

SYLLABUS

Course Description:

We economists traditionally divide the general field of International Economics into two subfields: International Finance and International Trade. In this course we will ignore this division. We will start by studying models from International Trade — the Ricardian model, the Heckscher-Ohlin model, and variants of the New Trade Theory model of increasing returns and monopolistic competition. By emphasizing dynamic general equilibrium versions of these models, we will develop tools compatible with modern, general equilibrium macroeconomics. We will then use these sorts of models to address a number of topics, some of which are typically studied in International Finance courses. Specifically, we will try to answer the questions: (1) Why did static applied general equilibrium models of the North American Free Trade Agreement do such a poor job in predicting its impact on trade flows? (2) How can we best model real exchange rate fluctuations and the relationship of these fluctuations to international capital flows? (3) How can we use dynamic general equilibrium models to analyze the causes and consequences of international financial crises like those that afflicted Mexico in 1994–1995 and Argentina in 2001–2002 and are have more recently occurred in the Eurozone? (4) How does trade liberalization affect a country’s growth rate?

Office Hours:

Wednesdays, 9:00 am – 10:00 am on Zoom. You will receive a link to a sign-up spreadsheet via Google Sheets. Some weeks, office hours will be on a different day than Wednesday. Check on the sign-up spreadsheet. If you need to meet at some other time, please do not call me at home; send me an e-mail message at tkehoe@umn.edu.

Assignments and Grading:

There will be five problem sets, a group project, and a final exam. All assignments must be completed in order to receive a final grade for the course. The mark for each problem set will be counted once and the mark for the group project and the mark for the exam will be counted twice. The lowest of these marks will be dropped and the remaining marks averaged. Notice that this means that, if the lowest grade is that of the group project or that of the exam, its weight will be halved, but it will not be completely dropped.

Group Project:

Students will form groups to work on projects. Each group will consist of two or three students (but not one student). Topics for projects will be related to empirical issues in international economics, such as predictions of the gravity “model” for world trade flows, or to issues of current policy relevance, such as the modeling financial crises. Each group will make a 50 minute presentation of its research at the end of the course.

Late Policy:

Any late assignment will be penalized 10 (out of 100) points for each class period it is late, up to a maximum of 40 points.

Cooperation on Assignments:

Students are permitted (and encouraged) to discuss the answers to problem sets together. Copying from another student's answers is not allowed. No cooperation on the final is allowed.

Readings:

Copies of many of the readings will be available on the course web site.

There is no textbook for this course. A good textbook in international trade — which will be especially useful the first few weeks of the course for anyone who has not studied international trade previously — is

R. C. Feenstra, *Advanced International Trade: Theory and Evidence*. Princeton University Press, 2003.

Treb Allen and Costas Arkolakis have an excellent set of notes, some of which follow the approach here, but go far beyond them based on their own research:

T. Allen and C. Arkolakis, *Elements of Advanced International Trade*. Unpublished manuscript, Yale University, 2016.
(<http://www.econ.yale.edu/~ka265/teaching/GradTrade/notes/ClassNotes.pdf>.)

The best textbook in open economy macroeconomics is

M. Obstfeld and K. Rogoff, *Foundations of International Macroeconomics*. MIT Press, 1996.

We will also spend time talking about depressions and crises. A useful reference is

T. J. Kehoe and E. C. Prescott, editors, *Great Depressions of the Twentieth Century*. Federal Reserve Bank of Minneapolis, 2007.

This book has a web page with data sets, computer programs, and a link to the book's web page at Amazon.com:

<http://www.greatdepressionsbook.com>.

List of Topics and Readings

0. Traditional Trade Theory

R. Dornbusch, S. Fischer, and P. A. Samuelson, “Comparative Advantage, Trade, and Payments in a Ricardian Model with a Continuum of Goods,” *American Economic Review*, 67 (1977), 823–839.

R. Dornbusch, S. Fischer, and P. A. Samuelson, “Heckscher-Ohlin Trade Theory with a Continuum of Goods,” *Quarterly Journal of Economics*, 95 (1980), 203–224.

Feenstra, Chapters 1–3.

C. A. Wilson, “On the General Structure of Ricardian Models with a Continuum of Goods: Applications to Growth, Tariff Theory, and Technical Change,” *Econometrica*, 48 (1980), 1675–1702.

1. Increasing Returns and Imperfect Competition

Feenstra, Chapter 5.

E. Helpman, “Increasing Returns, Imperfect Markets, and Trade Theory,” in R. W. Jones and J. P. Neary, editors, *Handbook of International Economics*, vol. 1. Amsterdam: North-Holland, 1984, 325–365.

E. Helpman and P. R. Krugman, *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy*. MIT Press, 1985.

P. R. Krugman, “Increasing Returns, Monopolistic Competition, and International Trade,” *Journal of International Economics*, 9 (1979), 469–479.

J. Markusen, “Explaining the Volume of Trade: An Eclectic Approach,” *American Economic Review*, 76 (1986), 1002–1011.

2. Dynamic Trade

J. Asturias, S. Hur, T. J. Kehoe, and K. J. Ruhl, “The Interaction and Sequencing of Policy Reforms,” *Journal of Economic Dynamics and Control*, 72 (2016), 45–66.

C. Bajona and T. J. Kehoe, “Demographics in Dynamic Heckscher-Ohlin Models: Overlapping Generations versus Infinitely Lived Consumers,” Federal Reserve Bank of Minneapolis Staff Report 377, 2006.

C. Bajona and T. J. Kehoe, “Trade, Growth, and Convergence in a Dynamic Heckscher-Ohlin Model,” *Review of Economic Dynamics*, 13 (2010), 487–513.

G. M. Grossman and E. Helpman, *Innovation and Growth in the Global Economy*. MIT Press, 1991.

R. E. Lucas, "Trade and the Diffusion of the Industrial Revolution," *American Economic Journal: Macroeconomics*, 1 (2009), 1–25.

E. R. McGrattan and E. C. Prescott, "Openness, Technology Capital, and Development," *Journal of Economic Theory*, 144 (2009), 2454–2476.

Obstfeld and Rogoff, Chapters 4 and 5.

H. Uzawa, "Optimal Growth in a Two-Sector Model of Capital Accumulation," *Review of Economic Studies*, 31 (1964), 1–24.

J. Ventura, "Growth and Interdependence," *Quarterly Journal of Economics*, 112 (1997), 57–84.

A. Young, "Learning by Doing and the Dynamic Effect of International Trade," *Quarterly Journal of Economics*, 106 (1991), 369–406.

3. Models with Heterogeneous Firms

J. Asturias, S. Hur, T. J. Kehoe, and K. J. Ruhl, "Firm Entry and Exit and Aggregate Growth," Federal Reserve Bank of Minneapolis Research Department Staff Report 544, 2017.

J. Asturias, S. Hur, T. J. Kehoe, and K. J. Ruhl, "The Interaction and Sequencing of Policy Reforms," *Journal of Economic Dynamics and Control*, 72 (2016), 45–66.

C. Arkolakis, "Market Access Costs and the New Consumers Margin in International Trade," *Journal of Political Economy*, 118 (2010), 1151–1199.

T. Chaney, "Distorted Gravity: Heterogeneous Firms, Market Structure, and the Geography of International Trade," *American Economic Review*, 98 (2008), 1707–1721.

J. Eaton and S. Kortum, "Technology, Geography, and Trade," *Econometrica*, 70 (2002), 1741–1779.

J. Eaton, S. Kortum, and F. Kramarz, "An Anatomy of International Trade: Evidence from French Firms," *Econometrica*, 79 (2011), 1453–1498.

M. J. Gibson, "Trade Liberalization, Reallocation, and Productivity," University of Minnesota, 2006.

M. Melitz, "The Impact of Trade on Aggregate Industry Productivity and Intra-Industry Reallocations," *Econometrica*, 71 (2003), 1695–1725.

A. Ramanarayanan, "International Trade Dynamics with Intermediate Inputs," University of Minnesota, 2006.

K. J. Ruhl, “The Elasticity Puzzle in International Economics,” University of Texas at Austin, 2008.

4. Empirical Evidence

D. K. Backus, P. J. Kehoe and T. J. Kehoe, “In Search of Scale Effects in Trade and Growth,” *Journal of Economic Theory*, 58 (1992), 377–409.

S. L. Baier and J. H. Bergstrand, “The Growth of World Trade: Tariffs, Transport Costs, and Income Similarity,” *Journal of International Economics*, 53 (2001), 1–27.

R. Bergoeing and T. J. Kehoe, “Trade Theory and Trade Facts,” Federal Reserve Bank of Minneapolis, Staff Report 284, 2003.

C. Broda, J. Greenfield, and D. E. Weinstein, “From Groundnuts to Globalization: A Structural Estimate of Trade and Growth,” NBER Working Paper 12033, 2006

A. V. Deardorff, “Testing Trade Theories and Predicting Trade Flows,” in R. W. Jones and P. B. Kenen, editors, *Handbook of International Economics*, vol. 1, North-Holland, 1984, 467–517.

D. Hummels and P. J. Klenow, “The Variety and Quality of a Nation’s Exports,” *American Economic Review* 95 (2005), 704–723

D. Hummels and J. Levinsohn, “Monopolistic Competition and International Trade: Reconsidering the Evidence,” *Quarterly Journal of Economics*, 110 (1995), 799–836.

T. J. Kehoe, J. M. Rossbach, and K. J. Ruhl, “Using the New Products Margin to Predict the Industry-Level Impact of Trade Reform,” *Journal of International Economics*, 96 (2015), 289–297.

T. J. Kehoe and K. J. Ruhl, “How Important is the New Goods Margin in International Trade?” *Journal of Political Economy*, 121 (2013), 358–392.

K.-M. Yi, “Can Vertical Specialization Explain the Growth of World Trade?” *Journal of Political Economy*, 111 (2003), 52–102.

5. Applied General Equilibrium Analysis of Trade Policy

Feenstra, Chapter 6.

Francois, J. F. and C. R. Shiells, editors, *Modeling Trade Policy: Applied General Equilibrium Assessments of North American Free Trade*, New York: Cambridge University Press, 1994.

P. J. Kehoe and T. J. Kehoe, “Capturing NAFTA's Impact with Applied General Equilibrium Models,” *Federal Reserve Bank of Minneapolis Quarterly Review*, 18:2 (1994), 17–34.

P. J. Kehoe and T. J. Kehoe, “A Primer on Static Applied General Equilibrium Models,” *Federal Reserve Bank of Minneapolis Quarterly Review*, 18:2 (1994), 2–16.

T. J. Kehoe, “An Evaluation of the Performance of Applied General Equilibrium Models of the Impact of NAFTA,” in T. J. Kehoe, T. N. Srinivasan, and J. Whalley, editors, *Frontiers in Applied General Equilibrium Modeling: Essays in Honor of Herbert Scarf*, Cambridge University Press, 2005, 341–377.

T. J. Kehoe, P. S. Pujolàs, and J. Roszbach, “Quantitative Trade Models: Developments and Challenges,” *Annual Review of Economics*, 9 (2017), 295–325.

J. Romalis, “NAFTA’s and CUSFTA’s Impact on North American Trade,” University of Chicago, 2004.

D. Trefler, “The Long and Short of the Canada-U.S. Free Trade Agreement,” *American Economics Review*, 94 (2004), 870–895.

6. Real Exchange Rates

R. Bems and K. Jönsson Hartelius, “Trade Deficits in the Baltic States: How Long Will the Party Last?” *Review of Economic Dynamics*, 9 (2006), 179–209.

C. M. Betts and M. B. Devereux, “Exchange Rate Dynamics in a Model of Pricing-to-Market,” *Journal of International Economics*, 50 (2000), 215–244.

C. M. Betts and T. J. Kehoe, “Real Exchange Rate Movements and the Relative Price of Nontraded Goods,” University of Minnesota and University of Southern California, 2002.

C. M. Betts and T. J. Kehoe, “Tradability of Goods and Real Exchange Rate Fluctuations,” University of Minnesota and University of Southern California, 2001.

C. M. Betts and T. J. Kehoe, “U.S. Real Exchange Rate Fluctuations and Relative Price Fluctuations,” *University Journal of Monetary Economics*, 53 (2006), 1297–326.

V. V. Chari, P. J. Kehoe, and E. R. McGrattan, “Can Sticky Price Models Generate Volatile and Persistent Real Exchange Rates?” *Review of Economic Studies*, 69 (2002), 533–563.

M. Crucini, C. Telmer, and M. Zachariadis “Understanding European Real Exchange Rates,” *American Economic Review*, 95 (2005), 724–738.

C. Engel, “Accounting for U.S. Real Exchange Rate Changes,” *Journal of Political Economy*, 107 (1999), 507–538.

G. Fernandez de Cordoba and T. J. Kehoe, “Capital Flows and Real Exchange Rate Fluctuations Following Spain's Entry into the European Community,” *Journal of International Economics*, 51 (2000), 49–78.

J. Imbs, H. Mumtaz, M. O. Ravn, and H. Rey, “PPP Strikes Back: Aggregation and the Real Exchange Rate,” *Quarterly Journal of Economics*, 120 (2005), 1–44.

Obstfeld and Rogoff, Chapters 8, 9, 10.

S. Rebelo and C. A. Vegh, “Real Effects of Exchange Rate-Based Stabilization: An Analysis of Competing Theories,” in B. S. Bernanke and J. J. Rotemberg, editors, *NBER Macroeconomics Annual 1995*. The MIT Press, 1995, 125–174.

A. C. Stockman and L. L. Tesar, “Tastes and Technology in a Two-Country Model of the Business Cycle: Explaining International Comovements,” *American Economic Review*, 85 (1995), 168–185.

7. Capital Flows and Crises

M. Aguiar, M. Amador, E. Farhi, and G. Gopinath, “Crisis and Commitment: Inflation Credibility and the Vulnerability to Sovereign Debt Crises,” Princeton University, 2012.

A. Araujo, M. Leon, and R. Santos, “Welfare Analysis of Currency Regimes with Defaultable Debts,” Banco Central do Brasil, 2012.

C. Chamley and B. Pinto, “Why Official Bailouts Tend Not to Work: An Example Motivated by Greece 2010,” *The Economists’ Voice*, 8 (2011).

H. L. Cole and T. J. Kehoe, “A Self-Fulfilling Model of Mexico's 1994-95 Debt Crisis,” *Journal of International Economics*, 41 (1996), 309–330.

H. L. Cole and T. J. Kehoe, “Self-Fulfilling Debt Crises,” *Review of Economic Studies*, 67 (2000), 91–116.

J. C. Conesa and T. J. Kehoe, “Gambling for Redemption and Self-Fulfilling Debt Crises,” Federal Reserve Bank of Minneapolis Research Department Staff Report 465, 2015.

J. M. Da Rocha, E. Gimenez, and F. Lores, “Self-Fulfilling Crises with Default and Devaluation,” *Economic Theory*, 53 (2013), 499–535.

T. J. Kehoe, “What Happened in Mexico in 1994–95?” in P. J. Kehoe and T. J. Kehoe, editors, *Modeling North American Economic Integration*, Kluwer Academic Publishers, 1995, 131–47.

T. J. Kehoe and K. J. Ruhl, “Sudden Stops, Sectoral Reallocations, and the Real Exchange Rate,” *Journal of Development Economics*, 89 (2009), 235–49.

T. J. Kehoe, K. J. Ruhl, and J. B. Steinberg, “Global Imbalances and Structural Change in the United States,” Federal Reserve Bank of Minneapolis Research Department Staff Report 489, 2017.

Note:

We will take the material in topic 0 for granted, reviewing some of it selectively throughout the course. We will cover topics 1, 2, 3, and some of topic 4 for sure. We will not have time to do all of topics 5, 6, and 7. I hope to cover at least one of these three topics (probably 7).

UNIVERSITY OF MINNESOTA POLICY ON THE COVID-19 VACCINE AND FACE COVERINGS:

The University of Minnesota is adding the COVID-19 vaccine to the list of vaccines required for all enrolled University of Minnesota students. **All students systemwide will receive an email with instructions on how to confirm your vaccination status.** Please watch for the email and then quickly complete the form.

Faculty and staff will receive an email with instructions to confirm their vaccination status.

COVID-19, FACE-COVERINGS, SYMPTOMS, AND VACCINATION:

The University of Minnesota currently requires all students, staff, and faculty to wear masks when indoors regardless of vaccination status. This includes classrooms, atriums, offices, and all University indoor spaces. Instructors have the option of wearing a mask or a face-shield while teaching.

Please stay at home if you experience symptoms of COVID-19 and consult with your healthcare provider about an appropriate course of action. An absence due to symptoms of COVID-19 is an excused absence, and instructors will work with you to find the best course of action for missed work and/or class experiences.

CLASS ASSIGNMENTS:

Written answers to homework assignments must be typed; Graphs and numerical work need not be typed, but should be legible.

STUDENTS WITH DISABILITIES:

Reasonable accommodations will be provided for all students with documented disabilities (by the DRC). Contact the instructor at the beginning of the semester to work out details. This information will be kept confidential.

STUDENT MENTAL HEALTH AND STUDENT COUNSELING SERVICES:

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns. Information about confidential mental health services is available at: <https://boynton.umn.edu/clinics/mental-health>. Student Counseling Services website: <https://counseling.umn.edu/>

SEXUAL MISCONDUCT

Sexual misconduct (sexual harassment, sexual assault, stalking, and relationship violence) includes unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such behavior is prohibited in the University setting.

Per the [U of M policy on sexual harassment](#), *I am required to share information that I learn about possible sexual misconduct* with the campus Title IX office. Within the requirements of my job, I will be as responsive as possible to your requests for confidentiality and support. You can also, or alternately, choose to talk with a confidential resource that will not share information that they learn about sexual misconduct. Confidential resources include [The Aurora Center](#), [Boynton Mental Health](#), and [Student Counseling Services](#).

DROPPING A CLASS:

Termination of attendance alone is not sufficient to drop a class. You must notify the Registrar's office. Please contact your academic (college) adviser for details on this process and pay attention to University deadlines for add/drop.

INCOMPLETE GRADE:

Low class standing is not a valid reason for an Incomplete grade. An I is given only in exceptional circumstances like family emergencies or hospitalization; arrangements must be worked out between the student and instructor before the final exam. We require written proof of emergencies. Details about I grades and how to make it up are to be decided by the Instructor and student; you need to fill out the form.

SCHOLASTIC DISHONESTY:

"The College of Liberal Arts defines scholastic dishonesty broadly as any act by a student that misrepresents the student's own academic work or that compromises the academic work of another. Examples include cheating on assignments or exams, plagiarizing (misrepresenting as one's own anything done by another), unauthorized collaboration on assignments or exams, or sabotaging another student's work".

The University Student Conduct Code defines scholastic dishonesty as "Submission of false records of academic achievement; cheating on assignments or examinations; plagiarizing; altering, forging, or misusing a University academic record; taking, acquiring, or using text materials without faculty permission; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement." Penalties for scholastic dishonesty of any kind in any course will entail an "F" for the particular assignment/exam or the course. Website for information on Student Academic Misconduct: <https://communitystandards.umn.edu/avoid-violations/avoiding-scholastic-dishonesty>

STUDENT CONDUCT AND CLASSROOM BEHAVIOR:

Students are expected to contribute to a calm, productive, and learning environment. Check the Student Conduct Code: https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_student_conduct_code.pdf to find out what is expected of you.