Written exam for the B.Sc. or M. Sc. in Economics

International Economics

Final Exam / Elective course / 3rd year course

June 21, 2010

3-hour closed book exam

All problems must be answered. The approximate weight of each problem in the final grade is stated in parentheses.

Please note that the language used in your exam paper must correspond to the language of the title for which you registered during exam registration. I.e. if you registered for the English title of the course, you must write your exam paper in English. Likewise, if you registered for the Danish title of the course or if you registered for the English title which was followed by "eksamen på dansk" in brackets, you must write your exam paper in Danish.

If you are in doubt about which title you registered for, please see the print of you exam registration from the students' self-service system.

PROBLEM 1 (40%)

Determine if the following statements are true or false. Give a short explanation.

1.1 The gravity model assumes that bilateral trade is explained entirely by the economic sizes of two countries.

1.2 The Leontief paradox is the empirical result that U.S. exports were found to be less capital intensive than U.S. imports.

1.3 In models of monopolistic competition international trade allows creation of an integrated market that offers consumers a greater variety of products at higher prices.

1.4 An implication of the Environmental Kuznets Curve is that trade liberalization leads to increased environmental damage.

1.5 National welfare will fall if a small country introduces an import quota.

1.6 Foreign direct investment is more likely the lower are trade costs.

1.7 Skill biased technological change is consistent with employment changes within industries.

PROBLEM 2 (60%)

Reciprocal Dumping. The world consists of two identical countries, Home and Foreign. There is one firm in each country producing a homogenous product, z, with constant marginal costs $c = 2$. Demand in each country is given by $p = 4 - 2z$, where p is the price of z. Consider first the situation without international trade.

2.1 State the Home firm's profit maximization problem and find the profit maximizing price, p^M, quantity, z^M, and profit level π^M. Show that welfare, measured as the sum of profits and consumer's surplus, equals $\frac{3}{4}$.

International trade is now possible, and the Home and Foreign markets for good z are characterized by Cournot competition. The quantities sold by the Home firm for the

Home and Foreign markets are denoted x and x^* respectively. Likewise, the quantities sold by the Foreign firm are denoted y and y^*, such that the total quantity sold in Home is given by $z = x + y$, and the total quantity sold in Foreign is $z^* = x^* + y^*$. Markets are segmented by per unit transport costs t.

2.2 State the Home and Foreign firm's profit maximization problems and derive their reaction functions for the Home market. Illustrate the Cournot Nash equilibrium solution graphically. Is it a stable equilibrium?

2.3 Show that the Cournot Nash equilibrium quantity and price for the Home market are given by $z^{CN} = \frac{4-t}{6}$ and $p^{CN} = \frac{8+t}{3}$. Compared to the closed economy solution in question 2.1, what has happened to the price? Explain.

2.4 Find the welfare level for the Home country (hint: use that the solutions are symmetric in the two countries). Determine how trade affects welfare when i) there are no transport costs, and ii) when transport costs are just below the trade prohibitive level.