

**Fourth Summer School in Trade, Industrialisation, and Development 2005**  
Trade, Innovation and Technology Diffusion: Implications for Developing Countries  
GARGNANO, ITALY

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This course examines technological innovation and diffusion in the world economy, examining why innovation takes place in the small number of countries where most of it occurs and how the rest of the world gains access to these innovations. Section I provides a review of closed-economy dynamic models of innovation. Section II turns to trade and foreign direct investment as channels by which countries benefit from each others' innovations. Section III then looks at various models of the determination of the growth rate in the global economy. Section IV considers barriers to capital flows between rich and poor nations. Finally, Sections V and VI model technology flows and the endogenous choice of technology in the global economy, and the consequences for differences in income across countries. The course emphasises quantitative general equilibrium approaches to these topics.

## Readings

### I. Innovation

- Grossman, Gene M. and Elhanan Helpman (1991) *Innovation and Growth in the Global Economy*. Cambridge, MA: MIT Press. Chapters 1-5.
- Kortum, Samuel (1997) "Research, Patenting, and Technological Change," *Econometrica* 65: 1389-1419.

### II. Trade and Foreign Direct Investment

- Redding, Stephen J. and Anthony J. Venables (2004) "Economic Geography and International Inequality," *Journal of International Economics* 62: 53-82.
- Eaton, Jonathan and Samuel Kortum (2002) "Technology, Geography, and Trade." *Econometrica* 70: 1741-1780.
- Melitz, Marc J. (2003) "The Impact of Trade on Intra-Industry Reallocations and Aggregate Industry Productivity," *Econometrica* 71: 1695-1726.
- Melitz, Marc J. and Gianmarco I. P. Ottaviano (2005), "Market Size, Trade, and Productivity." at:

<http://post.economics.harvard.edu/faculty/melitz/papers/melot.pdf>

- Helpman, Elhanan, Marc J. Melitz, and Stephen R. Yeaple (2004) "Export vs. FDI with Heterogeneous Firms," *American Economic Review* 94: 300-317.

### III. Growth in the Global Economy

- Acemoglu, Daron (2003) "Labor-and Capital-Augmenting Technical Change," *Journal of European Economic Association* 1: 1-40.
- Eaton, Jonathan and Samuel Kortum (2001) "Trade in Capital Goods," *European Economic Review* 45: 1195-1235.

- Eaton, Jonathan and Samuel Kortum (1999) “International Technology Diffusion: Theory and Measurement,” *International Economic Review* 40: 537-570.

#### IV. Capital Flows between Rich and Poor Countries

- Lucas, Robert E., Jr. (1990) “Why Doesn’t Capital Flow from Rich to Poor Countries?.” *American Economic Review* 80: 92-96.
- Reinhart, Carmen M. and Kenneth Rogoff (2004) “Serial Default and the “Paradox” of Rich-to-Poor Capital Flows,” *American Economic Review* 94: 53-58.
- Matsuyama, Kiminori (2004) “Financial Market Globalization, Symmetry-Breaking, and Endogenous Inequality of Nations,” *Econometrica* 72: 853-884.
- Caselli, Francesco and James Feyrer (2005) “The Marginal Product of Capital.” LSE.

#### V. Technology Flows

- Coe, David T. and Elhanan Helpman (1995) “International R&D Spillovers,” *European Economic Review* 39: 859-887.
- Keller, Wolfgang (2002) “Trade and the Transmission of Technology.” *Journal of Economic Growth* 7: 5-24.
- Benhabib, Jess and Mark Spiegel (2004) “Human Capital and Technology Diffusion,” Forthcoming in *Handbook of Economic Growth*.
- Caselli, Francesco and John Coleman (2001) “Cross-Country Technology Diffusion: The Case of Computers,” *American Economic Review, Papers & Proceedings*, 91: 228-335.
- Caselli, Francesco and Daniel Wilson (2004) “Importing Technology,” *Journal of Monetary Economics* 51: 1-32.

#### VI. Technology Choice

- Atkinson, Anthony B. and Joseph E. Stiglitz, (1969): “A new view of technological change.” *Economic Journal*, 79: 573-578.
- Acemoglu, Daron and Fabrizio Zilibotti (2001) “Productivity Differences,” *Quarterly Journal of Economics* 116: 563-606.
- Caselli, Francesco and John Coleman (2005): “The World Technology Frontier.” LSE.
- Caselli, Francesco (2004): “Accounting for Cross-Country Income Differences,” Forthcoming in *Handbook of Economic Growth*, Section 7.