Gerald Willmann
KU Leuven

# Final Exam

This is a 3 hour exam. There are three equally weighted questions. Please read them carefully and answer *each* of them. If you have problems understanding a question please do ask. *Good luck !!!*

**Question 1:** Consider a 2x2x2 world where the production functions for the two goods are given by $K_1^{\alpha} L_1^{1-\alpha}$ with $1 > \alpha > 0$ and $K_2^{\beta} L_2^{1-\beta}$ with $1 > \beta > 0$ respectively. Let the home country be relatively better endowed with labor than the foreign country.

a) What additional assumption on $\alpha$ and $\beta$ is required so that good 1 is the capital intensive good? Show mathematically that good 1 is capital intensive if your assumption holds. According to the Heckscher-Ohlin Theorem, which good will the home country export?

b) Derive the unit cost functions for good 1 and 2. Explain why unit costs equal unit prices. Explain why these equalities imply factor price equalization.

c) Using your results from b) and the same assumption as in a), show that the Stolper-Samuelson result holds for this particular example.

**Question 2:** Consider a perfectly competitive, 2-commodity setup where a (large) country imports good A and exports good B.

a) Using partial equilibrium analysis (i.e. price and quantity diagrams), analyze the effects of an import tariff. Show how it affects the world market price. State the welfare effects for the different domestic groups and the over-all effect for the country. Explain how you would find the optimal tariff.

b) Illustrate the effects you found in part a) in a (sufficiently large) general equilibrium 'PPF' diagram (as you know it from the 2x2x2 model). Be careful to indicate the slope of each price line in your diagram.

c) Can the import tariff possibly lower the domestic price of good A? If positive, repeat part a) for this case. If negative, explain why this cannot happen.

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**Question 3:** New (new) trade — the monopolistic competition model.

a) Describe the Dixit-Stiglitz-Krugman monopolistic competition trade model and state its main equations. Explain why it is able to account for intra-industry trade whereas the 'old' trade theory was not.

b) Describe in detail how Melitz extends the monopolistic competition trade model to allow for heterogeneous firms, and explain the effects of a decrease in trade costs on the profits of individual firms and the equilibrium productivity thresholds in this model.

c) Briefly summarize the 'firm scope' paper of Nocke and Yeaple. What are the additional effects of a decrease in trade costs when firm scope is taken into account?