MACROECONOMICS I

Homework Assignment #3

Deadline: **May 2nd**, **before** the class (12:00). No late submissions will be accepted.

Submission: a hard (printed) copy; no electronic versions will be accepted.

The homework contains 3 problems. When necessary, make sure to illustrate your answers with graphs.

Problem 1. (30 points). The Balance of Payment

Go to the webpage of the National Bank of Japan (https://www.boj.or.jp/en/). In the section "Statistics", download the balance of payments (yearly). Your task is to analyze the balance of payments for Japan and its changes over time. Chose two years (recent and past) and perform the following analysis:

- **Current account (CA)**. Does the CA balance is deficit or surplus and what determines this balance. Analyze trade balance, income balance, and transfers. Provide explanations for numbers.
- **Financial account** (FA). Does the FA balance shows surplus or deficit? What drives this result? Analyze the structure of foreign investments (FDI, stocks purchases, derivatives). Do Japanese residents own more foreign assets than foreign investors own in Japan? What is the nature of investments (short-term vs. long-term) and what does it imply about the country's solvency.
- What can we say (based on your analysis) about Japan's net international investment position?
- Compare changes in the balance of payment by comparing balances from two years. Do you observe any changes?

Problem 2. (30 points). Exchange rate regimes

1.Hong Kong adopted the **currency board** that issues Hong Kong dollars fully backed by the reserves of the US dollars (*anchor currency*) held by the government. Hong Kong has a fixed exchange rate: 1 USD= 7.75 Hong Kong dollars.

- ✓ If in 2014, Hong Kong ends up with a current account surplus, what effect it would have on the amount of Hong Kong dollars in circulation?
- ✓ Assume that Hong Kong would end 2014 with a current account deficit, but with a surplus on its finance account, what effect it would have on the amount of Hong Kong dollars in circulation?

2. An **informal dollarization** is known as a *currency substitution*, when a foreign currency is circulating in a country along with its domestic currency. Currency substitution results in transmission of monetary shocks from one country to another. Consider the example of a highly dollarized Russian economy. In the beginning of 2000s, the share of the US dollars in the total amount of cash circulating in the Russian economy comprised 80 %. Assume that the U.S. increases the money supply by printing additional dollars.

- ✓ What effect such increase in the money supply by the US economy would have on the market for the US dollars in Russia?

- ✓ As the exchange rate of the US dollar changes, what consequences it would have on the Russian interest rate?
- ✓ Assume that Russian government is determined to maintain a fixed *interest* rate. What changes in the money supply of the Russian currency would cause the increase in the money supply in the US?

Make sure to illustrate your answers with graphs when necessary.

Problem 3. (40 points). Policy objectives

1.Assume that the central bank of Argentina maintains a fixed exchange rate regime by pegging peso to USD. Moreover, the *perfect capital mobility* is allowed, which implies that investors are free to move their money from one location to another in search of higher interest rates.

- ✓ If the Bank decides to exercise expansionary monetary policy in order to stimulate economy, what consequences would the policy have for the demand for the USD?
- ✓ How will the Bank manage to maintain a fixed exchange rate? Will the initial objective of the expansionary monetary policy, such as stimulation of the economy be achieved?

2. The United States is a strong monetary policy maker. This implies that when the Federal Reserve withdraws a certain amount of the US dollars from circulation, interest rate increases.

- ✓ Under the perfect capital mobility, will the US be ever able to maintain a fixed exchange rate for the USD with respect to other currencies. Explain.

3. Consider China which maintains a fixed exchange rate between USD and Yuan.

- ✓ If the Central bank in China increases the money supply. What effect would this action have on the interest rate in China as well as on the exchange rate for Chinese Yuan?
- ✓ What should the Chinese central bank do in order to maintain a fixed exchange rate regime? What would be the consequences for the supply of Yuan? In this situation, is it possible to China to maintain the perfect capital mobility? Explain.