# TRADE AND DEVELOPMENT

EE 462 Development Macroeconomics

Semester 1/2014

# Topics

- Trade Trend and Patterns
- Comparative Advantages
- Trading Primary Products
- Empirical Evidence on Primary Export-Led Growth

# Trade and Development

- Trade creates gainers and losers.
  - Trade provides low- and middle-income countries with significant opportunities to improve welfare and accelerate growth.
  - But trade also creates losers. Think about firms or farmers in local markets!
- The evidence is that on balance free trade has benefited developing countries.
- Many developing countries have *comparative advantage* in *primary products*.
  - Resource curse & Dutch disease

# Trends and Patterns of Trade

- Exports (and imports) from high-income nations continue to dominate global exchange. (Why?)
- In 2009, China accounted for only 10% of world exports.
- Questions:
  - Who's the major trading partner of the United States?
    - Canada
  - Which region has the largest increase in the ratio of trade to GDP over the past 30 years?
    - East Asia (Trade GDP =~20% in 1970 and ~75% in 2000s)
- For developing countries as a whole, imports plus exports on goods and services are more than 64% of total output.

# Merchandise Exports in Selected Countries, 2008

| Country Name | Merchandise Exports (current millions of U.S. $) | GDP (current millions of U.S. $) | Merchandise Exports as a Share of GDP (%) | Manufactures Exports (% of merchandise exports) |
|---|---|---|---|---|
| **Developing countries** | | | | |
| Malaysia | 199,516 | 221,773 | 90 | 54 |
| Nigeria | 81,900 | 207,118 | 40 | 5 |
| China | 1,428,488 | 4,326,996 | 33 | 93 |
| Venezuela | 93,542 | 314,150 | 30 | 4 |
| Philippines | 49,025 | 166,909 | 29 | 83 |
| Indonesia | 139,281 | 510,730 | 27 | 39 |
| Mexico | 291,807 | 1,088,128 | 27 | 74 |
| Sri Lanka | 8,370 | 40,565 | 21 | 67 |
| Kenya | 4,972 | 30,355 | 16 | 37 |
| Jamaica | 2,400 | 14,614 | 16 | 61 |
| Niger | 820 | 5,354 | 15 | 7 |
| India | 179,073 | 1,159,171 | 15 | 63 |
| Brazil | 197,942 | 1,575,151 | 13 | 45 |
| **Developed countries** | | | | |
| United Kingdom | 457,983 | 2,674,057 | 17 | 70 |
| Japan | 782,337 | 4,910,840 | 16 | 89 |
| United States | 1,300,532 | 14,591,381 | 9 | 74 |

*Sources:* Derived from World Bank, *World Development Indicators, 2010,* tabs. 4.2 and 4.4.

# Comparative Advantages

- Theory of comparative advantage
  - Suggested by David Ricardo (1817) to describe trade patterns
  - Assume *static conditions* that factors of production are in fixed supply and unable to cross borders
- Some results:
  - A country can increase its welfare by trading.
  - The smaller the country, the greater is this potential gain from trade.
  - A country often gains most by exporting commodities that it produces using its abundant factors most intensively, while importing goods that requires intensive use of its scarce resources.

# Comparative Advantage (Cont'd)

- Example: Production costs and comparative advantage

| Labor hours | Mexico | U.S. |
|---|---|---|
| Tomatoes (1 ton) | 50 | 40 |
| Tractor (1 tractor) | 300 | 200 |
| Relative price (tons of tomatoes per tractor) | 6 | 5 |

- US has an *absolute advantage* in both goods.
- US has a *comparative advantage* in producing tractors, while Mexico has a comparative advantage in producing tomatoes.
- Suppose both countries agree to trade 1 tractor for 5.5 tons of tomatoes.
  - How many labor hours Mexico need to import 1 tractor? → 275 hours
  - How many labor hours U.S. need to import 1 ton of tomatoes? → 36.4 hours

# The Benefits of Trade

- International terms of trade (TOT) is the ratio of the export prices relative to the import prices.
  - Ex. For Mexico, TOT = $P_{tomotoes}/P_{tractors}$
- Heckscher-Ohlin model:
  - A country tends to export products that use its abundant factors of production more intensively and imports products that require relatively more of its scarce factors.
- Example:
  - Assume the home country (Mexico) is better endowed with labor than capital relative to the endowment of the world.
  - Thus, in the world market, the price of tomatoes in terms of tractors is higher than that in the home country.

# Gains from Trade (1)

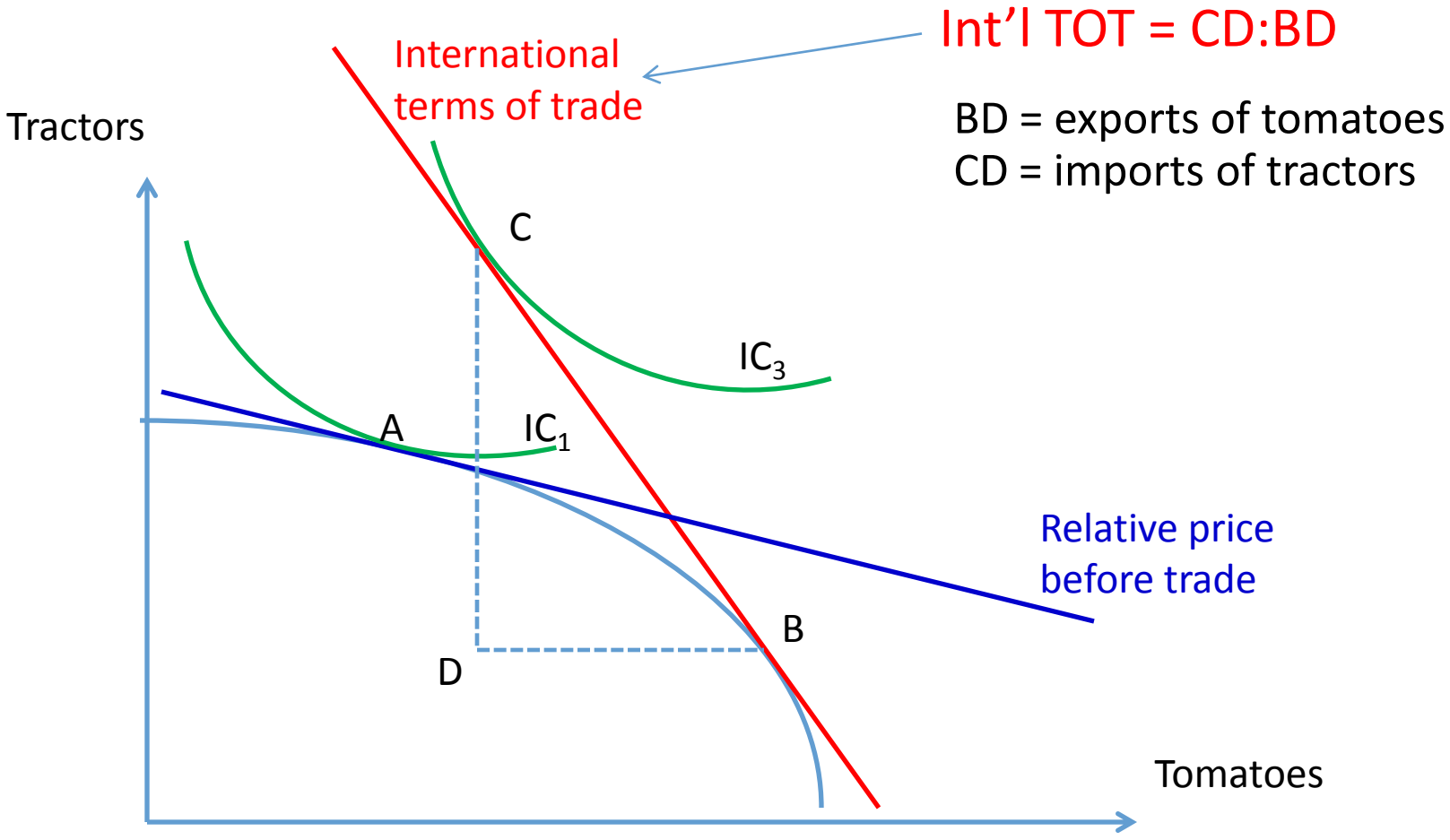



Figure (a)

# Gains from Trade (2)

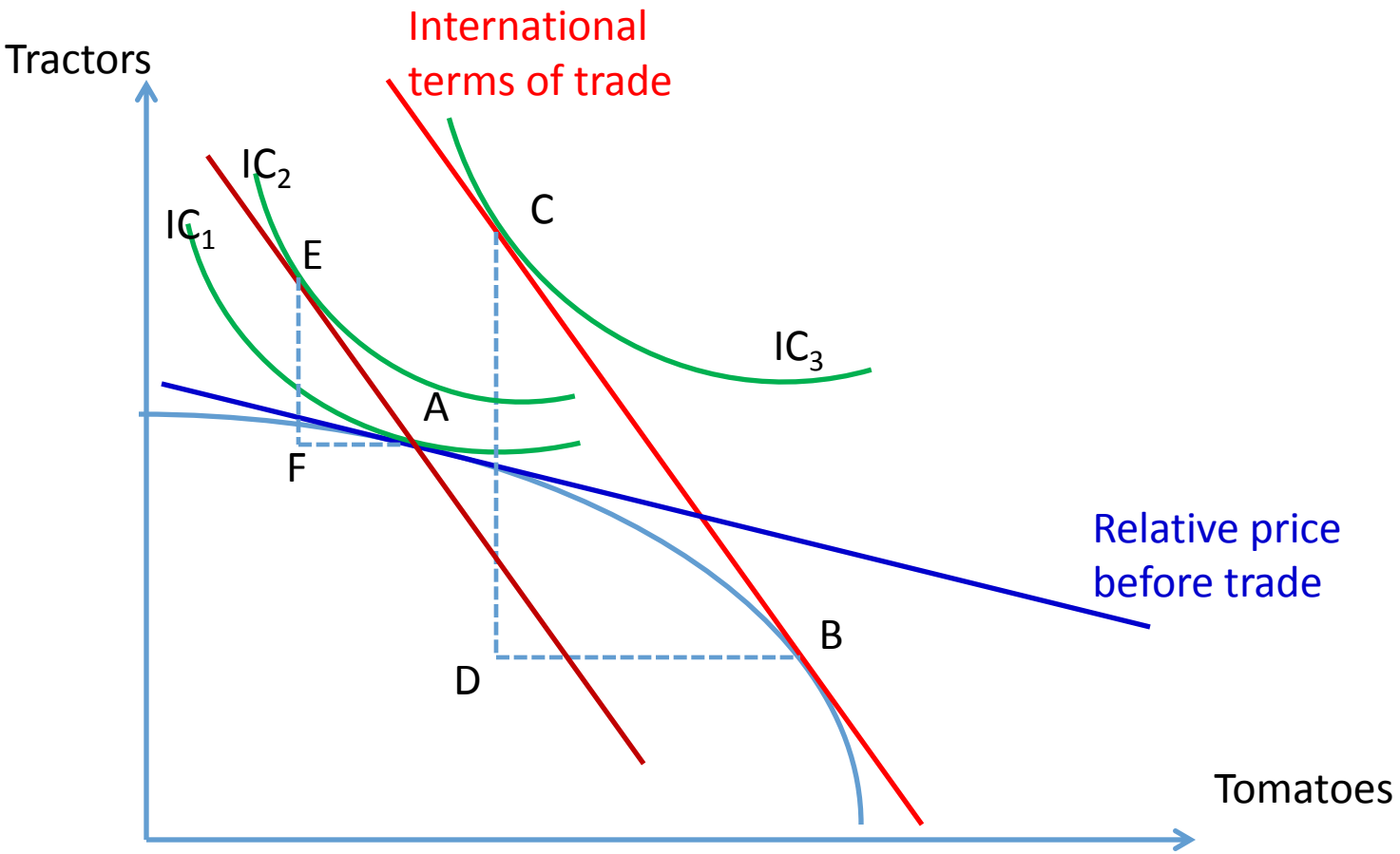



Figure (b)

# Gain from Trade (3)

- Two sources of gains from trade (IC1 to IC3):

1. Gains from exchange

- An increase in welfare due to the difference between autarky and world prices.
  - Change from IC1 to IC2 in figure (a)

2. Gain from specialization

- An increase in welfare due to the reallocation of resources as the country pursues its comparative advantage.
  - Change from IC2 to IC3 in figure (b)

# Other Benefits from Trade

- Trade exposes domestic firms to competition.
- Trade, especially in intermediate goods, often embodies new technologies that *raise productivity*.
- Trade increase not only the amount of goods, but also the *quality and variety of goods* available.
- However, there are both winners and losers.
  - Trade maybe good for the country as a whole, but not all individuals or groups within each country necessary gain from trade.
  - Need to distinguish between *aggregate gains* and individual gains.
  - Theoretically, the winners should compensate the losers, but this may not happen.

# Trading Primary Products

- What are primary products?
  - Agricultural raw materials, food, fuels, minerals, or ores
- Why focusing on primary products?
  - They account for *one third* of the value of all traded goods.
    - Important role on economic growth and development.
  - For most developing countries, international trade often began with primary products.
  - The growth performance of resource-rich economies often has been disappointing – this is referred to as "the resource curse".

# Benefits from Primary Product Exports

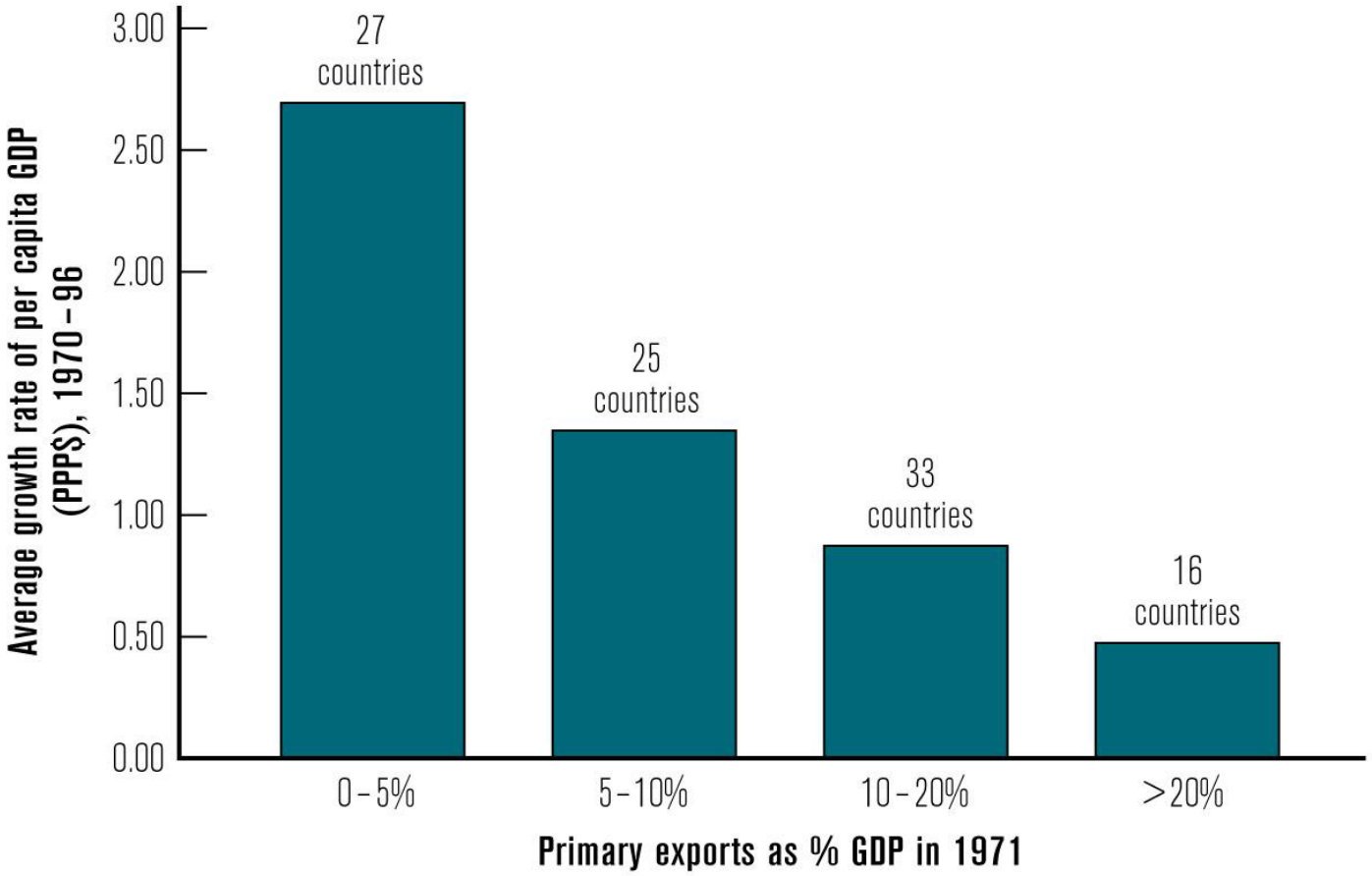
- Gain from comparative advantage
- "Vent for surplus"
  - Trade enables a country to produce more than it can sell domestically, and to sell the goods produced with its surplus land and labor to the rest of the world.
- The expansion of primary product exports can lead to the accumulation of additional factors of production (e.g. capital and labor) and attraction of FDI.
  - Shift of PPF
- Possibility of stimulating other, related sectors
  - Forward linkages (e.g. food processing industry), infrastructure linkages, human capital linkages

# Empirical Evidence on Primary Export-Led Growth

- Question: What has been the relationship between primary exports and economic growth in recent decades?
  - Slow or no growth – Angola, Myanmar (?), Ecuador, Jamaica, Nigeria
  - High growth – Botswana, Indonesia, Malaysia, Mauritius
- Sachs and Warner found that resource-rich countries have grown much more *slowly* than resource-poor countries (evidence from 95 countries during 1970-1989).

  (See figure next slide)
- Possible explanations:
  - Export pessimism
  - Declining terms of trade

# Natural Resource Abundance and Economic Growth



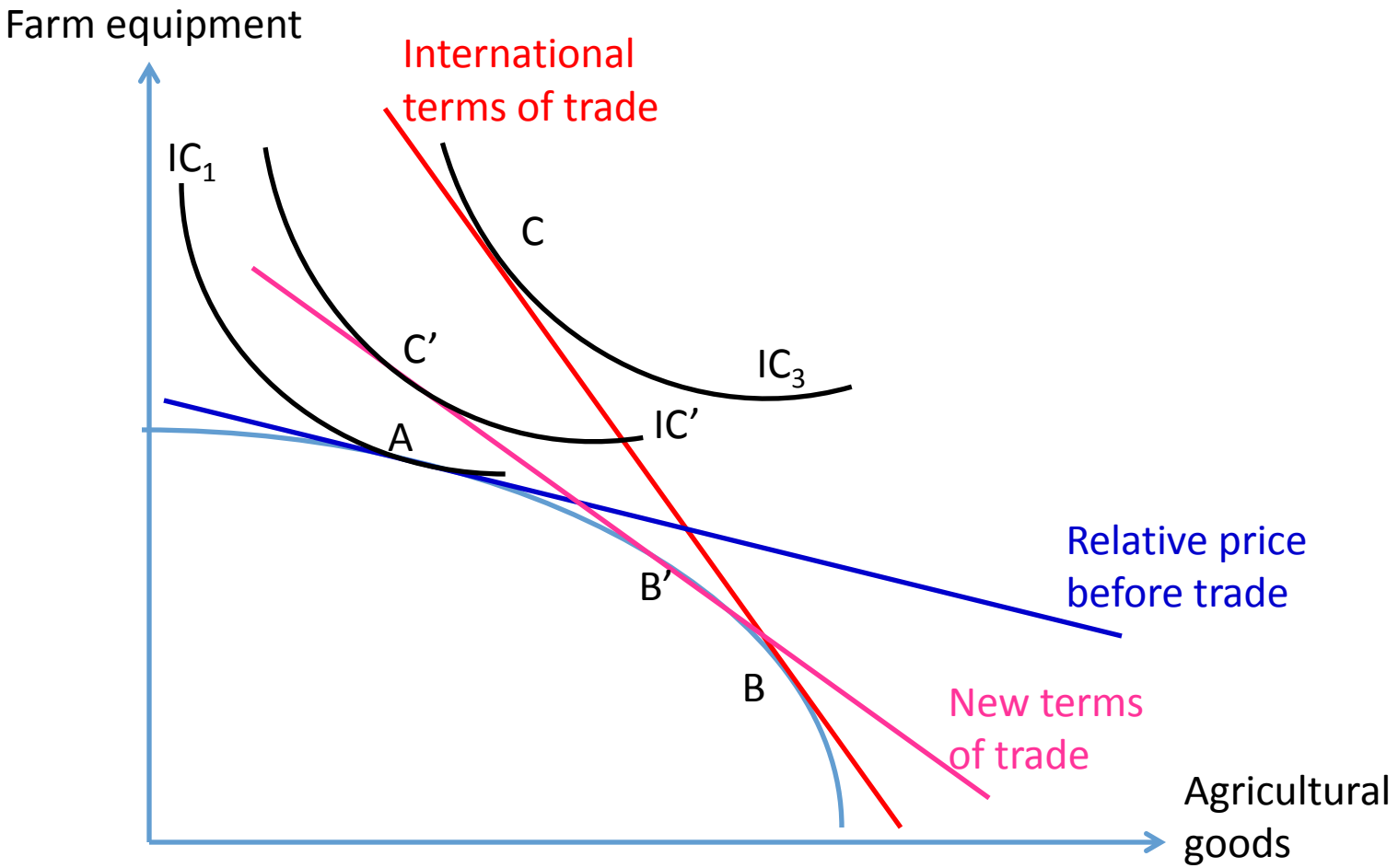
# Export Pessimism (1)

- Based on the work published in 1950 by Raul *Prebisch*, Hans *Singer*, and other.
- Context: at the time, developing countries mostly exported primary products and imported manufactured goods.
- Main argument: over the long run, prices for primary commodity exports on world markets tend to fall relative to prices of manufactured goods.
  - Over time, developing countries would have to *export more primary products* to import the same amount of manufactured products.
    - LDCs continue to *lag behind* in development process.

# Export Pessimism (2)

- **Causes of falling relative prices ($P_{primary}$ relative to $P_{manufacture}$):**
  - The income elasticity of demand for food is low, whereas the income elasticity of demand for manufactured goods is income elastic.
  - Technological changes in manufacturing works *against* the demand for raw materials and the nations that produce them.
  - Manufacturing firms in developed countries tended to have market power, whereas primary producers in developing countries face much greater competition.
- Some caveats:
  - Did not focus on products such as diamonds, natural gas, oil.
  - Did not expect primary producers to be able to transition to manufactured goods.

# Declining Terms of Trade (1)



# Declining Terms of Trade (2)

- As the terms of trade (for countries exporting primary products) declines, the gain from trade diminishes, but it's still better than if returned to autarky prices.
- A commonly used measured of relative prices of traded goods (including all products) is the net barter terms of trade ($T_n$):

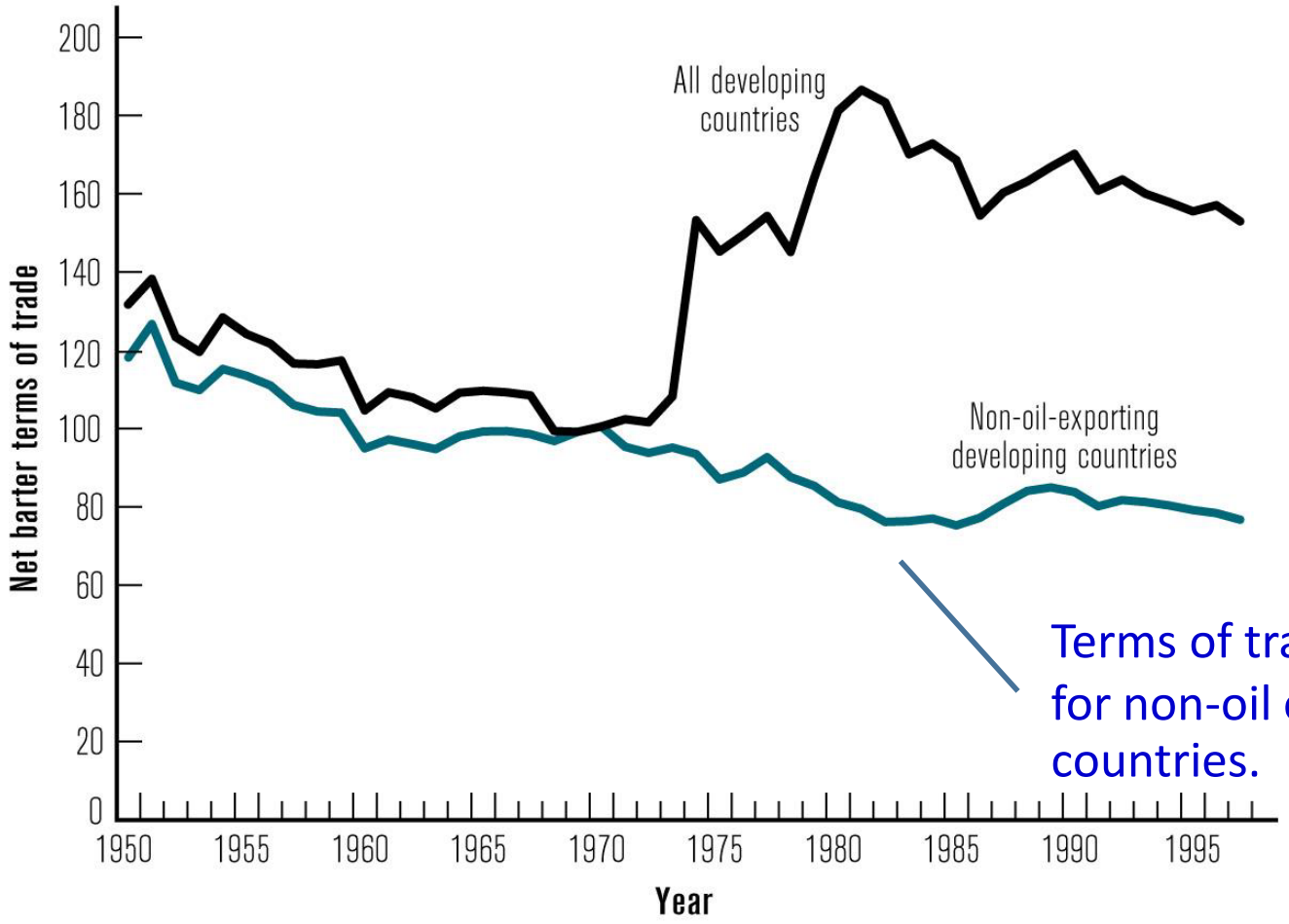
$$T_n = P_e/P_m$$

where $P_e$ = the average prices of a country's exports,

$P_m$ = the average prices of its imports

- During the 1980s and early 1990s, the terms of trade declined for *non-oil exporting developing countries*.
- There are factors other than movements in the terms of trade that affect long-run growth of primary product exporters.

# Net Barter Terms of Trade, 1950-1995




Terms of trade declined for non-oil exporting countries.

# Dutch Disease (1)

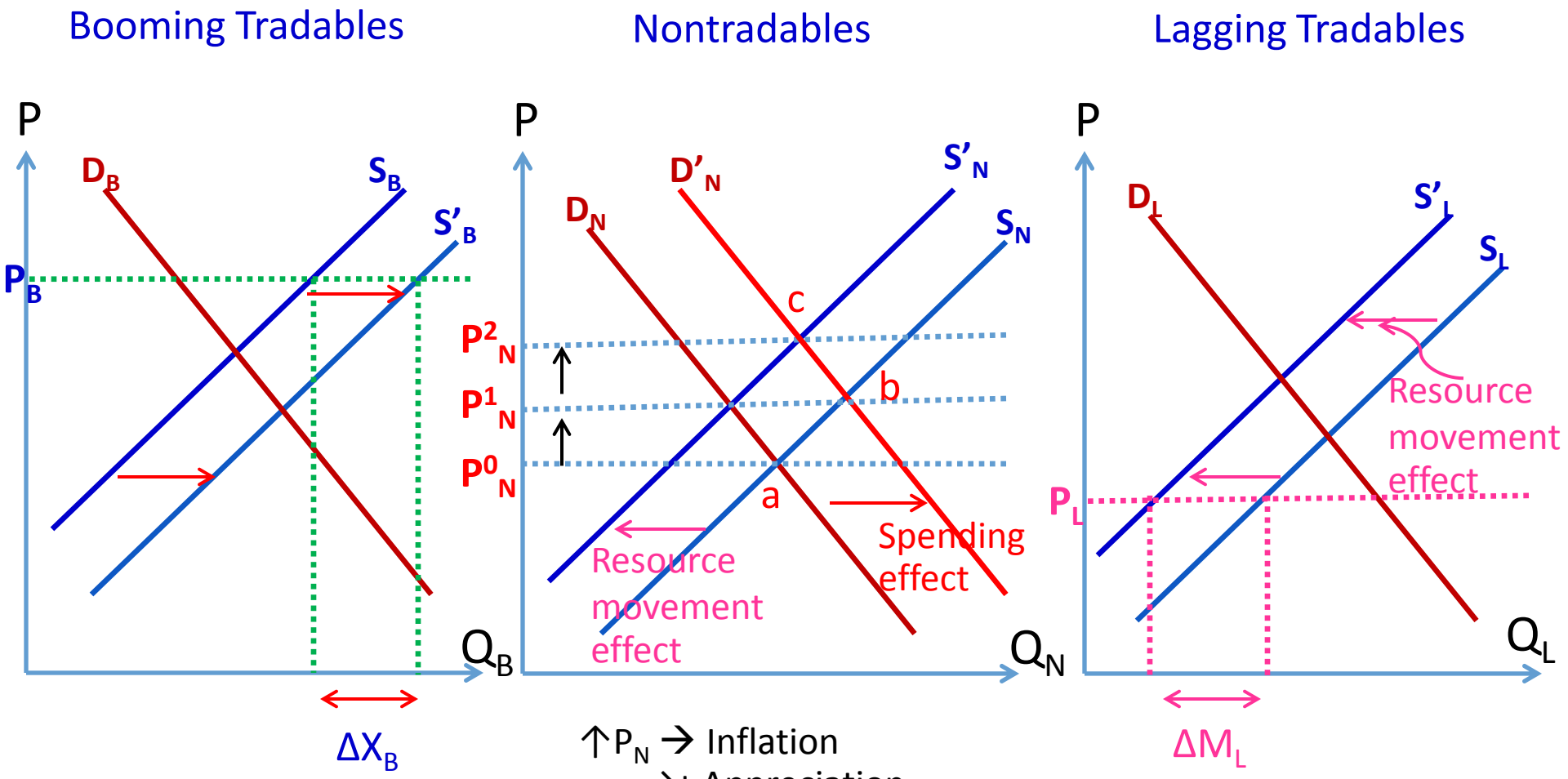
- Improvements in a nation's terms of trade brought on by booming primary export prices (e.g. oil boom of the 1970s and early 1980s in Mexico and Nigeria).
  - "Dutch disease" - rising inflation, lower manufacture exports, lower growth rate, and high unemployment
- Recall the definition of the real exchange rate (RER):

$$RER = (E_0 \times P_T)/P_N$$

where $E_0$ = the nominal exchange rate, $P_T$ = prices of tradable goods , and $P_N$ = prices of nontradable goods.

- RER can increase if $E_0$ or $P_T$ increases, or $P_N$ decreases.
  - Relative prices of tradables in domestic market rises → produce more and consume less of tradables.

# Dutch Disease: A Geometric Presentation



# Dutch Disease (2)

- A boom in raw material exports can cause a sharp appreciation of RER. Why?
  - Large influx of exports causes a surplus of foreign currency.
    - Market exchange rate falls and the currency appreciates.
  - High income from booming primary exports spurs faster domestic price inflation.
    - Higher demand for all goods and services, but only prices of nontradables increase.
- An appreciation of RER can harm export industries *other than the booming primary export sector*. How?
- A primary export boom can also shift labor from nontradables to the booming sector, but after the boom ends, labor adjustment may not necessarily happen.

# The Resource Trap

- Argument by Paul Collier that many Sub-Saharan African countries fail to grow over the past 3-4 decades because they have fallen into one of several traps.
- One main trap is the dependence on natural resource exports.
- In addition to Dutch disease and the appreciation of the RER, a natural resource trap is associated with poor governance.
  - Resource revenues → Widespread corruption and rent seeking behavior
  - With resource rents, political patronage often becomes the means of political competition.
  - Conflict trap – competition over the control over valuable natural resources for export could lead to civil wars.

# Breaking the Resource Curse

- Several approaches to overcome the resource curse:
  - Sovereign wealth funds – the accumulation of foreign assets, usually financed by primary product export earnings.
  - International charters such as the Extractive Industries Transparency Initiative (EITI)
    - Require firms in extractive industries to disclose payments for oil and mineral rights, govt to disclose receipt of payments, and independent international audits of these transfers
    - Improve governance of oil and other resource exporters
  - More prudent macroeconomic policies