

THE UNIVERSITY OF COLORADO  
DEPARTMENT OF ECONOMICS

Economics 8413  
International Trade  
Fall, 2014

Keith Maskus

Economics 107, 492-7588, [Keith.Maskus@colorado.edu](mailto:Keith.Maskus@colorado.edu)

Hours: Monday 3:00 – 5:00; Wednesday 2:00 – 3:00 and by appointment

D2L course site: <https://learn.colorado.edu/d2l/home/71448>

### Syllabus and Reading List

This course covers advanced topics in international trade, including classical comparative advantage, the theory of heterogeneous firms in trade, basics of trade policy, empirical work in international trade, and factor mobility. While an attempt is made to be comprehensive, time pressures dictate a judicious choice of materials to cover. However, the reading list provides a wide range of supplementary materials to consult on specific applications, which should be useful in thinking about research topics. The objectives of the course are to expose students deeply to frontier issues in international trade and to provide an analytical framework within which to pursue professional research.

There are no required texts for the course; readings will be posted on the course D2L site or I will provide an active link to where you can get them. However, the following books are very useful sources for particular issues in trade theory and policy (and in some cases specific chapters will be on D2L) and are worth having in your personal library.

- R. Feenstra, *Advanced International Trade*, Princeton U Press, 2004 (F).
- H. Bowen, A. Hollander, and J-M Viaene, *Applied International Trade*, Palgrave-Macmillan 2012 (BHV).
- J. Markusen and K Maskus, *International Trade: Theory and Evidence*, manuscript 2014 (MM); I will email this text to you.
- E.K. Choi and J. Harrigan eds., *Handbook of International Trade*, Blackwell 2003 (CH).
- G. Gopinath, E. Helpman and K. Rogoff eds. *Handbook of International Economics*, North-Holland 2014 (GHR).
- A. Dixit and V. Norman, *Theory of International Trade*, Cambridge U. Press. 1992 (DN).
- E. Helpman and P. Krugman, *Market Structure and Foreign Trade*, MIT Press, 1986 (HK).
- K. Bagwell and R.W. Staiger *The Economics of the World Trading System*, MIT Press, 2003 (BS).
- P. Combes, T. Mayer, and J-F Thisse, *Economic Geography*, Princeton U Press, 2008 (CMT).

The following older books are useful resources for foundational material. They are listed here solely for your reference. I have marked particularly important volumes with an asterisk.

- \*P. Aghion and P. Howitt, *Endogenous Growth Theory*, MIT Press, 1999.
- \*W.M. Corden, *Trade Policy and Economic Welfare*, Oxford U. Press, 2d edition, 1997.
- R.C. Feenstra, *Empirical Methods for International Trade*, MIT Press, 1987.
- \*G. Grossman, *Imperfect Competition and International Trade*, MIT Press, 1992.
- \*G. Grossman and E. Helpman, *Innovation and Growth in the Global Economy*, MIT Press, 1991.
- E. Helpman and P. Krugman, *Trade Policy and Market Structure*, MIT Press, 1988.
- \*E.E. Leamer, *Sources of International Comparative Advantage*, MIT Press, 1985.
- A. Woodland, *International Trade and Resource Allocation*, North-Holland, 1980.
- \*G. Grossman and K. Rogoff, *Handbook of International Economics: Vol. 3*, North-Holland, 1995.
- \*R. Jones and P.B. Kenen (JK), *Handbook of International Economics: Vol. 1*, North-Holland, 1985.

Finally, while this course emphasizes theory and frontier empirical work, some students may want a foundation in the practical issues of trade policy and international economic relations. Here are some useful qualitative and policy-oriented books on the WTO, preferential trade, etc.

- J.N. Bhagwati and R.E. Hudec, *Fair Trade and Harmonization: Prerequisites for Free Trade? Volume 1: Economic Analysis*, MIT Press, 1996.
- B. Hoekman and M. Kostecki, *The Political Economy of the World Trading System*, 3rd ed, Oxford U Press, 2009.
- A. Narlikar, M. Daunton and R.M. Stern, *The Oxford Handbook on the WTO*, Oxford U Press, 2012.
- K.E. Maskus, *Private Rights and Public Problems: The Global Economics of Intellectual Property in the 21<sup>st</sup> Century*, Peterson Institute, 2012.
- O. Cadot, et al, *The Origin of Goods: Rules of Origin in Regional Trade Agreements*, Oxford U Press, 2006.
- C.P. Bown and J. Pauwelyn, *The Law, Economics and Politics of Retaliation in WTO Dispute Settlement*, Cambridge U Press, 2010.

### **ASSIGNMENTS:**

There will be two examinations (September 29 and December 3), three problem sets, and a research paper (details discussed below). I also anticipate classroom participation: ask questions, bring up issues, offer insights on the material, etc. These tasks will be assigned the following weights in the overall grade:

Examination 1	30%
Examination 2	30%
Problem Sets	15%

Paper	20%
Participation	5%

The research paper should be an up-to-date, critical review of the frontier literature on a particular aspect of trade theory or trade policy (consult with me for likely topics), not exceeding 15 double-spaced pages. The paper should conclude with a description of a research project you think would be fruitful. The goal of the paper is to move you into a research topic that could lead to a journal submission and/or a start on your dissertation.

### **READINGS:**

Required readings are marked with an (R). Very useful background readings, which are highly recommended though not required, are marked with (B) and often provide material for lectures. Additional readings are listed for those wanting deeper and fuller treatments. In nearly all sections I have incorporated both theoretical and empirical papers.

*Note: Abbreviations used for journals:*

AER	American Economic Review
ECA	Econometrica
EJ	Economic Journal
IER	International Economic Review
JIE	Journal of International Economics
JPE	Journal of Political Economy
QJE	Quarterly Journal of Economics
REStat	Review of Economics and Statistics
REStud	Review of Economic Studies

### **SUBJECTS AND READINGS**

#### **1. Introductory Material on Trade and FDI: August 25**

(R) BHV, Ch. 1 (D2L)

(R) MM, Ch. 1

#### **2. The Gains from Trade in Competitive Models: August 27**

(R) DN, Ch. 3 (D2L)

(R) Deardorff, "The General Validity of the Law of Comparative Advantage," JPE 1980, 941-957 <http://www.jstor.org/stable/i331949>

(R) Frankel and Romer, "Does Trade Cause Growth?" AER 1999, 379-399 <http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.89.3.379>

(R) Bernhofen and Brown, "An Empirical Assessment of the Comparative Advantage Gains from Trade: Evidence from Japan," AER 2005, 208-225 <http://pubs.aeaweb.org/doi/pdfplus/10.1257/0002828053828491>

(B) MM, Ch. 5

(B) Bernhofen and Brown, "A Direct Test of the Theory of Comparative Advantage: The Case of Japan," JPE 2004, 48-67 <http://www.jstor.org/stable/10.1086/jpe.2004.112.issue-1>

Samuelson, "The Gains from International Trade Once Again," EJ 1962

### 3. Technology Differences and Trade: September 3-8

- (R) BHV, Ch. 3 (D2L)
- (R) Dornbusch, Fischer, and Samuelson, "Comparative Advantage, Trade, and Payments in a Ricardian Model with a Continuum of Goods," AER 1977, 823-839 (D2L)
- (R) Eaton and Kortum, "Technology, Geography, and Trade," ECA 2002, 1741-1779  
<http://onlinelibrary.wiley.com/doi/10.1111/1468-0262.00352/pdf>
- (B) MM, Ch. 7
- (B) Costinot, "On the Origins of Comparative Advantage," JIE 2009, 255-264  
<http://www.sciencedirect.com/science/journal/00221996/77/2>
- (B) Trefler, "International Factor Price Differences: Leontief was Right!" JPE 1993, 961-987, secs. II and III <http://www.jstor.org/stable/i337466>
- (B) Costinot, Donaldson and Komunjer, "What Goods do Countries Trade? A Quantitative Exploration of Ricardo's Ideas," REStud 2012, 581-608  
<http://restud.oxfordjournals.org/content/79/2/581.full.pdf+html>
- Ruffin, "The Missing Link: The Ricardian Approach to the Factor Endowments Theory of Trade," AER September 1988
- Markusen and Svensson, "Trade in Goods and Factors with International Differences in Production Technology," IER 1985.

### 4. The Factor-Proportions Model: September 10-17

- (R) F, Ch. 1 and 2 (D2L)
- (R) Trefler, "The Case of the Missing Trade and Other HOV Mysteries," AER 1995, 1029-1046 (D2L)
- (R) Davis and Weinstein, "An Account of Global Factor Trade," AER 2001, 1423-1453 <http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.91.5.1423>
- (B) HK, Ch. 1 (D2L)
- (B) F, Ch. 3 (D2L)
- (B) MM, Ch. 8
- (B) Harrigan, "Specialization and the Volume of Trade: Do the Data Obey the Laws?" in CH, Ch 4 (D2L)
- (B) Davis and Weinstein, "The Factor Content of Trade," in CH, Ch. 5 (D2L)
- R. Jones, "The Structure of Simple General Equilibrium Models," JPE 1965
- Deardorff, "Weak Links in the Chain of Comparative Advantage," JIE 1979
- Deardorff, "The General Validity of the Heckscher-Ohlin Theorem," AER 1982
- Melvin, "Production and Trade with Two Factors and Three Goods," AER 1968
- Leamer, *Sources of International Comparative Advantage*, MIT Press, 1985
- Bowen, Leamer, and Sveikauskas, "Multicountry, Multifactor Tests of the Factor Abundance Theory," AER 1987
- Costinot and Vogel, "Matching and Inequality in the World Economy," JPE 2009, 747-786
- Morrow, "Ricardian-Heckscher-Ohlin Comparative Advantage: Theory and Evidence," JIE 2010
- Romalis, "Factor Proportions and the Structure of Commodity Trade," AER 2004
- Schott, "One Size Fits All? Heckscher-Ohlin Specialization in Global Production," AER 2003

**5. The Specific-Factors Model: September 22**

- (R) Mussa, "Tariffs and the Distribution of Income: the Importance of Factor Specificity, Substitutability, and Intensity in the Short and Long Run," JPE 1974, 1191-1203 <http://www.jstor.org/stable/i304827>
- (R) Grossman and Levinsohn, "Import Competition and the Stock Market Return to Capital," AER 1989, 1065-1087 (D2L)
- (B) MM, Ch.9
- (B) Kovak, "Regional Trade Effects of Trade Reform: What is the Correct Measure of Liberalization?" AER 2013, 1960-1976  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.103.5.1960>
- DN, Chapter 4 and Chapter 5, parts 2 and 3
- Neary, "Short-Run Capital Specificity and the Pure Theory of International Trade," EJ 1978
- Kohli, "US Technology and the Specific-Factors Model," JIE 1993

**PROBLEM SET ONE DUE SEPTEMBER 22**

**6. Basic Oligopoly Models: September 24**

- (R) BHV, Ch. 8.1 (D2L)
- (R) Brander and Krugman, "A Reciprocal Dumping Model of International Trade," JIE 1983, 313-21 <http://www.sciencedirect.com/science/journal/00221996/15/3-4>
- (B) MM, Ch. 11
- (B) HK, Ch. 5 (D2L)
- (B) Trefler, "The Long and Short of the Canada-US Free Trade Agreement," AER 2004, 870-895 <http://pubs.aeaweb.org/doi/pdfplus/10.1257/0002828042002633>
- Levinsohn, "Testing Imports as Market Discipline Hypothesis," JIE 1993
- Markusen, "Trade and the Gains from Trade with Imperfect Competition," JIE 1981
- Krugman, "Import Protection as Export Promotion: International Competition in the Presence of Oligopoly and Economies of Scale," in Grossman, 1992
- Neary, "International Trade in General Oligopolistic Equilibrium," manuscript.

**EXAMINATION ONE: SEPTEMBER 29 (covers sections 1 through 5)**

**7. Monopolistic Competition: October 6-8**

- (R) BHV, Ch. 8.2-8.4 (D2L)
- (R) F, Ch. 5 (D2L)
- (R) Krugman, "Increasing Returns, Monopolistic Competition, and International Trade," JIE 1979, 469-479
- (R) Hanson and Xiang, "The Home-Market Effect and Bilateral Trade Patterns," AER 2004, 1108-29 <http://pubs.aeaweb.org/doi/pdfplus/10.1257/0002828042002688>
- (B) MM, Ch. 12
- (B) Krugman, "Scale Economics, Product Differentiation, and the Pattern of Trade," AER 1980, 950-959 (D2L)
- HK, Ch. 6-9

Davis and Weinstein, "Does Economic Geography Matter for International Specialization?" NBER working paper 5706, 1996  
Lancaster, "Intra-Industry Trade under Perfect Monopolistic Competition," JIE 1980  
Feenstra, "Gains from Trade in Differentiated Products: Japanese Compact Trucks," in Feenstra, Ch. 5

**8. Gravity Models, Geography and Trade Costs:** October 13-15

- (R) Anderson and van Wincoop, "Gravity with Gravitas: A Solution to the Border Puzzle," AER 2003, 170-92  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/000282803321455214>
- (R) Head and Mayer, "Gravity Equations: Workhorse, Toolkit, and Cookbook," in GHR, Ch. 3 (D2L)
- (R) Donaldson, "Railroads of the Raj: Estimating the Impact of Transportation Infrastructure," AER forthcoming <http://economics.mit.edu/files/6038>
- (B) Redding and Sturm, "The Costs of Remoteness: Evidence from German Division and Reunification," AER 2008, 1766-97  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.98.5.1766>
- (B) Anderson and van Wincoop, "Trade Costs," Journal of Economic Literature 2004, 691-751 <http://pubs.aeaweb.org/doi/pdfplus/10.1257/0022051042177649>
- (B) Hummels, "Transportation Costs and International Trade in the Second Era of Globalization," Journal of Economic Perspectives 2007, 131-54  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.21.3.131>

**9. Heterogeneous Firms and Trade: Background and Theory:** October 20-22

- (R) Bernard, Jensen, Redding and Schott, "Firms in International Trade," Journal of Economic Perspectives 2007, 105-30  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.21.3.105>
  - (R) Melitz and Redding, "Heterogeneous Firms and Trade," in GHR, Ch. 1 (D2L)
  - (R) Bernard, Redding, and Schott, "Comparative Advantage and Heterogeneous Firms," REStud 2007, 31-66  
<http://restud.oxfordjournals.org/content/74/1/31.full.pdf+html>
  - (R) Arkolakis, Costinot and Rodriguez-Clare, "New Trade Models, Same Old Gains?" AER 2012, 94-130  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.102.1.94>
  - (B) Melitz, "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity," ECA 2003, 1695-1725  
<http://onlinelibrary.wiley.com/doi/10.1111/1468-0262.00467/pdf>
  - (B) Nocke and Yeaple, "Globalization and Multiproduct Firms," NBER working paper 19409, 2013 <http://www.nber.org/papers/w19409.pdf>
  - (B) Demidova and Rodriguez-Clare, "The Simple Analytics of the Melitz Model in a Small Open Economy," JIE 2013, 266-72  
<http://www.sciencedirect.com/science/journal/00221996/90>
- Melitz and Ottaviano, "Market Size, Trade and Productivity," REStud 2003  
Bernard, Redding, and Schott "Multiproduct Firms and Trade Liberalization," QJE 2011

**10. Heterogeneous Firms and Trade: Empirical Studies:** October 29-November 3 (See next section for October 27)

- (R) Chaney, “Distorted Gravity: Heterogeneous Firms, Market Structure, and the Geography of International Trade,” AER 2008, 1707-21  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.98.4.1707>
- (R) Helpman, Melitz and Rubinstein, “Estimating Trade Flows: Trading Partners and Trading Volumes,” QJE 2008, 441-87  
<http://qje.oxfordjournals.org/content/123/2/441.full.pdf+html>
- (R) Tybout, “Plant- and Firm-Level Evidence on ‘New’ Trade Theories,” in CH, Ch. 13 (D2L)
- (B) Das, Roberts and Tybout, “Market Entry Costs, Producer Heterogeneity, and Export Dynamics,” ECA 2007, 837-73  
<http://onlinelibrary.wiley.com/doi/10.1111/j.1468-0262.2007.00769.x/pdf>
- Roberts and Tybout, “The Decision to Export in Colombia: An Empirical Model of Entry with Sunk Costs,” AER 1997
- Pavcnik, “Trade Liberalization, Exit and Productivity Improvements: Evidence from Chilean Plants” REStud 2002
- Balistreri, Hillberry and Rutherford, “Structural Estimation and Solution of International Trade Models with Heterogeneous Firms,” JIE 2011

**11. Demand Patterns and Trade:** October 27

- (R) Markusen, “Putting Per-Capita Income Back into Trade Theory,” JIE 2013, 255-65  
<http://www.sciencedirect.com/science/journal/00221996/90>
- (R) Caron, Fally and Markusen, “International Trade Puzzles: A Solution Linking Production and Preferences,” working paper 2013, QJE 2014  
[http://spot.colorado.edu/~markusen/publications\\_files/Published/0314\\_CFM\\_QJE.pdf](http://spot.colorado.edu/~markusen/publications_files/Published/0314_CFM_QJE.pdf)
- (B) Markusen, “Explaining the Volume of Trade: an Eclectic Approach,” AER 1986, 1002-1011 (D2L)
- (B) MM, Ch. 14
- Hunter, “The Contribution of Nonhomothetic Preferences to Trade,” JIE 1991
- Bergstrand, “The Heckscher-Ohlin Theorem, the Linder Hypothesis, and the Volume and Pattern of International Trade,” EJ 1990

**PROBLEM SET TWO DUE NOVEMBER 5**

**12. Foreign Direct Investment and the Multinational Firm:** November 5-10

- (R) BHV, Ch. 11 (D2L)
- (R) Carr, Markusen and Maskus, “Estimating the Knowledge-Capital Model of the Multinational Enterprise,” AER 2001, 693-708  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.91.3.693>
- (R) Helpman, Melitz and Yeaple, “Export versus FDI with Heterogeneous Firms” AER 2004, 300-16  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/000282804322970814>
- (B) MM, Ch. 15-16
- (B) Markusen and Maskus, “General Equilibrium Approaches to the Multinational



Firm: A Review of Theory and Evidence,” in GH, Ch. 11 (D2L)

**13. Trade, Offshoring and Technology Diffusion:** November 12-17

- (R) Grossman and Rossi-Hansberg, “Trading Tasks: A Simple Theory of Offshoring,” AER 2008, 1978-1997  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.98.5.1978>
- (R) Keller and Yeaple, “The Gravity of Knowledge,” AER 2013, 1414-1444  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.103.4.1414>
- (B) Antras and Rossi-Hansberg “Organizations and Trade,” Annual Review of Economics 2009, 43-64 (D2L)
- (B) MM, Ch. 17
- (B) Keller, “International Technology Diffusion” Journal of Economic Literature 2004, 752-82 <http://pubs.aeaweb.org/doi/pdfplus/10.1257/0022051042177685>
- Coe, Helpman and Hoffmaister, “North-South R&D Spillovers,” EJ 1997
- Hummels, Jorgensen, Munch and Xiang, “The Wage and Employment Effects of Outsourcing: Evidence from Danish Matched Worker Firm Data,” AER 2014

**14. Trade and Institutions:** November 19

- (R) Levchenko, “Institutional Quality and International Trade,” REStud 2007, 791-819 <http://restud.oxfordjournals.org/content/74/3/791.full.pdf+html>
- (B) Antras, “Incomplete Contracts and the Product Cycle,” AER 2005, 1054-73  
<http://pubs.aeaweb.org/doi/pdfplus/10.1257/0002828054825600>
- (B) Nunn, “Relationship Specificity, Incomplete Contracts and the Pattern of Trade,” QJE 2007, 569-600 <http://qje.oxfordjournals.org/content/122/2/569.full.pdf+html>
- (B) Rauch, “Business and Social Networks in International Trade,” Journal of Economic Literature 2001, 1177-1203

**NOVEMBER 24-26 NO CLASSES; FALL BREAK**

**15. Trade Policy: Competitive and Imperfectly Competitive Markets:** December 1

- (R) BHV, Ch. 5 and Ch. 10 (D2L)
- (B) MM, Ch. 18-20
- (B) Eaton and Grossman, “Optimal Trade and Industrial Policy under Oligopoly,” in Grossman, Ch. 7 (D2L)
- Vousden, *The Economics of Trade Protection*, Cambridge U Press 1990
- Corden, *Trade Policy and Economic Welfare*, Oxford U. Press 1997
- Berry, Levinsohn, and Pakes, “Voluntary Export Restraints on Automobiles: Evaluating a Trade Policy,” AER 1999
- Krishna, “Trade Restrictions as Facilitating Practices,” in Grossman, Ch. 5
- Horstmann and Markusen, “Up the Average Cost Curve: Inefficient Entry and the New Protectionism,” JIE 1986

**PROBLEM SET THREE DUE DECEMBER 1**

**EXAMINATION TWO: DECEMBER 3 (covers sections 7-14)**



**16. Economic Theories of Trade Agreements: Dec 8**

(R) BS, Ch. 2 (D2L)

(R) Horn, Maggi and Staiger, "Trade Agreements as Endogenously Incomplete Contracts," AER 2010, 394-419

<http://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.100.1.394>

(B) Grossman and Horn, "Why the WTO? An Introduction to the Economics of Trade Agreements," manuscript 2012 (D2L)

(B) MM, Ch. 21-22

Ethier, "Political Externalities, Non-Discrimination, and a Multilateral World,"  
Review of International Economics 2004

**17. Political Economy of Protection: December 8**

(R) Grossman and Helpman, "Protection for Sale," AER 1994, 833-850 (D2L)

(R) Goldberg and Maggi, "Protection for Sale: An Empirical Investigation," AER 1999, 1135-55 (D2L)

Cassing, McKeown, and Ochs, "The Political Economy of the Tariff Cycle,"  
American Political Science Review, 1986.

Magee, Brock and Young, *Black Hole Tariffs and Endogenous Policy Theory: Political Economy in General Equilibrium* Cambridge U Press, 1989

Gawande and Bandyopadhyay, "Is Protection for Sale? Evidence on the Grossman-Helpman Theory of Endogenous Protection," REStat 2000

**PART V: OTHER TOPICS**

It is unfortunate but we will not have time to cover the following areas, though elements of some were covered in the readings above. All of these subjects are actively being researched and are interesting and important. Feel free to read in these areas for a paper/dissertation topic or for your own interest.

**18. Trade, Innovation and Endogenous Growth**

Krugman, "A Model of Innovation, Technology Transfer, and the World Distribution of Income," JPE 1979

Dollar, "Technological Innovation, Capital Mobility, and the Product Cycle in North-South Trade," AER 1986

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

Helpman, "Innovation, Imitation, and Intellectual Property Rights," ECA, 1993

He and Maskus, "Southern Innovation and Reverse Knowledge Spillovers," IER 2012.

Howitt, "Endogenous Growth and Cross-Country Income Differences," AER 2000, 829-846

**19. Trade, Labor Markets and Immigration**

Costinot and Vogel, "Matching and Inequality in the World Economy," JPE 2010

Grossman, “The Distribution of Talent and the Pattern and Consequences of International Trade,” JPE 2004

Helpman, Itshoki, Redding and Muendler, “Trade and Inequality: from Theory to Estimation,” NBER working paper 17991, 2012

Ohnsorge and Trefler, “Sorting it Out: International Trade with Heterogeneous Workers,” JPE 2007

Davidson, Martin and Matusz, “Trade and Search-Generated Unemployment,” JIE 1999

Ottaviano, Peri and Wright, “Immigration, Offshoring and American Jobs,” AER 2014

Peri, “The Effect of Immigration on Productivity: Evidence from US States,” REStat 2013

G. Hanson and M. Slaughter, “The Rybczynski Theorem, Factor-Price Equalization, and Immigration: Evidence from U.S. States,” NBER working paper 7074, 1999

## **20. Product Quality and Trade**

Hallak, “Product Quality and the Direction of Trade,” JIE 2006

Hummels and Klenow, “The Variety and Quality of a Nation’s Exports,” AER 2005

Hummels and Skiba, “Shipping the Good Apples Out? An Empirical Confirmation of the Alchian-Allen Hypothesis,” JPE 2004

Schott, “Across-Product versus Within-Product Specialization and Trade,” QJE 2004

## **21. Trade in Intermediates and Vertical Specialization**

F, Ch.4

Antras and Chor, “Organizing the Global Value Chain,” NBER working paper 18163, 2012

Hummels, Ishii and Yi, “The Nature and Growth of Vertical Specialization in International Trade,” JIE 2001

Antras, Chor, Fally, and Hillberry, “Measuring the Upstreamness of Production and Trade Flows,” AER Papers and Proceedings 2012

Kohler, “International Outsourcing and Factor Prices with Multistage Production,” EJ 2004

Nunn and Trefler, “Incomplete Contracts and the Boundaries of the Multinational Firm,” Journal of Economic Behavior and Organization, 2013

## **22. International Trade and the Environment**

Copeland and Taylor, “Trade and Trans-boundary Pollution,” AER 1995

Antweiler, Copeland, and Taylor, “Is Free Trade Good for the Environment?” AER 2001

Copeland and Taylor, “Trade, Growth and the Environment,” Journal of Economic Literature 2004

Bohringer, Carbone, and Rutherford, “Embodied Carbon Tariffs,” NBER working paper 17376, 2011

Bohringer and Rutherford, “Carbon Abatement and International Spillovers,” Environmental and Resource Economics 2002

### **23. “Behind the Border” Regulations and Trade**

- Grossman and Lai, “International Protection of Intellectual Property,” AER 2004  
Ganslandt and Maskus, “Vertical Distribution, Parallel Trade, and Price Divergence in Integrated Markets,” European Economic Review 2007  
Ivus, “Do Stronger Patent Rights Raise High-Tech Exports to the Developing World?” JIE 2010  
Chen and Mattoo, “Regionalism in Standards: Good or Bad for Trade?” Canadian Journal of Economics 2008

### **24. Empirics of WTO and Regional Trade Agreements**

- Rose, “Do We Really Know that the WTO Increases Trade?” AER 2004  
Subramanian and Wei, “The WTO Promotes Trade, Strongly but Unevenly,” NBER working paper 10024, 2003  
Broda, Limao and Weinstein, “Optimal Tariffs and Market Power: the Evidence,” AER 2008  
Baier and Bergstrand, “Economic Determinants of Free Trade Agreements,” JIE 2004  
Baier and Bergstrand, “Estimating the Effects of Free Trade Agreements on International Trade Using Matched Econometrics,” JIE 2009  
Romalis, “NAFTA’s and CUSFTA’s Impact on International Trade,” REStat 2007  
Chen and Joshi, “Third-Country Effects on the Formation of Free Trade Agreements,” JIE 2010

### **25. Exchange Rates, Pricing and Trade**

- Alessandria and Kaboski, “Pricing to Market and the Failure of Absolute PPP,” AER: Macroeconomics 2011  
Atkeson and Burstein, “Pricing to Market, Trade Costs, and International Relative Prices,” AER 2008  
Feenstra, “Symmetric Pass-Through of Tariffs and Exchange Rates under Imperfect Competition: An Empirical Test,” JIE 1989