

# Modeling Policy in Services

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# Regulation and market access in services

- Retrospective studies (growth accounting and econometrics)
  - Inklaar, Timmer and van Ark (Economic Policy 2008, evidence for EU)
  - Jorgenson, Ho, Samuels (EU KLEMS 2010, evidence for the US and the impact of ICT and services productivity)
  - PMR project at the OECD
- Prospective studies (what if?...)
  - CGE studies of market access
  - CGE studies of domestic and FDI regulation
- Broadly reviewed in Francois and Hoekman (EJ 2010)

# CGE models of services

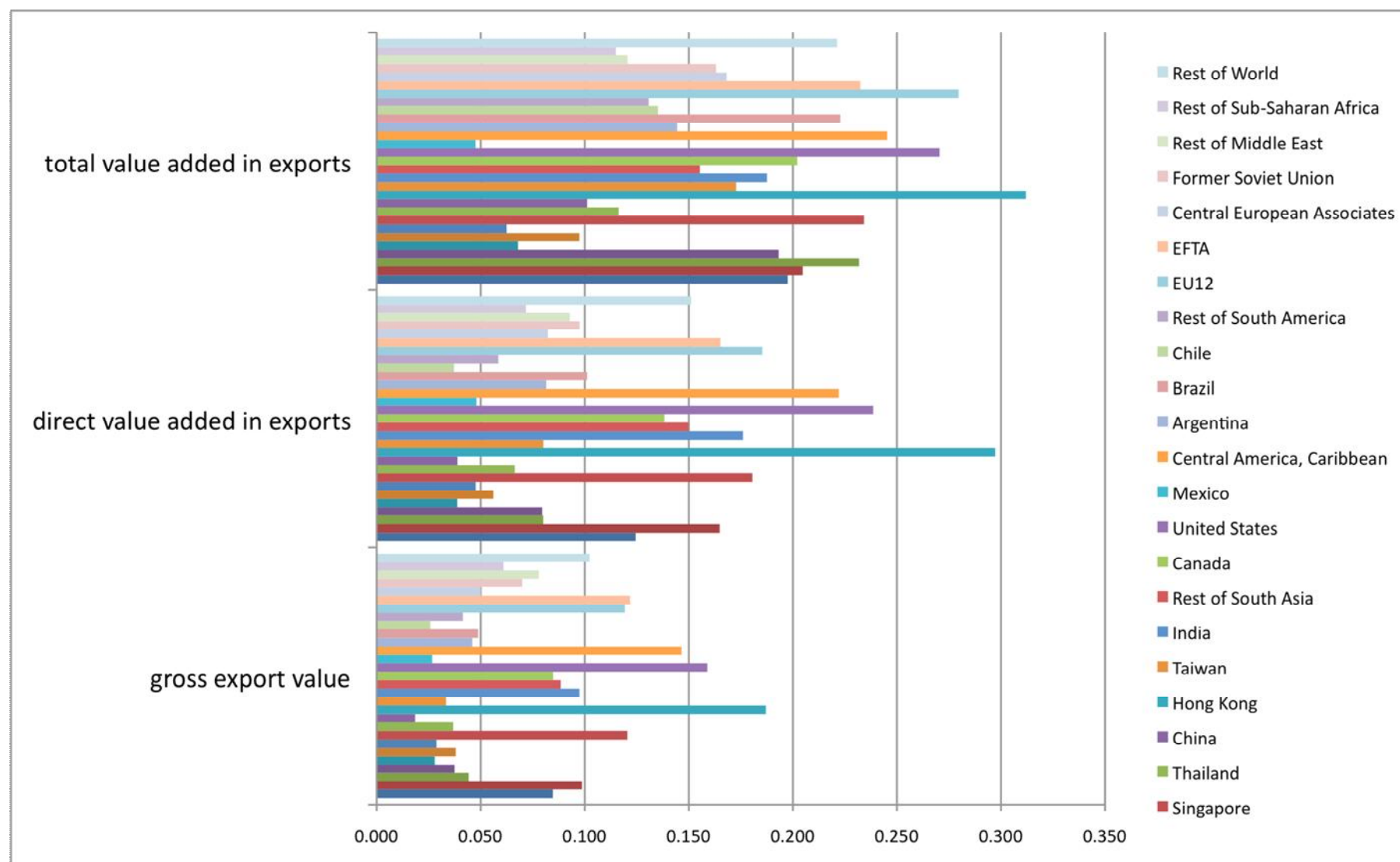
- Advantages
  - Prospective analysis
  - Explicitly incorporates linkages (stressed in the productivity literature) both cross-border and cross-country
  - Accounting approach to organizing data (makes it clear what we do not know but should)
- Challenges
  - Serious data limitations
  - Benchmarking policy
  - Representing policy regarding services in a CGE model
  - Structural treatment of services

# This presentation

- Why focus on services
  - Linkages to manufacturing
  - Value added structure of trade (indirect exports)
  - Direct services exports
- Challenges
  - Data challenges
  - Quantifying policy
- Application
  - WTO-GATS studies
  - Regional and unilateral reform
- Directions for research

# Services in Production and Trade

The share of services in exports, 2007



Source: Francois and Manchin (2011)

# Services in Production and Trade

- Linkages mean services are important not only in direct trade, but more so in the impact they have on traded goods costs.
- There is also a delineation based on income levels.

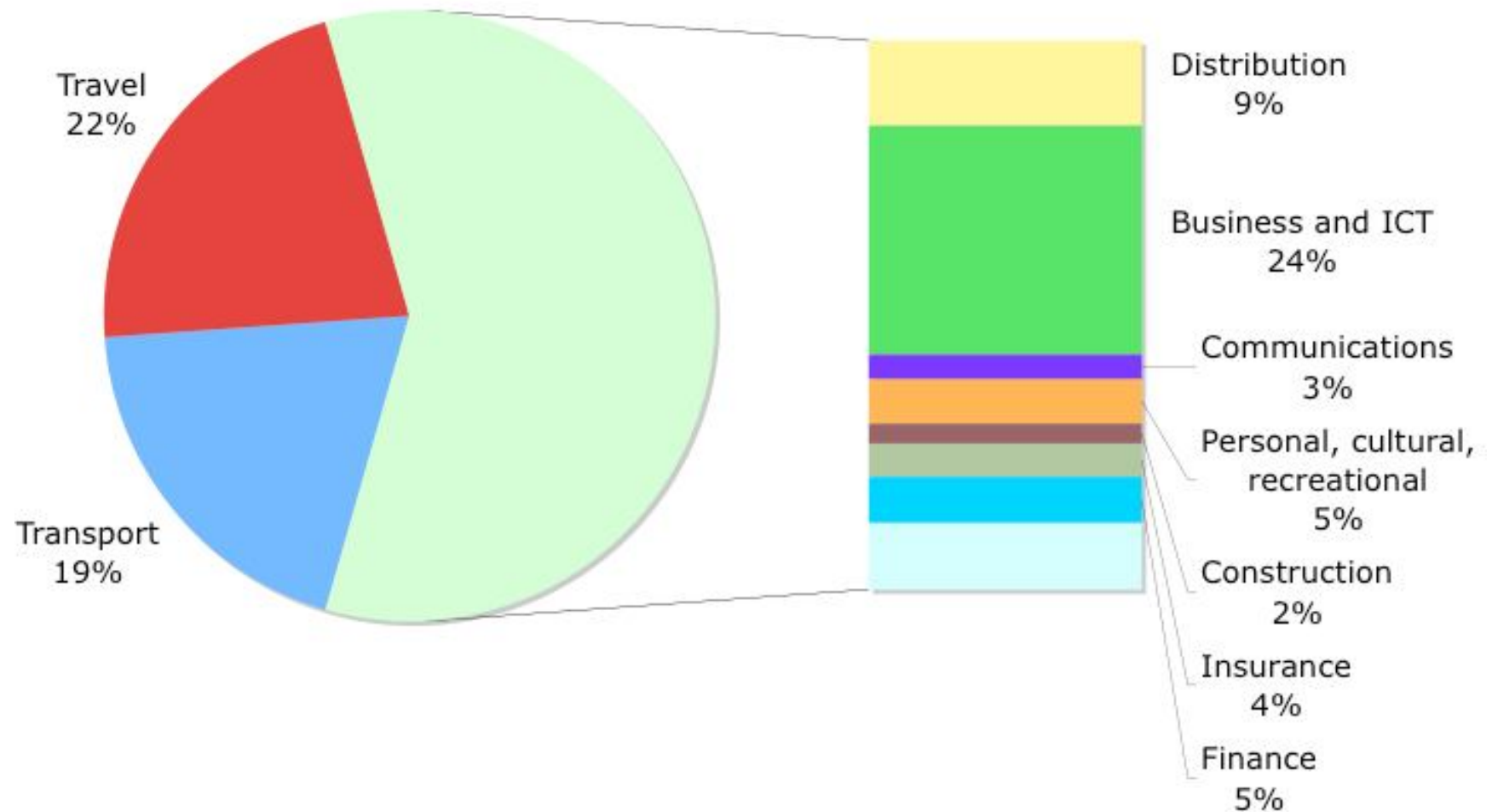
## The share of services in exports, 2007

	gross export value	direct value added in exports	total value added in exports		gross export value	direct value added in exports	total value added in exports
Australia	0.062	0.085	0.198	Canada	0.071	0.085	0.202
New Zealand	0.079	0.099	0.205	United States	0.112	0.159	0.270
Japan	0.028	0.044	0.232	Mexico	0.017	0.027	0.048
				Central America,			
Korea	0.029	0.037	0.193	Caribbean	0.106	0.147	0.245
Indonesia	0.017	0.028	0.068	Argentina	0.033	0.046	0.144
Malaysia	0.034	0.038	0.097	Brazil	0.041	0.049	0.223
Philippines	0.024	0.029	0.062	Chile	0.022	0.026	0.135
Singapore	0.111	0.120	0.234	Rest of South America	0.019	0.041	0.131
Thailand	0.033	0.037	0.116	EU12	0.098	0.119	0.280
China	0.010	0.018	0.101	EFTA	0.097	0.122	0.232
				Central European			
Hong Kong	0.181	0.187	0.312	Associates	0.033	0.050	0.168
Taiwan	0.027	0.033	0.173	Former Soviet Union	0.029	0.070	0.163
India	0.089	0.097	0.188	Rest of Middle East	0.054	0.078	0.121
				Rest of Sub-Saharan			
Rest of South Asia	0.051	0.088	0.155	Africa	0.043	0.061	0.115
				Rest of World	0.069	0.102	0.221

Source: Francois and Manchin (2011)

# Services in Production and Trade

Composition of US service exports



Source: US BEA

# Data challenges

- Sources:
  - UN, OECD, Eurostat, national data (trade and FDI)
- Problems:
  - Consistency, missing FDI and trade data
  - BOPs data reflects modes 1,2,3 data all at once
  - FATS data are worse than trade, FDI data
  - Margin flows in SAM construction (open issue)
- Solutions
  - Entropy and RAS methods
  - Mirrors flows
  - Example: GTAP (MacDougall and Hagemeyer 2005, and Van Leeuwen and Lejour 2006, Gelhar 1996)  
with reconciliation of goods data (fob-cif) balancing with transport services trade is also required, and also CEPII for FDI data (Boumellassa, Gouel, and Laborde 2007).
  - Consistent, comparable, repeated firm surveys (example of NTM survey by EU, see Dee, P. et al. 2011)
  - Better funding and reporting of data

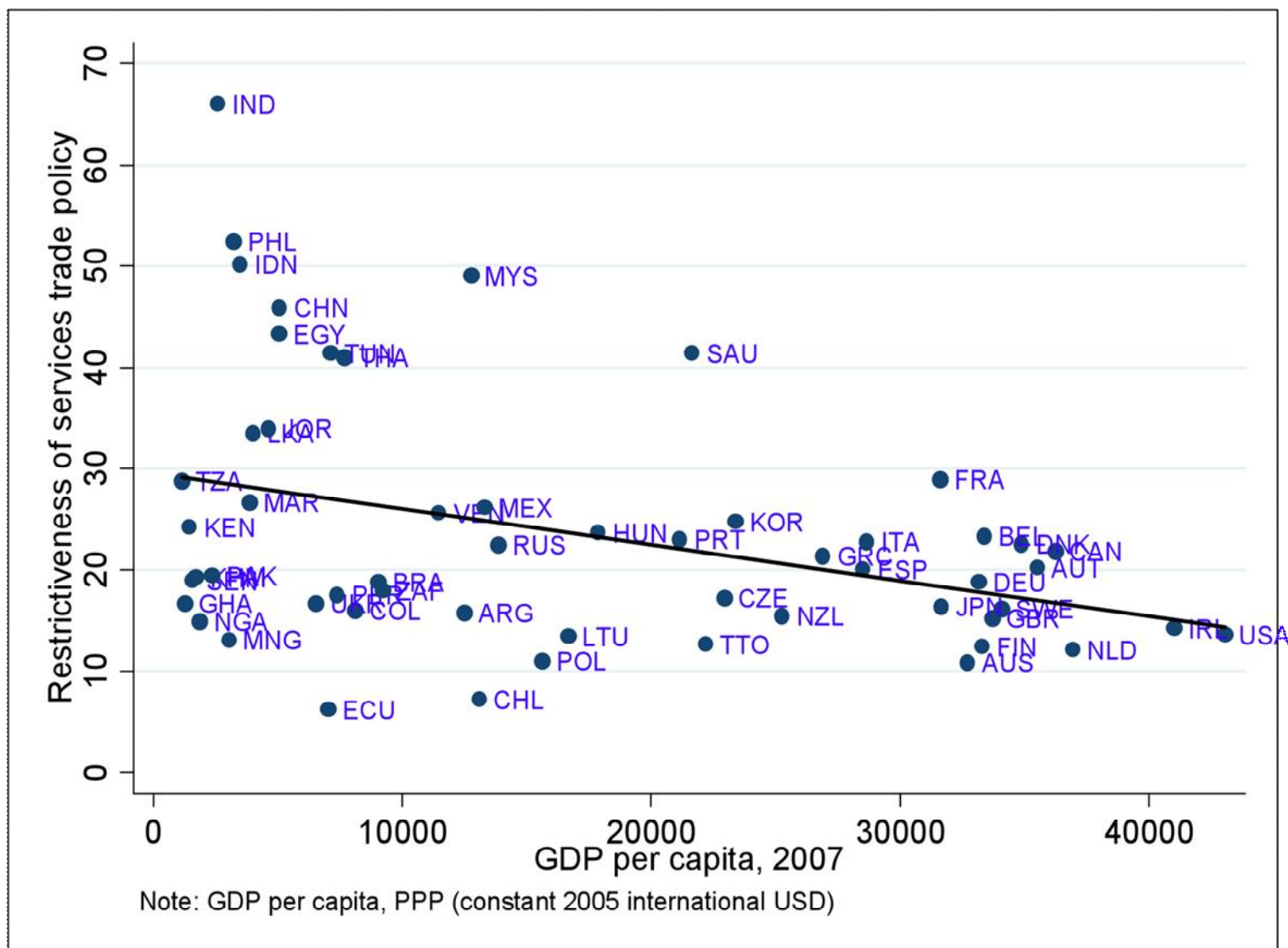


# Quantifying Policy

- Regulation and barrier indexing
  - Hoekman (1996), Kalirajan et al., (2000) Nguyen-Hong, (2000), OECD (2009) and all the PMR work, Langhammer, (2005) on the EU services directives, etc. OECD has also been “weighting” regulatory indexes by input-output coefficients for industry.
- Gravity modeling
  - Francois (2000), Fontagne et al (2010), ADB (2008), etc
- Price comparisons
  - Nguyen-Hong (2000), Dee (2005)
- Firm surveys, and mixed strategies: help to identify costs and rent aspects of NTBs and regulation.
  - ECORYS (1999 – EU/US), Balistreria, Rutherford, and Tarr (2009 Kenya), Sunesen, Francois and Thelle (2009 Japan)
- Available data do not allow us to easily split apart policy that targets specific modes
  - for example BOPs data reflects exports through affiliates, which is affected by FDI policies

# Quantifying Policy

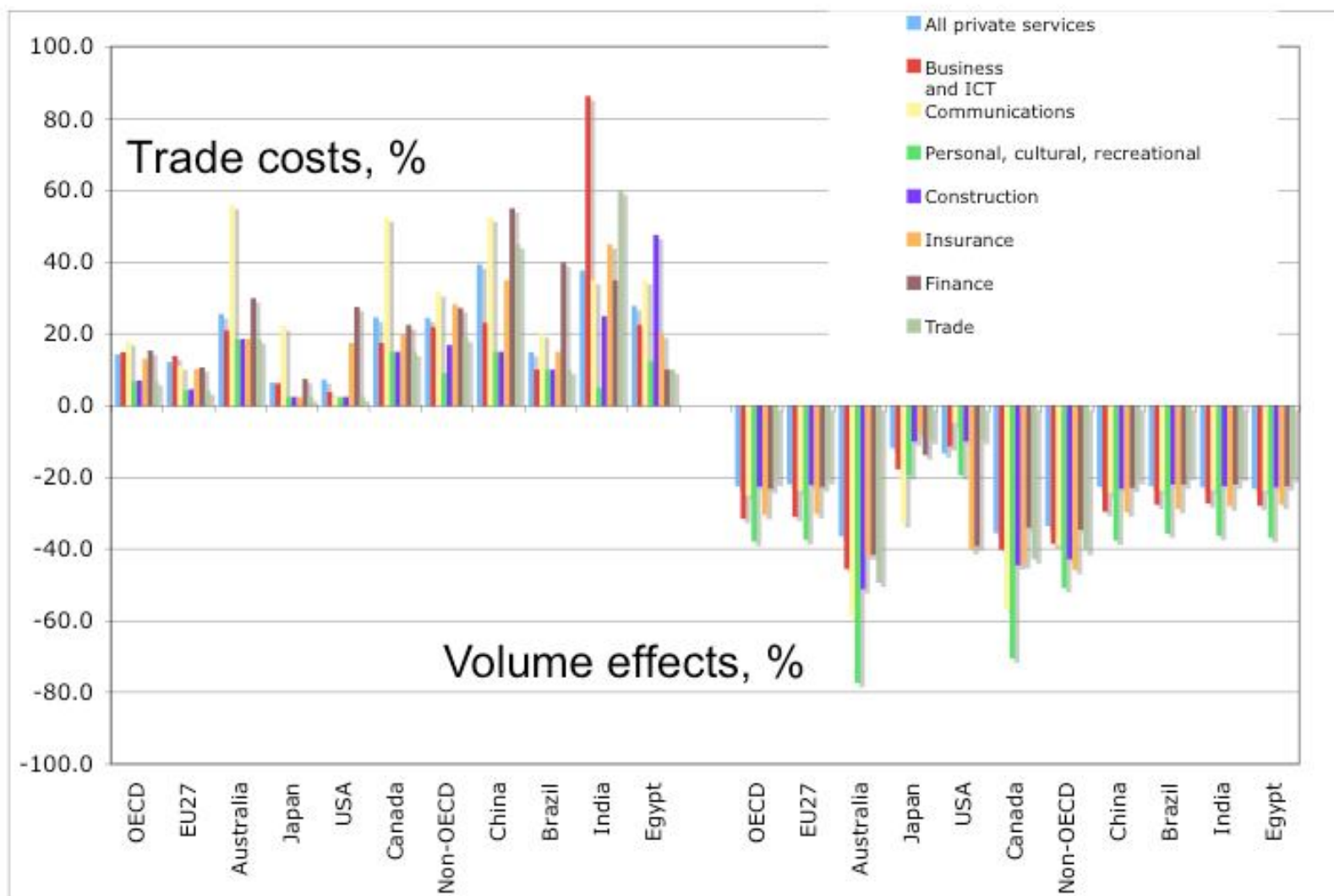
## Openness in services and income levels



Source: Gootiiz and Mattoo (2009).

# Quantifying Policy

## OECD FDI regulation indexes and trade volumes in services



Source: Francois and Hoekman (2010), based on Table 4.5.

# Applications: GATS experiments in CGE

- Pioneers:
  - Brown et al (1996, 2001) with Michigan model  
(Stone et al 1999, Hanslow et al 1999) with FTAP
  - Typically, trade costs modeled as tariff equivalents
  - FDI modeled in an Armington-type structure
- More recent work
  - Francois (2000), Francois, van Meijl, and van Tongeren (2005) and Kinnman and Lodefalk (2007), Lejour, Rojas-Romagosa and Verweij (2008)
  - Trade barriers treated more as deadweight costs, rather than tariffs or rents
- Model features
  - Monopolistic competition is common
  - Trade barriers more recently treated more as deadweight costs, rather than tariffs or rents (early literature did not include dead weight costs)
  - Emphasis is on cross-border trade (where we have data) reflecting modes 1,2,3

# Applications:

## Regional and multilateral models

- Country and regional studies:
  - Kox and Lejour (2006) examine EU integration and regulatory divergence.
  - ECORYS (2009) focuses on transatlantic barriers, and Sunesen et al (2009) on Japan, NTMs quantified with surveys and econometrics.
  - Balisteri, Rutherford, and Tarr (2009) examine domestic and foreign firm regulation in Kenya, also using firm surveys.
  - All recent EC scoping studies for FTAs
- Issues raised in recent regional/country studies
  - FDI has impacts not captured in a simple FDI structure. Productivity spillovers, and pressure on pricing, can be far more important.
  - Both domestic and market access regulatory reform is a hard thing to model, but from surveys firms view regulatory divergence as important in itself, above restrictiveness of regulations.
  - Because of linkages to manufacturing, FDI can have bigger impacts than simple trade and FDI flows suggest.

# Directions for Research

- Backstopping CGE model structure with econometrics and theory that better guides how to model sectors
- Moving toward oligopoly and away from monopolistic competition (markups matter)
- Better treatment of margin sectors in data construction
- Structured surveys, combined with econometrics, to better measure impacts of domestic and market access regulations
- Growth decomposition with SAMS and CGE models to better understand the linkages between services productivity and regulation, on the one hand, and competitiveness of goods sectors on the other