AFEPA 2012 Summer School

Course Outline – Applications of Agricultural Trade Policy

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This course develops basic concepts and competencies in applied international agricultural trade policy. The course does not teach the pure theory of trade, but rather analyses commercial policies (tariffs, quotas, production subsidies, etc.) using partial and general equilibrium models. The approach involves in class lectures and laboratory sessions where the students will learn to analyze the impacts of trade policies using trade models that are solved in Microsoft Excel, and web based econometric software.

Evaluation: Final examination (morning of Wednesday August 15)

Content:

Part 1: Overview of Trade Policy Modeling and Partial Equilibrium Non-Spatial models

Wednesday's lecture will introduce applied trade policy modeling. I will first consider key approaches to including descriptive analysis, ex ante and ex post models, simulation versus econometric models, and partial equilibrium (PE) versus general equilibrium (GE) approaches. Basic non-spatial partial equilibrium models are then introduced using three panel graphical analysis which is then extended to algebraic formulations that can then be implemented empirically. Commercial policies are considered including: tariffs, export subsidies, import quotas, deficiency payments and exchange rate devaluations.

The lab section (Thursday afternoon August 9) will apply these concepts using the solver in Microsoft Excel

Suggested Readings:

- Ivus O. and A. Stong , "Modeling approached to the analysis of trade policy: computable general equilibrium and gravity models" Chapter 5 in *Handbook on International \Trade \Policy*, W. Kerr and J. Gaisford (eds) Edward Elgar Publishing
- Reed, Michael, 2000, International Trade in Agricultural Products
- Houck James, Elements of Agricultural Trade Policy, Waveland Press
- Laird S. "Quantifying Commercial Policies" chapter 2 in J. Francois and K. Reinert (eds) *Applied Methods for Trade Policy Analysis: A handbook*, Cambridge University Press, 1997.

Part 2: Partial equilibrium and General Equilibrium with the Armington Assumption

Thursday's lecture will examine when to use partial equilibrium (PE) versus general equilibrium (GE) models. I will then introduce the Armington assumption and explain how it is used in trade modeling applications. A partial equilibrium non-linear model with Armington demand structure is introduced and an example is demonstrated in Excel.

The concept of general equilibrium is introduced and the circumstances of when it should be used are considered. An overview of a general equilibrium system and its structure is then considered. A three good stylized general equilibrium model (CGE 1-2-3 model) of Shri Lanka, which is implemented in Excel, is then described and the students are shown how the spreadsheet model works. Alternative closures for CGE models are considered and the strengths and weaknesses of the general equilibrium approach will close off this section.

The lab section (Friday morning August 10) will apply these concepts using the solver in Microsoft Excel. In order to understand the concepts introduced in part 2 in lab exercises using the non-linear partial equilibrium model and the simple CGE 1-2-3 model will then be assigned.

Suggested Readings:

- Surry Y, 2007, THE ARMINGTON TRADE MODEL.(handout to this class)
- Francois J. and K. Hall. 1997, "Partial Equilibrium Modeling" in *Applied Methods for Trade Policy Analysis: A Handbook*, (Franscois and Reinert editors) Cambridge University Press: Cambridge.
- Deveajan S., D. Go, J. Lewis, S. Robinson, and P. Sinko, 1997, "Simple General Equilibrium Modeling" Chapter 6 in *Applied Methods for Trade Policy Analysis: A Handbook*, (Franscois and Reinert editors) Cambridge University Press: Cambridge.

Part 3: Gravity models

The second week's lectures move from synthetic ex ante models to econometric ex post models. These models utilize the concept of gravitation force to explain bilateral trade flows. An analogy to the gravitation force equation is presented and an empirical equation for basic gravity model is considered. Applications of the gravity model are considered including border effects, explanation of trade patterns, regional trade agreements and calculating trade potentials. A major criticism of gravity models has been that they lack a theoretical foundation so we move from intuition to theory. In addition to the theory econometric problems are considered.

The lab section (Monday afternoon August 13) will apply these models using a web based interactive gravity modeling program:
http://www.unescap.org/tid/artnet/gravity.asp

Students are required to register for the ARTNet program. This should be done as soon as possible during the first day or two of the summer school. Basic models and extensions to the gravity model will be assigned as an exercise during this lab section.

Suggested Readings:

- Head K., 2003, "Gravity for Beginners" University of British Columbia (provided as a handout)
- ARTNet Tutorial at http://www.unescap.org/tid/artnet/gravity.asp

Part 4: Measuring Trade Barriers & Useful information sources

The final lecture (Tuesday morning August 14) goes beyond trade models to consider how trade barriers are measured. These concepts are useful to measure the degree of distortion and to monitor how trade liberalization is taking place. Concepts of nominal and effective protection are introduced. Effective protection considers the role of intermediate inputs and final outputs and their interactions in determining the "effective" level of protection. Border measures including tariffs are considered along with methods to aggregate these measures. The role of domestic policies is examined with the OECD's Producer Support Equivalent measure. The discussion involves more than looking at PSEs to measure distortion but also why disaggregation is important. Finally, a number of data sources are considered which will provide useful information about where to find trade value and volume data, tariffs and non-tariff measures, and information on WTO trade policy reviews.

In the lab section (Tuesday afternoon August 14) students will get "hands on" practice retrieving trade data and trade policies for their home countries and also for the European Union. This session will also be useful for putting the entire course into context.

Suggested Readings:

- Laird S. "Quantifying Commercial Policies" chapter 2 in J. Francois and K. Reinert (eds) *Applied Methods for Trade Policy Analysis: A handbook*, Cambridge University Press, 1997.
- Houck James, "Effective rates of protection and intermediate goods" chapter 13 in *Elements of Agricultural Trade Policy*, Waveland Press.
- Web sites available in class notes