Name:_____

Intermediate Macroeconomic Theory II, Fall 2009
Instructor: Dmytro Hryshko
Problem Set 2 (47 points). Due Wednesday, November 25, by 4PM

1. (**12 points, 2 points each**) Indicate for each of the statements below whether it is true or false, or elaborate on a statement if it does not require a true/false judgment. Briefly explain, supporting your argument with graphs, formulas, or simple reasoning.

   (a) In accordance with the *classical dichotomy*, an increase in the money supply in the economy should lead to an increase in the real production in the long run.

   (b) Suppose the economy is on a balanced growth path; the growth in the efficiency of labor is equal to 5%; and the growth of population is equal to 5%. If the growth of the money stock is equal to 5%, and the income velocity of money is constant, the inflation rate in the economy will be equal to 5% in the long run, and the aggregate prices will be increasing in the long run.

   (c) Suppose the government sets taxes on the *nominal* capital gains. If the nominal interest rate equals 2%, realized inflation rate equals 2%, and the tax rate on nominal gains equals 50%, then the investor's real purchasing power will increase by 1.0%.

(d) Suppose the government sets taxes on the *real* capital gains. If the nominal interest rate is equal to 2%, realized inflation rate is equal to 2%, and the tax rate on *real* gains is equal to 50%, then the investor's real purchasing power will increase by 1.0%.

(e) (**OE–LR**) Assume two countries with different but *constant* income velocities of money. Assume that country I(-ndustrialized) has money growth equal to 2%, while country D(-eveloping) has money growth equal to 10%. Assume that the population growth in both economies as well as the growth of the efficiency of labor are zero. Assume that the absolute purchasing power parity for both economies holds. We may conclude that, in the long run, currency of country I will depreciate in nominal terms relative to the currency in country D by 8%.

(f) (**RBC**) Suppose the economy's output fluctuates due to real technological shocks, and the economy's prices are fully flexible. If the central bank aims to stabilize the price level, what would it do to the money supply when, for example, the economy experiences a positive technological shock? As a result of this policy, does output change in the same direction as money supply? Would you make an inference that money causes output (as monetarists claim), or the real shocks cause unidirectional fluctuations in money and output (as RBC theorists would)?

2. (**5 points**) Use the IS–LM *and* AD-AS diagrams to determine the short- and long-run effects of each of the following on the equilibrium values of

   - output;
   - real interest rate;
   - consumption;
   - investment;
   - price level, and
   - real money balances.

   Draw the relevant diagrams to show how you arrived at your answer. Assume that consumption is *not* responsive to changes in the real interest rate; and that the economy is initially at the natural level of output. Track the effects for normal cases, i.e., do not bother about vertical/horizontal IS–LM curves.

(a) (**5 points**) The expected rate of inflation rises.

3. (**5 points**) Suppose that investment expenditures do not change with a change in the real interest rate. Show what this implies for the slope of the IS curve, and for the relative effectiveness of monetary and fiscal policy in stabilizing real output. Explain your results. Draw the relevant diagrams. (You may not bother about the AD-AS diagram here.)

4. (**10 points**) (You may not bother about the AD-AS diagram here.) The central bank is considering two alternative monetary policies:

   - holding the money supply constant and letting the interest rate adjust, or
   - adjusting the money supply to hold the interest rate constant.

   In the IS–LM model, which policy will better stabilize output under the following conditions? Draw the relevant diagrams, and explain how you arrived at your answer.

   (a) (**5 points**) All shocks to the economy arise from exogenous changes in the demand for goods and services.

   (b) (**5 points**) All shocks to the economy arise from exogenous changes in the demand for money.

5. (**15 points**)

(a) (**5 points**) (**OE–SR–Real shock**) Use the Mundell-Fleming model to predict the effects of a fall in domestic consumers' confidence on aggregate income, the exchange rate, and the trade balance in a small open economy with a flexible exchange rate regime.

(b) (**5 points**) (**OE–SR–Real Shock**) Use the Mundell-Fleming model to predict the effects of a fall in domestic consumers' confidence on aggregate income, the exchange rate, and the trade balance in a small open economy with a fixed exchange rate regime.

(c) (**5 points**) (**OE–SR–Money demand shock**) Use the Mundell-Fleming model to predict the effects of the introduction of ATMs that leads to a fall in the domestic demand for money on aggregate income, the exchange rate, and the trade balance in a small open economy with a fixed exchange rate regime.