NANYANG TECHNOLOGICAL UNIVERSITY
SCHOOL OF SOCIAL SCIENCES
SEMESTER 1 AY25-26

HE1002 MACROECONOMICS I

PROBLEM SET 12

12-1

Suppose total U.S. exports in the month of June were $123.1 billion and total imports from foreign countries were $192.2 billion. What was the balance of trade?

12-2

Suppose a country has total GDP (Y) = $10 trillion, consumption = $8 trillion, government spending = $2 trillion, investment = $3 trillion, and taxes = $1.6 trillion. What is the level of net exports or balance of trade? What is the level of public savings? What is the level of private savings? What is the level of net capital outflow?

12-3

Assume that U.S. investors purchased $50 billion in foreign assets, and foreigners purchased $100 billion in U.S. financial assets such as stocks and Treasury bills. In addition, U.S. businesses invested $150 billion in foreign factories and operations, while foreign companies invested $100 billion in U.S. factories and operations. What was the net capital outflow for the United States?

12-4

Define each of the following as direct or portfolio foreign investment.

a. Nike (a U.S. company) builds new factories in Cambodia.

b. A U.S. hedge fund purchases 30 percent of the shares of a Brazilian paper manufacturer.

c. Mercedes-Benz (a German company) builds a new manufacturing plant in Alabama.

d. Intel (a U.S. company) sets up a new call center in India.

e. A British chocolate maker buys a smaller U.S. rival.

f. Hilton Hotels (a U.S. company) builds a new resort in Hawaii.

12-5

Tom is stuck with his friends on an island that uses coconuts for currency, but they recently discovered Wilson's Island nearby. Tom's Island agrees to make only one transaction with Wilson's Island: It sells a fishing boat to Wilson's for 15 coconuts. Answer the following questions, assuming that yearly consumption on Tom's Island equals 500 coconuts and domestic investments in huts and farm equipment equals 150 coconuts.

a. What are net exports for Tom's Island?

b. What is the total national savings for Tom's Island?

c. Suppose Tom's Island imports a volleyball net from Wilson's Island for 5 coconuts. What is the total national savings now?

d. Now Tom purchases 1 coconut tree on Wilson Island at a cost of 10 coconuts. What is the net capital outflows? (*Hint:* A coconut tree produces coconuts like a factory produces goods.)

12-6

Over the last five years, Portlandia's average income has risen and caused the supply curve of loanable funds to increase and shift right.

a. Would the domestic interest rate have increased or decreased?

b. Given the change in the interest rate, would General Motors (GM) be more or less likely to open a car manufacturing plant in the country?

c. If Portlandia hits a recession and interest rates fall, which way must the demand curve for loanable funds have shifted?

12-7

Describe what happens to the supply and/or demand curves for U.S. dollars under the following scenarios. In each scenario, does the U.S. exchange rate appreciate or depreciate, and what happens to the U.S. balance of trade?

a. A drought in Russia destroys the wheat crop, resulting in increased purchases of wheat from the United States.

b. Bollywood movies become extremely popular in the United States, increasing demand for foreign movies.

c. The U.S. government forces all government offices to purchase American-made computer products, instead of importing them.

12-8

Suppose there is major unrest in the labour market in the United States, making European investors nervous about investing in the United States.

a. Draw the supply and demand curves for U.S. dollars, and show the appropriate shift(s) in supply and demand for U.S. dollars associated with the labour unrest.

b. Did the value of the U.S. dollar depreciate or appreciate?

12-9

Suppose a pessimistic economic outlook has led to an increase in household saving, resulting in a rightward shift of the saving function. Explain how each of the following is affected under a floating exchange-rate regime.

a. The interest rate.

b. The exchange rate.

c. The trade balance.

12-10

Suppose the new CEO for Apple Inc. decides to produce all the company's products in the United States instead of China.

a. Which way will the supply for U.S. dollars shift?
b. Which way will the demand for U.S. dollars shift?
c. Does the value of the U.S. dollar depreciate or appreciate?

12-11

Suppose that in the United States last season's hot holiday gift was the iPad (which is made primarily in China), while this season's big gift is media content for the iPad (which is made in the United States). Determine whether there will be an increase, decrease, or no change for each of the following variables compared to last year.

a. Supply and demand for dollars.
b. Exchange rate between the United States and China.
c. Net exports for the United States.
d. Net capital outflows for the United States.

12-12

In March 2009 the Canadian dollar was worth \$0.78 U.S. dollars. In April 2011 the Canadian dollar was worth \$1.06 U.S. dollars. What effect would this increase have on the trade balance between the United States and Canada? Why?

12-13

Hiro has $10,000 to invest in the foreign exchange market. He's interested in trading U.S. dollars (USD) for euros (EUR) and Japanese yen (JPY). Using Table 18P-1, determine the arbitrage profit/loss Hiro will make in each of the following scenarios. (*Note*: Any value less than $10 should be considered zero.)

Table 18P-1

Exchange rate	USD	EUR	JPY
USD	1.00000	0.78230	81.200
EUR	1.27830	1.00000	103.796
JPY	0.01232	0.00963	1.000

a. USD → EUR → JPY → USD.
b. USD → JPY → EUR → USD.

12-14

Some politicians argue for imposing trade restrictions in the hope that doing so will reduce the trade deficit of the United States. Assuming the United States has a floating exchange rate, answer the following questions regarding the impact of the trade restrictions.

a. What is the impact in the foreign exchange market for dollars?

b. What is the impact in the market for foreign currency (euros, yen, etc.)?

c. What happens to the exchange rate of the dollar?

d. What happens to net exports?

12-15

Suppose the U.S. economy slips into a recession. In response, the Federal Reserve cuts the federal funds rate in order to avoid unemployment. Consider what happens to the following under a floating exchange-rate regime.

a. Domestic investment.
b. Capital inflow.
c. Capital outflow.
d. Exchange rate.
e. Net exports.
f. Aggregate demand.

12-16

Reevaluate the previous problem assuming the U.S. economy follows a fixed exchange-rate regime.

12-17

A country that has been operating under a fixed exchange-rate regime falls into recession. All attempts at using fiscal policy to lift the economy out of recession have failed.

a. Can monetary policy be effective in this case? Why or why not?

b. Should the country allow the exchange rate to float? Why or why not?

12-18

In Windsor, Ontario, a Big Mac from McDonald's costs C$4.17 (Canadian dollars), and across the border in Detroit it costs $3.56 in U.S. dollars.

a. Suppose the nominal U.S. exchange rate with Canada is US$0.70 per Canadian dollar. Does the purchasing power parity hold between the two countries?

b. What is the purchasing power parity exchange rate for the United States?

12-19

Suppose the current U.S.–UK exchange rate is 0.64 pound (the pound is the UK currency) per dollar, and the aggregate price level is 175 for the United States and 138 for the UK. What is the real exchange rate? What does this real exchange rate mean in terms of the relative purchasing power of the dollar and the pound?

12-20

Imagine there are only two trading nations in the world. For each of the following scenarios, determine whether goods in one country will become more attractive relative to goods in the other country given their inflation rates and a shift in the nominal exchange rates.

a. Inflation is 8 percent in the UK and 4 percent in Germany, but the UK pound–euro exchange rate remains the same.

b. Inflation is 3 percent in the U.S. and 7 percent in Japan, but the exchange rate for the U.S. dollars to Japanese yen increases from 70 to 80 Japanese yen.

c. Inflation is 10 percent in the United States. and 6 percent in Mexico, and the price of the Mexican peso rises from US$0.08 to US$0.15.

12-21

Over several years, foreign investors poured billions of dollars into a country due to its favourable growth prospects. They have now become concerned about the return on their investments because growth in the country is stagnating. As a result, they are pulling their money out. Will this country be better able to withstand the financial crisis if it has a fixed or a floating exchange rate? Explain.