Trade and developing countries

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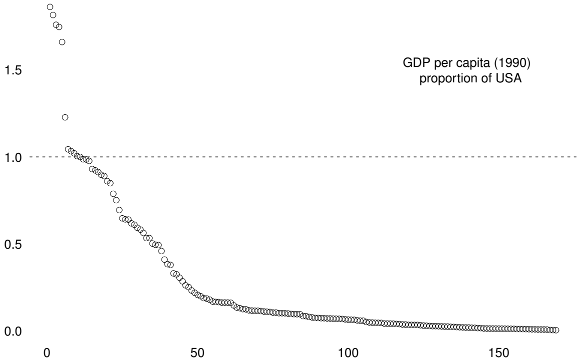
An important question is whether developing countries should be open to international trade

- i.e. reducing tariffs and NTBs

Economists will say yes, but reality is a bit more complicated.

Most basic problem of developing countries is that they are low income



Developing countries tend to be lacking in

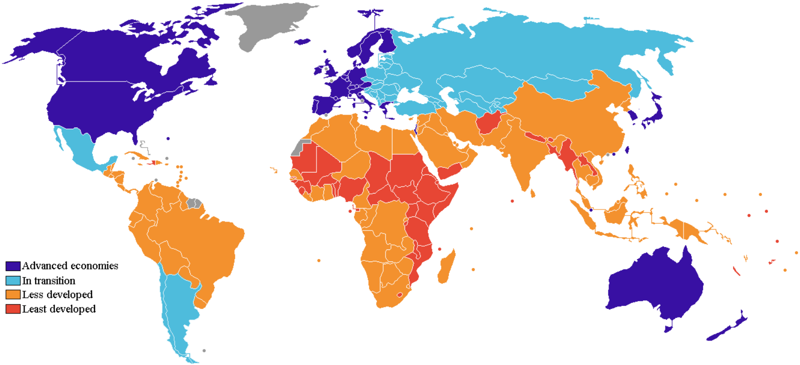
- Capital, both physical and human
- Infrastructure
- Technology
- Markets

Additionally they tend to be hampered by lack of economic freedom such as rule of law, government transparency etc.

Developing countries do tend to have

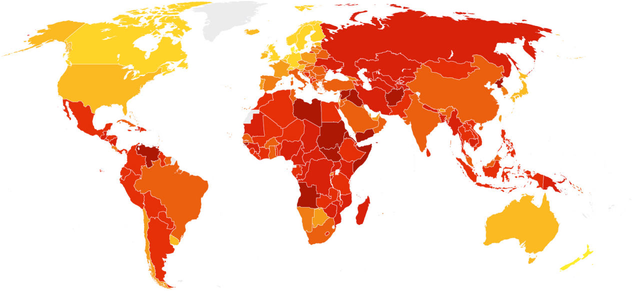
- Overpopulation
- High inflation
- Corruption
- High mortality rates

And in addition they tend to be reliant on primary commodity exports.


Advanced economies
In transition
Less developed
Least developed

Corruption index

source Transparency International



The volume of international trade is actually lower than what would be predicted by trade models.

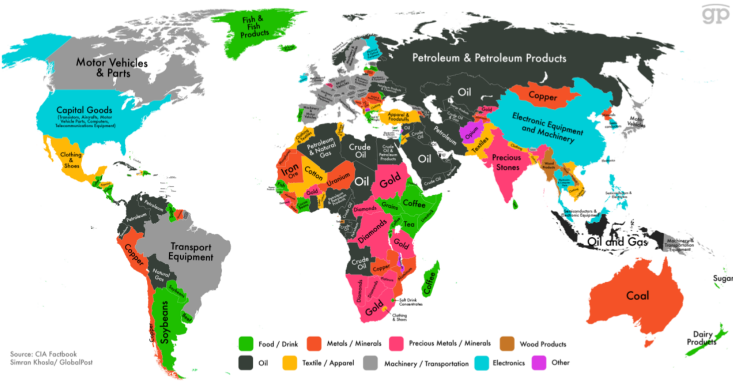
- Trade flows are particularly small in low-income countries

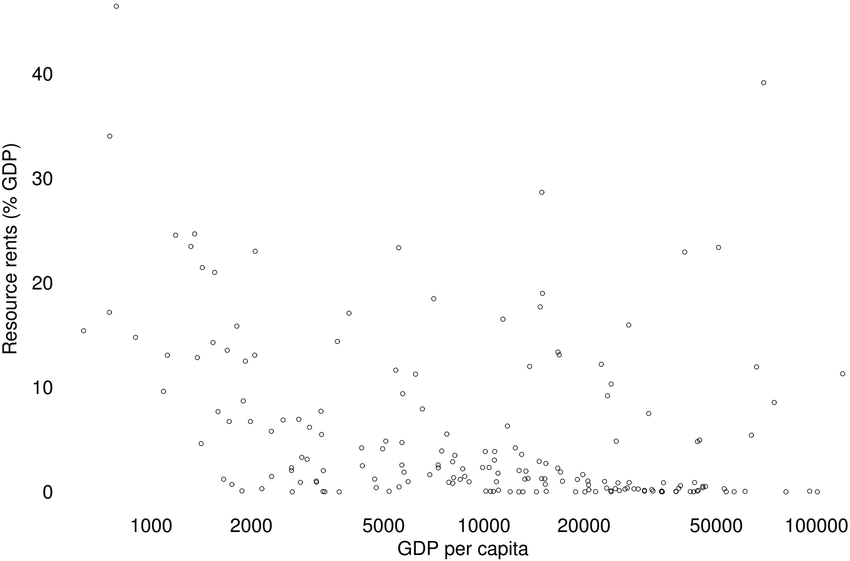
This could be due to corruption which means that some trade flows go unreported, however the effect of corruption is ambiguous

1. Bribing acts as an additional tax to trade
2. Corruption can help overcome bureaucratic barriers to trade

Main export per country

source Global post





40
30
20
10
0
Resource rents (% GDP)
1000
2000
5000
10000
20000
50000
100000
GDP per capita

Developing countries rely heavily on the exports of primary commodity exports. This is a problem however due to the **Prebisch-Singer hypothesis** which states that

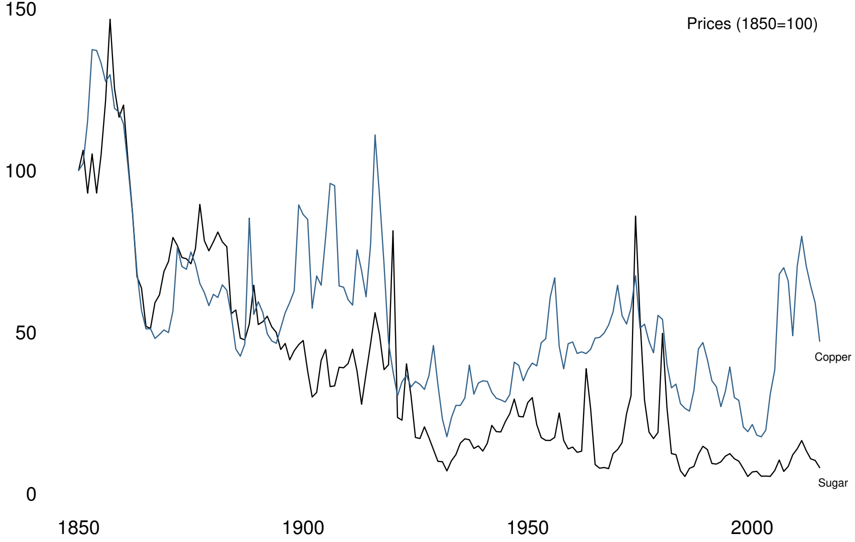
> *Price of primary commodities declines over time relative to the price of manufactured goods.*

Manufactured goods have greater income elasticity of demand compared to primary products such as foodstuffs.

The Prebisch-Singer hypothesis predicts that commodity prices will follow a downward trend, but the evidence for this stylised fact is very mixed

1. There is a negative downward trend in price time-series of main commodities
2. Others noticed an increase in commodity prices since the 1950s

It seems that the hypothesis holds for some commodities but that there is no general effect.



150
100
50
0
1850
1900
1950
2000
Prices (1850=100)
Copper
Sugar

What are the implications of the Prebisch-Singer hypothesis for international trade and developing countries? One is that primary commodity prices will decline when efficiency increases

- This means that as countries start exporting, the price of primary commodities declines relative to the price of manufactured goods

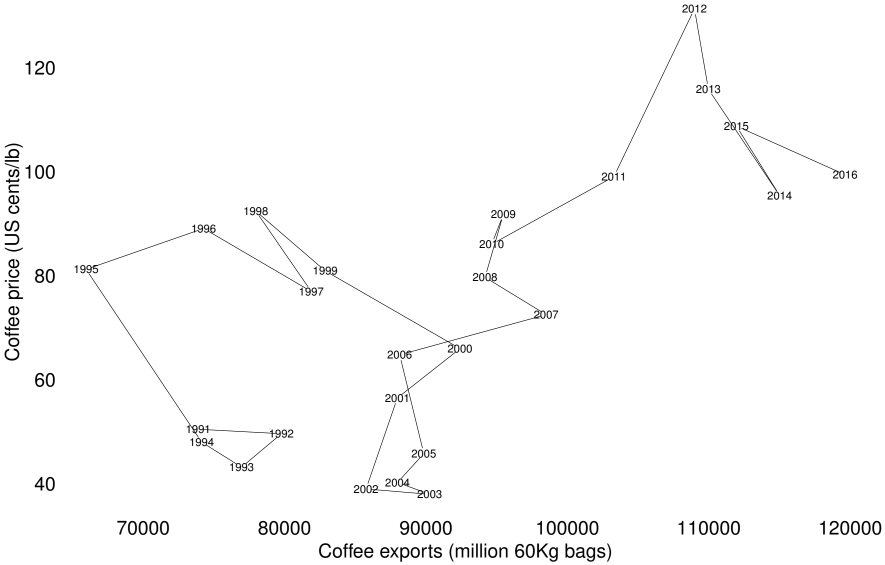
This means that there is a deterioration in the terms of trade for a country that relies on primary commodity exports.

- These countries should diversify their economy to become less dependent
- Sound advice, hard to implement (see specific-factors model)

Let's look at an example; the coffee trade.

- Coffee is primarily grown in developing countries

Over the past two decades there have been large fluctuations in the price of coffee



Coffee price (US cents/lb)
120
100
80
60
40
70000
80000
90000
100000
110000
120000
Coffee exports (million 60Kg bags)
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016


Coffee price (US cents/lb)
100
80
60
40
20
0
1990
1995
2000
2005
2010
2015
Uganda
Papua
New Guinea

Large price fluctuations means large fluctuations in the real income of coffee farmers.

- Government often protect the agricultural sector from the negative effects of trade
- Protection will increase farmer income but also raise domestic price of consumed good

Dube & Vargas (2013) examine relation between commodity prices and conflict on Colombia focusing on coffee and oil

- Coffee is labour-intensive; positive price shock will increase wages and lower opportunity costs for conflict
- Oil is capital-intensive: positive price shock will increase rents, stimulating rent-seeking making conflict more likely

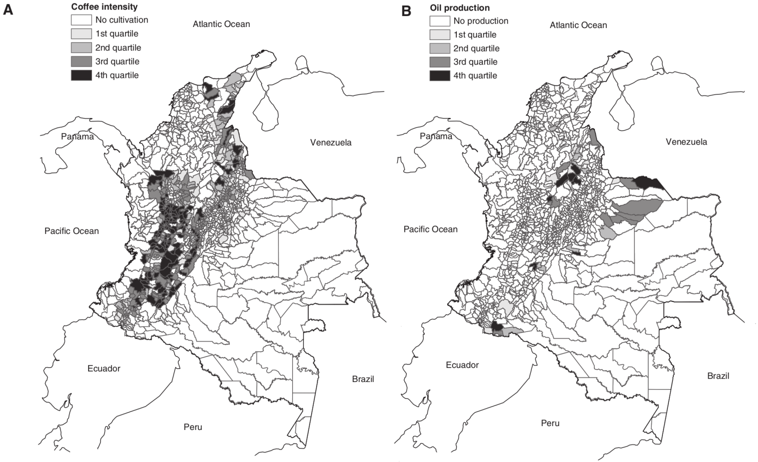


FIGURE 1

Coffee intensity and oil production in Colombia. (A) Coffee intensity; (B) Oil production

Notes: This figure shows coffee intensity and oil production in Colombian municipalities. Coffee intensity is measured as the land used for cultivating coffee (in thousands of hectares) in 1997. Oil production is measured in hundreds of thousands of barrels per day in 1988.

Sources: Shape file from IGAC; coffee data from NFCG; oil data from the Ministry of Mines and Energy.

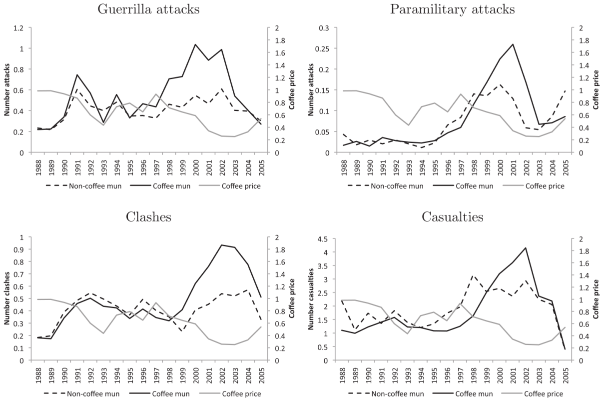


FIGURE 4

The coffee price and mean violence in coffee and non-coffee municipalities

Notes: This figure shows the (log) real internal price of coffee in Colombia, as well as mean violence in municipalities growing coffee in 1997 and mean violence in the non-coffee municipalities.

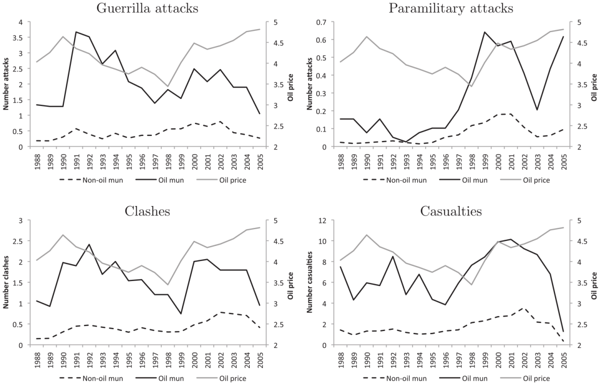


FIGURE 5

The oil price and mean violence in oil and non-oil municipalities

Notes: This figure shows the (log) real international price of oil, as well as mean violence in municipalities producing oil in 1988 and mean violence in the non-oil producing municipalities.

Within economics there is something called the **resource curse** which is a paradox that suggests that resource-rich countries tend to grow slower and are less developed compared to resource poor countries

- Compare Denmark to the DRC

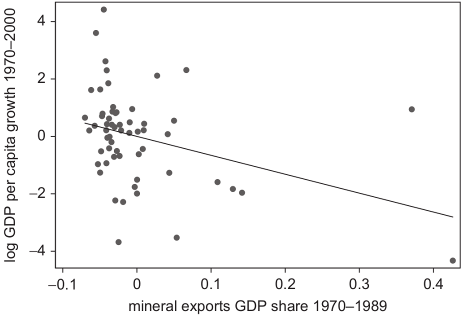


Fig. 1. GDP share of mineral exports and income growth. *Notes:* Detailed regression results are given in Table 4, column (1).

Brunnschweiler & Bulte, 2008, "The resource curse revisited and revised: A tale of paradoxes and red herrings"

There are different explanations for how resource abundance is linked to underdevelopment

1. Rent-seeking behaviour
2. Resource sector crowds out the non-resource sector which is more important for long-run growth due to increasing returns at the sector level

It might not be per se abundance that leads to underdevelopment but a heavy reliance on the resources.

How does trade actually promote economic growth? Let's consider standard Cobb-Douglas production function

$$Y_t = A_t K_t^{\alpha} L_t^{\beta}$$

Re-writing to get output per worker

$$\begin{aligned}\frac{Y_t}{L_t} &= A_t K_t^{\alpha} L_t^{\beta-1} \\ &= A_t \left(\frac{K_t}{L_t}\right)^{\alpha} L_t^{\alpha+\beta-1}\end{aligned}$$

Three ways to improve productivity and growth

1. More workers will increase productivity if

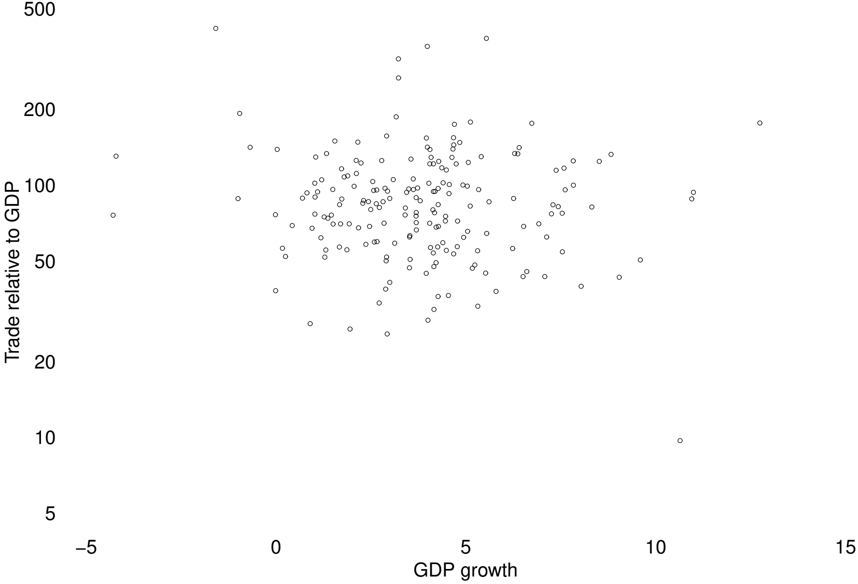
$$\alpha + \beta > 1$$

   However, most growth theories assume constant returns to scale

$$\frac{Y_t}{L_t} = A_t \left(\frac{K_t}{L_t} \right)^{\alpha}$$

2. Capital deepening
3. Technological progress

Trade, since it fosters specialisation, leads to capital deepening and stimulates diffusion of new technologies.



500
200
100
50
20
10
5
Trade relative to GDP
−5
0
5
10
15
GDP growth

There are three basic trade strategies for development

1. Import-substituting industrialisation
2. Export-oriented industrialisation
3. Trade liberalisation

Import-substituting industrialisation (ISI) is a development strategy that aims to reduce foreign dependency by

- Replacing imports with domestic production
- Encouraging domestic production

There are two stages

1. Use tariffs and quotas to reduce imports, which will increase domestic prices and therefore production
2. Industrial diversification focusing mainly on manufactured goods.

ISI strategy partially driven by Prebisch-Singer hypothesis

ISI was adapted by many low- and middle-income countries before the 1980's.

- Predominantly in what is called the Global South
- Particularly popular in Central and South America during the 1950-60's

This was in a time when European colonialism came to an end which led to a belief that Western countries exploit others through international financial markets and trade.

An import justification for ISI is the **infant industry argument**.

- A country could have a potential comparative advantage in certain industries
- But no economies of scale to compete with foreign competitors
- Therefore the government should support these industries until they are strong enough

This is a valid argument in the presence of imperfect capital markets and if there is learning-by-doing

There are a number of counterarguments to be made regarding the protection of infant industries

1. May be wasteful to support industries that will have a future comparative advantage
2. With protection industries might never become competitive
3. No need for government protection in absence of market failure

In practice policy result often corruption and monopolies.

One important point is that the presence of market failure could prevent the industry from becoming competitive. Market failure could arise due to

1. Imperfect capital markets
    - When there are imperfect capital markets poorly working financial laws and markets will restrict borrowing of new industries and hamper economic growth
    - Creating tariffs would be a second-best option to increase profits of new industry
2. Appropriability problem
    - Firms might not be able to appropriate benefits from investment in new industries
    - Knowledge created by industry might not be appropriable due to lack of property rights
    - If establishing system of property rights is not feasible, tariffs are a second best policy to encourage growth

Can a developing country protect its economy using a tariff? One would argue that a developing country has the same advantages of free trade as any other country

- Can exploit comparative advantage to increase efficiency
- Can promote growth through trade

However, a problem is that developing countries are lagging and therefore can't compete on the international market

- Note that all developed countries have used tariffs in the past

In the end ISI didn't really work out and lead to a disconnect with the developed world, reducing exports and some extreme measures of protection

- Import to GDP ratio equaled 3% in India in the early 1970's[1]
- Some effective tariff rates: Mexico, 26%; Philippines, 61%; Brazil, 113%; Chile, 182%; Pakistan, 271%

[1] Excluding oil

ISI lost track in the 1980's due to poor performance in the import-substitution industries and the fact that countries that adapted export-led growth policies did much better. There are a number of explanations for the failure of ISI which include

1. Production on too small scale
2. Production distorted through rent-seeking
3. Increased costs of doing business due to bureaucracy

ISI was popular in Central and South America where during the 1950-60s it helped develop manufacturing sectors. However, during the 1970s further ISI possibilities disappeared

- Industrial growth slowed down and urban jobs became scarce
- Income distribution didn't improve either

Due to high prices export possibilities were limited and ISI was abandoned in the 1980's.

Export-oriented industrialisation used policies to expand the country's exports

- Agricultural commodities and raw materials
- Manufactured goods

Given that economies of most developing countries are dominated by the primary sector it would make sense to focus on exports

- Domestic demand is too low to promote growth

There are however some foreign demand factors that work against this strategy

- Prebisch-Singer hypothesis
- Low population growth in developed countries
- Synthetic substitutes
- Protection in developed countries

Implemented policies in export-oriented industrialisation often focused on particular industries.

- Making use of their comparative advantage, these countries experienced rapid economic growth in export sectors as well as in general

These countries generated high volumes of export and import relative to total production.

- Although they are open economies they still have high restrictions on some forms of trade.

Countries focusing on export-led growth implemented a number of different policies to achieve their goals.

- This included subsidised loans, and research and development

But it is hard to establish the effect of the implemented policies and there is little evidence to suggest that these countries experienced higher growth rates in the targeted industries. There is some evidence that the policies actually failed.

- For instance the South Korean auto industry in the 1970s
- Was abandoned as it was too expensive and did not lead to the desired growth

Some countries did well using this approach such as the four tigers

1. Hong Kong
2. Singapore
3. South Korea
4. Taiwan

A number of other countries which adopted this strategy later also did well

1. Thailand
2. Indonesia
3. Philippines

Untill the 1997 financial crisis.


GDP growth Korea
GDP growth Singapore
GDP growth Hong Kong
15
10
5
0
−5
−10
1960
1970
1980
1990
2000
2010


GDP growth Indonesia
GDP growth Philippines
GDP growth Thailand
15
10
5
0
−5
−10
−15
1960
1970
1980
1990
2000
2010

It is unclear whether the exports caused growth or just happens to be correlated.

1. High savings and investment rates lead to high general growth rates and growth in export sectors
2. There was a rapid growth in education levels which is important for a productive labour force

What is clear is that countries adopting ISI such as Brazil and Mexico did not experience the same growth spur as countries such as South Korea did.

Just a note: For a large country, when economic growth is biased towards the export good there is the risk of something called **immiserising growth**

- Export supply affects export prices, which affects terms-of-trade

The ToT effect might outweigh the positive effect of economic growth

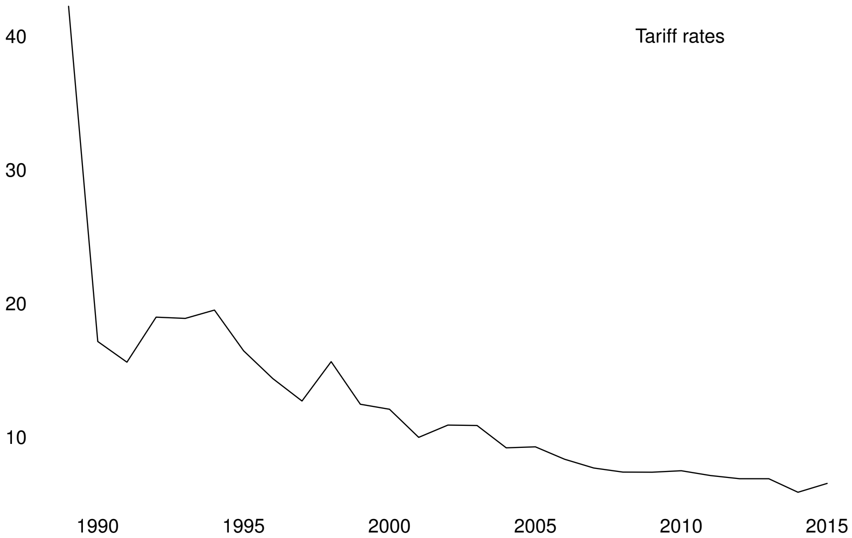
- This is an extreme case scenario

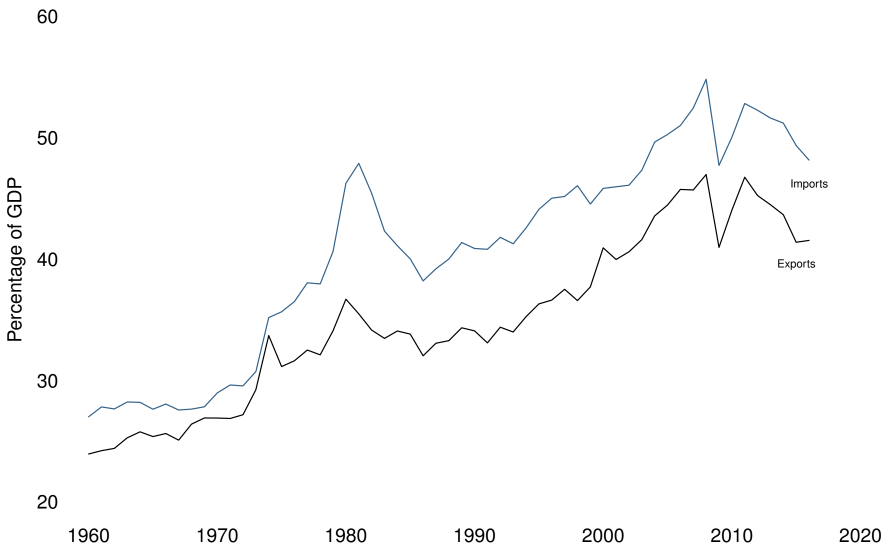
Trade policies such as ISI and export-oriented growth were aimed at promoting economic growth, but experiences have been mixed. Since 1980s most developing countries have started in a process of trade liberalisation.

- Increase in average trade-to-GDP ratio
- Tariff reduction of about 22 points

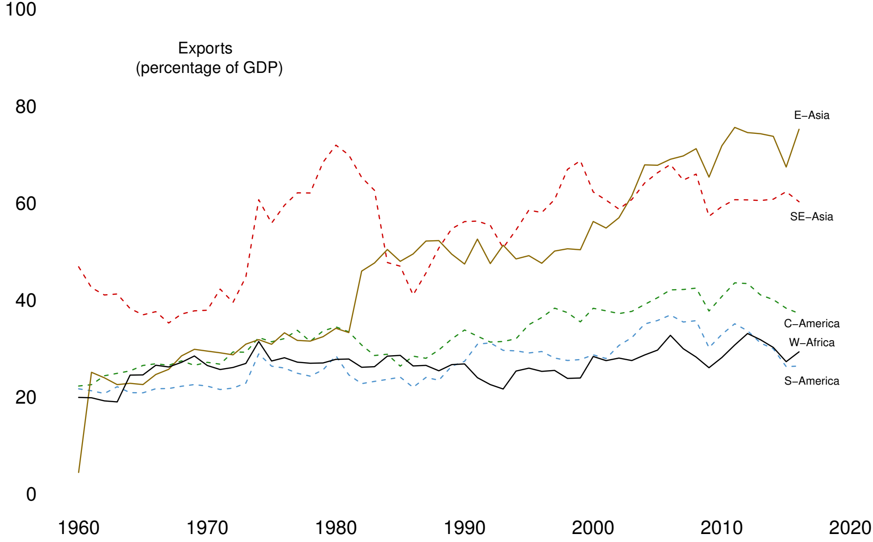
There does seem to be some convergence between post-1980 globalisers and industrialised countries

- More protectionist countries are falling behind

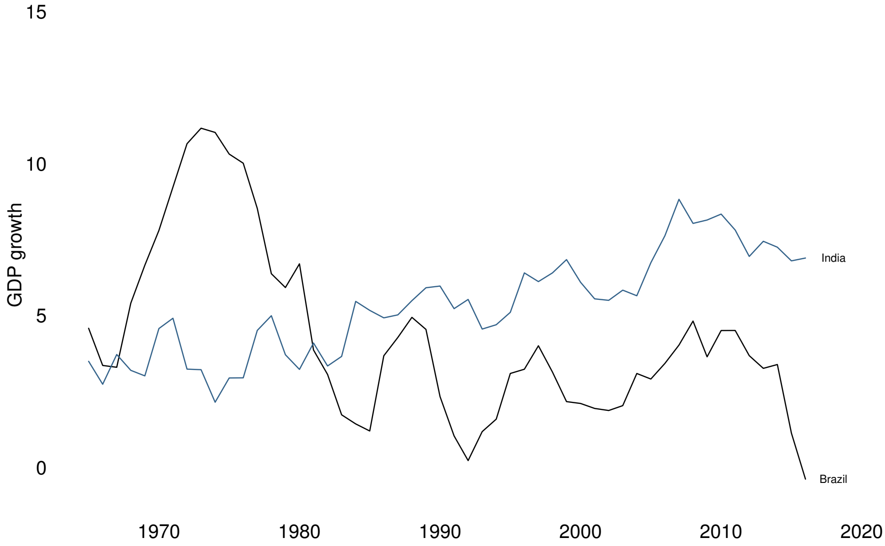

Tariff rates
40
30
20
10
1990
1995
2000
2005
2010
2015



60
50
40
30
20
Percentage of GDP
1960
1970
1980
1990
2000
2010
2020
Imports
Exports



Exports
(percentage of GDP)
100
80
60
40
20
0
1960
1970
1980
1990
2000
2010
2020
E−Asia
SE−Asia
C−America
W−Africa
S−America



15
10
5
0
GDP growth
India
Brazil
1970
1980
1990
2000
2010
2020

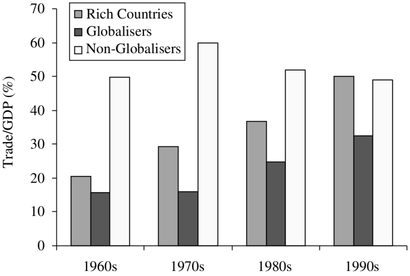


Fig. 1. *Trade/GDP*

Note: Rich countries refers to the 24 OECD economies before recent expansions, plus Chile, Hong Kong, Korea, Taiwan, and Singapore. Globalisers refers to the top one-third in terms of their growth in trade relative to GDP between 1975–9 and 1995–7 of a group of 72 developing countries for which we have data on trade as a share of GDP in constant local currency units since the mid-1970s. Non-globalisers refers to the remaining developing countries in this group. Decadal averages are population-weighted. Unweighted averages and alternative definitions of globalisers are reported in Table 3. Variable definitions and data sources are reported in the Appendix.

Dollar & Kraay, 2004, "Trade, Growth, and Poverty"

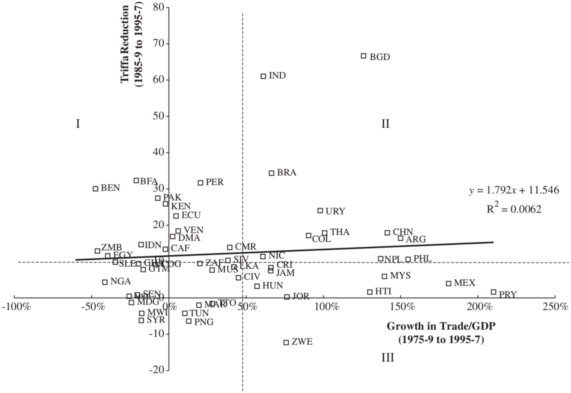


Fig. 6. *Identifying Globalisers*

Notes: Figure plots growth in trade relative to GDP over the period 1975–9 to 1995–7 on the horizontal axis and the decrease in weighted average tariffs over the period 1985–9 to 1995–7 on the vertical axis. The first group of globalisers consists of regions II and III, the second group consists of regions I and II, and the third group consists of region II. Variable definitions and data sources are reported in the Appendix.

Dollar & Kraay, 2004, "Trade, Growth, and Poverty"

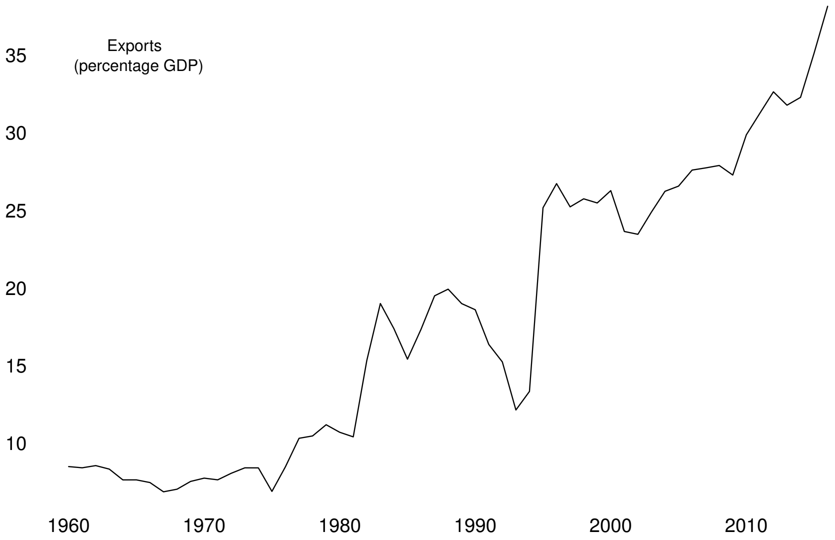
Interesting example in terms of the effect of trade liberalisation is Mexico

- Throughout 1950-60s high tariff barriers
- Produced little for exports, main export product was oil

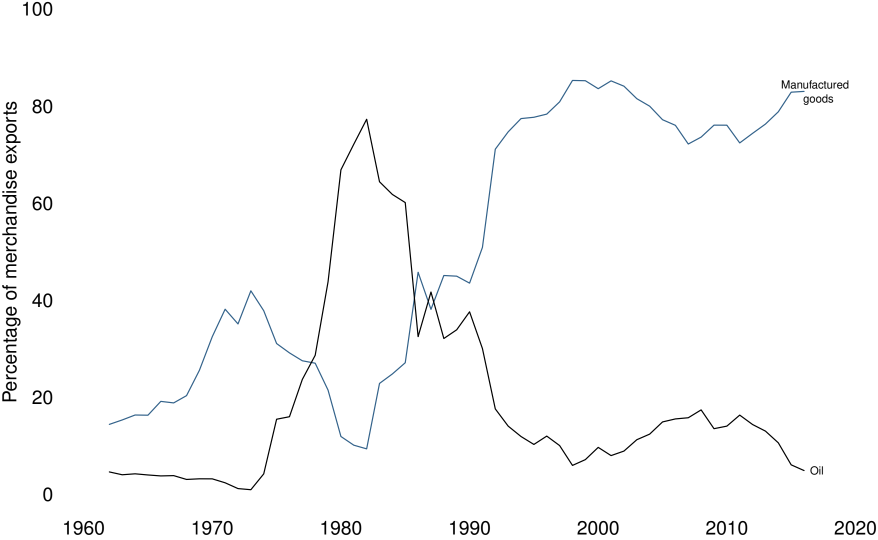
From 1980s onwards process of trade liberalisation

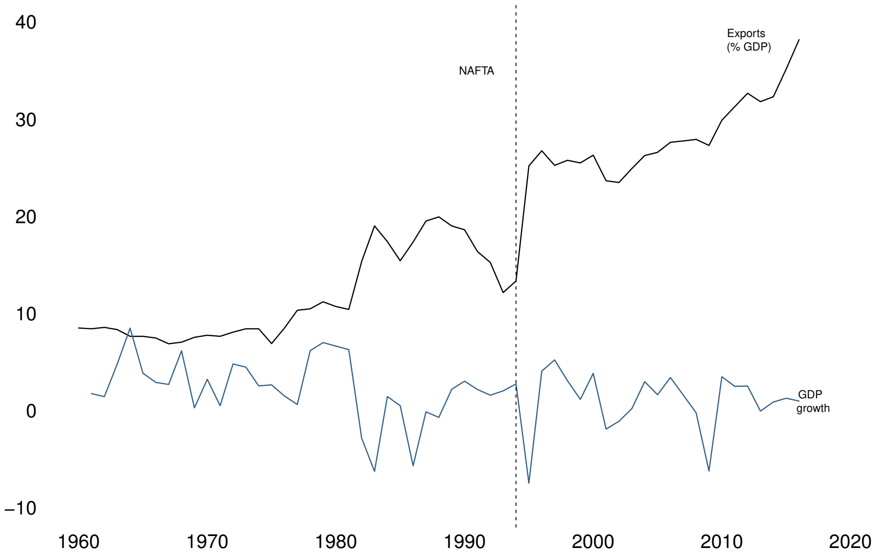
- 1985-88, removal of tariffs and quotas
- 1994, joined NAFTA

Mexico is 13th largest exporter in the world.



Exports
(percentage GDP)
35
30
25
20
15
10
1960
1970
1980
1990
2000
2010


Percentage of merchandise exports
100
80
60
40
20
0
1960
1970
1980
1990
2000
2010
2020
Manufactured goods
Oil


40
30
20
10
0
−10
1960
1970
1980
1990
2000
2010
2020
NAFTA
Exports
(% GDP)
GDP
growth

One issue is that developed countries often use agriculatural tariffs and subsidies which hurt developing countries

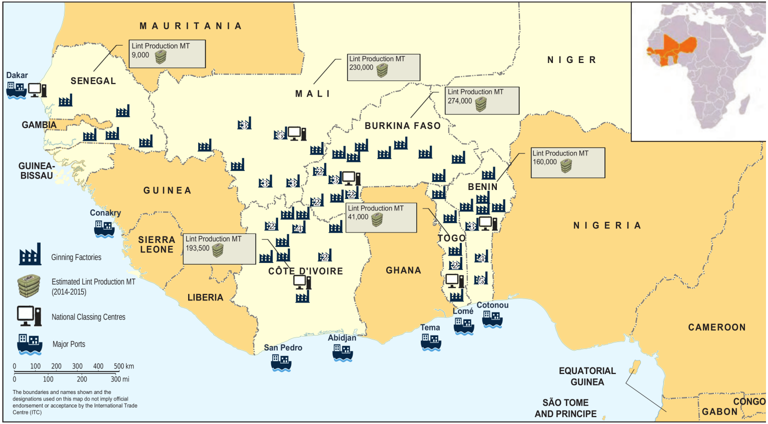
- EU's Common Agricultural Policy
- Cotton and Sugar in the USA

What are for example the effects of export subsidies for foreign countries?

- Decrease world prices

This will be great for foreign consumers but not so much for foreign producers

- Helps net-exporters but hurts net-importers


MAURITANIA
MALI
NIGER
SENEGAL
GAMBIA
GUINEA-BISSAU
GUINEA
SIERRA LEONE
LIBERIA
CÔTE D'IVOIRE
BURKINA FASO
GHANA
TOGO
BENIN
NIGERIA
CAMEROON
EQUATORIAL GUINEA
SÃO TOME AND PRINCIPE
GABON
CONGO
Dakar
Conakry
San Pedro
Abidjan
Tema
Lomé
Cotonou
Lint Production MT 9,000
Lint Production MT 230,000
Lint Production MT 274,000
Lint Production MT 160,000
Lint Production MT 41,000
Lint Production MT 193,500
Ginning Factories
Estimated Lint Production MT (2014-2015)
National Classing Centres
Major Ports
0 100 200 300 400 500 km
0 100 200 300 mi
The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the International Trade Centre (ITC)

Consider cotton, the production cost for which are three times lower in West-Africa than in the USA

- US farmers receive 4B USD in subsidies, a year

From 1998 to 2001 US output grew by 40%, exports by 50%, decreasing world prices to record low

Would developing countries be better off if rich nations stopped subsiding their agricultural sectors? Probably not.

- Developing countries are predominantly net-importers of agricultural goods

Poor will be hurt.

There has been a strong increase in South-South trade

- Developing countries accounted for 50% of increase in global exports between 1995-2012
- Account for 45% of global GDP
- Fuels and manufactured goods account for 25 and 19% of trade

This increase in trade is mainly driven by the development of Asian and American economies.

Source: UNCTAD