Information transmission and inefficient lobbying

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Introduction

- Grossman and Helpman (1994) developed a framework to analyze the effects of special interest groups on the economy.
- Yet, Grossman and Helpman (2001) and many others recognize that, in some situations, it is natural to assume that lobbies have more information about the impact of the policy instruments available for the governments.
- We introduce private information on the lobbies’ preferences in the GH model.
Related literature


- Similar to Esteban and Ray (2007) but very different results.

Basic idea

- In a small competitive economy the government is subject to the influence of special interest groups.

- The lobbies give money to the government in order to receive tariff protection.

- The government accepts contributions and give protection at the expense of the welfare of the society.

- Lobbies are privately informed about the supply curve of the sectors they represent.
The economy

- The economy has three goods \( x^0, x^1 \) and \( x^2 \).
- Demands for goods \( x^1 \) and \( x^2 \) are

\[
x^n = a - bp^n + dp^{-n}
\]

where \( p^n \) is the price of good \( x^n \). We assume \( p^0 = 1 \) and that \( x^0 \) is not taxed.

- The government’s revenue is.

\[
TR = \sum_n (p^n - p^e) \left( x(p^n, p^{-n}) - y^n \right)
\]

- For simplicity, we assume that \( x(p^n, p^{-n}) > y^n \).
Producers

The technology for the production of $x^1$ and $x^2$ is given by

$$\frac{\partial c}{\partial y} (\theta, y) = \begin{cases} \frac{\gamma y}{\theta} & \text{if } y \leq \theta \\ \infty & \text{if } y > \theta. \end{cases}$$

If $\gamma = 0$, then profit is $\theta \pi = \theta p$.

And if $\gamma = 1$, then profits is $\theta \pi = \theta \frac{p^2}{2}$

$x^0$ is produced from labor only at constant returns. Labor supply is big and wages are fixed.

Capital ownership is concentrated.
Political game: lobbies

- Two lobbies are the principals of the common agency game.
- Their utility is given by

$$V(\theta, p, C) = \theta \pi(p) - C$$

- $\theta^n \in \{\theta_l, \theta_h\}$ is private information of the lobby. $\theta_h > \theta_l$ and $z = P(\theta = \theta_h)$.
- We assume that lobbies can only contract on their own policy.
- The contribution schedules $C^n(\theta^n, p^n)$ specify a monetary transfer for a given import tariff.
Political game: policy maker

- The policy maker chooses the tariffs. He cares about the welfare \((W)\) and contributions.

\[
U (\theta^1, p^1, C^1, \theta^2, p^2, C^2) = \sum_n C^n + \lambda W (\theta^1, p^1, \theta^2, p^2)
\]

where \(\lambda\) is the relative preference between contributions and welfare.

- The welfare in this economy is given by

\[
W (\theta^1, p^1, \theta^2, p^2) = \sum_n \theta^n \pi (p^n) + u (p^1, p^2) + \sum_n (p^n - p^e) \left( x (p^n, p^-n) - \theta \pi' (p^n) \right)
\]
Welfare

**Welfare in Market 1**

- $p$
- $D(p^1, p^2)$
- $S(p^1)$
- $p^1$
- $p^e$
- A
- B
- C
- D
- E
- F
Timing
The timing of the game is
(0) nature draws the lobbies types;
(1) the lobbies offer contribution schedules to the policy maker;
(2) the policy maker accepts or rejects the contributions;
(3) the policies are chosen and, if the contract was accepted, the payments are made.
Benchmarks

- Free trade is the welfare maximum in this game \((p = p^e)\).

- It defines the policy maker’s reserve utility.

- If the capacities are common knowledge, lobbies play truthful strategies and policies maximize the surplus of the game.

- When \(\gamma = 0\) they are given by

\[
\bar{p}^n = \frac{b\theta^n + d\theta^{-n}}{\lambda (b^2 - d^2)} + p^e
\]
Information structure

- If the rival offers a separating contribution schedule, the policy maker learns the rival lobby’s type before the implementation of the policy.
- Hence, a lobby can anticipate that the policy maker will hold the rival’s private information and screen it.
- The private information of the rival lobby becomes the “private information” of the policy maker.
- The policy maker also does not know the type of the lobby.
- Some of the lobby’s types may pretend they are of a different type, hence signaling may be necessary.
Informed lobby problem

\[
\max_{\theta_i, p_i} \mathbb{E} [\theta_i \pi (p_i) - C_i] \\
\text{subject to} \\
\mathbb{E} [\theta_{-i} \pi (p_{-i}) - C_{-i}] \geq \mathbb{E} [\theta_{-i} \pi (p_i) - C_i] \quad (IC_i) \\
C_{ik} + C_{ki} + \lambda \mathcal{W} (\theta_i, p_{ik}, \theta_k, p_{ki}) \geq \lambda \mathcal{W} (\theta_i, p^e, \theta_k, p^e) \quad (IR_{i,k}) \\
C_{ik} + C_{ki} + \lambda \mathcal{W} (\theta_i, p_{ik}, \theta_k, p_{ki}) \geq C_{i(-k)} + C_{ki} + \lambda \mathcal{W} (\theta_i, p_{i(-k)}, \theta_k, p_{ki}) \quad (ICP_{i,k})
\]
First-order conditions

- By the goods’ substitutability, \((ICP_{ih})\) and \((IR_{il})\) must be binding in the informed lobby problem.

- The FOCs are given by

\[
\theta_i \pi' (p_{il}) - \lambda \left[ (p_{il} - p^e) \left( b + \theta_i \pi'' (p_{il}) \right) - d (p_{li} - p^e) \right] \\
- \frac{\mu_i}{(1 - \mu_i)} \Delta \theta_i \pi' (p_{il}) + \frac{z}{1 - z} \lambda d \left[ p_{li} - p_{hi} \right] = 0,
\]

\[
\theta_i \pi' (p_{ih}) - \lambda \left[ (p_{ih} - p^e) \left( b + \theta_i \pi'' (p_{ih}) \right) - d (p_{hi} - p^e) \right] \\
- \frac{\mu_i}{(1 - \mu_i)} \Delta \theta_i \pi' (p_{ih}) = 0
\]
\[ \gamma = 0: \text{screening effect} \]
\[ \theta \pi (p) = \theta p. \]

- Home production is fixed, there is no import substitution.

**Lemma**

*The constraint \((IC_t)\) is never binding.*

- Therefore, **only the screening constraints are binding**.
Screening effect

For simplicity, we assume that the international price $p^e$ is zero.
Screening equilibrium

**Theorem**

The equilibrium policies are given by

\[
\begin{align*}
    p_{hh}^S &= \bar{p}_{hh} \\
    p_{hl}^S &= \bar{p}_{hl} - \frac{zb^2 d \left( \theta_h - \theta_l \right)}{\lambda \left( (1 - z) b^2 - d^2 \right) \left( b^2 - d^2 \right)} \\
    p_{lh}^S &= \bar{p}_{lh} - \frac{zbd^2 \left( \theta_h - \theta_l \right)}{\lambda \left( (1 - z) b^2 - d^2 \right) \left( b^2 - d^2 \right)} \\
    p_{ll}^S &= \bar{p}_{ll} - \frac{zbd \left( b + d \right) \left( \theta_h - \theta_l \right)}{\lambda \left( (1 - z) b^2 - d^2 \right) \left( b^2 - d^2 \right)}
\end{align*}
\]

where the uppercase S indicates the screening equilibrium.
Screening equilibrium

- Lobbies demand less protection because they need to leave informational rent to the policy maker.
- Thus, with privately informed lobbies, the policy maker can use information of one lobby against the other.
- Protection decreases due to information transmission.

Corollary

*The welfare of the screening equilibrium is higher than the welfare of the truthful equilibrium.*

- Tariffs decrease, imports increase and welfare increases.
\[ \gamma = 1 - \text{screening and signaling} \]
\[ \theta \pi(p) = \frac{\theta}{2} p^2. \]

- Home supply increases with tariffs.
- The elasticity of home supply increases with \( \theta \).
- (\( IC_h \)) can be binding.
- The low type lobby may have to separate her contribution from that of the high type.
- **The screening and signaling effect can be present.**
Theorem

When \( (IC_h) \) is binding, the equilibrium prices are such that
\[
p_{hh}^* = \bar{p}_{hh}; \quad p_{hl}^* < \bar{p}_{hl}; \quad p_{lh}^* < \bar{p}_{lh}; \quad p_{ll}^* < \bar{p}_{ll}.
\]
where the uppercase asterisk refers to the equilibrium policies.

- The signaling effect adds up to the screening effect, reducing protection for the low type lobbies.
- Signaling also has positive welfare impact, comparing with the perfect information case.
- Information transmission is good for the society.
  - It increases the policy maker bargaining power
  - It reduces the rent seeking activity
Conclusion

- Private information on the lobbies introduce costly information transmission on the political game.

- There are two types of informational distortions:
  - The cost to make the policy maker learn the lobbies’ types - signaling.
  - The cost to make one lobby learn the type of the other - screening

- Information transmission is welfare enhancing.

- (EXT) Transparency may be bad in this context.

- (EXT) Information transmission in trade agreements, when countries are subject to influence - Costa Lima, Moreira and Verdier (2009).