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Chapter 5

International Trade Theory

Introduction

- International trade theory
 - explains why it is beneficial for countries to engage in international trade
 - helps countries formulate their economic policy
 - explains the pattern of international trade in the world economy

An Overview of Trade Theory

Question: What is free trade?

- Free trade refers to a situation where a government does not attempt to influence through quotas or duties what its citizens can buy from another country or what they can produce and sell to another country

An Overview of Trade Theory

Question: How has international trade theory evolved?

- Mercantilism (16th and 17th centuries) promoted the idea of encouraging exports and discouraging imports
- In 1776, Adam Smith promoted the idea of unrestricted free trade
- In the 19th century, David Ricardo built on Smith ideas, and in the 20th century, Eli Heckscher and Bertil Ohlin refined Ricardo's work

The Benefits of Trade

Question: Why is it beneficial for countries to engage in free trade?

- The theories of Smith, Ricardo and Heckscher-Ohlin show why it is beneficial for a country to engage in international trade even for products it is able to produce for itself
- International trade allows a country to specialize in the manufacture and export of products that can be produced most efficiently in that country, and import products that can be produced more efficiently in other countries

The Pattern of International Trade

- International trade theory helps explain trade patterns
 - Some patterns of trade are fairly easy to explain - it is obvious why Saudi Arabia exports oil, Ghana exports cocoa, and Brazil exports coffee
 - But, why does Switzerland export chemicals, pharmaceuticals, watches, and jewelry? Why does Japan export automobiles, consumer electronics, and machine tools?

The Pattern of International Trade

- Ricardo's theory of comparative advantage suggests that existing trade patterns are related to differences in labor productivity
- Heckscher and Ohlin's theory explains trade through the interplay between the proportions in which the factors of production are available in different countries and the proportions in which they are need for producing particular goods
- Ray Vernon suggested that trade patterns could be explained by looking at a product's life cycle

The Pattern of International Trade

- Paul Krugman developed **new trade theory** which suggests that the world market can only support a limited number of firms in some industries, and so trade will skew toward those countries that have firms that were able to capture first mover advantages
- Michael Porter focused on the importance of country factors to explain a nation's dominance in the production and export of certain products

Trade Theory and Government Policy

- While the theories all suggest that trade is beneficial, they lack agreement in their recommendations for government policy
 - Mercantilism makes a case for government involvement in promoting exports and limiting imports
 - Smith, Ricardo, and Heckscher-Ohlin promote unrestricted free trade
 - New trade theory and Porter justify limited and selective government intervention to support the development of certain export-oriented industries

Mercantilism

- **Mercantilism** (mid-16th century) asserted that it is in a country's best interest to maintain a trade surplus, to export more than it imports
 - it advocated government intervention to achieve a surplus in the balance of trade
 - it viewed trade as a **zero-sum game** (one in which a gain by one country results in a loss by another)
- Mercantilism is problematic and not economically valid, yet many political views today have the goal of boosting exports while limiting imports by seeking only selective liberalization of trade

Absolute Advantage

- In 1776, Adam Smith attacked the mercantilist assumption that trade is a zero-sum game and argued that countries differ in their ability to produce goods efficiently, and that a country has an **absolute advantage** in the production of a product when it is more efficient than any other country in producing it
- According to Smith, countries should specialize in the production of goods for which they have an absolute advantage and then trade these goods for the goods produced by other countries

Absolute Advantage

- Assume that two countries, Ghana and South Korea, both have 200 units of resources that could either be used to produce rice or cocoa
 - In Ghana, it takes 10 units of resources to produce one ton of cocoa and 20 units of resources to produce one ton of rice
 - So, Ghana could produce 20 tons of cocoa and no rice, 10 tons of rice and no cocoa, or some combination of rice and cocoa between the two extremes

Absolute Advantage

- In South Korea it takes 40 units of resources to produce one ton of cocoa and 10 resources to produce one ton of rice
- So, South Korea could produce 5 tons of cocoa and no rice, 20 tons of rice and no cocoa, or some combination in between
- Ghana has an absolute advantage in the production of cocoa
- South Korea has an absolute advantage in the production of rice

Absolute Advantage

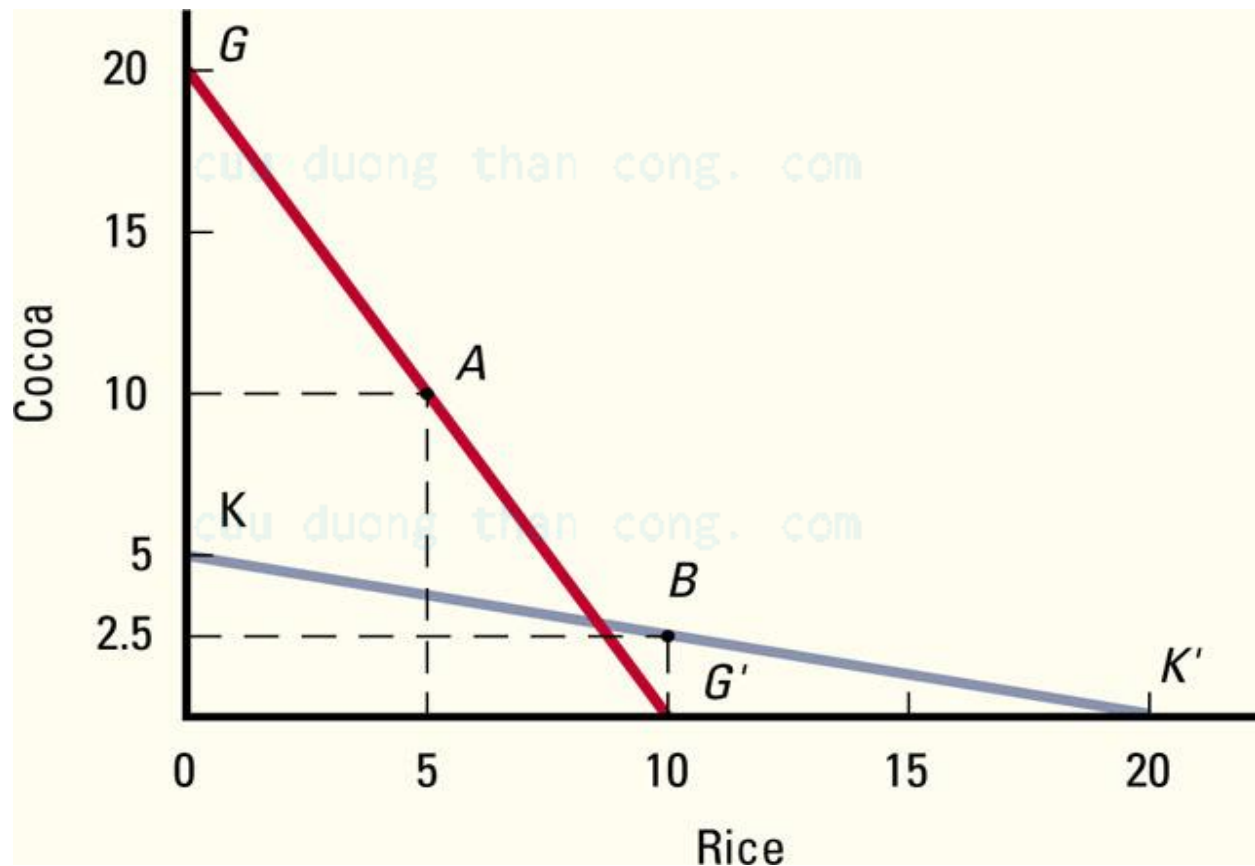
- Without trade
 - Ghana would produce 10 tons of cocoa and 5 tons of rice
 - South Korea would produce 10 tons of rice and 2.5 tons of cocoa
- If each country specializes in the product in which it has an absolute advantage and trades for the other product
 - Ghana would produce 20 tons of cocoa
 - South Korea would produce 20 tons of rice

Absolute Advantage

- Suppose
 - Ghana could trade 6 tons of cocoa to South Korea for 6 tons of rice
- After trade
 - Ghana would have 14 tons of cocoa left, and 6 tons of rice
 - South Korea would have 14 tons of rice left and 6 tons of cocoa
- Both countries gained from trade

Absolute Advantage

The Theory of Absolute Advantage



Absolute Advantage

Absolute Advantage and the Gains from Trade

Resources Required to Produce 1 Ton of Cocoa and Rice		
	Cocoa	Rice
Ghana	10	20
South Korea	40	10
Production and Consumption without Trade		
	Cocoa	Rice
Ghana	10.0	5.0
South Korea	2.5	10.0
Total production	12.5	15.0
Production with Specialization		
	Cocoa	Rice
Ghana	20.0	0.0
South Korea	0.0	20.0
Total production	20.0	20.0
Consumption after Ghana Trades 6 Tons of Cocoa for 6 Tons of South Korean Rice		
	Cocoa	Rice
Ghana	14.0	6.0
South Korea	6.0	14.0
Increase in Consumption as a Result of Specialization and Trade		
	Cocoa	Rice
Ghana	4.0	1.0
South Korea	3.5	4.0

Comparative Advantage

- In 1817, David Ricardo explored what might happen when one country has an absolute advantage in the production of *all* goods
- According to Ricardo's theory of **comparative advantage**, it makes sense for a country to specialize in the production of those goods that it produces most efficiently and to buy the goods that it produces less efficiently from other countries, even if this means buying goods from other countries that it could produce more efficiently itself

Comparative Advantage

- Assume
 - Ghana is more efficient in the production of both cocoa and rice
 - In Ghana, it takes 10 resources to produce one tone of cocoa, and $13 \frac{1}{3}$ resources to produce one ton of rice
 - So, Ghana could produce 20 tons of cocoa and no rice, 15 tons of rice and no cocoa, or some combination of the two

Comparative Advantage

- In South Korea, it takes 40 resources to produce one ton of cocoa and 20 resources to produce one ton of rice
- So, South Korea could produce 5 tons of cocoa and no rice, 10 tons of rice and no cocoa, or some combination of the two
- If each country specializes in the production of the good in which it has a comparative advantage and trades for the other, both countries will gain

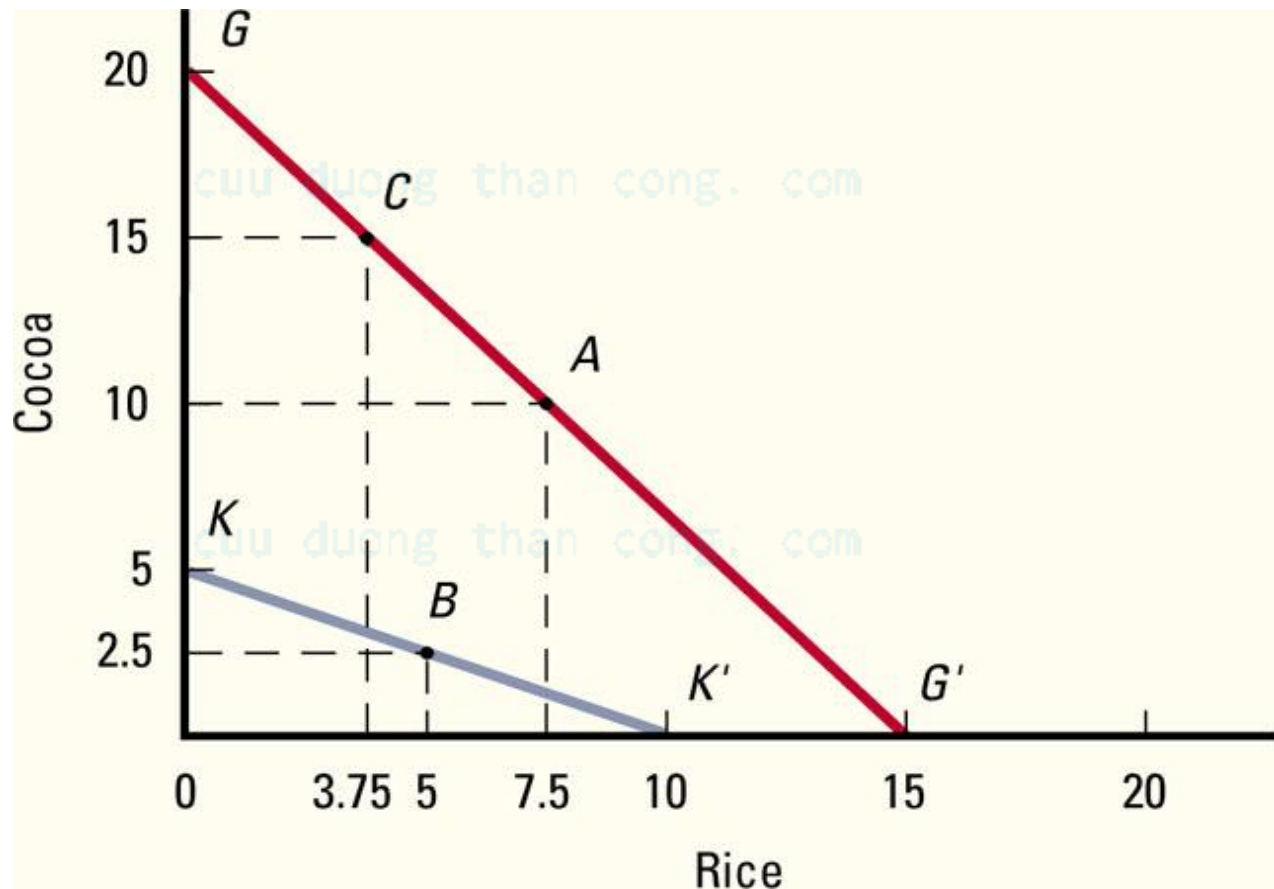
Comparative Advantage

- With trade

- Ghana could export 4 tons of cocoa to South Korea in exchange for 4 tons of rice
- Ghana will still have 11 tons of cocoa, and 4 additional tons of rice
- South Korea still has 6 tons of rice and 4 tons of cocoa

Comparative Advantage

The Theory of Comparative Advantage



Classroom Performance System

Which theory did not suggest that there could be gains from specialization and trade?

- a) Mercantilism
- b) Absolute advantage
- c) Comparative advantage
- d) Heckscher-Ohlin theory

The Gains from Trade

- The theory of comparative advantage argues that trade is a positive sum gain in which all gain
 - Potential world production is greater with unrestricted free trade than it is with restricted trade
- The theory of comparative advantage provides a strong rationale for encouraging free trade

Qualifications and Assumptions

- The simple example of comparative advantage assumes
 - only two countries and two goods
 - zero transportation costs
 - similar prices and values
 - resources are mobile between goods within countries, but not across countries
 - constant returns to scale
 - fixed stocks of resources
 - no effects on income distribution within countries

Extensions of the Ricardian Model

- Suppose the following assumptions are relaxed
 1. Resources move freely from the production of one good to another within a country
 2. There are constant returns to scale
 3. Trade does not change a country's stock of resources or the efficiency with which those resources are utilized

Extensions of the Ricardian Model

1. Immobile Resources

- Resources do not always move freely from one economic activity to another
- Governments may help retrain displaced workers

2. Diminishing Returns

- The simple model assumes **constant returns to specialization** (the units of resources required to produce a good are assumed to remain constant), but an assumption of diminishing returns is more realistic since not all resources are of the same quality and different goods use resources in different proportions

Extensions of the Ricardian Model

3. Dynamic Effects and Economic Growth

- Trade might increase a country's stock of resources as increased supplies become available from abroad
- Free trade might increase the efficiency of resource utilization, and free up resources for other uses

Extensions of the Ricardian Model

The Samuelson Critique

- Paul Samuelson argued that in some cases, dynamic gains can lead to less beneficial outcomes
 - He is concerned that the ability to offshore services jobs that were traditionally not internationally mobile may have the effect of a mass inward migration into the United States, where wages would then fall

Extensions of the Ricardian Model

The Link between Trade and Growth

- Studies exploring the relationship between trade and economic growth suggest that countries that adopt a more open stance toward international trade enjoy higher growth rates than those that close their economies to trade
 - Higher growth rates raise income levels and living standards

Heckscher-Ohlin Theory

- Heckscher and Ohlin argued that comparative advantage arises from differences in national **factor endowments** (the extent to which a country is endowed with resources such as land, labor, and capital)
 - The more abundant a factor, the lower its cost
 - Countries will export goods that make intensive use of those factors that are locally abundant, and import goods that make intensive use of factors that are locally scarce

The Leontief Paradox

- Wassily Leontief (1953) argued that since the U.S. was relatively abundant in capital, it would be an exporter of capital intensive goods and an importer of labor-intensive goods.
 - Leontief found however, that U.S. exports were less capital intensive than U.S. imports
- Possible explanations for these findings include
 - that the U.S. has a special advantage in producing products made with innovative technologies that are less capital intensive
 - differences in technology lead to differences in productivity which then drives trade patterns

Classroom Performance System

Which theory viewed trade as a zero sum game?

- a) Mercantilism
- b) Absolute advantage
- c) Comparative advantage
- d) Heckscher-Ohlin theory

The Product Life Cycle Theory

- Raymond Vernon (mid-1960s) proposed the **product life-cycle theory** suggesting that as products mature both the location of sales and the optimal production location will change affecting the flow and direction of trade
- In the mid-1960s, the wealth and size of the U.S. market gave a strong incentive to U.S. firms to develop new products

The Product Life Cycle Theory

- According to Vernon, in the early stages of a product's life cycle demand may grow in the U.S., but demand in other advanced countries is limited to high-income groups
- Therefore, it is not worthwhile for firms in those countries to start producing the new product, but it does necessitate some exports from the U.S. to those countries

The Product Life Cycle Theory

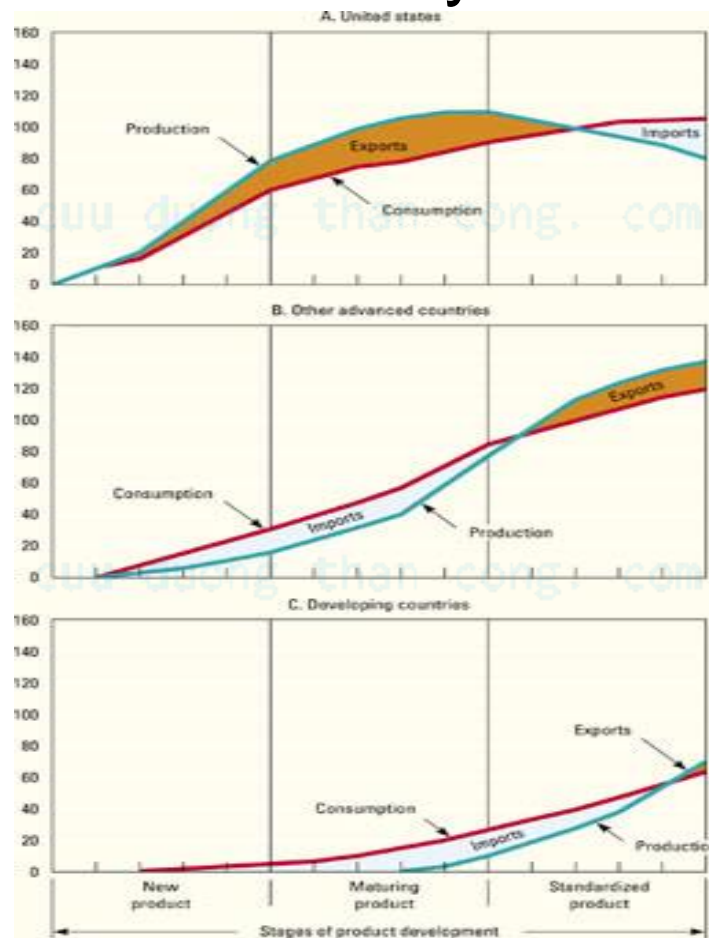
- Over time, demand for the new product starts to grow in other advanced countries making it worthwhile for foreign producers to begin producing for their home markets
- U.S. firms might also set up production facilities in those advanced countries where demand is growing limiting the exports from the U.S.
- As the market in the U.S. and other advanced nations matures, the product becomes more standardized, and price becomes the main competitive weapon

The Product Life Cycle Theory

- Producers based in advanced countries where labor costs are lower than the United States might now be able to export to the U.S.
- If cost pressures become intense, developing countries begin to acquire a production advantage over advanced countries
- The United States switches from being an exporter of the product to an importer of the product as production becomes more concentrated in lower-cost foreign locations

The Product Life Cycle Theory

The Product Life Cycle



Evaluating The Product Life Cycle Theory

- While the product life cycle theory accurately explains what has happened for products like photocopiers and a number of other high technology products developed in the US in the 1960s and 1970s, the increasing globalization and integration of the world economy has made this theory less valid in today's world
 - Today, many new products are initially introduced in Japan or Europe, or are introduced simultaneously in the U.S., Japan, and Europe
 - Production may also be dispersed to those locations where it is most favorable

New Trade Theory

New trade theory (1970s) suggests

1. Because of **economies of scale** (unit cost reductions associated with a large scale of output), trade can increase the variety of goods available to consumers and decrease the average cost of those goods
2. In those industries when the output required to attain economies of scale represents a significant proportion of total world demand, the global market may only be able to support a small number of firms

Increasing Product Variety and Reducing Costs

- Without trade
 - a small nation may not be able to support the demand necessary for producers to realize required economies of scale, and so certain products may not be produced
- With trade
 - a nation may be able to specialize in producing a narrower range of products and then buy the goods that it does not make from other countries
 - each nation then simultaneously increases the variety of goods available to its consumers and lowers the costs of those goods

Economies of Scale, First Mover Advantages and the Pattern of Trade

- Firms with **first mover advantages** (the economic and strategic advantages that accrue to many entrants into an industry) will develop economies of scale and create barriers to entry for other firms
- The pattern of trade we observe in the world economy may be the result of first mover advantages and economies of scale

Implications of New Trade Theory

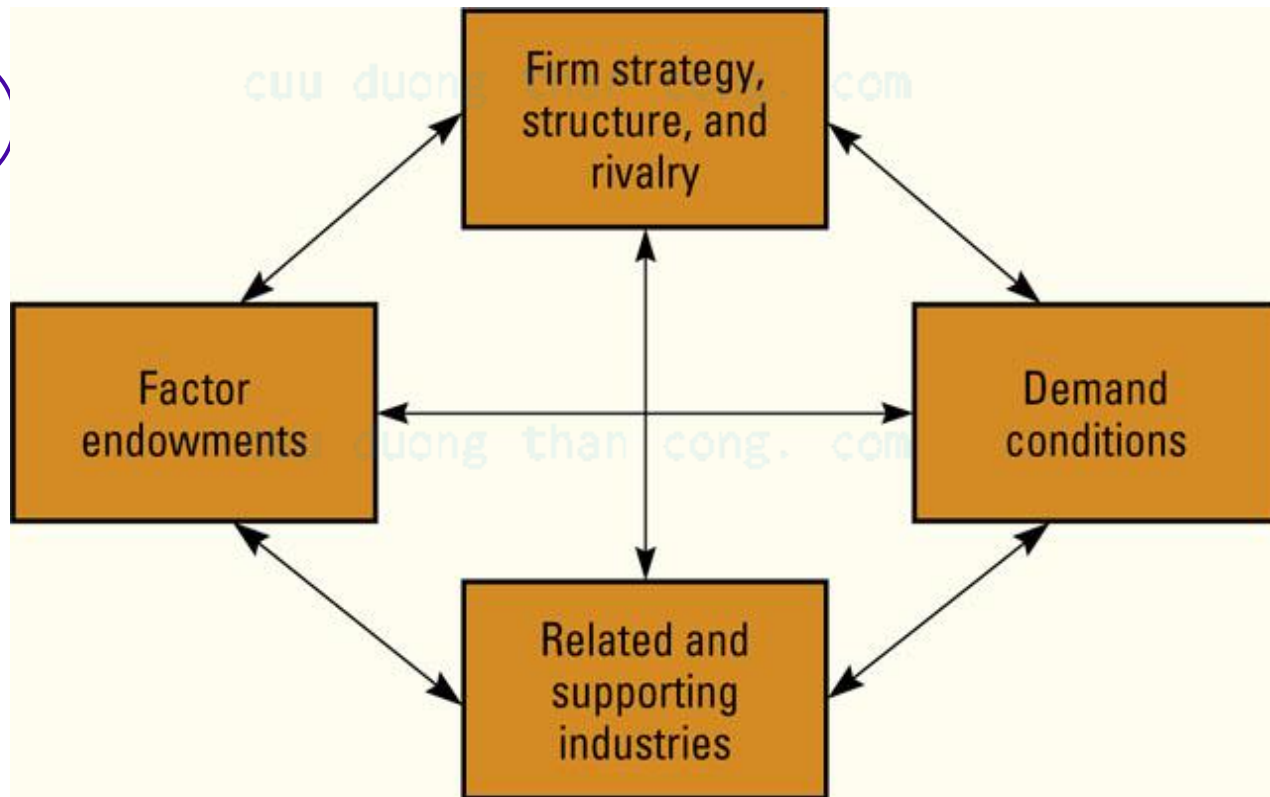
- New trade theory suggests
 - nations may benefit from trade even when they do not differ in resource endowments or technology
 - a country may predominate in the export of a good simply because it was lucky enough to have one or more firms among the first to produce that good
- Thus, new trade theory provides an economic rationale for a proactive trade policy that is at variance with other free trade theories

National Competitive Advantage: Porter's Diamond

- Porter (1990) tried to explain why a nation achieves international success in a particular industry
- Porter identified four attributes he calls the **diamond** that promote or impede the creation of competitive advantage
 1. Factor endowments
 2. Demand conditions
 3. Related and supporting industries
 4. Firm strategy, structure, and rivalry
- In addition, Porter identified two additional variables (chance and government) that can influence the diamond in important ways

National Competitive Advantage: Porter's Diamond

Determinants of National Competitive Advantage: Porter's Diamond



Factor Endowments

- A nation's position in factor endowments (factors of production) can lead to competitive advantage
- These factors can be either basic (natural resources, climate, location) or advanced (skilled labor, infrastructure, technological know-how)
- Basic factors can provide an initial advantage that is then reinforced and extended by investment in advanced factors

Demand Conditions

- Demand conditions refers to the nature of home demand for an industry's product or service
- Demand conditions influence the development of capabilities
- Sophisticated and demanding customers pressure firms to be more competitive and to produce high quality, innovative products

Related and Supporting Industries

- Related and supporting industries refers to the presence supplier industries and related industries that are internationally competitive
- Investing in these industries can spill over and contribute to success in other industries
- Successful industries tend to be grouped in clusters in countries which then prompts knowledge flows between firms
 - Having world class manufacturers of semi-conductor processing equipment can lead to (and be a result of having) a competitive semi-conductor industry

Classroom Performance System

Economies of scale and first mover advantages are central to which theory of trade

- a) Porter's diamond of competitive advantage
- b) New trade theory
- c) Vernon's product life cycle
- d) Comparative advantage

Firm Strategy, Structure, and Rivalry

- Firm strategy, structure, and rivalry refers to the conditions in the nation governing how companies are created, organized, and managed, and the nature of domestic rivalry
- Different nations are characterized by different management ideologies which influence the ability of firms to build national competitive advantage
- There is a strong association between vigorous domestic rivalry and the creation and persistence of competitive advantage in an industry

Evaluating Porter's Theory

- Porter suggests that the four attributes of the diamond together with government policy, and chance work as a reinforcing system, complementing each other and in combination creating the conditions appropriate for competitive advantage
- Porter believes that government policy can affect demand through product standards, influence rivalry through regulation and antitrust laws, and impact the availability of highly educated workers and advanced transportation infrastructure

Evaluating Porter's Theory

Question: Is Porter right?

- If Porter is correct, his model should predict the pattern of international trade in the real world
 - Countries should export products from industries where the diamond is favorable
 - Countries should import products from areas where the diamond is not favorable
- So, far there has been little empirical testing of the theory

Implications for Managers

Question: What are the implications of international trade theory for international businesses?

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○ There are at least three main implications for international businesses

1. Location implications
2. First-mover implications
3. Policy implications

Location

- Different countries have advantages in different productive activities
 - These differences influence a firm's decision about where to locate productive activities
 - It makes sense for a firm to disperse its various productive activities to those countries where they can be performed most efficiently

First-Mover Advantages

- Firms that establish a first-mover advantage in the production of a new product may later dominate global trade in that product
 - It can be worthwhile for a firm to invest resources in trying to build first-mover advantages, even if it means losses for a few years before a venture becomes profitable

Government Policy

- Government policies with respect to free trade or protecting domestic industries can significantly impact global competitiveness
 - Businesses should work to encourage governmental policies that support free trade

Classroom Performance System

Porter's Diamond is made up of all of the following except

- a) Factor endowments
- b) Related and supporting industries
- c) Firm strategy, structure, and rivalry
- d) Supply conditions

Critical Discussion Question

1. “Mercantilism is a bankrupt theory that has no place in the modern world.”
Discuss.

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Critical Discussion Question

2. Is free trade fair? Discuss!

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Critical Discussion Question

3. Unions in developed nations often oppose imports from low-wage countries and advocate trade barriers to protect jobs from what they often characterize as “unfair” import competition. Is such competition “unfair?” Do you think that this argument is in the best interests of (a) the unions, (b) the people they represent, and/or (c) the country as a whole?

Critical Discussion Question

4. What are the potential costs of adopting a free trade regime? Do you think governments should do anything to reduce these costs? What?

Critical Discussion Question

5. Reread the Country Focus on “Is China a Neo-Mercantilist Nation?”

a) Do you think China is pursuing an economic policy that can be characterized as neo-Mercantilist?

b) What should the United States, and other countries, do about this?

Critical Discussion Question

6. Drawing upon the new trade theory and Porter's theory of national competitive advantage, outline the case for government policies that would build national competitive advantage in biotechnology. What kind of policies would you recommend that the government adopt? Are these policies at variance with the basic free trade philosophy?

Critical Discussion Question

7. The world's poorest countries are at a competitive disadvantage in every sector of their economies. They have little to export. They have no capital; their land is of poor quality; they often have too many people given available work opportunities; and they are poorly educated. Free trade cannot possibly be in the interests of such nations! Discuss.