Name:____

Intermediate Macroeconomic Theory II, Winter 2011
Instructor: Dmytro Hryshko
Problem Set 2 (45 points). Due Friday, April 8 by 4 PM.

1. (**5 points**) Suppose the only shocks in an (closed) economy reliant on oil as an input to its production are the shocks to the world price of oil. The central bank of the economy considers two policies:

   - keeping the money stock constant or
   - keeping the real interest rate constant, adjusting the money stock.

   Which policy can prevent the recession resulting from an increase in the price of oil? As a result of this policy what is true about the price level in the long run, is it permanently higher or reverts to its previous level? <u>Draw</u> the IS-LM and AD-AS schedules.

2. (**10 points**) Assume that the government of a closed economy announces a temporary, debt-financed tax cut to stimulate the economy. Discuss the short- and long-run effects of the policy on output, consumption, investment, real interest rate, and the aggregate price level under the following scenarios. (<u>Draw</u> the IS-LM and AD-AS graphs.)

   (a) (**5 points**) Majority of households in the economy behave as the permanent income hypothesis consumers and are not liquidity constrained (for example, because a large fraction of population is of prime-age).

   (b) (**5 points**) Majority of households are liquidity constrained (for example, because of an underdeveloped financial sector).

3. (a) (**5 points**) Suppose a small open economy with a fixed exchange rate discovers oil reserves. As a result, the economy's households expect higher incomes in the future. Assuming households are forward-looking, discuss the effects of this "news" on income, exchange rate, trade balance, and the composition of aggregate demand. Does the central bank of the country accumulates or runs down its foreign exchange reserves? (Use the Mundell-Fleming model; draw the graphs.)

   (b) (**5 points**) Suppose an open economy with a floating exchange rate sets the target of a stable output, and all the shocks in the economy are the shocks to desired investment. Which policy should the cental bank implement to achieve the target—keeping the money stock constant or adjusting the money stock to keep the exchange rate constant? (Use the Mundell-Fleming model; draw the graphs.)

(c) (**5 points**) Suppose that foreigners impose quota on its households' purchases of the goods produced in our (domestic, small open) economy with a floating exchange rate. Discuss the effects of this policy on the exchange rate, and the economy's trade balance, income, and the volume of exports and imports. (Use the Mundell-Fleming model; draw the graphs.)

(d) (**5 points**) What is the essence of the Lucas critique? Discuss the issue in terms of either the consumption function or the short-run inflation-unemployment tradeoff.

(e) (**5 points**) Suppose an economy's production function is described as $Y = AK$, $A = 0.5$; its working population is constant; the savings rate is 0.2; and the depreciation rate is 0.05. What is the growth rate in output per worker in this economy? Is there any steady state in terms of capital per worker and output per worker?

(f) (**5 points**) Consider a closed Solow economy with no population and technological growth at its steady state. Suppose there is a sudden inflow of immigrants into the economy that raises working population. Assume that this is the only change in the economy, and the fundamental parameters of the economy such as the savings rate, the aggregate technology, depreciation rate, population and technological growth rates remain unaltered. Briefly discuss the changes in the economy in the short and very long runs: focus your discussion on the changes in capital per worker, output per worker, the real wage and the real interest rate. Draw a Solow diagram.