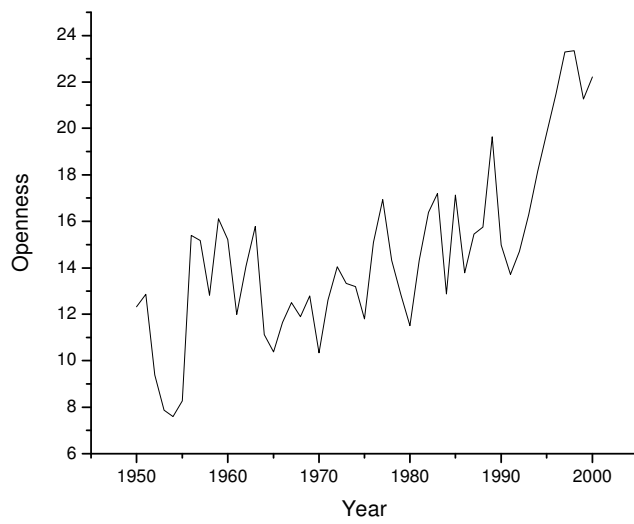


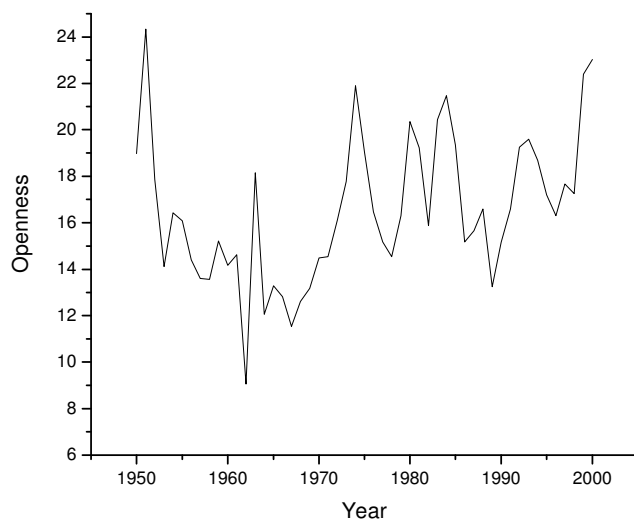
# Gains from Trade and Global Economic Integration

1. Trade Openness
2. Trade and Welfare
3. Gains from Trade
4. Comparative Advantage
5. Trade and Growth: Some Evidence
6. Trade, Specialization and Growth: More Evidence

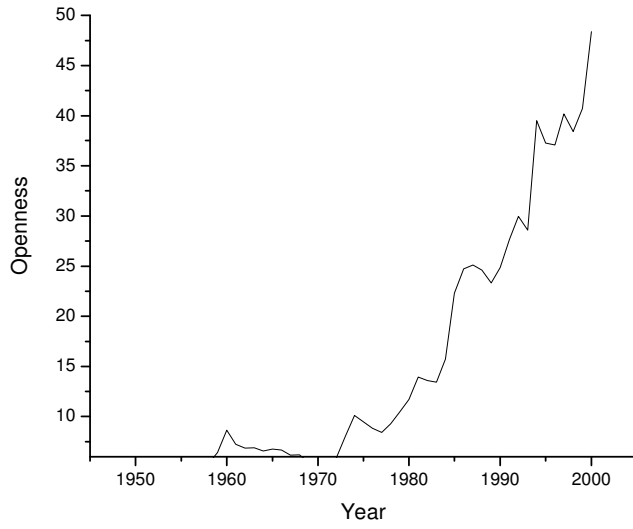
$$\text{Openness} = (\text{Import} + \text{Exports}) / \text{GDP}$$



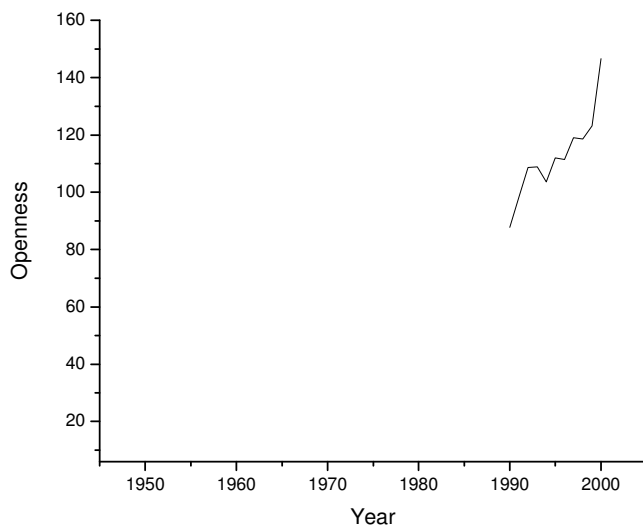
## Argentina



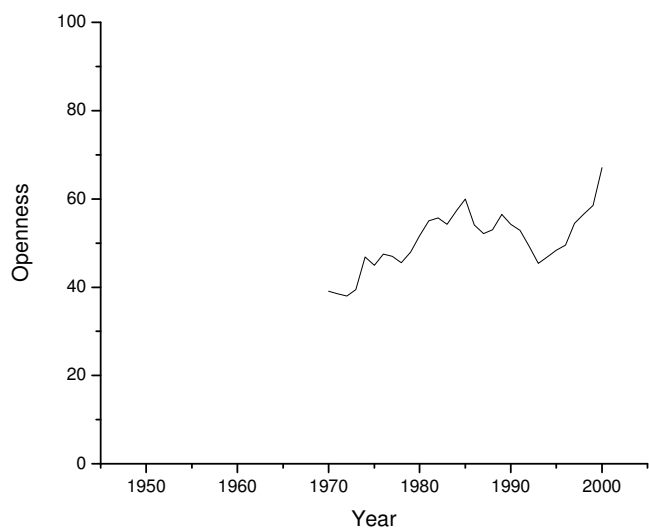
## Brazil



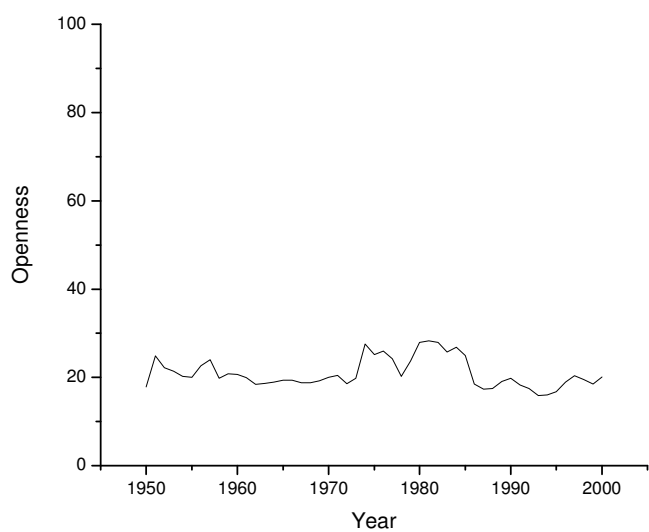
## China



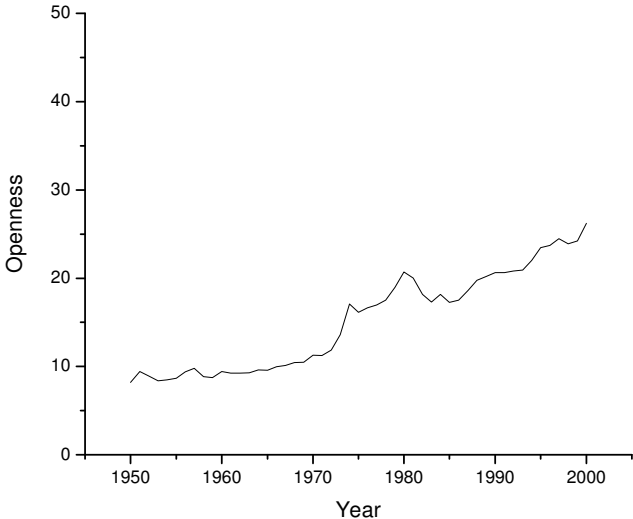
## Czech Republic



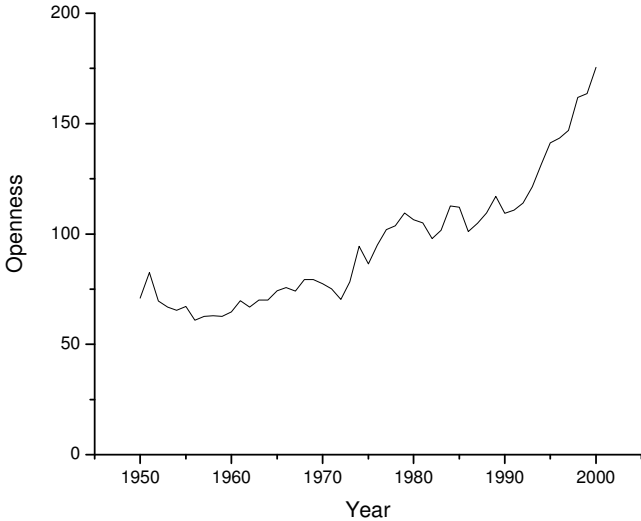
## Germany



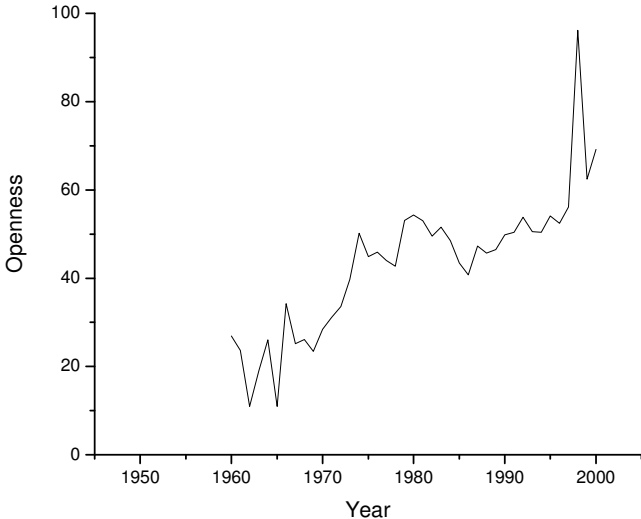
## Japan



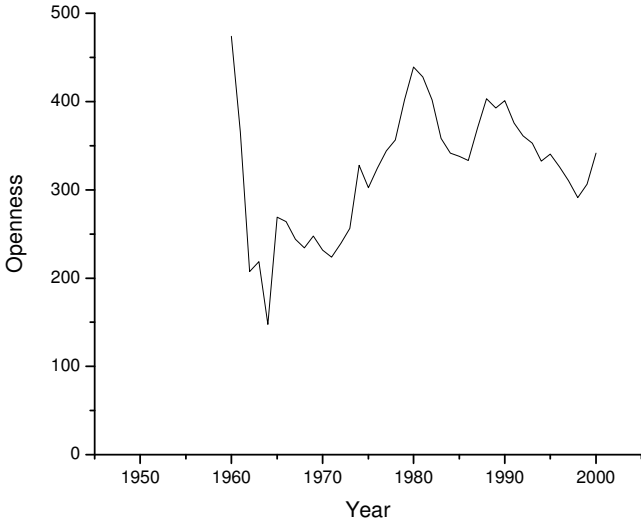
# USA



# Ireland



### Indonesia



### Singapore

## ***Gains from Trade***

### Three Sources of Welfare Gains from Trade

#### **1. Availability**

Availability of resources and products (countries exchange goods which can be produced only in one country)

Examples: most natural resources, but valid also for products that can only be produced with skills that are geographically distributed

How useful is growing Bananas in Dutch greenhouses?

perhaps more controversial:

How useful has it been to built steel factories in Hungary?

Should Malaysia produce luxury cars (as it does not)? Low end cars (as it does)? Why?

## 2. Absolute Efficiency in the Production (Adam Smith 1723 – 1790)

Cost and efficiency arguments:

Suppose there are two countries, Northland N and Southland S. Both have a computer industry and a rice industry.

In Northland it takes  
15 labor-days to produce 1 computer  
30 labor-days to produce a sack of rice.

In Southland it takes  
20 labor-days to produce 1 computer  
20 labor days to produce one sack of rice.

Production capabilities per labor-day

Country	Computer	Rice
Northland	0.033	0.067
Southland	0.050	0.050

No assume both countries have a production capacity of 100 labor days.

Accordingly, Northland can produce, for example:

6.7 computers and 0.0 sack rice

5.3 computers and 0.6 sack rice

4.0 computers and 1.2 sack rice

2.7 computers and 1.9 sack rice

1.3 computers and 2.6 sack rice

0.0 computers and 3.3 sack rice

Southland can produce

5.0 computers and 0.0 sack rice

4.0 computers and 1.0 sack rice

3.0 computers and 2.0 sack rice

2.0 computers and 3.0 sack rice

1.0 computers and 4.0 sack rice

0.0 computers and 5.0 sack rice

If both countries go for option 4 they jointly produce 4.7 computers and 4.9 sack rice.

If, however, Northland produces all computers and Southland all the rice, they produce 6.7 computers and 5.0 sack rice

If Southland produces all the computers and Northland all the rice, they produce 5.0 computers and 3.3 sack rice.

HOWEVER:

### 3. Comparative Advantages

Division of Labor is also welfare-enhancing if one country has an absolute advantage in the both production of both goods, if both actors produce the good they do relatively better.

(Ricardo: theorem of comparative advantage)

Suppose there are two countries, Northland N and Southland S. Both have a computer industry and a rice industry.

In Northland, it takes  
10 labor-days to produce 1 computer  
15 labor-days to produce a sack of rice.

Southland is less efficient in both industries, it takes  
40 labor-days to produce 1 computer  
20 labor days to produce one sack of rice.

Production capabilities per labor-day

Country	Computer	Rice
Northland	0.100	0.067
Southland	0.025	0.050

Apparently, Northland is more productive in both computers and rice.

No assume both countries have a production capacity of 100 labor days.

Accordingly, Northland can produce, for example:

10.0 computers and 0.0 sack rice

8.0 computers and 1.3 sack rice

6.0 computers and 2.7 sack rice

4.0 computers and 4.0 sack rice

2.0 computers and 5.3 sack rice

0.0 computers and 6.7 sack rice

Southland can produce

2.5 computers and 0.0 sack rice

2.0 computers and 1.0 sack rice

1.5 computers and 2.0 sack rice

1.0 computers and 3.0 sack rice

0.5 computers and 4.0 sack rice

0.0 computers and 5.0 sack rice

If both countries go for option 3 they jointly produce 7.5 computers and 4.7 sack rice.

If, however, Northland produces all computers and Southland all the rice, they can produce

10.0 computers and 5.0 sack rice, which is clearly superior because they together have more computers and more rice.

## **4. Technological Spill-overs**

Trade increases and improves the spread of ideas and technologies. (Note technological progress positively affects economic growth)

How does trade distribute ideas and technology?

## On Political Discussion CHECK

<http://web.mit.edu/krugman/www/ricardo.htm>

for a wonderful story why comparative advantage seems to be difficult.

Bjørn Lomborg's Copenhagen Consensus on international development challenges ranked trade liberalization as third on the list of development priorities; the experts judged that modest costs could yield large benefits for developing nations.

(They ranked freer trade as a "**Very Good**" opportunity for fighting misery along with cheap measures against HIV infection, micronutrient distribution, and anti-malarial programs.) (...)

Reducing subsidies and tariffs would improve the wellbeing of the global poor being more than any agricultural, political, or environmental program. They considered that the free trade in labor would also be a significant (although less important) move against poverty, especially if skilled worker migration were permitted.

(See Wikipedia)

[www.wikipedia.org](http://www.wikipedia.org)

## Trade Openness and Growth

Variable	Model 1	Model 2	Model 3	Model 4
Intercept	0,9859 (0,1308) ****	1,0136 (0,1185) ****	0,9902 (0,1132) ****	1,0529 (0,1250) ****
Lagged Per Capita Income	-0,1209 (0,0150) ****	-0,1311 (0,0132) ****	-0,1274 (0,0129) ****	-0,1265 (0,0142) ****
Growth Rate of Capital	0,3219 (0,0216) ****	0,3373 (0,0140) ****	0,3339 (0,0184) ****	0,3264 (0,0231) ****
Technological Progress	0,0712 (0,0094) ****	0,0747 (0,0080) ****	0,0717 (0,0068) ****	0,0738 (0,0081) ****
Human Capital	0,0045 (0,0035)	0,0050 (0,0035)	0,0049 (0,0036)	0,0051 (0,0032)
Population Growth	-1,5875 (0,4343) ****	-1,4337 (0,3931) ****	-1,5211 (0,4298) ****	-1,5650 (0,4689) ****
Trade/GDP		0,0003 (0,0001) ****		
logged Trade/GDP			0,0221 (0,0037) ****	
Sachs-Warner Dummy				0,0078 (0,0014) ****
country dummies	y	y	y	y
period dummies	y	y	y	y
N	243	243	243	243
R <sup>2</sup>	0,828	0,839	0,843	0,831
Wald Chi <sup>2</sup>	151,35	68,15	84,58	147,72
Prob>Wald Chi <sup>2</sup>	0,0000	0,0000	0,0000	0,0000

dependent variable: Growth of Per Capita Income.

*Trade Openness and Growth*

# **(Re-) distributive Effects of Trade and FDI and the Political Economy of Protection and Liberalization**

1. The Heckscher-Ohlin theorem
2. Ricardo-Viner theorem
3. Lobbying and the Case for Protection
4. Democratization and Liberalization
5. Crises (International Organizations) and Liberalization

## ***Heckscher-Ohlin and the Sources of Comparative Advantage***

“A model of international trade in which comparative advantage derives from differences in relative factor endowments across countries and differences in relative factor intensities across industries.” (Deardorff)

Assume two factors of production (capital and labor), two countries (i and j) and two goods (A and B). Country i is relatively rich of capital (capital abundant) and labor is relatively scarce, country j is capital scarce and labor abundant.

In autarchy, capital is relatively cheap and labor relatively expensive in i, and vice versa in j.

Assume further that the production of good A is relatively capital intense and the production of good B is relatively labor intense.

Under this assumptions, i has a comparative advantage in the production of capital intense goods and j has a comparative advantage in the production of labor intense goods.

Does this lead to a conflict over trade policy?

## ***Heckscher-Ohlin and Trade Policy***

Does this lead to a conflict over trade policy?

Not always (or: not necessarily),

since capital and labor can move from sector B to A in country i and from sector A to B in country j.

(Let's ignore the alternative option that capital and labor change countries rather than sectors).

But under some additional, reasonable conditions:

Institutional barriers to the movement of capital and labor between sectors.

Workers have acquired sector-specific skills, for which there is no demand in the other sector.  
Hence, they will lose their wage premium.

Labor market rigidities (wages are inflexible).

Else?

## ***Stolper-Samuelson theorem***

Assume two factors of production (capital and labor), two countries (i and j) and two goods (A and B).

Country i is relatively rich of capital (capital abundant) and labor is relatively scarce, country j is capital scarce and labor abundant.

(well, we had that before)

Let's assume further that – according to Heckscher-Ohlin – country i specializes on the production of capital-intensive goods and country j on the production of labor-intensive goods.

This implies that the production of good A (B) in country i (j) increases.

It follows that the demand for the factor that is used abundantly in the production of good A increases as well. Hence, the demand for capital (labor) in country i increases (declines) – and vice versa in country j.

- The price of capital (interest) in country i increase.
- The price of labor (wage) in country j declines.
- The price of capital in country j declines.
- The price of labor in country j increases.

## ***Heckscher-Ohlin and Trade Policy***

Does this lead to a conflict between capital and labor over trade policy?

What are the predictions of the model?

Is there empirical evidence for the predictions?

## ***Heckscher-Ohlin and Trade Policy***

Does this lead to a conflict between capital and labor over trade policy?

The model predicts conflict between capital and labor. Owners of the relatively scarce factor always prefers protection, the owners of the abundant factor prefer free trade.

What are the predictions of the model?

Owners of the relatively scarce factor always prefers protection, the owners of the abundant factor prefer free trade.

→ In the capital rich country, capital prefers free trade and labor opposes free trade.

→ In the labor rich country, labor prefers free trade and capital opposes free trade.

Is there empirical evidence for the predictions?

Not much, but some.

***Magee, Brock and Young 1989***

analysis of the position of interest groups (capital and labor)

		Industry's Labor	
		protectionist	free trade
Industry	protectionist	distilling textiles chemicals shoes cutlery watches	tobacco
Capital	free trade	petroleum	paper machinery tractors trucks aviation

US Congress 1973

## ***Adrian Wood 1994***

The increase in imports from low labor countries leads to a widening income gap between low and high-skilled workers OR to an increase in unemployment in OECD countries.

In Stolper-Samuelson terms: the demand for low-skilled labor declines if wages are sticky, OR the wages have to decline to keep demand constant.

Specifically:

It leads to rising income inequality if labor markets are flexible.

It causes an increase in unemployment if labor markets are inflexible – especially if wages cannot decline.

Empirics: Wood 1994 page 312

## ***Rodrik 1999***

An increase in economic openness leads to an increase in the number of economic shocks (and to an increase in market uncertainty). Accordingly, the demand for social insurance rises. Responsible (i.e. opportunistic) governments react by increasing government spending.

→ Trade Openness leads to a higher share of social security transfers to GDP.

empirics: Rodrik 1989 page 89

HOWEVER:

Larger markets are less volatile.

(The world economy is larger than national economies).

Hence: Foreign economic liberalization increases macroeconomic stability – contrary to what Rodrik suggests.