Soochow University, Summer Session I, 2022

ECON202: Macroeconomics (Dr. Lei Pan)

Final Exam Solution

Due Friday, 15th July 2022 at 2:00pm Taipei Time

Instruction to students:

1. The exam duration is **1 hour and 50 minutes** plus **10 minutes** reading time.

2. This is a **closed-book** exam and calculators are permitted.

3. This exam consists of **TWO** sections: Section A: multiple-choice questions, and Section B: problem solving questions.

4. Read each multiple choice question and answer choice carefully and choose the ONE best answer. There are 20 questions in total, each of them is worth 2 marks.

5. The second section contains 6 problem solving questions. All of them carrying 60 marks in total. Students **MUST** answer each question in Section B on a **FRESH** page of the answer book.

6. Try to answer all questions. In general, if you have some knowledge about a question, it is better to try to answer it. You will not be penalised for guessing.

7. You may work on the two sections in any order that you choose. Be sure to allocate your time carefully so that you are able to complete the entire exam with the exam session.

Please do NOT start this exam until instructed to do so.

Good luck and all the best!

(In the world of crypto, winter has arrived)

Section A: Multiple Choice Questions [Total = 40 marks]

Choose ONE of the best answers for each of the following questions. Each question is worth 2 marks.

Question 1. [2 marks] Banca Solida has, in the past, always operated with a reserve ratio of 25 per cent. It has now been taken over by Gung-Ho Bank which operates with a reserve ratio of 12.5 per cent. Assuming that Banca Solida adopts the business practices of its new owner, what will be the effect on money supply in the country in which Banca Solida operates?

A. Money supply will increase because Banca Solida will increase its loans.

B. The effect on money supply cannot be determined from the information given.

C. Money supply will decrease because the loans will have to be repaid.

D. Money supply will be unchanged because the central bank has made no policy changes.

Solution: A

Question 2. [2 marks] Suppose Louis moves his $1,000 demand deposit from Bank A to Bank B. If both banks operates with a reserve ratio of 10 per cent, what is the potential change in money supply as a result of Louis's action?

A. $10,000

B. $1,000

C. $9,000

D. $0

Solution: D

Question 3. [2 marks] A U.S. Treasury bond is a

A. store of value, but not a common medium of exchange.

B. store of value and common medium of exchange.

C. a common medium of exchange, but not a store of value.

D. neither a store of value nor a common medium of exchange.

Solution: A

Question 4. [2 marks] When the money market is drawn with the value of money on the vertical axis, as the price level decreases, the value of money

A. increases, so the quantity of money demanded increases.

B. increases, so the quantity of money demanded decreases.

C. decreases, so the quantity of money demanded decreases.

D. decreases, so the quantity of money demanded increases.

Solution: B

Question 5. [2 marks] Suppose the nominal interest rate is 7 per cent while the money supply is growing at a rate of 5 per cent per year. If the government increases the growth rate of the money supply from 5 per cent to 9 per cent, the Fisher effect suggests that, in the long run, the nominal interest rate should become

A. 9 per cent.

B. 11 per cent.

C. 4 per cent.

D. 16 per cent.

Solution: B

Question 6. [2 marks] Which of the following costs of inflation does NOT occur when inflation is constant and predictable?

A. Costs due to inflation induced tax distortions.

B. Arbitrary redistributions of wealth.

C. Shoeleather costs.

D. Menu costs.

Solution: B

Question 7. [2 marks] There is evidence that the rate at which money changed hands rose during the German hyperinflation. This means that

A. velocity rose. If money neutrality holds the rise in velocity increased the ration M/P.

B. velocity rose. If money neutrality holds the rise in velocity decreased the ration M/P.

C. velocity fell. If money neutrality holds the fall in velocity increased the ration M/P.

D. velocity fell. If money neutrality holds the fall in velocity decreased the ration M/P.

Solution: B

Question 8. [2 marks] Suppose the real exchange rate between Russia and the UK is defined in terms of bottles of Russian vodka per bottle of UK vodka. Which of the following will increase the real exchange rate (that is, increase the number of bottles of Russian vodka per bottle of UK vodka)?

A. an increase in the price in pounds of UK vodka.

B. an increase in the number of roubles for which the pound can be exchanged.

C. None of the changes described in these answers will increase the real exchange rate.

D. Both of the changes described in these answers will increase the real exchange rate.

Solution: D

Question 9. [2 marks] Suppose the nominal exchange rate between the Japanese yen and the UK pound is 100 yen per pound. Further, suppose that a kilogram of rise costs 2 pounds in the UK and 250 yen in Japan. What is the real exchange rate between Japan and the UK?

A. 2.5 kilograms of Japanese rice per kilogram of UK rice.

B. 0.5 kilograms of Japanese rice per kilogram of UK rice.

C. 0.8 kilograms of Japanese rice per kilogram of UK rice.

D. 1.25 kilograms of Japanese rice per kilogram of UK rice.

Solution: C

Question 10. [2 marks] Suppose a resident of the USA buys a Holden car from Australia, and the Australian exporter uses the receipts to buy shares in Facebook. Which of the following statements is TRUE from the perspective of Australia?

A. Net exports fall, and net capital outflows rises.

B. Net exports rise, and net capital outflows rises.

C. Net exports rise, and net capital outflows falls.

D. Net exports fall, and net capital outflows falls.

Solution: B

Question 11. [2 marks] For the Eurozone countries, the most important source of the downward slope of the aggregate demand curve is probably

A. the wealth effect.

B. the exchange rate effect.

C. the interest rate effect.

D. All of these answers.

Solution: C

Question 12. [2 marks] If output is above its natural rate, then according to sticky-wage theory

A. workers and firms will strike bargains for higher wages. This increase in wages shifts the short-run aggregate supply curve right.

B. workers and firms will strike bargains for higher wages. This increase in wages shifts the short-run aggregate supply curve left.

C. workers and firms will strike bargains for lower wages. This decrease in wages shifts the short-run aggregate supply curve right.

D. workers and firms will strike bargains for lower wages. This decrease in wages shifts the short-run aggregate supply curve left.

Solution: B

Question 13. [2 marks] An economic contraction caused by a shift in aggregate demand remedies itself over time as the expected price level

A. rises, shifting aggregate demand right.

B. rises, shifting aggregate demand left.

C. falls, shifting aggregate supply right.

D. falls, shifting aggregate supply left.

Solution: C

Question 14. [2 marks] Suppose the economy is in long-run equilibrium. If there is an income tax cut at the same time that major new sources of oil are discovered in the country, then in the short-run

A. real GDP will rise and the price level might rise, fall or stay the same.

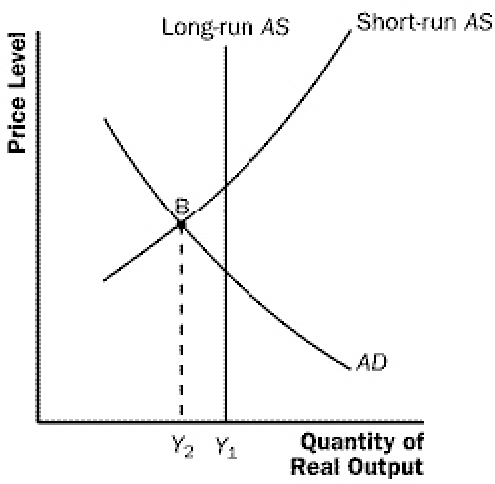
B. real GDP will fall and the price level might rise, fall or stay the same.

C. the price level will rise, and real GDP might rise, fall, or stay the same.

D. the price level will fall, and real GDP might rise, fall, or stay the same.

Solution: A

Question 15. [2 marks] Refer to the following graph. Suppose the economy is operating in a recession such as point B in the graph below. If policymakers wished to move output to its long-run natural rate, they should attempt to



A. shift aggregate demand to the left.

B. shift short-run aggregate supply to the left.

C. shift aggregate demand to the right.

D. shift short-run aggregate supply to the right.

Solution: C

Question 16. [2 marks] What might reduce the effectiveness of fiscal expansion in raising national output?

A. It is likely to lead to a depreciation of the currency.

B. it is likely to lead to an increase in the money supply.

C. It is likely to result in higher interest rates.

D. It is likely to lead to an expectation of lower future levels of taxation.

Solution: C

Question 17. [2 marks] What would be a positive effect on the growth of an economy in the short run, if the government reduced a direct tax on individual earnings?

A. food prices would increase due to shortages.

B. imports of luxury cars would increase to satisfy a change in demand.

C. savings would increase due to additional disposable income.

D. the consumption of domestically produced goods would increase.

Solution: D

Question 18. [2 marks] A government adopts a policy of fiscal contraction. What will be the expected impact of this policy on the country's exchange rate?

A. appreciation.

B. depreciation.

C. uncertain.

D. not enough information.

Solution: B

Question 19. [2 marks] Fiscal policy helps increasing the productive potential of the economy (long run aggregate supply) through all of the following except?

A. government subsidies for education and training of employees.

B. tax rebates for businesses for spending on research and development.

C. government spending on improved infrastructure.

D. lower exchange rate.

Solution: D

Question 20. [2 marks] The opportunity cost of holding money balance is

A. zero.

B. real interest rate.

C. nominal interest rate.

D. none of the above.

Solution: C

Section B: Problem Solving Questions [Total = 60 marks]

Question 21. [10 marks] The economy of Elmendyn contains 2,000 $1 bills.

(a) [2 marks] If people hold all money as currency, what is the quantity of money?

Solution: If people hold all money as currency, the quantity of money is $2,000.

(b) [3 marks] If people hold all money as demand deposits and bank maintain 100 percent reserves, what is the quantity of money?

Solution: If people hold all money as demand deposits at banks with 100% reserves, the quantity of money is $2,000.

(c) [3 marks] If people hold equal amounts of currency and demand deposits and banks maintain 100 percent reserves, what is the quantity of money?

Solution: If people have \$1,000 in currency and \$1,000 in demand deposits, the quantity of money is \$2,000.

(d) [2 marks] If people hold all money as demand deposits and banks maintain a reserve ratio of 10 percent, what is the quantity of money?

Solution: If banks have a reserve ratio of 10%, the money multiplier is $1/0.1 = 10$. So if people hold all money as demand deposits, the quantity of money is $10 \times \$2{,}000 = \$20{,}000$.

Question 22. [10 marks] Suppose that people in 2021 expect US inflation in 2022 equals to 5 percent, but the Russia-Ukraine war worsens the inflation rate to 8.6 percent. Describe how this unexpected high inflation rate would help or hurt the following:

(a) [3 marks] the government

Solution: Unexpectedly high inflation helps the government by providing higher tax revenues and reducing the real value of outstanding government debt.

(b) [2 marks] a homeowner with a fixed-rate mortgage

Solution: Unexpectedly high inflation helps a homeowner with a fixed-rate mortgage because he pays a fixed nominal interest rate that was based on expected inflation, and thus pays a lower real interest rate than was expected.

(c) [2 marks] a union worker in the second year of a labor contract

Solution: Unexpectedly high inflation hurts a union worker in the second year of a labor contract because the contract probably based the worker's nominal wage on the expected inflation rate. As a result, the worker receives a lower-than-expected real wage.

(d) [3 marks] a college that has invested some of its endowment in government bonds

Solution: Unexpectedly high inflation hurts a college that has invested some of its endowment in government bonds because the higher inflation rate means the college is receiving a lower real interest rate than it had planned. (This assumes that the college did not purchased indexed Treasury bonds.)

Question 23. [10 marks] How would the following transactions affect U.S. exports, imports, and net exports.

(a) [2 marks] An American economics professor spends the summer touring museums in Europe.

Solution: When an American economics professor spends the summer touring museums in Europe, he spends money buying foreign goods and services, so U.S. exports are unchanged, imports increase, and net exports decrease.

(b) [2 marks] Students in Paris flock to see the latest movie from Hollywood.

Solution: When students in Paris flock to see the latest movie from Hollywood, foreigners are buying a U.S. good, so U.S. exports rise, imports are unchanged, and net exports increase.

(c) [2 marks] Your uncle buys a new Toyota.

Solution: When your uncle buys a new Toyota, an American is buying a foreign good, so U.S. exports are unchanged, imports rise, and net exports decline.

(d) [2 marks] The student bookstore at University of Melbourne in Australia sells a pair of Levi's 501 jeans.

Solution: When the student bookstore at University of Melbourne sells a pair of Levi's 501 jeans, foreigners are buying U.S. goods, so U.S. exports increase, imports are unchanged, and net exports increase.

(e) [2 marks] A Canadian citizen shops at a store in northern Vermont to avoid Canadian sales taxes.

Solution: When a Canadian citizen shops in northern Vermont to avoid Canadian sales taxes, a foreigners is buying U.S. goods, so U.S. exports increase, imports are unchanged, and net exports increase.

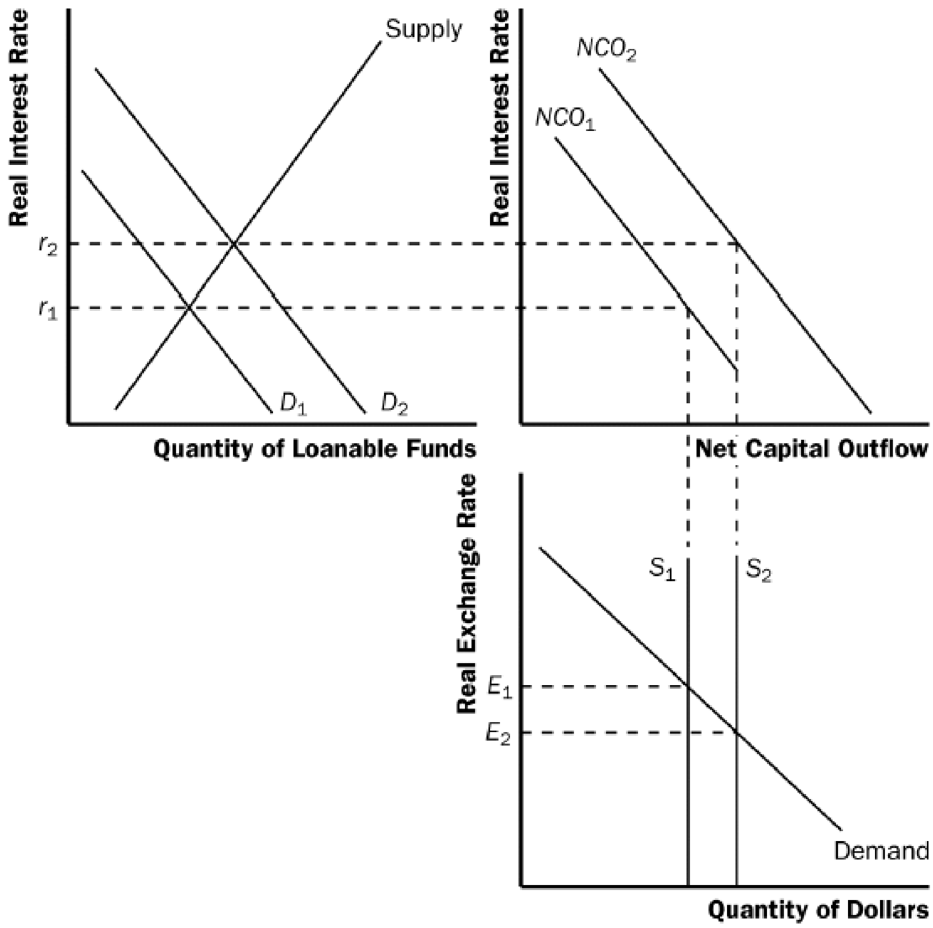
Question 24. [10 marks] Suppose that real interest rate increases in Australia.

(a) [2 marks] Explain how this development will affect U.S. net capital outflow.

Solution: Higher real interest rate in Australia leads to increased U.S. net capital outflow.

(b) [4 marks] Explain how it will affect U.S. net exports by using the open economy macroeconomic accounting identity and by drawing a diagram.

Solution: Higher net capital outflow leads to higher net exports, because in equilibrium net exports equal net capital outflow (NX = NCO). The figure below shows that the increase in net capital outflow leads to increased net exports.



(c) [4 marks] What will happen to the U.S. real interest rate and real exchange rate?

Solution: The figure above shows that the increase in net capital outflow leads to a lower real exchange rate, higher real interest rate.

Question 25. [10 marks] Explain whether each of the following events will increase, decrease, or have no effect on long-run aggregate supply.

(a) [2 marks] The United States experiences a wave of immigration.

Solution: When the United States experiences a wave of immigration, the labor force increases, so long-run aggregate supply shifts to the right.

(b) [3 marks] Congress raises the minimum wage.

Solution: When congress raises the minimum wage, the natural rate of unemployment rises, so the long-run aggregate supply curve shifts to the left.

(c) [2 marks] Intel invents a new and more powerful computer chip.

Solution: When Intel invents a new and more powerful computer chip, productivity increases, so long-run aggregate supply increases because more output can be produced with the same inputs.

(d) [3 marks] A severe hurricane damages factories along the east coast.

Solution: When severe hurricane damages factories along the east coast, the capital stock is smaller, so long-run aggregate supply declines.

Question 26. [10 marks] In which of the following circumstances is expansionary fiscal policy more likely to lead to a short-run increase in investment? Explain.

(a) [5 marks] When the investment accelerator is large or when it is small?

Solution: Expansionary fiscal policy is more likely to lead to a short-run increase in investment if the investment accelerator is large. A large investment accelerator means that the increase in output caused by expansionary fiscal policy will induce a large increase in investment. Without a large accelerator, investment might decline because the increase in aggregate demand will raise the interest rate.

(b) [5 mark] When the interest sensitivity of investment is large or when it is small?

Solution: Expansionary fiscal policy is more likely to lead to a short-run increase in investment if the interest sensitivity of investment is small. Because fiscal policy increases aggregate demand, thus increasing money demand and the interest rate, the greater the sensitivity of investment to the interest rate the greater the decline in investment will be, which will offset the positive accelerator effect.

End of Exam