UNIVERSITY OF OSLO
DEPARTMENT OF ECONOMICS

Postponed exam: **ECON4335 – The Economics of Banking**

Date of exam: Wednesday, December 14, 2011

Time for exam: 09:00 a.m. – 12:00 noon

The problem set covers 2 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.

A

Consider a competitive banking sector in a closed economy. With no equity, bank i's balance sheet can be expressed as

$$L_i + B_i + R_i = D_i \tag{1}$$

where L_i is loans to the non-bank sector, B_i is the bank's net position in the interbank market, R_i is the bank's net position with the central bank and D_i is deposits from the non-bank sector. The interest rates on ordinary loans and deposits are r_L and r_D respectively The going rate in the interbank market is r_B and the central bank borrows and lends at the rate r_R. Hence, the bank's profit is

$$\Pi_i = r_L L_i + r_B B_i + r_R R_i - r_D D_i - C(D_i, L_i) \tag{2}$$

where $C(D_i, L_i)$ is the bank's management costs.

1. Assume that the central bank borrows (take deposits from the banks) and lends without limit at the rate r_R, and, hence, that $r_B = r_R = r$. Derive the condition for maximum profit for an individual bank. Discuss how the bank's choice of D_i and L_i is affected by an increase in r_L under different assumptions about management cost. Discuss also how an increase in r affects the choice of D_i and L_i and what consequences this may have for the bank's desired position in the interbank market.

2. We now turn to the banking sector as a whole and, as we turn, make the simplifying assumption that the management costs of all banks are $C(D_i, L_i) = c_D D_i + c_L L_i$. Given that we still have $r_B = r_R = r$, what are the equilibrium interest rates on loans and deposits? What does the supply curve for loans look like?

3. Assume loan demand is a downward sloping function of the interest rate on loans, $L = L^D(r_L)$. Consider a "cashless" economy where nobody holds bank notes or coins. Only banks have accounts and credit lines at the central bank. All money that is lent to the non-bank sector will then end up as deposits in the banks. Hence, we can assume that for the banking system as a whole deposits are equal to loans $D = L$. What does an increase in r then mean for the net position that the ordinary banks have with the central bank? What does an increase in loan demand mean for those positions?

B

Many fear (justified or not) that a number of European banks will suffer heavy losses on holdings of government bonds from certain countries in the Eurozone. Explain the channels through which this fear can reduce aggregate demand for goods and services in Europe. Discuss briefly to what extent central banks in Europe may be able to dampen the negative effect on aggregate demand.