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## **International Economics**

### IV. Economic Development and the Political Economy of Free Trade

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## IV. Economic Development and the Political Economy of Free Trade

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### International Trade and Economic Development

1. Additional Causes of International Trade
2. Implications of the H-O Model
3. International Trade and Development
4. International Trade and Capital Accumulation

### The Political Economy of Free Trade

5. Winners and Losers from International Trade
6. The Case for Free Trade
7. Summary

Pugel, International Economics, pp. 67-137



# 1. Additional Causes of International Trade Curiosities

- Comparative advantage doesn't explain everything
- Intra-industry trade a case in point

## Two additional aspects

- Economies of scale
- Product differentiation



## Constant Returns to Scale

- Input use and total cost rise in the same proportion as output
- Average cost is constant: total cost divided by number of units produced

## Scale Economies

- Output quantity goes up by a larger proportion than does total cost
- Average cost per unit of output is decreasing

**Note that *eventually, we will always face increasing marginal costs***

## Implications of constant average costs

- All factors are perfectly divisible
- The prices of factors do not increase as demand for them increases
- Both implications demonstrably false!



## The real determinant of economies of scale

- The *indivisibility of factors of production or of the product*
- If one factor is indivisible, it may be underemployed in a given combination with other factors
- If we increase input of other factors:
  - Increasing returns or decreasing average costs as output increases
  - Only until the indivisible factor is fully utilized – then rising costs

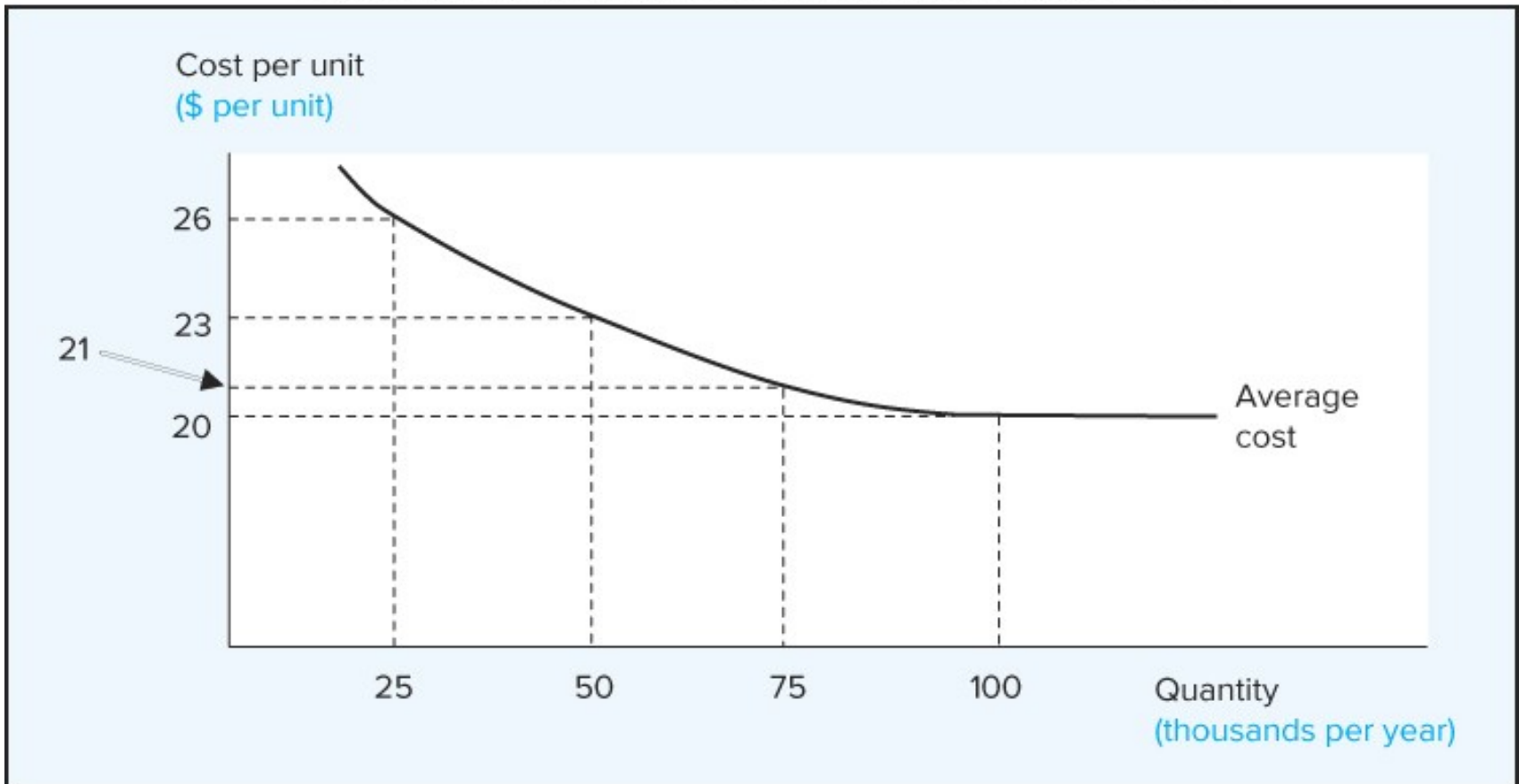
## All factors of production are indivisible to some extent

- But some less than others: e.g., oil or fuel in general
- Economies of scale always only up to a point



# Economies of Scale

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## Internal economies of scale

- Internal to each firm
- Directly related to the indivisibility of factors
  - If it is most efficient to use a very large machine, for instance, then you need a plant of a certain size, enough workers, and so on
- Larger firms are superior to smaller firms – but only up to a point

## External economies of scale

- Based on the size of the *industry* in a given region
  - Average cost to the individual firm declines as the industry grows
- *Cluster* effect from specialized resources, labour
- Greater *knowledge spillover* between firms
- Examples: London in finance, Silicon Valley in tech



## Trade and Internal Economies of Scale

- Prices rise for exporting industries after trade opens
  - The point of decreasing average costs might shift farther into the future
- For the individual firm, a greater size may become profitable as the indivisible factors can be utilized more intensively
  - Tendency to concentration in greater firms

## Trade and External Economies

- Greater investment in the production of export goods may lead to greater external economies of scale
- More clusters forming and so on





## ***Net trade for an industry:***

- The difference between exports and imports of the industry's product(s)

## ***Inter-industry trade:***

- A country exports products in some industries and imports products in other industries

## ***Intra-industry trade:***

- Two-way trade in which a country both exports and imports the same or very similar products (i.e., products in the same industry)
- Intra-industry trade is an important part of international trade – but how can that be, when comparative advantage is the driver of trade?



# Measuring Intra-Industry Trade (IIT)

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**IIT is the total trade in the product that is not net trade**

$$\text{IIT} = (X + M) - |X - M|$$

- $X$  is the value of exports
- $M$  is the value of imports of the product / group of products in question
  - Definition of the “product” important for size of IIT
  - The broader the definition, the greater IIT will be
- Empirically, intra-industry trade is more important for trade in manufactured goods than it is for trade in agricultural products and raw materials



# Intra-Industry Trade in Nonfood Products (Percentage Share)

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Country	1989	2005	2012
United States	55.3	58.3	63.6
Canada	54.3	63.2	55.4
Japan	27.8	41.2	38.0
Germany	62.6	67.5	67.2
France	71.3	73.9	71.5
United Kingdom	69.0	71.7	71.6

*Source:* Authors' calculations, based on data for 1989 and 2005 from Organization for Economic Cooperation and Development, *SourceOECD ITCS International Trade by Commodity Database*, and data for 2012 from United Nations, Commodity Division, *UN Comtrade Database*.



# What Explains Intra-Industry Trade?

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## Product Differentiation

- Many types and different qualities of the same kind of product are produced around the world
  - Car manufacturing, for instance: German, Japanese, Korean, French, etc., cars are all sold in Germany
  - Wine: Germany both exports wine and imports wine

## Seasonality

- Temperate and Mediterranean countries may produce and export some seasonal goods in the summer and fall and import similar goods in the winter months

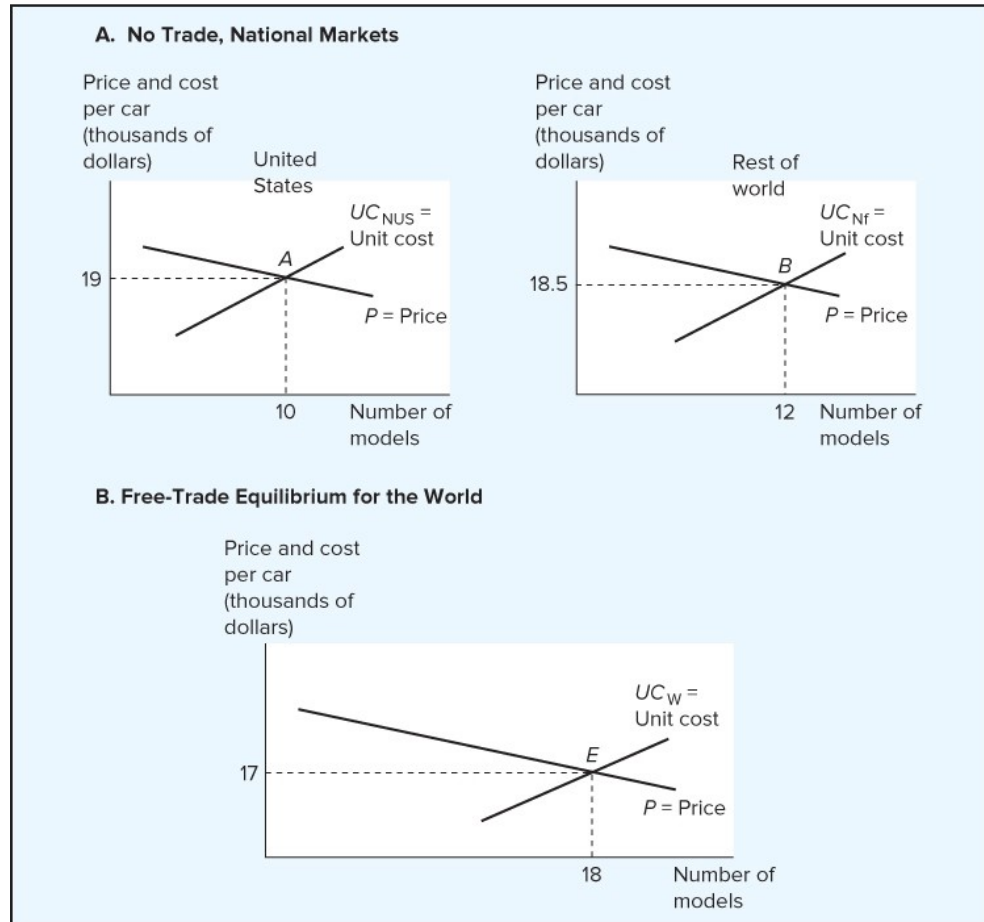
## World Market Integration

- If the world market is sufficiently integrated, then there is no distinction between it and domestic markets
- Producers in different countries may have similar advantages



# Differentiation and International Trade

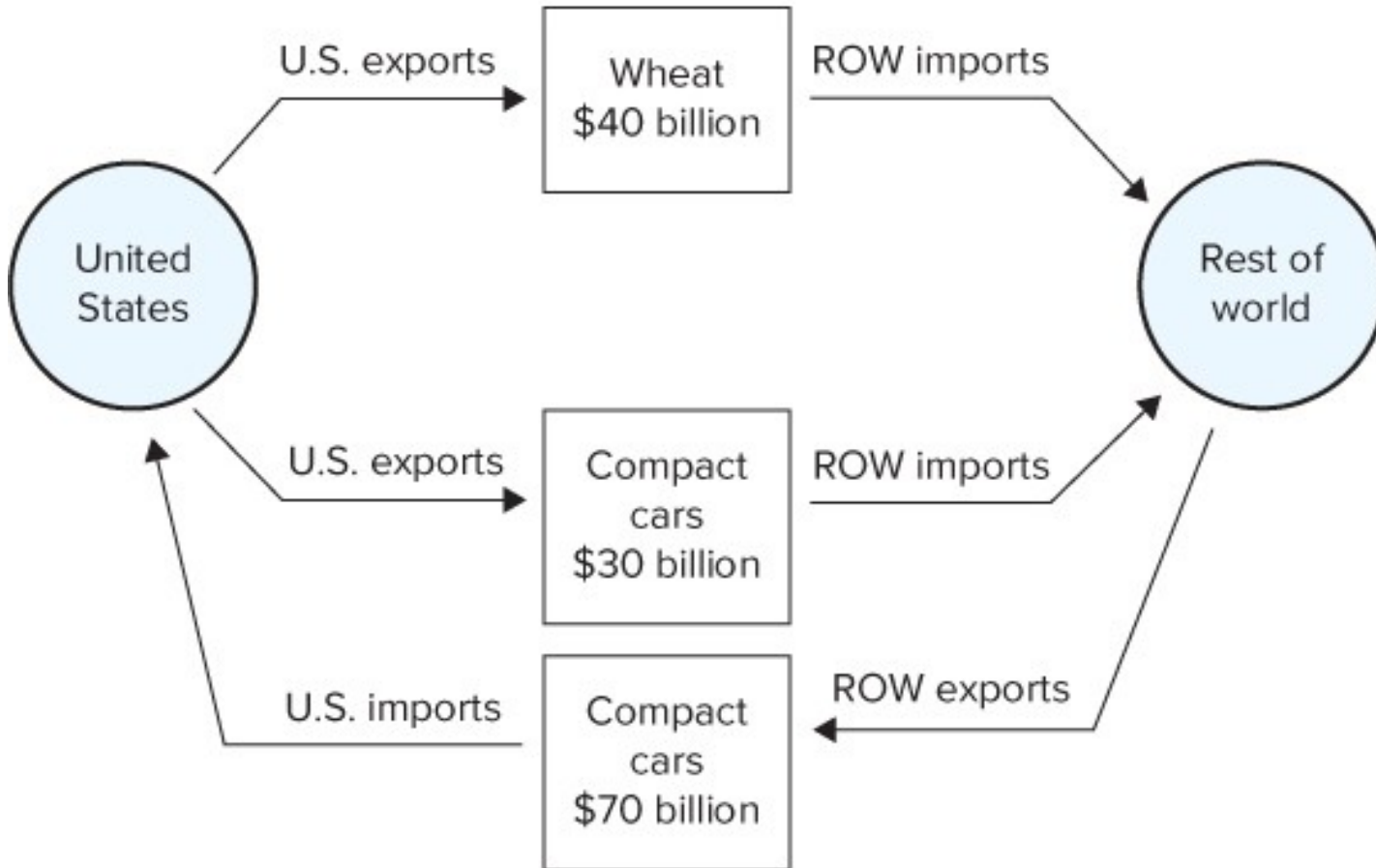
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# Net Trade and Intra-Industry Trade

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## 2. Implications of the H-O Model

**Three implications from the Heckscher-Ohlin Model:**

1. The Stolper-Samuelson theorem
  2. The specialized factor pattern
  3. The factor-price equalization theorem
- We will examine each in turn



# The Stolper-Samuelson Theorem

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- The theorem states that, given certain assumptions,\* an event that changes relative prices in a country has two effects:
  1. It raises the real return to the factor used intensively in the rising-price industry
  2. It lowers the real return to the factor used intensively in the falling-price industry
- \*The assumptions are: 1) the country produces two goods using two factors of production, each factor is relatively intensively used in the production of each good; 2) Factors are mobile between productions and fully employed; 3) Competition prevails in all markets; 4) Constant returns to scale. As we shall see further on, such specific assumptions are not necessary





# The Specialized Factor Pattern

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- The more a factor is specialized, or concentrated, in the production of a good whose relative price is *rising*, the more this factor stands to gain from the change in the product price
- The more a factor is specialized, or concentrated, in the production of a good whose relative price is *falling*, the more it stands to lose from the change in the product price
- This holds both in the short and the long run
- Note that it is not a question of *how much* of a factor is used in this or that industry, but of how *specific* it is to that industry
  - A purely specific factor will be most sensitive to increases or decreases in the price of the product



# The Factor-Price Equalization Theorem

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**Under free trade, there is a tendency toward the equalization of prices of all factors of production of the same kind**

- Labourers of the same skill level will tend to earn the same wage in all countries engaged in trade
- Units of land of comparable quality will tend to earn the same return in all countries engaged in trade
- Capital goods (produced factors of production) will tend to earn the same rental return in all countries

**This is no different from normal price theory**



# The Factor-Price Equalization Theorem

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## Restrictive assumptions unnecessary

- The theorem follows from the logic of trade
  - Recall the description of the H-O theory: “Commodities requiring for their production much of [abundant factors of production] and little of [scarce factors] are exported in exchange for for goods that call for factors in the opposite proportions. Thus indirectly, factors in abundant supply are exported and factors in scanty supply are imported.”
- International trade leads to the establishment of a world market and world market prices
- The law of one price



## **All units of commodities (and services) traded in the same market will trade at the same price**

- This follows from simple arbitrage: speculators will quickly identify discrepancies and act to profit from them
- Once a world market is established in some good, all units of that good will be exchanged for the world market price
  - Due allowance made for transport costs
  - Note the difference between subjective and technological definition of a good: its location matters for its value!

## **Domestic factors of production and the world market**

- Factor prices or incomes determined by world market prices
- Factor allocation according to profitability on world market



### 3. International Trade and Development

- When the economy of a country grows, this has consequences for its position in the international economy

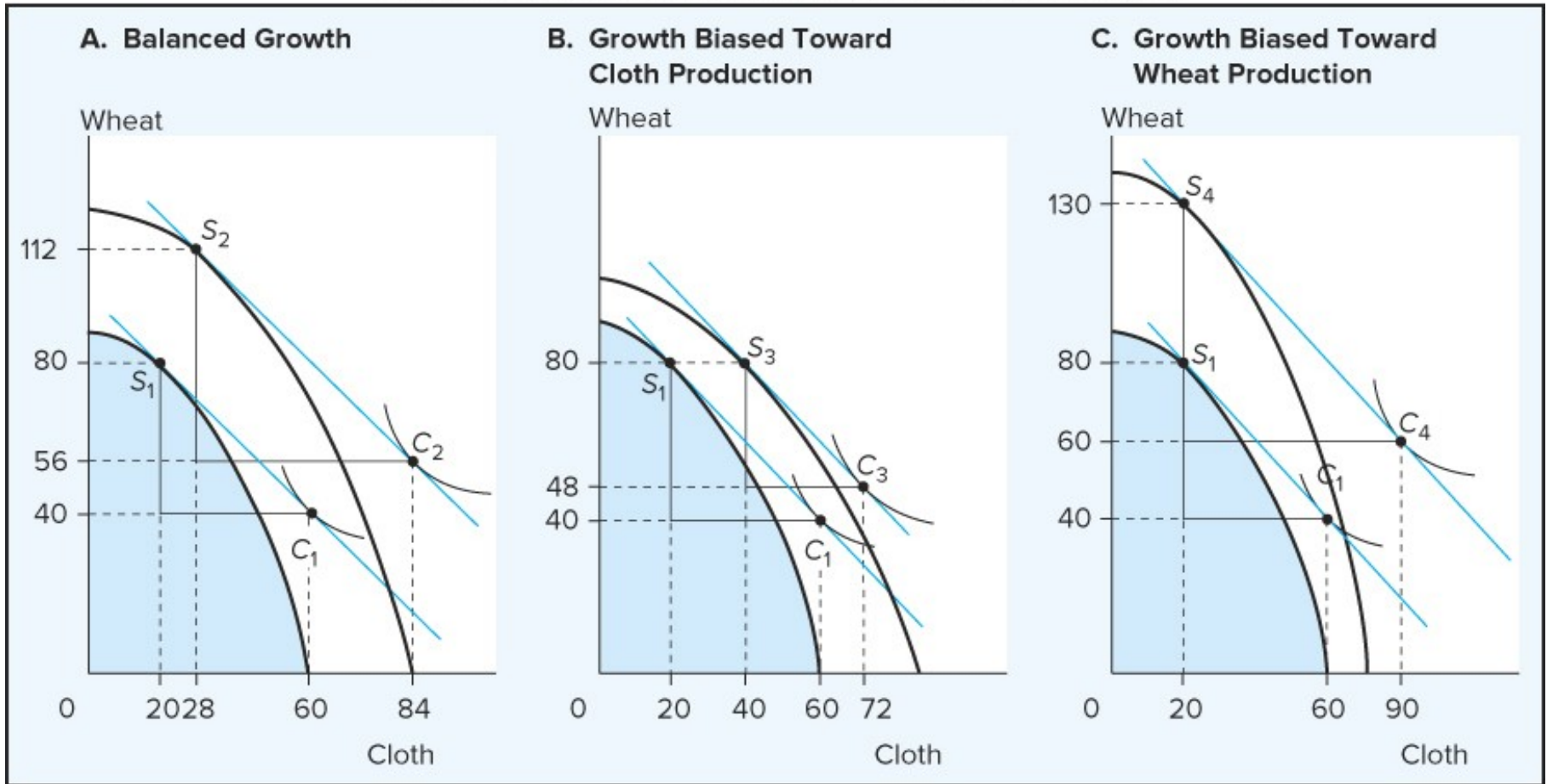
#### Balanced and Biased Growth

- Balanced growth: the country's production possibilities curve shifts out proportionately, so its shape is the same
- Biased growth: expansion favours one product disproportionately, so the ppc changes shape as it shifts out



# Balanced and Biased Growth

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# The Rybczynski Theorem

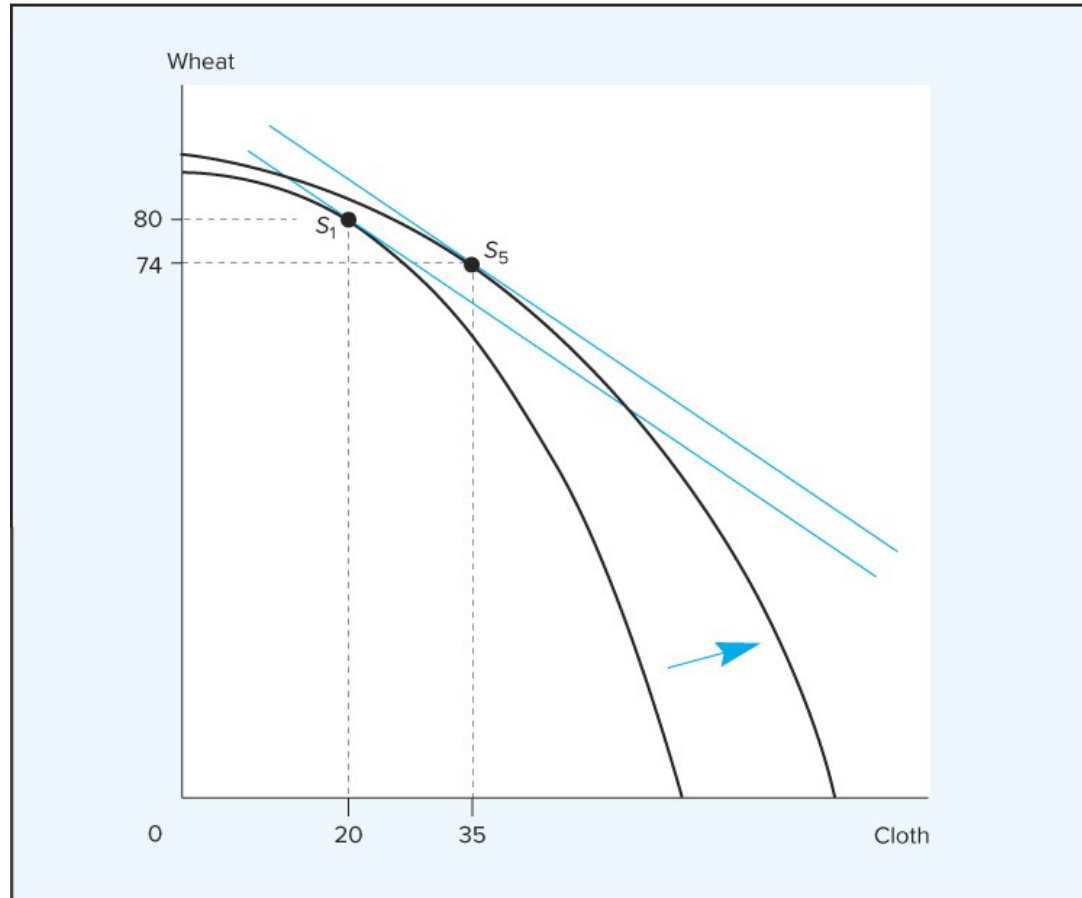
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- In a two-good world, assuming constant product prices, an increase in the amount of one factor available will have two consequences:
  1. An increase in the output of the good that uses the growing factor intensively
  2. A decrease in the output of the other good
- More generally, an increase in the amount of a factor of production specific to one employment always increases the output of this good
- However, the output of other goods does not necessarily decrease – only if unspecific factors are bid away



# The Rybczynski Theorem

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## Economic Development and Patterns of Trade

- Development leads to changing patterns of production

### Implications for international trade:

- If a greater supply of factors for import-competing industries become available
  - More will be produced domestically and less imported
  - Less factors are available for export industries. Trade declines
- If more factors become available for export industries
  - Exports expands and more can be imported. Trade expands

**Development can both increase and decrease a country's willingness to trade**

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## For a small country

- An increase in amount of commodities exported is unlikely to affect product prices substantially
- Its terms of trade therefore remain virtually unchanged

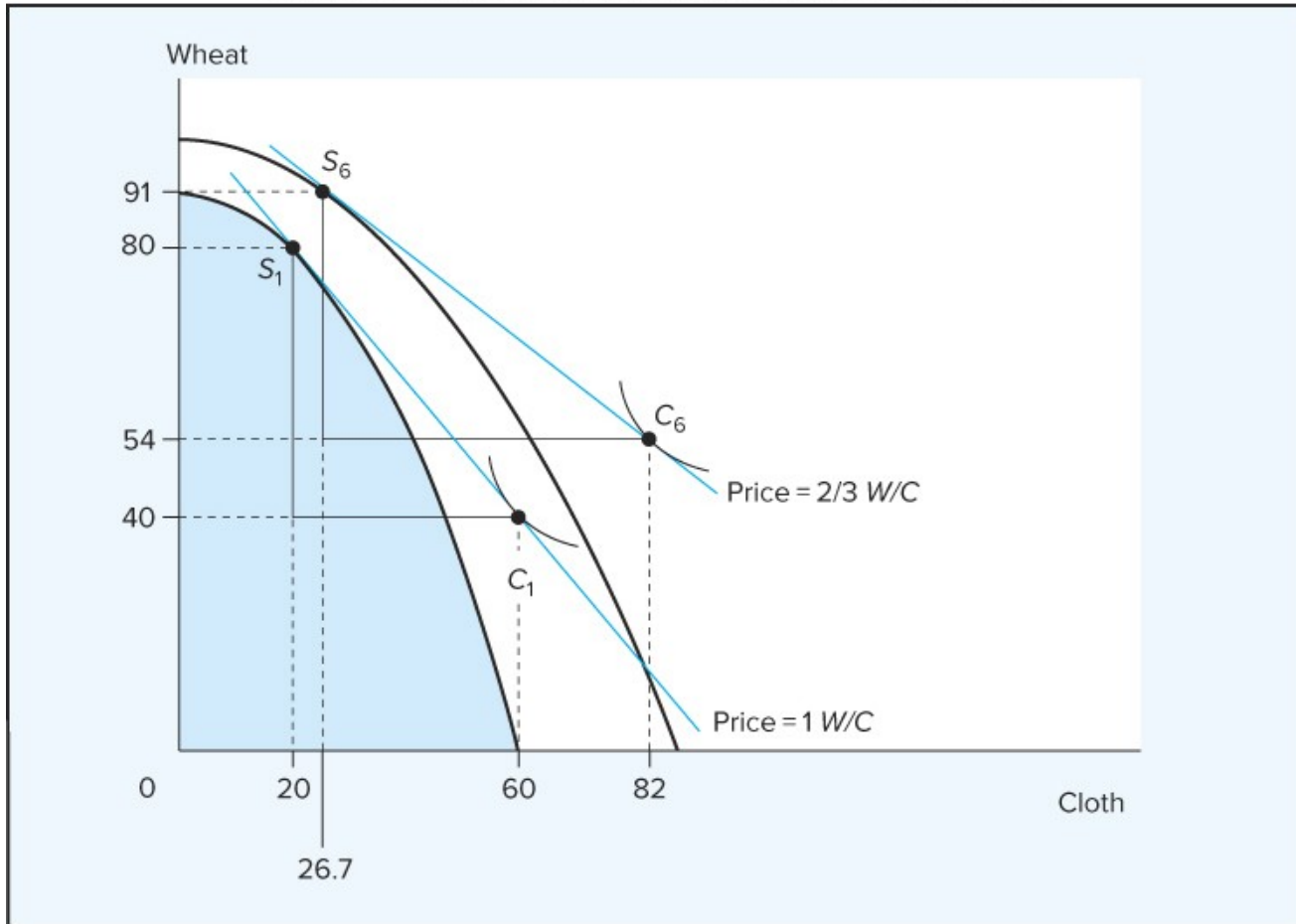
## For a large country

- An increase in its exports can affect its terms of trade – in both positive and negative directions
- Growth biased toward import-competing industries
  - Reduced demand for imports, leading to a lower relative price for imports – improved terms of trade (but also less imports)
- Growth in export industries
  - Worsening *commodity* terms of trade but improved *income* terms of trade
  - The relative effects of the lower price and the increased quantity sold



# Growth Leading to Improved ToT

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## Definition

- Growth that leaves a country worse off than before
- Analysed first by Jagdish Bhagwati (1958)

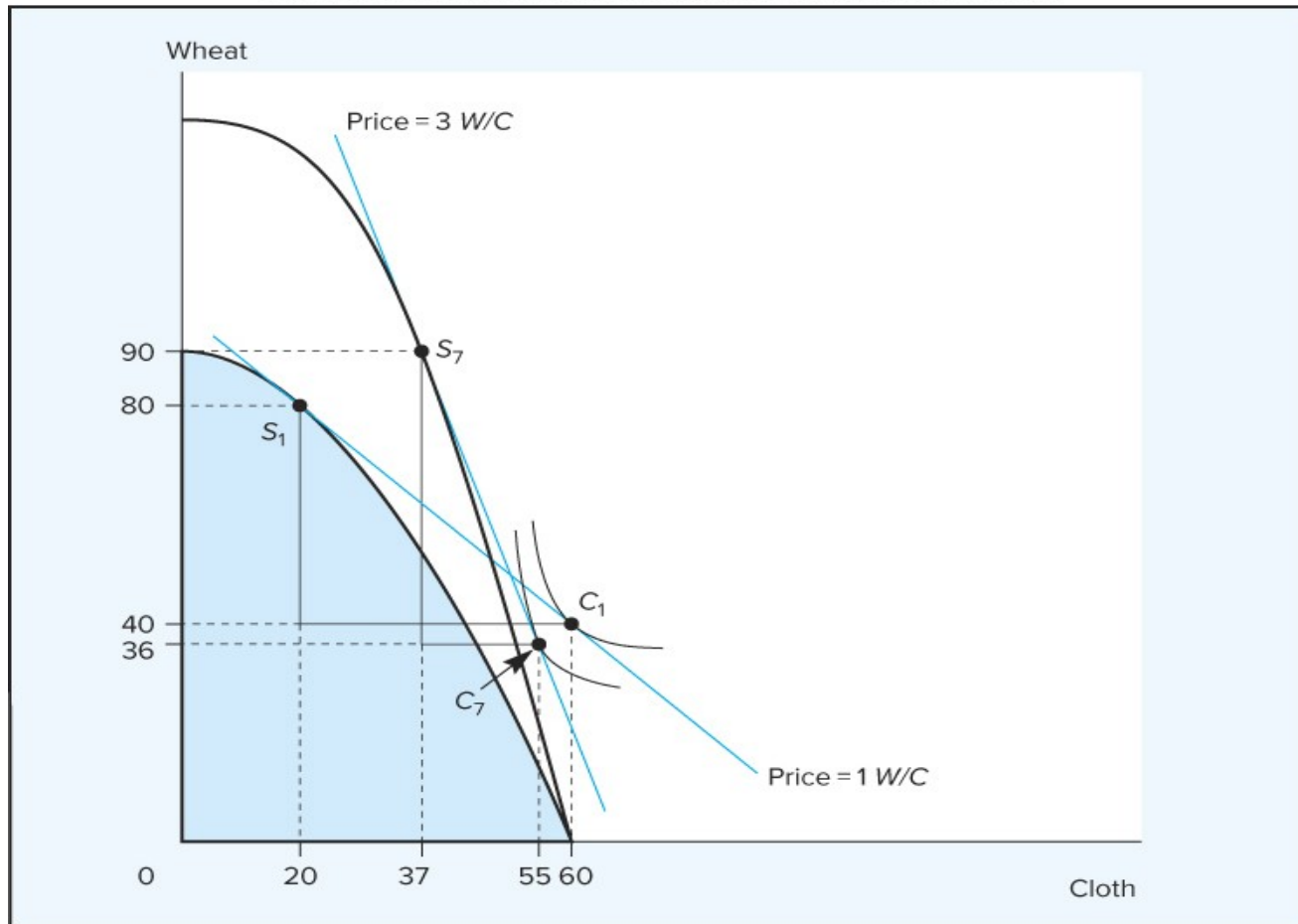
## Conditions

- An increase in exports leads to so great a decline in export prices that export revenues are lower than before
  - Declining terms of trade – commodity and income
- In other words, the international demand for the exported good(s) must be price-inelastic



# Immiserizing Growth

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# Is Immiserizing Growth Possible?

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- Theoretically, yes – but often an artifact of too restrictive assumptions

## **Realistic Growth Patterns**

- Entrepreneurs estimate the income they expect from increased output and only increase production if this seems profitable
- They estimate profits, total revenue, not simply selling price
- Only bad forecasting would lead them to invest capital in expanding productive capabilities in a way leading to immiserizing growth

## **Causes of Immiserizing Growth**

- Government direction of investment
- Government intervention falsifying entrepreneurial judgment



## 4. International Trade and Capital Accumulation

### The Importance of Capital

- Not seen under restrictive assumptions
- The two-factor (labour and land), two-goods assumptions must be relaxed
- There are in reality a myriad of different factors of production
  - Permanent, irreplaceable factors (land)
  - Human factors (labour)
  - Produced factors of production (capital goods)



# Capital and Capital Goods

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## **Capital goods: the produced factors of production**

- Specific to different production lines to various degrees
- Continually worn out in use, have to be reproduced

## **Capital: the estimated money value of all the nonhuman (or owned) factors of production employed in production processes**

- Capital goods part of capital
- Land part of capital
- Labour? Normally no

## **Capitalists earn a return on investment, or interest**

- Interest based on time preference: higher value of present over future goods
- Profit due to entrepreneurial ability: investment of capital in most productive sectors, most highly valued lines of production





## Factor Allocation and Prices

- Factor owners are paid according to their marginal productivity
  - Labourers receive wages determined by the (discounted) MRP
  - Landowners receive rent for land
- Capitalists a little different
  - Profits from successful adjustment to desired output
  - Interest on investment → equal in all lines of production

## Consumption Determines the Pattern of Production

- Production and the distribution of income is determined by the prices paid for the products of all the industries in the country



## Trade and the Pattern of Production

- When trade opens up, the system of prices is disarranged
  - Prices for (what are now) imports fall
  - Prices for exports increase

## Consequences for the whole capital structure

- Nonspecific factors will tend to leave the contracting import-competing industries and migrate to export industries
- Specific factors cannot migrate, however
  - Incomes to specific factors fall in import-competing industries
  - Incomes to specific factors rise in export industries



## **Nonspecific Factors**

- Nonspecific factors will quickly take advantage of new opportunities in export industries
- Labour the prime nonspecific factor

## **Specific Land Factors**

- In contracting import-competing industries, land permanently earn a lower rent
- In export industries, incomes to specific land factors rise
  - New land factors may, if possible be formed in expanding industries

## **Capital Goods are Different**

- Specific capital goods will continue to be employed in contracting industries, but they will not be reproduced
- Instead, new capital goods are produced for the expanding industries

## **The impact of foreign trade reshapes a country's capital structure**

- Profits in export industries lead to capital formation here
- Losses in import-competing industries lead to reduction of capital stock here



## **Net saving: an excess of income over consumption**

- Saving increases supply of capital, speeds up reallocation process
- International capital flows help – but that’s a topic for later!
- The more capital is accumulated in a country, the more “capitalistic” it is, the more it can engage in international trade
- Capital investment in areas of comparative advantage key

## **International division of labour determined by two factors**

- The extent of the market
- The amount of capital accumulation
- The former to a great extent depend on the latter!



## Dutch Disease?

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- When natural gas fields were discovered and developed under the North Sea in the 1960s, the Netherlands expected a bonanza. Many were disappointed when the Dutch manufacturing base seemed to contract the more natural gas production was developed
- This gave rise to the idea of “Dutch disease”: development of new natural resources leads to deindustrialization
- In reality, what happened was that capital shifted to the new, more profitable field of natural gas extraction. This was painful for entrepreneurs in the suddenly unprofitable manufacturing sectors, but not a problem for the country as a whole



## 5. Winners and Losers from International Trade

### In the Long Run

- Everyone is better off from the increased productivity brought about by international trade

### In the Short Run

- The winners are the entrepreneurs in the industries with a comparative advantage on the world market, the owners of specific factors in these industries, and the nonspecific factors who can quickly move to expanding industries to take advantage of higher wages
- The losers are the capitalists invested in the import-competing industries and the owners of factors specific to these industries, as well as labourers who have highly specific skills



**Who gains from trade really depends on over what time frame we consider it!**

- Over the long run, even the “losers” gain from increased productivity and the greater availability of goods
- The question is how long they have to wait:
  - Those who expect to gain in the short run will favour free trade
  - Those who expect to lose will favour protectionism

## **Sources of Protectionist Agitation**

- Often capitalists invested in industries with a comparative *dis*-advantage
- Not always: a person’s ideas is not determined by his place in the economic structure of society



# Bastiat and the Candlemakers' Petition

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- Protectionists really argue for an organization of society that leads to lower productivity and less wealth

Frédéric Bastiat lampooned this attitude in his famous *Petition of the Candlemakers* from 1845

- The candlemakers want protection from the French government
- They're exposed to unfair competition from a foreign source
- ... that foreign source turns out to be *the sun!*
- They want the state to mandate shut windows all during the day
- A lot of activity would be generated if the French were forced to shut out all light, but this productive effort could have been spent on something else
- And all for the benefit of a narrow interest group





## 6. The Case for Free Trade

### Free Trade Rare

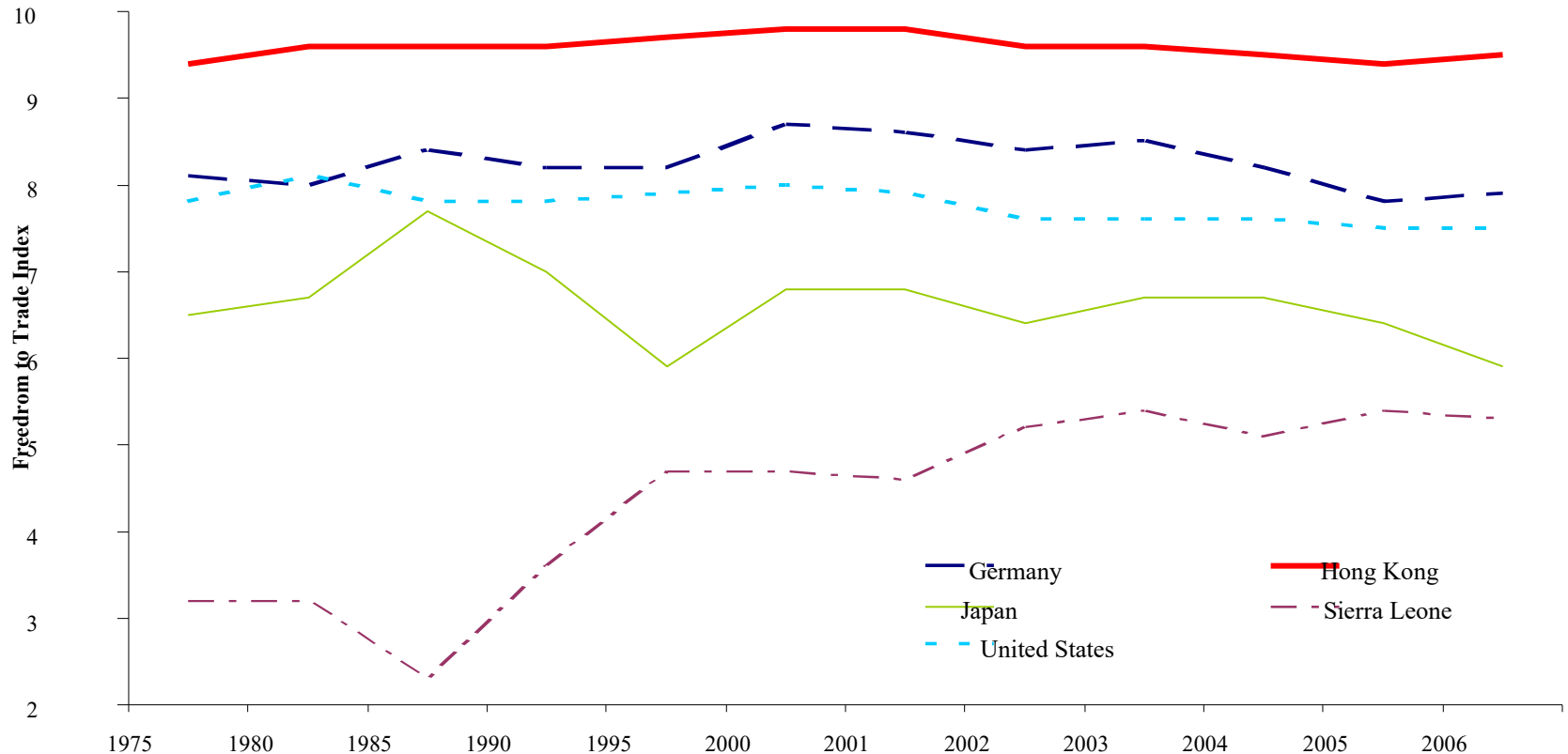
- Hong Kong may be the country that comes closest to complete free trade
- The potential gains from free trade are larger for developing countries and for smaller countries

### Free Trade and Prosperity Historically

- United Kingdom (and a little later most of Europe) in the 19<sup>th</sup> century
- Europe more gradually after WW2
- East Asian countries (the “tiger economies”)
- China from the late 1970s on



# The Freedom to Trade Index



Source: The Fraser Institute 2009, [www.freetheworld.com](http://www.freetheworld.com), the index ranges from zero to ten points. It is based on data of taxes on international trade, regulatory trade barriers, actual size of trade sector compared to expected size, difference between official exchange rate and black-market rate and international capital market controls.



## **High gains from trade in small countries and in developing countries**

- Excluding foreign competitions protects domestic companies
- Economies of scale decrease

## **Example: Argentina's car industry lost competitiveness due to import restrictions in the 1960s**

- Before restrictions, an efficient scale assembly plant produced between 80,000 and 200,000 cars per year
- After restrictions, in 1964, 13 Argentinian plants produced 166,000 cars total

## **Economies of scale gains are hard to estimate**

- Harris/Cox (1984) estimated the gains for Canada. They found that real income in Canada was higher by 8.6 percent



# The Median Voter Model (Downs 1957)

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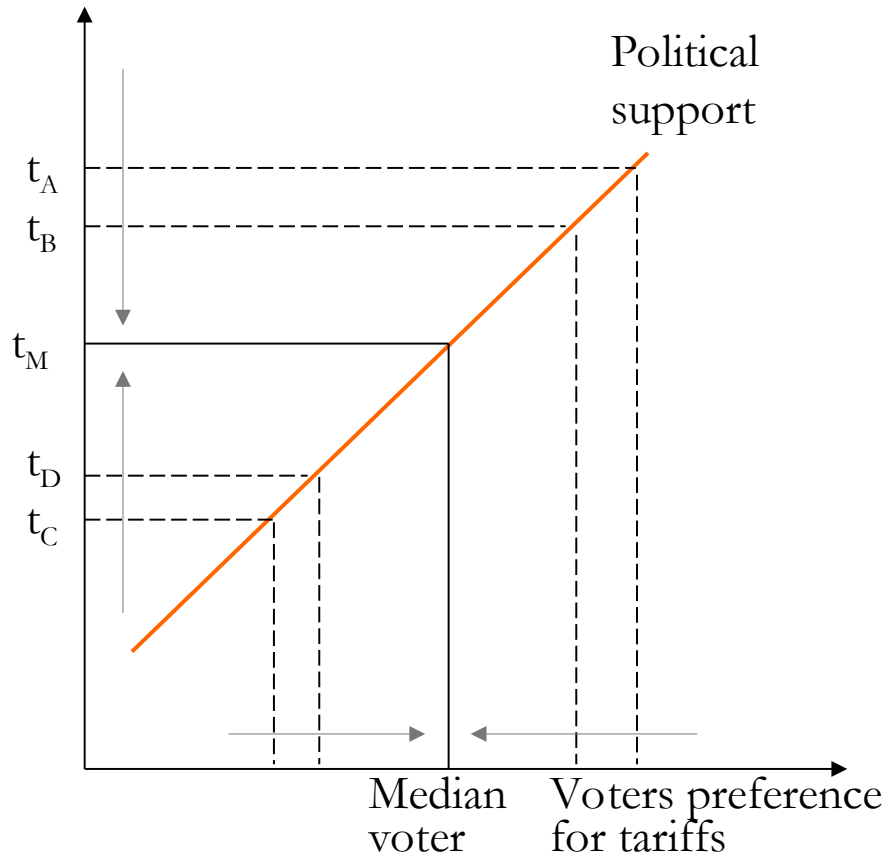
Describes the phenomenon that governments might maximize political success rather than national welfare

## Assumptions

- One country, two goods
- Exports: skill-intensive goods, imports: labour-intensive goods
- Two competing political parties
- Only issue: tariff rate adjustment
- Skilled labour favours low tariffs
- Unskilled labour favours high tariffs



# The Median Voter Model



- On the x-axis voters who favor the lowest tariff are lined up on the left and those who favor the highest rate are lined up on the right.
- A voter votes for the party, which proposes the tariff which is closest to the voter's preference.
- Both parties want to gain the majority of the votes and will tend to converge towards the preferred tariff rate by the median voter ( $t_M$ ).
- If one party proposes a higher tariff  $t_A$  (lower tariff  $t_C$ ) than tariff  $t_M$  the other party proposes a lower tariff  $t_B$  (higher tariff  $t_D$ ) to get more votes.
- Political competition leads both parties to propose tariffs close to  $t_M$ .
- The tariff is optimal from a political, but not an economic perspective.



# Problem of Collective Action (Olson 1965)

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## The Problem

- The individual carries the cost of collective activity
- The benefit spread out over large group

## Interest groups overcome this problem

- Small groups, clearly identified economic interests
- Each member reaps substantial gains from successful action
- Interest groups advocating economic policies thus successful

## Weakness: assumes action determined by economic interests

- Action always determined by ideas
- Including ideas about how to further one's economic interest



# Protection in Agriculture

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- Farmers only a small percentage of the population and workforce in developed countries
- Yet farmers in developed countries enjoy substantial protection:
  - Export subsidies
  - Protected markets
- Strong farm lobbies part of the explanation
- However, farmers have also been strong in agitation against farm protectionism
  - Repeal of the Corn Laws in England 1846
- Any interest group only advocates the policies they *think* will benefit them – and which do not contradict other goals!



## 7. Summary

1. Economies of scale and product differentiation also drive international trade
2. There is a tendency toward equalization not only of product prices but of factor incomes in all countries once trade is opened
3. Economic growth can both improve and worsen a country's terms of trade. However, the case of immiserizing growth is an artifact of too abstract models, not a real problem
4. International trade has important effects on the reallocation of capital as investment flows are redirected internally in each country
5. In the short run, capitalists invested in import-competing industries may lose from international trade. In the long run, all gain
6. Few countries have free trade. In the modern world, Hong Kong comes closest. Especially small and developing countries would gain from trade
7. Concentrated (short-term) benefits from protectionism may help explain why countries do not adopt completely free trade





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- Chap. 7, on the role of specific and nonspecific factors