



ECON 550 Applied Trade Policy Analysis

Units: 4

Time: Tuesday and Thursday 8am – 9:50am

IMPORTANT:

2 lectures of 1 hour and 50 mins per week

Location: Zoom meetings and course-related URLs, etc.

Instructor: Terrie L. Walmsley

Office: KAP 318B

Office Hours: I will be available online after classes and by appointment

Contact Info: Email: twalmsle@usc.edu

Course Description

As national economies have become more integrated through increased trade and investment flows, trade has become more important and more controversial, particularly in relation to issues of income inequality and the environment. The purpose of this course is to introduce students to the quantitative economic methods used to analyze trade policy issues by governments and international organizations worldwide, and in particular applied global computable general equilibrium models. Computable general equilibrium models are widely used for ex-ante analysis of potential trade policies; while econometric gravity models are widely used in trade analysis to examine the (ex-post) impact of trade policies on an economy and to estimate trade barriers.

Trade data and input-output tables are introduced and used to examine trade patterns and review the various theories behind why countries trade. Students will then learn how to use a global applied general equilibrium model to examine the impact of trade policies, such as the potential impact of the Trans-Pacific Partnership (TPP) and of the US raising tariffs on Chinese goods, on production, consumption, employment and wages, among other things. The course will then examine issues related supply chains, non-tariff measures, economic growth and income inequality. Some of the studies examined introduce dynamics, imperfect competition, foreign investment, firm heterogeneity, supply chains, emissions and household survey data into these models, giving students an idea of how these models are being adapted to better address global issues.

Learning Objectives and Outcomes

Throughout the course, students will be introduced to and exposed to various quantitative methods and data sources for applied trade policy analysis. By the end of the course students are expected:

- to demonstrate an understanding of the theories of international trade;
- to understand the differences between the two quantitative methods used in applied policy analysis and the circumstances under which they should each be used;
- to be able apply a computable general equilibrium model to examine the impact of trade policy;
- to understand some of the current issues in trade policy and how these methods have been used and adapted to examine them;
- to be able to think critically about the assumptions, modelling and policy recommendations of current research, in order to identify areas for possible improvement; and
- to have practiced presenting the background and results of a research paper in class.

Prerequisite(s): Undergraduate level microeconomics (ECON 303) is required. Experience with excel and STATA are also required. The course is mathematical and relies on a good understanding of microeconomics. It is therefore highly recommended that students complete ECON 500 Microeconomics before doing this course.

Co-Requisite(s): ECON 500 Microeconomics

Course Notes

Classes will take the form of lectures, discussion and hands-on modeling exercises. Students will be required to manipulate data in excel, as well as run models using specialized modeling software. Students will be provided with various types of models and data via links through blackboard. STATA may also be used for supplementary materials.

Since this syllabus is prepared in advance of the semester, please note that circumstances may arise requiring some adjustment in the syllabus during the semester, especially in the supplementary reading assignments.

Technological Proficiency and Hardware/Software Required

Students will be required to use several different software packages. Freely available, specialised software can be loaded onto your own computers (unfortunately **no MAC compatible versions of this software are available**).

Required Readings and Supplementary Materials

Links have been provided where the papers or reports are freely available and other books and journal papers can be obtained through the USC Library.

Core reading material:

Bacchetta, M., Beverelli, C., Cadot, O., Fugazza, M., Grether, J., Helble, M., Nicita, A., and R. Piermartini, 2012, [A practical guide to Trade Policy Analysis](https://vi.unctad.org/tpa/index.html), World Trade Organisation and United Nations Conference on Trade and Development Virtual Institutue. Available for download at: <https://vi.unctad.org/tpa/index.html>

Burfisher, M., 2017, [Introduction to Computable General Equilibrium Models](#), Cambridge University Press, 2nd edition (1st edition available from library is also adequate).

Supplementary reading material:

Items may be added to this list based on students interests.

For those students who have not done an International Trade course before, it would be helpful to have access to an undergraduate trade theory book to provide useful background reading and intuition to the theories underlying the methods being taught:

Krugman, P., M. Obstfeld and M. Melitz, 2015, [International Trade: Theory and Policy](#), Pearson (10th ed).

Feenstra, R. C. and A. M. Taylor, 2015, [International Trade](#), Worth Publishers (3rd Ed).

Akgul, Z., N. B. Villoria, and T. W. Hertel, 2016, "GTAP-HET: Introducing Firm Hetrogeneity into the GTAP Model." *Journal of Global Economic Analysis* 1(1): 118-180.

Anderson, J. E., and E. van Wincoop, 2003, "Gravity and Gravitats: A Solution to the Border Puzzle." *American Economic Review* 93(1): 170-192.

Anderson, J. E., and E. van Wincoop, 2004, "Trade Costs." National Bureau of Economic Research Working Paper 10480.

Antweiler, W., B. R. Copeland and M. S. Taylor, 2001, "Is Free Trade Good for the Environment?." *American Economic Review*, 91(4):877-908.

Armington, P. S, 1969, "A theory of demand for products distinguished by place of production." *International Monetary Fund Staff Papers* 16(1): 159-178.

Borjas, G., 2004, "Increasing the supply of labor through Immigration: Measuring the Impact of Native-born workers." Washington DC: Center for Immigration Studies.

Elbehri, A. and T. Hertel, 2006, "A Comparative Analysis of the EU-Morocco FTA vs. Multilateral Trade Liberalization" *Journal of Economic Integration* 21(3): 496-525

Fugazza, M., and J. C. Maur, 2008, "Non-tariff barriers in CGE models: How useful for policy?." *Journal of Policy Modeling*, 30(3): 475-490.

Francois, J., M. Manchin, H. Norberg, O. Pindyuk and P. Tomberger, 2013, "Reducing Transatlantic Barriers to Trade and Investment: An Economic Assessment", Center for Economic Policy Research, London.

Available at:

http://statmath.wu.ac.at/~hauser/LVs/Oetrie3/Folien/Projekte/TTIP/FrancoisNorberg2013CEPR_tradoc_150737.pdf

Francois, J., and B. McDonald, 1996, "Liberalization and Capital Accumulation in the GTAP Model" GTAP Technical paper No. 7, Center for Global Trade Analysis, Purdue University: West Lafayette IN.

Hertel, T., M. Verma, M. Ivanic, E. Magalhaes, C.E. Ludena and A.R. Rios, 2015, "GTAP - POV: A Framework for Assessing the National Poverty Impacts of Global Economic and Environmental Change". GTAP Technical Paper No. 31, Center for Global Trade Analysis, Purdue University: West Lafayette IN (IDB - TN - 870). <https://publications.iadb.org/publications/english/document/GTAP-POV-A-Framework-for-Assessing-the-National-Poverty-Impacts-of-Global-Economic-and-Environmental-Change.pdf>

Hertel, T. W., D. Hummels and T. L. Walmsley. 2014. "The Vulnerability of the Asian Supply Chain to Localized Disasters in Asia and Global Production." In B. Ferrarini and D. Hummels (eds). *Asia and Global Production Networks-Implications for Trade, Incomes and Economic Vulnerability*. Asian Development Bank and Edgar Elgar Publishing.

Hummels, D. and G. Schaur. 2013. "Time as a Trade Barrier." *American Economic Review* 103: 1-27.

Ianchovichina, E. and T. L. Walmsley, 2012, *Dynamic Modeling and Applications in Global Economic Analysis*, Cambridge: Cambridge University Press

Kee, H. L., A. Nicita and M. Olarreaga, 2009, "Estimating Trade Restrictiveness Indices", *Economic Journal* 119: 172--199. Available at: <https://openknowledge.worldbank.org/handle/10986/5903>

Khan, M. A., T. L. Walmsley and K. Mukhopadhyay, 2020, "Trade Liberalization and Income Inequality: The Case for Pakistan", American Committee on Asian Economic Studies (ACAES) panel on Economic inequality in Asia, ASSA Meeting, San Diego, USA, 2020. Will be provided.

Lenzen, A. Geschke, M. D. Abd Rahman, Y. Xiao, J. Fry, R. Reyes, E. Dietzenbacher, S. Inomata, K. Kanemoto, B. Los, D. Moran, H. Schulte in den Bäumen, A. Tukker, T. L. Walmsley and T. Wiedmann, 2017, "The Global MRIO Lab – charting the world economy", *Economic Systems Research*, 2(29), 158-186.

Melitz, M. J. and G. I. P. Ottaviano. 2008. "Market Size, Trade, and Productivity." *Review of Economic Studies* 75: 295-316.

Miller and Blair, 2009, Input-output Analysis: Foundations and Extensions, Cambridge University Press, (2nd edition).

Nelson G. C., H. Valin, R. D. Sands, P. Havlík, H. Ahammad, D. Deryng, J. Elliott, S. Fujimori, T. Hasegawa, E. Heyhoe, P. Kyle, M. Von Lampe, H. Lotze-Campen, D. Mason d' Croza, H. van Meijl, D. van der Mensbrugghe, C. Müller, A. Popp, R. Robertson, S. Robinson, E. Schmid, C. Schmitz, A. Tabeau, and D. Willenbockel, 2014,

"Climate change effects on agriculture: Economic responses to biophysical shocks", Proceedings of the National Academy of Sciences (PNAS), 11(9), 3274–3279. Available at: <https://www.pnas.org/content/111/9/3274>

Pyatt, G., 1988, "A SAM approach to modeling", *Journal of Policy Modeling*, Elsevier, vol. 10(3), pages 327-352.

Samuelson, P. A. 1954. "The Transfer Problem and Transport Costs, II: Analysis of Effects of Trade Impediments." *The Economic Journal* 64(254): 264-289.

Santos, S. and S, Tenreyro, 2009, "The log of Gravity." *The Review of Economic and Statistics*, 88: 641-58.

Siddig, K. A., A. Aguiar, H. Grethe, P. Minor, and T. L. Walmsley, 2014, "Impacts of Removing Refined Oil Import Subsidies in Nigeria on Poverty", *Energy Journal*, 69, 165-178.

United Nations Conference on Trade and Development (UNCTAD), 2015, International Classification of Non-tariff Measures, 2012 version. Geneva. Available at: https://unctad.org/en/PublicationsLibrary/ditctab20122_en.pdf?user=46

Walmsley T. L., and P. Minor, 2018, "Estimated Impacts of US Sections 232 and 301 Trade Actions on the US and Global Economies: A Supply Chain Prospective 2018-2030", ImpactECON Working Paper No. 08, ImpactECON: Boulder, CO, USA. Available at: <https://impactecon.com/resources/us-trade-actions/>

Walmsley T. L., and P. Minor, 2017, "Reversing NAFTA: A Supply Chain Perspective", ImpactECON Working Paper No. 07, ImpactECON: Boulder, CO, USA

Walmsley T. L., and P. Minor, forthcoming, "Non-tariff Measures in Applied Trade Models: Demand Shifts and Willingness to Pay", *World Economy*

Walmsley, T. L., and A. Strutt, 2019, "A Comparison of Approaches to Modelling Non-Tariff Barriers", Presented at the 22nd Annual Conference on Global Economic analysis, Warsaw, Poland, June 19-21.

Winters, L. A., N. McCulloch, and A. McKay, 2004, "Trade Liberalization and Poverty: The Evidence So Far", *Journal of Economic Literature*, Vol. XLII (March 2004) pp. 72–115.

Winters, L. A., T. L. Walmsley, Z. K. Wang and R. Grynberg, 2003, "Liberalising Temporary Movement of Natural Persons: An Agenda for the Development Round" *World Economy*, August 2003, Vol.26(8), pp.1137-1161.

World Bank, IDE-JETRO, OECD, UIBE, and World Trade Organisation (2017). "Measuring and Analysing the impact of GVCs on Economic Development." Global Value Chain Development Report, World Bank. Available at: https://www.wto.org/english/res_e/booksp_e/gvcs_report_2017.pdf. Chapters 1-2.

Yotov, Y., 2016, *Advanced Trade Policy Analysis: The Structural Gravity Model*, World Trade Organisation and United Nations Conference on Trade and Development Virtual Institutue. Available for download at: <https://vi.unctad.org/tpa/index.html>

Description and Assessment of Assignments

Students will be assessed through:

- Homework exercises: Students will be expected to complete hands-on computing exercises. The hands-on computing exercises will be commenced in lecture classes, with additional questions and analysis to be completed for homework. There will be six homework exercises.
- Presentation: students will be expected to present their research paper to the class. The length of this presentation will not exceed 20 minutes.
- Research Paper: students will be asked to develop and undertake a policy experiment using one of the models provided, and analyse and write up the results.

Grading Breakdown

Assignment	Points	% of Grade
Homework exercises		50
Research paper Presentation		20
Research project		30
TOTAL		100

Grading Scale

Grading in this course is generally A – C, C-, although students that miss classes or assessments could receive a lower grade. To receive an A students are expected to demonstrate all of the course objectives to a high level.

Assignment Submission Policy

Assignments are to be submitted via blackboard by noon on the due date. Students will be required to submit written documents, excel files with workings, and other program applications. Only microsoft word or pdf files will be accepted for written documents.

Grading Timeline

Assignments will be graded and feedback given within 2 weeks of submission.

Additional Policies

Every student is required to meet with me during the first three weeks to discuss a potential topic for their research project and their presentation.

Attendance is highly recommended as the course will be highly practical and there are no text books that cover all of the material covered in the course. Replication exercises will be done in class, with additional questions and analysis related to those replication exercises given for the homework assignments. Class participation is also an important part of the course. If you cannot attend these classes you will be at a severe disadvantage when competing the the homework exercises.

Students assignments will be penalized at the rate of 1 percent per day late, unless justified for emergency health reason. Students should notify the professor prior to the due date of any issues or as soon as is practically possible in the case of emergencies.

No requests for INCOMPLETE will be considered unless strictly justified for emergency health reason.

Course Schedule: A Weekly Breakdown

	Days	Topics	Readings and Homework	Deliverable Due Dates*
Week 1	January 19	Topic 1: Introduction to trade and trade policy	Krugman et al (2015), ch 2-3	
	January 21	Topic 1: Introduction to trade and trade policy		

Week 2	January 26	Topic 2: Review of trade theory and the analysis of trade flows	Bacchetta et al (2012), ch 1 Burfisher (2017), ch 3 Krugman et al (2015), ch 4-5	
	January 28	Topic 2: Review of trade theory and the analysis of trade flows		
Week 3	February 2	Topic 3: The Gravity model	Bacchetta et al. (2012), ch 3 Yotov (2016) Samuelson (1954) Anderson et al (2003) Anderson et al (2004) Santos & Tenreyro (2009)	
	February 4	Topic 3: The Gravity model		
Week 4	February 9	Topic 4: Trade policy instruments	Bacchetta et al. (2012), chs 2-3 (pp. 116-118) Kee et al (2009) Hummels et al (2013) UNCTAD (2015) Krugman et al (2015), ch 9	Homework 1 due Monday of this week
	February 11	Topic 4: Trade policy instruments		
Week 5	February 16	Topic 5: A basic trade model	Bacchetta et al. (2012), ch 5 Burfisher (2017), ch 1-2, 4, 7 Armington (1969) Krugman et al (2015), ch 6, 8	
	February 18	Topic 5: A basic trade model		
Week 6	February 23	Topic 6: Factors of production	Burfisher (2017), ch 5-6 Krugman et al (2015), ch 4-5	Homework 2 due Monday of this week
	February 25	Topic 6: Factors of production		
Week 7	March 2	Topic 7: A global applied general equilibrium model	Burfisher (2017), ch 4, 7-8	
	March 4	Topic 7: A global applied general equilibrium model		

Week 8	March 9	Topic 8: Trade agreements and the WTO	Burfisher (2017), ch 9 Samuelson (1954) Francois, et al (2013) Fugazza and Maur (2008)	Homework 3 due Monday of this week
	March 11	Topic 9: The backlash against free trade	Walmsley et al (2018)	
Week 9	March 16	Topic 10: Supply chains and trade in value-added		
	March 18	Topic 10: Supply chains and trade in value-added	World Bank et al (2017) chs 1-2 Miller et al (2009) ch 2-3 Lenzen et al (2017) Krugman et al (2015), ch 7-8	
Week 10	March 23	Wellness Day		Homework 4 due Monday of this week
	March 25	Topic 11: Factor mobility and Dynamics	Winters et al (2003) Borjas (2004) Francois et al (1996)	
Week 11	March 30	Topic 11: Factor mobility and Dynamics		
	April 1	Topic 12: Firms: Imperfect competition and Firm Heterogeneity	Akgul et al (2016) Elbehri et al (2006) Melitz et al (2009) Krugman et al (2015), ch 6-8	
Week 12	April 6	Topic 12: Firms: Imperfect competition and Firm Heterogeneity		Homework 5 due Monday of this week
	April 8	Topic 13: Trade and Developing Countries	Bacchetta et al. (2012) ch 6 Winters et al (2014) Hertel et al (2015) Siddig et al (2014) Krugman et al (2015), ch 11	
Week 13	April 13	Topic 14: Trade and the environment	Antweiler et al (2001) Francois et al (2013) Hertel et al (2014) Nelson et al (2014)	
	April 15	Presentations		
Week 14	April 20	Wellness Day		Homework 6 due Monday of this week

	April 22	Presentations		
Week 15	April 27	Presentations		
	April 29	No class		Final research paper due

* Assignments are due at the beginning of the week indicated (Monday by 12 noon).

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Student Health Counseling Services - (213) 740-7711 – 24/7 on call
engemannshc.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 – 24/7 on call
engemannshc.usc.edu/rsvp

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) | Title IX - (213) 740-5086
equity.usc.edu, titleix.usc.edu

Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

Bias Assessment Response and Support - (213) 740-2421
studentaffairs.usc.edu/bias-assessment-response-support

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710

studentaffairs.usc.edu/ssu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.