



USITC Staff Research on Barriers to Trade in Services

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CompNet Workshop
20–21 September, 2012
Paris

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Overview

- Present two investigations of the effects of barriers to FDI and services sales
 1. Analysis of barriers in retail services
 2. Modeling of foreign affiliate sales (FAS) in multiple industries with application to retail services
- Industry-level analysis (not firm level)
- Focus on several challenges
 - Data (un)availability
 - Estimation of effects beyond direct effect on sales
 - Connection to competitiveness
 - Measures relevant to by policy makers



Matthew Reisman and Danielle Vu, 2012, “Nontariff Measures in the Global Retailing Industry”

- New dataset of retailing policies in 75 countries in 2011
- Generate restrictiveness index for each country
- Estimate effect on sales of retailers’ foreign affiliates using a gravity specification
- Illustrates burden of data collection and limitations of current sectoral FAS data
- USITC staff are extending to other services; see also Commission reports on *Property and Casualty Insurance Services, 2009*, and *Recent Trends in U.S. Services Trade, 2012*

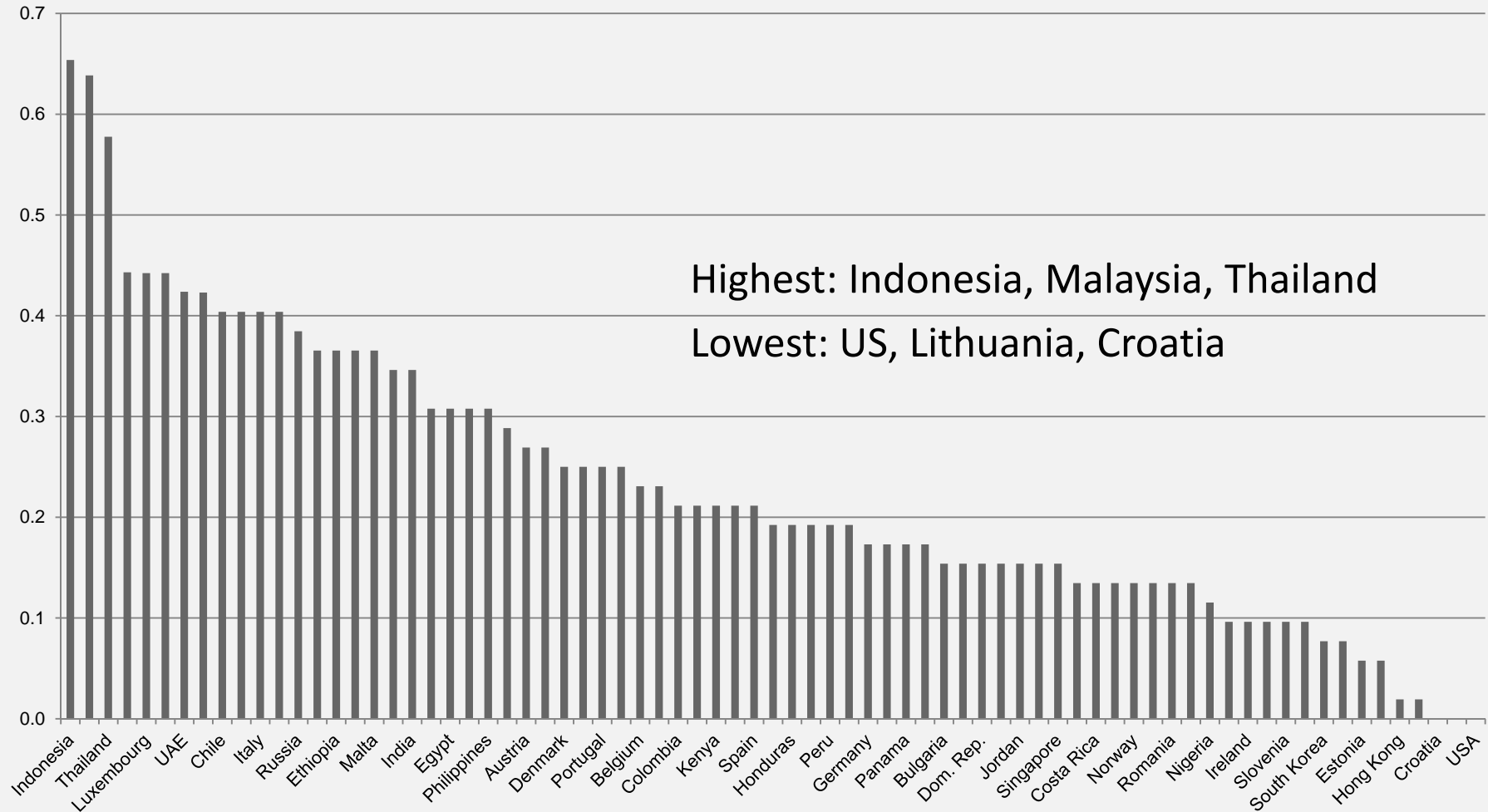


Database and restrictiveness index

- Database
 - 75 countries,
 - 13 categories of NTMs
 - Larger than previous databases such as Kalirajan, 2000; Conway and Nicoletti, 2006; Dihel and Shepherd, 2007; Golub, 2009
- Index
 - Aggregate index of retailing restrictiveness
 - Sub-indexes:
 - Foreign
 - Domestic
 - Restrictions on establishment (e.g., equity caps, investment screening)
 - Regulations to ongoing operations (e.g., limits on operating hours and promotional activities)



Retail restrictiveness index





Empirical approach

- Estimate the effect on retailing affiliate sales of standard gravity variables and the restrictiveness index
- FAS is a relatively rare, even at industry level, even in this sample of (mostly) developed host countries
 - Half of these observations are zero
 - Need estimation technique robust to zero flows (PPML, ZINB, etc.)
 - Santos-Silva and Tenreyro, 2006; De Benedictis and Taglioni, 2011
- FAS data:
 - Combination of Eurostat and US data
 - Balanced panel contains only 12 host countries and 7 source countries



Econometric results

Dependent variable: affiliate sales		OLS		ZINB	
Variable	Label	(1)		(2)	
Host country GDP	$\ln Y_r$	0.61 ***		0.65 ***	
		(0.18)		(0.13)	
Home country GDP	$\ln Y_s$	0.99 **		0.88 ***	
		(0.39)		(0.24)	
Distance	$\ln D_{rs}$	-2.81 ***		-2.86 ***	
		(-0.33)		(-0.35)	
Common language	LAN_{rs}	1.24 ***		1.22 ***	
		(0.30)		(0.24)	
Shared border	BOR_{rs}	-2.42 ***		-2.28 ***	
		(-0.78)		(-0.69)	
Multilateral resistance—distance	MRD_{rs}	1.08 **		1.31 ***	
		(0.53)		(0.36)	
Multilateral resistance—border	$MRBOR_{rs}$	-6.80 **		-7.88 ***	
		(-2.55)		(-2.24)	
Retail restrictiveness index (RRI)—host country	$\ln RRI_r$	-1.62 ***		-1.46 ***	
		(-0.43)		(-0.29)	
Constant		-23.78 ***		-22.25 ***	
		(-5.97)		(-4.47)	
Number of observations		55		110	

- Despite small sample, results significant with right sign (except border)
- Among subindexes, restrictions specific to foreign investors and establishment restrictions have largest effect on FAS



Csilla Lakatos and Tani Fukui 2012, “Liberalization of FDI in Retail Services”

1. Estimate the determinants of FAS in multiple sectors
 2. Use estimates as one input into new global CGE model of foreign affiliate sales
 3. Estimate effect of liberalizing global retailing services in CGE model
 4. Examine changes relevant to competitiveness: output, consumer prices, GDP, and wages
- Focus on 1 and 4 today
 - See Fukui and Lakatos, 2012, “A Global Database of Foreign affiliate sales” for 2 & 3



Specification

- FAS from Eurostat database
 - 22 host countries (reporters); 41 source countries; 21 sectors; 2003-07
 - Sparse: 48 percent missing values; 46 percent zeros
- FDI restrictiveness index from Koyama and Golub, 2006
- Regression follows Bergstrand and Egger, 2007, and Carr et al. 2007, with extension to industry data

$$\begin{aligned} \text{FAS}_{irst} = & \alpha_0 + \beta_1 \ln(\text{GDP}_{st}) + \beta_2 \ln(\text{GDPROW}_{rst}) + \beta_3 \ln(\text{production}_{irt}) \\ & + \beta_4 \ln(\text{GDP/capita}_{rt}) + \beta_5 \ln(\text{GDP/capita}_{st}) + \beta_6 \text{distance} + \\ & + \beta_6 \ln(\text{common language}_{rst}) + \beta_6 \ln(\text{trade openness}_{rst}) \\ & + \beta_7 \ln(\text{investment barriers}_{rst}) + \beta_8 \ln\left[\frac{(S/U)_{rst}}{(S/U)_{rst}}\right] \\ & + \sum_t \gamma_t + \varepsilon_{irst} \end{aligned}$$

- r=host; s=source; i=industry; t=time



Econometric results

Dependent variable: FAS _{irst}	OLS		PPML		ZINB	
Ln(GDP _{st})	-0.02		0.02		-0.10	**
	(-0.52)		(-0.77)		(-2.67)	
Ln(GDP RoW _{rst})	-11.24	***	-15.93	***	-9.747	***
	(-20.39)		(-20.91)		(-15.42)	
Ln(Production _{irt})	0.28	***	0.53	***	0.25	***
	(19.79)		(28.95)		(13.37)	
Ln(GDP/capita _{st})	0.71	***	1.54	***	0.51	***
	(11.38)		(24.03)		(6.82)	
Ln(GDP/capita _{rt})	1.293	***	1.153	***	1.138	***
	(32.40)		(16.57)		(18.32)	
Ln(Distance _{rs})	-0.507	***	-1.033	***	-0.258	***
	(-15.12)		(-22.09)		(-5.80)	
Common Language _{rs}	0.27	***	-0.00		0.10	
	(3.67)		(-0.04)		(1.50)	
Trade Openness _{rt}	-0.30	***	-0.39	***	-0.19	*
	(-6.04)		(-4.19)		(-2.35)	
FDI Restrictiveness _{ir}	-0.43	***	-0.55	***	-0.58	***
	(-3.32)		(-3.47)		(-5.07)	
Skill Differential _{rst}	2.71	***	4.13	***	2.47	***
	(8.56)		(6.83)		(6.36)	
N	6,327		43,541		43,541	

- r=host; s=source; i=industry; t=time
- t-stats in parens
- PPML preferred, even though data are overdispersed
 - ZINB generally underestimates values
 - ZINB also predicts many zeros where data show positive values



Main Econometric Results

- Overall, signs of coefficients are as expected for all variables except
 - Common language should be positive and is negative for PPML
 - GDP of host country is expected to be positive and is negative for all but PPML
- Trade openness is negative
 - denotes substitution between trade and foreign affiliate sales
- FDI restrictiveness
 - always negative as expected and significant and is of similar magnitude across specifications

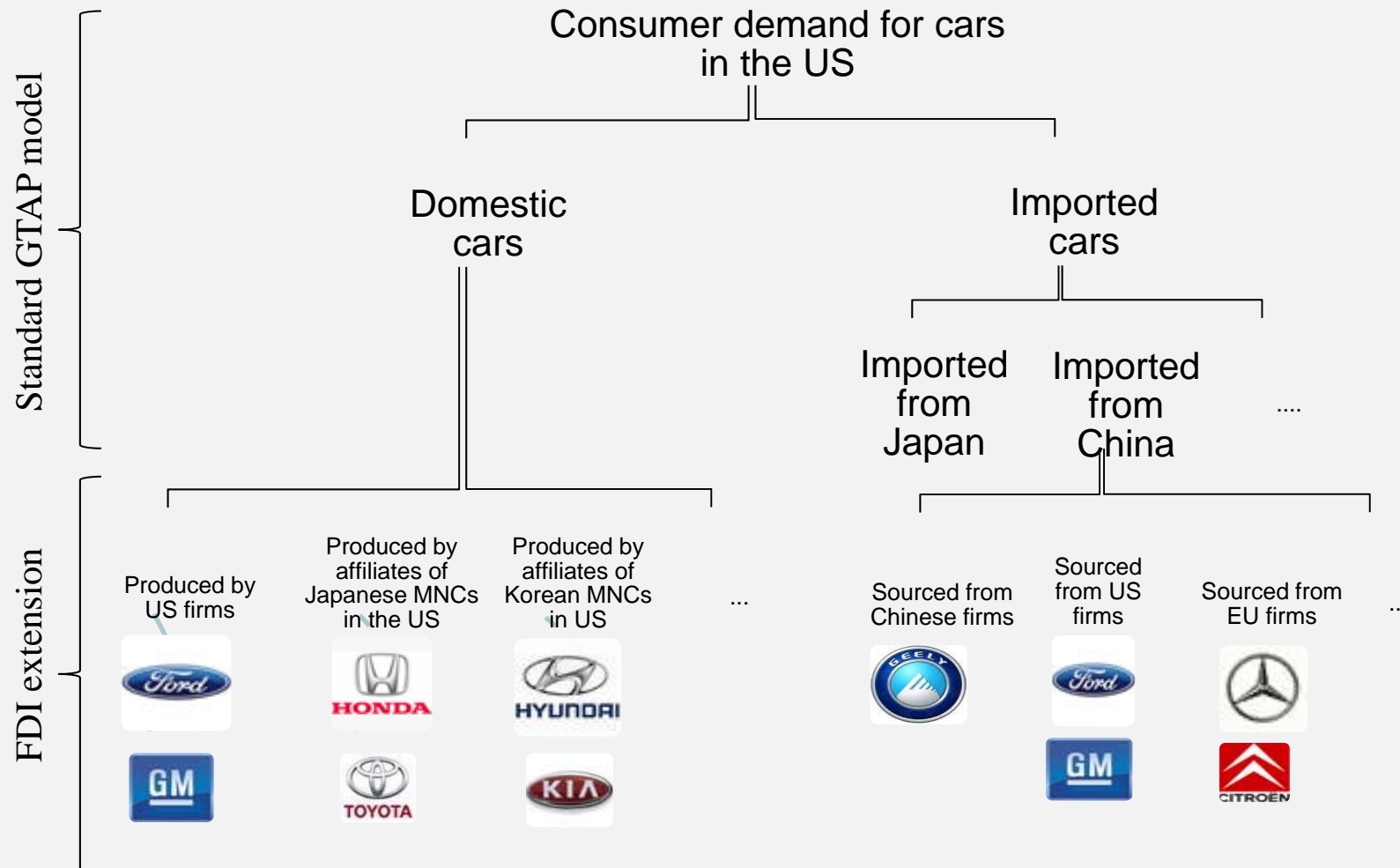


Model construction

- Generate a global bilateral industry-by-country FAS database by combining
 - Actual data
 - Econometric estimates
 - Matrix balancing techniques to populate database when only industry or country (not industry-by-country) row and column totals are available
- Embed in CGE model
 - Based on GTAP model
 - New demand and supply equations that distinguish production by location and ownership



Modeling: The structure of demand with foreign commercial presence



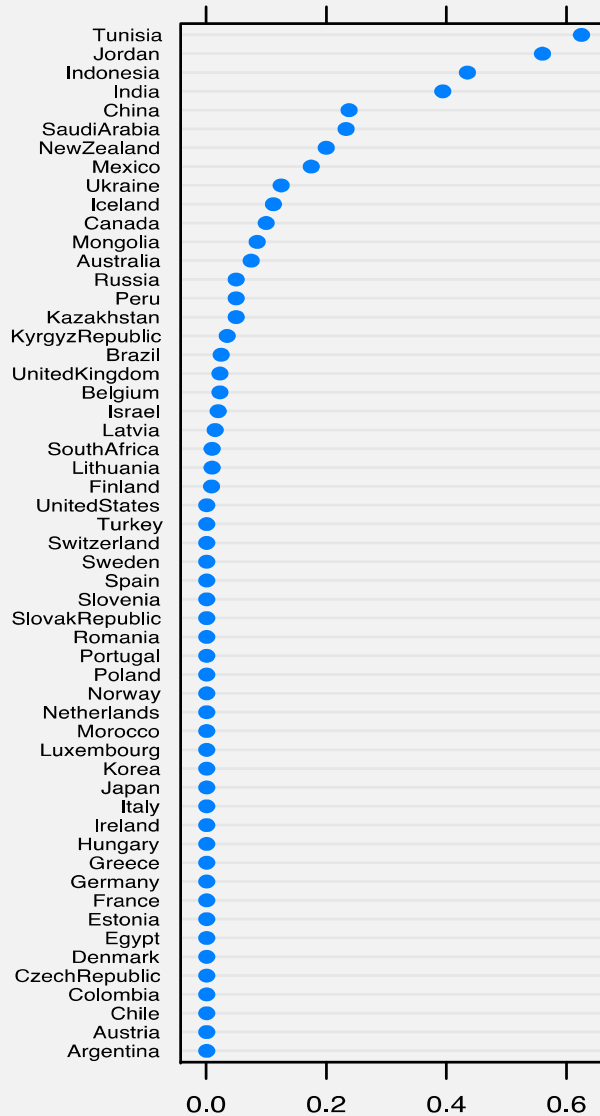


Simulation

- Multilateral liberalization of distribution services trade under GATS mode 3
- For each GTAP region, estimate quantity change in FAS sales for reducing FDI restrictiveness index to zero
- Use model to estimate effects of FAS increase on output, prices, GDP, wages



FDI Restrictiveness index in distribution services



OECD (Kalinova et al., 2010)

Implied quantity change of of
reducing barriers to zero
(elasticity = 0.55)

	Index	Change
USA	0	0
EU27	0.013	0.71%
China	0.238	13.09%
India	0.394	21.67%
East Asia	0.087	4.79%
ASEAN	0.158	8.68%
Aus/Nz	0.099	5.43%
ROW	0.075	4.15%



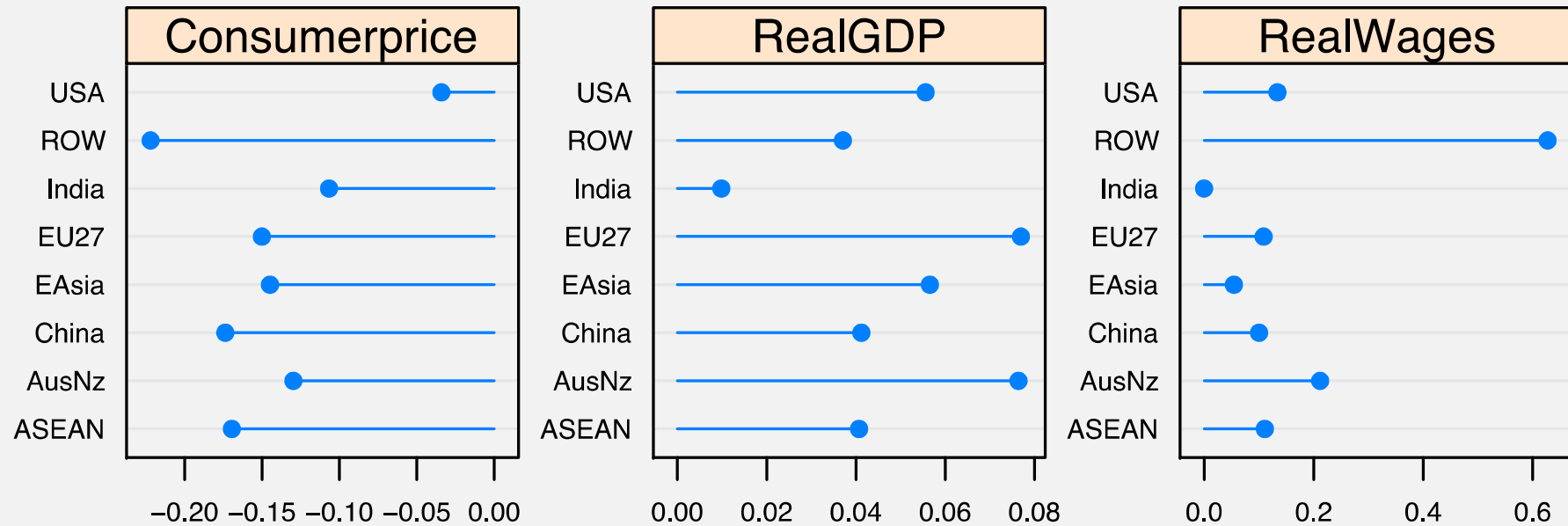
Multilateral liberalization

Distribution services: output (% changes)

Host	Source							
	USA	China	India	East Asia	ASEAN	AusNz	EU27	ROW
USA	-2.14	-0.51	0.18	-0.07	-0.58	-3.17	-1.09	-4.42
China	104.24	-0.59	15.24	69.07	26.90	134.71	69.67	18.49
India	283.59	46.54	0.05	162.34	54.19	405.67	167.54	40.27
East Asia	24.86	7.01	5.14	-0.13	8.01	29.64	18.40	2.87
ASEAN	55.16	13.93	9.48	39.10	-0.72	68.40	38.81	9.52
AusNz	29.19	8.07	5.82	22.07	9.24	-3.19	21.40	3.90
EU27	1.06	0.43	0.81	2.28	0.50	0.63	-1.14	-3.50
ROW	20.57	5.78	4.29	16.12	6.63	-3.37	15.33	1.76



Multilateral liberalization Economy-wide effects (% changes)





Conclusions

- Focus on several challenges
 - Data (un)availability
 - NTM data is much less available than tariff data; even so,
 - We have more information on barriers than can be applied to existing FAS databases
 - Any multi-country model will need strategy to overcome data limitations
 - Estimation of effects beyond direct effect on sales
 - Effects of NTMs on FAS can be directly estimated, but FAS has little connection to competitiveness
 - Have to impose progressively larger model structure to estimate prices, wages, other sectors, or aggregate effects.