Temporary Trade Barriers: When Will They End?

Kristy Buzard
Syracuse University and The Wallis Institute
kbuzard@syr.edu

May 13, 2016

Political Economy of Trade Agreements

In most models, a single actor in each country makes trade policy. Modeling policy-making power more richly:

- reconciles 'Protection for Sale' model to the data
- generates lobbying for the purpose of disrupting trade agreements
- adds new role for trade agreements

Preview of Results

- Higher trade agreement tariffs induce lobbies to decrease effort
  - Reduces probability of trade war / ratification failure
- Executives negotiate tariffs to discourage lobbying
  - Produces higher tariffs than executives prefer
  - Reduces equilibrium lobbying effort
  - Trade agreement as political commitment device
- Tariff levels and optimal lobbying depend on how much political uncertainty is present

Outline of Talk

1. Background and Motivation
2. Economic and Political Structure
3. Results for a Special Case: Certainty
4. Full Results: Political Uncertainty
5. Conclusion

Standard Unitary Government Model

Grossman & Helpman government welfare function:

$$C + aW$$

- Government auctions tariffs/subsidies: lobbies pay for a-weighted welfare loss
- Estimated a's far too large
  - Implies that governments respond very little to lobbying effort
  - Inconsistent with observed large tariffs relative to small lobbying effort

Trade Agreements and Separation of Powers

Take special case of 'Protection for Sale' model (single lobby) and generalize government structure

- Executives can make trade agreement
- Legislatures retain final authority: can break agreement and start trade war / fail to ratify
- Trade war is subgame of the trade-agreement-setting game
  - Executives consider lobbying incentives and possibility of trade war when forming agreement

Related Literature

Protection for Sale: Grossman & Helpman (1994)

- Empirics: Goldberg & Maggi (1999), Gawande & Bandyopadhyay (2000), Mitra, Thomakos, & Ulubasoglu (2002)
- Mitra, Thomakos, & Ulubasoglu (2006), Bombardini (2008)
- Trade Wars and Trade Talks: Grossman & Helpman (1995)

Political economy shocks

- Feenstra & Lewis (1991), Bagwell & Staiger (2001, 2005)

Separated powers

- Mansfield, Milner & Rosendorff (2000), Song (2008)

Political uncertainty

- Milner & Rosendorff (1997), Le Breton & Zaporozhets (2007)

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. $\gamma(e,\theta) \geqslant \gamma_E \geqslant 1 \ \forall\theta$

Lobby

Lobby chooses effort to maximize:

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

- e_b: Lobbying effort for break decision
- e_{tw}: Lobbying effort for trade-war tariffs
- $\boldsymbol{\tau}^{\boldsymbol{a}} = (\tau^a, \tau^{*a})$: tariff under an agreement
- $\boldsymbol{\tau}^{\mathbf{tw}} = (\tau^{tw}, \tau^{*tw})$: tariff when agreement is broken

Timeline

1. **Formation**
   i. Executives set trade policy in international agreement
2. **Ratification / Maintenance**
   i. Firms lobby legislatures to break agreement
   ii. 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. Legislatures decide trade-war tariff
4. Private actors make production, consumption decisions

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)

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

Timeline

1. Formation
   i. Executives set trade policy in international agreement
2. **Ratification / Maintenance**
   i. Firms lobby legislatures to break agreement
   ii. 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. Legislatures decide trade-war tariff
4. Private actors make production, consumption decisions

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

Timeline

1. Formation
   i. Executives set trade policy in international agreement
2. **Ratification / Maintenance**
   i. Firms lobby legislatures to break agreement
   ii. 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. Legislatures decide trade-war tariff
4. Private actors make production, consumption decisions

Timeline

1. **Formation**
   i. Executives set trade policy in international agreement
2. Ratification / Maintenance
   i. Firms lobby legislatures to break agreement
   ii. 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. Legislatures decide trade-war tariff
4. Private actors make production, consumption decisions

Total Break Probability

$B(\tau^a) = b(e_b(\tau^a), \tau^a)$

- Both direct and indirect effects of raising τ^a are negative
  - $B(\tau^a)$ decreasing in τ^a

Result 3

The total probability that the trade agreement will be broken is decreasing in the trade agreement tariffs.

Executives' Tradeoff

$$\Pr\left[\text{TradeWar}(\tau^a)\right] W_E(\tau^{tw}) + \{1 - \Pr\left[\text{TradeWar}(\tau^a)\right]\} W_E(\tau^a)$$

Lemma 5

The executives face the following trade off when choosing τ^a: higher tariffs decrease the probability that the trade agreement will be broken, but they also decrease welfare when the agreement is in force.

Trade Agreements

Result 4

The executives maximize their welfare by either (a) trading off reductions in the probability that the agreement will be broken with reductions in welfare under the agreement or (b) raising tariffs sufficiently high to ensure that the trade agreement will remain in force.

Uncertainty

- Added intuition for lobbying incentives and tariff-setting behavior
- High tariffs, low but positive lobbying effort
- Possibility of trade disruptions / ratification failure in equilibrium
- Different behavior at varying levels of uncertainty

Future Work

- Comparative statics on weighting function
- Empirical Tests
- Parallel models for countries with different government structures
- Asymmetric agreements
- Repeated model
  - Implications for design of dispute settlement procedures

Conclusion

Resolution of 'Protection for Sale' Puzzle

- Non-unitary legislature: more realistic lobbying process
- Separation of Powers: tariffs set in shadow of lobbying
- Uncertainty: smoother results, additional intuition

Conclusion

- Social welfare maximizers ($a \approx \infty$) set high tariffs to achieve low lobbying expenditures (and low γ_{ML})
- Executives use trade agreement to manipulate lobbying incentives
  - Trade agreement as political commitment device
- Firms lobby for trade war / ratification failure and achieve equilibrium trade disruptions in some cases
  - Can examine the endogenous dynamics behind politically-driven failures to cooperate