Course Description

This course provides an overview of some of the key theoretical ideas and empirical findings in the field of international trade. It aims to strike a balance between covering the core foundations and discussing the recent advances on the frontiers of the field. Two main themes of the course are 1) explaining the observed patterns of trade across countries and regions, and 2) assessing the welfare effects of barriers to trade (or lack thereof). The other core theme of the field, which is the study of trade policy, will be covered in the second part of the sequence.

The course also aims to introduce the students to recent theoretical and empirical tools that have found broad interest outside the field of international trade. In particular, we will give special attention to the recent advances in quantitative methods that allow us to account for economic interlinkages among large numbers of spatial units, e.g., countries, regions, or cities. We will also cover recent theoretical and empirical advances in accounting for heterogeneity in patterns of demand, across different categories of goods or different consumers. These technical tools are increasingly used across a number of other disciplines in economics such as Economic Development, Macroeconomics, and Labor Economics.

The course is structured in seven parts. The first four parts cover a number of foundational ideas that have shaped the history of thought in the discipline in chronological order. These parts include:

I. Neoclassical Trade Theory: Factors, Technology, and Tastes,
II. New Trade Theory: Returns to Scale, Market Structure, and Product Differentiation,
III. Quantitative Trade: Trade Costs and Trade Flows,
IV. New New Trade: Heterogeneity among Firms.

The first part sets up the neoclassical foundations of trade theory and discusses the empirical evidence for and against the drivers of trade suggested by this framework. In particular, this framework provides a benchmark for thinking about international exchange in a world characterized by perfect competition, constant returns to scale, no frictions in markets for international commodity exchange, and perfect barriers for the mobility of factors of production across countries. The neoclassical benchmark also assumes representative consumers and firms, and effectively implies that the technology of production may be invariant to the changes in the patterns of trade.
Parts II-IV of the course each consider one set of deviations from this benchmark framework: Part II studies increasing returns and imperfect competition, Part III studies imperfect mobility of goods across countries, and Part IV shows how trade influences patterns of production when we account for heterogeneity among firms.

The remaining three parts of the course discuss topics on the frontiers of the field. These parts include:

V. Trade and Inequality: Heterogeneity among Workers and Consumers,
VI. Multinationals and Global Supply Chains,
VII. Trade, Ideas, and Growth.

Part V studies the issues of inequality, which arise once we deviate from a unitary view of consumption and labor supply in our models. We cover the frontiers in the study of the effects of trade on regional labor markets, as well as the accounting for the distributional aspects of the consumption-side welfare gains from trade. The last two parts of the course study substantive ways in which production technologies may be shaped by trade. Part VI in particular studies the fragmentation of supply chains as the result of the trade and the rise of multinational firms. Part VII studies the dynamic effects of trade on the patterns of comparative advantage and income through the impacts of trade on R&D, innovation, and the cross-country diffusion of ideas and technologies.

Sources and Textbooks

Most of the readings in the course are based on journal articles and recent working papers (see the reading list below). However, we will use the following three textbooks for a number of lectures.


Note that the reading list is subject to change throughout the semester. Please refer to the most recent version of the reading list to find the material before each lecture.

Requirements

Readings: The effectiveness of lectures covering advanced topics greatly hinges on whether the students prepare for the material corresponding to each lecture beforehand. The required material is identified on the reading list by a solid square sign (■) before them, and the other material to be covered is identified by a square sign (□). The papers on the list for the same class are closely related to each other. Therefore, after a close reading of the required papers, you will find it easier to briefly review the rest of the papers and identify their core contributions. During the first few sessions, we will dedicate some time to discussing a number of strategies for directed and effective skimming of academic papers in economics.

Class preparation and participation (5%): PhD-level courses aim to engage class participants in constructive and lively discussions of the material covered. Therefore, it is important that everyone prepares the materials beforehand and participates in the discussions. Your contribution to class discussions will be evaluated in each class.

Referee Reports (15%): You are required to submit three referee reports on the due dates specified on the course schedule (see below). For each due date, you can choose one of the readings among those corresponding to the lecture before the due date that is identified by a star sign (★). Instructions on the expected structure of the referee reports will be posted on the course website.
**Problem Sets (30%):** The course has three problem sets that cover a range of theoretical and empirical topics.

**Final Paper (50%):** The students are required to write a final research paper related to the topics covered in the course. Throughout the semester, a number of specific ideas will be suggested to the students as potential subjects for the final paper. The students can alternatively choose to write the final paper on a topic of their choice. Collaboration on the final paper is strongly encouraged.

**Important Dates**

See the course schedule below.

**Policies**

**Phones and Laptops:** Please refrain from using your phones during the class. You are allowed to bring your laptops to the class and take notes on them. However, please note that you are expected to participate and be engaged while in class and not surf the web or check your email. Remember that your class participation is evaluated in every class.

**Correspondence:** I will try to reply to your emails within 24 hours if you email me during the work week, and by the next Monday if you email me over the weekend. Please make sure to include “ECON8871” in the subject line of any emails you send me. If your question cannot be answered in one brief paragraph, or requires a longer exchange, please arrange to discuss it with me in person instead.

**Formatting:** For the referee reports, please use double-spaced, 12 point Times New Roman font, one-inch margins for all the referee reports. For the problem sets, please use latex (or LyX). Please submit all the assignments via email. Please include “ECON8871 - Assignment” in the subject line of your email.

**Late assignments:** Missing the due date for each assignment results in losing half of the grade for the assignment. Please let me know in advance if serious or unforeseen circumstances arise.

**Academic integrity:** Please refer to Boston College’s policy on academic integrity (http://www.bc.edu/integrity). You are encouraged to discuss the material and assignments together, but any work you turn in must be your own. If you use any sources or outside help, whether from classmates, internet, or other published work, you must acknowledge them. Failure to follow this basic rule will have very serious consequences for you. If in doubt, always come and talk to me.
Course Outline and Reading List

1 Introduction–Trade Facts and Concepts

Broad empirical facts and key concepts of international trade; Overview of the course; Foundations of Neoclassical Trade Theory

- DN Ch. 2 (pp. 31–36, 59–64), Ch. 3 (pp. 65–79), Ch. 4 (pp. 94–96)

Part I

Neoclassical Trade Theory: Factors, Technology, and Tastes

In this part of the course, we provide an overview of the main ideas of the benchmark neoclassical theory of international trade. In this framework, patterns of trade are driven by autary prices, which are in turn determined by factor endowments, technology, or tastes. We discuss the theories behind each of these three different drivers in the three lectures in this part of the course.

2 Factor Endowment Theory of Comparative Advantage

Neoclassical trade theory; Integrated world equilibrium; Heckscher-Ohlin-Vanek (HOV) theory; Empirical tests of HOV theory.

Core Ideas/Models:

- HK Ch. 1 (pp. 11–29).
- Feenstra Ch. 1 (pp. 25–82).

Empirical Tests:


Please note that the reading list is subject to change throughout the semester.
3 Ricardian Theory of Comparative Advantage

Ricardian model; D-F-S model; Multi-country extensions of D-F-S; Assignment models; Empirical tests of the Ricardian framework; Drivers of comparative advantage.

Core Ideas/Models:


Multi-country extensions:


Assignment models:

Empirical Tests:


Drivers of Comparative Advantage:


4 Demand-side Drivers of Trade

Linder’s hypothesis; Nonhomotheticity of demand; Price indices

- Feenstra App. A and B (pp. 403–429).

Part II

New Trade Theory: Returns to Scale, Market Structure, and Product Differentiation

In this part of the course, we discuss the so-called “new trade theory,” which swept across the field starting in the 1980s. This framework deviated from the neoclassical theory by introducing new forces and mechanisms into
the toolbox of trade economists, namely, the variations in returns to scale, imperfect competition, and product differentiation. In the first lecture, we will discuss these three forces. In the second lecture, we focus on the Krugman model of trade that ended up becoming a workhorse model capturing the key insights of the new trade theory. In the last lecture, we will discuss the advances that were made in the 1990s and 2000s in empirically measuring the importance of the forces highlighted by new trade theory.

5 Increasing Returns to Scale and Market Structure

■ HK Ch. 2–5 (pp. 25–82).

6 Krugman Model of Monopolistic Competition

Krugman model; Home Market Effect (HME); Preferences with variable markups

■ HK Ch. 2–5 (pp. 25–82).


7 Empirics of New Trade Theory

Feenstra correction; Estimation of the elasticity of substitution.


Part III

Quantitative Trade: Trade Costs and Trade Flows

In this part of the course we will cover the recent advances in bringing the theories of international trade to speak directly to the available data on, first, global commodities flows, and, more recently, inter-regional flows
of goods and factors of production. These advances can be traced to two sources: 1) the long-standing line of empirical work on gravity equations in trade, which (first lecture in this section), and 2) the 2002 paper by Jon Eaton and Sam Kortum that provided a quantitative Ricardian theory capable of generating the gravity equation (second lecture in this section). In the third lecture, we discuss an application of this framework to the study of the demand-side drivers of trade. Th quantitative framework has also allowed trade theorist to account for insights from the empirical studies of trade costs, which we discuss in lecture 4. Finally, lecture 5 provides an overview of the extensions of the quantitative trade models to the study of economic geography and the mobility of goods and factors of production over space.

8 Gravity Equation

Sources of data on trade flows; Gravity equation; Estimation of gravity equations


9 Eaton-Kortum Model of Ricardian Comparative Advantage

EK model; Trade elasticity; Hat algebra; Intermediate inputs in EK model

10  Revisiting Demand-side Drivers of Trade

Income elasticities; Quality and unit values

- Jonathan Eaton and Cecília Fieler. The Gravity of Unit Values. (July), 2017
  - Ahmad Lashkaripour. International Market Power and Markups: The Role of Within-Industry Specialization. 2018

11  Trade Costs and Frictions

Transportation costs; Information frictions; Intermediation; Matching frictions

  - Woan Foong Wong. The Round Trip Effect: Endogenous Transport Costs and International Trade. 2017
  - Meredith Startz. The value of face-to-face: Search and contracting problems in Nigerian trade. 2018

12  Factor Mobility and Economic Geography

Agglomeration externalities; Market access; Remoteness

Part IV

New New Trade: Heterogeneity among Firms

Much of the discussions so far have treated production and consumption in each country at the unitary level, relying on representative firm and consumer arguments. In this part of the course, we will discuss the forces that emerge when we study heterogeneity among units of production within a given country.

13 Facts of Firm Heterogeneity

Creative destruction; Firm-level productivity heterogeneity; Productivity estimation; Entry and exit; Market selection


- Alla Lileeva and Daniel Trefler. Improved access to foreign markets raises plant-level productivity... for some plants. Quarterly Journal of Economics, 125(3):1051–1099, 2010
14 Melitz Model of Firm Heterogeneity

Melitz model; Selection; Fixed costs


15 Firm Heterogeneity, Gravity, and Gains from Trade

Gravity with firm heterogeneity; Pareto distribution; ACR formula; ACR debate; Revisiting gains from trade in quantitative settings

- Treb Allen, Costas Arkolakis, and Yuhta Takahashi. Universal Gravity. 2014
16 Firm Heterogeneity, Competition, and Costs

Pro-competitive effects of trade; Variable markups and heterogeneous firms; Market penetration

- Costas Arkolakis, Arnaud Costinot, and Dave Donaldson. The elusive of pro-competitive effect of trade. Mimeo, 2012a

Part V

Trade and Inequality: Heterogeneity among Workers and Consumers

In this part of the course, we now shift our attention to the study of heterogeneity among households, whether as workers or as consumers. This allows us to study the impact of international trade on income inequality within countries and address the potential impacts of globalization on rising inequality.

17 Trade and Inequality: Facts and Concepts

Trade and rise in skill premium; Outsourcing; Heterogeneous gains to consumers

Heterogeneity in Returns to Assets: Back to Factor Endowment Theory

- Feenstra Ch. 4 (pp. 83–118).
Revisiting Globalization and Cross-country Inequality


□ Michael Kremer and Eric Maskin. Globalization and Inequality. 2006


Heterogeneous Gains to Consumers


★ Kirill Borusyak and Xavier Jaravel. The Distributional Effects of Trade: Theory and Evidence from the United States. 2017

18 Matching and Sorting of Firms and Workers

Revisiting assignment models


19 Workers, Import Competition, and Mobility Frictions

ADH; Bartik shocks; Quantitative models of migration


■ Lorenzo Caliendo, Maximiliano Dvorkin, and Fernando Parro. Trade Liberalization and Labor Market Dynamics. 2018


□ Simon Galle, Andres Rodriguez-Clare, and Moises Yi. Slicing the Pie: Quantifying the Aggregate and Distributional Effects of Trade. 2017
Part VI

Multinationals and Global Supply Chains

In the next two parts of the course, we consider ways in which international trade and globalization can influence the nature of technology. In this part, we first focus on how trade may influence the organization of the firm and the structure of the supply chains.

20 Multinationals and Global Supply Chains: Facts and Concepts

GVCs; Value-added trade; Firm-to-firm trading networks; Trade in services


Measuring GVCs


Basic theories of supply chains


Network Structure of Value Chains


Trade in Taks and Services

21 FDI and the Organization of the Firm

Property rights theory of the firm; Incomplete contracts and FDI; Knowledge hierarchies and FDI

Background on Property Rights Theory of the Firm Boundary


Vertical Integration and FDI


Tests of the Property Rights Theory of FDI


Knowledge Hierarchies and Trade


22 Quantitative FDI Models

Proximity-concentration tradeoff; Multicountry FDI models

Proximity-concentration Tradeoff

23 Trade, Ideas, and Growth

In the final part of the course, we discuss how trade can influence innovation, technologies of production and, ultimately, economic growth. One key theme of this part of the course is the dynamics of trade, a subject that we have for the most part left out in the earlier parts of the course.

24 Trade and Growth: Historical Facts and Concepts

Cross-country studies of trade and growth; Dynamics of comparative advantage

Empirics of Trade and Growth


Evolution of Comparative Advantage

25  **Trade and Firm Innovation**

Theory and empirics of the effect of trade on innovation

**Theories**


**Empirics**


26  **Trade and International Diffusion of Ideas**

Theories of ideas diffusion and trade


■ Jesse Perla, Christopher Tonetti, and Michael E. Waugh. Equilibrium Technology Diffusion, Trade, and Growth. 2015

■ Francisco J Buera and Ezra Oberfield. The Global Diffusion of Ideas. 2017

<table>
<thead>
<tr>
<th>M</th>
<th>D</th>
<th>Part</th>
<th>Lec.</th>
<th>Topic</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug</td>
<td>28</td>
<td>Tu</td>
<td>1</td>
<td>Introduction–Trade Facts and Concepts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Th</td>
<td>I</td>
<td>Factor Endowment Theory of Comparative Advantage</td>
<td></td>
</tr>
<tr>
<td>Sep</td>
<td>4</td>
<td>Tu</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Th</td>
<td>3</td>
<td>Ricardian Theory of Comparative Advantage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Tu</td>
<td>4</td>
<td>Demand-side Drivers of Trade</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Th</td>
<td>5</td>
<td>Increasing Returns to Scale</td>
<td>Problem Set 1 due</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Tu</td>
<td>II</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Th</td>
<td>6</td>
<td>Krugman Model of Monopolistic Competition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Tu</td>
<td>7</td>
<td>Love of Variety in the Data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Th</td>
<td>III</td>
<td>Gravity Equation</td>
<td></td>
</tr>
<tr>
<td>Oct</td>
<td>2</td>
<td>Tu</td>
<td>8</td>
<td>Eaton-Kortum Model of Ricardian Comparative Advantage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>Th</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>Tu</td>
<td>10</td>
<td>Demand-side Drivers of Trade: Quantitative View</td>
<td>Problem Set 2 due</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Th</td>
<td>11</td>
<td>Trade Costs and Frictions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Tu</td>
<td>12</td>
<td>Economic Geography</td>
<td>Referee Report 1 due</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Th</td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>23</td>
<td>Tu</td>
<td>IV</td>
<td>Firm Heterogeneity: Facts and Concepts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>25</td>
<td>Th</td>
<td>14</td>
<td>Melitz Model</td>
<td></td>
</tr>
<tr>
<td>Nov</td>
<td>1</td>
<td>Th</td>
<td>15</td>
<td>Firm Heterogeneity, Gravity, and Gains from Trade</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Tu</td>
<td>V</td>
<td>Trade and Inequality: Facts and Concepts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>Th</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Tu</td>
<td>18</td>
<td>Matching and Sorting of Firms and Workers</td>
<td>Referee Report 2 due</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Th</td>
<td>VI</td>
<td>Multinationals and GVCs: Facts and Concepts</td>
<td>Referee Report 3 due</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Tu</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22</td>
<td>Th</td>
<td>20</td>
<td></td>
<td>Thanksgiving (no classes)</td>
</tr>
<tr>
<td></td>
<td>27</td>
<td>Tu</td>
<td>21</td>
<td>FDI and Firm Organization</td>
<td></td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>Th</td>
<td>VII</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dec</td>
<td>4</td>
<td>Tu</td>
<td>22</td>
<td>Quantitative FDI Models</td>
<td>Problem Set 3 due</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>Th</td>
<td>23</td>
<td>Trade and Growth: Historical Facts</td>
<td></td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Tu</td>
<td>24</td>
<td>Trade and Innovation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>25</td>
<td>Trade and International Diffusion of Ideas</td>
<td>Study Days (no classes)</td>
</tr>
</tbody>
</table>