

Economics 3300: International Trade Theory
Fall 2024
Tuesdays 4pm-6pm
Room: GE 100
Peter M. Morrow
(This version: August 30th, 2024)

Quercus Link: <https://q.utoronto.ca/courses/357543>

Contact: peter.morrow@utoronto.ca. I will generally NOT be checking my office voicemail. You should email me only from your University of Toronto email as I will ignore any other email address (e.g. Gmail etc.). If I can answer your email briefly, I will try to respond to within 24 hours on weekdays but more slowly on the weekend. If you require a longer answer, I may ask you to make an appointment for office hours.

Course Orientation

This class will generally be taught at a mixed *M.A./Ph.D.* level and will have three goals. First, we will cover the theoretical models that economics uses to understand the structure of international trade. There will be a mix of classical models that serve as a theoretical foundation, as more recent developments. Second, we will cover empirical work that steers the development of these models. Third, we will cover recent contributions to both the theory and empirics of international trade to show you “cutting edge” research.

Updating of the syllabus

This draft represents my best guess/ambition for the papers I will cover this semester. If the past is any lesson, this will likely change as the semester progresses. Refer to the date for the most recent version of the syllabus. The version on Quercus will always be the “right” version.

Logistics

Sometime between Friday and Monday, I will post the lecture slides for that week’s class. Readings for the class will be assigned the previous week so that you can do the reading even if that week’s slides are not posted.

Office Hours: Wednesday 4pm-5pm or by appointment in my office.

Civility Statement and Accessibility

I consider the classroom to be a place where you will be treated with respect, and I welcome individuals of all abilities, ages, backgrounds, ethnicities, genders, gender identities, gender expressions, national origins, religious affiliations, sexual orientations, and other visible and non-visible differences. All members of this class are expected to contribute to a respectful, welcoming, and inclusive environment for every other member of the class. When sending any communication or participating in discussions, remember

that there are real people with feelings on the receiving end. Be kind and treat people as you want to be treated.

Communication

I will use Quercus to post all course communication and content. I will send all email communication to your University of Toronto email linked to Quercus. Use email to inform me of course problems (e.g. typos, missing information etc.).

Books and Resources

Although there are no required books for this class, there are some that are recommended (*) if you specialize in international trade. These are easily available on Amazon or any other online vendor.

*Feenstra, Robert C., *Advanced International Trade: Theory and Evidence*, Second Edition, Princeton: Princeton University Press, 2016 (“F” below)

*Handbook of International Economics, Vol. 4 (2014), edited by Gita Gopinath, Elhanan Helpman and Kenneth Rogoff

*Handbook of International Economics, Vol. 5 (2022), edited by Gita Gopinath, Elhanan Helpman and Kenneth Rogoff

Dixit, A.K. and V. Norman, *Theory of International Trade: A Dual, General Equilibrium Approach*, Cambridge: Cambridge University Press, 1980 (“DN” below)

Handbook of International Economics, (2003), edited by E. Kwan Choi and James Harrigan

Handbook of International Economics, (1995), edited by G.M. Grossman and Kenneth Rogoff

Handbook of International Economics, (1984), edited by R.W. Jones and P.B. Kenen

In addition, if you are uncertain about your familiarity with microeconomics:

Varian, H., *Microeconomic Analysis*, 3rd edition, New York: W.W. Norton 1992.

Mas-Colel, Andreu and Michael D. Whinston and Jerry Green, *Microeconomic Theory*, 1st Edition, New York: Oxford University Press (1995).

Given the attention that will be paid to empirical analysis in this class, you should have some idea of the data that is publicly available:

1) Robert Feenstra (and collaborators) has assembled extensive data covering world trade and U.S. imports at varying levels of aggregation across a number of decades. This data is

available at www.internationaldata.org and also at www.nber.org/data. In addition, researchers at CEPII in Paris have compiled more detailed data which they have made available at http://www.cepii.fr/cepii/en/bdd_modele/presentation.asp?id=1

2) The IPUMS [website](#) contains free data on the United States Current Population Survey (CPS), international population surveys, census public use sub-samples, and the United States American Community Survey. These provide very large (sample size) and extensive (number of variables) data for many years. These data sets have been used extensively in empirical work. They are very useful for almost all questions related to wages and occupational choice.

3) The World Bank has posted a series of useful data sets. First, the [Exporter Dynamics Database](#) provides providing indicators for close to 70 countries over the period 1997-2014 on the basic characteristics of their exporting firms, their concentration and diversification, their dynamics in terms of entry, exit and survival, and the unit prices of the goods they trade. Exporter-level data can often be obtained with a simple request.

4) Lastly, the University of Toronto has recently purchased a handful of useful data sets. One contains multiple years of Indian firm level data as recently used by one of our job market candidates (Scott Orr and Swapnika Rachapalli both) now at UBC and John Cairncross (a current Ph.D. student) is also used this data. Another useful data set is the Nielsen scanner data which contains barcode-time-location level data for purchases by US consumers. Torsten Jaccard (now at UBC) is working with this data. Please contact me or one of them if you have any questions. Feel free to ask me to introduce you to them if you are shy.

5) Many journals (especially those under the AEA) now require codes and data to be posted for published papers. This is a very nice way to ensure replication. Often, it also allows students to get “under the hood” of what authors did. These replication materials are posted on journal websites.

6) Confidential microdata maintained by Statistics Canada has recently become available at the RDC at Robarts Library. This includes the [CEEDD](#) database, a linked T2-LEAP-LWF database, trade transactions data, and a survey of manufactures. There is a formal application procedure to use this data and it is not usually free. However, I am happy to share my data dictionaries with you so that you can see what is available. The current Statistics Canada data base might not always be up to date.

Grading

The grading metric will be slightly different between MA and Ph.D. students. MA students can choose to be graded as Ph.D. students but not the opposite. MA students must inform me by 12pm on September 24th, 2024 if they wish to be graded as Ph.D. students otherwise they will be graded as MA students by default.

MA Grading System

20% Final Exam

20% Problem Sets

60% Weekly Quizzes

Ph.D. Grading System

20% Final Exam

10% Problem Sets

50% Weekly Quizzes

20% Weekly Questions and Research Proposal

Problem Sets (both MA and Ph.D. students): Problem sets will be a mix of theory and empirics. Some will be as simple as uploading data to STATA and running summary statistics and other will ask you to replicate a handful of very influential theory or empirical papers. The former will give you practical skills and teach you the more mundane tasks of the profession so that you will not waste time figuring them out later. The latter force you to get “under the hood” and see how these models work. **MA students may work in groups of 3 on the problem sets but each Ph.D. student must turn in their own.** These will be assessed “check plus” (100%), “check” (75%), “check minus” (50%), or 0%. If you do not turn in a problem set, you will receive a zero.

Weekly Quizzes (both MA and Ph.D. students): I will post short, timed quizzes each week (time to be determined). These will begin the week of September 23rd and there will be 10 of these quizzes; one for each week not counting reading week. You will be required to take these quizzes by 5pm on the Friday of each week. These are meant to be low stakes exercises to keep you all engaged during this time and to make sure you have been absorbing the content. They will usually pertain to the *previous week’s* content, but I reserve the right to also include earlier material. They will never be on content that we have not yet covered. If you miss a quiz, you must make the appropriate online declaration on ACORN. Your quiz marks will then be reweighted onto the quizzes you attended.

Weekly Journal (Ph.D. Students): Weekly questions and the research proposal are meant to get you thinking about research. While a journal-quality project is not required at this point, a simple question is a good place to start, and this is the point of the weekly questions. These will begin the week of September 23rd. By 5pm of each Friday, I ask that you write three simple questions and then 3-4 sentences for each fleshing out why it is an interesting question and how you might answer it. I strongly recommend that these questions be related to trade. I will set up private Google sheets for each of you. Questions each week should be distinct from earlier questions although they need not be completely unrelated. The goal is for you to have 30 or so questions at the end of the semester from which you can pick your favorites or most promising to work on for your second-year paper or (later) job market paper.

Exams: We will have an in class final exam during the final exam period.

Academic Misconduct

Students should note that I do not tolerate any form of academic misconduct. Any student caught engaging in such activities will be subject to academic discipline ranging from a mark of zero on the test or examination to dismissal from the university as outlined in the academic handbook. Any student abetting or otherwise assisting in such misconduct will also be subject to academic penalties.

Assigned Readings and Schedule

Readings with a double asterisk (**) are required. Readings with a single asterisk (*) are strongly suggested for Ph.D. students. Remaining readings are for those with further interest in the subject.

How to Do Research (intro)

**Redding, Stephen J. "The Transition to PhD Research", Slide Deck ([link](#))

Bernard, Andrew B., J. Bradford Jensen, Stephen J. Redding, and Peter K. Schott. "Global firms." *Journal of Economic Literature* 56, no. 2 (2018): 565-619.

Chaubey, Varanya, *The Little Book of Research Writing*, CreateSpace Independent Publishing Platform, 2018

Davis, Don "Ph.D. Research: Where do I Start?" ([link](#))

Meager, Rachel "Public Speaking for Academic Economists", Slide Deck ([link](#))

Redding, Stephen J., "Material for Trade PhD Students" ([link](#))

Lecture 1: Basic Gains from Trade and Comparative Advantage

**DN Ch. 3 (especially pg. 71-72)

**F Ch. 1 and Ch. 2

** Dornbusch, Rudiger and Stanley Fischer, and Paul Samuelson (1977) "Comparative Advantage, Trade, and Payments in a Ricardian Model with a Continuum of Goods," *The American Economic Review*, Vol. 67, No. 5, pp. 823-839

Costinot, Arnaud (2009), "An Elementary Theory of Comparative Advantage", *Econometrica*, Vol. 77 No. 4, pp. 1165-1192.

Bernhofen, Daniel M. and John C. Brown (2004), "A Direct Test of the Theory of Comparative Advantage: The Case of Japan," *Journal of Political Economy*, Vol. 112, No. 1, pp. 48-67

Deardorff, Alan V. (1980) "The General Validity of the Law of Comparative Advantage" *The Journal of Political Economy*, Vol. 88, No. 5, pp. 941-957

Dixit, Avinash K. (1986) "Gains from Trade Without Lump Sum Compensation," *Journal of International Economics*, Vol. 21,

Romalis, John (2004) "Factor Proportions and the Commodity Structure of Trade", *American Economic Review*, Vol. 94 No. 1, pp. 67-97.

Morrow, Peter (2022). "Comparative advantage in contemporary trade models." *Oxford Research Encyclopedia of Economics and Finance*.

Lecture 2: The Modern Ricardian Model of Eaton and Kortum (2002)

** Eaton, Jonathan and Samuel Kortum (2002) "Technology, Geography, and Trade," *Econometrica*, Vol. 70, No. 5, pp. 1741-1779.

*Eaton, Jonathan and Samuel Kortum (1001) "Technology, Trade, and Growth: A unified framework," *European Economic Review*, Vol. 45, pp. 742-755

Alvarez, Fernando and Robert Lucas (2007) "General equilibrium analysis of the Eaton-Kortum model of international trade," *Journal of Monetary Economics*, vol. 70, No. 6, pp. 1726-1768

Chen, Jiafeng, and Jonathan Roth. "Logs with zeros? Some problems and solutions." *The Quarterly Journal of Economics* 139, no. 2 (2024): 891-936.

Lecture 3: Eaton Kortum (2002) with Multiple Industries and Input-Output Linkages

** Costinot, Arnaud, Dave Donaldson, and Ivana Komunjer. "What goods do countries trade? A quantitative exploration of Ricardo's ideas." *The Review of Economic Studies* 79, no. 2 (2012): 581-608.

**Caliendo, Lorenzo and Fernando Parro (2015) "Estimates of the Trade and Welfare Effects of NAFTA" *Review of Economic Studies*, Vol. 82, No. 1, pp. 1-44

*Costinot, Arnaud and Andrés Rodríguez-Clare (2014) "Trade Theory with Numbers: Quantifying the Consequences of Globalization", *Handbook of International Economics*, Vol. 4, pages 197-262

Dekle, Robert and Jonathan Eaton and Samuel Kortum (2007) "Unbalanced Trade", *American Economic Review: Papers and Proceedings*, Vol. 97 No. 2 pg. 351-355.

Lecture 4: Imperfect Competition and Increasing Returns to Scale

**Dingel, Jonathan (2009), "the basics of 'Dixit-Stiglitz Lite'", posted notes

**Dixit, Avinash and Joseph Stiglitz, (1977) "Monopolistic competition and optimum product diversity", *American Economic Review*, Vol. 70, No. 3 pp. 297-308.

**Krugman, Paul (1979) "Increasing Returns, Monopolistic Competition, and International Trade" *Journal of International Economics* Vol 15. Pp. 313-321

**Krugman, Paul (1980) "Scale Economies, Product Differentiation, and the Pattern of Trade," *The American Economic Review*, Vol. 70, No. 5 (Dec., 1980), pp. 950-959

*F Chapter 5 and Appendix B

Costinot, Arnaud and Dave Donaldson and Margaret Kyle and Heidi Williams (2019) "The more we die, the more we sell? a simple test of the home-market effect." *The Quarterly Journal of Economics*, Vol. 134 no. 2, 843-894.

Dingel, Jonathan and Joshua Gottlieb and Maya Lozinski and Pauline Mourrot (2023). "Market Size and Trade in Medical Services" National Bureau of Economic Research Working Paper

Lecture 5: The Melitz (2003) Model of Firm Heterogeneity (set-up)

** Bernard, Andrew B., J. Bradford Jensen, Stephen J. Redding, and Peter K. Schott. "Global firms." *Journal of Economic Literature* 56, no. 2 (2018): 565-619.

** Melitz, Marc J. (2003) "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity", *Econometrica*, Vol. 71, No. 6, pp 1695-1725

* Melitz, Marc J. and Stephen J. Redding (2014) "Heterogeneous Firms and Trade", *Handbook of International Economics*, Vol. 4, pages 1-54

Lecture 6: The Melitz (2003) Model of Firm Heterogeneity (equilibrium and extensions)

** Melitz, Marc J. (2003) "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity", *Econometrica*, Vol. 71, No. 6, pp 1695-1725

**De Loecker, Jan and Pinelopi Goldberg (2014) "Firm Performance in a Global Market", *Annual Review of Economics*, Vol. 6 pages 201-227

* F ch. 6

* Chaney, Thomas (2008) "Distorted Gravity: The Intensive and Extensive Margins of International Trade", *American Economic Review*, Vol. 98, No. 4, pp 1707-1721

Akerberg, Daniel, Lanier Benkard, Steven Berry and Ariel Pakes (2007) "Econometric Tools for Analyzing Market Outcomes", *Handbook of Econometrics*, Vol. 6, pages 4171-4276 **Section 2.**

Holmes, Thomas J. and James A. Schimdt (2011) "Competition and Productivity: A Review of Evidence", *Annual Review of Economics*, Vol. 2 pages 619-642

Trefler, Daniel. (2004). The long and short of the Canada-US free trade agreement. *American Economic Review*, 94(4), 870-895

Lecture 7: Firm Heterogeneity with Variable Markups

** Atkeson, Anthony and Ariel Burstein (2008) "Pricing to Market, Trade Costs, and International Relative Prices" *American Economic Review*. Vol. 98, No. 5, pp. 1998-2031

** Bernard, Andrew and Jonathan Eaton and Bradford Jensen and Samuel Kortum (2003) "Plants and Productivity in International Trade", *American Economic Review*, Vol. 93 No. 4 pp. 1268-1290

Melitz, Marc J. and Gianmarco Ottaviano (2008) "Market Size, Trade, and Productivity", *Review of Economic Studies*, Vol. 75, No. 1, pp 295-316

Lecture 8: Firm Heterogeneity Advanced Topics

** Arkolakis, Costas, Arnaud Costinot, and Andrés Rodríguez-Clare (2012) "New trade models, same old gains?" *American Economic Review* 102.1, 94-130.

**Dhingra, S., & Morrow, J. (2019). Monopolistic competition and optimum product diversity under firm heterogeneity. *Journal of Political Economy*, 127(1), 196-232.

* Arkolakis, Costas, Arnaud Costinot, Dave Donaldson, and Andrés Rodríguez-Clare. "The elusive pro-competitive effects of trade." *The Review of Economic Studies*, 86, no. 1 (2019): 46-80.

* Edmond, Chris, Virgiliu Midrigan, and Daniel Yi Xu. "Competition, markups, and the gains from international trade." *American Economic Review* 105, no. 10 (2015): 3183-3221.

Lecture 9: Economic Geography

**Redding, Stephen J. (2016) "Goods Trade, Factor Mobility, and Welfare," *Journal of International Economics*, Vol. 101, pp. 148-167

**Redding, Stephen J. (2022) "Trade and Geography", *Handbook of International Economics*, Vol. 5, pages 147-218

*Allen, Treb and Costas Arkolakis (2014) "Trade and Topography of a Spatial Economy," *Quarterly Journal of Economics*, vol. 129, No. 3, pp. 1085-1140

* Allen, Treb and Costas Arkolakis (2020) "Universal Gravity," *Journal of Political Economy*, Vol. 128, No. 2, pp 393-433

*Head, Keith and Thierry Mayer (2014) "Gravity Equations: Workhorse, Toolkit, and Cookbook", *Handbook of International Economics*.

Redding, Stephen and Anthony Venables (2004) "Economic Geography and International Inequality," *Journal of International Economics*, Vol. 62, No. 1, pp. 53-82

Redding, Stephen and Esteban Rossi-Hansberg (2017) "Quantitative Spatial Economics", *Annual Review of Economics*, Vol. 9, pg. 21-58

Lectures 10: The China Shock

**Autor, David and David Dorn and Gordon Hanson (2013), "The China Syndrome: Local Labor Market Effects of Import Competition in the United States," *American Economic Review*, 103(6), 2121-2168

**Autor, David and David Dorn and Gordon Hanson (2014), "Trade Adjustment: Worker Level Evidence," *Quarterly Journal of Economics*, 129(4), 1799-1860

** Autor, David and David Dorn and Gordon H. Hanson (2016) "The China shock: Learning from labor-market adjustment to large changes in trade", *Annual Review of Economics*, Vol. 8 pages 205-240. *This article summarizes much of the "China shock" literature by Autor, Dorn, and Hanson that is cited above.*

** Borusyak, Kirill, Peter Hull, and Xavier Jaravel. "Quasi-experimental shift-share research designs." *The Review of Economic Studies* 89, no. 1 (2022): 181-213.

** Goldsmith-Pinkham, Paul, Isaac Sorkin, and Henry Swift. "Bartik instruments: What, when, why, and how." *American Economic Review* 110, no. 8 (2020): 2586-2624.

* Pierce, Justin R., and Peter K. Schott. "The surprisingly swift decline of US manufacturing employment." *American Economic Review* 106, no. 7 (2016): 1632-1662.

Acemoglu, Daron, David Autor, David Dorn, Gordon H. Hanson, and Brendan Price. "Import competition and the great US employment sag of the 2000s." *Journal of Labor Economics* 34, no. S1 (2016): S141-S198.

Hummels, David & Rasmus Jorgensen & Jakob Munch & Chong Xiang, (2014), "The Wage Effects of Offshoring: Evidence from Danish Matched Worker-Firm Data," *American Economic Review*, vol. 104(6), pages 1597-1629.

Abadie, Alberto, Susan Athey, Guido W. Imbens, and Jeffrey M. Wooldridge. "When should you adjust standard errors for clustering?." *The Quarterly Journal of Economics* 138, no. 1 (2023): 1-35.

Moulton, Brent R. "An illustration of a pitfall in estimating the effects of aggregate variables on micro units." *The review of Economics and Statistics* (1990): 334-338.

Lectures 11: Trade and Wages in Industrializing Countries/ DDM Models

** Artuc, Erhan & Shubham Chaudhuri & John McLaren, 2010. "Trade Shocks and Labor Adjustment: A Structural Empirical Approach," *American Economic Review*, vol. 100(3), pages 1008-45.

** Dix-Carneiro, Rafael, and Brian K. Kovak. (2017). "Trade liberalization and regional dynamics", *American Economic Review*, 107(10), 2908-46.

** Caliendo, Lorenzo, Maximiliano Dvorkin, and Fernando Parro. "Trade and labor market dynamics: General equilibrium analysis of the china trade shock." *Econometrica* 87, no. 3 (2019): 741-835.

* Dix-Carneiro, Rafael. "Trade liberalization and labor market dynamics." *Econometrica* 82, no. 3 (2014): 825-885.

* Goldberg, Penny and Nina Pavcnik, (2007) "Distributional effects of globalization in developing countries." *Journal of economic Literature*, 45(1), 39-82.

* Kovak, Brian and Rafael Dix-Carneiro (2023) "Globalization and Inequality in Latin America", *working paper*, Latin America and Caribbean Inequality Review

* McLaren, John (2017) "Globalization and Labor Market Dynamics", *Annual Review of Economics*, Vol. 9, pp. 177-200

Lecture 12: Relative Labor Demand and Offshoring

**F Ch. 4

** Alfaro-Urena, Alonso, Isabela Manelici, and Jose P. Vasquez. "The effects of joining multinational supply chains: New evidence from firm-to-firm linkages." *The Quarterly Journal of Economics* 137, no. 3 (2022): 1495-1552.

**Grossman, Gene M., and Esteban Rossi-Hansberg. "Trading tasks: A simple theory of offshoring." *American Economic Review* 98, no. 5 (2008): 1978-1997.

*Berman, Eli and John Bound, and Zvi Griliches, (1994) "Changes in the Demand for Skilled Labor Within U.S. Manufacturing Industries: Evidence from the Annual Survey of Manufacturing" *The Quarterly Journal of Economics*, Vol. 109, No. 2, pp. 367-397

* Fort, Teresa C. "The changing firm and country boundaries of US manufacturers in global value chains." *Journal of Economic Perspectives* 37, no. 3 (2023): 31-58.

*Katz, Lawrence and Kevin Murphy, (1992): "Changes in Relative Wages, 1963-1987: Supply and Demand Factors," *The Quarterly Journal of Economics*, Vol. 107, No. 1, pp. 35-78

* Verhoogen, Eric. "Firm-level upgrading in developing countries." *Journal of Economic Literature* 61, no. 4 (2023): 1410-1464.

Lecture 13: Topics in Trade Policy (time permitting)

Costinot, Arnaud, Andrés Rodríguez-Clare, and Ivan Werning (2020) "Micro to Macro: Optimal Trade Policy With Firm Heterogeneity" *Econometrica*, 88(6), 2739-2776.

Costinot, Arnaud, and Iván Werning. "Lerner symmetry: A modern treatment." *American Economic Review: Insights* 1, no. 1 (2019): 13-26.

Costinot, Arnaud, and Iván Werning. "Robots, trade, and luddism: A sufficient statistic approach to optimal technology regulation." *The Review of Economic Studies* 90, no. 5 (2023): 2261-2291

Fajgelbaum, Pablo D., Pinelopi K. Goldberg, Patrick J. Kennedy, and Amit K. Khandelwal. "The return to protectionism." *The Quarterly Journal of Economics* 135, no. 1 (2020): 1-55.

Fajgelbaum, Pablo, Pinelopi Goldberg, Patrick Kennedy, Amit Khandelwal, and Daria Taglioni. "The US-China trade war and global reallocations." *American Economic Review: Insights* 6, no. 2 (2024): 295-312.

(Mandatory versus recommended readings will be established when I get a better sense of if there will be time and how much).

Final Exam: TBA