

# Comparing market access formulas for U.S. and EU

What hurts and who benefits?

Christine Wieck and Tom Wahl  
Impact Center  
Washington State University

# Table of Content



- Introduction
- Tariff formulas
- CAPRI Model
- Results
- Conclusions

# Introduction



- Market access one of the most contentious policy areas
- Substantial commitments expected by U.S. and EU but they are also important producers and exporters
- Uruguay Round could have provided a suitable methodology but controversy over
  - Liberalization achievements of Uruguay Round
  - Future reduction formulas and desired tariff profiles
- Objective of the study:
  - Analysis of market access scenarios (tariff reduction/TRQ expansion) for two of the key players

# Tariff/TRQ liberalization



- Disaccord about whether only *tariff levels* or also *tariff dispersion* in national tariff profiles shall be reduced
- Tariff reduction commitments may imply strong liberalization commitments for specific sectors
- Countries defend or promote certain tariff scenarios in line with their strategic import and export interests

# Tariff formulas I



- *Uruguay round formula*: Linear tariff cut; in average cut -36%, each single tariff line by at least -15%
  - If applied on a line-by-line basis: progressive
  - No special attention to tariff peaks
- *Swiss formula*: 
$$t_{1i} = \frac{at_{0i}}{(a + t_{0i})}$$
  - A-coefficient: upper limit to all tariffs
  - Strong reduction of all tariff peaks
- *WTO draft paper (Harbinson)*: Different cuts according to tariff bands in the range -40% to -60%
  - Progressive reduction of tariff peaks
  - Flexibility in the composition of the average tariff reduction

# Tariff formulas II



- *Modified Swiss* (proposal by Francois et al. 2005):

- B-coefficient incorporates more flexibility

$$t_{1i} = \frac{a \frac{t_{0i}}{b}}{a + \frac{t_{0i}}{b}}$$

- *Konandreas* (2003) proposal (“Panoply”): Reduction in tariff level and tariff dispersion

$$t_{1i} = (1 - \alpha)m_0 + (1 - \beta)(t_{0i} - m_0)$$

- Formula depends on tariff average and standard deviation of tariff profile
- Drawbacks in the case of very dispersed tariff profiles, as some small tariffs might be increased

# CAPRI Model: Overview



- **Common Agricultural Policy Regionalised Impact** analysis
- Partial equilibrium agricultural sector model
- Comparative-static
- Consists of
  - Detailed EU supply component
  - **Multi-Commodity spatial market module**
- Developed within European research network coordinated by Bonn University
- Mainly funded by EU research framework programs

# CAPRI Model: Market Module



- Country aggregates:  
EU + CEE, U.S., CAN, IND, CHN, CAD, ANZ, MED, ACP, ROW
- Products (HS 2-3): 5 cereals, 3 oilseeds/cakes/oils, pulses, sugar,  
4 meat, eggs, 4 processed milk products
- Armington assumption (bilateral streams, two stage procedure)
- Globally well-behaved behavioral functions calibrated to elasticities  
from literature
- Welfare analysis based on indirect utility function



# CAPRI: Trade policy instruments



- Due to the Armington approach:
  - Bilateral ad valorem and specific tariffs (WTO, OECD, AMAD)
  - TRQs (WTO)
    - Global for most country aggregates and products
    - Bilateral TRQs for some U.S. and EU products
- PSE/CSE for representation of domestic policies (OECD)
- EU: Intervention purchases and export subsidies (EU-COM)



# Scenario Layout



Reference	<p>All simulations for the year 2009.          Dom. policy: EU implementation of CAP reform 2003; U.S. PSE/CSE from 2000          Trade policy: Uruguay Round extended unchanged until 2009 (EU and U.S.)</p>				
Tariff reductions	Uruguay round approach	Swiss formula	Harbinson	Konandreas proposal	Modified swiss
TRQs expansion + MFN reduction	<p>Increase quota to at least 10% of demand          Apply tariff cuts as in previous scenario runs</p>				
TRQs expansion + Reduction of MFN, in-quota t.	<p>Increase quota to at least 10% of demand          Apply tariff cuts as in previous scenario runs          Reduce in-quota tariffs if fill rate <math>\leq 65\%</math></p>				

# Tariff reductions Development of tariff profiles



	United States		European Union	
	Average tariff (%)	Standard Deviation	Average tariff (%)	Standard Deviation
Reference	15.63	26.38	72.42	42.21
Uruguay	10.00	16.88	46.35	27.01
Swiss	6.10	6.31	17.30	3.63
Harbinson	6.88	11.36	33.43	16.84
Panoply	8.49	11.47	45.49	18.26
Mod. Swiss	4.15	4.98	13.63	3.92

# Tariff reductions

## Binding trade instruments U.S.



	United States					
	Reference	Uruguay	Swiss	Harbinson	Panoply	Mod. Swiss
Wheat	MFN	MFN	MFN	MFN	MFN	MFN
Barley	MFN	MFN	MFN	MFN	MFN	MFN
Maize	MFN	MFN	MFN	MFN	MFN	MFN
Rice	MFN	MFN	MFN	MFN	MFN	MFN
Oilseeds/cakes/ oils	MFN	MFN	MFN	MFN	MFN	MFN
Sugar	binding quota	binding quota	binding quota	binding quota	binding quota	binding quota
Beef	over-quota t.	over-quota t.	over-quota t.	over-quota t.	over-quota t.	over-quota t.
Pork meat	MFN	MFN	MFN	MFN	MFN	MFN
Poultry meat	MFN	MFN	MFN	MFN	MFN	MFN
Cheese	binding quota	binding quota	binding quota	binding quota	binding quota	binding quota
Butter and cream	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.
Skimmed milk powder	binding quota	binding quota	binding quota	binding quota	binding quota	binding quota

# Binding trade instruments EU

	European Union					
	Reference	Uruguay	Swiss	Harbinson	Panoply	Mod. Swiss
Wheat	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.
Barley	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.
Maize	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.
Rice	over-quota t.	over-quota t.	abolition of quota	over-quota t.	over-quota t.	abolition of quota
Oilseeds/cakes/oils	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sugar	binding quota	over-quota t.	abolition of quota	over-quota t.	over-quota t.	abolition of quota
Beef	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.	in-quota t.
Pork meat	in-quota t.	in-quota t.	abolition of quota	in-quota t.	in-quota t.	abolition of quota
Poultry meat	binding quota	abolition of quota	abolition of quota	abolition of quota	abolition of quota	abolition of quota
Cheese	in-quota t.	in-quota t.	in-quota t.	abolition of quota	in-quota t.	abolition of quota
Butter and cream	in-quota t.	in-quota t.	abolition of quota	in-quota t.	in-quota t.	abolition of quota
Skimmed milk powder	in-quota t.	in-quota t.	abolition of quota	in-quota t.	in-quota t.	abolition of quota

## Tariff reductions Import shares & prices



- Import shares in total demand, especially in the EU, are low and remain rather stable in all scenarios (changes U.S.: +0.5% to +3%, EU more divers especially for dairy products)
- Price developments very moderate in most scenarios (less than -2%)
- Conclusion on tariff reduction scenarios:
  - Only very limited new import options by different tariff formulas
  - Markets with low MFN tariffs or binding in-quota tariffs not much affected
  - Markets with high MFN tariffs show stronger reaction; but import shares remain small

## Liberalization of TRQ regime Increase in size



- Mainly targeted markets: U.S. dairy markets; EU meat and dairy markets
- Binding policy instruments remain the same
- No quota expansion in sugar (and EU rice) market in both countries, as they show already high import shares
- EU: In some sensitive markets (poultry, butter) import increases occur, but in similar range to tariff scenarios, New imports partially replace trade under preferential agreements
- U.S.: Similarly, only slight import increases can be observed (e.g. skimmed milk powder)
- Only very limited price reactions



# Liberalization of TRQ regime

## Additional in-quota tariff reduction



- In-quota tariff reduction relevant in:
  - U.S.: Dairy markets
  - EU: Cereals, maize, all meat and dairy products
- In-quota tariffs remain binding policy instrument, as demand is not sufficiently elastic to make quotas binding
- U.S.: Stronger increases in butter/cream and skimmed milk powder. But almost no effects on prices
- EU: Stronger increases for wheat, barley, pork, poultry, butter/cream, skimmed milk powder. Slight price depression (-0.5% to -2%)
- Conclusion on TRQ liberalization:
  - General TRQ expansion not very effective
  - Additional in-quota reduction improve market penetration

# Beneficiaries of import developments



- U.S.: EU (wheat),  
Australia/New Zealand (beef),  
CAIRNS countries (rice, beef),  
and the “other” aggregate, e.g. Ukraine, Russia (wheat), can benefit.
- EU: U.S. (wheat, rice, pork, beef meat),  
Australia/New Zealand (butter/cream),  
CAIRNS group (rice, poultry),  
Mediterranean countries (durum wheat, poultry),  
and “others” (wheat, rice, sugar) can benefit.

# Conclusions



- With respect to the analyzed formulas:
  - Uruguay < Panoply < Harbinson < Swiss formulas
  - Harbinson approach can serve as a compromise since it addresses tariff levels and tariff dispersion while leaving flexibility
- Overall market impact far from being “substantial”, but exceptions in certain “sensitive” commodities
- In TRQ regimes, strong MFN cuts achieve similar results as TRQ expansion + lower in-quota tariffs
- Market access probably will improve when *green/blue box* or *de minimis* definitions are altered

# Acknowledgement



- Support for this work from the CAPRI modeling team of Bonn University (Germany) and the CAPRI research network is gratefully acknowledged.
- The modeling system is financially supported by research framework programs of the European Commission.

- Reduction according to different formulas
- Market effect depends on:
  - Tariff cut
  - Shape of demand and supply curves
  - Substitution elasticity imports/domestic

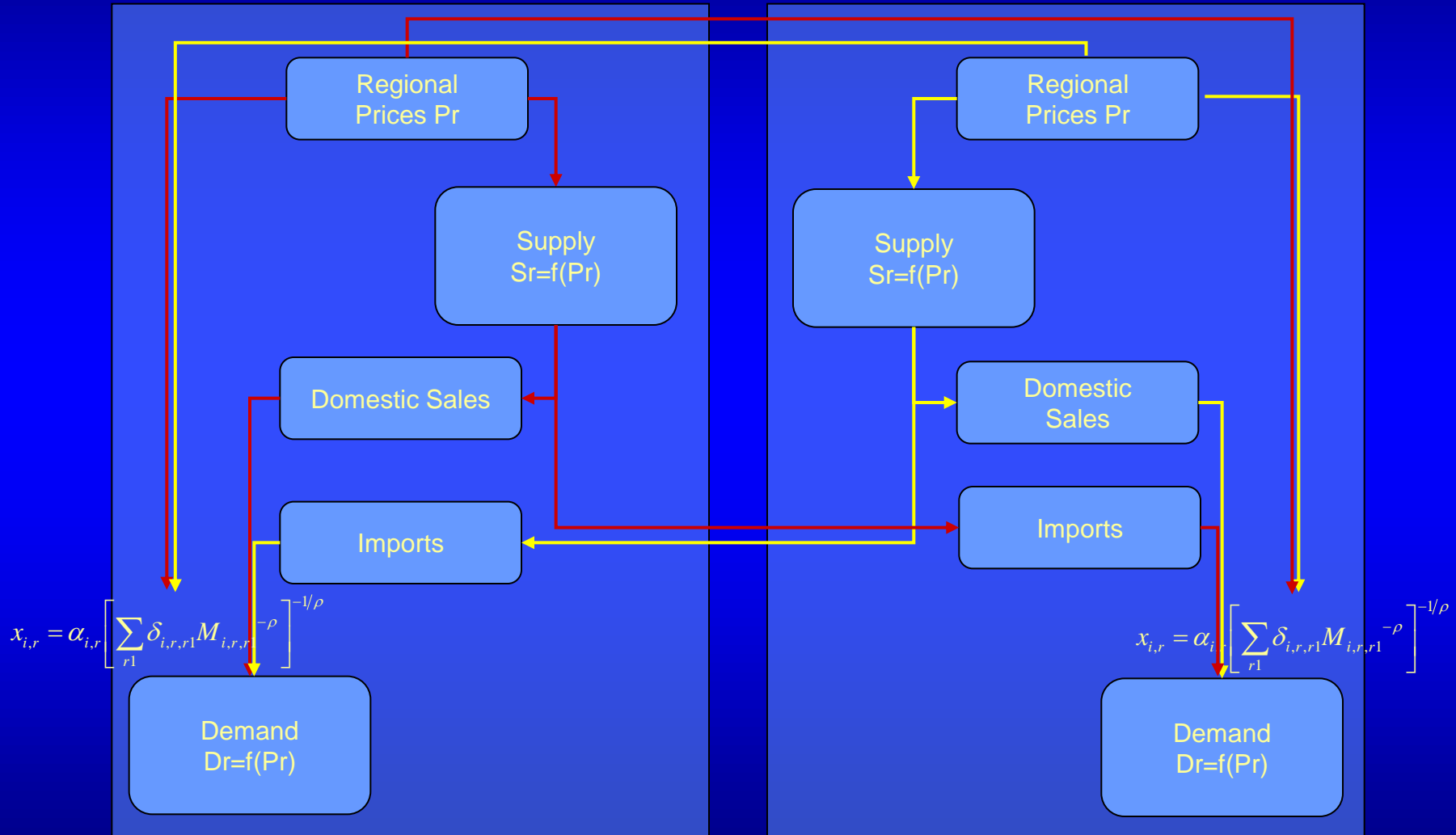
# Liberalization options TRQs



Change in instrument	Binding policy instrument in initial situation		
	MFN tariff	Quota binding	In-quota tariff
MFN	✓	Depends on tariff cut	Depends on tariff cut
Quota expansion	✓ *	✓ *	-
In-quota tariff	- *	- *	✓ *

As in tariff case: Import reaction depends on shape of supply/demand curve, substitution elasticities

# CAPRI Model: Overview



# Welfare developments



Mio. Euro	Applied tariff formula	Reference [2009]	Tariff reduction only	with quota expansion	with quota expansion + lowered in-quota t.	Multilateral tariff reductions
			difference to : Reference [2009]			
United States	Uruguay	587665.04	587717.99 52.95	587759.16 94.12	587776.58 111.54	588360.22 695.18
	Harbinson	587665.04	587743.12 78.08	587718.37 53.33	587738.46 73.42	587675.52 10.48
	Swiss	587665.04	587746.22 81.18	587743.67 78.63	587765.38 100.34	588218.21 553.17
European Union	Uruguay	6508876.1	6509268.23 392.13	6509271.82 395.72	6509252.17 376.07	6509585.32 709.22
	Harbinson	6508876.1	6510022.02 1145.92	6510023.26 1147.16	6510009.54 1133.44	6510085.59 1209.49
	Swiss	6508876.1	6511059.25 2183.15	6511059.04 2182.94	6511048.5 2172.4	6511691.55 2815.45