

Trade Policy in the Shadow of Power

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Where Does Trade Policy Come From?

Inside the State

- Lobbying: Protection is “for sale” (Grossman and Helpman 1994)
- Voting: Factor ownership of median voter (Mayer 1984; Yang 1995; Milner and Kubota 2005)
- *Country is small, takes world prices as given, imposes no externalities on others, as is subject to no outside influence*

Outside the State

- Trade talks (Grossman and Helpman 1995; Bagwell and Staiger 1999)
- Hegemonic stability theory (Kindleberger 1986; Krasner 1976)
- Coercive bargaining (Fearon 1995; Fearon 1997; Powell 1999)
- *Countries are large, impose market access externalities on one another, and seek to influence one another's policy choices*

Policy Choice in the Shadow of Power

Gunboat Diplomacy

- British Imperialism
 - Imperial Preference system
 - Opium Wars (1839-1842, 1856-1860)
- Perry expeditions (1853-1854)
- Cold War regime change bids (Dube, Kaplan, and Naidu 2011)

Strategic Logic

- Governments have heterogeneous policy preferences defined by position in international economy and domestic political institutions
- In anarchy of world politics, bargaining takes place in the shadow of militarized force (Powell 1999)
- When trade policy choices impose externalities, these must be made small enough to appease prospective invaders
- *Fearon (1995) bargaining critique – policy concessions should make wars unnecessary*

Inference Problem: *Are trade policies chosen for desirable domestic effects, or to prevent war with affected foreign governments?*

Preview

Model Structure

1. International economy: two-sector specific factors model (Ricardo-Viner)
2. Domestic influence game: owners of specific factor attempt to influence governments' policy choice through contributions (Grossman and Helpman 1994)
3. International negotiations: two outside options available
 - Noncooperative policy choice (trade wars, Grossman and Helpman (1995))
 - Regime change bids – victor imposes 'puppet' with more 'dovish' trade policy preferences
 - *Which outside option 'binds' in determining bargaining outcomes?*

Results

1. Conflicts of interest decreasing in governments' representativeness
2. Probability that regime change bid 'binds' decreasing in representativeness
3. When given opportunity, more representative governments invest less in military capacity

Production and Exchange (I)

- Two countries: i and j
- Two goods: 0 and 1
 - p_i price of good 1 in country i relative to good 0

Consumption

- Quasilinear utility

$$U_i(\mathbf{q}_i) = q_{i0} + u_i(q_{i1})$$

- Consumer's problem

$$\begin{aligned} \max_{\mathbf{q}_i} \quad & U_i(\mathbf{q}_i) \\ \text{subject to} \quad & q_0 + p_i q_{i1} \leq L_i \end{aligned}$$

- Consumer surplus (utility in excess of income L_i)

$$S_i(p_i) = u_i(d_i(p_i)) - p_i d_i(p_i)$$

Production and Exchange (II)

Production

- Numeraire produced with labor alone
- Good one produced with labor and inelastically-supplied specific factor
- Good one producer's problem

$$\max_{L_i} p_i f_{i1}(L_{i1}, K_i) - L_{i1}$$

- Equilibrium profits

$$\Pi_i(p_i) = p_i f_{i1}(L_{i1}^*(p_i), K_{i1}) - L_{i1}^*(p_i)$$

Effective Prices and International Markets

- Domestic prices depend on international price and trade policy

$$p_i = \tau_i \pi$$

	Importer	Exporter
$\tau_i > 1$	Import Tariff	Export Subsidy
$\tau_i < 1$	Import Subsidy	Export Tax

Production and Exchange (III)

- Market clearing conditions

$$L_{i0}^* + L_{i1}^* = L_i \quad \forall \quad i \quad (1)$$

$$\sum_i q_{i0}^* = \sum_i f_{i0}(L_{i0}^*) \quad (2)$$

$$\sum_i q_{i1}^* = \sum_i f_{i1}(L_{i1}^*, K_i) \quad (3)$$

Lemma 1: For any $\tau_i, \tau_j > 0$, there exists a unique $\pi(\tau_i, \tau_j)$ such that Equations 1, 2, and 3 are satisfied.

Profit Shifting

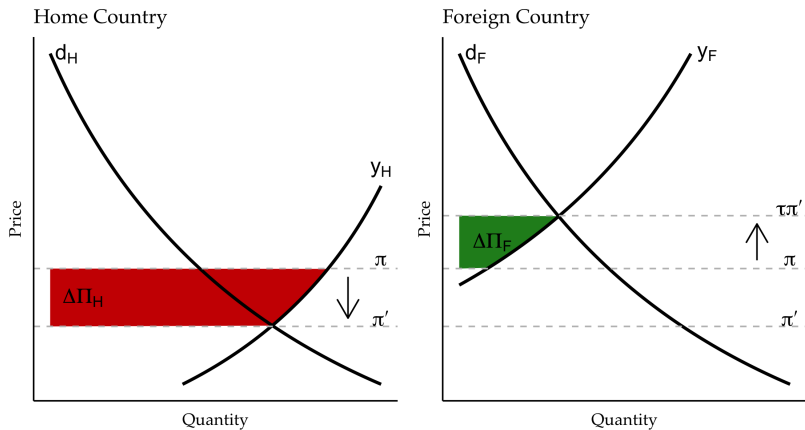


Figure 1

Political Economy of Protection (I)

Domestic Influence Game

1. Producers present contribution schedules to their governments
2. Governments choose trade policies noncooperatively
3. Policies are implemented and production, consumption, and trade occur and contributions accrue to the governments

Producer Net Welfare

$$W_i(\tau_i, \tau_j) = \Pi_i(\tau_i, \tau_j) - C_i(\tau_i|\tau_j)$$

Government Objective Function

$$G_i(\tau_i, \tau_j) = (1 - a_i)C_i(\tau_i|\tau_j) + a_i [\Pi_i(\tau_i, \tau_j) + S_i(\tau_i, \tau_j)] + r(\tau_i, \tau_j)$$

- $a_i \rightarrow 0$ – pure ‘kleptocrat’
- $a_i \rightarrow 1$ – pure ‘technocrat’

Political Economy of Protection (II)

Lemma 2 (Grossman and Helpman 1994): *In any equilibrium of the domestic influence game, the government chooses its trade policy such that*

$$\tau_i^* = \operatorname{argmax}_{\tau_i} G_i^*(\tau_i, \tau_j) = \Pi_i(\tau_i, \tau_j) + a_i S_i(\tau_i, \tau_j) + r(\tau_i, \tau_j)$$

Restrictions on $G_i^*(\tau_i, \tau_j)$

- **Assumption 1:** For all $a_i \in [0, 1]$, international economic primitives are such that $G_i^*(\tau_i, \tau_j)$ is concave in τ_i and τ_j .
- **Assumption 2:** For all $a_i \in [0, 1]$, International economic primitives are such that

$$\frac{\partial^2 G_i^*(\tau_i, \tau_j)}{\partial \tau_i \partial \tau_j} \geq 0 \quad \forall \quad \tau_j \in \mathbb{R}_+$$

Political Economy of Protection (III)

Lemma 3 (Trade Wars): *A noncooperative international equilibrium exists. In it, government trade policies maximize their contribution-induced utility and constitute best responses to one another*

$$\tau_i^* = \operatorname{argmax}_{\tau_i} G_i^*(\tau_i, \tau_j)$$

$$\tau_j^* = \operatorname{argmax}_{\tau_j} G_j^*(\tau_i, \tau_j)$$

Lemma 4: $\tau_i^*(a_i)$ is a strictly decreasing function.

Trade Wars Equilibrium

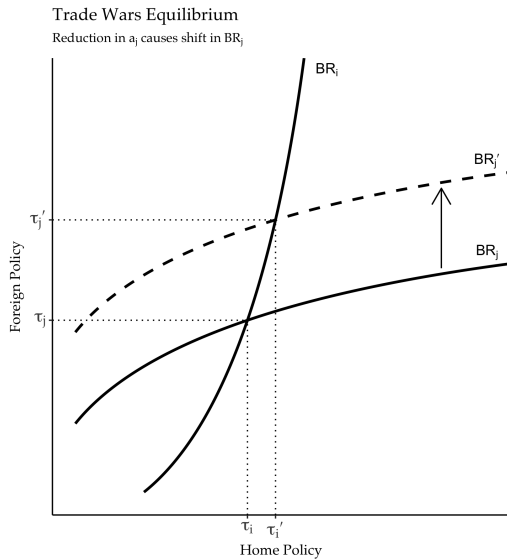


Figure 2

International Bargaining and Militarized Force (I)

- Governments fight for right to choose $a_{i,j}$ parameter of trade partner that conditions policy choice in trade wars
- Contest success function (probability i prevails in war for control of type of j 's government)

$$q : \{\omega_i, \omega_j\} \rightarrow [0, 1]$$

Negotiation Structure

- j makes take-it-or-leave-it offer to i , consisting of trade policy pair $\{\tau_i^j, \tau_j^j\}$ and side payment R^j to i
- i chooses to
 1. Accept j 's offer
 2. Implement noncooperative trade policy, yielding $G_i^*(\tau_i^*, \tau_j^*)$
 3. Attempt regime change bid, yielding expected utility

$$\tilde{G}_i = (q(\omega_i, \omega_j)\overline{G}_i + (1 - q(\omega_i, \omega_j))\underline{G}_i) (1 - c_i)$$

International Bargaining and Militarized Force (II)

- **Optimal Puppet Regimes:** If country i wins a war with country j , it will install a puppet government of type $k(a_i)$ where

$$k(a_i) = \operatorname{argmax}_{a_j \in [0,1]} G_i^*(\tau_i^*(a_i), \tau_j^*(a_j))$$

- Successful regime change bid yields

$$\overline{G}_i(a_i) = G_i^*(\tau_i^*(a_i), \tau_j^*(k(a_i)))$$

- Unsuccessful bid yields

$$\underline{G}_i(a_i, a_j) = a_i [\Pi_i(\tau_i^*(k(a_j)), \tau_j^*(a_j)) + S_i(\tau_i^*(k(a_j)), \tau_j^*(a_j))]$$

What type of government would i like to install abroad?

International Bargaining and Militarized Force (III)

- Governments use regime change bids to secure market access abroad. . . implicit restriction on a_i

$$\{\bar{a}_i, \bar{a}_j\} = \left\{ a_i, a_j \left| \frac{\partial G_i^*}{\partial \tau_j} = \frac{\partial G_j^*}{\partial \tau_i} = 0 \right|_{(\tau_i^*(a_i), \tau_j^*(a_j))} \right\}$$

Assumption 3: $\{a_i, a_j\} \ll \{\bar{a}_i, \bar{a}_j\}$

Lemma 6: $k(a_i) > a_j$ and $\{\tau_i^*(a_i), \tau_j^*(k(a_i))\} \ll \{\tau_i^*(a_i), \tau_j^*(a_j)\}$

Value of Puppet Regimes

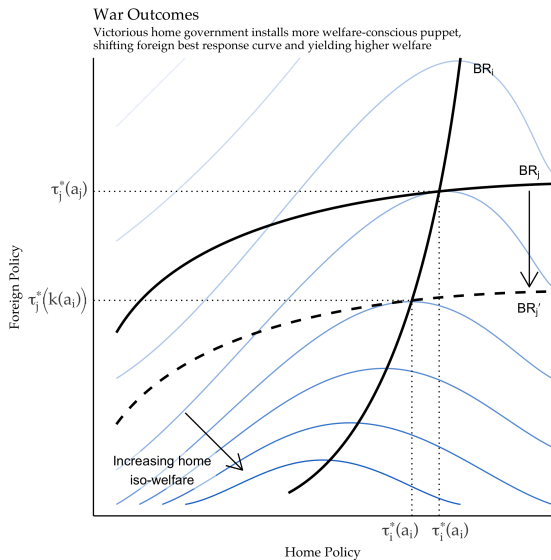


Figure 3

Conflicts of Interest

Definition 2: *Government i 's conflict of interest with j is:*

$$\Gamma_i(a_i, a_j) = \bar{G}_i(a_i) - \underline{G}_i(a_i, a_j)$$

where \bar{G}_i and \underline{G}_j are as given in Definition 1.

Proposition 1: *For all $(a_i, a_j) \ll (\bar{a}_i, \bar{a}_j)$, $\Gamma_i(a_i, a_j)$ is decreasing in a_i .*

Intuition

- Loss of rents from deposit hurts kleptocrats more than technocrats
- Value of puppet higher for kleptocrats, because they have stronger profit shifting incentives
- Stakes of conflict are therefore higher

Militarized and Nonmilitarized Bargaining (I)

- Recall regime change bid expected utility

$$\begin{aligned}\tilde{G}_i &= (q(\omega_i, \omega_j)\bar{G}_i + (1 - q(\omega_i, \omega_j))\underline{G}_i) (1 - c_i) \\ &= [\underline{G}_i(a_i, a_j) + q(\omega_i, \omega_j)\Gamma_i(a_i, a_j)] (1 - c_i)\end{aligned}$$

- Condition for regime change bid to 'bind' for i

$$[\underline{G}_i(a_i, a_j) + q(\omega_i, \omega_j)\Gamma_i(a_i, a_j)] (1 - c_i) > G_i^*(\tau_i^*(a_i), \tau_j^*(a_j))$$

Militarized and Nonmilitarized Bargaining (II)

Militarized and Nonmilitarized Bargaining

Shaded region is set of (G_i^*, G_j^*) that do not generate incentives for regime change bids

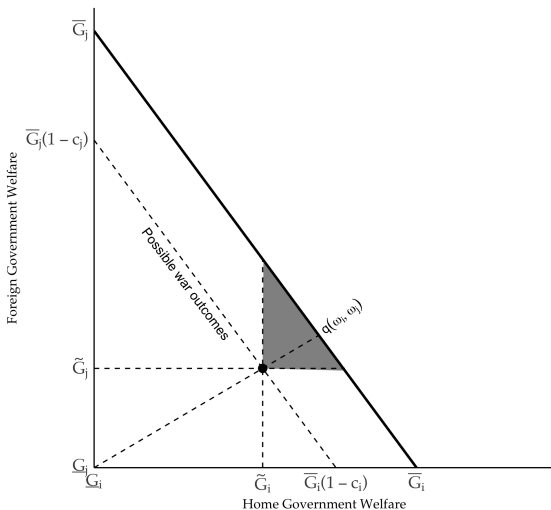


Figure 4

Militarized and Nonmilitarized Bargaining (III)

- Consider distribution of foreign military capabilities

$$F_j : [\underline{\omega}_j, \bar{\omega}_j] \rightarrow [0, 1]$$

- $q(\omega_i, \underline{\omega}_j) = 1$
- $q(\omega_i, \bar{\omega}_j) = 0$

Proposition 2: *There exists a $c_i^* \in [0, 1]$ such that for all $c_i > c^*$, the probability that a regime change bid binds is decreasing in a_i .*

Intuition

- Peaceful and conflictual outside options less and less likely to overlap as conflicts of interest grow
- Conflicts of interest larger for kleptocrats

Conclusions

Modern Economic Peace

- Primitive: regime type
- Endogenous variables: protection, trade, conflict
- Protection and conflict positively correlated because kleptocrats are both more protectionist and more likely to experience militarized policy negotiations

Estimating Welfare Consciousness

- Many attempts to structurally estimate welfare consciousness from Grossman and Helpman (1994), Grossman and Helpman (1995)
 - (Goldberg and Maggi 1999; Mitra, Thomakos, and Ulubasoglu 2006; Gawande, Krishna, and Olarreaga 2009; Gawande, Krishna, and Olarreaga 2012; Gawande, Krishna, and Olarreaga 2015)
- In these models, low protection \implies high welfare consciousness
- Here, kleptocrats whose markets are pried open by threats of force adopt same policies as technocrats (**Future Research**)

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Extension

Extension: Endogenous Military Investment

- Military capacity costs $z_i(\omega_i)$, increasing and convex
- Invest for deterrence, ω_i^* solves

$$(\underline{G}_j + q(\omega_i^*, \omega_j)\Gamma_j(a_j, a_i))(1 - c_j) = G_j^*(\tau_j^*(a_j), \tau_i^*(a_i))$$

- Invest for regime change bid

$$\frac{d\tilde{G}_i(\omega_i, \omega_j)}{d\omega_i} = \frac{\partial q(\omega_i, \omega_j)}{\partial \omega_i} \Gamma_i(a_i, a_j)(1 - c_i) - \frac{\partial z_i(\omega_i)}{\partial \omega_i} = 0$$

Proposition 3: *There exists a $c_i^* \in [0, 1]$ such that for all $c_i > c_i^*$, optimal military investment $\omega_i^*(a_i)$ is weakly decreasing in a_i .*