UNIVERSITY OF OSLO
DEPARTMENT OF ECONOMICS

Exam: **ECON4415 – International Trade**

Date of exam: Tuesday, Nov. 24, 2009   **Grades will be given: December 15, 2009**

Time for exam: 9:00 a.m. – 12:00 noon

The problem set covers 3 pages (incl. cover sheet)

Resources allowed:
- No resources allowed

The grades given: A-F, with A as the best and E as the weakest passing grade. F is fail.

International Trade-ECON4415
Final Exam, Fall 2009

The exam consists of 100 points. Please allocate your time to each problem accordingly.

Problem 1. (20 points)

    a. Explain the concept of home market effect.

    b. Explain the source of gains from trade in the monopolistic model of trade.

    c. State and explain the Stoper-Samuelson theorem and its implications.

Problem 2. (20 points)

    a. Explain the border puzzle of McCallum. In particular, describe the data, empirical model and main result.

    b. Explain how Anderson and Van Wincoop derive a more convenient gravity equation. State the gravity equation derived by the authors and explain why it may help to solve the McCallum puzzle.

Problem 3 (30 points)
Suppose consumers in two countries home and foreign have the same preference for food and machines given by the following utility function

$$U = c_F^{1/2} c_M^{1/2}$$

In the home country, to produce one ton of food 1 workers is needed whereas to produce one machine requires 1 worker. In the foreign country, 3 workers produce one ton of food and 2 workers produce one machine. Home has 50 workers and foreign has 120 workers. Finally, let the price of machines be the numeraire in the economy.

    a. Solve for the equilibrium prices and quantities when countries are not allowed to trade. Which country has the higher autarky price for food?

    b. Now suppose that countries are allowed to trade. Compute the world relative price of food and wages in both countries.

c. Explain the pattern of trade using the production possibility frontier for both countries.

d. Show that both countries benefit from trade.

Problem 4 (30 points)

Consider an economy producing two goods 1 and 2. There are three factors of production, land T, capital K and labor L. The national economy is endowed with fixed supplies T, K, and L of these factors.

Assume that technologies are of the Cobb Douglas type, that is

$$y_1 = z_1 K^{1/2} L_1^{1/2}$$
$$y_2 = T^{1/2} L_2^{1/2}$$

where z_1 is the productivity in sector 1. Assume that labor can move between sectors, but the other factors are specific to each sector. Suppose that consumers in this economy consume goods 1 and 2 in the same proportion, that is for each unit of good 1 they will also consumer one unit of good 2. For simplicity suppose that $z_1 = 1, T = 50$ and $K = 100$.

a. Derive the equation for the relative supply curve of good 1. What are the factors that affect the shape of this curve? Explain.

b. Determine the autarky relative price of good 1.

c. Assume that this economy opens up to trade at fixed international prices $p_1 = p_2 = 1$. Describe the pattern of trade for this economy.

d. Explain how an increase in the productivity in sector 1 affects the pattern of trade and labor allocation between sectors. Find the lower bound in productivity so that the country continue to export good 1.

e. Explain the effect of an increase of productivity in sector 1 on the return to the factors (w, r_K, r_T).