

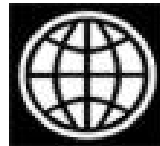


# Statistical Analysis in the Area of Trade in Services

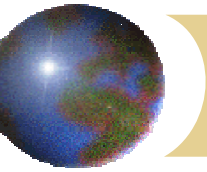
---

“Trade in Services and International Agreements”  
World Bank Institute, Geneva 6-8, 2004

**CARSTEN FINK**

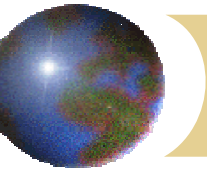


WORLD  
BANK  
INSTITUTE



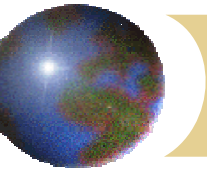
# Demands of the trade negotiator

- How much trade is there?
- What are the barriers service providers encounter and how important are these barriers?
- How would trade respond to a reduction of trade barriers?



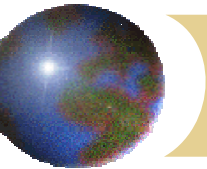
## Statistical analysis in the goods case

- Data on imports and exports of goods available for highly disaggregated product groups
- Information on tariffs available for the same product groups
- Estimates of “trade elasticities” available; well-established framework for modeling the effects of trade liberalization



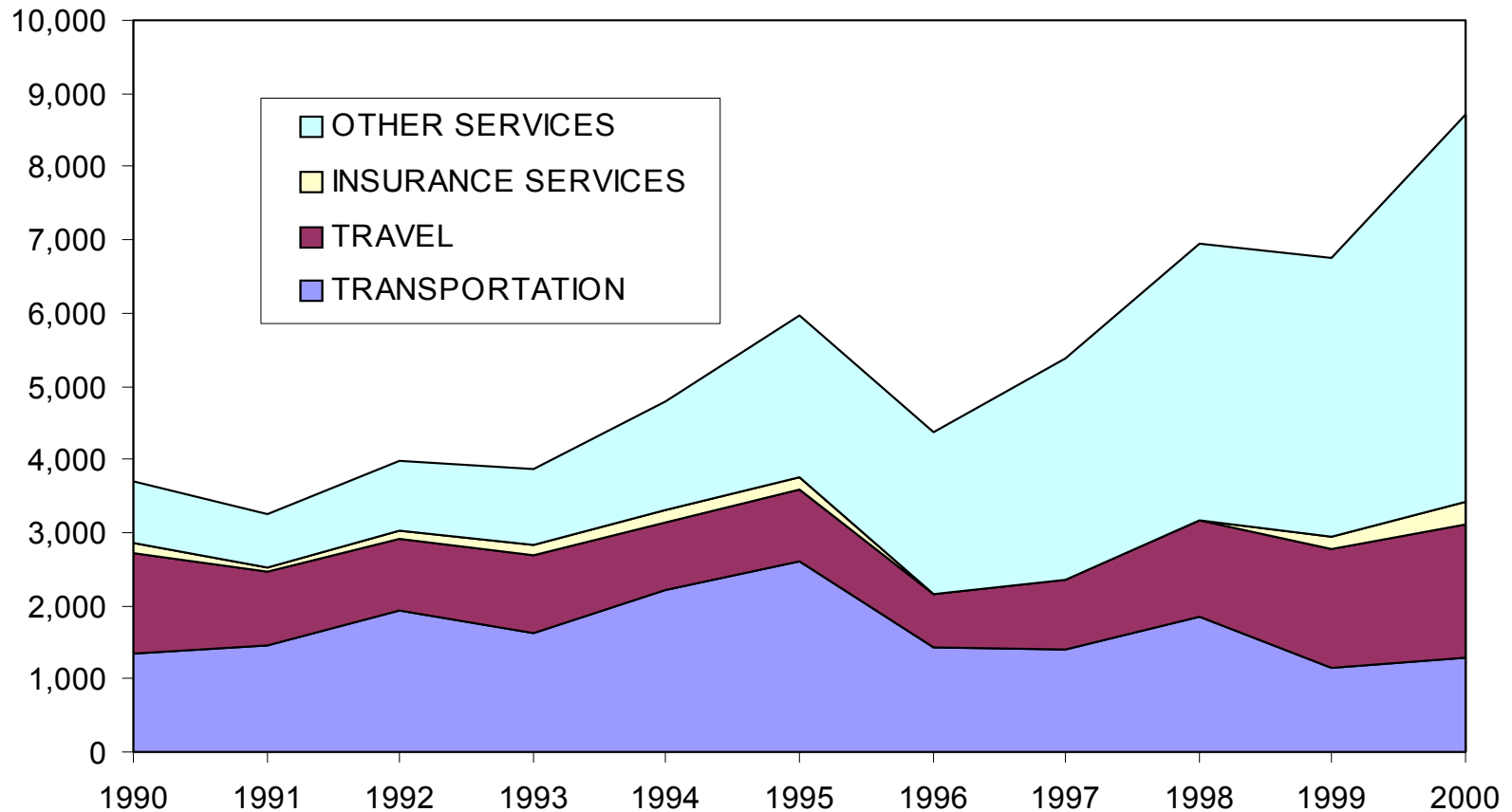
# How much services trade is there?

- Obtain information on “offensive” and “defensive” interests in services:
  - How important is services trade relative to goods trade?
  - In which sectors and to which countries do domestic firms export services?
  - What is the geographic and sectoral breakdown of services imports?

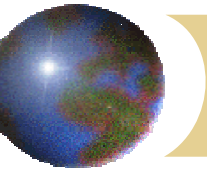


# Example: Brazil's BOP exports

Millions of US dollars

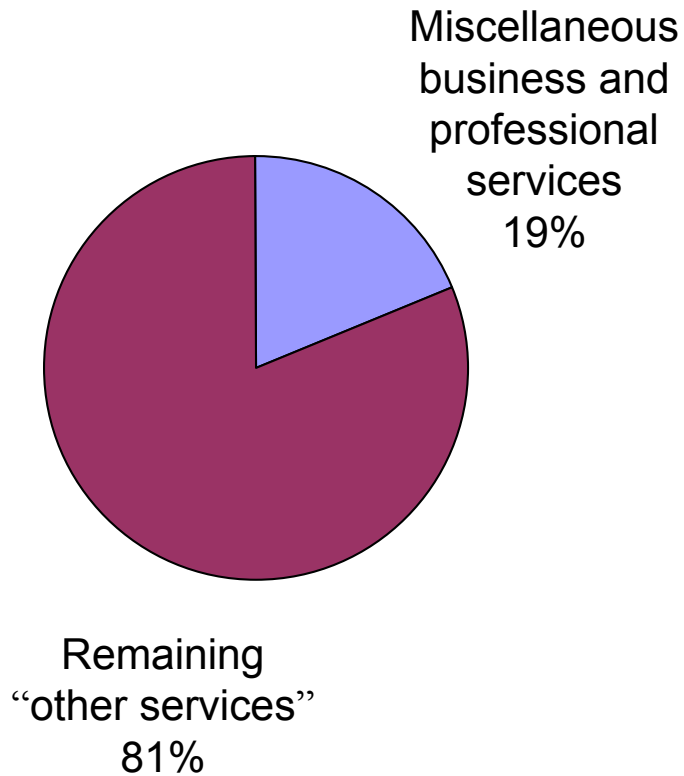


Source: "Brazil – Trade Policies to Improve Efficiency, Increase Growth and Reduce Poverty." Vol. IV. (The World Bank, 2002).

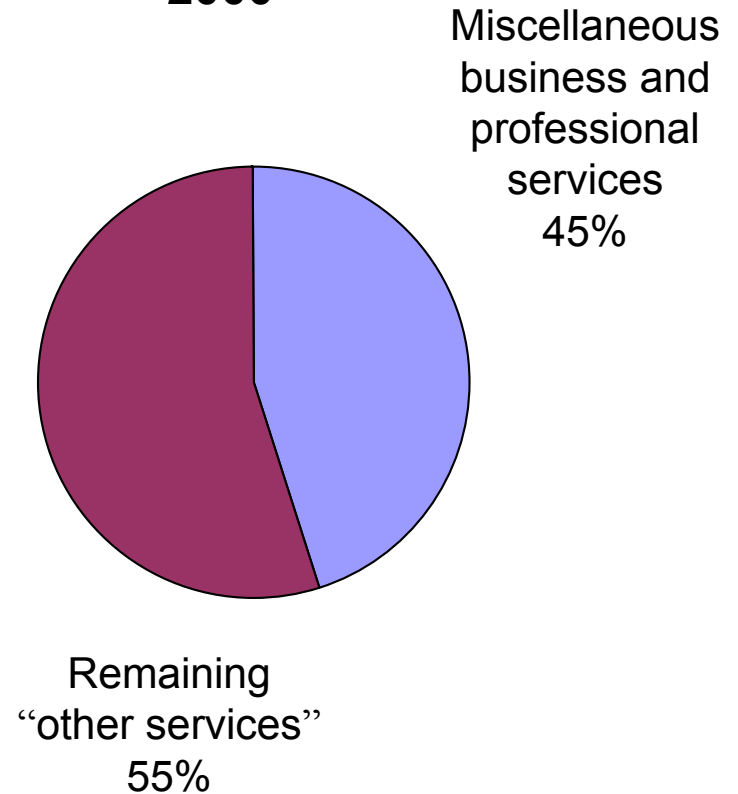


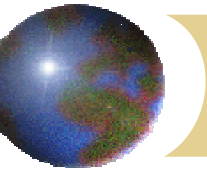
# Breakdown of “other services”

**1995**



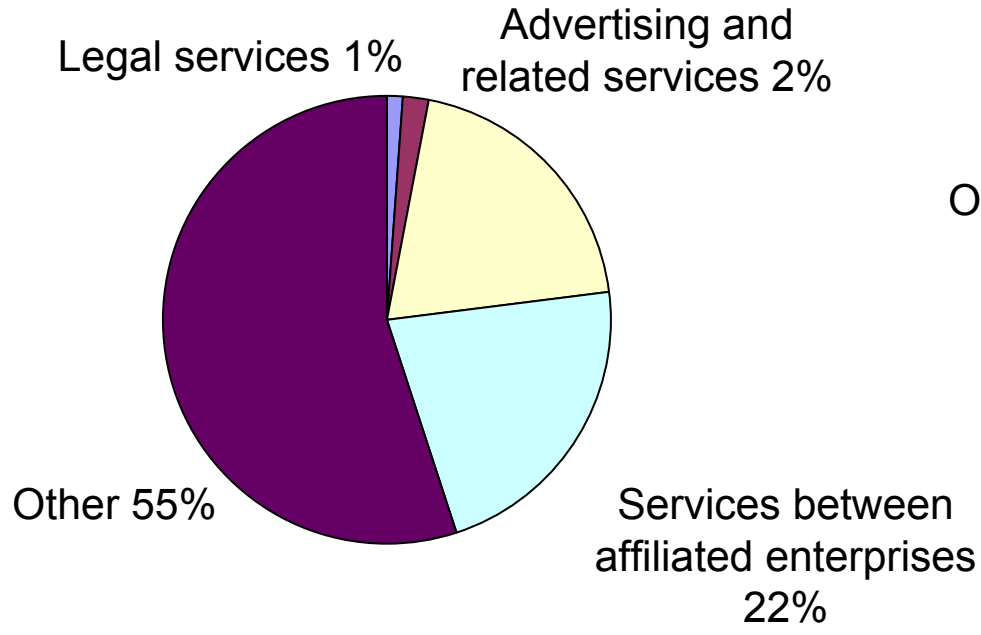
**2000**



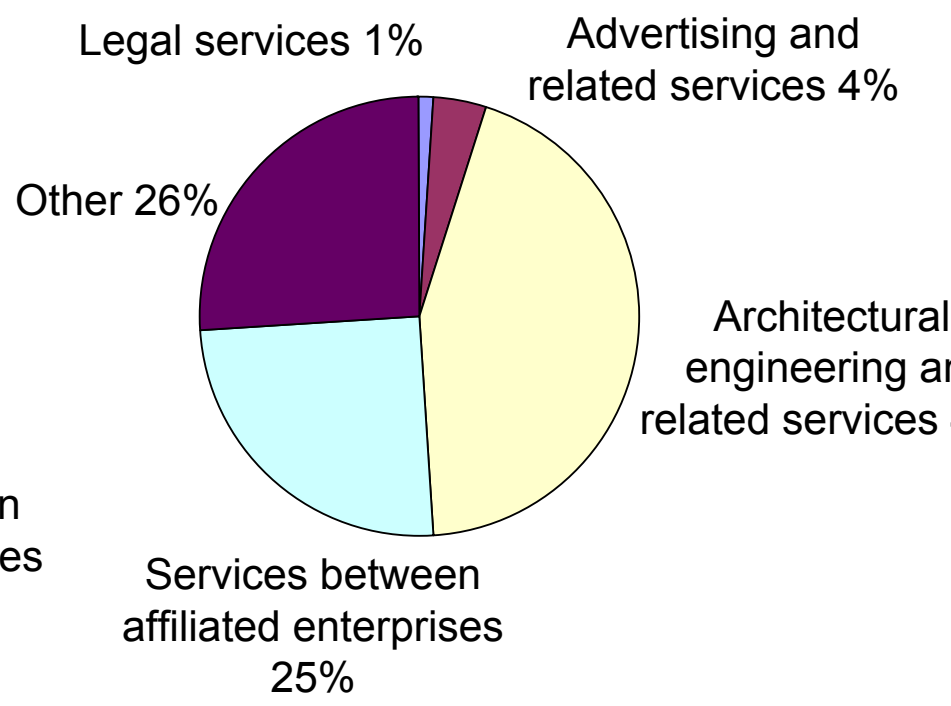


# Further breakdown of misc. business and professional services

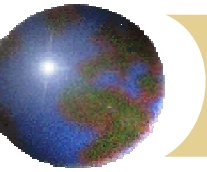
**1995**



**2000**



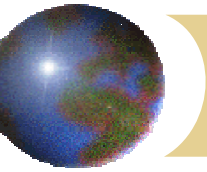
Source: "Brazil – Trade Policies to Improve Efficiency, Increase Growth and Reduce Poverty." Vol. IV. (The World Bank, 2002).



# Revealed comparative advantage

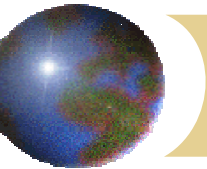
$$RCA_k = \frac{\text{Exports}_k^{\text{Brazil}} / \text{Total Exports}^{\text{Brazil}}}{\text{Exports}_k^{\text{World}} / \text{Total Exports}^{\text{World}}}$$





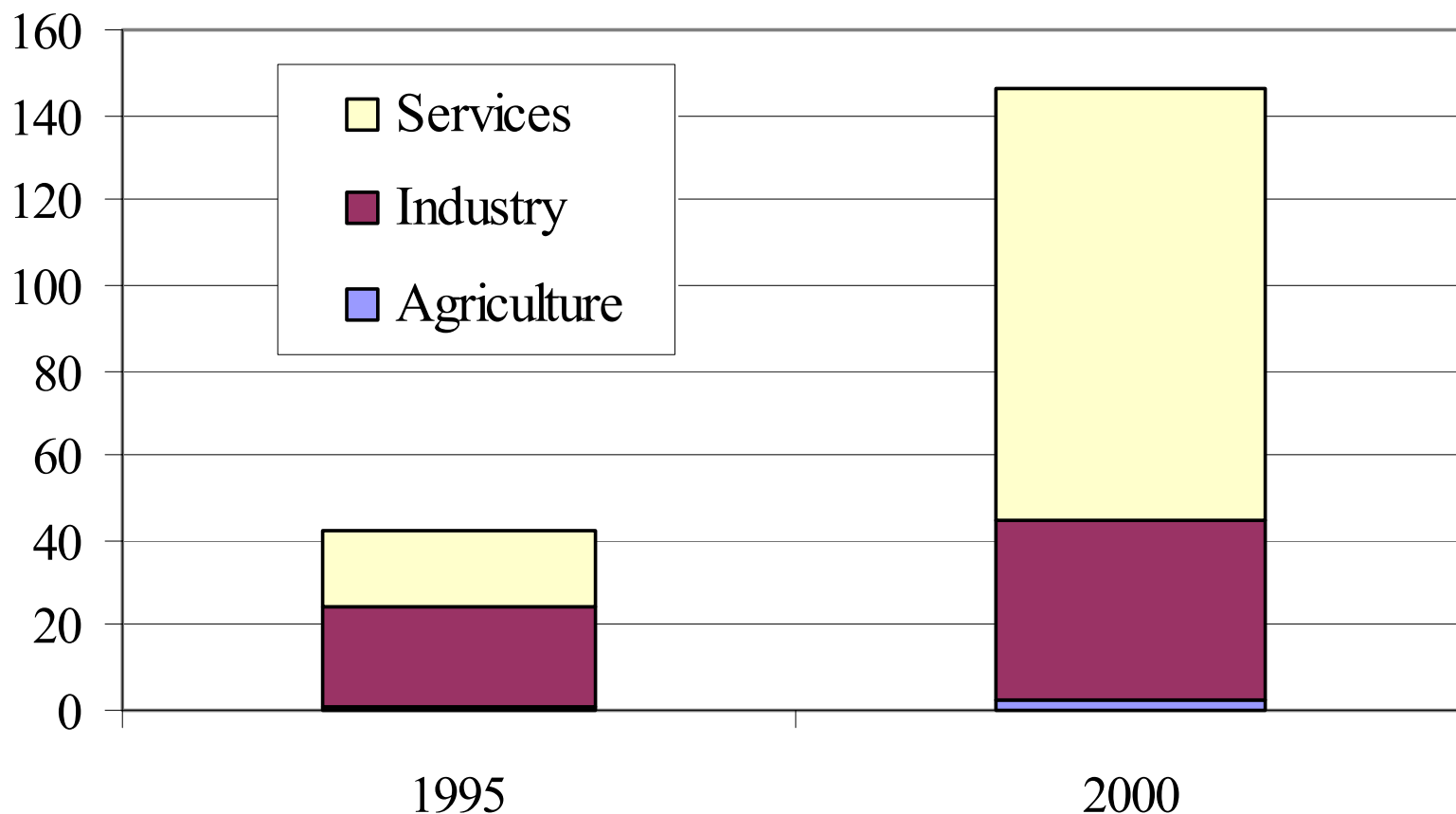
# Brazil's RCA indices

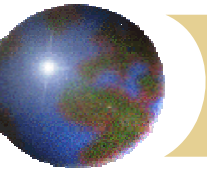
<b>Exports</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
Goods	1.10	1.12	1.12	1.14	1.12	1.09	1.13	1.12	1.09	1.08	1.06
Services	0.56	0.49	0.50	0.44	0.51	0.61	0.45	0.49	0.63	0.65	0.75
Transport services	0.79	0.79	0.93	0.72	0.89	1.03	0.58	0.52	0.71	0.47	0.47
Travel	0.61	0.44	0.36	0.34	0.28	0.28	0.21	0.26	0.36	0.46	0.46
Insurance services	0.80	0.40	0.55	0.69	0.69	0.86	0.01	-0.16	0	0.72	1.33
Other business serv.	0.51	0.41	0.47	0.29	0.61	0.50	0.62	0.83	1.16	1.36	1.68



# Brazil's inflows of FDI in services

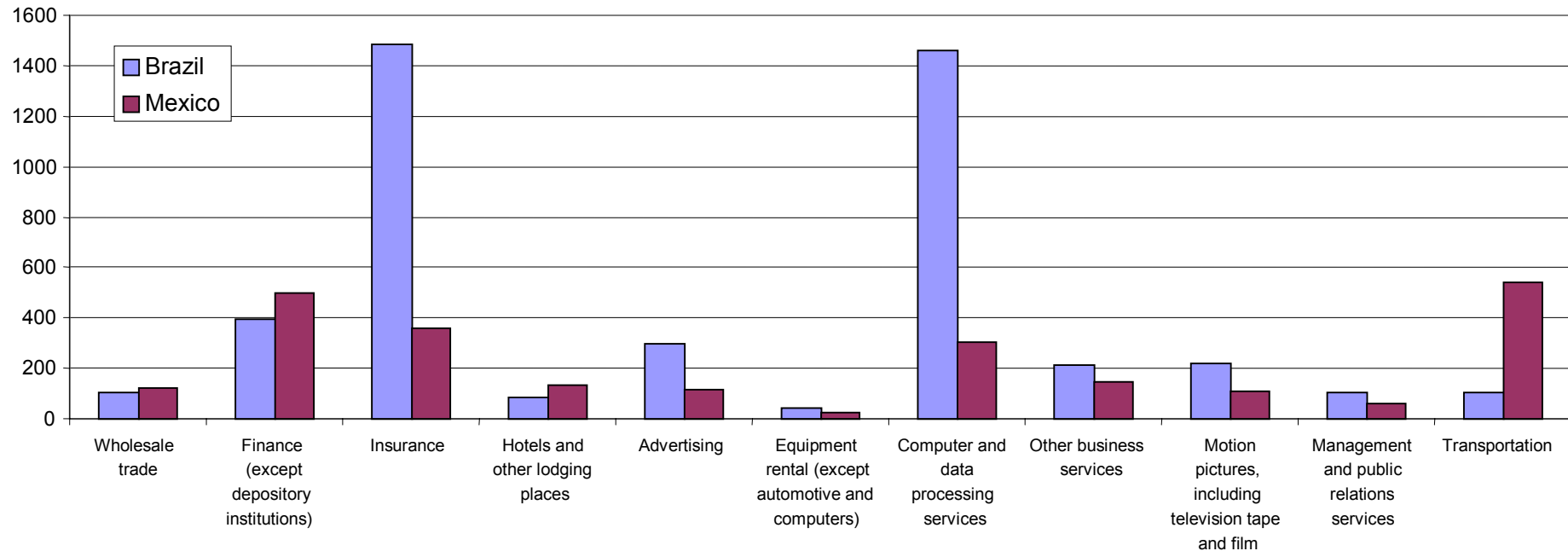
Billions of US\$



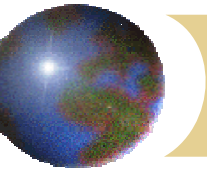


# Sales of Services by US Foreign Affiliates in 1996

Millions of US dollars

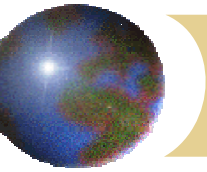


Source: "Brazil – Trade Policies to Improve Efficiency, Increase Growth and Reduce Poverty." Vol. IV. (The World Bank, 2002).



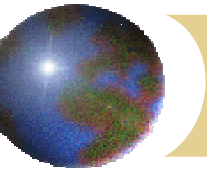
# Assessment of trade barriers

- ❖ Set of non-tariff measures:
  - ❑ Various quantitative restrictions
  - ❑ Foreign equity ownership allowed
  - ❑ Types of legal entity permitted
  - ❑ Regulatory measures
- ❖ To what extent do trade measures disadvantage foreign service providers?
- ❖ Can a “tariff-equivalent” of trade barriers be calculated?



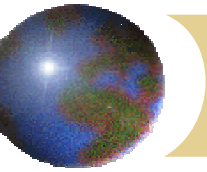
# Frequency indices

- ✿ Idea: define a set of trade barriers, document the frequency of occurrence, and calculate a single index number
- ✿ Methods of assigning weights to barriers
  - ▣ Judgments based on anecdotal evidence
  - ▣ As revealed in econometric models



# Frequency indices: an example

- Study by Alex Hardin and Leanne Holmes (2000) on FDI restrictions in services in selected APEC economies
  - Based on information on actual FDI restrictions
  - Judgmental system of weighting to reflect efficiency costs



# Index components

## **Type of restriction**

## **Weight**

---

Foreign equity limits on all firms

No foreign equity permitted

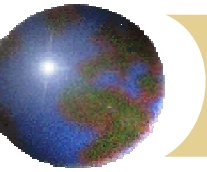
1.000

Less than 50 per cent foreign equity permitted

0.500

More than 50 per cent and less than 100 per cent foreign equity permitted

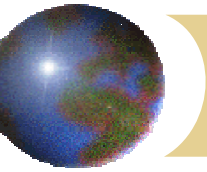
0.250



# Index components (2)

<b>Type of restriction</b>	<b>Weight</b>
Foreign equity limits on existing firms, none on greenfield	
No foreign equity permitted	0.500
Less than 50 per cent foreign equity permitted	0.250
More than 50 per cent and less than 100 per cent foreign equity permitted	0.125





# Index components (3)

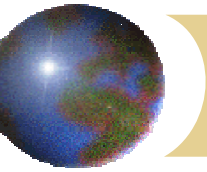
## **Type of restriction**

## **Weight**

---

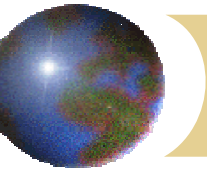
### Screening and approval

Investor required to demonstrate net economic benefits	0.100
Approval unless contrary to national interest	0.075
Notification (pre or post)	0.050



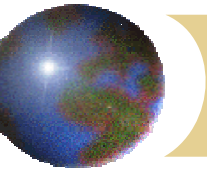
# Index components (4)

<b>Type of restriction</b>	<b>Weight</b>
Control and management restrictions	
All firms	0.200
Existing firms, none for greenfield	0.100
Input and operational restrictions	
All firms	0.200
Existing firms, none for greenfield	0.100



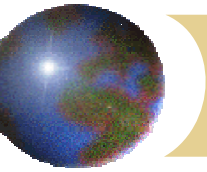
# Resulting restrictiveness indices

<b>Sectors</b>	<b>China</b>	<b>Hong Kong</b>	<b>Mexico</b>	<b>United States</b>
Business	0.360	0.015	0.289	0.005
Communic.	0.819	0.350	0.739	0.345
Construction	0.400	0.000	0.450	0.000
Distribution	0.275	0.050	0.325	0.000
Education	0.525	0.000	0.450	0.000
Financial	0.450	0.233	0.554	0.200
Health	0.275	0.000	0.408	0.000
Transport	0.455	0.093	0.283	0.025



# Tariff equivalents

- ✿ Use frequency index in econometric model explaining prices for traded services
- ✿ Impute tariff equivalents by comparing hypothetical free trade prices to actual prices
- ✿ Problems:
  - ▣ Purpose?
  - ▣ Price data are often unavailable
  - ▣ Modeling difficulties (e.g., imperfect competition)
  - ▣ Existing literature only offers “guesstimates”



# Assess impact of trade liberalization

## ✿ Questions:

- ✿ How strongly would exports increase if foreign barriers were reduced?
- ✿ Evaluate economic impact of own liberalization

## ✿ Econometric studies on specific sectors:

- ✿ Useful cross-country evidence in various sectors
- ✿ Which performance indicator?

## ✿ General equilibrium studies:

- ✿ Heroic assumptions on trade barriers & elasticities