

Economics 245 — Fall 2013
International Trade

September 26, 2013

Instructor: Marc-Andreas Muendler
Office: Economics 312
Office hours: Thu 11:00a - 12:30p (or by appointment)
Phone: (858) 534-4799
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Class Time: TueThu 9:30a - 10:50a
Classroom: Sequoyah 231
Class Web Page: econ.ucsd.edu/muendler/teach/13f/245

1 Course Objectives

This course examines theoretical foundations of international trade and empirical evidence. The course considers the determinants of the trade pattern in goods and services, explanations of export-market participation and multinational activity at the firm level, as well as the interrelation of international trade with factor-market outcomes, income distribution and commercial policy. The empirical parts of the course present basic assessments of theories of international trade and capital movements, and provide an overview of evidence on economic outcomes.

2 Prerequisites

Instructor's consent.

3 Readings

Textbooks: Feenstra (2004); Eaton and Kortum (2010);
partly Bhagwati, Panagariya, and Srinivasan (1998)

Readings: See Class schedule and References.

The Eaton and Kortum textbook draft and readings are available through the class web page (see above). For each lecture, there are up to three types of readings. The *basic reading* is the textbook reference, or the classic article, on which a large part of the lecture notes will be based; you are *not* asked to write your weekly report on those. The *main* reading is an original paper or book chapter, on which you are asked to write your weekly report; the main reading is a recent academic publication (rarely more than one) for you to understand and discuss. *Additional readings* are points of departure for related research questions.

Lecture slides are available for download from the course web page.

4 Paper reports

There are typically two lectures per week, and each lecture has one designated *Main Reading* on this syllabus.

You are asked to send me *one* paper report by e-mail per week, either on the main reading of the Tuesday lecture or on the main reading of the Thursday lecture. Please paste your report into the *body of the e-mail*. No report is due for Lecture 1. Starting with Lecture 2 on October 1, there are two lectures per week through November 19; one report is due for each of these eight weeks. Given Thanksgiving holiday on November 21, the paper due in the ninth week is either one of the two alternative main readings for Lecture 18 on November 19. On two occasions, the main reading consists of three shorter papers and is cumulative.

Your report should be no longer than two (2) paragraphs and provide a summary of the paper's main insights and lessons. For theoretical papers, and the occasional historic conceptual paper, the summary should describe the main hypothesis and building blocks of the model, recount the main steps of the reasoning in the derivation, and assess the novelty and generality of the model. For empirical papers, the summary should describe the main features of the data source, explain the empirical procedure and identification strategy, and assess the robustness and generality of the results. For each paper, the summary concludes with a brief assessment of the role and relevance of the paper in the literature.

The paper report e-mail is due *before* the respective class, at 9:00am of the day of class. In particular, if you choose to review the main reading of the Tuesday lecture, then the report is due at 9:00am before the class on Tuesday.

5 Problem sets

Three problem sets will be distributed throughout the quarter. Problem set 1 will cover Industry-level Trade Theory, problem set 2 Firm-level Trade Theory and problem set 3 Global Production. The problem sets will ask you to derive main aspects of models covered in class, or related extensions. Each problem set is given out at the beginning of the according topic block (Oct 3/Oct 22/Nov 12) and due upon conclusion of the according topic block (Oct 17/Nov 8/Dec 5). Also see the Class Schedule for dates.

6 Oral presentation

The last week of class will be devoted to student presentations. In groups of two, students will choose a recent research paper at the frontier of research in international trade. For this purpose, you will propose a paper of your choice by Monday, November 18 at 5pm. In rare cases, I may ask you to select another paper by Wednesday, November 20. The paper presentation should explain the paper's main insights in a style similar to a seminar. Ideally, you will conclude with ideas for own follow-up research. A presentation should be based on slides as if you were presenting your own work.

7 Final exam

There will be a two-hour final exam on Thursday, December 12.

8 Assessment

There are four components of assessment: nine paper reports (out of 18 main papers), three problem sets, the oral presentation, and the final exam. The final exam will count for 25 percent of the final

letter grade; the paper reports, the problem sets, and the oral presentation also for 25 percent each. Strong class room participation throughout the quarter will be counted towards performance in the latter three categories.

9 Class Schedule

I. Foundations

1. **Thu, Sep 26:** Empirical Foundations

Basic reading: Eaton and Kortum (2010)/Ch. 2

(Additional readings: Bernard and Jensen 1995, Bernard, Jensen, Redding, and Schott 2007, Bernard, Jensen, and Schott 2009, Eaton, Kortum, and Kramarz 2004)

2. **Tue, Oct 1:** Analytic Foundations and the Gravity Equation

Basic readings: Eaton and Kortum (2010)/Ch. 3, Feenstra (2004)/Ch. 5

Main reading: Anderson and van Wincoop (2003)

(Additional readings: Armington 1969, Anderson 1979, Anderson and van Wincoop 2004)

II. Industry-level Trade Theory

3. **Thu, Oct 3:** Productivity Differences and Trade

Basic readings: Eaton and Kortum (2010)/Ch. 3, Feenstra (2004)/Ch. 1

Main reading: Dornbusch, Fischer, and Samuelson (1977)

(Additional readings: Eaton and Kortum 2012, Ricardo 1821, Costinot 2009, Obstfeld and Rogoff 1996/Ch. 4.5)

PROBLEM SET 1 OUT

4. **Tue, Oct 8:** Endowment Differences and Trade

Basic readings: Feenstra (2004)/Ch. 1-2, Bhagwati, Panagariya, and Srinivasan (1998)/Ch. 5-6

Main reading: Ohlin (1931)

5. **Thu, Oct 10:** Many Goods, Many Factors and Some Evidence

Basic readings: Feenstra (2004)/Ch. 3, Bhagwati, Panagariya, and Srinivasan (1998)/Ch. 8

Main reading: Davis and Weinstein (2001)

(Additional readings: Leontief 1953, Trefler 1995, Bernhofen and Brown 2004)

6. **Tue, Oct 15:** Endowment Differences, Trade, and Trade Policy

Basic readings: Feenstra (2004)/Ch. 2-3, Bhagwati, Panagariya, and Srinivasan (1998)/Ch. 12

Main reading: Romalis (2004)

(Additional reading: Schott 2004; Dornbusch, Fischer, and Samuelson 1980, Costinot and Vogel 2010)

III. Firm-level Trade Theory

7. **Thu, Oct 17:** Monopolistic Competition and Increasing Returns

Basic reading: Bhagwati, Panagariya, and Srinivasan (1998)/Ch. 11

Main reading: Krugman (1980)

(Additional readings: Helpman and Krugman 1985/Ch. 6-9, Dixit and Stiglitz 1977, Broda and Weinstein 2006)

PROBLEM SET 1 DUE

- 8. Tue, Oct 22:** Exporter Heterogeneity and the Size Distribution of Firms
Main readings: Axtell (2001), Eaton, Kortum, and Kramarz (2004), Bernard, Jensen, Redding, and Schott (2007), cumulatively
(Additional readings: Roberts and Tybout 1997, Clerides, Lach, and Tybout 1998; Gibrat 1931, Sutton 1997)
 PROBLEM SET 2 OUT
- 9. Thu, Oct 24:** Intermission on Multidimensional Panel Data
Main reading: Abowd, Kramarz, and Woodcock (2008)
(Additional readings: Abowd, Kramarz, and Margolis 1999, Moreira 2008)
- 10. Tue, Oct 29:** Heterogeneity with Fixed Costs of Exporting
Basic reading: Melitz (2003)
Main reading: Das, Roberts, and Tybout (2007)
(Additional readings: Melitz and Trefler 2012, Bernard, Redding, and Schott 2007, Chaney 2008)
- 11. Thu, Oct 31:** Technology in the Global Economy
Basic reading: Eaton and Kortum (2010)/Ch. 4-6 (sections 4.1, 4.4, 5.1-5.4, 6.1-6.5)
Main reading: Eaton and Kortum (2002)
(Additional readings: Alvarez and Lucas 2007, Eaton, Kortum, and Kramarz 2011)
- 12. Tue, Nov 5:** Multi-product Firms
Main reading: Eckel and Neary (2010)
(Additional readings: Arkolakis and Muendler 2011, Bernard, Redding, and Schott 2011)

IV. Global Production

- 13. Thu, Nov 7:** Offshoring and Trade in Intermediate Inputs
Basic reading: Feenstra (2004)/Ch. 4
Main reading: Feenstra and Hanson (1999)
(Additional reading: Ebenstein, Harrison, McMillan, and Phillips 2009)
 PROBLEM SET 2 DUE
- 14. Tue, Nov 12:** Trade in Tasks
Main reading: Grossman and Rossi-Hansberg (2008)
(Additional readings: Leamer and Storper 2001, Levy and Murnane 2004, Blinder 2009, Jensen and Kletzer 2010)
 PROBLEM SET 3 OUT
- 15. Thu, Nov 14:** Horizontal Foreign Direct Investment
Basic reading: Feenstra (2004)/Ch. 11
Main reading: Brainard (1997)
(Additional readings: Markusen and Venables 2000, Helpman, Melitz, and Yeaple 2004, Ekholm, Forslid, and Markusen 2007)
- Mon, Nov 18:** PROPOSAL FOR PAPER PRESENTATION DUE
- 16. Tue, Nov 19:** Firm Boundaries and Vertical Foreign Direct Investment
Basic reading: Feenstra (2004)/Ch. 11
Main reading: Antràs (2003)
(Additional reading: Antràs and Helpman 2004, Hanson, Mataloni, and Slaughter 2005)

17. Tue, Nov 26: Determinants and Consequences of Multinational Firm Activity

Basic reading: Feenstra (2004)/Ch. 11

Main reading: Carr, Markusen, and Maskus (2001), Blonigen, Davies, and Head (2003) and Carr, Markusen, and Maskus (2003), jointly

(*Additional reading:* Muendler and Becker 2010; Helpman 2006)

Wed, Nov 22: SCHEDULE OF STUDENT PRESENTATIONS OUT

18. Thu, Nov 28: Trade and Employment Outcomes

Main reading: Helpman, Itskhoki, and Redding (2010)

(*Additional readings:* Davidson and Matusz 2004; Artuç, Chaudhuri, and McLaren (2010); Amiti and Davis (2011); Menezes-Filho and Muendler 2011)

Tue, Dec 3: STUDENT PRESENTATIONS

Thu, Dec 5: STUDENT PRESENTATIONS

PROBLEM SET 3 DUE

Thu, Dec 12: FINAL EXAM 8:00am-11:00am

References

- ABOWD, J. M., F. KRAMARZ, AND D. N. MARGOLIS (1999): "High Wage Workers and High Wage Firms," *Econometrica*, 67(2), 251–333.
- ABOWD, J. M., F. KRAMARZ, AND S. WOODCOCK (2008): "Econometric Analyses of Linked Employer-Employee Data," in *The econometrics of panel data*, ed. by L. Mátyás, and P. Sevestre, vol. 46 of *Advanced Studies in Theoretical and Applied Econometrics*, chap. 22, pp. 727–760. Springer, Berlin.
- ALVAREZ, F., AND R. E. J. LUCAS (2007): "General Equilibrium Analysis of the Eaton-Kortum Model of International Trade," *Journal of Monetary Economics*, 54(6), 1726–68.
- AMITI, M., AND D. R. DAVIS (2011): "Trade, Firms, and Wages: Theory and Evidence," *Review of Economic Studies*, 79(1), 1–36.
- ANDERSON, J. E. (1979): "A Theoretical Foundation for the Gravity Equation," *American Economic Review*, 69(1), 106–16.
- ANDERSON, J. E., AND E. VAN WINCOOP (2003): "Gravity with Gravitas: A Solution to the Border Puzzle," *American Economic Review*, 93(1), 170–92.
- (2004): "Trade Costs," *Journal of Economic Literature*, 42(3), 691–751.
- ANTRÀS, P. (2003): "Firms, Contracts, and Trade Structure," *Quarterly Journal of Economics*, 118(4), 1375–1418.
- ANTRÀS, P., AND E. HELPMAN (2004): "Global Sourcing," *Journal of Political Economy*, 112(3), 552–580.
- ARKOLAKIS, C., AND M.-A. MUENDLER (2011): "The Extensive Margin of Exporting Products: A Firm-level Analysis," University of California, San Diego, unpublished manuscript.
- ARMINGTON, P. S. (1969): "A Theory of Demand for Products Distinguished by Place of Production," *International Monetary Fund Staff Papers*, 16(1), 159–178.
- ARTUÇ, E., S. CHAUDHURI, AND J. MCLAREN (2010): "Trade Shocks and Labor Adjustment: A Structural Empirical Approach," *American Economic Review*, 100(3), 1008–1045.
- AXTELL, R. L. (2001): "Zipf Distribution of U.S. Firm Sizes," *Science*, 293(5536), 1818–20.

- BERNARD, A. B., AND J. B. JENSEN (1995): "Exporters, Jobs, and Wages in U.S. Manufacturing: 1976-1987," *Brookings Papers on Economic Activity: Microeconomics*, 1995(1), 67-112.
- BERNARD, A. B., J. B. JENSEN, S. J. REDDING, AND P. K. SCHOTT (2007): "Firms in International Trade," *Journal of Economic Perspectives*, 21(3), 105-30.
- BERNARD, A. B., J. B. JENSEN, AND P. K. SCHOTT (2009): "Importers, Exporters, and Multinationals: A Portrait of Firms in the U.S. that Trade Goods," in *Producer Dynamics: New Evidence from Micro Data*, ed. by T. Dunne, J. B. Jensen, and M. J. Roberts, vol. 68 of *Studies in Income and Wealth*, chap. 14, pp. 513-552. University of Chicago Press, Chicago.
- BERNARD, A. B., S. J. REDDING, AND P. K. SCHOTT (2007): "Comparative Advantage and Heterogeneous Firms," *Review of Economic Studies*, 74(1), 31-66.
- (2011): "Multi-product Firms and Trade Liberalization," *Quarterly Journal of Economics*, advance access July 19, 2011.
- BERNHOFEN, D. M., AND J. C. BROWN (2004): "A Direct Test of the Theory of Comparative Advantage: The Case of Japan," *Journal of Political Economy*, 112(1), 48-67.
- BHAGWATI, J. N., A. PANAGARIYA, AND T. N. SRINIVASAN (1998): *Lectures on International Trade*. MIT Press, Cambridge, Massachusetts, 2nd edn.
- BLINDER, A. S. (2009): "How Many U.S. Jobs Might Be Offshorable?," *World Economics*, 10(2), 41-78.
- BLONIGEN, B. A., R. B. DAVIES, AND K. HEAD (2003): "Estimating the Knowledge-Capital Model of the Multinational Enterprise: Comment," *American Economic Review*, 93(3), 980-994.
- BRAINARD, S. L. (1997): "An Empirical Assessment of the Proximity-Concentration Trade-off between Multinational Sales and Trade," *American Economic Review*, 87(4), 520-544.
- BRODA, C., AND D. E. WEINSTEIN (2006): "Globalization and the Gains from Variety," *Quarterly Journal of Economics*, 121(2), 541-85.
- CARR, D. L., J. R. MARKUSEN, AND K. E. MASKUS (2001): "Estimating the Knowledge-Capital Model of the Multinational Enterprise," *American Economic Review*, 91(3), 693-708.
- (2003): "Estimating the Knowledge-Capital Model of the Multinational Enterprise: Reply," *American Economic Review*, 93(3), 995-1001.
- CHANEY, T. (2008): "Distorted Gravity: The Intensive and Extensive Margins of International Trade," *American Economic Review*, 98(4), 1707-21.
- CLERIDES, S. K., S. LACH, AND J. R. TYBOUT (1998): "Is Learning by Exporting Important? Micro-dynamic Evidence from Colombia, Mexico, and Morocco," *Quarterly Journal of Economics*, 113(3), 903-47.
- COSTINOT, A. (2009): "An Elementary Theory of Comparative Advantage," *Econometrica*, 77(4), 1165-92.
- COSTINOT, A., AND J. VOGEL (2010): "Matching and Inequality in the World Economy," *Journal of Political Economy*, forthcoming.
- DAS, S., M. J. ROBERTS, AND J. R. TYBOUT (2007): "Market Entry Costs, Producer Heterogeneity, and Export Dynamics," *Econometrica*, 75(3), 837-873.
- DAVIDSON, C., AND S. J. MATUSZ (2004): *International trade and labor markets: Theory, evidence, and policy implications*. W. E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- DAVIS, D. R., AND D. E. WEINSTEIN (2001): "An Account of Global Factor Trade," *American Economic Review*, 91(5), 1423-53.

- DIXIT, A. K., AND J. E. STIGLITZ (1977): "Monopolistic Competition and Optimum Product Diversity," *American Economic Review*, 67(3), 297–308.
- DORNBUSCH, R., S. FISCHER, AND P. A. SAMUELSON (1977): "Comparative Advantage, Trade, and Payments in a Ricardian Model with a Continuum of Goods," *American Economic Review*, 67(5), 823–39.
- (1980): "Heckscher-Ohlin Trade Theory with a Continuum of Goods," *Quarterly Journal of Economics*, 95(2), 203–24.
- EATON, J., AND S. KORTUM (2002): "Technology, Geography, and Trade," *Econometrica*, 70(5), 1741–79.
- (2010): "Technology in the Global Economy: A Framework for Quantitative Analysis," University of Chicago, unpublished manuscript.
- (2012): "Putting Ricardo to Work," *Journal of Economic Perspectives*, 26(2), 65–90.
- EATON, J., S. KORTUM, AND F. KRAMARZ (2004): "Dissecting Trade: Firms, Industries, and Export Destinations," *American Economic Review: Papers and Proceedings*, 94(2), 150–54.
- (2011): "An Anatomy of International Trade: Evidence from French Firms," *Econometrica*, 79(5), 1453–98.
- EBENSTEIN, A., A. HARRISON, M. McMILLAN, AND S. PHILLIPS (2009): "Estimating the Impact of Trade and Offshoring on American Workers Using the Current Population Surveys," *NBER Working Paper*, 15107.
- ECKEL, C., AND J. P. NEARY (2010): "Multi-Product Firms and Flexible Manufacturing in the Global Economy," *Review of Economic Studies*, 77(1), 188–217.
- EKHOLM, K., R. FORSLID, AND J. R. MARKUSEN (2007): "Export-Platform Foreign Direct Investment," *Journal of the European Economic Association*, 5(4), 776–795.
- FEENSTRA, R. C. (2004): *Advanced international trade: Theory and evidence*. Princeton University, Princeton, New Jersey.
- FEENSTRA, R. C., AND G. H. HANSON (1999): "The Impact of Outsourcing and High-Technology Capital on Wages: Estimates for the United States, 1979-1990," *Quarterly Journal of Economics*, 114(3), 907–40.
- GIBRAT, R. (1931): *Les inégalités économiques. Applications: Aux inégalités des richesses, a la concentration des entreprises, aux populations des villes, aux statistiques des familles, etc., d'une loi nouvelle: La loi de l'effect proportionnel*. Librairie du Recueil Sirey, Paris.
- GROSSMAN, G. M., AND E. ROSSI-HANSBERG (2008): "Trading Tasks: A Simple Theory of Offshoring," *American Economic Review*, 98(5), 1978–97.
- HANSON, G. H., R. J. MATALONI, AND M. J. SLAUGHTER (2005): "Vertical Production Networks in Multinational Firms," *Review of Economics and Statistics*, 87(4), 664–678.
- HELPMAN, E. (2006): "Trade, FDI, and the Organization of Firms," *Journal of Economic Literature*, 44(3), 589–630.
- HELPMAN, E., O. ITSCHKOKI, AND S. REDDING (2010): "Inequality and Unemployment in a Global Economy," *Econometrica*, 78(4), 1239–1283.
- HELPMAN, E., AND P. KRUGMAN (1985): *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy*. MIT Press, Cambridge, Massachusetts.
- HELPMAN, E., M. J. MELITZ, AND S. R. YEAPLE (2004): "Export versus FDI with Heterogeneous Firms," *American Economic Review*, 94(1), 300–316.
- JENSEN, J. B., AND L. G. KLETZER (2010): "Measuring Tradable Services and the Task Content of Offshorable Services Jobs," in *Labor in the New Economy*, ed. by K. G. Abraham, J. R. Spletzer, and M. J. Harper, no. 71 in NBER Studies in Income and Wealth, chap. 8, pp. 309–35. University of Chicago Press, Chicago and London.

- KRUGMAN, P. R. (1980): "Scale Economies, Product Differentiation, and the Pattern of Trade," *American Economic Review*, 70(5), 950–59.
- LEAMER, E. E., AND M. STORPER (2001): "The Economic Geography of the Internet Age," *Journal of International Business Studies*, 32(4), 641–65.
- LEONTIEF, W. (1953): "Domestic Production and Foreign Trade; The American Capital Position Re-Examined," *Proceedings of the American Philosophical Society*, 97(4), 332–349.
- LEVY, F., AND R. J. MURNANE (2004): *The New Division of Labor*. Princeton University Press, Princeton.
- MARKUSEN, J. R., AND A. J. VENABLES (2000): "The Theory of Endowment, Intra-industry and Multi-national Trade," *Journal of International Economics*, 52(2), 209–234.
- MELITZ, M. J. (2003): "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity," *Econometrica*, 71(6), 1695–1725.
- MELITZ, M. J., AND D. TREFLER (2012): "Gains from Trade When Firms Matter," *Journal of Economic Perspectives*, 26(2), 91–118.
- MENEZES-FILHO, N. A., AND M.-A. MUENDLER (2011): "Labor Reallocation in Response to Trade Reform," *NBER Working Paper*, 17372.
- MOREIRA, M. (2008): "A Maximum Likelihood Method for the Incidental Parameter Problem," *NBER Working Paper*, 13787.
- MUENDLER, M.-A., AND S. O. BECKER (2010): "Margins of Multinational Labor Substitution," *American Economic Review*, 100(5), 1999–2030.
- OBSTFELD, M., AND K. ROGOFF (1996): *Foundations of international macroeconomics*. MIT Press, Cambridge, Mass. and London.
- OHLIN, B. (1931): *Interregional and International Trade*, vol. 39 of *Harvard Economic Studies*. Harvard University, Cambridge, 2nd (1952) edn., Chapter 6, pp. 91–113.
- RICARDO, D. (1821): *On the Principles of Political Economy and Taxation*. John Murray, London, 3rd edn.
- ROBERTS, M. J., AND J. R. TYBOUT (1997): "The Decision to Export in Colombia: An Empirical Model of Entry with Sunk Costs," *American Economic Review*, 87(4), 545–64.
- ROMALIS, J. (2004): "Factor Proportions and the Structure of Commodity Trade," *American Economic Review*, 94(1), 67–97.
- SCHOTT, P. K. (2004): "Across-Product versus Within-Product Specialization in International Trade," *Quarterly Journal of Economics*, 119(2), 647–78.
- SUTTON, J. (1997): "Gibrat's Legacy," *Journal of Economic Literature*, 35(1), 40–59.
- TREFLER, D. (1995): "The Case of the Missing Trade and Other Mysteries," *American Economic Review*, 85(5), 1029–46.