumbent with $\tau = H$ chooses $a_1 = x_1$. Let $\sigma_A, \sigma_B \in [0, 1]$ be probability that an L-type incumbent chooses $a_1 = x_1$ for $x_1 = A, B$.

Let $\eta(a, y) \in [0, 1]$ for each $a \in \{A, B\}, y \in \{A, B, \varnothing\}$ be the probability that the voter reelects. Note that $\eta(A, B) = \eta(B, A) = 0$, since the H-type incumbent would never choose $a_1 \neq s_1$ in equilibrium.

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