Notes on 2nd round of revisions for JIE of SOP_Repeated

1 Dixit, Grossman and Helpman analogy

DGH97 paper:

- Has to be a truthful contribution schedule
  - Proposition 3: $G(a^0, e^T(a^0, u^0)) = \max_a G(a, 0)$
  - $e^T(a^0, u^0)$ is essentially $\phi(a^0, u^0)$, which is defined implicitly in eqn3 (p. 760) as

$$U\left[a, \phi(a^0, u^0)\right] = u^0$$

    - Careful: truthful contribution schedule is not a best response function. But the lobby will still have to be best responding in equilibrium.
    - Truthful contribution schedule is a device for solving equilibrium in their model. Doesn't mean I have to follow it (I think; I hope)
  - if $G = W + g(e)$ and $e = 0$ and $g(0) = 0$, then $a^* = \tau^{\text{opt}}$
  - Then rewrite as

$$G(\tau^0, e^T(\tau^0, u^0)) = \max_a G(\tau^{\text{opt}}, 0)$$

    - Right hand side provides a number
    - Ignoring arguments of e^T function, LHS traces out (τ, e) pairs that satisfy the equation given $g(e)$.
    - For lobby to be best responding, it MUST pick the pair that maximizes $\pi(\tau) - e$. *This* concern must be what sets u^0.

- Corollary to Prop 1 / Prop 3: Gov't gets utility equal to outside option. Is this true when there is just one lobby?

- Combining the two previous facts (if true in my case), then it must be that gov't getting outside option will set u^0 (eqm utility) and anchor contribution schedule (just have to be careful of zero contributions)

What editor proposes:

- Lobby offers contribution schedule (can be very simple: just one (e, τ) pair, $e = 0$ for everything else)

- Government maximizes $W + g(e)$
  - Note that $CS_X + \gamma(e) \cdot PS_X + CS_Y + PS_Y + TR = W + (\gamma(e) - 1)\, PS_X$
- Sectioning from my paper:
  3.1 Same (execs)
  3.2 Trade war
    * Government chooses unilateral τ as $\frac{\partial W}{\partial \tau} + \frac{\partial g(e)}{\partial \tau} = 0$
      · How to think about lobby's contribution schedule?
      · DGH Proposition 1: principal (lobby) has to provide at least agent's (gov'ts) outside option; as long as this constraint is satisfied, lobby can propose τ and payment that maximizes his own utility
      · DGH Proposition 3 (p. 760-61): simplifies so we don't need to look for contribution functions, only eqm values

Comparisons

- Note that in GH94, claim is that IN EQUILIBRIUM, government behaves as if it maximizes a weighted sum of the groups' utilities ($1 + a$ for those represented by lobbies; a for those not represented; pg. 10 of PDF). But this is in equilibrium: there's a lot going on out of equilibrium that leads us there!
  - I haven't proved this to myself, but that must also depend on lobbies having all the bargaining power
- In DGH, $G(\tau^0, e^0) = \max_\tau(\tau, 0)$
  - This is <u>not</u> generally true in my model
  - I think the slippage is in bargaining power. DGH paradigm assumes lobby essentially make TIOLI offer.
  - $\gamma(e)$ formulation in essence distributes bargaining power more generally
    * Is it okay to characterize it this way?
    * If so, does bargaining power vary with effort? Seems mixed up with diminishing returns to effort.
  - $W + \Phi(e)$ of Limao and Tovar gives decreasing returns; then explicitly models bargaining power through Nash bargain instead of menu auction (as far as I can tell–I can't find it clearly specified).

- In DGH, essentially lobby chooses its favorite (τ, e) pair from among all the possible ones that make the Gov't indifferent.
  - Is it possible that this is equivalent to $\frac{\partial \pi}{\partial e} = 1$?
  - seems like the pair that satisfies that equation might not be available
  - When I calculate the various (τ, e) pairs to 'compare' government welfare levels, this comes from the government welfare function: each e induces an optimal τ and then I get an optimal value function
    * Lobby doesn't care about these varying welfare levels. Chooses (τ, e) pair that maximizes $\pi - e$

Examples

- Use numeric example from BS2005 in R (DGH.r)
- Isomorphism I've already calculated: if $G = W + e$ then $\gamma(e) = 1 + \frac{e}{\pi_x}$
- Lobby's optimization:

$$W(\tau, e(\tau)) = W(0,0)$$
$$W(\tau) + e = W(0)$$
$$e = W(0) - W(\tau)$$

  - This forms a contribution schedule
  - Lobby chooses the pair (τ, e) that maximizes $\pi(\tau) - e$
- Make sure these are unilateral changes in τ in the program
- Then compare to my old way: $\frac{\partial \pi}{\partial \tau}\frac{\partial \tau}{\partial \gamma}\frac{\partial \gamma}{\partial e} = 1$ (e changes with τ directly depending on shape of γ, then government maximizes w.r.t. τ
  - NEXT: go into R program and sort it out