ECON 8401   T. J. HOLMES AND T. J. KEHOE
INTERNATIONAL TRADE AND PAYMENTS THEORY   FALL 2010
SYLLABUS

Overview

This course meets once a week (Mondays 2:30-4:10) throughout the fall semester. The course
has two parts, corresponding to the first and second halves of the semester. Part 1 will be
similar to the 8401 class taught by Tim Kehoe in the first mini of Fall 2009. (See
http://www.econ.umn.edu/~tkehoe/classes/8401-09) Part 2 will cover topics at the
intersection of trade, industrial organization and regional economics.

Assignments and Grading:

There will be four 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, providing a total of eight marks. 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, three, or four
students. Topics for projects will be related to empirical issues in international economics,
such as empirical tests of the Heckscher-Ohlin model, or to issues of current policy relevance,
such as the modeling financial contagion. 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.

Description of Part 1

We economists traditionally divide the general field of International Economics into two
subfields: International Finance and International Trade. In Part 1 of 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? (4) How does trade liberalization affect a country's growth rate?

Part 1 Readings:

Copies of many of the readings will be available on the course web site from last year: http://www.econ.umn.edu/~tkehoe/classes/8401-09.

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.

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 for Part 1

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

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," Federal Reserve Bank of Minneapolis Staff Report 378, 2006.

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," National Bureau of Economic Research Working Paper 13286, 2007.

E. R. McGrattan and E. C. Prescott, "Openness, Technology Capital, and Development," Federal Reserve Bank of Minneapolis Working Paper 651, 2007.

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

C. Arkolakis, "Market Access Costs and the New Consumers Margin in International Trade," Yale University of Minnesota, 2008.

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," New York University, University of Minnesota, and CREST-INSEE, 2005.

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

T. J. Kehoe and K. J. Ruhl, "On Models of International Trade with Heterogeneous Firm," University of Minnesota, 2009.

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. l, 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 and K. J. Ruhl, "How Important is the New Goods Margin in International Trade?" University of Minnesota, 2002.

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.

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), 1297–1326.

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.

Notes for Part 1
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 4, 5, and 6. We hope to cover at least one of these three topics.

List of Topics and Readings for Part 2 (tentative, more an indication about topics than the papers that will actually be discussed)

7. More on Impact of Trade with Heterogeneous Firms

Andrew Atkeson and Ariel Tomás Burstein, "Innovation, Firm Dynamics, and International Trade," Journal of Political Economy, 2010, vol. 118, no. 3.

Holmes, Thomas J. and John J. Stevens, An Alternative Theory of the Size Distribution with an Application to Trade," April, 2010.

Andrew Bernard, Stephen Redding and Peter Schott, "Multi-product Firms and Trade Liberalization," NBER working paper, April 2010

8. Parallels between Trade Models and Regional (NEG) Models

Ottaviano, G., T. Tabuchi and J.-F. Thisse (2002), "Agglomeration and trade revisited," International Economic Review, 43(2): 409-435.

Melitz, M. J. and G. Ottaviano (2008), "Market size, trade, and productivity," Review of Economic Studies, 75(1): 295-316.

9. Impacts of Trade on Productivity

Chad Syverson, "Market Structure and Productivity: A Concrete Example," Journal of Political Economy, December 2004

Holmes, Levine, and Schmitz, "Monopoly and the Incentive to Innovate When Adoption Involves Switchover Disruptions, NBER working paper 13864, Oct 2008.

Holmes, Thomas J. and James A. Schmitz, Jr, "Competition and Productivity: A Review of the Evidence" Annual Review of Economics, Vol. 2, September 2010

Pavcnik N. 2002. Trade liberalization, exit, and productivity improvements: evidence from Chilean plants. Rev. Econ. Stud. 69(1):245–76

De Loecker J. 2009. Product differentiation, multi-product firms and estimating the impact of trade liberalization on productivity. Work. Pap., Princeton Univ.

Bloom, N. Raffaella Sadun & John Van Reenen , "Americans do I.T. Better: US Multinationals and the Productivity Miracle" Stanford working paper, Aug 2009

Bloom, N , Mirko Draca and John Van Reenen , "Trade Induced Technical Change: The Impact of Chinese Imports on Innovation, Diffusion and Productivity," Stanford working paper, 2009.

Trefler D. 2004. The long and short of the Canada-U.S. free trade agreement. Am. Econ. Rev. 94(4):870–95

Keller, Wolfgang and Stephen R. Yeaple, "Multinational Enterprises, International Trade, And Productivity Growth: Firm Level Evidence From The United States," The Review of Economics and Statistics, November 2009, 91(4): 821–831.

10. Spillovers

Eaton, J. and S. Kortum, "International Technology Diffusion: Theory and Measurement," International Economic Review," Volume 40, Issue 3, pages 537–570, August 1999

Greenstone, Hornbeck, and Moretti, "Identifying Agglomeration Spillovers: Evidence from Winners and Losers of Large Plant Openings," Journal of Political Economy, 2010, vol. 118, no. 3.

Moretti, Enrico, 2004. "Workers' Education, Spillovers and Productivity: Evidence from Plant-Level Production Functions." A.E.R. 94 (June): 656–90.

Stephen Redding and Daniel Sturm, "The Costs of Remoteness: Evidence from German Division and Reunification" American Economic Review, 98(5), 1766-1797, 2008.

11. Cities

Lucas, R. E. Jr. and E. Rossi-Hansberg (2002), "On the internal structure of cities," Econometrica, 70 (4): 1445-1476.

Esteban Rossi-Hansberg, Pierre‐Daniel Sarte and Raymond Owens III, "Housing Externalities," [Journal of Political Economy, 2010, vol. 118, no. 3.

Kristian Behrens, Gilles Duranton, Frederic Robert-Nicoud, "Productive cities: Sorting, selection, and Agglomeration," August 11, 2010, working paper

12. Offshoring, Skills,...

Antras, Pol, Luis Garicano, and Esteban Rossi-Hansberg (2006) , Offshoring in a knowledge economy, Quarterly Journal of Economics 121(1), 31{77.

Gene M. Grossman and Esteban Rossi-Hansberg, "Task Trade between Similar Countries," Princeton University Manuscript, July 2010

Ariel Burstein and Jonathan Vogel, "Globalization, Technology, and the Skill Premium'', July 2010

13. Borders and Pricing

Atkeson, Andrew and Ariel Burstein, "Pricing to Market, Trade Costs, and International Relative Prices," American Economic Review, 2009

Christian Broda, David E. Weinstein, "Understanding International Price Differences Using Barcode Data," NBER Working Paper No. 14017, May 2008

14. Borders and Product Flows

Anderson, James E. and Eric van Wincoop, 2003. "Gravity with Gravitas: A Solution to the Border Puzzle," Amer. Econ. Rev. 93:1, pp.170-92.

15. Trade Data and Small Samples

Ellison, Glenn and Edward L. Glaeser, "Geographic Concentration in U.S. Manufacturing Industries: A Dartboard Approach," The Journal of Political Economy, Vol. 105, No. 5 (Oct., 1997), pp. 889-927

Roc Armenter and Miklós Koren, "A Balls-and-Bins Model of Trade," April 2010 CEPR Discussion Paper No. DP7783

G Duranton, HG Overman, "Testing for localization using micro-geographic data,"The Review of Economic Studies Vol. 72, No. 4 (Oct., 2005), pp. 1077-1106

Eaton and Kortum, (work in progress)

Guidelines for Defining Scholastic Dishonesty:

The University Student Conduct Code defines scholastic dishonesty as follows:

Scholastic Dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis.

Scholastic dishonesty includes, but is not limited to, the description above. It could also be said that scholastic dishonesty is any act that violates the rights of another student with respect to academic work or that involves misrepresentation of a student's own work. Also included would be cheating on assignments or examinations, inventing or falsifying research or other findings with the intent to deceive, submitting the same or substantially similar papers (or creative work) for more than one course without consent of all instructors concerned, depriving another of necessary course materials, and sabotaging another's work. (*CLA Classroom, Grading & Examination Procedures*, http://advisingtools.class.umn.edu/cgep/studentconduct.html.)

Penalties for scholastic dishonesty of any kind in any course will entail an "F" for the particular assignment/exam or the course.