ECO 551: International Trade I
Tue/Thu 10:40 - 12:10 PM, Room: 298 Julis Romo Rabinowitz Building

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Instructor: L. Kamran Bilir, A23 Julis Romo Rabinowitz Building, lbilir@princeton.edu

Office Hours: By appointment

Course Website: We will use the Blackboard website for posting announcements and materials.

Lectures:

Lecture 1: Firm Heterogeneity and Trade I. (Week of 11/4) [3 hours]

Lecture 2: Firm Heterogeneity and Trade II. (Week of 11/11) [3 hours]

Lecture 3: Trade and Innovation I. (Week of 11/18) [3 hours]

Lecture 4: Trade and Innovation II. (Week of 11/25) [3 hours]

Lecture 5: Multinational Firms I. (Week of 12/2) [3 hours]

Lecture 6: Multinational Firms II. (Week of 12/9) [3 hours]

Extra Topic: Diffusion and Networks.

Lecture 1: Firm Heterogeneity and Trade I - Theory and Evidence. (Week of 11/4)

Required Readings

1. Pavcnik, Nina (2002). "Trade Liberalization, Exit, and Productivity Improvements: Evidence from Chilean Plants," The Review of Economic Studies, 69, 245-76.
2. Melitz, Marc (2003). "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity," Econometrica, 71(6), 1695-1725.
3. Arkolakis, Costas (2010). "Market Access Costs and the New Consumers Margin in International Trade," Journal of Political Economy, 118(6), 1151-1199.

Additional Readings

1. Krugman, Paul (1980). "Scale Economies, Product Differentiation, and the Pattern of Trade," American Economic Review, 71(5), 950-959.
2. Bernard, Andrew, Jonathan Eaton, Bradford Jensen and Samuel Kortum (2003). "Plants and Productivity in International Trade," American Economic Review, 93(4), 1268-1290.
3. Bernard, Andrew, Stephen Redding and Peter Schott (2007). "Comparative Advantage and Heterogeneous Firms," Review of Economic Studies, 74(1), 31-66.
4. Chaney, Thomas (2008). "Distorted Gravity: The Intensive and Extensive Margins of International Trade," American Economic Review, 98(4), 1707-1721.
5. Helpman, Elhanan, Marc Melitz and Yona Rubinstein (2008). "Estimating Trade Flows: Trading Partners and Trading Volumes," Quarterly Journal of Economics, 123(2), 441-487.
6. Melitz, Marc and Gianmarco Ottaviano (2008). "Market Size, Trade and Productivity," Review of Economic Studies, 75(1), 295-316.
7. Eaton, Jonathan, Samuel Kortum and Francis Kramarz (2011). "An Anatomy of International Trade: Evidence from French Firms," Econometrica, 79(5), 1453-1498.
8. Arkolakis, Costas, Arnaud Costinot, and Andres Rodriguez-Clare (2012). "New Trade Models, Same Old Gains?" American Economic Review 102(1), 94-130.
9. Melitz, Marc J. and Stephen J. Redding (2015). "New Trade Models, New Welfare Implications" American Economic Review 105(3), 1105-1146.

Background Readings

1. Hopenhayn, Hugo (1982a). "Entry, Exit, and Firm Dynamics in Long Run Equilibrium," Econometrica, 60, 1127-1150.
2. Hopenhayn, Hugo (1982a). "Exit, Selection, and the Value of Firms," Journal of Economic Dynamics and Control, 16, 621-653.
3. Helpman, Elhanan and Paul Krugman (1985). *Market Structure and Foreign Trade: Increasing Returns, Imperfect Competition, and the International Economy*, MIT Press, ch. 6-11.
4. Bernard, Andrew B., Jensen, J. Bradford, Redding, Stephen J. and Schott, Peter K. (2007). "Firms in International Trade," *Journal of Economic Perspectives*, 21(3), 105-130.
5. Bernard, Andrew B., Jensen, J. Bradford, Redding, Stephen J. and Schott, Peter K. (2009). "Importers, Exporters, and Multinationals: A Portrait of Firms in the U.S. that Trade Goods," in (eds.) T. Dunne, J.B. Jensen and M.J. Roberts, *Producer dynamics: New Evidence from Micro Data*, Chicago: Chicago University Press.

Lecture 2: Firm Heterogeneity and Trade II - Multi-Product Firms. (Week of 11/11)

Required Readings

1. De Loecker, Jan (2011). "Product Differentiation, Multi-Product Firms and Estimating the Impact of Trade Liberalization on Productivity," Econometrica, 79(5), 1407-1451.
2. Goldberg, Penny, Amit Khandelwal, Nina Pavcnik, and Petia Topalova (2010). "Imported Intermediate Inputs and Domestic Product Growth: Evidence from India," Quarterly Journal of Economics, 125(4), 1727-67.

Additional Readings

1. Bernard, Andrew, Stephen Redding and Peter Schott (2010). "Multi-Product Firms and Product Switching," American Economic Review, 100(1), 70-97.
2. Eckel, Carsten and J. Peter Neary (2010). "Multi-product Firms and Flexible Manufacturing in the Global Economy," *Review of Economic Studies*, 77(1), 188-217.
3. Mayer, Thierry, Marc Melitz and Gianmarco Ottaviano (2010). "Market Size, Competition, and the Product Mix of Exporters," Harvard University, mimeograph.
4. Bernard, Andrew, Stephen Redding and Peter Schott (2011). "Multi-Product Firms and Trade Liberalization," Quarterly Journal of Economics, 126(3), 1271-1318.
5. Arkolakis, Costas and Marc Muendler (2015). "The Extensive Margin of Exporting Goods: A Firm-Level Analysis," Yale University mimeo.

Lecture 3: Trade and Innovation I. (Week of 11/18)

Required Readings

1. Bustos (2011). "Trade Liberalization, Exports, and Technology Upgrading: Evidence on the Impact of MERCOSUR on Argentinian Firms," American Economic Review, 101(1), 304-340.
2. Chaudhuri, Shubham, Pinelopi K. Goldberg, Panle Jia (2006). "Estimating the Effects of Global Patent Protection in Pharmaceuticals: A Case Study of Quinolones in India," American Economic Review, 96(5), 1477-1514.

Additional Readings

1. Grossman, Gene M., and Elhanan Helpman (1991). "Quality Ladders and Product Cycles." Quarterly Journal of Economics, 106(2), 557-586.
2. Helpman, Elhanan (1993). "Innovation, Imitation, and Intellectual Property Rights," Econometrica, 61(6), 1247-1280.
3. Grossman, Gene M., and Edwin L. C. Lai (2004). "International Protection of Intellectual Property," American Economic Review, 94(5), 1635-1653.
4. Atekson, Andy, and Ariel Burstein (2010). "Innovation, Firm Dynamics, and International Trade,"Journal of Political Economy, 118(3), 433-484.
5. Aw, Bee Yan, Mark J. Roberts and Daniel Yi Xu (2011). "R&D Investment, Exporting, and Productivity Dynamics," American Economic Review, 101(4), 1312-1344.
6. Bloom, Draca, Van Reenen (2015). "Trade Induced Technical Change? The Impact of Chinese Imports on innovation, IT and Productivity," The Review of Economic Studies, 83(1), 87-117.
7. Bøler, Ester Ann, Andreas Moxnes and Karen Helene Ulltveit-Moe (2015). "R&D, International Sourcing, and the Joint Impact on Firm Performance," American Economic Review, 105(12), 3704-3739.
8. Atkin, David, Amit Khandelwal, and Adam Osman (2017). "Exporting and Firm Performance: Evidence from a Randomized Trial," Quarterly Journal of Economics, 132(2), 551-615.
9. Atekson, Andy, and Ariel Burstein (2018). "Aggregate Implications of Innovation Policy," forthcoming Journal of Political Economy.

Background Readings

1. Pakes, Ariel (1986). "Patents as Options: Some Estimates of the Value of Holding European Patent Stocks,' Econometrica, 54(4), 755-784.
2. Schankerman, Mark A., and Ariel Pakes (1986). "Estimates of the Value of Patent Rights in European Countries During the Post-1950 Period," Economic Journal, 96, 1052–1077.
3. Levin, Richard C., Alvin K. Klevorick, Richard R. Nelson, Sidney G. Winter, Richard Gilbert, and Zvi Griliches (1987). "Appropriating the Returns from Industrial Research and Development." Brookings Papers on Economic Activity, Special Issue On Microeconomics, 783–831.
4. Aghion, Philippe, and Peter Howitt (1992). "A Model of Growth Through Creative Destruction," Econometrica 60(2), 323-351.

Lecture 4: Trade and Innovation II – Technology and Policy. (Week of 11/25)

Required Readings

1. Branstetter, Lee, Raymond Fisman and Fritz Foley (2006). "Do Stronger Intellectual Property Rights Increase International Technology Transfer? Empirical Evidence from U.S. Firm-Level Panel Data." Quarterly Journal of Economics, 121(1), 321-349.
2. Bilir, L. Kamran (2014). "Patent Laws, Product Lifecycle Lengths, and Multinational Activity," American Economic Review, 104(7), 1979-2013.

Additional Readings

1. Vernon, Raymond (1966). "International Investment and International Trade in the Product Cycle," Quarterly Journal of Economics, 80(2), 190-207.
2. Teece, David J. (1977). "Technology Transfer by Multinational Firms: The Resource Cost of Transferring Technological Know-how," Economic Journal, 87, 242-261.
3. McCalman, Phillip (2004). "Foreign Direct Investment and Intellectual Property Rights: Evidence from Hollywood's Global Distribution of Movies and Videos," Journal of International Economics, 62, 107-123.
4. Guadalupe, María, Olga Kuzmina, and Catherine Thomas (2012). "Innovation and Foreign Ownership." American Economic Review, 102(7), 3594-3627.
5. Keller, Wolfgang, and Stephen R. Yeaple (2013). "The Gravity of Knowledge," American Economic Review, 103(4), 1414-1444.
6. Holmes, Thomas J., Ellen R. McGrattan, and Edward C. Prescott (2015). "Quid Pro Quo: Technology Capital Transfers for Market Access in China," Review of Economic Studies, 82(3), 1154-1193.

Background Readings

1. Klepper, Steven (1996). "Entry, Exit, Growth, and Innovation over the Product Life Cycle" American Economic Review, 86(3), 562-583.
2. Cohen, Wesley M., and Steven Klepper (1996). "Firm Size and the Nature of Innovation within Industries: The Case of Process and Product R&D," Review of Economics and Statistics, 78(2), 232-243.
3. Cohen, Wesley M., Richard R. Nelson, and John P. Walsh (2000). "Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (Or Not)." National Bureau of Economic Research Working Paper 7552.
4. Moser, Petra (2005). "How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World Fairs," American Economic Review, 95(4), 1214-1236.
5. Qian, Yi (2007). "Do National Patent Laws Stimulate Domestic Innovation In A Global Patenting Environment?" Review of Economics and Statistics, 89(3), 436-453.
6. Qian, Yi (2008). "Impacts of Entry by Counterfeiters,' Quarterly Journal of Economics, 123(4), 1577-1609.
7. Williams, Heidi (2013). "Intellectual Property Rights and Innovation: Evidence from the Human Genome," Journal of Political Economy, 121(1), 1-27.

Lecture 5: Multinational Firms I. (Week of 12/2)

Required Readings

1. Bilir, L. Kamran and Eduardo Morales (2018). "Innovation in the Global Firm," Journal of Political Economy, forthcoming.
2. Arkolakis, Costas, Natalia Ramondo, Andres Rodriguez-Clare, Stephen Yeaple (2018). "Innovation and Production in the Global Economy," American Economic Review, 108(8), 2128-73. Economy, 121(1), 74-126.

Additional Readings

1. Helpman, Elhanan (1984). "A Simple Theory of International Trade with Multinational Corporations," Journal of Political Economy, 92(3), 451-471.
2. Markusen, James R. (1984). "Multinationals, Multi-Plant Economies, and the Gains from Trade," Journal of International Economics, 16(3), 205-226.
3. Carr, David, James Markusen and Keith Maskus (2001). "Estimating the Knowledge-Capital Model of the Multinational Enterprise," American Economic Review, 91(3), 693-708
4. Yi, Kei-Mu (2003). "Can Vertical Specialization Explain the Growth of World Trade?" Journal of Political Economy, 111(1), 52-102
5. Helpman, Elhanan, Marc Melitz, and Stephen Yeaple (2004). "Exports versus FDI with Heterogeneous Firms," American Economic Review, 94(1), 300-316
6. Ramondo, Natalia, and Andrés Rodríguez-Clare (2013). "Trade, Multinational Production, and the Gains from Openness," Journal of Political Economy, 121(2), 273-322.
7. Head, Keith, and Thierry Mayer (2018). "Brands in Motion: How Frictions Shape Multinational Production," mimeo.

Background Readings

1. Arrow, Kenneth J. (1975). "Vertical Integration and Communication." Bell Journal of Economics, 6(1), 173-183.
2. Cohen, Wesley M., and David A. Levinthal (1989). "Innovation and Learning," Economic Journal, 99, 569-596.
3. Wilson, Daniel J. (2009). "Beggar Thy Neighbor? The In-State, Out-of-State, and Aggregate Effects of R&D Tax Credits," Review of Economics and Statistics, 91(2), 431-436.
4. Hall, Bronwyn H., Jacques Mairesse, and Pierre Mohnen (2010). "Measuring the Returns to R&D," mimeo.
5. Doraszelski, Ulrich, and Jordi Jaumandreu (2013). "R&D and Productivity: Estimating Endogenous Productivity," Review of Economic Studies, 80, 1338-1383.
6. Atalay, Enghin, Ali Hortaçsu, and Chad Syverson (2014). "Vertical Integration and Input Flows," American Economic Review, 104(4), 1120-1148.
7. Ackerberg, Daniel A., Kevin Caves, and Garth Frazer (2015). "Identification Properties of Recent Production Function Estimators," Econometrica, 83(6), 2411-2451.
8. Gandhi, Amit, Salvador Navarro, and David Rivers (2016). "On the Identification of Production Functions: How Heterogeneous is Productivity?" mimeo.

Lecture 6: Multinational Firms II. (Week of 12/9)

Required Readings

1. Irrarazabal, Alfonso, Luca Opromolla, and Andreas Moxnes (2013). "The Margins of Multinational Production and the Role of Intrafirm Trade," Journal of Political
2. Antràs, Pol (2005). "Incomplete Contracts and the Product Cycle," American Economic Review, 95(4), 1054-1073.

Additional Readings

1. Rodríguez-Clare, Andrés (1996). "Multinationals, Linkages and Economic Development," American Economic Review, 86(4), 852-873.
2. Brainard, Lael (1997). "An Empirical Assessment of the Proximity-Concentration Trade-off Between Multinational Sales and Trade," American Economic Review, 87(4), 520-544.
3. McLaren, John (2000). "Globalization and Vertical Structure," American Economic Review, 90(5), 1239-1254.
4. Antràs, Pol, and Elhanan Helpman (2004). "Global Sourcing," Journal of Political Economy, 112(3), 552-580.
5. Muendler, Marc-Andreas, and Sascha O. Becker (2010). "Margins of Multinational Labor Substitution," American Economic Review, 100(5), 1999-2030.
6. Ramondo, Natalia, Veronica Rappaport, and Kim Ruhl (2016). "Intrafirm Trade and Vertical Fragmentation in U.S. Multinational Corporations," Journal of International Economics, 98, 51-59.
7. Tintelnot, Felix (2017). "Global Production with Export Platforms," Quarterly Journal of Economics, 132(1), 157-209.

Extra Topic: Diffusion and Networks.

Required Readings

1. Keller, Wolfgang (2002). "Geographic Localization of International Technology Diffusion," American Economic Review, 92(1), 120-142.
2. Chaney, Thomas (2014). "The Network Structure of International Trade," American Economic Review, 104(11), 3600-3634.
3. Allen, Treb, L. Kamran Bilir, and Christopher Tonetti (2019). "The Network Diffusion of Knowledge," mimeo.

Additional Readings

1. Eaton, Jonathan and Samuel Kortum (1999). "International Technology Diffusion: Theory and Measurement," International Economic Review, 40(3), 537-570.
2. Sampson, Thomas (2016). "Dynamic Selection: An Idea Flows Theory of Trade and Growth," Quarterly Journal of Economics, 131(1), 315-380.
3. Davis, Donald, and Jonathan Dingel (2019). "A Spatial Knowledge Economy," American Economic Review, 109(1), 153-170.
4. Perla, Jesse, Christopher Tonetti, and Michael Waugh (2015). "Equilibrium Technology Diffusion, Trade, and Growth," mimeo.
5. Buera, Paco and Ezra Oberfield (2016). "The Global Diffusion of Ideas," mimeo
6. Cockburn, Iain M., Jean O. Lanjouw, and Mark Schankerman (2016). "Patents and the Global Diffusion of New Drugs," American Economic Review, 106(1), 136-164.

Background Readings

1. Griliches, Zvi (1957). "Hybrid Corn: An Exploration in the Economics of Technological Change," Econometrica, 25(4), 501-522.
2. David, Paul A. (1966). "The Mechanization of Reaping in the Ante-Bellum Midwest," Chapter 1 of H. Rosovsky, ed., Industrialization in Two Systems: Essays in Honor of Alexander Gerschenkron, New York: Wiley and Sons.
3. Arrow, Kenneth J. (1969). "Classificatory Notes on the Production and Transmission of Technological Knowledge," American Economic Review, Papers and Proceedings, 59(2), 29-35.
4. Caselli, Francesco, and Wilbur John Coleman (2001). "Cross-Country Technology Diffusion: The Case of Computers" American Economic Review, 91(2), 328-335.
5. Comin, Diego, and B. Hobijn (2004). "Cross-Country Technology Adoption: Making Theory Face the Facts," Journal of Monetary Economics, 51, 39-83.
6. Keller, Wolfgang (2004). "International Technology Diffusion," Journal of Economic Literature, 42(3), 752-782.
7. Giraud, Xavier (2013). "Proximity and Investment: Evidence from Plant-level Data," The Quarterly Journal of Economics, 128(2), 861-915.
8. Manuelli, Rodolfo, and Ananth Seshadri (2014). "Frictionless Technology Diffusion: The Case of Tractors," American Economic Review, 104(4), 1368-91.
9. Doepke, Matthias, David de la Croix and Joel Mokyr (2018). "Clans, Guilds, and Markets: Apprenticeship Institutions and Growth in the Pre-Industrial Economy," mimeo.