

Temporary Trade Barriers: When Will They End?

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Preview of Results

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- ▶ E
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Outline of Talk

1. B
2. E
3. R
4. F
5. Conclusion

Timeline

1. Formation

- i. Executives set trade policy in international agreement

2. Ratification / Maintenance

- i. Firms lobby legislatures to break agreement
- ii. Uncertainty is resolved
- iii. Legislatures decide to break or abide by agreement

3. Trade War (if agreement is broken)

- i. Firms lobby legislatures to set high trade-war tariff
- ii. Uncertainty is resolved
- iii. Legislatures decide trade-war tariff

4. Private actors make production, consumption decisions

Economy

- ▶ Two countries: home and foreign (*)
- ▶ Separable in three goods: X and Y (traded) and numeraire
- ▶ Demand identical for both goods in both countries
- ▶ Supply: $Q_X^*(P_X) > Q_X(P_X) \forall P_X$; symmetric for Y
 - ▶ Home net importer of X, net exporter of Y

Home levies τ on X, Foreign levies τ^* on Y

- ▶ $P_X = P_X^W + \tau$ and $\pi_X(P_X)$ increasing in τ

Non-tradable specific factors motivates political activity

Political Structure

In each country (focus on Home):

- ▶ A Unitary Executive
 - ▶ Delegated authority to make trade agreement
- ▶ A Non-unitary Legislature
 - ▶ Can withdraw delegation, break agreement, and set trade-war tariff
 - ▶ Susceptible to influence of lobbying
 - ▶ Decision determined by median legislator
- ▶ A Single Lobby
 - ▶ Represents import-competing sector, X (Y in foreign)

Executive Branch

Trade agreement negotiated by unitary executive:

$$W_E = CS_X(\tau) + CS_Y(\tau^*) + \gamma_E \pi_X(\tau) + \pi_Y(\tau^*) + TR(\tau)$$

- ▶ $CS_i(\cdot)$: consumer surplus
- ▶ $\pi_X(\tau)$: profits of import-competing industry
- ▶ $\pi_Y(\tau^*)$: profits of exporting industry
- ▶ $TR(\tau)$: tariff revenue
- ▶ γ_E : weight on profits in the import-competing industry

Non-Unitary Legislature

Decisions determined by preferences of Median Legislator:

$$W_{ML} = CS_X(\tau) + CS_Y(\tau^*) + \gamma(e, \theta)\pi_X(\tau) + \pi_Y(\tau^*) + TR(\tau)$$

- ▶ $\gamma(e, \theta)$: weight on import-competing industry profits
 - ▶ e : lobbying effort
 - ▶ θ : uncertain element in determination of ML's identity

Assumptions on $\gamma(e, \theta)$

1. $\gamma(e, \theta)$ is increasing and concave in e for all $\theta \in \Theta$.
2. $\gamma(e, \theta) \geq \gamma_E \geq 1 \quad \forall \theta$

Lobby

Lobby chooses effort to maximize:

$$\{1 - \Pr[\text{TradeWar}(e_b, \tau^a)]\} \pi(\tau^a) \\ + \Pr[\text{TradeWar}(e_b, \tau^a)] [\pi(\tau^{tw}) - e_{tw}] - e_b$$

- ▶ e_b : Lobbying effort for break decision
- ▶ e_{tw} : Lobbying effort for trade-war tariffs
- ▶ (τ^a, τ^{*a}) : trade agreement tariffs
- ▶ τ^{ad} : tariff equivalent under anti-dumping duties

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Highlight: Separation of Powers

Legislature

- ▶ Breaks agreement if median legislator prefers τ^{tw} to τ^a

Lobby

- ▶ Given the τ^a it faces, lobby knows what e_b is required to break the agreement
- ▶ Lobby pays this e_b if: $\pi(\tau^{tw}) - e_{tw} - e_b > \pi(\tau^a)$

Executives

- ▶ Set τ^a to make paying e_b unprofitable
 $\Rightarrow e_b = 0$, agreement remains in force
- ▶ High tariffs, no lobbying, no trade disruptions

Political Uncertainty Illustration

An Example (Bagwell & Staiger 2005)

- ▶ $D(P_i) = 1 - P_i$
- ▶ $Q_X(P_X) = \frac{P_X}{2}$, $Q_Y(P_Y) = P_Y$
- ▶ $P_X^W = \frac{4-3\tau}{7}$, $P_X = \frac{4+4\tau}{7}$
- ▶ $\gamma(e, \theta) = 1.25 + e^{0.2} + \theta$
 - ▶ $\theta \sim U[-0.25, 0.25]$
- ▶ $\gamma_E = 1$

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Legislature

Legislature breaks trade agreement if median legislator's utility is higher under trade war than trade agreement

- Median legislator's identity is uncertain through θ

Probability that Legislature breaks agreement:

$b(e_b, \tau^a, \tau^{tw}, \theta)$ probability median legislator prefers τ^{tw} to τ^a for a given θ

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Future Work

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- ▶ E
- ▶ P
- ▶ A

Conclusion

- ▶ S
- ▶ E
- ▶ F