



# **The political economics of trade policies**

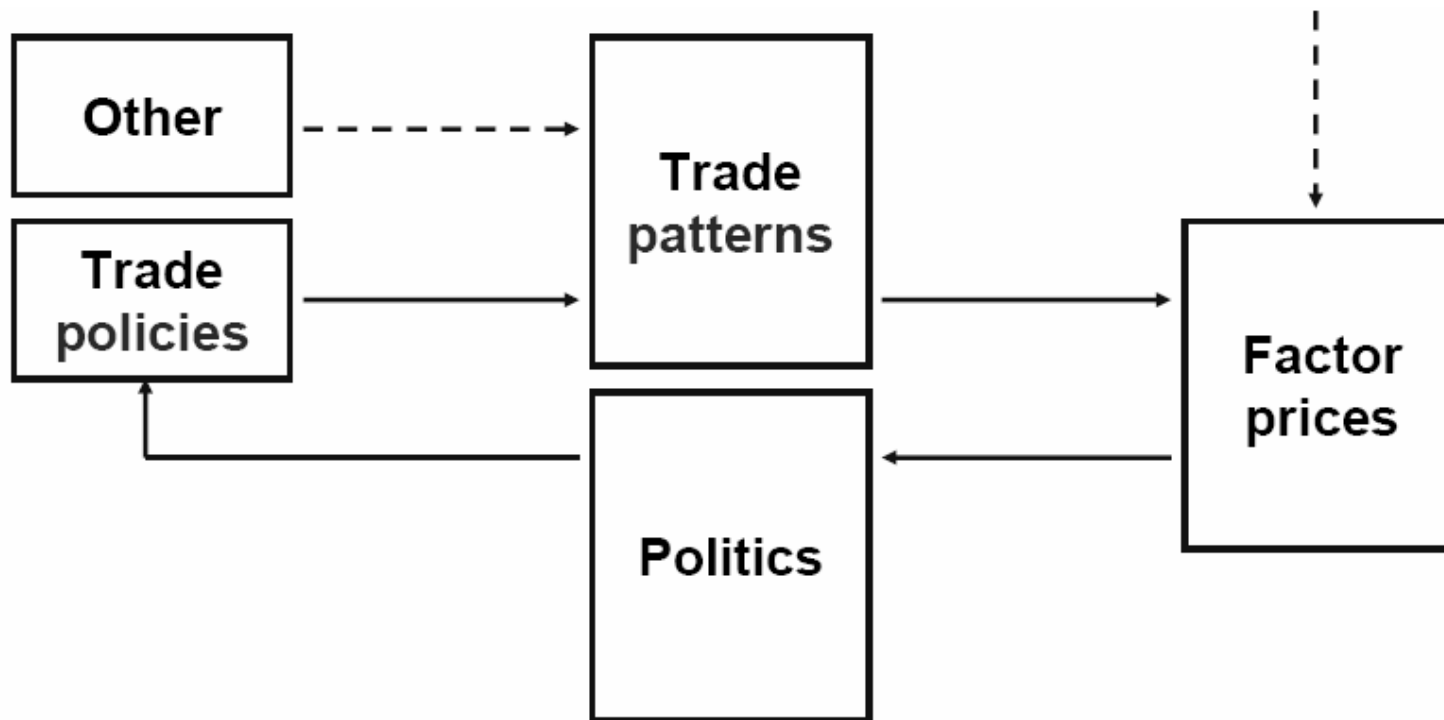
Frédéric Robert-Nicoud

Université de Genève



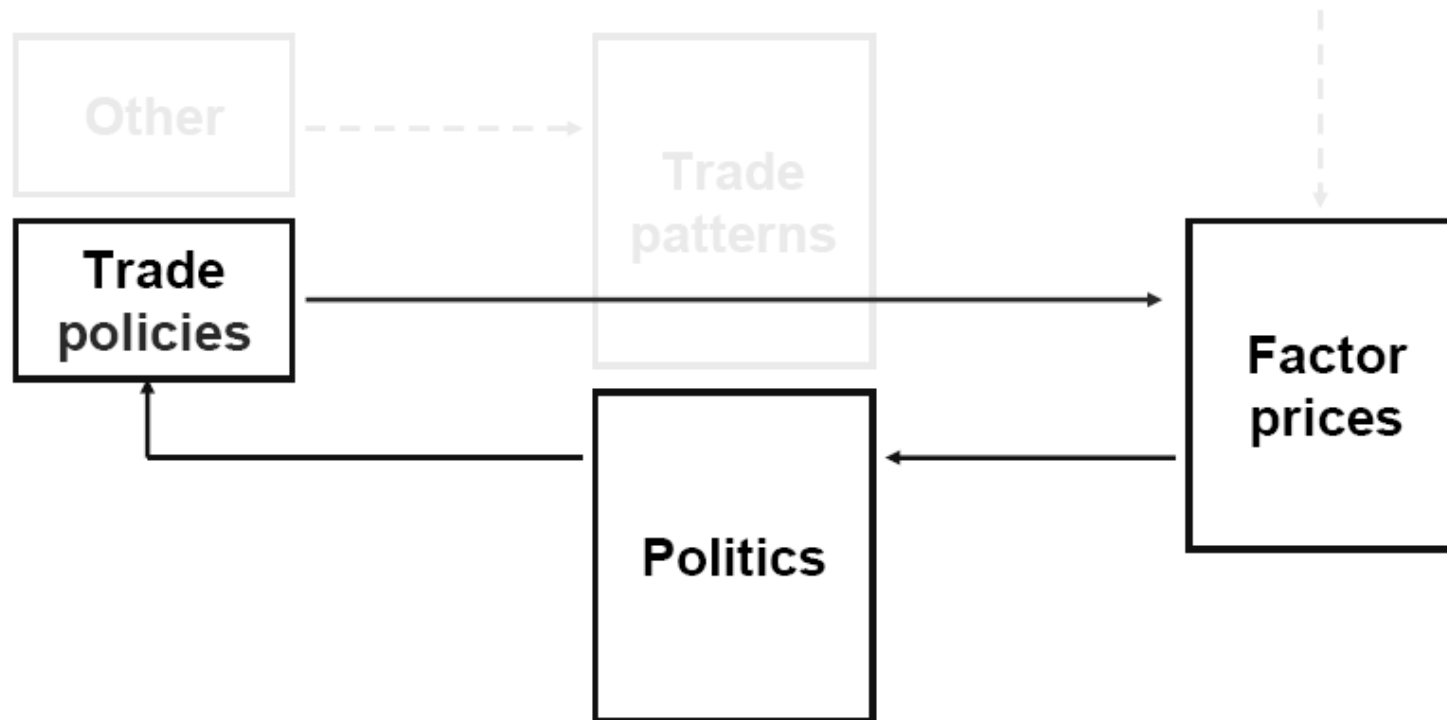
# Motivation

- Trade status affects factor + good prices
- Winners and losers



## For simplicity

- Trade status affects factor + good prices
- Winners and losers



## Outline

- **Why do countries trade?**
- Gains from trade
- Trade policy: Domestic effects
- Trade policy: International effects

## Trade patterns: Why do countries trade?

- Because they are different [Walras]
  - Ricardo: different technologies (wine for cloth)
  - H.O.: different factor endowments (oil for food)
- Because prices don't reflect marginal cost [Imperfect competition]
  - Brander 1981: reciprocal dumping
  - Nunn 2007: hold-up problem and contract enforcement
  - Ethier 1982, Krugman 1979: IRS and product variety
    - Jean 2002, Melitz 2003: same with heterogeneous firms

# Outline

- Why do countries trade?
- **Gains from trade**
- Trade policy: Domestic effects
- Trade policy: International effects

## Gains from trade in a Walrasian world

- CRS and PC (perfect competition)
  - Three efficiency conditions
  - Prices reflect unit costs (including distance)
- General results:
  1. **Some** trade is better than **no** trade
  2. SOE: **Free** trade is better than **restricted** trade

## (Gains from trade in a Walrasian world)

- Pareto-improving trade liberalisation [Feenstra]
  - Grignols and Wong 1991, Jus and Krishna, 2000:
  - Self-financing transfers to individual :

$$R^h = (p^1 - p^0)'c^{h0} - (w^1 - w^0)'v^{h0} + \frac{t^0'm^0}{H}$$

- Then policy change from  $t^0$  to  $t^1$  is Pareto improving if

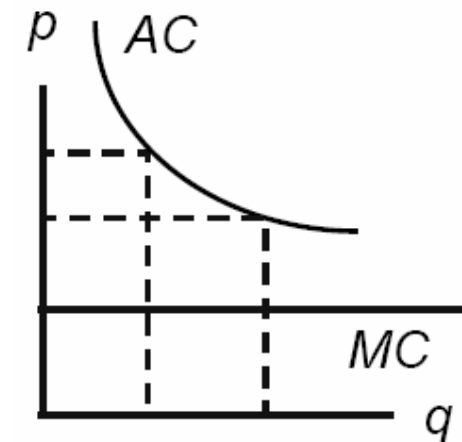
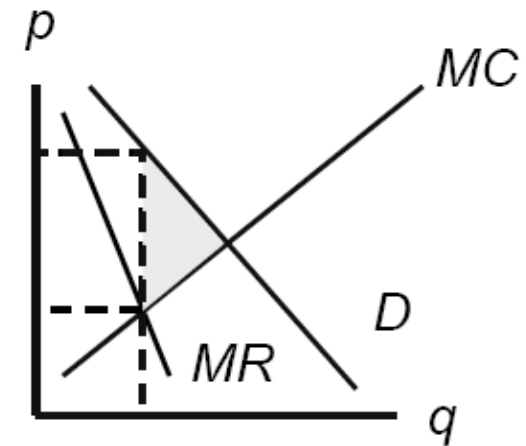
$$(p^{*0} - p^{*1})'m^0 + t^1'(m^1 - m^0) \geq 0$$

- (terms of trade / tariff revenue)
- Free trade > autarky (Samuelson 1962, Kemp 1962)
  - OK with commodity taxes instead of transfers (Dixit and Norman 1980)



# Gains from trade in a monopolistic world

- Imperfect competition
  - Prices are above marginal cost
  - Under provision of goods
- Scale economies
  - Big is better
- Product differentiation
  - Taste for variety
- General result:
  - Trade policy as a **2<sup>nd</sup> best** policy



## (Gains from trade in a monopolistic world)

- **Free-trade Pareto-dominates autarky** (with self-financing transfers) **if:**
- With CRS and IC: Helpman 1984, Markusen 1981
  - **output of every good** does not fall
- With IRS and MC: Helpman and Krugman 1985
  - **Output**  $x$  of each surviving firm does not fall
  - **Total industry output**  $Nx$  does not fall
  - **Set of goods**  $N^C$  available to consumers does not fall
    - E.g. DSK model
    - Counterexample: Melitz model

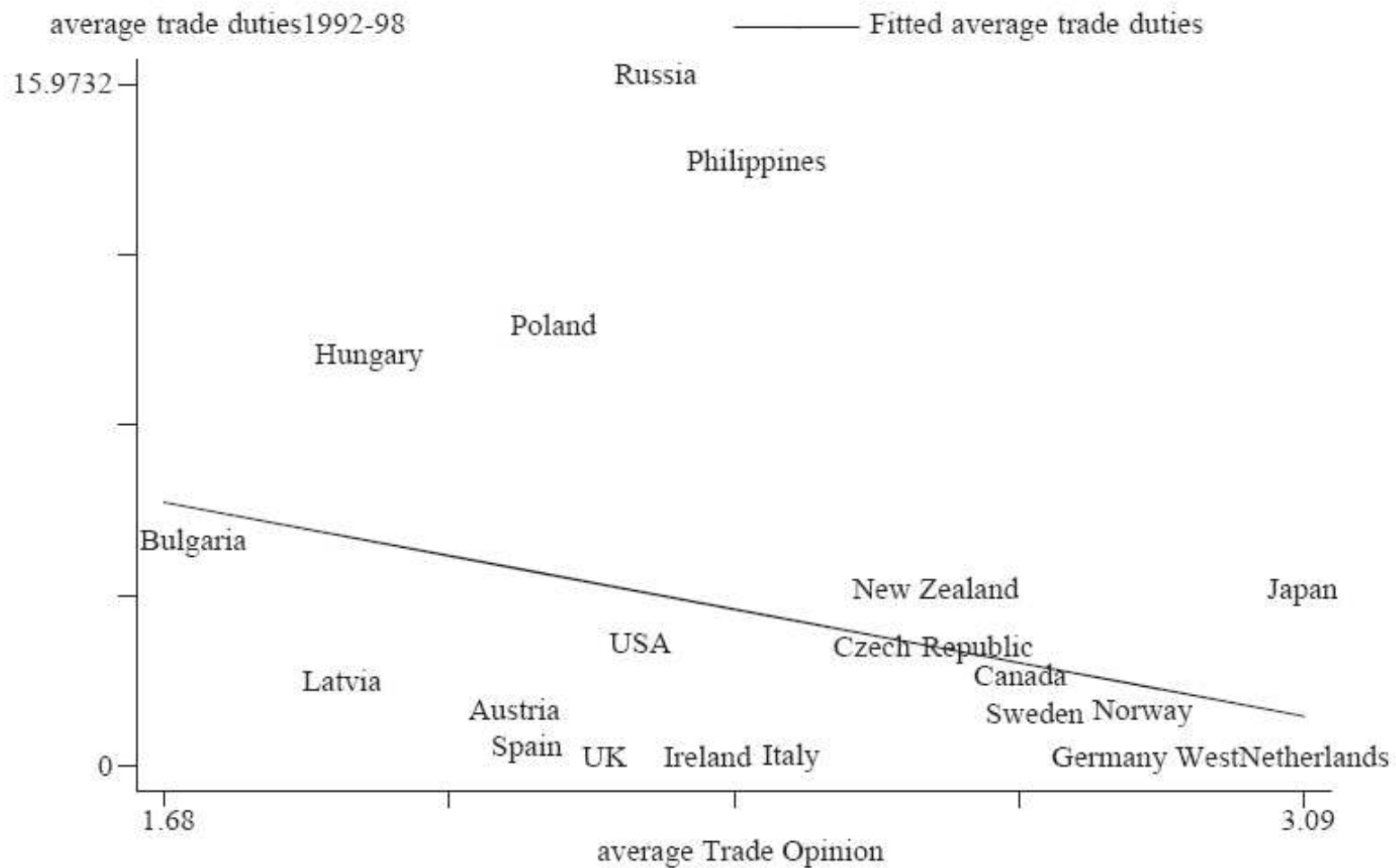
## Compensations in practice: examples

- Moving subsidies
  - Feenstra and Lewis 1994
  - USA: Trade Adjustment Assistance (TAA)
  - Automobile workers in 1979-1980 recession
    - Detroit: then moved back to previous job
  - TAA shrank under 1994 NAFTA (+ retraining)
- German reunification 1.7.1990 (Akerlof et al. 1991)
  - Wage parity
  - Government support so sustain employment in East
  - Self-financing
    - Subsidizing workers → not unemployed

## Compensations in practice: Generality?

- Welfare state as risk insurance (Rodrik 1998)
  - More open economies have bigger governments
- Winners and losers in practice
  - Incomplete insurance
  - Full compensation are not systematically feasible

# Trade attitudes and trade policies



Source: Mayda and Rodrik 2005, EER

## Summary: Trade policies & welfare

- Free-trade  $>$  autarky [CRS, PC]
- Scope for (2<sup>nd</sup> best) policy intervention [IC]
  - Strategic trade policies: impracticable
- **So why so many trade policies?**
- Losers cannot be fully compensated
  - Indirect influence: voting (representative democracy)
  - Voting on trade issues directly (direct democracy)
  - Direct influence: lobbying, cronyism (democracies and dictatorships alike)
- Manipulate terms of trade

# Outline

- Why do countries trade?
- Gains from trade
- **Trade policy: Domestic effects**
- Trade policy: International effects

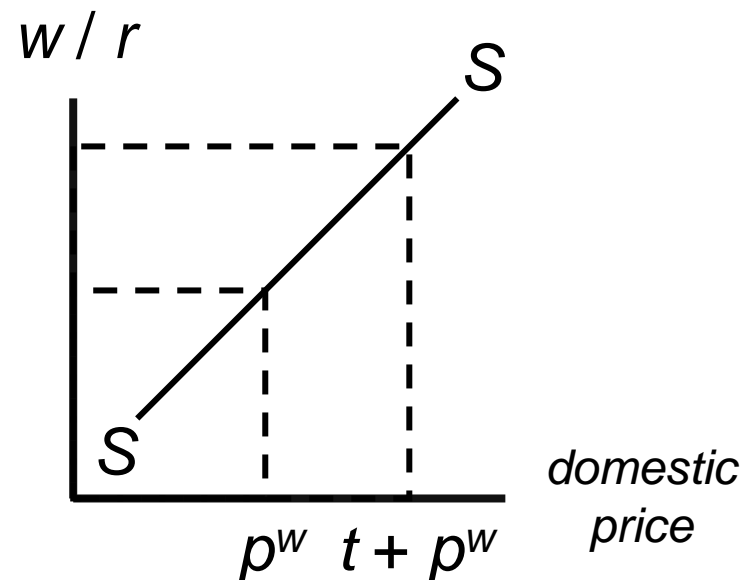
## Trade policy: Domestic effects

- Unilateral trade policy and the *domestic* distribution of the gains from trade
- Heterogeneous people → uneven effects of changes of  $p$
- Mediation of demands through the political process
  - Voting
  - Lobbying



# Voting in a Walrasian world

- Median voter in HO (Mayer 1984)
- Politics
  - Single-peaked preferences
  - Majority voting
    - Downsian candidates
    - direct democracy
- Economics
  - 2x2 HO structure
  - Trade  $\rightarrow$  Stolper Samuelson distributive effects
  - Heterogeneous citizens: own different amounts of  $K$
  - Consumers favour more open trade



## Mayer 1984

- Quasi-linear preferences (with  $k = K/L$  and  $L = 1$ )

$$u(c_0^h, c^h) = c_0^h + U(c^h)$$

– Income

$$\begin{aligned} I^h &= T + w + rk^h \\ &= T + w + \rho^h rk \\ &= (\rho^h - 1)rk + T + w + rk \\ &= (\rho^h - 1)rk + tm(p) + [y_0(p) + py(p)] \end{aligned}$$

– Indirect Utility:

$$\begin{aligned} V(p, I^h) &= I^h - pd(p) + U[d(p)] \\ &= (\rho^h - 1)rk + y_0(p) + py(p) + tm(p) + CS(p) \\ &= \text{income} + \text{Consumer surplus} \end{aligned}$$

## (Mayer 1984)

- Differentiating:

$$\begin{aligned}dV^h &= (\rho^h - 1)kdr + [y'_0(p) + py'(p) + y(p) + tm'(p) - d(p)] dp + m(p)dt \\ &= (\rho^h - 1)kdr + tm'(p)dp + m(p)[dt - dp]\end{aligned}$$

- Small open economy:  $dp = dt$

$$\frac{dV^h}{dt} = (\rho^h - 1)k \frac{dr}{dt} + tm'(p)$$

- Median voter's preferred platform (equilibrium)

$$t^m = (1 - \rho^m) \frac{k}{m'(p)} \frac{dr}{dp}$$

- Theoretical predictions

## (Mayer 1984)

- Theoretical predictions [**Cross-country**]
  - Alesina and Rodrik 1994:  $\rho^m < 1$  in all countries →
- 1. Positive tariffs in industrialised countries
  - Negative tariffs in developing countries
- 2. Tariffs are increasing in income inequalities
  - To see this:  $t^m$  is increasing in  $(1 - \rho^m)$
- Effects should be stronger in democracies

## (Mayer 1984)

- Empirical evidence: Dutt and Mitra (2002)

$$\tau^i = \alpha_0 + \alpha_1 INEQ^i + \alpha_2 INEQ^i k^i + \alpha_3 k^i + \beta' X^i + \varepsilon^i$$

– With 
$$\frac{\partial \tau^i}{\partial INEQ^i} = \alpha_1 + \alpha_2 k^i$$

- Results:

Gini coefficient-regression with and without controls

	Tariff	Quota	Import duty	(X+M)/GDP
Gini	-0.029** (0.016)	0.012 (0.022)	-1.048* (0.679)	0.049 (0.04)
Gini*capital-labor ratio	0.003*** (0.001)	-0.0002 (0.002)	0.144*** (0.067)	-0.006* (0.004)
Capital-labor ratio	-0.189*** (0.068)	-0.037 (0.093)	-8.406*** (2.888)	0.341*** (0.166)

# Lobbying in a Walrasian world

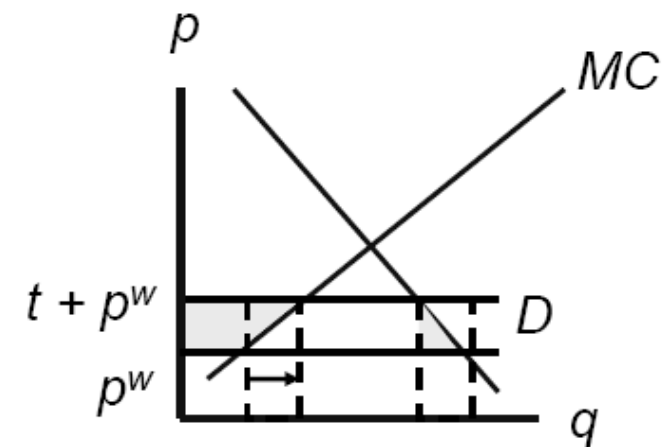
- Protection for sale (Grossman-Helpman 1994)
  - ‘Buying’ tariffs in Specific factor model

- Politics

- Lobbies buy influence
- Incumbent politician

- Economics

- $N$  sectors with  $N$  specific factors + numéraire
- Exporting  $\rightarrow$  good for specific factor
- Import competition  $\rightarrow$  bad for specific factor
- Consumers favour more open trade



## (Grossman and Helpman 1994)

- Quasi-linear preferences (with  $k = K/L$  and  $L = 1$ )

$$u(c_0^h, c^h) = c_0^h + U_1(c_1^h) + \dots + U_N(c_N^h)$$

- Indirect Utility:

$$\begin{aligned} V(p, I^h) &= I^h + CS_1(p_1) + \dots + CS_N(p_N) \\ &= I^h + S(p) \end{aligned}$$

- Incomes for industry  $i$ :

$$I_i = \pi_i + H_i [1 + T]$$

- Thus:  $V_i = \pi_i + H_i [1 + S(p) + T]$

- For individuals not owning shares:

$$V_0 = H_0 [1 + S(p) + T]$$

## (Grossman and Helpman 1994)

- Government's objective function

$$\begin{aligned} G(p) &= \frac{1}{1+\alpha} R(p) + \frac{\alpha}{1+\alpha} V(p) \\ &= \frac{1}{1+\alpha} \sum_{i \in J_O} R_i(p) + \frac{\alpha}{1+\alpha} \sum_h V^h(p) \end{aligned}$$

- Lobbies' contribution schedules

$$R_i(p) = \max\{0, W_i(p) - B_i\}$$

- To which I prefer to 'no-ice-cream clause' version

$$\tilde{R}_i(p) = \max\{0, \pi_i(p_i) - B_i\}$$

- Together:

$$R_i(p) = \max\{0, \pi_i(p_i) + \phi H_i [1 + S(p) + T] - B_i\}, \quad \phi \in \{0, 1\}$$



## (Grossman and Helpman 1994)

- Together:

$$G(p) = ct + \frac{\alpha + \phi\lambda_O}{1 + \alpha} [1 + S(p) + T] + \frac{\alpha}{1 + \alpha} \sum_i \pi_i(p_i) + \frac{1}{1 + \alpha} \sum_{i \in J_O} \pi_i(p_i)$$

– where

$$\lambda_O \equiv \sum_{i \in J_O} H_i$$

– FOC:

$$\frac{dG}{dp_i} = \frac{\alpha + \phi\lambda_O}{1 + \alpha} \left[ -d_i(p_i) + \frac{dT_i}{dp_i} \right] + \frac{\alpha + \delta_i}{1 + \alpha} y_i(p_i), \quad \delta_i = 1 \text{ if } i \in J_O \text{ and } 0 \text{ o/w}$$

$$= \frac{\alpha + \phi\lambda_O}{1 + \alpha} [-d_i(p_i) + m_i(p_i) + t_i m'_i(p_i)] + \frac{\alpha + \delta_i}{1 + \alpha} y_i(p_i)$$

$$= \frac{\alpha}{1 + \alpha} t_i m'_i(p_i) + \frac{\delta_i - \phi\lambda_O}{1 + \alpha} y_i(p_i) + \frac{\phi\lambda_O}{1 + \alpha} t_i m'_i(p_i)$$

$$\propto t_i [\alpha + \phi\lambda_O] m'_i(p_i) \frac{p_i}{m_i(p_i)} + y_i(p_i) [\delta_i - \phi\lambda_O] \frac{p_i}{m_i(p_i)} = 0 \Rightarrow$$

## (Grossman and Helpman 1994)

- Equilibrium characterisation

$$\frac{t_i}{p_i} = - \left[ \frac{\partial \ln m_i}{\partial \ln p_i} \right]^{-1} \frac{y_i \delta_i - \phi \lambda_0}{m_i \alpha + \phi \lambda_0}$$

- Theoretical predictions [**cross-sector**]
  1. Positive tariffs in organised sectors
    - Negative tariffs otherwise
  2. Tariffs are decreasing in import penetration

## (Grossman and Helpman 1994)

- Empirical evidence: Goldberg and Maggi 1999
  - Empirical specification:

$$\left[ \frac{\partial \ln m_i}{\partial \ln p_i} \right] \tau^i = \beta_0 + \beta_1 \left( \frac{y}{m} \right)_i + \beta_2 \left( \delta \frac{y}{m} \right)_i + \varepsilon_i$$

- As a function of structural parameters:

$$\beta_1 = -\frac{\phi \lambda_0}{\alpha + \phi \lambda_0} \leq 0, \quad \text{and} \quad \beta_2 = \frac{1}{\alpha + \phi \lambda_0} > 0$$

- Gawande and Bandyopadhyay 2000
  - Control for tariffs on intermediate goods

## (Grossman and Helpman 1994)

- Estimations:
  - GM:  $\frac{\alpha}{1 + \alpha} = 99\%$ ,  $\phi\lambda_0 = 88\%$
  - GB:  $\frac{\alpha}{1 + \alpha} = 99.97\%$ ,  $\phi\lambda_0 = 98\%$
- Realistically,  $\phi$  is about zero and  $\lambda_0 < 1/2$ :
  - Imposing  $\phi = 0$ :
    - Implied  $\alpha / (1 + \alpha)$  more realistic:  $1 / (1 + \beta_2)^{-1} = .35$
  - Guiso et al. (2003): Few households own stocks directly or indirectly
    - US: 48%
    - UK: 34%
    - France: 23%
    - Italy: 15%

## (Grossman and Helpman 1994)

- Evidence with horizontal competition among lobbies
  - Key in GH model is  $1 / (1 + \alpha) > 0$  but estimates are close to zero
- No competition among lobbies:  $\phi = 0$ 
  - Improves on implied benevolence share
  - Weight on contributions  $\rightarrow 1 / (1 + \alpha) = .65$
  - But no evidence for prediction:  $\beta_1 / \beta_2 = 0$
- Model predicts  $\beta_1 + \beta_2 > 0$ 
  - But data systematically implies  $\beta_1 + \beta_2 = 0$
- What might be missing?
  - Vertical competition among lobbies
  - NTB (non-tariff barriers)
  - Heterogeneous firms

## (Grossman and Helpman 1994)

- Gawande, Krishna and Olarreaga (2009)
  - Vertical competition between lobbies
  - Between upstream and downstream production
- Cross-industry evidence
- 42 countries
  - ‘With’ or ‘without’ assuming competition

	$\alpha/(1+\alpha)$	without	with
Bangladesh		.63	.41
Pakistan		.63	.5
France		.96	.92
USA		.98	.94
Japan		.989	.968
Singapore		.999	.995

## Facchini, Van Biesebroeck and Willman 2006

- Model explicitly non-tariff barriers
  - Coverage ratios
  - Both tariffs *and* non-tariff barriers
- Non-tariff barriers: rent dissipation
  - VER
  - Quotas: not using auctions
- Find rent dissipation in the range 25-28%
- Welfare weight  $\alpha$  still too large (above 96%)
- Fraction  $\lambda_0$  more realistic in some specifications
  - But varies a lot across specifications

## Heterogeneous firms: Melitz 2003, Jean 2002

- Sunk entry cost (innovation)
  - Positive profits ex post
- Random, heterogeneous productivity
- Fixed market entry costs ('beachhead costs')
  - Only the most productive firms export
  - The least productive firms 'exit'
- Trade liberalisation (Baldwin Forslid 2006)
  - Higher profits for formerly exporting firms
  - Lower profits for purely domestic firms
  - 'Stolper-Samuelson effects'



## Bombardini 2008

- Simplified GH model
  - Linear demand
  - Leontief technology
  - (final goods only)
  - Structural specification with no-ice-cream clause  $\phi = 0$
- Heterogeneous firms
- Endogenous lobby participation
  - Firms contribute individually
  - Fixed cost of lobbying (similar to Mitra 1999)
  - Only the largest firms lobby

## (Bombardini 2008)

- Theoretical predictions

$$\frac{t_i}{p_i} = - \left[ \frac{\partial \ln m_i}{\partial \ln p_i} \right]^{-1} \frac{y_i \theta_i - \phi \lambda_0}{m_i \alpha + \phi \lambda_0}$$

– where  $\theta_i$  is the lobby participation share (output)

- Larger firms are more likely to belong to lobby
- Under Pareto distribution
  - Mean preserving spread  $\rightarrow$  less protection

## (Bombardini 2008)

- Reduced form

$$\tau^i = \beta_0 + \beta_1 \left( \frac{y/m}{e} \right)_i + \beta_2 \left( \delta \frac{y/m}{e} \right)_i + \beta_3 \sigma_i + \beta_4 \mu_i + \beta_5 \delta_i + Z'_i \beta_6 + \varepsilon_i$$

- Simultaneity bias (Trefler 1993)

$$\left( \frac{m}{y} \right)_i = \gamma \tau_i + \eta_i$$

- Results:  $\beta_3 = .44^{**}$ 
  - (and  $\beta_4 = 0$ )
  - Reject no-ice-cream clause:  $\beta_1 / \beta_2 = -1$
  - Implied  $\alpha / (1 + \alpha)$  still close to zero

## (Bombardini 2008)

- Structural estimation

$$\tau^i = \beta_0 + \beta_1 \left( \frac{y/m}{e} \right)_i + \beta_2 \left( \delta \theta \frac{y/m}{e} \right)_i + Z'_i \beta_6 + \varepsilon_i$$

- Results with observed participation shares
  - Welfare weight  $\alpha$  still too large (above 99%)
  - But  $\phi \lambda_0$  much more acceptable: about .02
- Results with constructed shares
  - Welfare weight even larger
  - Participation share  $\phi \lambda_0$  in [.12, .18]
- She also finds that more uneven sectors are more protected

## Evidence on Grossman and Helpman 1994

- Summary
- Key in GH model is  $1 / (1 + \alpha) > 0$  but estimates are close to zero
- Extensions add some explanatory power but do not improve on welfare weights
- A solution is to assume the no-ice-cream clause
  - Much more reasonable weights
  - But theoretical implication  $\beta_1 / \beta_2 = 0$  rejected by data

# Outline

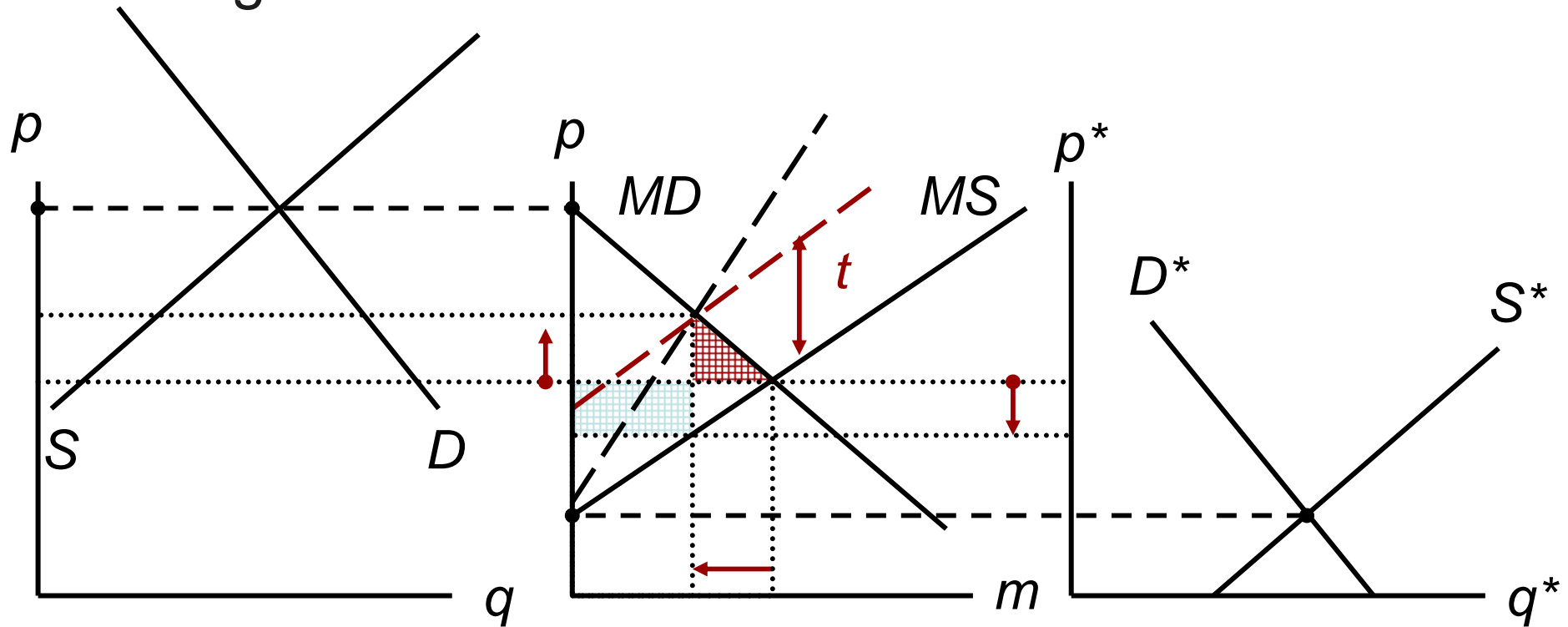
- Why do countries trade?
- Gains from trade
- Trade policy: Domestic effects
- **Trade policy: International effects**
  - **Unilateral trade policy**
  - Regionalism
  - Multilateralism

## Trade policy: International effects

- Multilateral trade policy and the *international* distribution of the gains from trade
- Large countries can manipulate the terms of trade
  - Unilateralism
  - Regionalism
- Trade wars vs. trade talks
- **Multilateralism** and the role of the GATT
  - Reciprocity
  - Non-discrimination

# Unilateral trade policy in a Walrasian world

- Large countries and the terms of trade

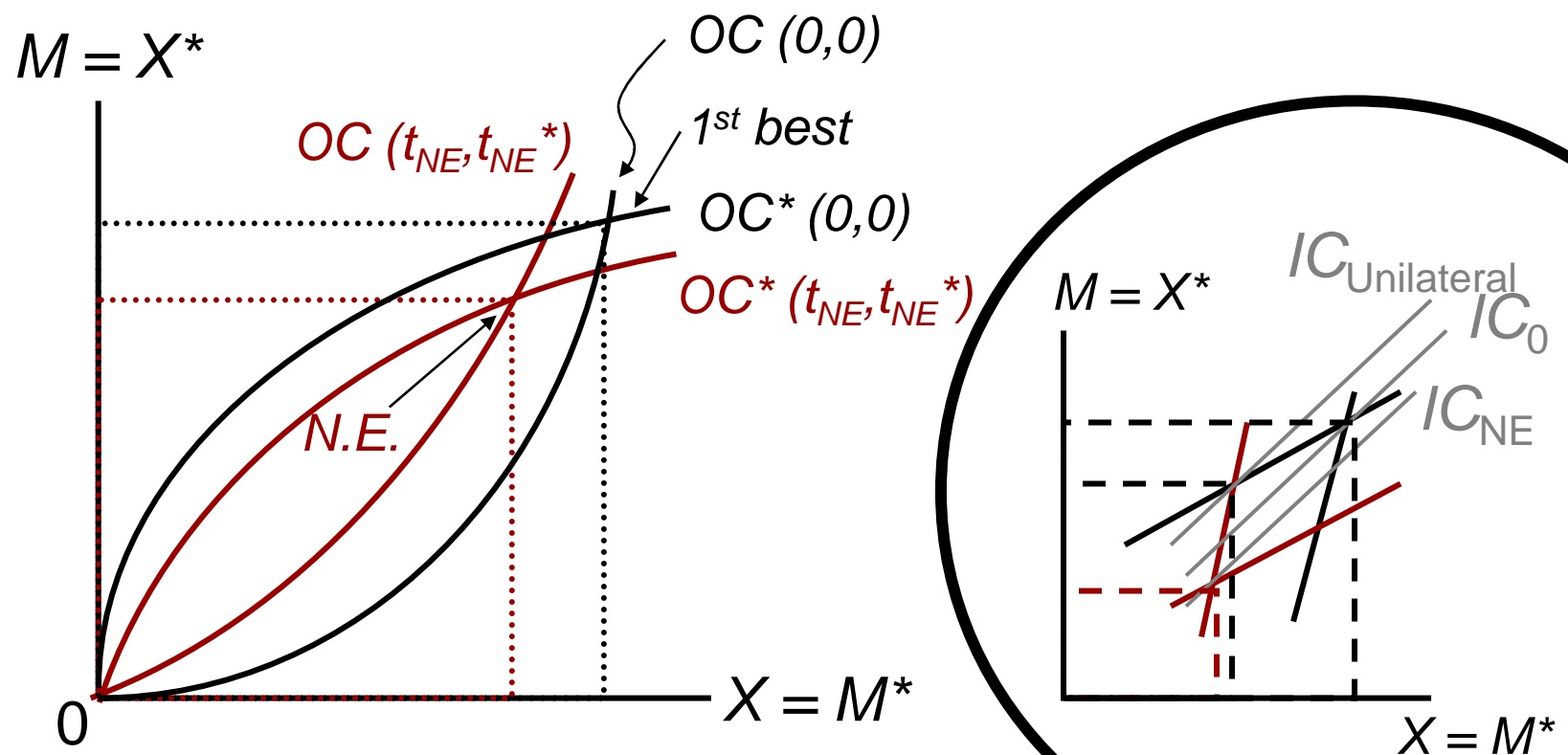


- Positive effects: domestic price, border price, imports
- Normative effects: Foreign worse-off, Home better-off.



# Non-cooperative trade policy

- Prisoners' dilemma
- 'optimal tariffs' end up hurting both countries



## Non-cooperative trade policy

- Two-country extension of quasi-linear model
  - Voting: median voter
  - Lobbying: PFS model (Grossman and Helpman 1995)
- Home government objective function
  - $G(p^W, \tau)$  and  $G^*(p^W, \tau^*)$
  - Politically optimal tariff
    - $G_\tau(p^W, \tau) = 0$
    - $G_\tau^*(p^W, \tau^*) = 0$
  - N.E.: ToT externality
    - $G_\tau(p^W, \tau) + G_p(p^W, \tau) dp^W/d\tau = 0$
    - $G_\tau^*(p^W, \tau) + G_p^*(p^W, \tau) dp^W/d\tau^* = 0$

## GATT: reciprocity

- Bagwell and Staiger (2002)
- Reciprocity principle
  - Norm
  - Exchanging ‘concessions’ (mercantilist paradigm)
- Interpretation (2 by 2)
  - Imports rise by the same amount:  $p^{w0}\Delta m = \Delta m^*$
  - Trade balance:  $\Delta m^* = m^{*1} - m^{*0} = p^{w1}x^{*1} - p^{w0}x^{*0}$
  - Identity:  $x^{*1} = m^1$  and  $x^{*0} = m^0$
  - Thus  $p^{w0}\Delta m = \Delta m^*$  iff  $p^{w1} = p^{w0}$
- Reciprocity  $\rightarrow$  TOT unchanged

# Unilateral trade policy in a DSK world

- Price-lowering protection (Venables 1987)
- Setup
  - 2 sectors
    - Homogeneous, CRS, PC, zero trade cost
    - Differentiated, IRS, iceberg trade costs
- Equilibrium outcome
  - Home Market effect (Krugman 1980)
    - Large country exports IRS good
  - PLP effect (Venables 1987)
    - Unilateral protection decreases domestic prices

## PLP (Venables 1987)

- How the PLP works:
  - Let  $P^{1-\sigma} = n + \tau^{1-\sigma} (1-n)$ 
    - Share of IRS firms in Home:  $n$
    - Iceberg trade/transportation cost:  $\tau$
    - Elasticity of substitution/demand:  $\sigma$
  - Welfare effect summarized by effect on prices
    - $(1 - \sigma) d \ln P = [1 - \tau^{1-\sigma}] dn - (\sigma - 1) \tau^{-\sigma} (1 - n) d\tau$
    - Relocation externality:  $dn / d\tau < 0$  and 'large'
    - Zero-sum game
- Nash equilibrium in tariff game
  - Prohibitive tariffs
  - Strong prisoners dilemma flavour

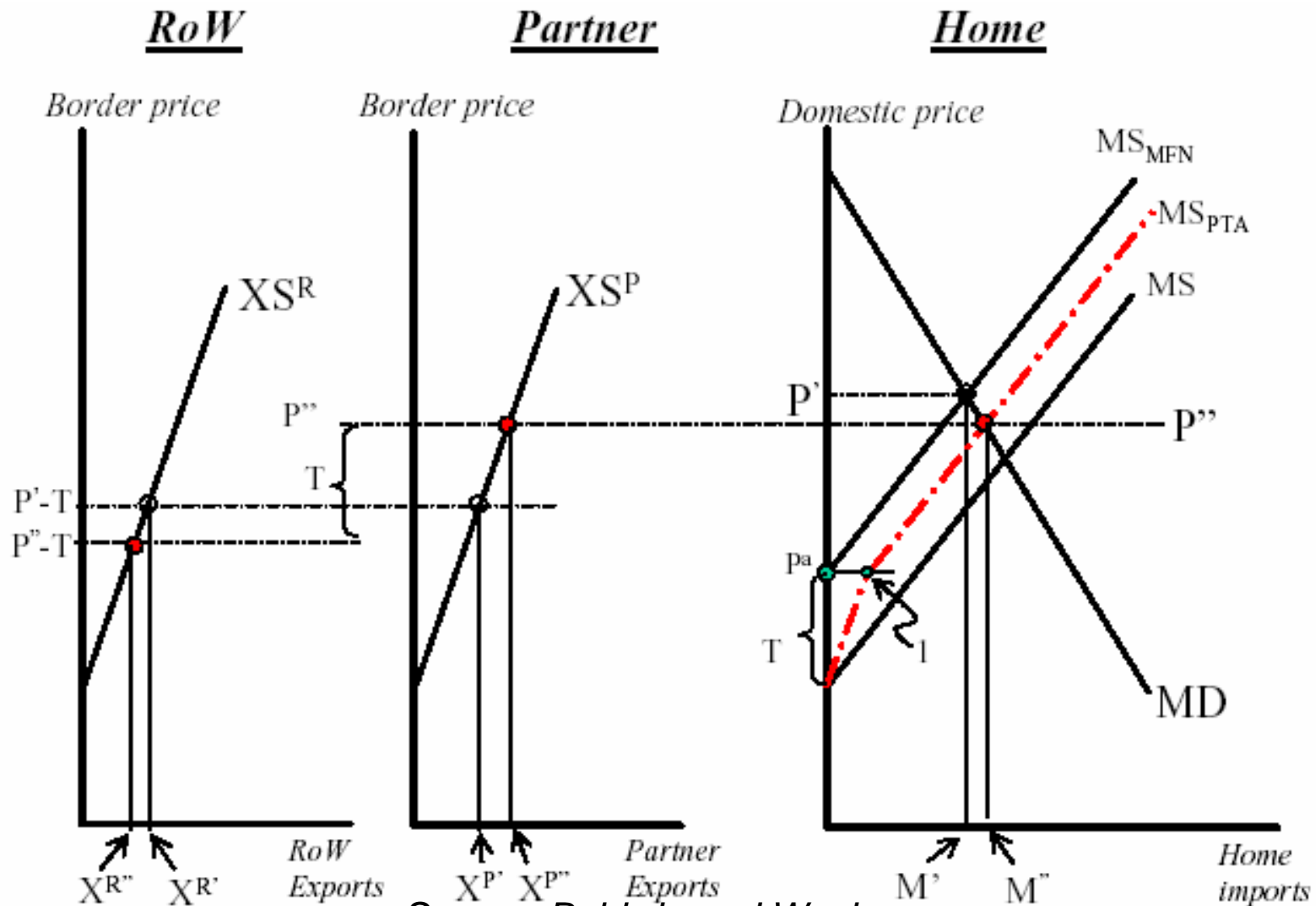
## Trade talks and the relocation externality

- Baldwin and Robert-Nicoud (2000)
  - Design PTAs to liberalise while keeping  $dn = 0$
  - E.g. EU-CEEC trade agreements
    - During transition:  $\tau^{EU} < \tau^{CEEC}$
  - Both countries gain:  $d \ln P = \tau^{-\sigma} (1 - n) d\tau > 0$
- Ossa (2009)
  - Another rationale for GATT/WTO principles
  - If ‘Reciprocity’ = such that trade balance unaffected
  - then  $dn = 0$
  - and both countries gain:  $d \ln P = \tau^{-\sigma} (1 - n) d\tau > 0$
  - WTO tariff cutting formulas

# Outline

- Why do countries trade?
- Gains from trade
- Trade policy: Domestic effects
- **Trade policy: International effects**
  - Unilateral trade policy
  - **Regionalism**
  - Multilateralism

# Discriminatory trade policy: Regionalism



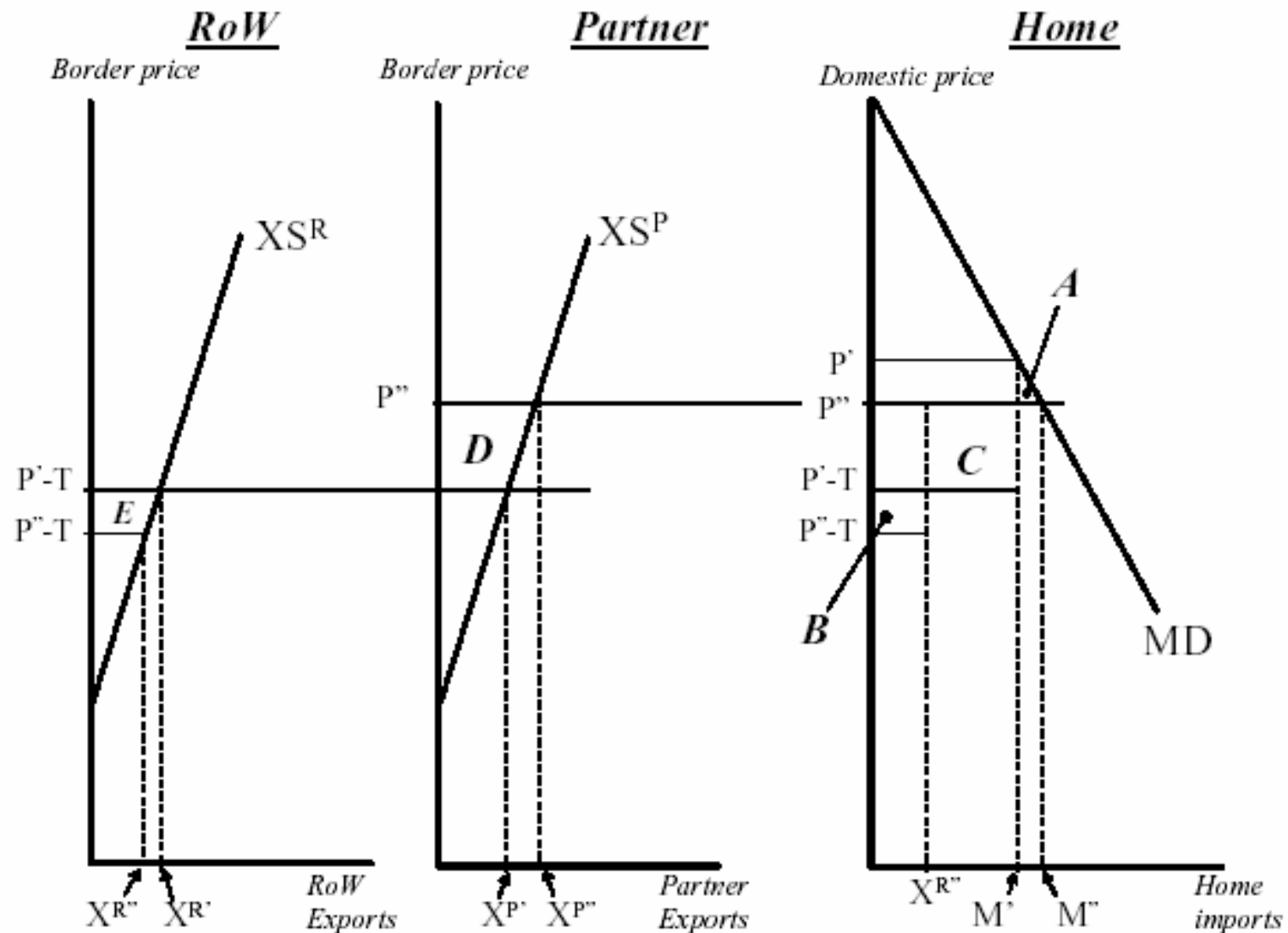
Source: Baldwin and Wyplosz



## The positive effects of regionalism

- Preferential trade agreements (PTA)
  - FTAs and CUs
- Positive effects: Prices
  - Home: domestic price falls
  - Partner: border price rises from  $P'-T$  to  $P''$
  - ROW: border price falls from  $P'-T$  to  $P''-T$
- Quantities: Viner
  - Home: imports rise [loosely: *trade creation*]
  - Partner: exports rise [loosely: *trade diversion*]
  - ROW: exports fall
  - ➔ Supply switching occurs and we buy more from the country whose border price is higher!

# The welfare effects of regionalism



## (The welfare effects of regionalism)

- Partner gains D (higher price, more sales)
- ROW loses E (lower price, less sales)
- Home ambiguous  $A+B-C$ 
  - Gain from extra imports (A)
  - Price effect on original imports from ROW (B)
  - Price effect on original imports from Partner (C)
  - Ignore border price effects on new imports  $M''-M'$  (didn't import them to begin with)

## GATT: non-discrimination

- Article 1 – MFN treatment
  - ... any advantage, favour, privilege or immunity granted by any contracting party ... shall be accorded immediately and unconditionally to ... all other parties.
  - See Bagwell and Staiger (2002)
- Article 24 – CUs and FTAs
  - The purpose of a CU or a FTA should be to facilitate trade between the constituent territories and not to raise barriers to the trade of other contracting parties.
  - ... the duties ... shall not be on the whole higher than ... prior [its] formation.

## Remember: GFT in a Walrasian world

1. **Some** trade is better than **no** trade
2. SOE: **Free** trade is better than **restricted** trade
  - Easy to see why PTA has ambiguous effect on welfare of participating countries
  - Kemp and Wan 1976 vs. GATT Article 24
    - If the CU keeps  $p^W$  constant (i.e.  $m^{ROW}$  constant) then neither the ROW nor the participating countries loose
      - Involves transfers among member countries
    - Krishna and Panagariya 2002: KW holds if *each country* keeps importing same volume from ROW
      - ROO crucial for this result

## Empirical measures

- Britain and the EEC 1973 (Grignols 1984)
  - British ToT have fallen each year 1973-80 vs. 1972
  - Loss 1.7% GDP
  - Tariff revenue: loss .6% of GDP
  - Net transfers: gain: .04% of GDP
- MERCOSUR (Chang and Winters 2002)
  - Brazilian border price from J, US, G, K and Chile fell
    - Loss 1996 = \$ 624 mio for US, \$ 17 mio for Chile
- NAFTA (Clausing 2001, Romalis 2002)
  - Both trade creation and trade diversion

## Regionalism in a DSK world

- Domino effect of regionalism (Baldwin 1993)
  - EU integrated by waves. Why?
  - Cost of staying out increases as number of members rises
- To see this
  - Home / Partner:  $P^{1-\sigma} = n + \tau^{1-\sigma} n^* + (\tau')^{1-\sigma} [1 - n - n^*]$
  - ROW:  $(P'')^{1-\sigma} = (\tau'')^{1-\sigma} [n + n^*] + [1 - n - n^*]$
- One can show (BFMOR 2003):
  - Share of ROW firms  $[1 - n - n^*]$  falls as  $\tau$  falls
  - Thus  $d \ln P'' = (\sigma - 1)^{-1} d[n + n^*] > 0$
  - and  $dP < 0$  (time consuming: trust me on this)

# Outline

- Why do countries trade?
- Gains from trade
- Trade policy: Domestic effects
- **Trade policy: International effects**
  - Unilateral trade policy
  - Regionalism
  - **Multilateralism**



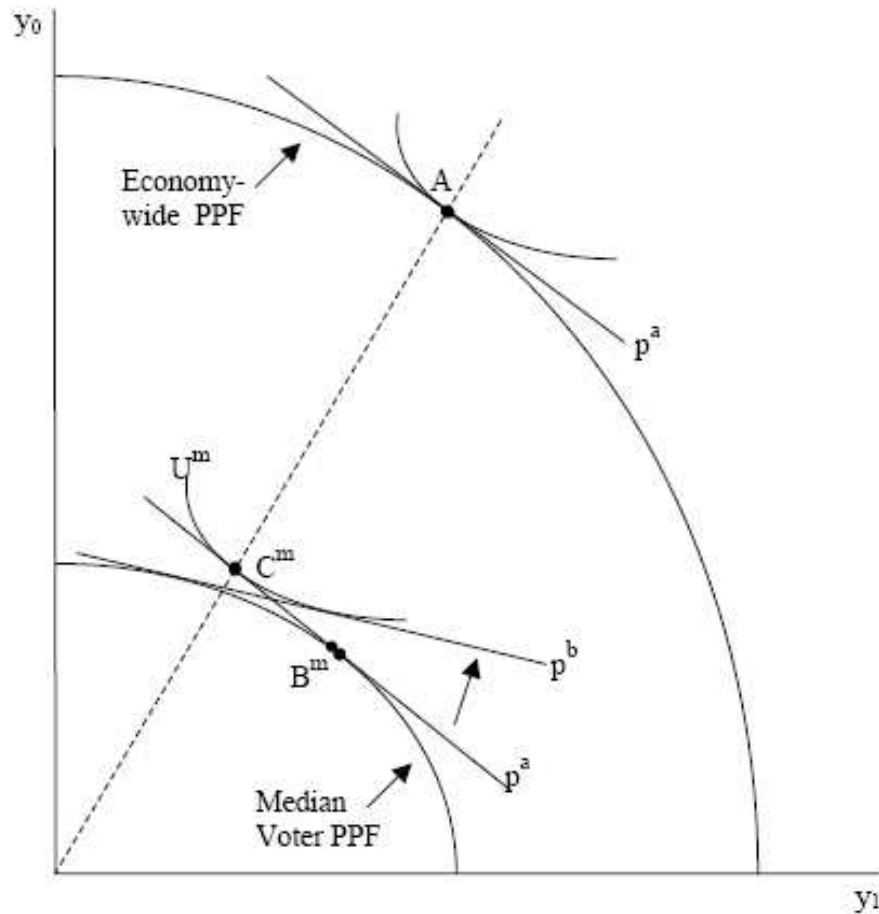
# Stumbling or building block to Multilateral FT?

- Article 24 – CUs and FTAs
  - The contracting parties recognise the desirability of increasing freedom of trade by the development ... of such agreements.
- Bhagwati 1993
  - Static impact: trade creation / diversion
  - Dynamic impact: PTAs change the *status quo ante*
  - The polity might reject free trade *after* the introduction of PTA
  - Levy 1999 (median voter setting)
  - Stumbling block: Krishna 1999 (PFS setting)
  - Building block: Baldwin 1998, Freund 2000, Ornelas 2005

## FT path in a Walrasian setting (Levy 1999)

- HO framework
  - 2 countries + ROW
  - Initially autarky. 1<sup>st</sup> vote: FTA. 2<sup>nd</sup> vote: Multilateral FT
  - *Bilateral* FT as stepping stone to *multilateral* FT?
- Four possible voting paths
  - a. (yes, yes) then (yes, yes) → no effect
  - b. (no, ·) then (yes, yes) → no effect
  - c. (yes, yes) then (yes, no)
  - d. (yes, yes) then (no, no)

# (Levy 1999)

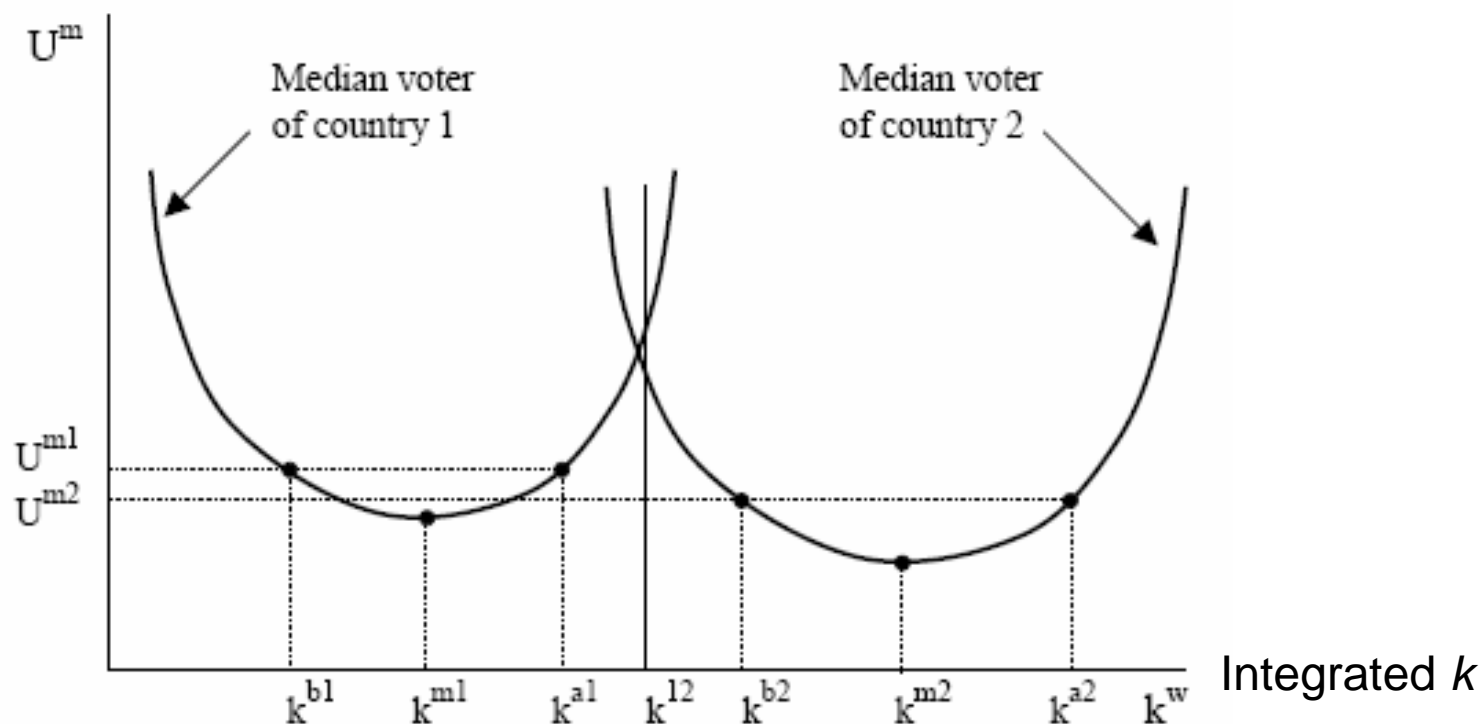


Source: Feenstra

- Good 0 is  $k$ -intensive
- Median voter with  $\rho^m < 1$
- FT with  $k$ -poorer nation
  - Median voter loses unless  $p$  falls all the way to  $p^b$  or by more
- FT with  $k$ -richer nation
  - Median voter unambiguously better-off

## (Levy 1999)

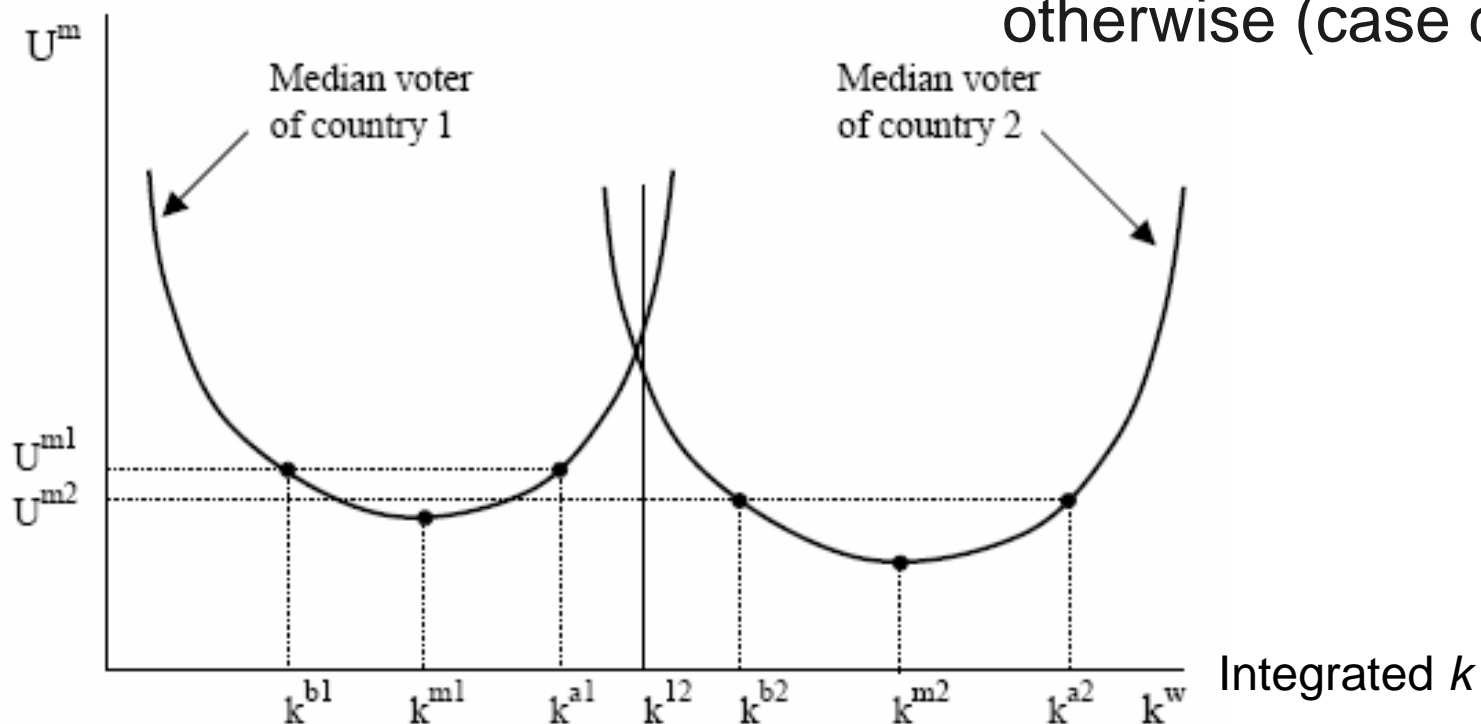
- Country 1  $k$ -poor
  - Rejection set  $(k^{b1}, k^{a1})$
- Country 2  $k$ -abundant
  - Rejection set  $(k^{b2}, k^{a2})$
- $k^{12} =$  Integrated  $k$
- Both median voters vote for bilateral FTA iff
  - $k^{a1} < k^{12} < k^{b2}$



Source: Feenstra

## (Levy 1999)

- $k^w =$  Integrated  $k$
- From FTA situation, *at least one* median voter votes for MFT
- FTA is a stumbling block to MFT when countries are similar (case c)
- Not an impediment otherwise (case d)



Source: Feenstra

## (Levy 1999)

- Assessment: two strategic countries
- Recall general result 1
  - By construction, no scope for building block effect
- Case (c): what if median voter favourable to MFT is forward looking?
  - Need a model with agenda setters and bargaining (Aghion, Antràs and Helpman 2007)
  - Or a model with path dependence (Freund 2000, McLaren 2002)
  - Or alternative political-economy mechanisms (Krishna 1998)

## Building or stumbling block? Theory

- Theory is ambiguous
  - Mostly in lobbying game (PFS)
  - Resolution of ambiguity depends on market structure
- Walrasian framework
  - Richardson 1993, Ornelas 2005qje
  - FTA reduces incentives to lobby
  - Reduces opposition to MFT from import competing sector
- Krishna 1998
  - Relative benefits of PTA accrue disproportionately to lobbying sector
  - Costs to rest of society gets a lower weight

## (Building or stumbling block? Theory)

- PTA tariff and external tariff are strategic complements
  - Tariffs as sources of revenue
  - Lowering one encourages lowering the other one
  - FTA *creates* external trade
  - Which is good for ROW (Ornelas 2005jie)
  - But this way may reduce the net benefit of MFT (Ornelas 2005eer)



## Building or stumbling block? Empirics

- Stumbling: Limao 2006  $\Delta \tau_{it} = \phi G_i + a + a_I$
- Uses tariff line data from US  $+ \beta \sum_k s_{iT}^k \Delta(b_t - b_t^k)$
- Aim: PTAs  $\rightarrow$  US MFN tariff  $+ \rho \sum_k s_{iT}^k (\sum_j \Delta \tau_{jt}^k w_{jT}^k) + u_i$ 
  - Counterfactual: goods without PTA
  - MFN tariff cut between Tokyo and Uruguay rounds
  - Most PTAs signed in between
  - Controls: market power of partner,
- Stumbling block effect
  - Strongest for goods in many PTAs or that cover a large fraction of US imports

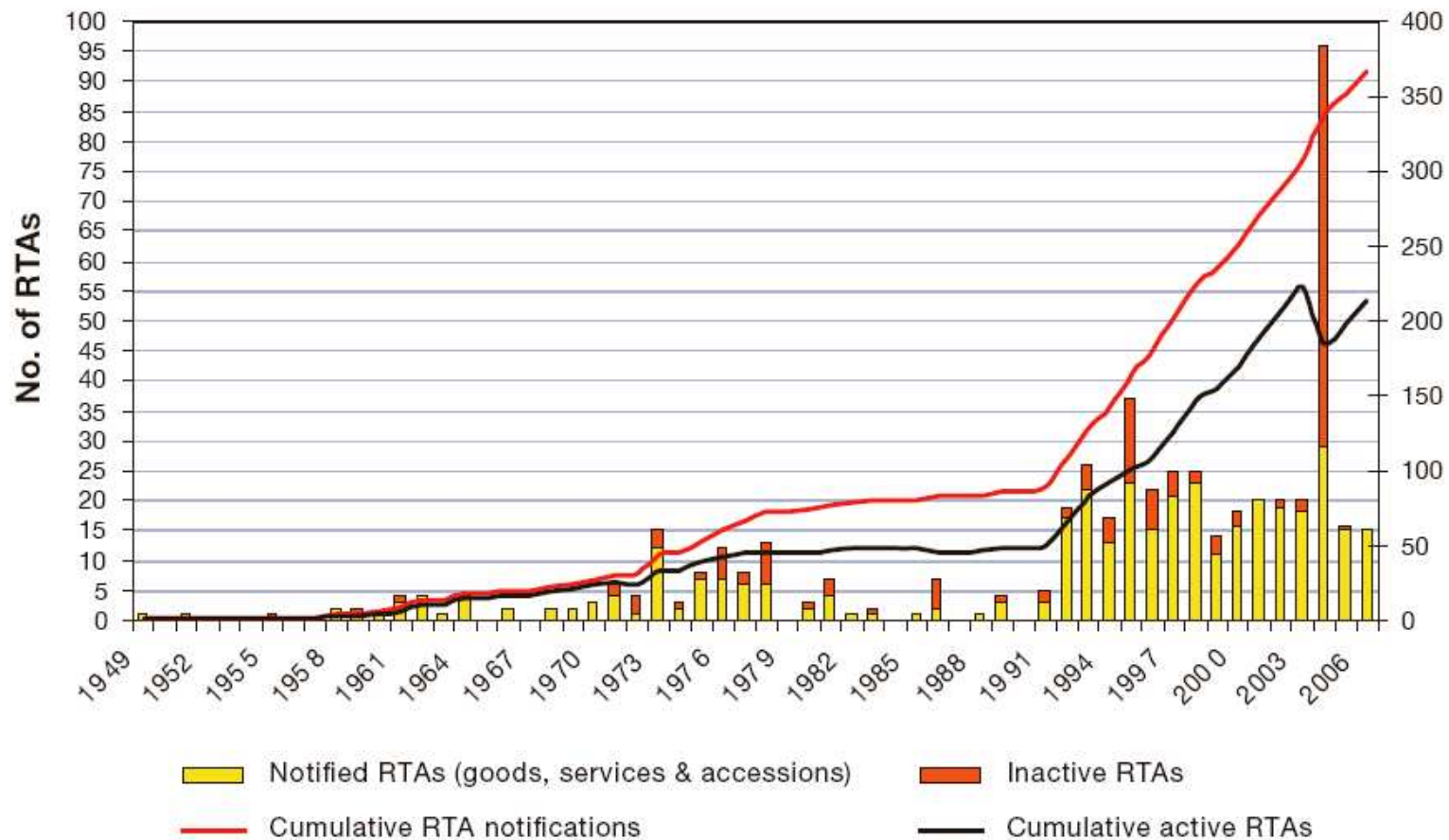
## (Building or stumbling block? Empirics)

- Building: Estevadeordal, Freund and Ornelas 2008
- Ten Latin American countries 1990-2001
- PTA tariff reductions  $\rightarrow$  MTL: reduction in external tariff ('water')
  - (in sample: applied  $\tau \ll$  bound  $\tau$  in 98% of cases)
  - From 15% (average) to 12%
  - Building block effect greater if preferences granted to important exporters
  - Effect not present in CUs (MERCOSUR)
    - Suggests that effect PTA  $\rightarrow$  MTL is causal

# From MTL to PTAs

- Proliferation of PTAs
  - Sign or success or failures of the WTO/GATT?

All RTAs notified to the GATT/WTO (1948-2006), by year of entry into force



## (From MTL to PTAs)

- Theory (Freund 2000)
  - MFN tariff reductions encourage formation of PTAs
  - Both ‘one-shot’ + ‘self-enforcing’ arguments
- Empirics (Fugazza and Robert-Nicoud 2009)
  - US tariff line data

Benchmarks LOGIT			
	(1)	(2)	(3)
cutMFN	0.749 (10.89) <sup>***</sup>	0.787 (11.28) <sup>***</sup>	0.0500 (15.27) <sup>***</sup>
MFN		0.125 (8.46) <sup>***</sup>	0.00528 (2.70) <sup>**</sup>
Observations	7614	7614	7614
Pseudo $R^2$	0.383	0.400	
<i>AIC</i>	6344.4	6176.9	7553.9
<i>BIC</i>	6975.7	6815.1	8192.1

*t* statistics in parentheses

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## Summary

- Some trade is better than no trade
  - Free trade is better than restricted trade for SOE
- Compensation schemes not feasible in practice
  - Political equilibrium generally economically inefficient
  - Wide ranging implications
- Unilateral trade policy suboptimal
  - Typically too protectionist
  - Maybe too much emphasis on regionalism
- Some evidence in favour of the median voter model
  - Less supportive for the PFS model