

The liberalization of TRQs under oligopolistic competition

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109th EAAE Seminar

Viterbo, Italy, November 20 -21, 2008



Why?

- Under the new CAP, market support measures have been almost eliminated, but a considerable degree of border protection is still in place in the EU;
- Domestic prices are currently distorted by border protection
- In the last decade **TRQs** have been extensively used

- The UR Agreement on Agriculture introduced TRQs to guarantee minimum market access in highly protected markets;
- Developed countries use TRQs to grant preferential access to developing countries

TRQs are two level tariffs: in-quota imports are subject to a lower tariff than out-of-quota imports;

TRQs and EU imports

- More than 15% of agricultural products (tariff lines) imported by the EU are covered by a TRQ (10% in Japan and US; around 60% in Norway);
- in 1997-2002 the share of TRQ imports in total EU imports has been large especially for meat (46%), dairy (67%), sugar (49%) and fruits and vegetables (15%; bananas: 100%).

TRQs liberalization

- The extensive use of TRQs has raised questions and many countries ask for a liberalization of TRQs **within WTO**;
- One of the core issues in negotiations between (potential or actual) members of **preferential trade agreements** is how to liberalize agricultural trade when TRQs are in place.
- **The debate about TRQs liberalization:** increase in the quota (Q), reduction in the in-quota (t) or out-of-quota (T) tariffs

What the literature tells us about TRQs liberalization

The effectiveness of TRQs liberalization depends upon which instrument is binding:

Table 3-1—TRQ liberalization and market access

Action	Binding constraint on imports			
	Demand	In-quota tariff	Quota	Over-quota tariff
Reduce t	0	+	0	0
Increase Q	0	0	+	0
Reduce T	0	0	0	+

Source: Economic Research Service, USDA.

The motivations of the paper

- Most contributions on the economics of agricultural TRQs and on their liberalization assume **perfect competition**, even though world agricultural trade is often highly concentrated;
- Empirical evidence on **market power** in the agricultural trading industry is poor and contradictory, but a number of papers found evidence of market power;
- Both evidence of **quantity** competition (e.g. Deodhar, Sheldon, 1995 for bananas) and **price** competition (e.g. Patterson and Abbott, 1994; Thursby, Thursby, 1990 for cereals)

Theoretical literature: quota and tariff under oligopoly

- Literature on import quota under oligopoly assumes duopoly and exogenous mode of competition: Cournot or Bertrand or a fixed conjectural variation parameter;
- Comparative statics is performed under the assumption of a fixed mode of competition;
- This means that they implicitly assume that a change in the trade policy does not modify the strategic interactions between firms;
- Models predictions are dependent on the *ex-ante* assumption about the mode of competition

The paper contributes to the literature by:

1. Considering the presence of **oligopolistic traders** in modelling TRQs;
2. Developing an oligopoly model with N firms in which the **mode of competition** is **endogenous**, i.e. it is affected by the trade policy (extension of Maggi, 1996);
3. Examining the **trade, welfare and competition effects** of different options of TRQs liberalization

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2. TRQs liberalization options
3. Impact of TRQs liberalization on the mode of competition
4. Trade, welfare and competition effects of TRQs liberalization

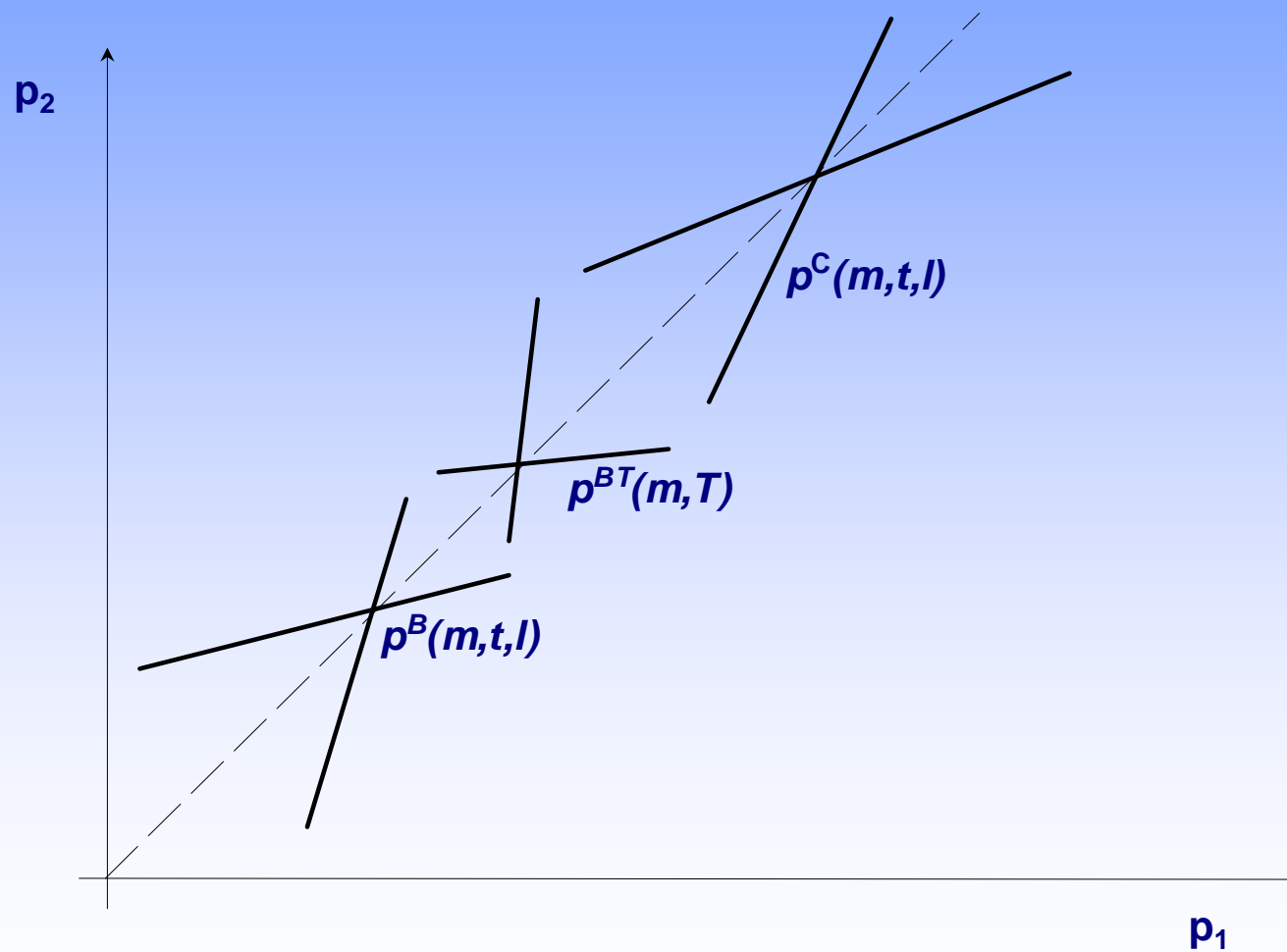
The model: main assumptions

- N symmetric trading firms importing a differentiated product in one country;
- Linear demands and constant trading costs, m ;
- Firms sustain the constant cost l to acquire the right to import within the quota (rent-seeking, quota auctions, licences on the market..);
- Q is the import quota and t and T are the in-quota and the out-of-quota tariffs.
- Each firm acquires Q_i licences with $Q = NQ_i$

- **First stage:** firms choose capacity, i.e. the amount of licences they wish to obtain; by this way they commit themselves to import a certain quantity in the second period. Marginal cost of increasing capacity in this stage is $t+l+m$
- **Second stage:** firms compete on price. They can increase imports (flexible constraint), but only out-of-quota; marginal cost of increasing capacity is $T+m$

Three possible sub-game perfect equilibria

($N = 2$) (Maggi, 1996):



The mode of competition depends upon the effectiveness of the capacity commitment

1. If the cost of adjusting capacities in the two stages is identical then the commitment is not effective and the outcome is Bertrand;
2. If the cost of adjusting capacities in the second period is very high, then the commitment is effective and the outcome is Cournot
3. If the cost in the second period is greater than in the first period, but is lower than a critical value T^* then the equilibrium is between Bertrand and Cournot

TRQs liberalization: five options

Increase the quota Q by:

- Increasing licences to incumbents ($Q_i \uparrow$)
- Allocating the additional licences to new operators ($N \uparrow$)
- Reduction in t
- Reduction in T
- Reduction in l (improvements in the administration of TRQs)

Trade, welfare and competition effects of TRQs liberalization

- Numerical simulations;
- Only under two scenarios - increase in N and increase in Q_i - the **binding instruments changes** (from T to t) as a consequence of liberalization
- Competition measured by the Lerner index

Main results

Expansion of the quota by **increasing Q_i** :

- No trade effect even if after liberalization the out-of-quota tariff is no longer binding;

Expansion of the quota by **increasing N**

- Trade effects *whether or not* after liberalization the out-of-quota tariff is no longer, binding because of the **decrease in market power**;

Reduction in t

- Trade effects even if T is binding (!!!); this is because: a) the mode of competition may change ; b) when the capacity commitment is strong, the price is determined by the cost of the first stage (t , l)

Reduction in T

- Trade effects only if the initial equilibrium is in between Bertrand and Cournot. If the capacity commitment is strong, firms pricing depends upon the cost of the first stage;

Conclusions

- TRQs, by introducing a capacity constraint to traders, move competition away from the price outcome and increase firms' market power;
- The consideration of strategic interaction between traders could undermine some of the usual conclusions about the (in) effectiveness of the various liberalization options
- Unconventional results are the consequence of the inherent, although limited, dynamic of the two-stage game: in static games this would not be the case

Thank you!