TRADE

EE 462 Development Macroeconomics

Semester 1/2020

Topics

- Trade and Development
  - Trade Trend and Patterns
  - Comparative Advantages
  - Trading Primary Products
- Trade Policy
  - Import Substitution
  - Export Orientation
  - Trade Strategy and Industrial Policy
  - Trade, Growth, and Poverty Reduction

TRADE AND DEVELOPMENT

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 local 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.
  2016 17-1.
- 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 vs. Absolute Advantage

- 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.

$\left(\frac{L}{K}\right)_{mex} > \left(\frac{L}{K}\right)_{US}$

abundant labor & scarce capital

Gains from Trade (1)

For Mexico

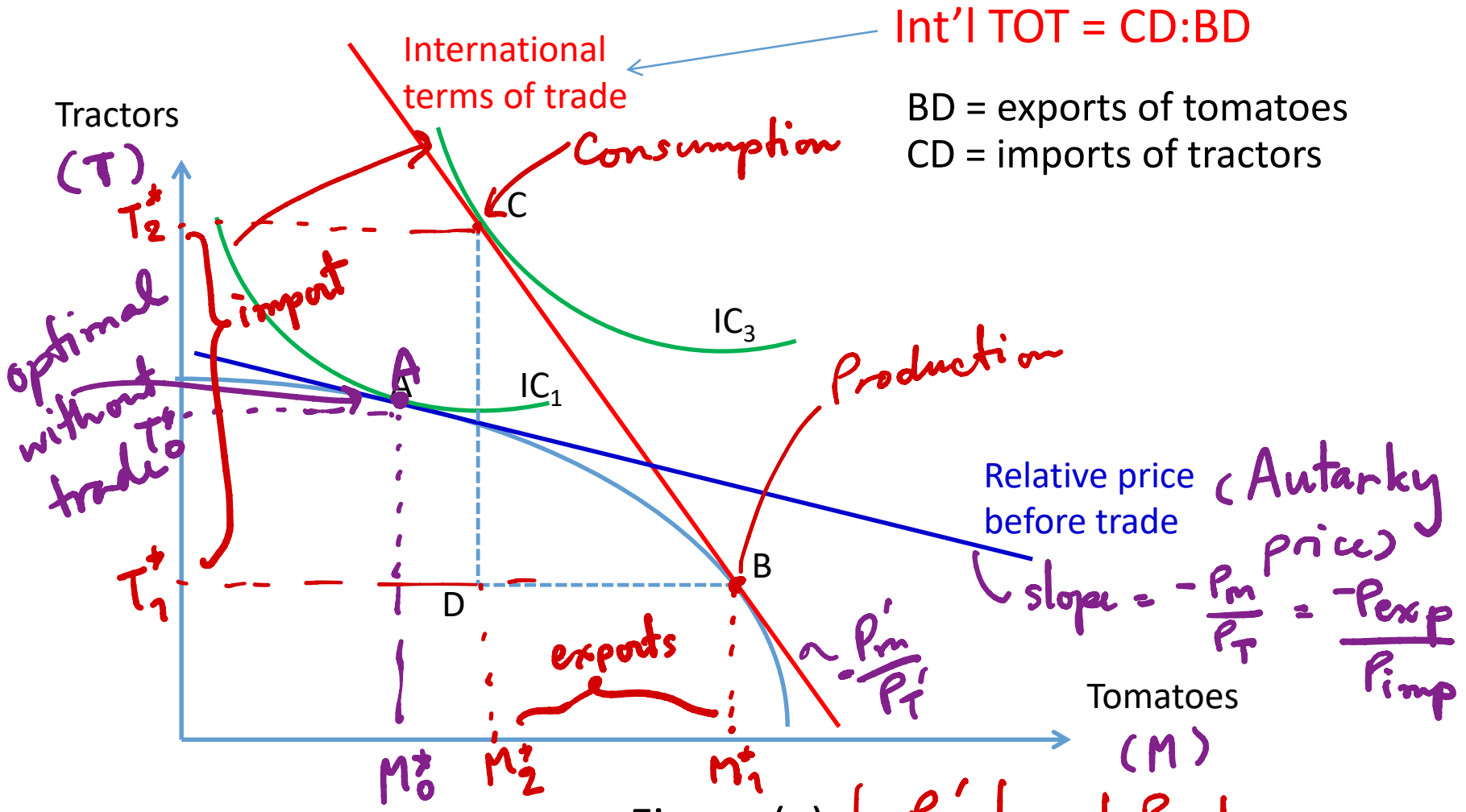
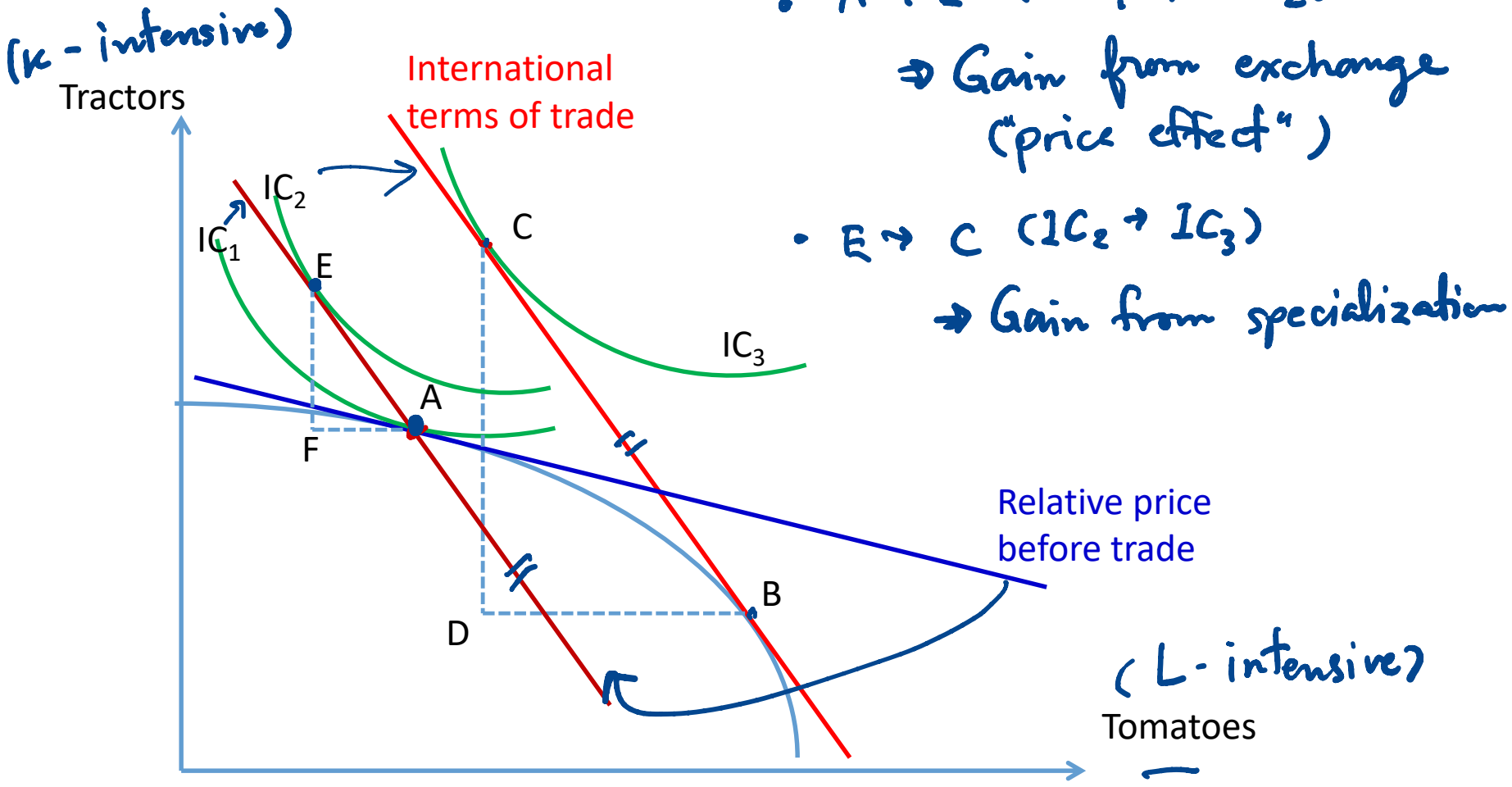


Figure (a)

$$\left|-\frac{P_m'}{P_T'}\right| > \left|\frac{P_m}{P_T}\right|$$

Gains from Trade (2)



- $A \rightarrow E$ $(IC_1 \rightarrow IC_2)$
  - ⇒ Gain from exchange ("price effect")
- $E \rightarrow C$ $(IC_2 \rightarrow IC_3)$
  - ⇒ Gain from specialization

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 (b)

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

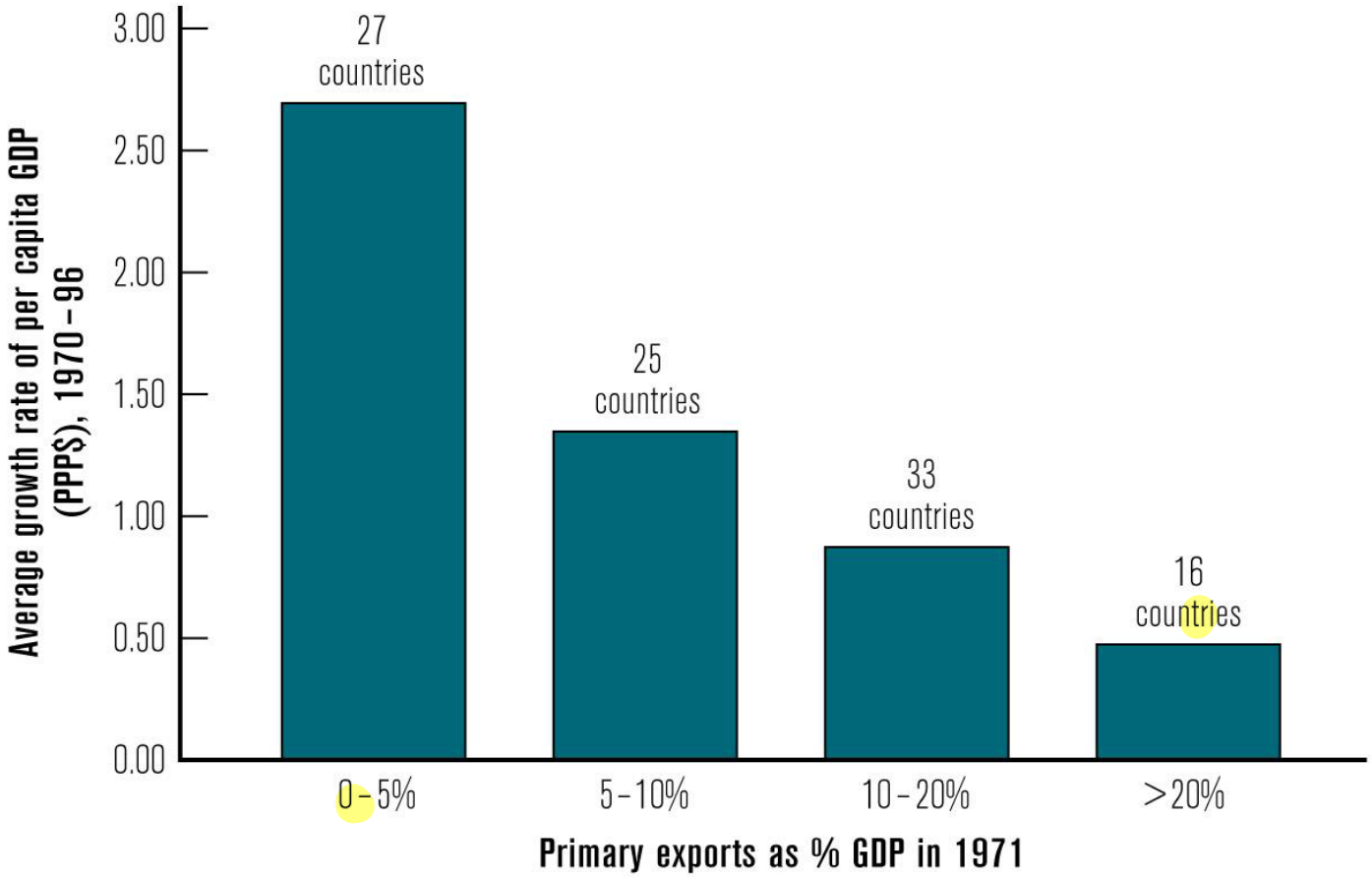
- Gain from comparative advantage
- "Vent for surplus" Hla Myint
  - Trade enables a country to produce more than it can sell domestically, and to sell the goods produced with its surplus land and labor to the rest of the world.
- The expansion of primary product exports can lead to the accumulation 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



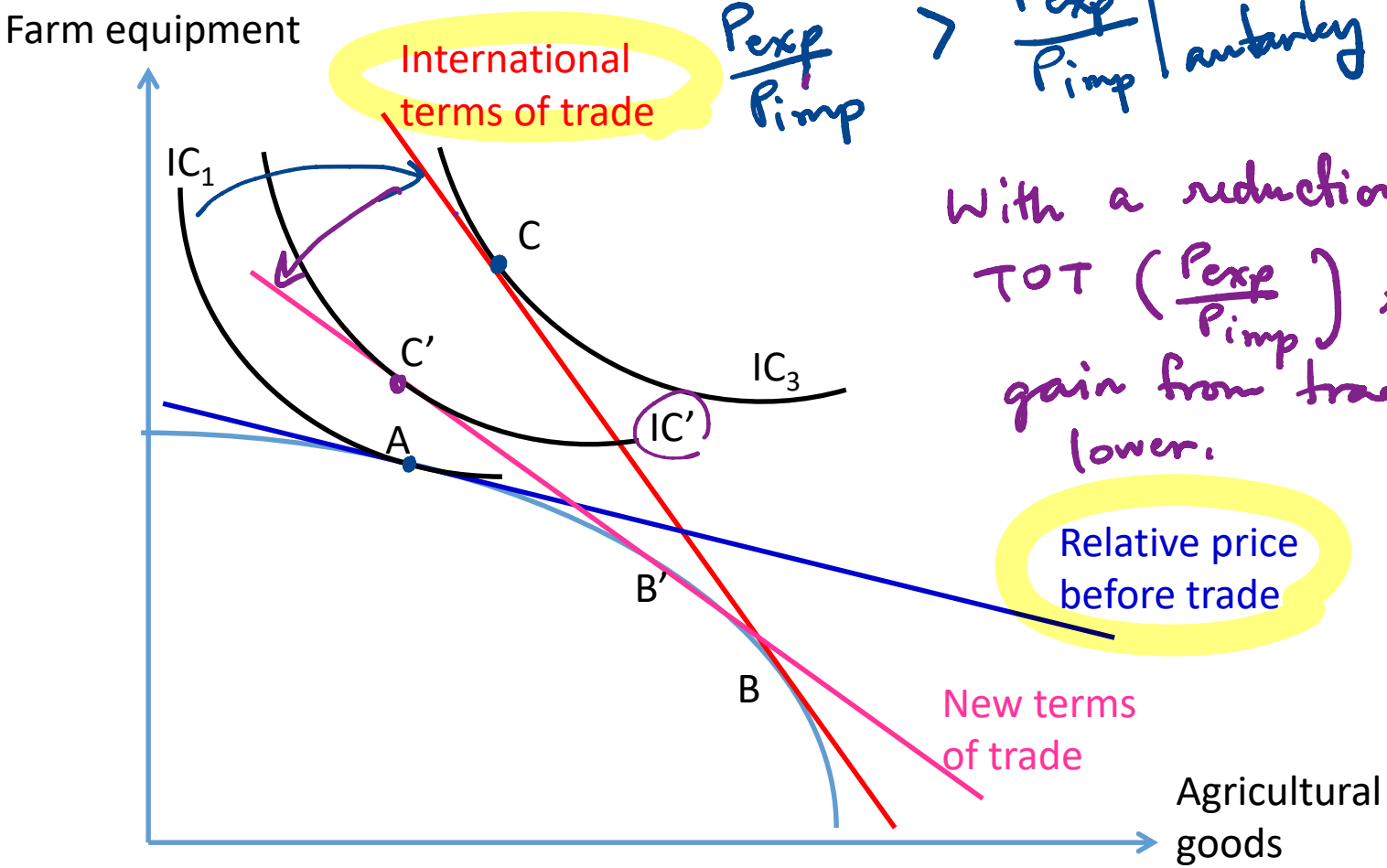
Export Pessimism (1)

- 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)



$\frac{P'_{exp}}{P_{imp}} > \frac{P_{exp}}{P_{imp}}$ | autarky.

With a reduction in TOT $\left(\frac{P_{exp}}{P_{imp}}\right)$, gain from trade is lower.

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):

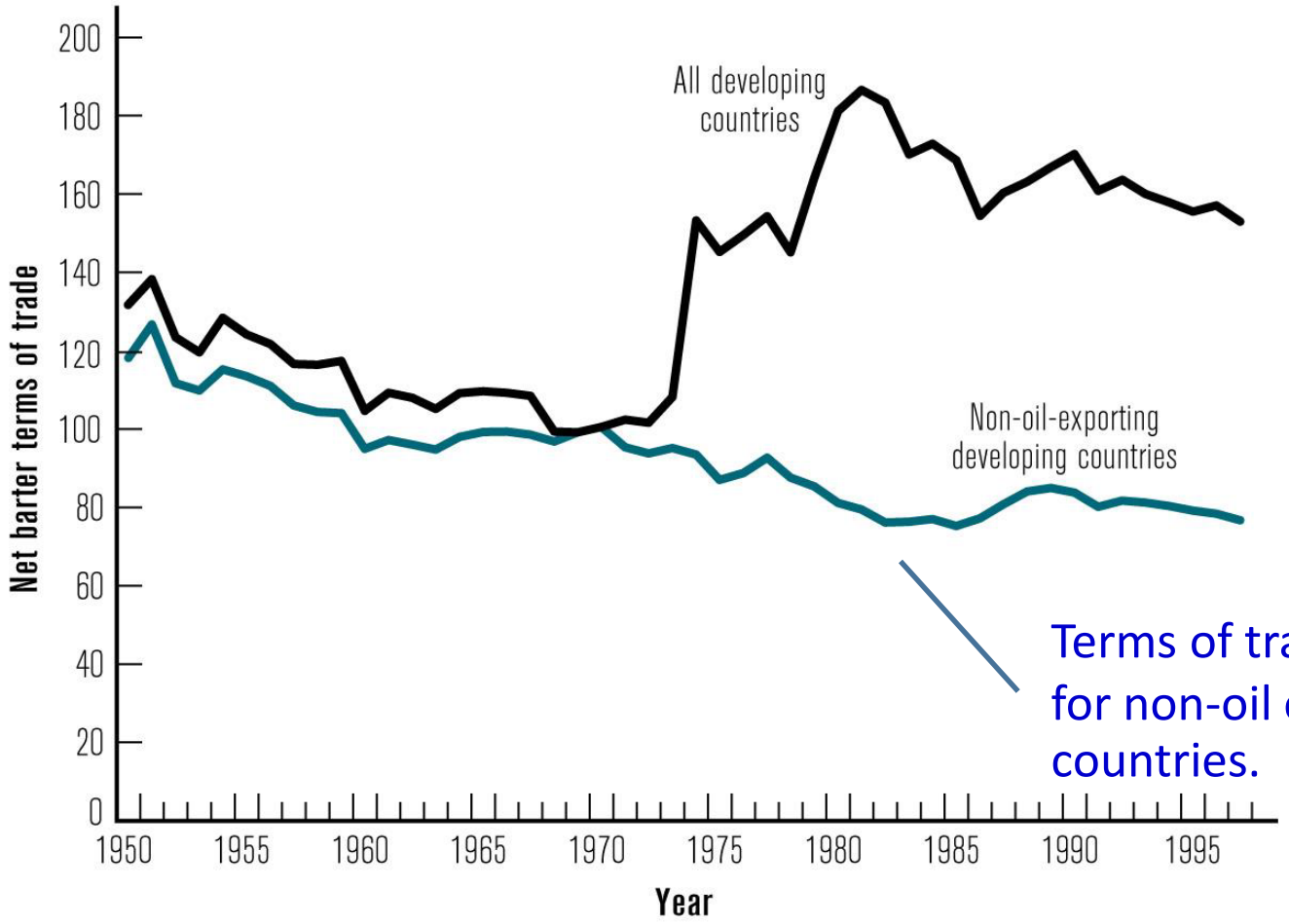
$$T_n = P_e/P_m$$

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):

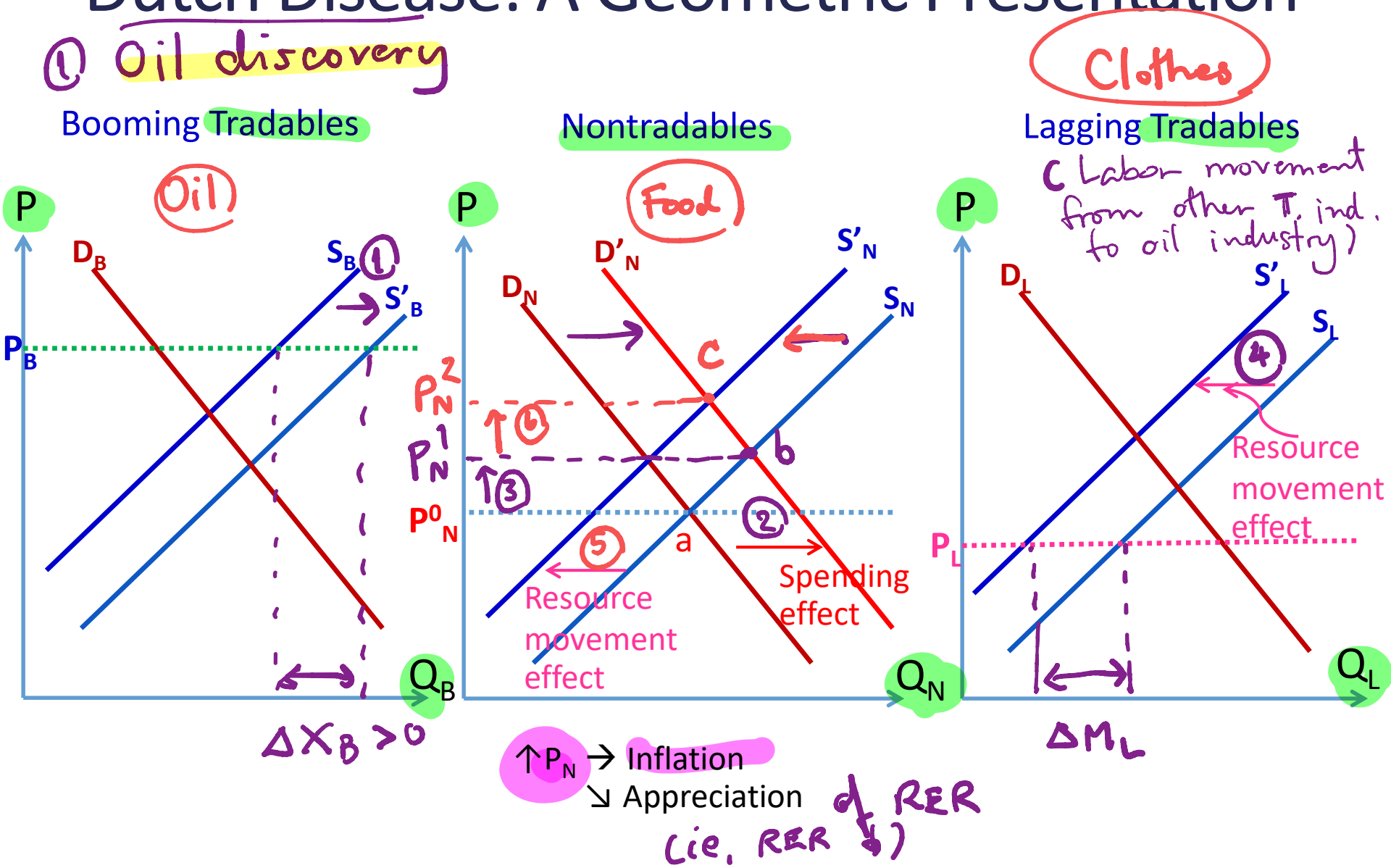
30 Baht/$

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

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

  - 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. ($P_N \uparrow$) $\Rightarrow$ RER $\uparrow$
    - 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? "Lagging industry"
- 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. $\rightarrow$ unemployment.

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.

Questions for Discussion

- Would exporting primary products still be a good option for developing countries? Why or why not?
- In countries with rich natural resources, what kinds of policies should governments pursue in order to break the 'resource curse'?

TRADE POLICY

Trade Strategies

- Two different trade strategies: aka ISI

1. Import substitution (IS) is the production of goods and services that replace (or substitute for) imports.
   - Strategies: tariffs, quotas, subsidies, exchange rate management
   - Core idea - *Infant industries* need protection to survive.

2. Export orientation is a strategy designed to make producers internationally competitive by relying on market forces, strengthening key institutions, and in some cases using subsidies, managed exchange rates, and other instruments.
   - Core idea - Domestic producers must become internationally competitive.

I. Import Substitution

- Also referred to as *Import Substitution Industrialization (ISI)*
  - Firms are unlikely to compete in manufactures immediately, so they need government assistance to get started.
  - Ideally, industries for *simple products with large domestic markets* (e.g. processed foods, beverage, textiles, clothing) should be the first targets.
- This argument is particularly valid for 'infant industry'.
- Government's tools:
  - Tariffs – taxes imposed on imports at the borders
  - Quotas – quantitative limits on specified categories of imports
  - Subsidies – production subsidies provided to local producer
  - Exchange rate policy – fixed exchange regime

Import Substitution: Protective Tariffs

- Protective tariff is aimed at *raising the domestic price* of the imported good *above* the world price.
- For importing country, the world price is the cost at the port of entry, called the *c.i.f. price* (including costs, insurance, and freight) or *border price*.
- Suppose P_w is the world price with free trade, and an ad varolem tariff, t_0, is imposed on the good.
  - Domestic price becomes: $P_d = P_w(1+t_0)$
  - The nominal rate of protection is:

$$t_0 = (P_d - P_w)/P_w$$

, P_d = domestic price

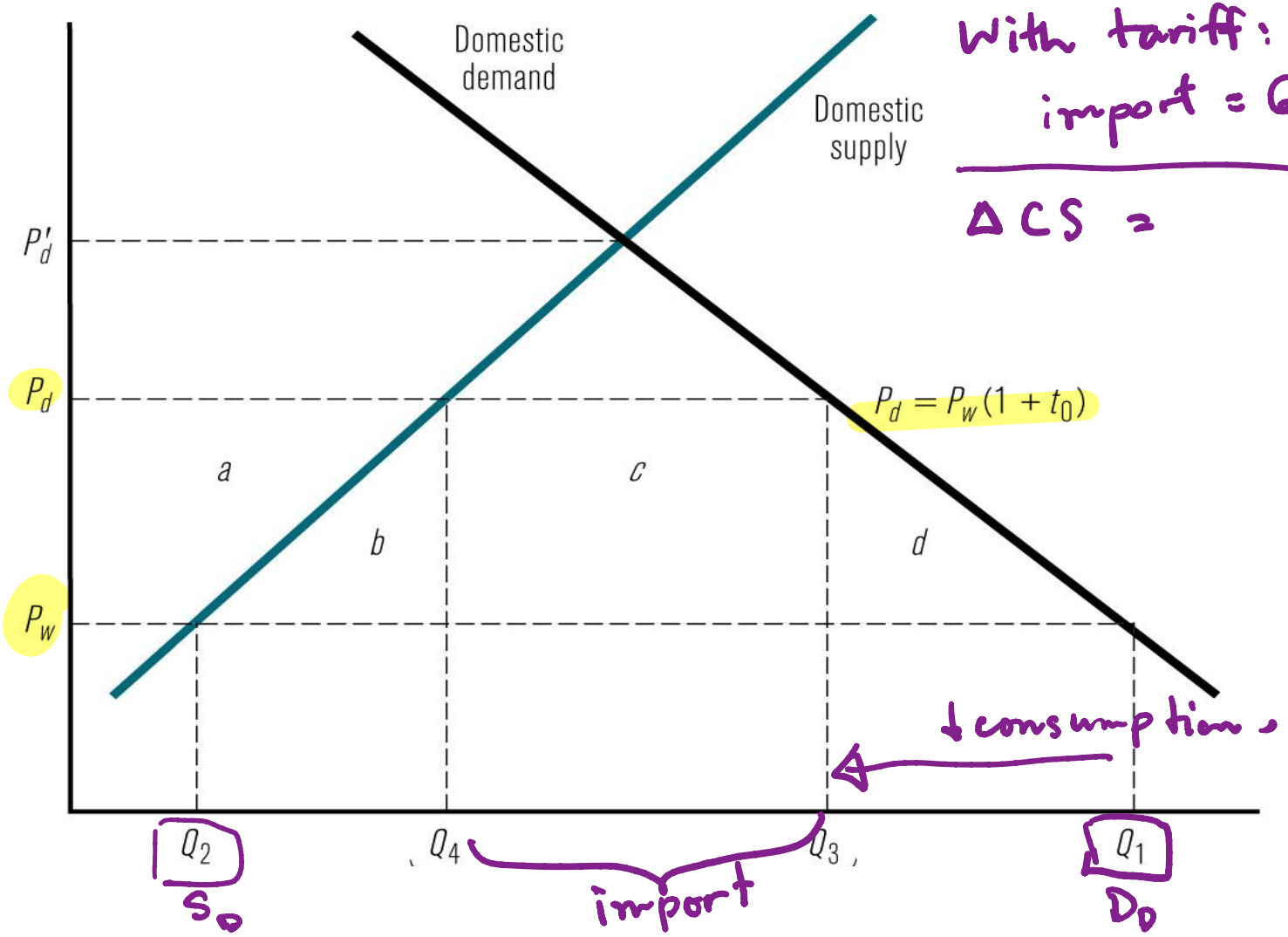
$P_d = P_w + (t_0 \times P_w)$

Nominal Tariff Protection

W/o tariff:
import = $Q_1 - Q_2$

With tariff:
import = $Q_3 - Q_4$

ΔCS =



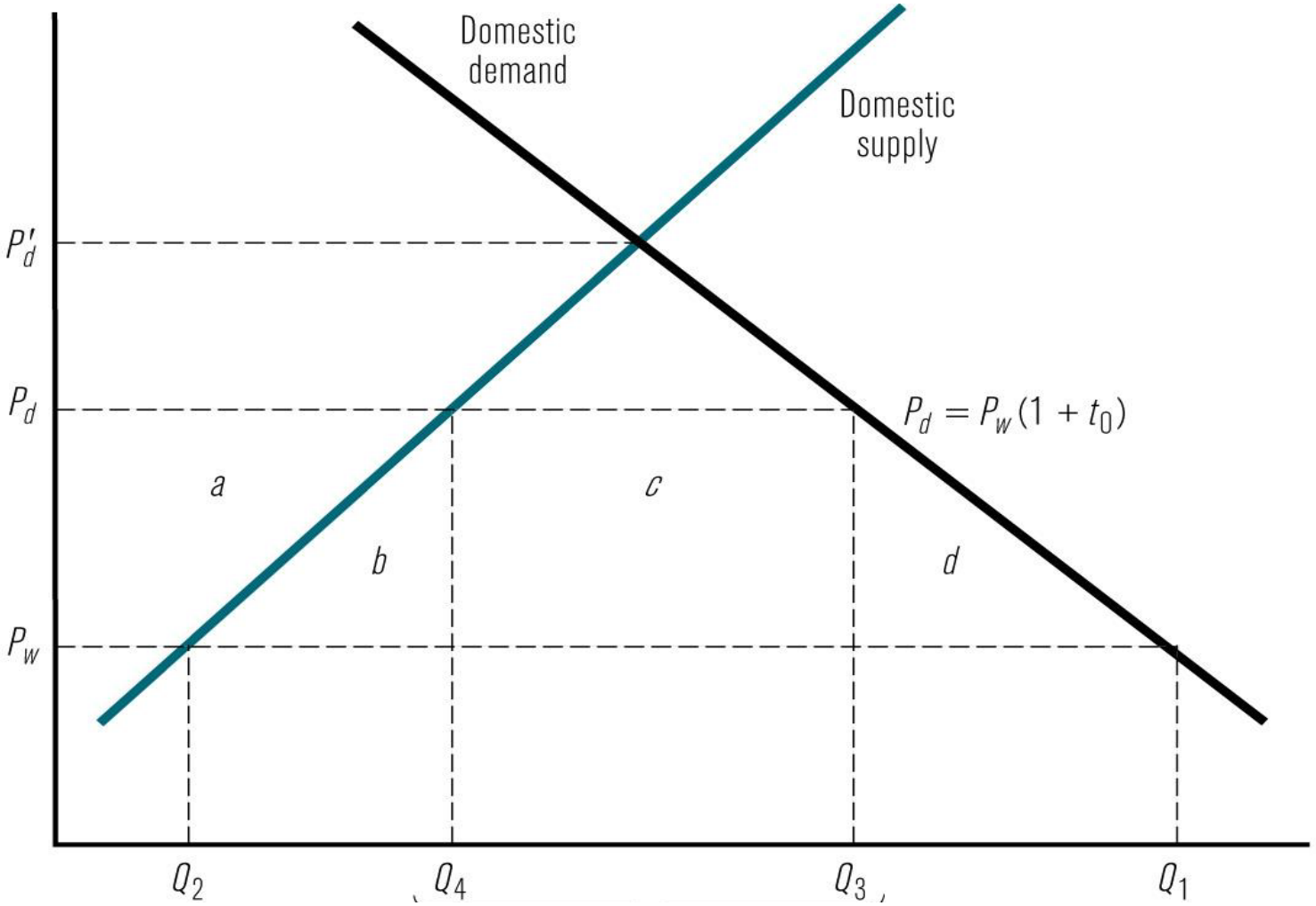
Impact of Tariff Protection (from diagram)

- Gain in producer surplus = a
- Loss of consumer surplus = a + b + c + d
- Tariff revenue = c
- Resource cost (i.e. cost of using resources inefficiently) = b
- Deadweight loss = b+d

Import Substitution: Import Quotas

- These involve the quantitative restrictions on imports by import licensing – government determines in advance *the quantity of imports it wants to allow*.
- The loss in consumer surplus, deadweight loss, and gain in producer surplus are the same as in the case of equivalent tariff.
- 2 distinctions from tariffs:
  1. Government does not necessarily collect revenue, so the area c becomes license holder's bonus a.k.a. "quota rent"
     - Room for rent seeking activities including bribes.
  2. When the world price decreases, imports cannot rise unless the quota increased. → Tariff is preferred to quotas.

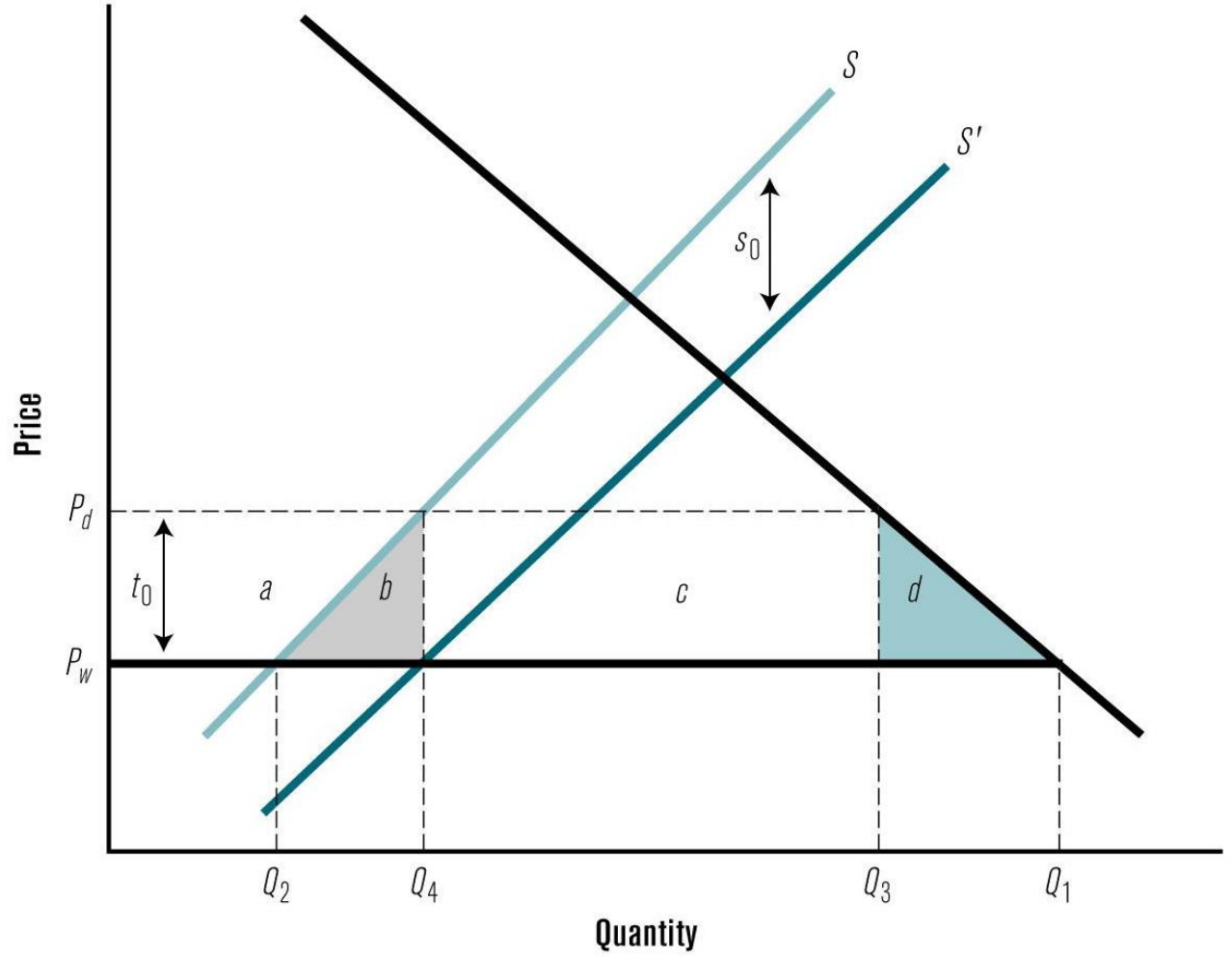
Import Quotas



Import Substitution: Production Subsidies

- Government provides direct subsidies as a means of protecting domestic manufacturers (just like how high-income economies subsidize their agricultural production).
- Producers are equally happy with a subsidy or equivalent tariff.
- But consumers are better off because *there is no loss in consumer surplus*.
  - Lower deadweight loss
- Economists generally prefer subsidies over tariffs, and tariffs over quotas.
- But government officials tend to prefer quotas or tariffs over subsidies. Why?

Impacts of Subsidies on Firms Competing with Imports



Import Substitution: Exchange Rate Management (1)

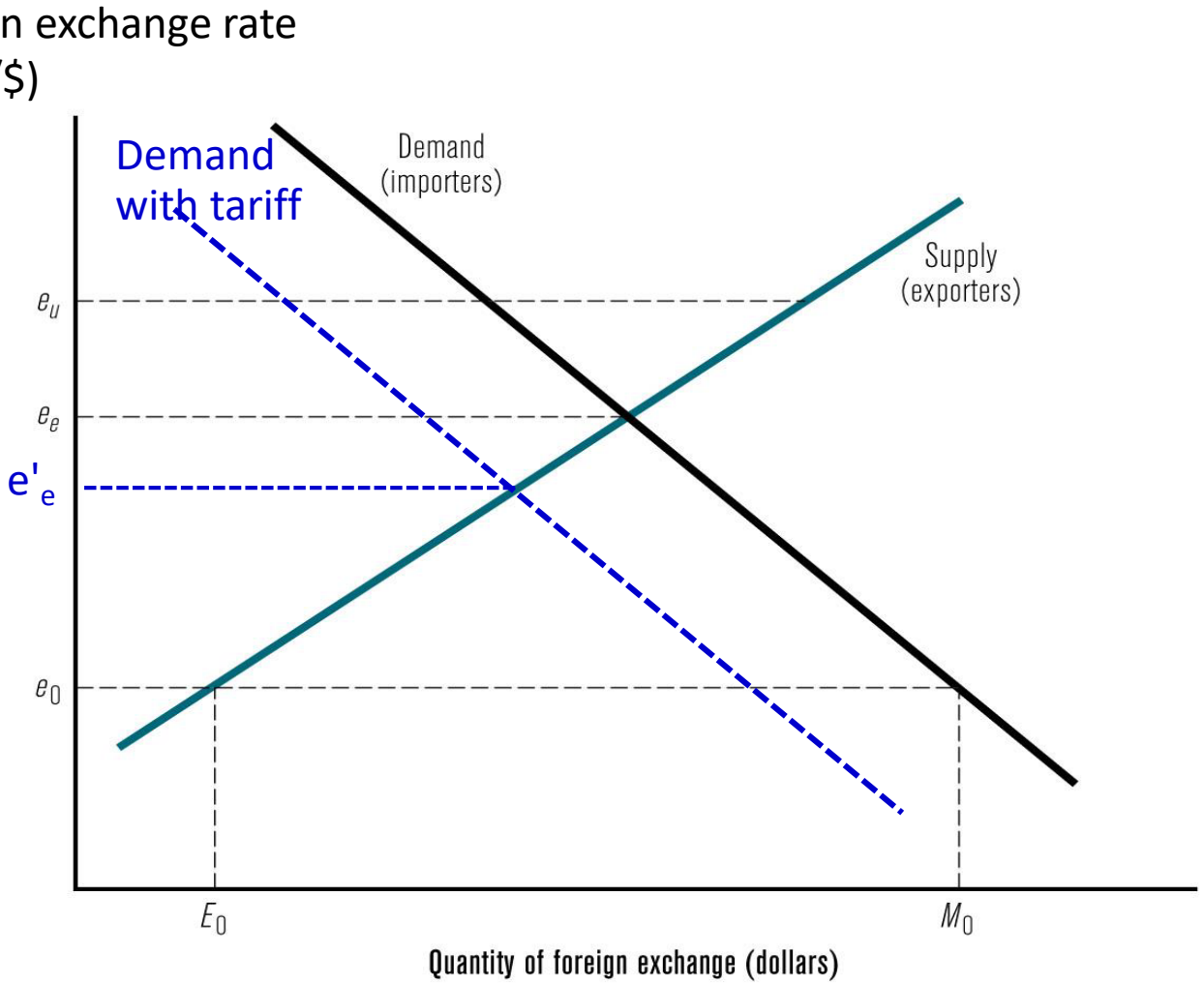
- Exchange-rate policy has a uniform effect on the prices of all tradable goods, but alters the price between tradables and nontradables.
- IS strategies tend to cause the domestic currency to appreciate.
  - Tariffs and quotas reduce the demand for foreign exchange at every exchange rate.
  - The new exchange rate acts likes a tax on exports.
- Many IS strategies were designed to foster industrial development, but at the same time often hurt traditional exports (e.g. agricultural goods).

Import Substitution: Exchange Rate Management (2)

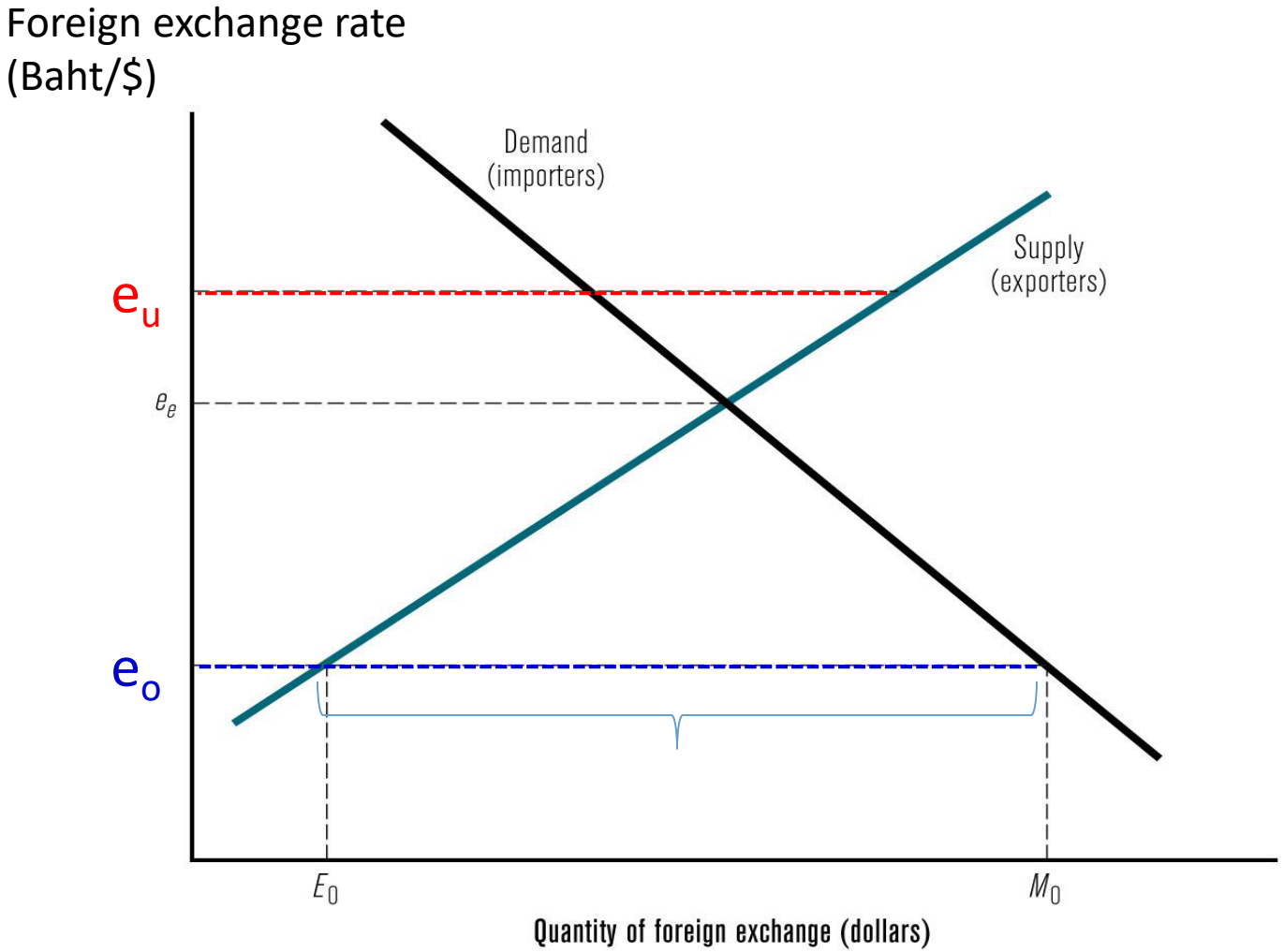
1. Overvalued Exchange rate: fix official exchange rate *below* equilibrium rate
   - Exports less profitable and imports less expensive
   - Can harm domestic producers of goods that compete with imports, but consumers are happy.
   - Often used as IS strategy to make capital goods cheaper
   - Can also give rise to black markets for foreign exchange

2. Undervalued Exchange rate: fix official exchange rate *above* equilibrium rate
   - Exports more profitable and imports more expensive
   - Used to stimulate exports and provide protection to firms competing with imports
   - Example is China's exchange rate policy (read box 19.3)

IS Strategy and Exchange Rates



Overvalued and Undervalued Exchange Rates



Outcomes of Import Substitution

- Countries that introduce import substitution may experience initial spurt in growth, but eventually leads to weak technology, low efficiency, growing trade deficits, and slower growth. Why?
  - IS protected too many industries and remained in place for too long
  - IS induced excessively capital-intensive investments
  - Trade protection resulted in lower productivity → unable to compete internationally
- IS also creates incentives for rent seeking, corruption, lobbying and reduced competitiveness.

II. Export Orientation

- A.k.a. *outward orientation, openness, export promotion*, and *export orientation*.
- Core idea is to introduce policies that encourage firms to produce products that are competitive on world markets.
  - Encourage investment, productivity gain, learning, and new technology to support growth
  - Usually start with simple labor-intensive products, and move to more advanced manufactures
- The export-led strategy of East Asia's "tigers" has been outstandingly successful.
- There are some unsuccessful cases, e.g. Zambia.

Export Orientation:

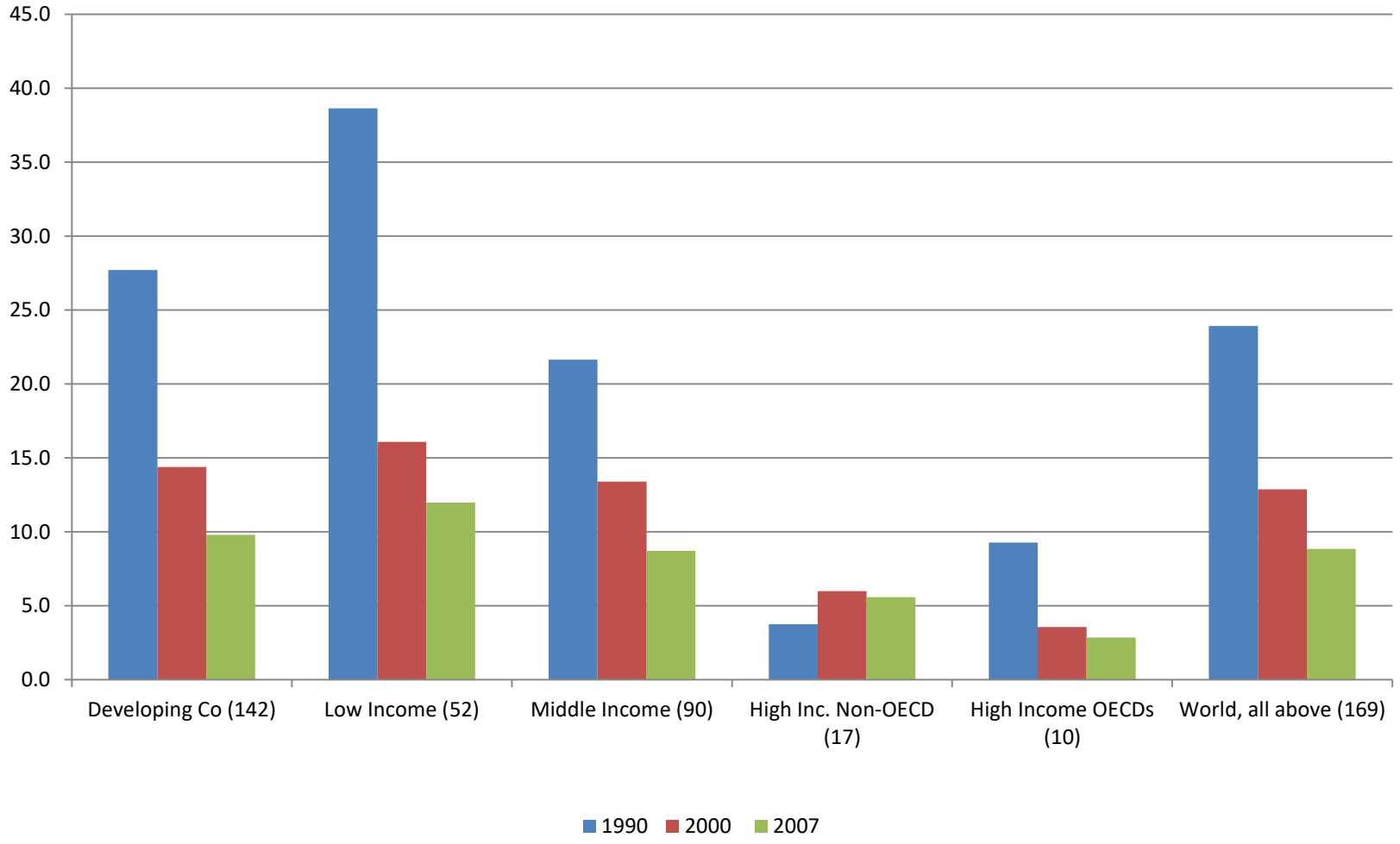
(1) Removing the Bias Against Exports

- Policies that favor imports (e.g. tariffs and overvalued exchange rates) are implicitly biased against exports.
- Policies to remove these biases:
  - Remove tariffs and quotas and other forms of protection, especially on capital and intermediate goods
  - Allow currency to float with market-determined rate & maintain macroeconomic stability
  - Reduce unnecessary regulatory burdens and business costs

Regulatory guillotine

  - Keep markets flexible for labor and credit with market determined wages and interest rates

Trends in Average Applied Tariff Rates (Unweighted in %)



(2)

Export Orientation: Favoring Exports

- Same idea as "openness" of the economy
- Korea and China were much more interventionists.
- Korea uses an *outward-looking approach* – intervened to induce, and sometimes force, firms to meet ambitious export targets
  - A Korean firm could not take advantage of protection or other preferential treatment unless it met stringent export targets.
- China has been using exchange rate policy to favor exporters by undervaluing its currency.
  - Rapid export growth and large trade surplus
    - Large accumulation of foreign exchange reserves

Export Orientation: Building Export Platform (3)

- Export platform institutions are established to enable exporters to import and sell at close to world market prices.
- Forms of export platforms: *export processing zones (EPZs), bonded warehouses, duty exemption programs*, and *science and technology parks*.
- The idea is to provide an *enclave* for new or potential export industries, so they can be *insulated from price distortions of the protected domestic markets* and more able to compete on world market.
- Advantage – allow one part of the economy to be competitive, while steps are taken over time to introduce economy-wide changes.

The Benefits of Outward Orientation

- The Asian tigers (Hong Kong, Korea, Singapore, and Taiwan) has proven success of export-oriented policies.
- Their rapid growth in trade was accompanied by accelerating economic growth, reductions in poverty, and other advancements.
- These countries shared four key characteristics:
  1. a disciplined focus on policies to promote rapid economic development
  2. prudent management of macroeconomic policy and exchange-rate policy
  3. flexible factor markets
  4. insulation of exports from domestic price distortions.

Trade Strategy and Industrial Policy (1)

- Industrial policy – a broad set of interventions (such as undervalued exchange rates and EPZs) which governments may use to favor one set of economic activities over another.
- Rodrik and others see industrial policy as a part of a developing nation's trade policy.
  - The government's role beyond traditional areas (ensure macro stability & provide public goods).
  - Government needs to facilitate the structural change inherent in the development process.

Trade Strategy and Industrial Policy (2)

- Rodrik suggests that the problem in moving away from traditional production is one of "self-discovery" (i.e. what particular product should entrepreneurs produce).
  - Governments need to intervene to *encourage the process of self-discovery.*
- Question: why can't we leave the self-discovery up to individual entrepreneur?
  - Think about *public good* problem
- Other economists argue for partnership between the public and the private sectors in resolving the constraints facing entry into the new markets.

Trade and Growth (1)

- Trade and growth can have bi-directional relationship.
  - Trade could generate economic growth and reducing poverty.
  - Income and productivity growth can make a country more competitive in world markets.
- In the paper "Does Trade Cause Growth?," Frankel and Romer study this relationship by using the portion of trade due to geographic characteristics (which are weakly correlated with determinants of growth).
  - This geographical component of trade has a *large and positive effect* on income.
  - Supports the direction of causality running from *trade to growth*, but the results are not highly statistically significant.

Trade and Growth (2)

- One issue is that Frankel and Romer use **trade volumes** (the ratio of X+M to GDP) as their measure of trade.
- But trade volumes are not the same as trade policies (e.g. reducing tariffs, managing exchange rate, etc.).
  - Trade volumes are consequence of trade policies and other policies.
- Harrison and Rodriguez-Clare find **no** significant relationship between lower tariff levels on final goods and country performance.
  - So, does this mean that trade liberalization is not a good idea?
  - In practice, different countries have different policy mix, so it's hard to identify what steps of trade liberalization each country should take.

Trade and Growth (3)

- Alternative measure of trade policies is "*trade openness*".
- Jeffrey Sachs and Andrew Warner find that countries with *more open policies* and less-biased exchange rates *grew about 2 percentage point faster* than did closed economies.
  - A country is considered to be "open" if it passed 5 criteria:
    1. Its average tariff rate was less than 40%.
    2. Its nontariff barriers covered less than 40% of imports.
    3. The premium on the unofficial parallel market exchange rate did not exceed 20%.
    4. There were no state monopolies on major exports.
    5. It was not a socialist economy.

Trade and Growth (4)

- Sachs-Warner's openness index was subjected to a number of criticisms, because some criteria are more likely to improve macroeconomic policy than to liberalize trade.
- So, what do we know about the impact of trade and trade policy on economic growth?
  - Economists believe that increased trade confer benefits, but the steps necessary to stimulate economic growth and increased trade go beyond simply reducing tariffs and quotas.
  - Also, one single approach in liberalizing trade does not fit all nations.

Trade Reforms and Poverty Reduction (1)

- Mechanisms by which increased trade can reduce poverty:
  - Greater openness and faster growth in labor intensive manufacturing can potentially create substantial employment opportunities → increase income → reduce # of people living below the poverty line
  - Prices of imports decrease → many of the poor can benefit as consumers
  - Trade can increase government revenue and improve spending on the poor.

Trade Reforms and Poverty Reduction (2)

- But trade have some negative impacts as well:
  - It can eliminate jobs in *import-competing sectors* → rising levels of unemployment & increasing poverty
  - Although urban consumers are better off from lower price, domestic producers in rural areas are generally worse off (e.g. corn producers in Mexico).
- The factor endowment models assume that labor is mobile between sectors. However, if workers cannot easily relocate (why?), then the gains from trade may not be transmitted as predicted.
- Thus, trade reform *alone* cannot be used to reduce poverty.

Key Issues on The Global Trade Agenda

1. Increased global competition and the rise of China (and India).
   - Does this mean that there is no room for other countries in the global trade?
2. Outward orientation and globalization creates global sweatshop economy and race to the bottom to those who will accept the lowest wages and other benefits.
   - Is this always a bad thing?
3. Difficulty in expanding access to markets in European Union, North American, and Japanese markets
   - These countries have greatest trade barriers on products for which developing countries have comparative advantages such as *textiles, apparel, and agricultural products* .

WTO and Multilateral Trade Negotiations

- After WWII industrial countries began to reduce tariffs. Between 1947 - 1994, eight round of trade negotiations took place through General Agreement on Tariffs and Trade (GATT) which became the World Trade organizations (WTO) in 1995.
- The Uruguay Round of trade negotiations began in 1986 and ended in 1994 involving 123 countries that took part.
  - The industrialized countries promised: (1) significant reduction in tariffs, (2) the end of Multi-Fiber Agreement, and (3) reduction in agricultural subsidies.
  - LDCs also committed to large reduction in their tariffs, agreement in new rules of investment, services, and Trade-Related Intellectual Property Rights (TRIPs), and support for the new WTO.

The Outcome of Negotiation of the Uruguay Round

- Global average tariff on manufactured goods were reduced by one-third, and LDCs have increased access in some industrialized country markets.
- But there are some concerns:
  1. Industrialized countries pledge to reduce agricultural subsidies did not happen.
  2. The new agreements on investment, services, and TRIPs were more complicated than reducing tariffs, and created large burden on many low-income countries.
  3. TRIPs resulted in LDCs paying higher prices for medicine and pharmaceutical products covered patents.

Other Trade Negotiations

- Began in 2001, the latest round of trade negotiations among the WTO members is the Doha Round (or the Doha Development Agenda), which were intended to served the needs of developing nations.
- The Doha Round collapsed in 2008 after failing to reach a compromise on agricultural import rules. The main dispute was among the US, China, and India.
- More recently, nations have turned away from multilateral talks and entered into bilateral and regional agreements.
  - Disadvantage – they did not allow for global comparative advantage
  - Advantage – they take the pressure off the government to compromise on multilateral agreement.