International Trade and International Finance

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Preface

International Economics has come in two separate parts that reflect the microeconomics and macroeconomics. 'International Trade' is based on microeconomics reasoning in terms of comparative advantage, economies of scale and product differentiation. 'International Finance' is largely conceptualized in terms of 'open-economy macroeconomics' which set the focus on exchange-rate regimes, stabilization policies and financial capital flows. The history of economics is full of different attempts to bridge the gaps between international trade and international finance.

The aim of "International Trade and International Finance" course is to give students a comprehensive understanding of the relevant economic theory and empirical evidence. The lectures will introduce some key ideas on international trade and finance. I will provide a formal discussion of the Ricardian model of trade, which contains one of the great insights in Economics that what matters for the gains from trade to occur is comparative advantage and not absolute advantage. I will introduce the Heckscher–Ohlin model of trade where endowment differences among countries play a key role in determining the pattern of trade. An important result in this discussion is that international trade can produce winners and losers.

Increasing returns and trade are essential concept of this course. I will focus on the Krugman model or the model of trade based on internal economies of scale in production. It shows how countries can gain from trade even in a world where countries have identical endowments and technologies, provided that production functions exhibit increasing returns to scale and consumers have a love for variety. I will also develop a discussion of the various commercial policy instruments, such as tariffs, quotas and export subsidies, that countries use to intervene in trade. Next, we will study the economics of preferential trading agreements, and the concluding chapter provides a history of multilateral trading agreements under the aegis of GATT

(General Agreement on Tariffs and Trade) and its evolution into the World Trade Organization (WTO).

Syllabus of (International Trade and Intenational Finance)

0.0.0.0.1 * Section 1: Introduction to International Economics

- Lecture 1: Basics of International Economics
- Lecture 2: Introduction to International Trade
- Lecture 3: Reasons behind International Trade
- Lecture 4: International Trade Models

0.0.0.0.2 * Section 2: International Trade Policy

- Lecture 5: The Instruments of Trade Policy
- Lecture 6: The Political Economy of Trade Policy
- Lecture 7: Trade Policy in Developing Countries
- Lecture 8: Controversies in Trade Policy

0.0.0.0.3 * Section 3: Open-Economy Macroeconomics

- Lecture 9: National Income Accounting
- Lecture 10: Exchange Rates and the Foreign Exchange Market
- Lecture 11: Money, Interest Rates, and Exchange Rates
- Lecture 12: Fixed Exchange Rates and Foreign Exchange Intervention

0.0.0.0.4 * Section 4: International Macroeconomic Policy

- Lecture 13: International Monetary Systems
- Lecture 14: Financial Globalization
- Lecture 15: Developing Countries Growth, Crisis, and Reform

Course logistic

Class schedule in third quarter:

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-   Monday from 13:30 JST
-   Thursday from 13:30 JST
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Class room: **A108**, Eikokuji Campus, Kochi University of Technology

Grading

Your grade evaluation will depend on following three factors:

Performance	Weight
a. Attendance and answering the quizzes	20%
b. Answering the assignments (Five problem sets)	30%
c. Final examination (TBA)	50%

Instructor

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Email address:

- For the submission of assignments and quizzes: **`trade.moinul@gmail.com`**

Office hours: By appointment, please email

1 Basics of International Economics

1.1 What is International economics?

- International Economics is the study of economic interactions between countries.
- The world is rapidly globalizing and this is providing many opportunities and major challenges to the nations and people of the world.
- We will study international economics with a brief overview of the globalization revolution taking place in the world today.

1.2 What is international economics about?

- International economics consists of two main classifications:
  - International trade (Microeconomics)
  - International finance (Macroeconomics)

Comparision	International_Trade	International_Finance
Economics	Microeconomics	Macroeconomics
Employment	Full employment	Under employment
Savings	No savings	Savings
Trade	Balance	Imbalance
Money	Real transaction	Monetary transaction

1.3 Why study international trade?

- Production technologies do not flow easily across borders. There are massive differences in production technologies across countries.
- The use of some technologies is tied to human capital which can not be transferred across countries.
- Government institutions have a huge impact on the effectiveness of different technologies.

1.4 What are the subjects to focus in international trade?

- Seven themes recur throughout the study of international economics:

  a. The gains from trade
  b. The pattern of trade
  c. Protectionism
  d. The balance of payments
  e. Exchange rate determination
  f. International policy coordination
  g. The international capital market

1.5 What is globalization?

- Increase in international transactions in markets for goods, services, and factors
- Growth and expanded scope of international institutions and organizations, for instance, UN, World Bank, IMF, WTO
- How can globalization be measured?
  - Trade flows: exports and imports of goods
  - Trade in services: transportation, healthcare, telecommunications, business services
  - Foreign asset ownership
  - Immigration
  - Price convergence: Possibility of trade may have important effects

1.6 Globalization and international trade

- Globalization is the process of interaction and integration among people, companies, and governments worldwide.
- Globalization has accelerated since the 18th century due to advances in transportation and communications technology.
- This increase in global interactions has caused a growth in international trade.

Text book: Paul Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics*, 12th edition

2 Introduction to International Trade

2.1 The gains from trade

- Probably the most important single insight in all of international economics is that there are gains from trade that is, when countries sell goods and services to each other, this exchange is almost always to their mutual benefit.
- Although nations generally gain from international trade, it is quite possible that international trade may hurt particular groups within nations—in other words, that international trade will have strong effects on the distribution of income.

  Trade can alter the distribution of income between workers and the owners of capital.

2.2 The pattern of trade

- Some aspects of the pattern of trade are easy to understand. Climate and resources clearly explain why Brazil exports coffee and Saudi Arabia exports oil.
- Why does Japan export automobiles, while the United States exports aircraft?
- There are various different models that try to explain the reason behind the pattern of trade.

  "Who sells what to whom" have been a major question of international economics.

2.3 Determinents of trade

- After World War II the advanced democracies, led by the United States, pursued a broad policy of removing barriers to international trade; this policy reflected the view that free trade was a force not only for prosperity but also for promoting world peace.
- In 2016, Britain shocked the political establishment by voting to leave the European Union, which guarantees free movement of goods and people among its members.

Conflicts of interest within nations are usually more important in determining trade policy than conflicts of interest between nations.

2.4 Balance of payments

- The balance of payments (BOP) tracks international transactions. When funds go into a country, a credit is added to the balance of payments ("BOP"). When funds leave a country, a deduction is made.
- The balance of payments includes both the current account and capital/financial account.
  - The current account (CA) includes a nation's net trade in goods and services, its net earnings on cross-border investments, and its net transfer payments.
  - The capital/financial account (FA) consists of a nation's transactions in financial instruments and central bank reserves.
  - The sum of all transactions recorded in the balance of payments should be zero; however, exchange rate fluctuations and differences in accounting practices may hinder this in practice.

The BOP has become a central issue for the United States because the nation has run huge trade deficits every year since 1982.

2.5 What is trade?

- Buying and selling goods and services from other countries. Trade consist of imports (M) and exports (X). For instance, in the context of Japan:
  - The purchase of goods and services from abroad that leads to an outflow of currency from Japan – Imports (M)
  - The sale of goods and services to buyers from other countries leading to an inflow of currency to Japan – Exports (X)

2.6 Labor Intensive and capital intensive industries

2.6.1 What Is labor intensive industry?

- The term labor intensive refers to a process or industry that requires a large amount of labor to produce its goods or services.

- The degree of labor intensity is typically measured in proportion to the amount of capital required to produce the goods or services: the higher the proportion of labor costs required, the more labor-intensive the business.
- Labor-intensive industries include restaurants, hotels, agriculture, mining, as well as healthcare and caregiver.
- Less developed economies, as a whole, tend to be more labor-intensive. This situation is rather common because low income means that the economy or business cannot afford to invest in expensive capital.
- Before the industrial revolution, 90% of the workforce was employed in agriculture. Producing food was very labor-intensive.

2.6.2 What is capital intensive industry?

- Capital intensive refers to the production that requires higher capital investment such as financial resources, sophisticated machinery, more automated machines, the latest equipment, etc.
- Capital intensive industries pose higher barriers to entry as they require more investment in equipment and machinery to produce goods and services.
- Good examples of capital intensive industries include the oil refining industry, telecommunications industry, airline industry, and public transport authorities that maintain the roads, railways, trains, trams, etc.

2.6.3 Differences between capital intensive and labor intensive industries

- Capital intensive and labor intensive refer to types of production methods followed in the production of goods and services.
- Capital intensive production requires more equipment and machinery to produce goods; therefore, require a larger financial investment.
- Labor intensive refers to production that requires a higher labor input to carry out production activities in comparison to the amount of capital required.

Reference: Chapter 1- Introduction (Paul Krugman, Maurice Obstfeld, and Marc Melitz, *International Economics*, 12th edition)

3 Reasons of International Trade

3.1 Basic reasons behind trade?

- Countries engage in international trade for two basic reasons
  - They are different from each other in terms of climate, land, capital, labor, and technology.
  - They try to achieve scale economies in production.

3.2 Trade based on absolute advantage: Adam Smith

- The theory of absolute advantage, developed by Adam Smith. He started with the simple truth that for two nations to trade with each other voluntarily, both nations must gain. If one nation gained nothing or lost, it would simply refuse to trade. But how does this mutually beneficial trade take place, and from where do these gains from trade come?
- According to Adam Smith, trade between two nations is based on absolute advantage. When one nation is more efficient than (or has an absolute advantage over) another in the production of one commodity but is less efficient than (or has an absolute disadvantage with respect to) the other nation in producing a second commodity, then both nations can gain by each specializing in the production of the commodity of its absolute advantage and exchanging part of its output with the other nation for the commodity of its absolute disadvantage.
- By this process, resources are utilized in the most efficient way and the output of both commodities will rise. This increase in the output of both commodities measures the gains from specialization in production available to be divided between the two nations through trade.
- For example, because of climatic conditions, Canada is efficient in growing wheat but inefficient in growing bananas (hothouses would have to be used). On the other hand, Nicaragua is efficient in growing bananas but inefficient in growing wheat. Thus, Canada has an absolute advantage over Nicaragua in the cultivation of wheat but an absolute dis- advantage in the cultivation of bananas. The opposite is true for Nicaragua.

- Under these circumstances, both nations would benefit if each specialized in the production of the commodity of its absolute advantage and then traded with the other nation. Canada would specialize in the production of wheat (i.e., produce more than needed domestically) and exchange some of it for (surplus) bananas grown in Nicaragua. As a result, both more wheat and more bananas would be grown and consumed, and both Canada and Nicaragua would gain.
- Thus, while the mercantilists believed that one nation could gain only at the expense of another nation and advocated strict government control of all economic activity and trade, Adam Smith (and the other classical economists who followed him) believed that all nations would gain from free trade and strongly advocated a policy of `laissez-faire` (i.e., as little government interference with the economic system as possible).
- Free trade would cause world resources to be utilized most efficiently and would maximize world welfare. There were to be only a few exceptions to this policy of `laissez-faire` and free trade. One of these was the protection of industries important for national defense.

  In view of this belief, it seems paradoxical that today most nations impose many restrictions on the free flow of international trade.

3.2.1 Example of absolute advantage:

- one hour of labor time produces six kilograms of wheat in the United States but only one in the United Kingdom.
- On the other hand, one hour of labor time produces five units of cloths in the United Kingdom but only four in the United States.
- Thus, the United States is more efficient than, or has an absolute advantage over, the United Kingdom in the production of wheat, whereas the United Kingdom is more efficient than, or has an absolute advantage over, the United States in the production of cloth.
- With trade, the United States would specialize in the production of wheat and exchange part of it for British cloth. The opposite is true for the United Kingdom.

Table 3.1: Absolute advantage

	USA	UK
Wheat	6	1
Cloth	4	5

Absolute advantage, however, can explain only a very small part of world trade today, such as some of the trade between developed and developing countries. Most of world trade, especially trade among developed countries, could not be explained by absolute advantage.

3.3 Trade based on comparative advantage: David Ricardo

- David Ricardo, writing some 40 years after Smith, to truly explain the pattern of and the gains from trade with his law of comparative advantage.
- The law of comparative advantage is one of the most important laws of economics, with applicability to nations as well as to individuals and useful for exposing many serious fallacies in apparently logical reasoning.

3.3.1 The law of comparative advantage

- According to the law of comparative advantage, even if one nation is less efficient than the other nation in the production of both commodities, there is still a basis for mutually beneficial trade. The first nation should specialize in the production and export of the commodity in which its absolute disadvantage is smaller (this is the commodity of its comparative advantage) and import the commodity in which its absolute disadvantage is greater.
- The statement of the law can be clarified by looking at Table 3.2. The only difference between Tables 3.2 and 3.1 is that the United Kingdom now produces only two units of cloth per hour instead of five. Thus, the United Kingdom now has an absolute disadvantage in the production of both wheat and cloth with respect to the United States.
- However, since U.K. labor is half as productive in cloth but six times less productive in wheat with respect to the United States, the United Kingdom has a comparative advantage in cloth.
- On the other hand, the United States has an absolute advantage in both wheat and cloth with respect to the United Kingdom, but since its absolute advantage is greater in wheat (6:1) than in cloth (4:2), the United States has a comparative advantage in wheat.
- According to the law of comparative advantage, both nations can gain if the United States specializes in the production of wheat and exports some of it in exchange for British cloth. At the same time, the United Kingdom is specializing in the production and exporting of cloth.

Table 3.2: Comparative advantage

	USA	UK
Wheat	6	1
Cloth	4	2

3.4 Detail analysis of comparative advantage

- On Valentine's Day the U.S. demand for roses is about 10 million roses.
  - Growing roses in the U.S. in the winter is difficult. Heated greenhouses should be used. The costs for energy, capital, and labor are substantial.
  - Resources for the production of roses could be used to produce other goods, say computers.

`Opportunity cost`: The opportunity cost of roses in terms of computers is the number of computers that could be produced with the same resources as a given number of roses.

3.4.1 Gains from trade due to comparative advantage

- Suppose that in the U.S., 10 million roses can be produced with the same resources as 100,000 computers.
- Suppose also that in Mexico, 10 million roses can be produced with the same resources as 30,000 computers.

Table 3.3: Example of comparative advantage

	Million roses	Thousand computers
U.S	-10	+100
Mexico	+10	-30
Total	0	+70

3.5 The opportunity cost theory

- According to the opportunity cost theory, the cost of a commodity is the amount of a second commodity that must be given up to release just enough resources to produce one additional unit of the first commodity.

- The nation with the lower opportunity cost in the production of a commodity has a comparative advantage in that commodity.
- For example, if in the absence of trade the United States must give up two-thirds of a unit of cloth to release just enough resources to produce one additional unit of wheat domestically, then the opportunity cost of wheat is two-thirds of a unit of cloth.

3.6 The Production Possibility Frontier (PPF) under constant costs

- Opportunity costs can be illustrated with the production possibility frontier, or transformation curve. The production possibility frontier is a curve that shows the alternative combinations of the two commodities that a nation can produce by fully utilizing all of its resources with the best technology available to it.

Table 3.4: Production possibility frontier of Wheat and Cloth production

USA		UK	
Wheat	Cloth	Wheat	Cloth
180	0	60	0
150	20	50	20
120	40	40	40
90	60	30	60
60	80	20	80
30	100	10	100
0	120	0	120

- Table 3.4 gives the (hypothetical) production possibility schedules of wheat (in million kg/year) and cloth (in million units/year) for the United States and the United Kingdom.
- The United States and United Kingdom production possibility schedules given in Table 3.4 are graphed as production possibility frontiers in Figure 3.1. Each point on a frontier represents one combination of wheat and cloth that the nation can produce.

3.7 The Basis for and the Gains from Trade under Constant Costs

- In the absence of trade, a nation can only consume the commodities that it produces. As a result, the nation's production possibility frontier also represents its consumption frontier.

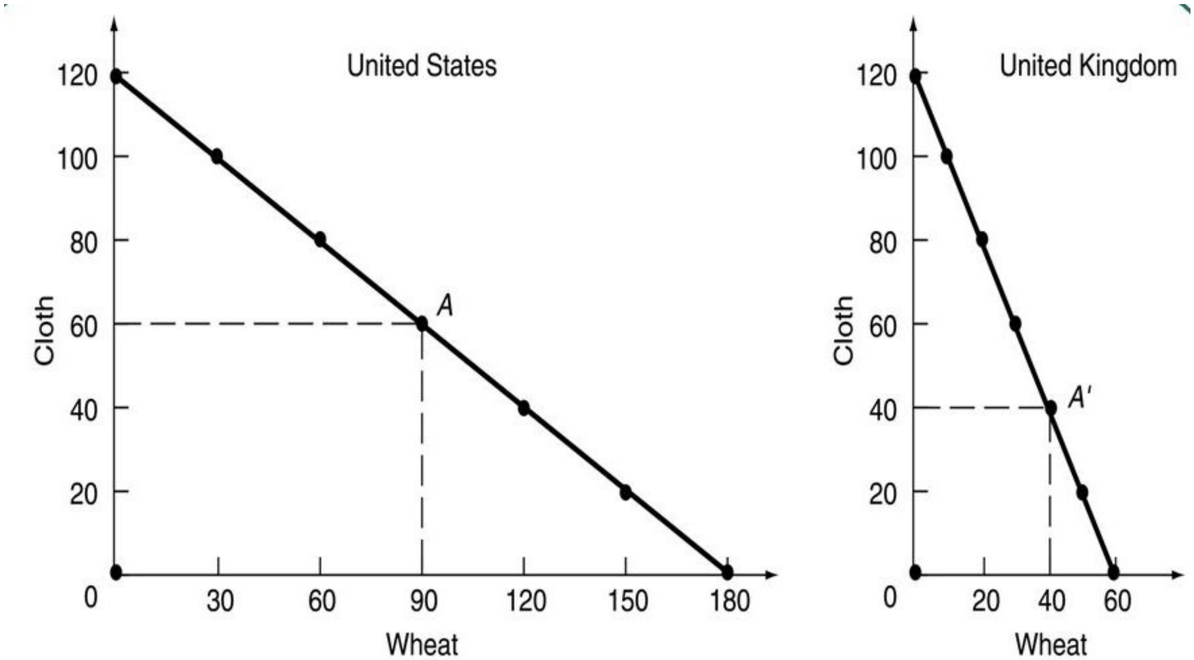

Figure 3.1: Figure 3.1: The Production Possibility Frontiers of the United States and the United Kingdom.

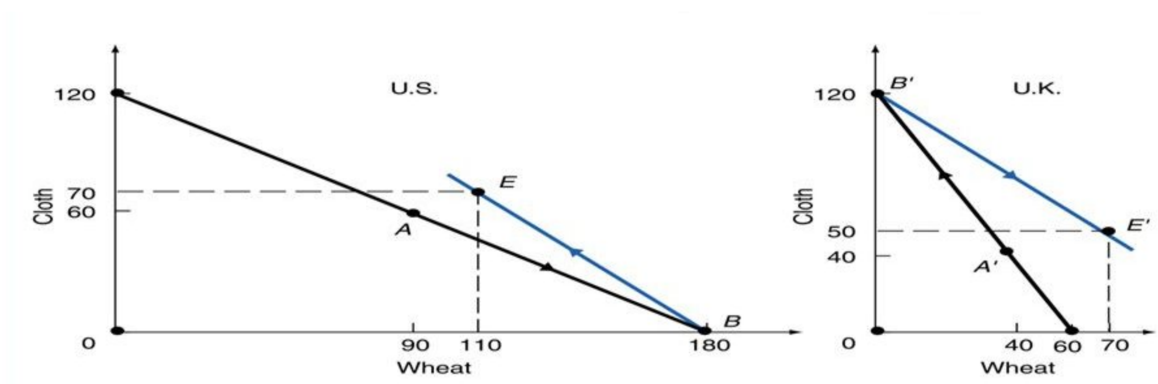

Figure 3.2: Figure 3.2: The gains from trade

- In the absence of trade, the United States might choose to produce and consume combination A (90W and 60C) on its production possibility frontier (see Figure 2.2), and the United Kingdom might choose combination A' (40W and 40C).
- In the absence of trade, the United States produces and consumes at A , and the United Kingdom at A' . With trade, the United States specializes in the production of wheat and produces at B , while the United Kingdom specializes in the production of cloth and produces at B' . By exchanging 70W for 70C with the United Kingdom, the United States ends up consuming at E (and gains 20W and 10C), while the United Kingdom ends up consuming at E' (and gains 30W and 10C).
- The increased consumption of both wheat and cloth in both nations was made possible by the increased output that resulted as each nation specialized in the production of the commodity of its comparative advantage.

Reference: Chapter 2- Salvatore, D. (2016). *International Economics.* John Wiley & Sons.

4 International Trade Models

4.1 The Ricardian model of international trade

- The Ricardian model of international trade states that the main reason why countries trade is that different countries have different productivity (or technologies) for producing different goods and services.
- It shows how countries can gain from exporting goods that they are relatively better at making and importing goods that they are relatively worse at making.

4.1.1 The Ricardian theory

- The Ricardian theory of comparative advantage is based on the idea that if there are technological differences in the production of goods across countries,
- Countries can gain from trade by exporting goods for which the country has a lower opportunity cost of production and importing goods for which the country's opportunity costs of production are higher.
- The model can be understood using a two-country, two-good and one factor of production example.
- Suppose that the two countries are Home(h) and Foreign(f) and the two goods are Bread (b) and Cloth (c).
- The lone factor of production is labor (L).
- The production of one unit of each good in each country requires a certain amount of labor which is called the unit labor requirement.

Let's denote,

- The unit labor requirement in `Home` by hL_i
- The unit labor requirement in `Foreign` by fL_i
- Here $i = b$, c
  - b denotes `Bread` and c denotes `Cloth`

To fix ideas, let us work with the following numbers:

- $hL_b = 1$, $hL_c = 2$, $fL_b = 4$ and $fL_c = 3$

4.2 Heckscher–Ohlin model of trade

- The Heckscher–Ohlin model of trade states that endowment differences among countries play a key role in determining the pattern of trade.

4.3 The Krugman model of trade

- The Krugman model or the model of trade based on internal economies of scale in production.
- It shows how countries can gain from trade even in a world where countries have identical endowments and technologies, provided that production functions exhibit increasing returns to scale and consumers have a love for variety.

4.4 The gravity model

- Let's begin by describing who trades with whom. An empirical relationship known as the gravity model helps to make sense of the value of trade between any pair of countries and sheds light on the impediments that continue to limit international trade even in today's global economy.
- Three of the top 15 U.S. trading partners are European nations: Germany, the United Kingdom, and France. Why does the United States trade more heavily with these three European countries than with others? The answer is that these are the three largest European economies. That is, they have the highest values of gross domestic product (GDP), which measures the total value of all goods and services produced in an economy.

  There is a strong empirical relationship between the size of a country's economy and the volume of both its imports and its exports.

5 The Instruments of Trade Policy

Content creation is in progress...

6 The Political Economy of Trade Policy

Content creation is in progress...

7 Trade Policy in Developing Countries

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