

Trade Agreements, Political Economy and Endogenously Incomplete Contracts

Ian(Na) Li and Alan Ker

Department of FARE

University of Guelph

- 1 INTRODUCTION
 - Background
 - Purpose of the paper
- 2 A Political Economy Model of Production Subsidies and Tariff Policies
 - The Noncooperative Equilibrium
 - Costless Trade Agreement
- 3 The Optimal Trade Agreement
- 4 The Optimal Trade Agreement Based on National Treatment (NT) Principle
- 5 Conclusion

Background

- Trade agreements have never been easy to **negotiate** nor have they always been effectively **enforced**
- Two different avenues of attempt
 - ① Trade agreements as **incomplete contracts** (Copeland 1990 CJE, Battigalli and Maggi 2003 NBER, Horn 2006 AER, **Horn et al 2010 AER**)
 - ② **Rent-seeking behavior** as the rationale (Putnam 1988 IO, **Grossman and Helpman 1994 AER, 1995a JPE, 1995b AER, Maggi and Rodriguez-Clare 1998 JPE, 2007 AER**)

Horn et al (2010), Trade Agreements as Endogenously Incomplete Contracts, AER

- Endogenously Incomplete Contracts?
 - What kind of policies would be constrained
 - How the constraints would change
 - are determined by the net global benefit they bring,
- Production and Consumption externalities
 - Rationale for policy intervention.

Political economy rationale for trade agreements

- Focuses on the interaction between **lobby groups** and the **incumbent government**
- Does not involve essential elements tracing **contracting incompleteness**
e.g. Uncertainty and Contracting Cost

Purpose of the paper

- To examine trade agreements that stem from **rent-seeking** pressures while utilizing **incomplete contract** theory.
- To explain several core provisions of WTO and regional free trade agreements.
e.g. **differential treatment** on subsidies, **countervailing duties (CVDs)**, and the **national treatment** principle

A Political Economy Model of Production Subsidies and Tariff Policies

- 2 Countries, Home and Foreign, a numeraire good 0 and n other nonnumeraire goods.
- Price relationships

$$q_i = \tau_i \omega_i, \quad (1)$$

$\tau_i > 1$ represents a **tariff** or an export subsidy

$\tau_i < 1$ represents an import subsidy or an **export tax**.

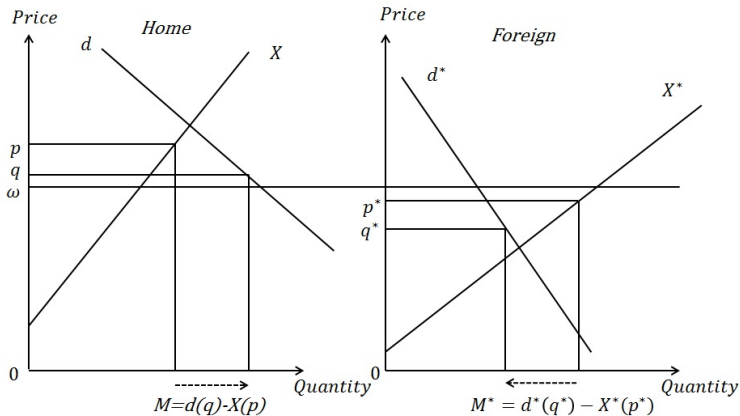
$$p_i = q_i + s_i. \quad (2)$$

- Clearing of the world market requires that

$$M_i(\tau_i \omega_i, s) + M_i^*(\tau_i^* \omega_i, s^*) = 0, \quad i = 1, 2, \dots, n. \quad (3)$$

A Political Economy Model of Production Subsidies and Tariff Policies

- $q_i = \tau_i \omega_i$, and $p_i = q_i + s_i$, $q_i^* = \tau_i^* \omega_i$, and $p_i^* = q_i^* + s_i^*$.
- $M_i(\tau_i \omega_i, s) + M_i^*(\tau_i^* \omega_i, s^*) = 0$, $i = 1, 2, \dots, n$.



Political Economy Model of Production Subsidies and Tariff Policies

- The objective of lobby group i

$$V_i = W_i(\tau, s, \omega) - C_i(\tau, s, \cdot),$$

where $W_i(\tau, s, \omega)$ is its **gross joint welfare**, $C_i(\tau, s, \cdot)$ is its **contribution schedules**

- The objective of Home government

$$G = \sum_{i \in L} C_i(\tau, s, \cdot) + aW(\tau, s, \omega), \quad a \geq 0$$

where $W(\tau, s, \omega)$ is the **aggregate social welfare**.

The Noncooperative Equilibrium

- Home's noncooperative policies are given by

$$\tau_i^0 - 1 = \frac{1}{e_i^*}, \quad (4)$$

$$\frac{s_i^0}{p_i} = \frac{l_{iL} - \alpha_L}{a + \alpha_L} \frac{1}{\eta_i}. \quad (5)$$

where e_i^* is the elasticity of Foreign export supply or import demand, η_i is the supply elasticity in Home.

- at Johnson's optimal tariff rate
- to tax industries not represented by lobbies,
- while subsidizing industries represented by lobbies.

Costless Trade Agreement

- Global efficiency requires maximizing the **global benefits**

$$a^* G + a G^* = a^* \sum_{j \in L} C_j(P; P^*) + a \sum_{j \in L} C_j^*(P; P^*) + a^* a [W(P, P^*) + W^*(P^*, P)].$$

- The weight of each country's aggregate social welfare are **equalized** (to $a^* a$),
- The relative weights (a and a^*) of aggregate social welfare and political contributions within each country are **identical** to that of the noncooperative case.

Costless Trade Agreement

- The globally efficient policies are defined by

$$\tau_i^e - \tau_i^{*e} = 0 \quad (6)$$

$$s_i^e = \frac{l_{iL} - \alpha_L p_i}{a + \alpha_L \eta_i}, \quad (7)$$

$$s_i^{*e} = \frac{l_{iL}^* - a_L^* p_i^*}{a^* + \alpha_L^* \eta_i^*}, \quad (8)$$

where η_i^* is the supply elasticity in Foreign.

- Tariff in one country equals export subsidy in another, some rationale for WTO'S **countervailing duty** law.
- An agreement that **only** constrains **production subsidies cannot** increase **global welfare** relative to the noncooperative equilibrium

Assumptions the Optimal Agreement Based on

- Four sources of **uncertainty** that may leads to incomplete contracts (**state variables**):
 - ① the **relative weight** of aggregate social welfare (a and a^*),
 - ② the **fraction of population** that are represented by lobbies (α_L and α_L^*)
 - ③ whether an industry may organize or dissolve its political lobby (I_{iL} and I_{iL}^*)
 - ④ the level of import demand (M_i and M_i^*).
- Two categories of **contracting costs**:
 - ① The costs of contracting over **state variables**,
 - ② The costs of contracting over **policy variables**, e.g. τ and s and their Foreign counterparts.

A possible Optimal Agreement

- An agreement of the form

$$A^0 = \left\{ \tau_i = \tau_i^*, s_i = \frac{l_{iL} - \alpha_L p_i}{a + \alpha_L \eta}, s_i^* = \frac{l_{iL}^* - a_L^* p_i^*}{a^* + \alpha_L^* \eta^*} \right\}$$

imposing first best policies has $n_p = 4$ and $n_s = 6$ and therefore costs $c(4, 6)$.

- What if contracting costs **matters** but do **not prohibit** a trade agreement?

A possible Optimal Agreement

- Recall an optimal trade agreement should **at least** impose constraints on **trade policies**.
- Should the agreement also constrain **production subsidies**?

Whether the trade agreement which binds trade policies should also constrains production subsidies?

- Depends on the **additional gain in gross global benefits** ($\Delta\Omega(s, s^*)$) brought by binding production policies.

$$\Delta\Omega(s, s^*) = \Omega(s^E, s^{*E}) - \Omega(s^N, s^{*N})$$

- If $\Delta\Omega(s, s^*) < \text{The contracting costs over } s \text{ and } s^*$,
- then it is optimal to exclude them

Determinants of $\Delta\Omega(s, s^*)$

- $\Delta\Omega(s, s^*)$ depends on

$$B_i = \frac{aa^* X_i'}{|d_i^{*'}|\tau_i^* + |M_i'|\tau_i} [M_i - (\tau_i^* - 1)\omega_i\tau_i^* |d_i^{*'}|],$$

$$B_i^* = \frac{aa^* X_i^{*'}}{|d_i'|\tau_i + |M_i^{*'}|\tau_i^*} [|M_i^*| + (\tau_i - 1)\omega_i\tau_i |d_i'|].$$

- 3 circumstances under which B_i (B_i^*) is **small**:
 - M_i ($|M_i^*|$) – **little** trade volume.
 - X_i' ($X_i^{*'}$) – **low** price sensitivity of **supply**.
 - $|M_i'|\tau_i$ ($|M_i^{*'}|\tau_i^*$) – **high** price sensitivity of import demand in Home (export supply in Foreign).
- differential treatment** with respect to production subsidies.

NT based Trade Agreements

- When NT provision is included in trade agreements, we have

$$q_i = \tau_i \omega_i + t_i, \quad (9)$$

$$p_i = \tau_i \omega_i + s_i. \quad (10)$$

- Under what circumstances is it desirable to include the NT provision while leaving consumption taxes to **discretion**?

Whether to Exclude t and t^* from the NT-based Trade Agreement

- Depends on the **additional gain in gross global benefit** ($\Delta\Omega(t, t^*)$) implied by constraining consumption taxes

$$\Delta\Omega(t, t^*) = \Omega(t^E, t^{*E}) - \Omega(t^N, t^{*N})$$

- If $\Delta\Omega(t, t^*) < 0$ The contracting costs over consumption taxes,
- then it is optimal to exclude them.

Determinants of $\Delta\Omega(t, t^*)$

- $\Delta\Omega(t, t^*)$ depends on

$$N_i = \frac{a|d_i'|}{|M_i'|\tau_i + X_i^*\tau_i^*} \{I_{iL}^* X_i^* \tau_i^* - a^* s_i^* X_i^* \tau_i^* [(\tau_i^* - 1)\omega_i + s_i^*] + a^* M_i\},$$

$$N_i^* = \frac{a^*|d_i^{*'}|}{|M_i^{*'}|\tau_i^* + X_i'\tau_i} \{-I_{iL} X_i \tau_i + a s_i X_i' \tau_i [(\tau_i - 1)\omega_i + s_i] + a |M_i^*|\}.$$

- 3 circumstances under which N_i (N_i^*) is small:

- 1 M_i (M_i^*) – **little** trade volume.
- 2 $|d_i'|$ ($|d_i^{*'}|$) – **low** price sensitivity of **demand**.
- 3 $|M_i'|$ ($|M_i^{*'}|$) – **high** price sensitivity of import demand in Home (export supply in Foreign).

Conclusions Based on Political Economy of Production Subsidies and Tariff Policies

- 1 Noncooperatively,
 - Production subsidies will emerge in industries that are **politically organized** at the expense of those not. ,
 - Tariff rates depends on **international monopoly power** ($1/e^*$).
- 2 A costless trade agreement would lead to a circumstance equivalent to free trade.
- 3 A trade agreement which only constrains production subsidies but not tariffs is not optimal.

Conclusions Implied by Incomplete Contract Theory

- 1 It is optimal to leave production subsidies to discretion
 - If production subsidies can **not adequately substitute** for tariffs (small X' or large $|M'|$),
 - Or if countries trade **little** (small M).
- 2 It is optimal to leave consumption taxes to discretion in an NT-based trade agreement.
 - If consumption taxes can **not adequately substitute** for tariffs (small $|d'|$ or large $|M'|$),
 - or if countries trade **little** (small M).

- Thank You for your attention!
- Welcome to Comment and/or Ask Questions!