Eco 354

International Economics

Eshragh Motahar/Spring 2026

This course operates under two fundamental principles: transparency and accountability. Every effort will be made to adhere to the terms of this syllabus. However, changes and adaptations might have to be made because of unforeseen circumstances *(force majeure)*. I will give you written notice of those changes.

OFFICE INFORMATION

- *Hours:* Office hours, Tuesdays and Thursdays, 4:00-5:30 PM and by appointment; click here, or contact me *via* e-mail or voice mail.
- *Location:* Lippman Hall, Room 218
- *Telephone:* 518.388.6065
- *E-mail:* motahare@union.edu

A. COURSE

International economics is about issues raised by the special problems of economic interaction among sovereign states. The study of these problems falls into two broad categories: *international trade* and *international money*. In the area of international trade, we will study topics such as gains from trade, the pattern of trade, protectionism, and international migration of labor and capital. We will also study new views on the political economy of trade policy, and strategic trade policy. In the area of international money, we will study topics such as exchange rate determination, balance of payments, and international capital markets. We will also place the course material in the wider context of current geo-economic and geopolitical dynamics.

B. TEXTBOOK

Paul R. Krugman, Maurice Obstfeld, and Marc J. Melitz, *International Economics: Theory and Policy,* Twelfth Edition, Pearson, 2022.

The textbook is required. You might benefit from the accompanying *MyEconLab.* However, the latter is not required.

C. WORK

1. The lectures will be based on the entire textbook. However, we will not be able to cover all chapters in equal detail. Specific reading assignments from the Textbook, guidance about *MyEconLab*, plus additional readings, will be announced in class, and posted at this website, at appropriate times. The plan is to focus on the following chapters: 1-8, 10, 12, and 13-14.

2. From time to time, newspaper, journal, or web articles which are of special relevance to this course will be assigned as additional reading material. All of this material will be regarded as an integral part of the course. You should also familiarize yourself with, and use, those Internet resources that are related to issues in international economics. In particular, check the website dedicated to the textbook, as well as the sites mentioned on the homepage for this course.

3. **How to study for this course.** It is absolutely essential that you keep up with the course work as we go along. Study in a gradual and steady manner from day one, and utilize office hours (if you need them) in the same fashion. Last-minute cramming will not work. With this in mind, please note that there will be **no review sessions** prior to the midterm or the final exams.

D. EXAMINATIONS, HOMEWORK ASSIGNMENTS, AND GRADING POLICY

There will be two examinations and two homework assignments, as follows:

1. Examinations

• Mid-term Examination	Thursday, April 30	30% of course grade
• Final Examination	TBA	30% of course grade

The exams will include questions on topics that will **not** have been covered in class, but which are covered in assigned readings.

2. Homework Assignments

1. Distributed: Tuesday, April 7	Due: Thursday, April 16	20% of course grade
2. Distributed: Tuesday, May 12	Due: Thursday, May 21	20% of course grade

The assignments, in **pdf format**, are due at the *beginning of class.* For late submissions see section *3.a* below.

3. Other Matters

a. There is a penalty for late submission of homework assignments: it is one point per hour. Fractions of an hour are rounded to the nearest hour. The **entire** homework assignment, **in one file**, must be submitted at the submission time; that is, partial submissions are **not** acceptable.

b. The dates of examinations and homework assignments are announced on the first day of classes so that you can plan accordingly. There will be no changes in these dates unless you notify me by Friday, April 10th, that you have concerns with these dates. If because of an ***extreme emergency*** you are unable to take an examination or submit an assignment at the above-announced dates and times, you must (i) inform the Dean of Students and me *ahead of time* (or, in case of incapacity, have someone else contact us), and (ii) contact me subsequently so that, ***conditional on certification of the nature of emergency by the Dean of Students***, arrangements can be made for a make-up examination or late submission. If the above procedures are not followed, your grade on that examination, or assignment, will be zero. Please note that it is YOUR responsibility, NOT the professor's, to make ALL the necessary arrangements.

c. **Accommodative Arrangements**. Any student with a documented disability needing academic adjustments or accommodations is **required** to notify me, **and to make the necessary arrangements with me via e-mail**, by no later than **5:00 PM on April 10th, 2026**. Requests made after this date will not be honored (unless a case is made as to why the deadline was not met). All discussions will remain confidential.

d. Since adequate ways of assessing students' performance are already instituted (*i.e.*, the two examinations and the two homework assignments), *no additional work of any kind* will be accepted as a means of improving grades.

e. **Professional Conduct.** You are required to adhere to the following professional code of conduct during class sessions. It is in your best interest to **drop this course** if you are unable and/or unwilling to adhere to

this code. "In order for everyone to benefit from the educational process in an appropriate environment, adherence to professional conduct during class sessions is expected. Eating, late arrival, leaving the class session while it is in progress, conversation which interferes with session activity, and similar unprofessional conduct is not acceptable. **Such conduct will lead to point deductions (one point per occurrence) from your course grade.**" The use of ***any electronic devices*** during the class sessions is ***not allowed*** unless you obtain prior permission from me. Unauthorized use of electronic devices will be subject to the same penalty points as above. (Electronic devices include, but are not limited to: cellphones, laptops, notebooks, iPads and iPad-like devices, Apple watches, etc.)

f. **Responsibility.** It is *your* responsibility to know course/class and college policies. College rules and regulations governing issues such as academic honesty apply to examinations as well as homework assignments (see the relevant sections of the *Student Handbook*). Cheating of any kind, including plagiarism, will result in serious penalties. The College's **Honor Code** is now in effect. "Union College recognizes the need to create an environment of mutual trust as part of its educational mission. Responsible participation in an academic community requires respect for and acknowledgement of the thoughts and work of others, whether expressed in the present or in some distant time and place. Matriculation at the College is taken to signify implicit agreement with the Academic Honor Code, available at honorcode.union.edu. It is each student's responsibility to ensure that submitted work is his or her own and does not involve any form of academic misconduct. Students are expected to ask their course instructors for clarification regarding, but not limited to, collaboration, citations, and plagiarism. Ignorance is not an excuse for breaching academic integrity.

Students are also required to affix the full Honor Code Affirmation, or the following shortened version, on each item of coursework submitted for grading: ``I affirm that I have carried out my academic endeavors with full academic honesty. [Signed, Jane Doe]"

All course material, including any course-related announcements, will be posted at this website (http://minerva.union.edu/motahare/Eco354/Eco354.htm). So, please make sure to check it regularly.

 Eco 354 Home

Last revised: Wednesday, March 25, 2026

Eco 354 Eshragh Motahar
International Economics Spring 2026
Office Hours: Tuesdays and Thursdays, 4:00-5:30, and by appointment. Telephone: 388-6065. E-mail: motahare@union.edu

Introduction to International Economics

The Gravity Model

• international trade

-gains from trade, patterns of trade, comparative advantage
-resources and trade
-economies of large-scale production
-randomness in international trade patterns
-international migration of labor and capital
-protectionism

• international money

-balance of payments
-exchange rate determination
-international capital markets

• political economy of trade policy

• international macroeconomic policy coordination

• Who trades with whom?

-the Gravity Model

• The changing pattern of world trade

-multinational corporations and outsourcing

● Check the summary and key terms at the end of each chapter. Also, do the problems at the end of each chapter.

Reading Assignment

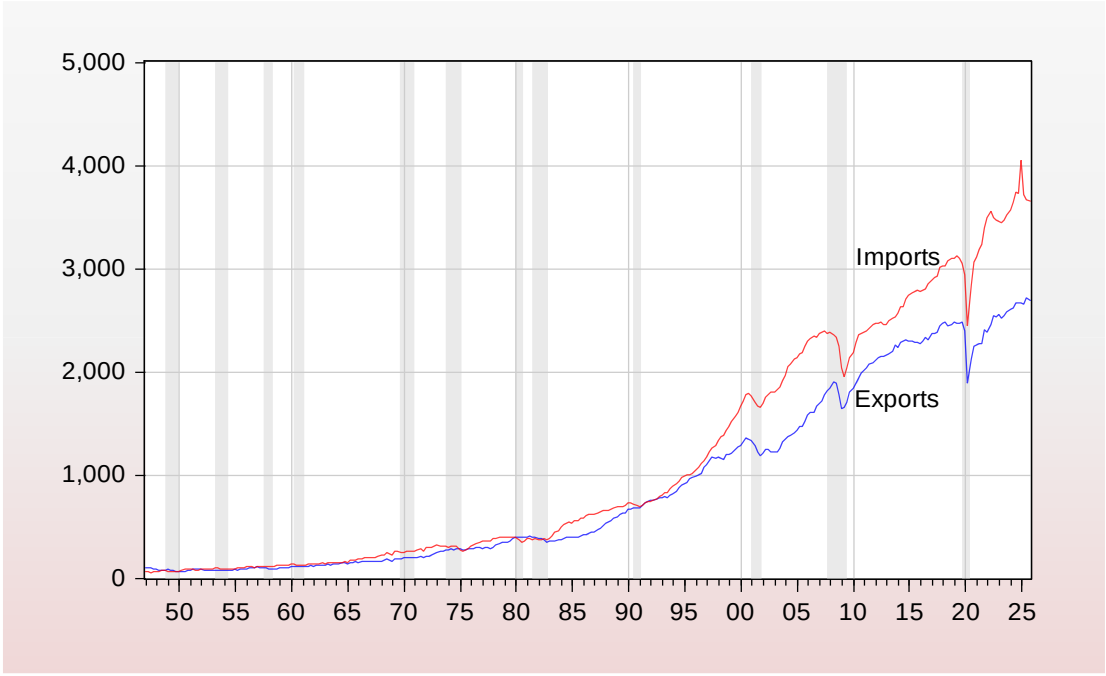
Chapters 1 and 2. (Recall that the textbook is required, while *MyEconLab* is optional.) For this and subsequent assignments, **ALL** of the material in each chapter (including boxes, sidebars, summary, key terms, questions, etc.) is required.

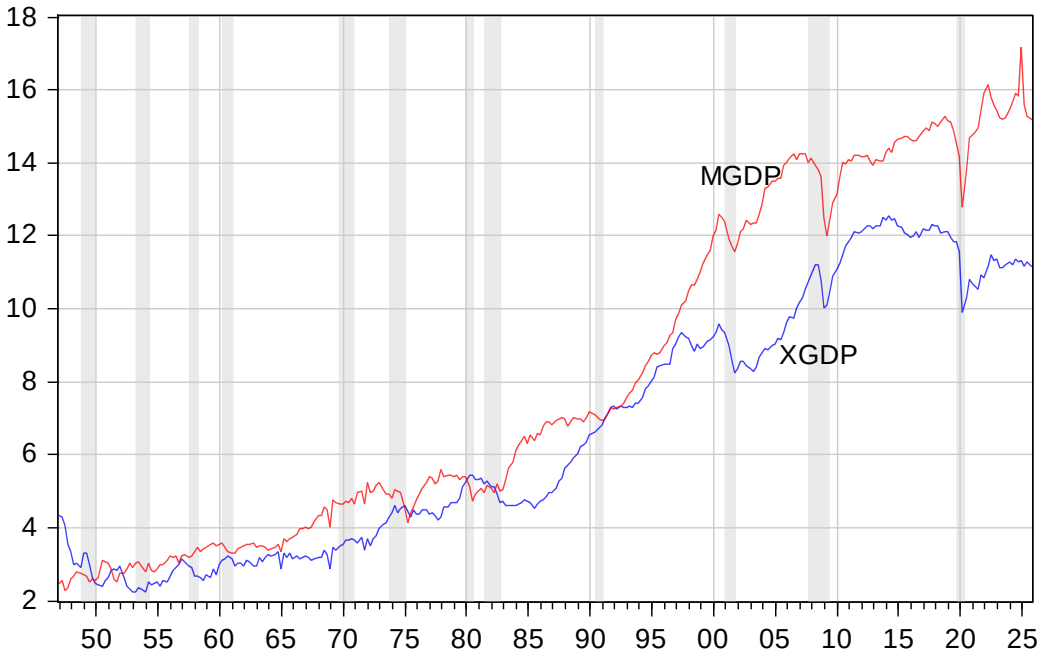
Eco 354 Home

Eco 354 Eshragh Motahar
INTERNATIONAL ECONOMICS

U.S. Import and Export Patterns, 1952.1-2025.4

Exports: U.S. exports in billions of chained 2017 dollars [FRED code: expgsc1]
Imports: U.S. imports in billions of chained 2017 dollars [FRED code: impgsc1]
XGDP: exports as a percentage of GDP (both in real terms) [FRED code for real GDP: gdpc1]
MGDP: imports as a percentage of GDP (both in real terms)
Data source: FRED

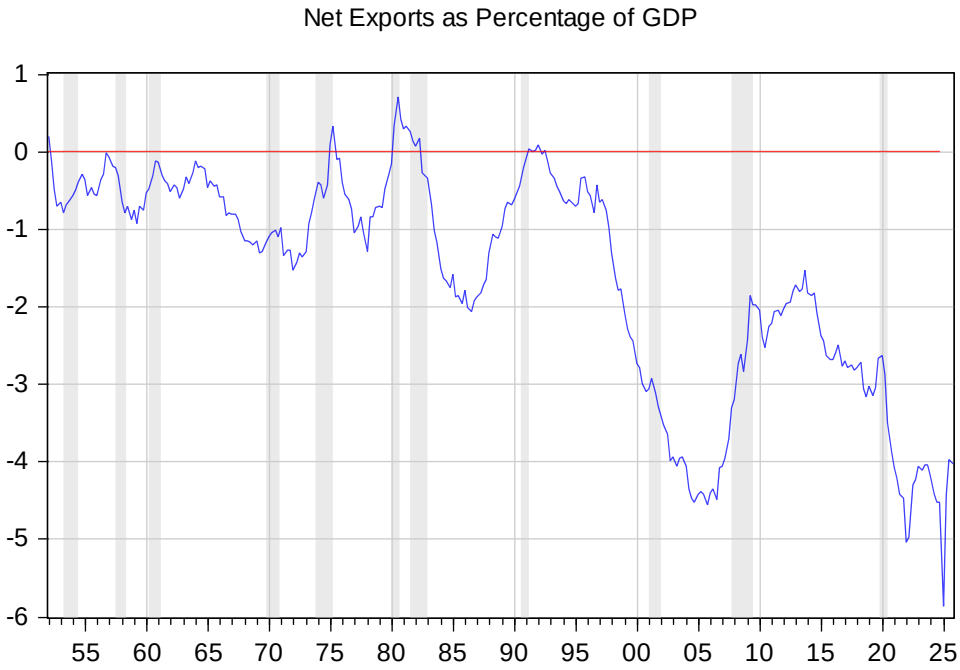


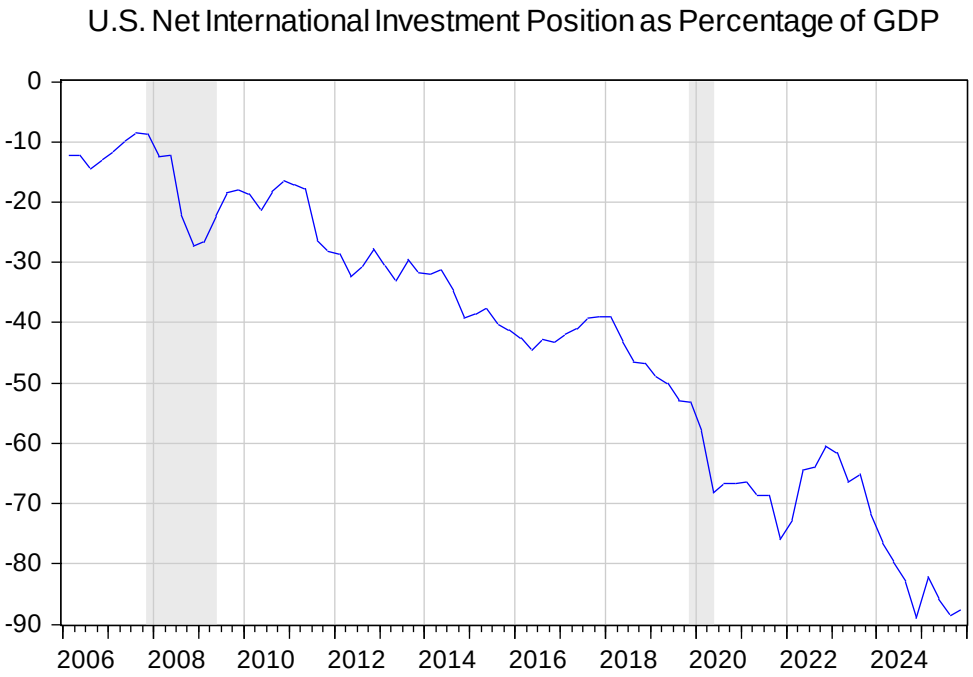


Eco 354 Eshragh Motahar
INTERNATIONAL ECONOMICS

U.S. International Data: Net Exports and Net International Asset Position as Percentage of GDP

(1) Net exports as a percentage of GDP (all in real terms), 1952.1-2025.4. *Source: FRED.*
(2) U.S. Net International Investment Position (IIPUSNETIQ) as Percentage of GDP, 2006.1-2025.4. *Source: FRED.*





Eco 354 Eshragh Motahar
International Economics Spring 2026
Office Hours: Tuesdays and Thursdays, 4:00-5:30, and by appointment. Telephone: 388-6065. E-mail: motahare@union.edu

Labor Productivity and Comparative Advantage
The Ricardian Model

- the concept of *comparative advantage*
- misconceptions about comparative advantage
- transport costs and non-traded goods
- empirical evidence

- Check the summary and key terms at the end of each chapter. Also, do the problems at the end of each chapter.

Reading Assignment

Textbook and *MyEconLab*: Chapter 3. (Recall that the textbook is required, while *MyEconLab* is optional.)


Eco 354 Home

Eco 354 Eshragh Motahar

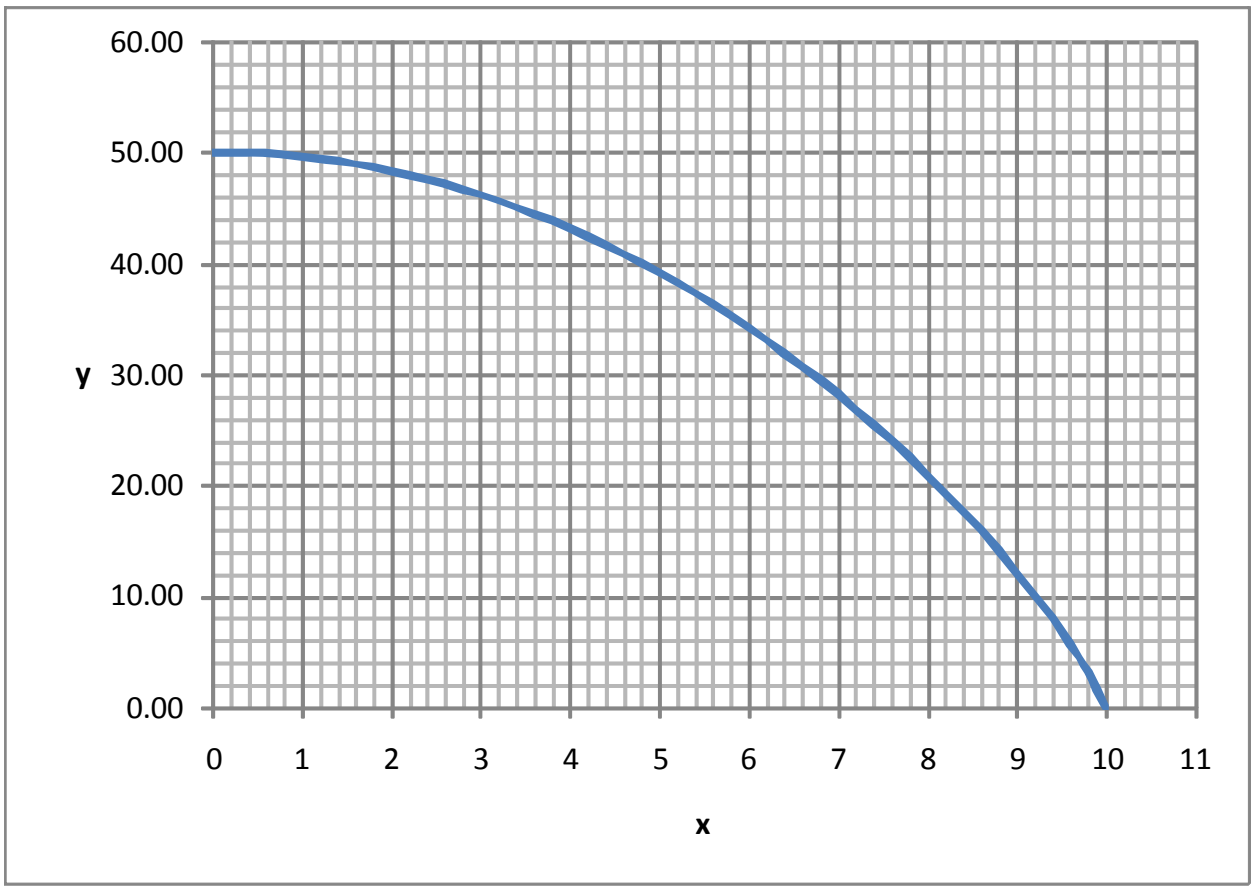
INTERNATIONAL ECONOMICS

A Simple Model of a Perfectly Competitive Firm

Assumptions

1. The firm produces two goods, *x* and *y*.
2. All necessary factors of production are in place and have been paid for.
3. The production possibilities frontier for this firm is given below.
4. The market prices of *x* and *y* are, respectively, €4 and €1 per unit.

Determine the optimum quantities of *x* and *y* produced by this profit-maximizing firm.



Mathematical Appendix

The underlying equations for the above Production Possibilities Frontier are:

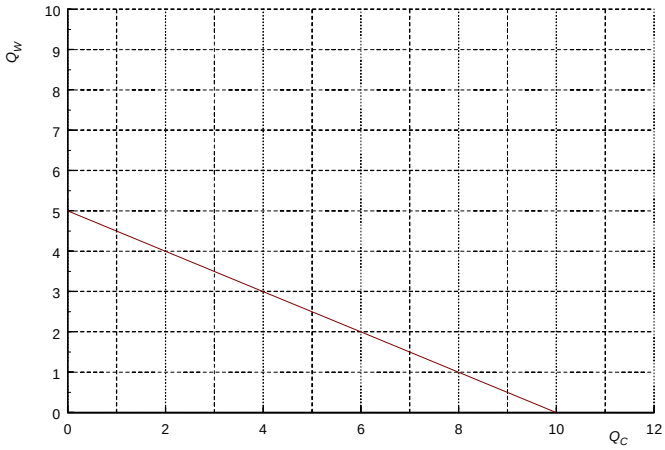
$$x = L_1^{\beta}$$
$$y = L_2^{\alpha}$$
$$L_1 + L_2 = L.$$

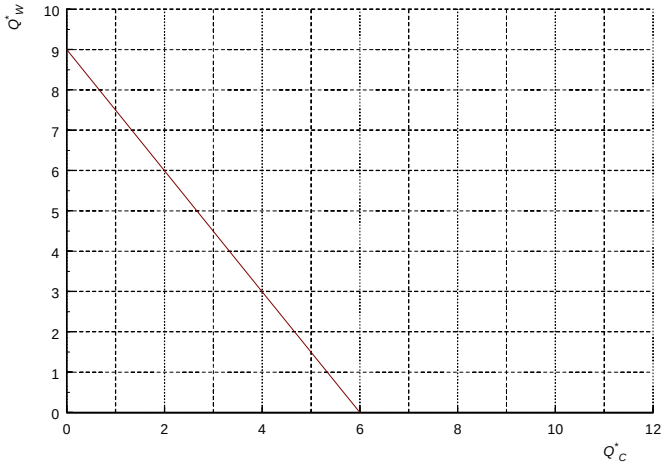
In the drawing of the above Production Possibilities Frontier the following assumptions have been made:

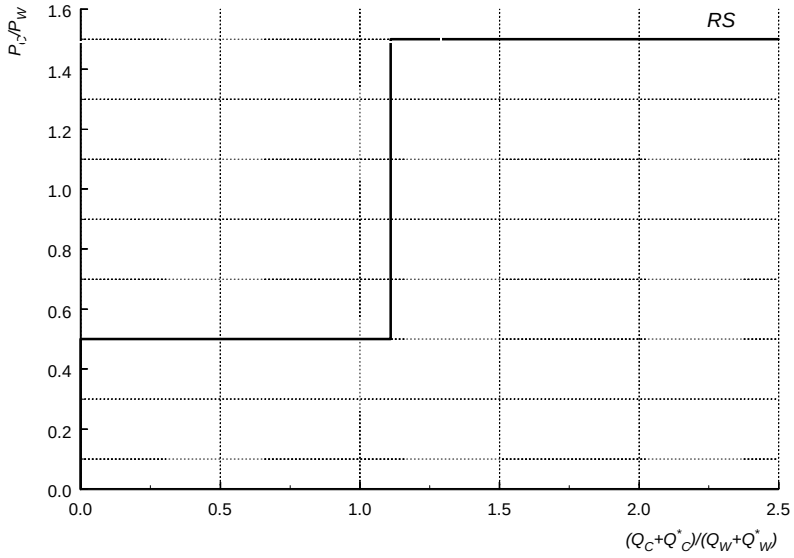
$$\alpha = 0.85, \quad \beta = 0.50, \quad L = 100.$$

Trade in a One-Factor World: A Simple Ricardian Model

Assume: $L = 100, \quad a_{LC} = 10, \quad a_{LW} = 20; \quad L^* = 270, \quad a^*_{LC} = 45, \quad a^*_{LW} = 30.$







Eco 354 Eshragh Motahar
International Economics Spring 2026
Office Hours: Tuesdays and Thursdays, 4:00-5:30, and by appointment. Telephone: 388-6065. E-mail: motahare@union.edu

Specific Factors and Income Distribution

- the Specific Factors model
- income distribution and gains from trade
- the political economy of trade
- international labor mobility

- Check the summary and key terms at the end of each chapter. Also, do the problems at the end of each chapter.

Reading Assignment

Textbook and *MyEconLab*: Chapter 4 (the appendix is optional). (Recall that the textbook is required, while *MyEconLab* is optional.)

Eco 354 Home

Eco 354 Eshragh Motahar
International Economics Spring 2026
Office Hours: Tuesdays and Thursdays, 4:00-5:30, and by appointment. Telephone: 388-6065. E-mail: motahare@union.edu

Resources and Trade:

The Heckscher-Ohlin Model

- the Heckscher-Ohlin Model: a model of a two-factor economy
- factor-price equalization
- income distribution and gains from trade
- the political economy of trade policy
- empirical evidence regarding the Heckscher-Ohlin model

● Check the summary and key terms at the end of each chapter. Also, do the problems at the end of each chapter.

Reading Assignment

Textbook and *MyEconLab*: Chapter 5 (the appendix is optional). (Recall that the textbook is required, while *MyEconLab* is optional.)

Eco 354 Home

Eco 354 Eshragh Motahar
International Economics Spring 2026
Office Hours: Tuesdays and Thursdays, 4:00-5:30, and by appointment. Telephone: 388-6065. E-mail: motahare@union.edu

A General Theory of International Trade

- a standard model of international trade
- factors that cause shifts in the relative supply curve
- factors that cause shifts in the relative demand curve
- tariffs and export subsidies
- international borrowing and lending
- income distribution issues

  -international distribution of income
  -income distribution within trading countries

Check the summary and key terms at the end of each chapter. Also, do the problems at the end of each chapter.

Reading Assignment

Textbook and *MyEconLab*: Chapter 6 (the appendix is optional). (Recall that the textbook is required, while *MyEconLab* is optional.)

Eco 354 Home

Eco 354 Eshragh Motahar
International Economics Spring 2026
Office Hours: Tuesdays and Thursdays, 4:00-5:30, and by appointment. Telephone: 388-6065. E-mail: motahare@union.edu

International Trade in the Presence of Economies of Scale and Imperfect Competition
Multinational Enterprises: Exporting Decisions, Outsourcing

• Economies of Scale

-external economies of scale
-internal economies of scale

• Imperfect competition

-monopoly
-monopolistic competition

• Dumping

• Outsourcing

- Check the summary and key terms at the end of each chapter. Also, do the problems at the end of each chapter.
- Make sure to read case studies and side bars

Reading Assignment

Textbook and *MyEconLab*: Chapter 7, and Chapter 8 (the appendix is summarized in handout [6A]). (Recall that the textbook is required, while *MyEconLab* is optional.)

Eco 354 Home

INTERNATIONAL TRADE IN THE PRESENCE OF ECONOMIES OF SCALE AND IMPERFECT COMPETITION

THE THEORY OF IMPERFECT COMPETITION: A REVIEW

1. *Monopoly*

Demand curve $Q = A - B \times P$ (1)

Marginal Revenue $MR = P - Q/B \quad \rightarrow \quad P - MR = Q/B$ [see Appendix] (2)

Total costs $C = F + c \times Q$ (3)

Average cost $AC = C/Q = F/Q + c$ (4)

2. *Monopolistic Competition*

Demand curve facing a firm $Q = S \times [1/n - b \times (P - \overline{P})]$ (5)

2.1 *The number of firms and average cost:* In equilibrium, when $P = \overline{P}$, from (5) we have

$$Q = S/n \quad (6)$$

Therefore, from (4) $AC = F/Q + c = n \times (F/S) + c$ (7)

2.2 *The number of firms and the price:* Each firm treats $\overline{P}$ as given, therefore from (5),

$$Q = (S/n + S \times b \times \overline{P}) - S \times b \times P \quad (8)$$

Compare (8) with (1), and look at (2). Therefore, the *MR* for a typical firm is,

$$MR = P - Q/(S \times b) \quad (9)$$

For a profit-maximizing firm we have,

$$MR = P - Q/(S \times b) = c \quad (10)$$

Therefore, the price charged by a typical firm is:

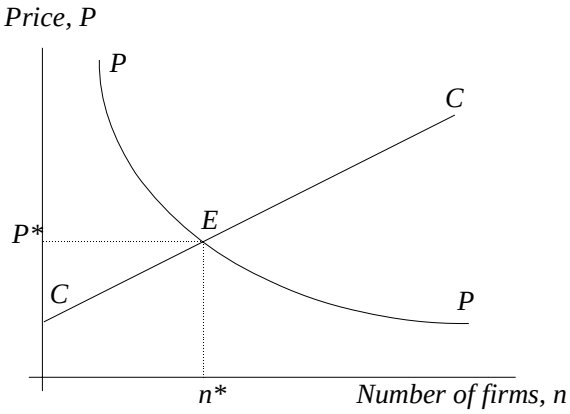
$$P = c + Q/(S \times b) \quad (11)$$

If all firms charge the same price, from (6) we see that $Q = S/n$. Therefore, (11) becomes,

$$P = c + \frac{1}{bn} \tag{12}$$

2.3 *The equilibrium number of firms*

The equilibrium price and quantity is represented by point *E* in the graph below.



2.4 *A Numerical Example*

Let $S_1 = 450$, and $S_2 = 128$, where S_1 stands for total sales of a particular industry (say, soft drinks) in one country (say the U.S.), and S_2 stands for the total sales of the same industry in another country (say Canada). Also, let $F = 400$, and $b = 1/200$, for any firm in this industry in either country.

Now, we know that in equilibrium in the case of monopolistic competition $P = AC$. From (7) and (12) above we get:

$$c + \frac{1}{bn} = n\frac{F}{S} + c \tag{13}$$

When we solve the above for *n* we get:

$$n = \sqrt{\frac{S}{bF}} \tag{14}$$

Now, here is the situation, for each country, before trade (plug in the appropriate numbers in each case): [Assume that $c = 80$.]

	U.S.	*Canada*
Equilibrium *n*	15	8
Market share (*S*/*n*)	30	16
Price	93.33	105.00

The situation after these two countries= markets are integrated; that is, after we set $S = S_1 + S_2$ is:

	Integrated market
Equilibrium *n*	17
Market share	34
Price	91.76

Note that as a result of integration consumers in both countries gain.

Appendix: Derivation of (2).

Re-write (1) as:

$$BP = A - Q \tag{A1}$$

Isolating P we get:

$$P = \frac{A}{B} - \frac{Q}{B}. \tag{A2}$$

Write the formula for Total Revenue (TR):

$$TR = \frac{A}{B}Q - \frac{Q^2}{B}. \tag{A3}$$

Taking the derivative of TR with respect to Q we get:

$$MR = \frac{A}{B} - 2\frac{Q}{B}. \tag{A4}$$

Substituting from (A2) into (A4) for $\frac{A}{B} - \frac{Q}{B}$ we get:

$$MR = P - \frac{Q}{B}. \tag{A5}$$

Now go back to (2) above.

Eco 354 Eshragh Motahar
International Economics Spring 2026
Office Hours: Tuesdays and Thursdays, 4:00-5:30, and by appointment. Telephone: 388-6065. E-mail: motahare@union.edu

Industrial and Trade Policy

- Industrial policy
- Strategic trade policy
- Globalization and low-wage labor

- Check the summary and key terms at the end of each chapter. Also, do the problems at the end of each chapter.
- Make sure to read case studies and side bars

Reading Assignment

Textbook and *MyEconLab*: Chapter 12. (Recall that the textbook is required, while *MyEconLab* is optional.)

Eco 354 Home

Eco 354 Eshragh Motahar
International Economics Spring 2026
Office Hours: Tuesdays and Thursdays, 4:00-5:30, and by appointment. Telephone: 388-6065. E-mail: motahare@union.edu

Open-Economy Macroeconomics
Exchange Rates and the Foreign Exchange Market

- National Income Accounting for an Open Economy
- The balance of payments accounts
- The foreign exchange market

- Check the summary and key terms at the end of each chapter. Also, do the problems at the end of each chapter.
- Make sure to read case studies and side bars

Reading Assignment

Textbook and *MyEconLab*: Chapters 13 and 14 (the appendix to chapter 14 is optional). (Recall that the textbook is required, while *MyEconLab* is optional.)

Eco 354 Home

EXCHANGE RATES AND OPEN-ECONOMY MACROECONOMICS

National Income Accounting for an Open Economy

All expenditures are per annum and in constant dollars.

C	total consumption expenditure by the private sector
I	total expenditure on capital goods and inventories
G	total purchases of goods and services by government
IM_C	consumption expenditure on imported goods and services
IM_I	investment expenditure on imported capital goods and inventories
IM_G	government purchases of imported goods and and services
EX	total exports (goods and services sold to foreigners)
IM	total imports
T	net tax revenue (collected by the government)
Y	Gross National Product (GNP)

The national income of an open economy is the sum of domestic and foreign expenditures on the goods and services produced by domestic factors of production. That is:

$$Y = (C - IM_C) + (I - IM_I) + (G - IM_G) + EX \implies$$

$$Y = C + I + G + EX - (IM_C + IM_I + IM_G) \implies$$

$$Y = C + I + G + EX - IM. \quad (1)$$

Define **current account balance** as:

$$CA = EX - IM. \quad (2)$$

Define **private saving** as:

$$S^p = Y - C - T. \quad (3)$$

(3) can be re-written as:

$$Y = C + T + S^p \quad (4)$$

Now, since the left-hand sides of (1) and (4) are the same, we have:

$$C + I + G + EX - IM = C + T + S^p \quad (5)$$

Canceling C from both sides of (5), remembering (2), and re-arranging terms, we get:

$$CA = S^p - I - (G - T). \quad (6)$$