



Fraser International College

Economics 105 Midterm Exam II (Fall 2023)

Instructor: Jiamin. Liu

Name: Weiqi Wang

Preferred Name: Sam

FIC Student ID: WANWAD1903

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Please indicate your lecture day:

Monday morning (1)	[]	Monday afternoon (2)	[]
Tuesday morning (3)	[]	Tuesday afternoon (4)	[<input checked="" type="checkbox"/>]

Instructions:

1. Please do not open the exam until you are asked to or you will get 2 points deducted as your penalty.
2. There are 20 multiple choice questions that are 0.5 point each, totaling 10 points. Please put your answers on the table provided on page 3. Answers on the questions not on the table will not be graded.
3. There are 4 short answer questions totaling 40 points as indicated on each question. Please provide all the steps and explanations. No point will be given without explanations.
4. All the questions must be answered in the exam sheet. No marks will be deducted for incorrect answers. The total number of marks available is 50.
5. Time allowed is 1.5 hours.
6. Answers written in pencil and whiteouts are NOT eligible for remark.
7. Page 2 and 14 serve as draft papers, there are no extra paper provided during the exam and you are not allowed to use your own paper, please use pages 2 and 14 on this exam booklet wisely.
8. For all your final answers with non-integers, please keep 2 decimal places.
9. Good luck!

Place Answers to the Multiple Choice Questions in the Chart Below
Fill in the space that corresponds to the correct answer.

Question	A	B	C	D
1	✓			
2			✓	
3			✓	
4	✓			
5			✓	
6		✓		
7		✓		
8	✓			
9	✓			
10		✓		
11		✓		
12	✓			
13				✓
14	✓			
15				✓
16			✓	
17			✓	
18				✓
19			✓	
20	✓			

8.5

Section I: Multiple Choice Questions

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- a 1. In a closed economy, what is public saving?
- ☒ a. the amount of income that households have left after paying for taxes and consumption
 - ☐ b. the amount of income that businesses have left after paying for the factors of production
 - ☐ c. the amount of tax revenue that the government has left after paying for its spending
 - ☐ d. the amount of total income minus total expenditure
- C 2. If the nominal interest rate is 10 percent and the inflation rate is 4 percent, what is the real interest rate?
- ☐ a. 0.44 percent
 - ☐ b. 2.6 percent
 - ☒ c. 6 percent
 - ☐ d. 14 percent
- C 3. If other things are the same, will countries that tax less on saving have lower or higher interest rates and investment than other countries?
- ☐ a. lower interest rates and higher investment
 - ☐ b. lower interest rates and lower investment
 - ☒ c. higher interest rates and higher investment
 - ☐ d. higher interest rates and lower investment
- a 4. What is the effect of an increase in budget deficit?
- ☒ a. It changes the supply of loanable funds.
 - ☐ b. It changes the demand for loanable funds.
 - ☐ c. It changes both the supply of and demand for loanable funds.
 - ☐ d. It does not influence the supply of or the demand for loanable funds.
- C 5. Suppose that interest rates fall and investment falls. Which of the following best explains these changes?
- ☐ a. The government went from a surplus to a deficit.
 - ☐ b. The government has repealed an investment tax credit.
 - ☒ c. The government has replaced a consumption tax with an income tax.
 - ☐ d. The government is allowing nontaxable savings deposits of up to \$5000 per year.
- b 6. How is the unemployment rate computed?
- ☐ a. by counting the number of unemployment insurance claims filed
 - ☒ b. by dividing the number of unemployed by the number of persons in the labour force
 - ☐ c. by determining the number of unemployed in the population aged 18 and older
 - ☐ d. by counting the number of working-age persons who don't have a job

Table 9-1

This table shows the 2013 data for males and females aged 15 and over in the country of Dan.

Not in the Labour Force		Unemployed		Employed	
Male	Female	Male	Female	Male	Female
45 million	35 million	5 million	5 million	85 million	65 million

- b 7. Refer to the Table 9-1. What is the adult unemployment rate in Dan?
- a. 4.12 percent
 - ☒ b. 6.25 percent
 - c. 11.11 percent
 - d. 12.50 percent

- a 8. Suppose that in 2013, the demand for construction workers increased and the demands for textile and steel workers diminished. Which of the following types of unemployment does this situation illustrate?
- ☒ a. frictional unemployment created by a sectoral shift
 - b. structural unemployment created by a sectoral shift
 - c. frictional unemployment created by efficiency wages
 - d. structural unemployment created by efficiency wages

- a 9. Dawn is the CEO of a corporation that hires nonunion labour. According to the theory of efficiency wages, if she decides to pay her workers more than the competitive equilibrium wage, which of the following is most likely to happen?
- ☒ a. The profits of her firm may increase.
 - b. The higher wages will induce her workers to shirk.
 - c. The turnover of her workers may increase.
 - d. She will face a shortage of labour.

- b 10. Which of the following lists ranks assets from most to least liquid?
- a. currency, fine art, stocks
 - ☒ b. currency, stocks, fine art
 - c. fine art, currency, stocks
 - d. fine art, stocks, currency

- b 11. Which of the following agencies is responsible for regulating the money supply in Canada?
- a. the Comptroller of the Currency
 - ☒ b. the Bank of Canada
 - c. the TD Bank
 - d. the Canadian Payments Association

- a 12. Which of the following best defines the bank rate?
- ☒ a. It is the interest rate the Bank of Canada charges banks.
 - b. It is one divided by the difference between one and the reserve ratio.
 - c. It is the interest rate banks receive on reserve deposits with Bank of Canada.
 - d. It is the interest rate that banks charge on overnight loans to other banks.

- d 13. A medium of exchange must be which of the following?
- a. legal tender
 - b. issued by the government
 - c. a commodity that is as valuable as a commodity as it is as money
 - ☒ d. generally accepted by people for goods and services

- a 14. Which of the following does the Fisher effect imply?
- ☒ The nominal interest rate adjusts one for one with the inflation rate.
 - ☒ The growth rate of the money supply determines the inflation rate.
 - Real variables are heavily influenced by the monetary system.
 - The real interest rate adjusts one for one with the inflation rate.
- d 15. Which of the following can a country increase in the long run by increasing its money growth rate?
- the nominal wage divided by the price level
 - real output
 - real interest rates
 - ☒ the price level
- C 16. The country of Aquilonia has a tax system identical to that of Canada. Suppose an Aquilonian bought a parcel of land for \$10 000 in 1960 when the price index equalled 100. In 2013, the person sold the land for \$100 000, and the price index equalled 500. If the person must pay 20 percent of any capital gain in taxes, what is the after-tax real capital gain (in 2013 dollars) on the land?
- \$72 000
 - \$62 000
 - ☒ \$32 000
 - \$6400
- $\$50000,$
 $100000 - 50000 \times 20\% = 100000 \times (1 - 20\%) - 50000$
- C 17. Suppose Connie, a Canadian citizen, buys bonds issued by an automobile manufacturer in Sweden. Which of the following would her expenditure be?
- Canadian foreign direct investment that would increase Canadian net capital outflow
 - Canadian foreign direct investment that would decrease Canadian net capital outflow
 - ☒ Canadian foreign portfolio investment that would increase Canadian net capital outflow
 - Canadian foreign portfolio investment that would decrease Canadian net capital outflow
- d 18. If a Canadian shirt-maker purchases cotton from Egypt, which of the following correctly identifies the effects of this transaction?
- Canadian net exports increase, and Canadian net capital outflow increases.
 - Canadian net exports increase, and Canadian net capital outflow decreases.
 - Canadian net exports decrease, and Canadian net capital outflow increases.
 - ☒ Canadian net exports decrease, and Canadian net capital outflow decreases.
- C 19. Tony, a Canadian citizen, uses some previously obtained Portuguese currency (escudo) to purchase a bond issued by a Portuguese company. How does this transaction affect Canadian net capital outflow?
- It increases Canadian net capital outflow by more than the value of the bond.
 - It increases Canadian net capital outflow by the value of the bond.
 - ☒ It does not change Canadian net capital outflow.
 - It decreases Canadian net capital outflow.
- a 20. What equation is the GDP identity in an open economy?
- ☒ $Y = C + I + G + NCO$
 - $NX = -NCO$
 - $NCO = S - I + NX$
 - $Y = C + I + G - NX$

Section II: Short Answer Questions

Question 1: [10 points in total] True or False. For the correct statements please put down "right" without explanation. For the incorrect statements please put down "wrong" (worth 0.5 point) and explain why it is incorrect.

- a) Job search refers to the time that workers spend looking for employment and thus job search results in both cyclical and frictional unemployment.

Wrong, job search ~~results~~ not results cyclical unemployment

- b) The loanable funds market interest rate is the return a borrower receives and the cost for a lender to allow the borrower to use a dollar for a year.

right

- c) Historically the relationship between the change in unemployment and the annual growth rate of real GDP is a positive relationship.

Wrong, a negative relationship

- d) Holding everything else constant, when the government runs a deficit this results in the level of private investment spending in the loanable funds market decreasing.

Wrong, deficit \rightarrow $MS \downarrow \rightarrow r \uparrow \rightarrow$ more private investment spending in the loanable funds market

- e) Efficiency wages are a mean for employers to retain employees while providing incentive for greater job effort.

right

- f) Credit cards create a form of money for users since the use of credit cards enables people to purchase goods and services.

Wrong, credit cards do not create money what is it?
0.5

- g) Money eliminates the need for a "double coincidence of wants" between trading partners.

right

- h) M2 includes currency in circulation, savings account deposits and checkable ~~and~~ bank deposits.

right

- i) Banks decrease the money supply because they remove some currency from circulation when they place currency in their bank vaults or deposit currency at the central bank.

right

- j) In the long run, an increase in the money supply will cause nominal prices and nominal wages to increase by the same percentage as the percentage increase in the money supply.

right

SS

Question 2: [14 points in total] Based on the following information, please calculate the following questions. Each question is independent to each other.

1. You are given the following information about a closed economy for 2019.

GDP	\$100 billion
C	70 billion
Tax	15 billion
Transfer Payment	8 billion
G	20 billion

- a) What is the private saving equal to? (1 point)

$$GDP - C - Tax = \$100 \text{ billion} - \$70 \text{ billion} - \$15 \text{ billion} = \$15 \text{ billion}$$

0.5

- b) What is the budget balance equal to in this economy? (1.5 points)

$$Tax - G = \$15 \text{ billion} - \$20 \text{ billion} = \$-5 \text{ billion}$$

a deficit of \$5 billion

0.5

- c) What is the level of investment spending in this economy? (1 point)

$$I = GDP - C - G = \$100 \text{ billion} - \$70 \text{ billion} - \$20 \text{ billion} = \$10 \text{ billion}$$

1

2. Suppose that there are 10,000 adults in Econland and that 5,000 of these adults are employed, 2,000 are unemployed, 500 are discouraged workers, and the rest are not currently working and/or not seeking for employment.

- a) What is the labor force equal to in Econland? (1 point)

$$\text{employed} + \text{unemployed} = 5000 + 2000 = 7000$$

1

- b) What is the unemployment rate in Econland? (1 point)

$$\frac{\text{unemployed}}{\text{labour force}} \times 100\% = \frac{2000}{7000} \times 100\% = 28.57\%$$

- c) Currently the Bureau of Labor Statistics does not count discouraged workers as unemployed workers. How does this decision affect the calculated value of unemployment rate? (1.5 points)

The unemployment rate decreases because discouraged workers are included in "not in the labour force" and decrease the number of unemployed

3. Assume that there is only one good in the economy, pizza. The economy has enough resources to produce $Y = 1000$ units of pizza. Assuming that velocity is constant. In 2015, money supply is \$500 and price of pizza is \$10/pizza.

- a) Calculate nominal GDP and velocity in 2015. (2 points)

$$\text{nominal GDP: } 1000 \times \$10 = \$10000$$

$$\text{velocity: } \frac{\$10000}{\$500} = 20$$

- b) Assume that the output remains unchanged in 2016, and the central bank increases the money supply by 10%, to \$550. Calculate the 2016 value of nominal GDP and the price level and then compute the inflation rate between 2015 and 2016. (3 points)

$$\text{Inflation rate: } 10\%$$

$$\text{nominal GDP: } \$10000 \times (1 + 10\%) = \$11000$$

$$\text{price level: } \frac{\$11000}{1000} = \$11/\text{pizza}$$

- c) Now suppose that technological progress causes output to increase by 2% to 1020 in 2016, and the central bank increases money supply by 10% to \$550. Calculate inflation rate between 2015 and 2016. (2 points)

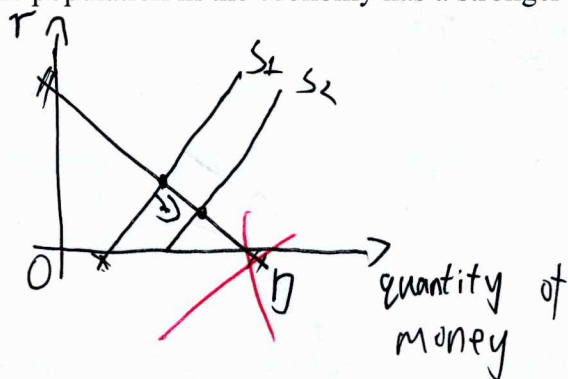
$$\text{nominal GDP: } \$550 \times 20 = \$11000$$

$$\text{price level: } \frac{\$11000}{1020} = \$10.78/\text{pizza}$$

$$\text{inflation rate: } \left(\frac{\$10.78}{\$10} - 1 \right) \times 100\% = 7.8\%$$

Question 3: [9 points in total] For each of the following situations, state the effect on the equilibrium interest rate and the equilibrium quantity of loanable funds. In your answer make sure to draw the supply and demand diagram for the loanable funds market and show how supply or/and demand is affected, holding everything else constant.

- a) The population in the economy has a stronger time preference. (3 points)



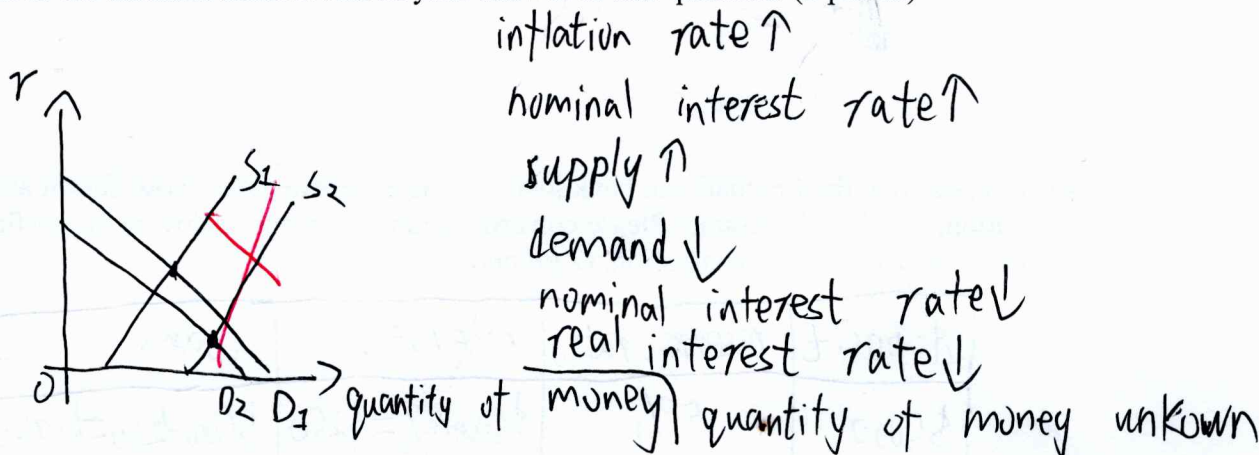
stronger time preference

supply \uparrow

quantity of money \uparrow

interest rate \downarrow

- b) There is an increase in the expected inflation rate. Comment on the real interest rate as well as the nominal interest rate in your answer to this question. (3 points)



inflation rate \uparrow

nominal interest rate \uparrow

supply \uparrow

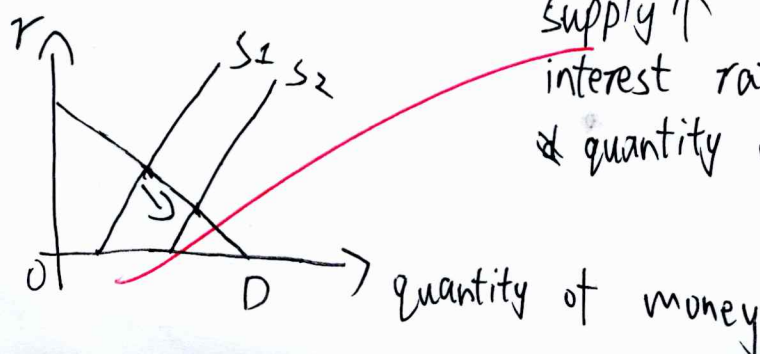
demand \downarrow

nominal interest rate \downarrow

real interest rate \downarrow

quantity of money unknown

- c) There is a change in demographics that majority of the population is in their mid-age. (3 points)



mid-age population \uparrow

supply \uparrow

interest rate \downarrow

quantity of money \uparrow

Question 4: [7 points in total] suppose that the first national bank in Econland has initial deposit of \$5,000, reserves are \$500, and loans are \$4,500.

- a) Construct a T-account depicting the initial situation in the first national bank in Econland. What is its reserve ratio? (2 points)

$$\frac{\text{reserves}}{\text{deposit}} \times 100\% = \frac{\$500}{\$5000} \times 100\% = 10\%$$

0.5

- b) Suppose that the central bank in Econland has a required reserve of 5% of deposits. How much excess reserves do first national bank have? Please calculate. (1 point)

$$10\% - 5\% = 5\%$$

0.5

- c) Suppose that the first national bank loans out its excess reserves, how does it affect first national bank's T-account? Please construct a new T-account below to depict first national bank's current situation. (2 points)

deposit	reserve ratio	reserves	loans
\$5000	5%	\$500 $\times 5\% = \$250$	\$500 $\times 5\% = \$4750$

d) What is the money multiplier in the banking system in Econland? (1 point)

~~A:~~

$$1 - \cancel{5\%} = 95\%$$

e) How does the first national bank's action influence the money supply? (1 point)

money supply increases ~~5%~~

①