

KRUGMAN | OBSTFELD | MELITZ
INTERNATIONAL
ECONOMICS
THEORY & POLICY



TENTH EDITION

ALWAYS LEARNING

Chapter 12

Controversies in Trade Policy

PEARSON



Preview

- Arguments for “activist” trade policies
 - Externality and appropriability problem
 - Strategic trade policy with imperfect competition
- Trade and working conditions
- Trade and the environment



Arguments for an Activist Trade Policy

- An activist trade policy usually means government policies that actively support export industries through subsidies.
- Arguments for activist trade policies are based on market failure.
 - Externalities and an appropriability problem
 - Imperfect competition that results in revenues that exceed all (opportunity) costs: “excess” profits.



Technology and Externalities

- Firms that invest in new technology generally create knowledge that other firms can use without paying for it: an appropriability problem.
 - By investing in new technology, firms are creating an extra benefit for society that is easily used by others.
 - An appropriability problem is an example of an **externality**: benefits or costs that accrue to parties other than the one that generates it.
 - An externality implies that the marginal social benefit of investment is not represented by producer surplus.
- Governments may want to actively encourage investment in technology when externalities in new technologies create a high marginal social benefit.



Technology and Externalities

- Should the government subsidize high-tech industries?
- When considering whether a government should subsidize high-technology industries, consider:
 1. The ability of governments to subsidize the right activity.
 - Much activity by high technology firms has nothing to do with generating knowledge: subsidizing equipment purchases or non-technical workers generally does not create new technology.
 - Knowledge and innovation are created in industries that are not usually classified as high tech.



Technology and Externalities

2. Instead of subsidizing specific industries, the government may subsidize research through the tax code.
 - Research and development expenses can be deducted from corporate taxable income.
3. The economic importance of externalities.
 - It is difficult to determine the quantitative importance that externalities have on the economy.
 - Therefore, it is difficult to say *how much* to subsidize activities that create externalities.
4. Externalities may occur across countries as well.
 - No individual country has an incentive to subsidize industries if all countries could take advantage of the externalities generated in a country.



Should the U.S. government subsidize high-tech industries?

- Some argue that the United States should have a deliberate policy of promoting high-technology industries.
 - Such arguments gained popularity in the 1980s and early 1990s, then they fell from favor, only to experience a strong revival in recent years.
 - The inspiration was Japan which adopted this kind of policy.
 - Between 1978 and 1986 the U.S. share of world production of RAM chips declined from 70% to 20% while Japan's share rose from 30% to 70%. It is not clear, however, whether the primary reason was the economic policy of Japan.
 - In the 1980s and early 1990s there were worries that Japan's dominance of the semiconductor memory market would translate into a broader dominance in modern technologies.



Should the U.S. government subsidize high-tech industries?

- The fear from a broader dominance of Japan in modern technologies proved to be unfounded.
 - USA are still on the leading edge in new technologies.
 - The RAM production is now a competitive industry with many producers and it is definitely not a strategic industry.
- Although there are arguments in favor of promoting high-tech industries, in reality it is difficult to select which industry to subsidize.
 - The semiconductor industry (RAMs) appeared to have all attributes of a sector suitable for activist trade policy. But in the end, it is neither industry with strong externality nor industry with excess returns.

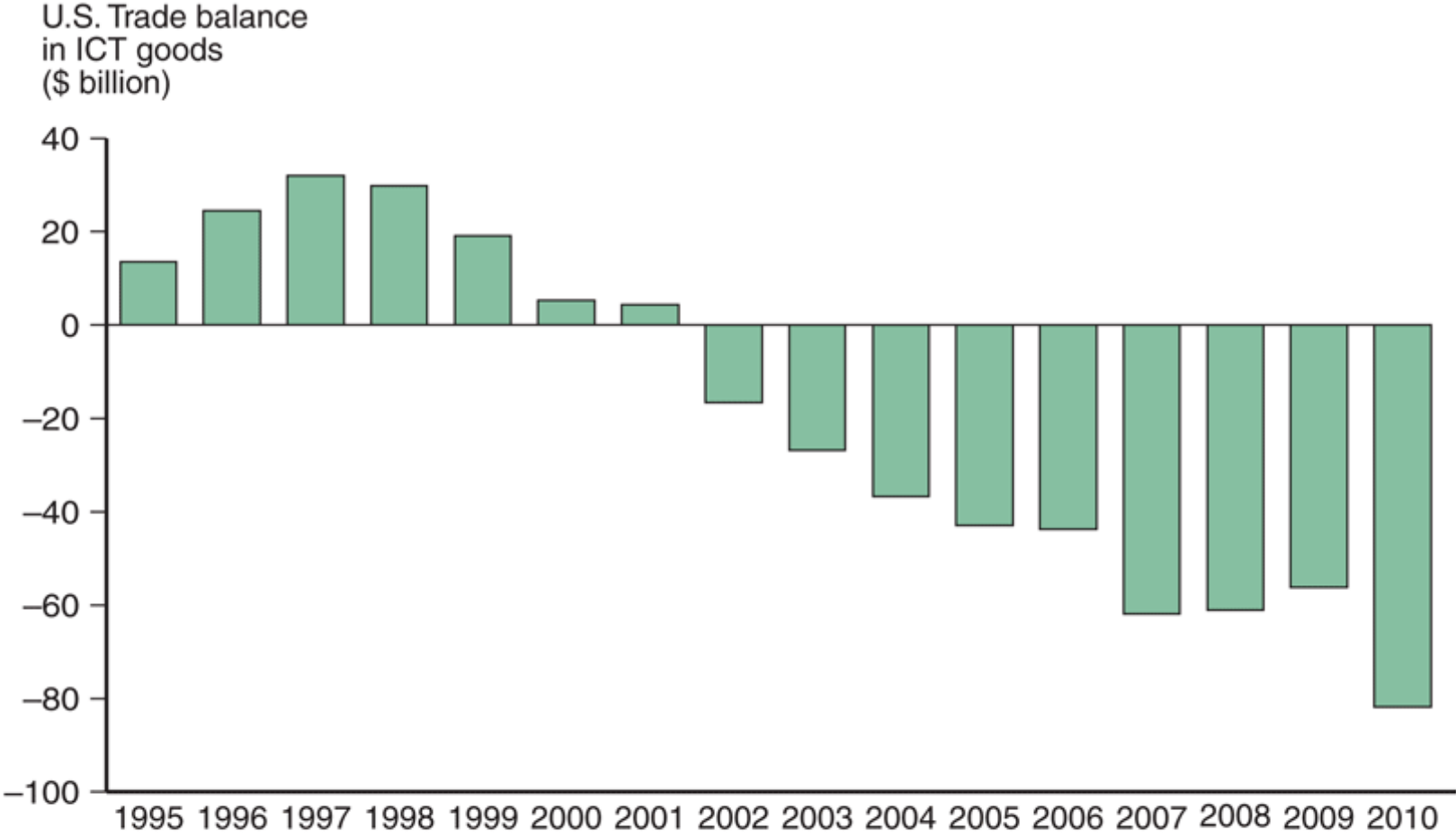


Should the U.S. government subsidize high-tech industries?

- In recent years the arguments for subsidizing high-tech industries have reemerged.
 - USA has moved into a large trade deficit in advanced technology products (ATP, ICT), see Fig. 12-1.
 - The decline of employment in ICT industries, see Fig. 12-2.
 - Warning from Andy Grove (founder of Intel), see p. 328, who argues that technological spillovers require more than research and creating a start-up. He argues that government should subsidize process of going from the prototype to mass production which rises employment. He argues that this kind of process is no longer happening in the U.S.



Fig. 12-1: The U.S. Trade Balance in Information Goods



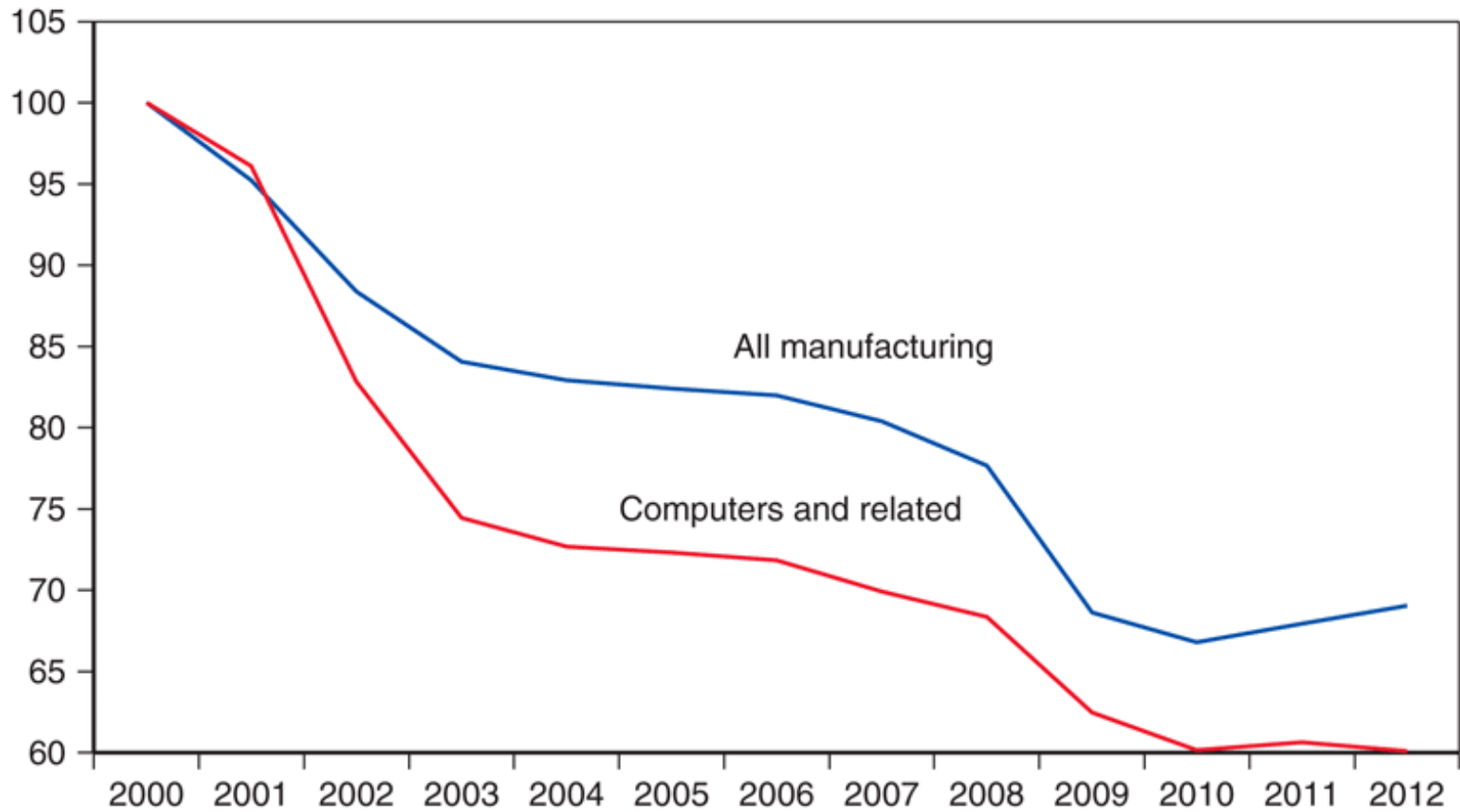
Source: National Science Foundation, *Science and Engineering Indicators* 2012.



Fig. 12-2: U.S. Manufacturing Employment

MyEconLab Real-time data

Index of employment, 2000=100



Source: Bureau of Labor Statistics.



Imperfect Competition and Strategic Trade Policy

- Imperfectly competitive industries are typically dominated by a few firms that generate monopoly profits or **excess profits**.
- In an imperfectly competitive industry, government subsidies can shift excess profits from a foreign firm to a domestic firm.
- Example (called the **Brander-Spencer analysis**):
 - Two firms (Boeing and Airbus) compete in the international market but are located in two different countries (U.S. and EU).
 - Both firms manufacture airplanes, but each firm's profits depends on the actions of the other.
 - Each firm decides to produce or not depending on profit levels.



Table 12-1: Two-Firm Competition

		Airbus	
		Produce	Don't produce
Boeing	Produce	-5, -5	0, 100
	Don't produce	0, 100	0, 0

The predicted outcome depends on which firms invest/produce first.

If Boeing produces first, then Airbus will not find it profitable to produce.

If Airbus produces first, then Boeing will not find it profitable to produce.



Table 12-2: Effects of a Subsidy to Airbus

		Airbus	
		Produce	Don't produce
Boeing	Produce	-5 / 20	0 / 100
	Don't produce	0 / 125	0 / 0

A subsidy by the European Union can alter the outcome by making it profitable for Airbus to produce *regardless of Boeing's action*.

If Boeing expects that the European Union will subsidize Airbus, Boeing will be deterred from entering the industry. Thus, the subsidy of 25 will generate profits of 125 for Airbus.

The subsidy raises profits more than the amount of the subsidy itself due to its deterrent effect on foreign competition.



Imperfect Competition and Strategic Trade Policy

- A government policy to give a domestic firm a strategic advantage in production is called a **strategic trade policy**.
- This analysis received much criticism:
 1. Practical use of strategic trade policy requires more information about firms than is likely available.
 - The predictions from the simple example differ if the numbers are slightly different.
 - What if governments or economists are not exactly right when predicting the profits of firms?
 - For example, what if Boeing has a better technology that only it can recognize, so that even if Airbus produces, Boeing still finds it profitable to produce?



Imperfect Competition and Strategic Trade Policy

2. Foreign retaliation also could result:
 - If the European Union subsidizes Airbus, the U.S. could subsidize Boeing, which would deter neither firm from producing, start a trade war, and waste taxpayer funds.
3. Strategic trade policy, like any trade policy, could be manipulated by politically powerful groups.



Trade and Working Conditions

- Manufactured exports from low- and middle- income countries have been increasing.
- Compared to rich-country standards, workers who produce these goods work under poor conditions.
- Some labor activists want to include labor standards in trade negotiations.
 - However, labor standards imposed by foreign countries are opposed by governments of low- and middle-income countries.
 - International standards could be used as a protectionist policy or a basis for lawsuits when domestic producers did not meet them.
 - Standards set by high-income countries would be expensive for low- and middle-income producers.



Trade and Working Conditions

- A policy that could be agreeable for governments of low- and middle-income countries is a system that monitors wages and working conditions and makes this information available to consumers.
 - Products could be certified as made with acceptable wage rates and working conditions.
 - But this policy would have a limited effect, since a large majority of workers in low- and middle-income countries do not work in the export sector.



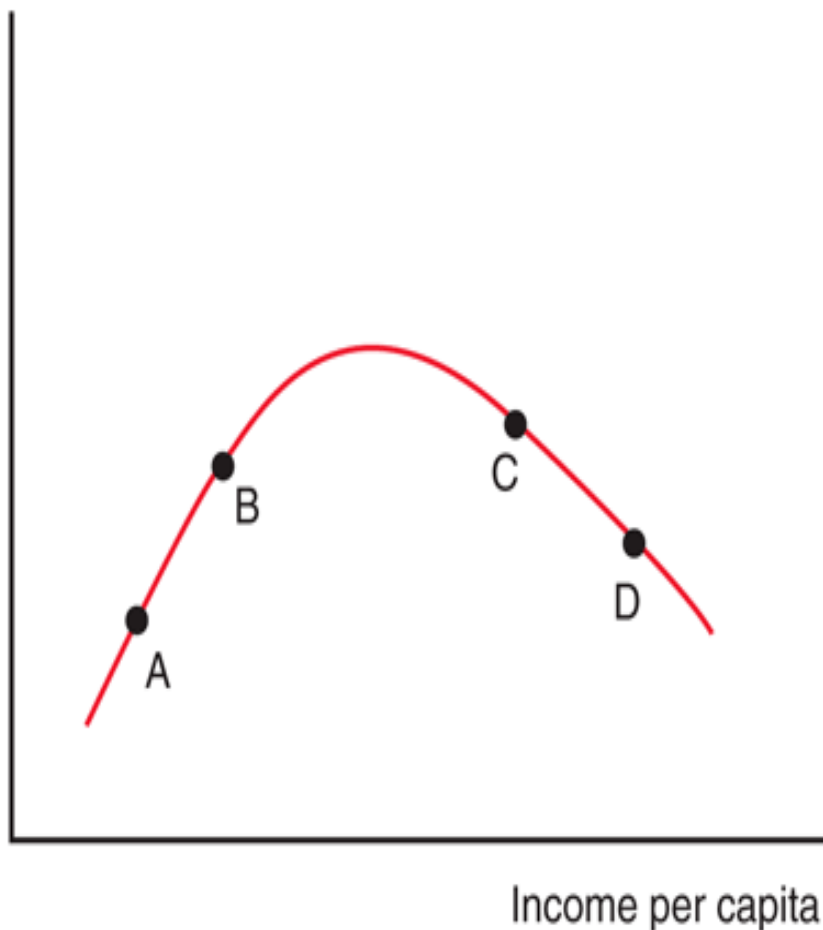
Trade and the Environment

- Compared to rich-country standards, environmental standards in low- and middle- income countries are lax.
- Some environmental activists want to include environmental standards in trade negotiations.
 - However, environmental standards imposed by foreign countries are opposed by governments of low- and middle-income countries.
 - International standards could be used as a protectionist policy or a basis for lawsuits when domestic producers did not meet them.
 - Standards set by high-income countries would be expensive for low- and middle-income producers.



Fig. 12-3: The Environmental Kuznets Curve

Environmental damage



As poor countries grow richer, possibly partly due to trade, they produce more and can consume more, leading to more environmental degradation.

But as countries grow richer, they want to pay for more stringent environment protection.

Both of these ideas are represented as an **environmental Kuznets curve**: An inverted “U-shaped” relation between environmental degradation and income per person



Trade and the Environment

- Because rich countries usually have strict environmental regulations and poor countries do not, environmentally hazardous activities may be moved to poor countries.
 - A **pollution haven** is a place where an economic activity that is subject to strict environmental controls in some countries is moved to (sold to) other countries with less strict regulation.
 - Yet, there is evidence that pollution havens are insignificant relative to the pollution that occurs without international trade.
 - There is not much evidence that “dirty” industries move to countries with lax environmental regulation.
 - The primary motive of moving these industries to developing countries are rather their low-wages than lax environmental restrictions.

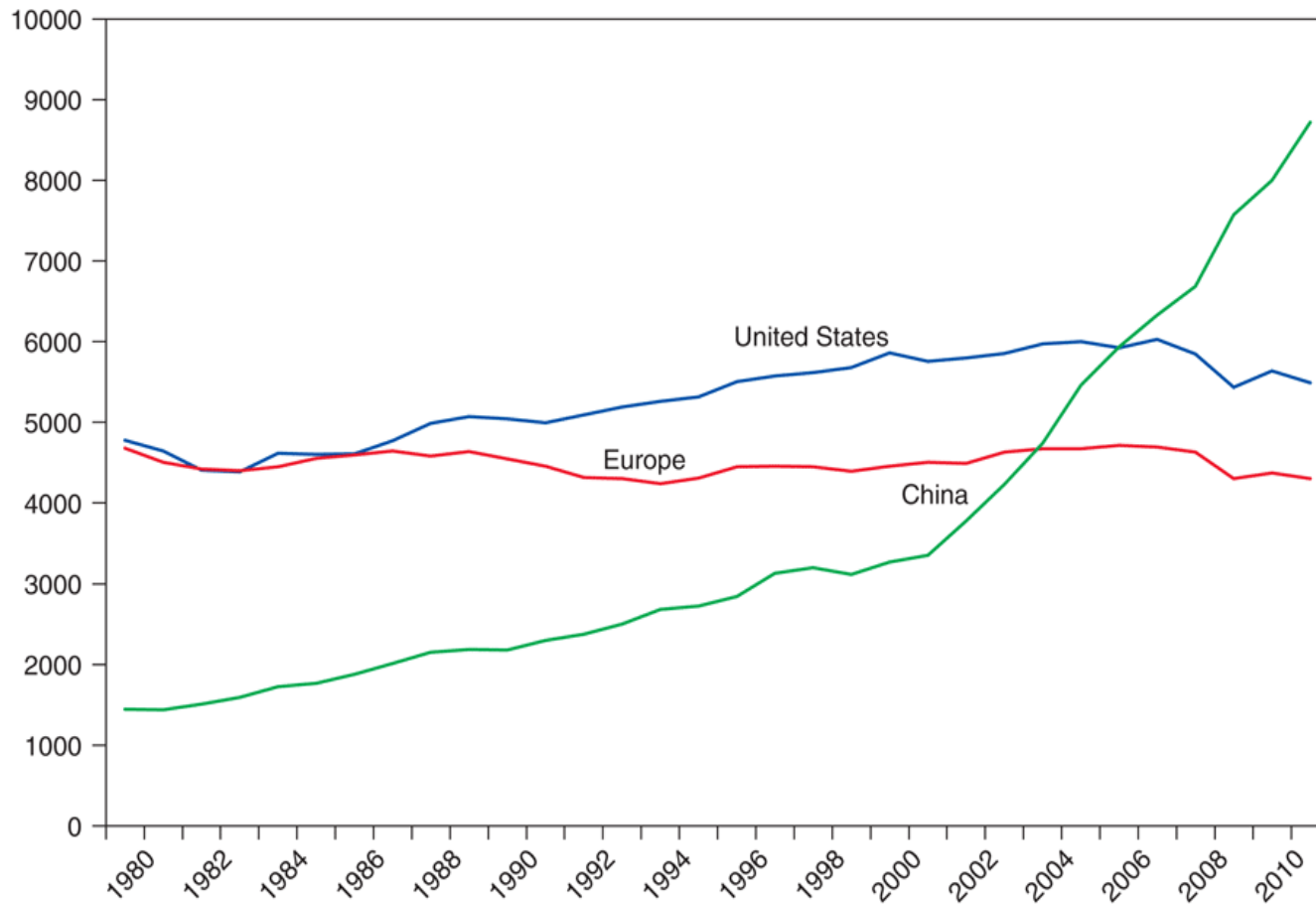


Trade and the Environment

- Pollution in some countries may cause a negative externality for other countries.
 - For example, production in China could cause air pollution in Korea (or on the West Coast of the U.S.).
- To the degree that pollution causes negative externalities for other countries, they should want to include it in international negotiations.

Fig. 12-4: Carbon Dioxide Emissions

Carbon dioxide emissions
(million metric tons)



Emissions of carbon dioxide is an example of pollution that causes a negative externality and that has been included in international negotiations.

Source: Energy Information Agency.



Summary

1. One argument for an activist trade policy is that investment in high-technology industries produces externalities for the economy.
 - But it is hard to identify which activities produce externalities and if so, to what degree they do.

2. A second argument for an activist trade policy is that governments can give domestic firms a strategic advantage in industries with excess profits.
 - But it is unclear if such a policy would succeed at giving a firm a strategic advantage or if it would be worthwhile.
 - The consequence of this policy could be foreign retaliation.
 - This policy can be manipulated by particular interests of politically powerful groups.



Summary

3. Some have proposed that trade negotiations should involve labor and environmental standards, but these standards are generally opposed by governments of low- and middle- income countries.
 - The reason is fear of developing countries that these standards would be used for protectionism.
4. The environmental Kuznets curve is an inverted “U-shaped” relation between environmental degradation and income per capita.
 - As countries grow richer, they produce and consume more, leading to more environmental degradation. But as countries grow richer even more, they want to protect the environment more.