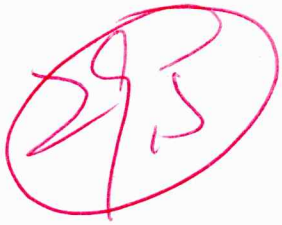
Fraser International College

Economics 105 Midterm Exam II (Summer 2023)

Instructor: Jiamin. Liu



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Please indicate your lecture day: Monday morning (1) [✓]

Monday afternoon (2) [ ]

Instructions:

1. 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.
2. There are 3 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.
3. 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.
4. Time allowed is 1.5 hours.
5. Answers written in pencil and whiteouts are NOT eligible for remark.
6. Please do not open the exam until you are asked to.
7. Page 2 and 12 serve as draft papers, there are no extra paper provided during the exam, please use them wisely.
8. For all your final answers, 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	A			

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Section I: Multiple Choice Questions

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

A 1. When opening a restaurant, you may need to buy ovens, freezers, tables, and cash registers. What do economists call these expenditures?
   a. capital investment
   b. investment in human capital
   c. business consumption expenditures
   d. inventories

D 2. Which of the following best characterizes the lending strategy of banks?
   a. Banks make most their profits from account fees.
   b. Banks lend mostly to large and familiar companies rather than smaller local firms.
   c. Banks charge borrowers a slightly lower interest rate than they pay to depositors.
   d. Banks lend money both for investment and consumption purposes.

A 3. Which of the following best defines a closed economy?
   a. an economy that does not trade with other economies
   b. an economy that does not have free markets
   c. an economy that does not allow immigration
   d. an economy that does not grow

Table 8-4

GDP	$100 billion
Consumption	$65 billion
Taxes minus Transfers	$15 billion
Government Purchases	$20 billion

B C 4. Refer to the Table 8-4. Supposing the market for loanable funds is in equilibrium, what is the quantity of funds demanded?
   a. $25 billion
   b. $20 billion
   c. $15 billion
   d. $10 billion

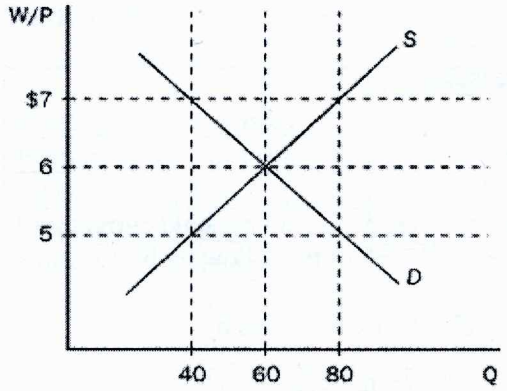
A B 5. Which of the following best defines the nominal interest rate?
   a. It is the interest rate corrected for inflation.
   b. It is the interest rate as usually reported by banks.
   c. It is the real rate of return to the lender.
   d. It is the real cost of borrowing to the borrower.

D 6. Suppose that the government were to replace the income tax with a consumption tax. What would happen to the interest rate and investment, respectively?
   a. increase and increase
   b. decrease and decrease
   c. increase and decrease
   d. decrease and increase

C 7. When the government runs a budget deficit, which of the following is most likely to happen?
   a. Interest rates become lower than they would be otherwise.
   b. National saving gets higher than it would be otherwise.
   c. Investment gets lower than it would be otherwise.
   d. Government debt decreases by the amount of the deficit.

C 8. Which of the following constitutes the labour force?
   a. the number of people who are employed
   b. the number of people who are unemployed
   c. the number of people employed plus the number of people unemployed
   d. the number of people in the adult population

Figure 9-2



D 9. Refer to the Figure 9-2. If the minimum wage is $5 or $6, what is the number of people unemployed, respectively?
   a. 40 and 0
   b. 20 and 20
   c. 40 and 20
   d. 0 and 0

C 10. When unions raise wages in some sectors of the economy, which of the following happens to the supply of labour in other sectors of the economy?
   a. It decreases, raising wages in industries that are not unionized.
   b. It decreases, reducing wages in industries that are not unionized.
   c. It increases, raising wages in industries that are not unionized.
   d. It increases, reducing wages in industries that are not unionized.

RB 11. Which of the following is included in the M2 definition of the money supply?
a. credit cards
b. term deposits
c. corporate bonds
d. foreign currency accounts

BA 12. Which of the following is the fundamental function of credit cards?
a. Credit cards are used for deferring payments.
b. Credit cards are used as store of value.
c. Credit cards are used for increasing the money supply.
d. Credit cards are used as investment assets.

B 13. 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

C 14. If the central bank lowered the reserve requirement, what happens to the money multiplier and the money supply?
a. The money multiplier increases, but the money supply decreases.
b. The money multiplier decreases, but the money supply increases.
c. The money multiplier and the money supply both increase.
d. The money multiplier and the money supply both decrease.

B A 15. Suppose the reserve ratio is 10 percent, banks do not hold excess reserves, people do not hold currency, and the Bank of Canada purchases $20 million of government bonds. Which of the following best describes the effects of Bank of Canada's purchase?
a. Bank reserves increase by $20 million, and the money supply eventually increases by $200 million.
b. Bank reserves decrease by $20 million, and the money supply eventually increases by $200 million.
c. Bank reserves increase by $20 million, and the money supply eventually decreases by $200 million.
d. Bank reserves decrease by $20 million, and the money supply eventually decreases by $200 million.

D A 16. If your salary increased by 7 percent and prices increased by 4 percent, how much did your real wage rise by?
a. 3 percent
b. 4 percent
c. 6 percent
d. 7 percent

17. For a given real interest rate, which of the following best describes the effects of an increase in inflation?
a. Inflation makes the real interest rate decrease, which encourages savings.
b. Inflation makes the real interest rate decrease, which discourages savings.
c. Inflation makes the real interest rate increase, which encourages savings.
d. Inflation makes the real interest rate increase, which discourages savings.

18. Given a nominal interest rate of 10 percent, in which of the following cases would you earn the highest after-tax real interest rate?
a. Inflation is 6 percent, and the tax rate is 20 percent.
b. Inflation is 5 percent, and the tax rate is 30 percent.
c. Inflation is 4 percent, and the tax rate is 40 percent.
d. Inflation is 2 percent, and the tax rate is 50 percent.

19. If citizens of a country are not saving much, which of the following actions should that country's government take?
a. force citizens to save
b. reduce investment
c. have foreigners invest in the domestic economy
d. prevent opportunities for citizens to buy capital assets abroad

Table 12-1

Country	Currency	Currency per Canadian Dollar	Canadian Price Index	Country Price Index
Bolivia	Boliviano	8.00	100	800
Japan	Yen	125.00	100	25 000
Morocco	Dinar	10.00	100	1000
Norway	Kroner	6.5	100	750
Thailand	Baht	40.00	100	3500

20. Refer to the Table 12-1. What currency(ies) is(are) more valuable than predicted by the doctrine of purchasing-power parity?
a. the boliviano and dinar
b. the yen, kroner, and baht
c. the yen and kroner
d. the baht

Section II Short Answer Questions

1. [17 points in total] Please calculate the following questions. These questions (i.e. part a to part e) are independent to each other. Please show your steps to get full marks.

a) In a closed economy GDP = \$1000, consumption = \$600, taxes = \$100 and government purchases = \$200 (all numbers are in billions). Calculate national saving, and investment. (2 points)

$S^P = Y - C - T = \$1000 - 600 - 100 = \$300$ billions

$S^G = T - G = 100 - 200 = -\$100$ billions

$S = S^P + S^G = 300 - 100 = \$200$ billions

In a closed economy

So, $Y = C + I + G \Rightarrow I = Y - C - G$

$= 1000 - 600 - 200$

$= \$200$ billion

$S^G = T - G$

$I = S^G = T - G = 100 - 200$

$G = S^G - T = 200 - 100 = \$100$ billions

2

b) Use the following data to calculate questions 1 to 5. (5 points)

	Quantity (millions)
Total population	29.7
Adult population	21.2
Unemployed	1.2
Employed	12.1

1) What is the size of the labour force?

$LF = U + E = 1.2 + 12.1 = 13.3$ million

1

2) What is the unemployment rate?

$\text{unemployment rate} = \frac{U}{LF} \times 100\% = \frac{1.2}{13.3} \times 100\% = 9.02\%$

1

3) What is the labour-force participation rate?

$LFPR = \frac{LF}{\text{Adult population}} \times 100\% = \frac{13.3}{21.2} \times 100\% = 62.73\%$

1

4) If the natural rate of unemployment is 6.6%, how much is the cyclical unemployment rate? Is the economy likely to be experiencing a recession or a boom?

cyclical unemployment rate = unemployment rate − natural rate of unemployment
= 9.02% − 6.6% = 2.42%

The economy likely to be experiencing a boom.

0.5−

5) After calculating the unemployment rate, do you think it can actually reflect the current joblessness in the labour market? Why or why not? Please explain.

No, because there are many structural unemployed to ~~create~~ influence ~~make~~ joblessness increase population, like union, effect-wage. This both can increase the rate of unemployment.

c) Suppose Jiamin writes a $1000 cheque on her account to buy a government bond from her friend Eva. If Eva deposits the cheque in his bank and the reserve ratio is 20%, what is the potential change in money supply? (2 points)

$\Delta C = C_2 - C_1 = 0 - 1000 = -\$1000$

$\Delta D = D_2 - D_1 = 1000 - 0 = \$1000$

$\Delta M_S = \Delta C + \Delta D = -\$1000 + 1000 = 0$

7.5

2

d) Suppose that the Bank of Canada purchases a $1000 government bond from Jiamin. If Jiamin deposits the entire $1000 in her bank and the reserve ratio is 20%, what is the potential change in money supply? (2 points)

$\Delta C = C_2 - C_1 = 0 - 1000 = -\$1000$

$\Delta D = D_2 - D_1 = 1000 - 0 = \$1000$

$\Delta M_S = \Delta C + \Delta D = -1000 + 1000 = 0$

e) Fill in the following table and answer questions 1-2. (6 points)

	Low-inflation country	High-inflation country
Real interest rate	3%	3%
Inflation rate	2%	9%
Nominal interest rate	5%	12%
Reduced interest due to 25% tax	1.25%	3%
After-tax nominal interest rate	3.75%	9%
After-tax real interest rate	1.75%	0%

1) In which country is there a greater incentive to save? Why?

Low-inflation country is a greater incentive to save because its r_{a-t} are bigger than ~~Ho~~ High-inflation country, which means can get more interest in Low-inflation country.

2) How does high inflation dampen long-run economic growth?

high inflation will led government to copy more money that reduce the value of money and hurt ~~the~~ the person who hold ~~of~~ desposits, ↑ Ms ~~but~~ and increase the supply of investment, ↓r

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2. [11 points in total] Suppose that EconLand has a single bank that initially has $10,000 of deposits, reserves of $2,000, and loans of $8,000. We will assume that EconLand's central bank has a required reserve of 10% of deposits. All monetary transactions are made by cheque (i.e. no one in EconLand uses currency).

a) Construct a T-account depicting the initial situation in EconLand. In your T-account, make sure you differentiate between required and excess reserves and that your T-account's assets equal its liabilities. (4 points)

Assets	Liabilities
reserves { require: $1000	D: $10,000
excess: $1000	
Loans: $8000	

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b) Explain how you calculate the level of excess reserves in EconLand. You can list the equation as your explanation. (1 point)

Excess reserves = total reserves − require reserves
= ~~10,000×10%~~ 2000 − 10000×10%
= 2000 − 1000
= $1000

1

c) Suppose the bank in EconLand lends these excess reserves until it reaches the point where its excess reserves equal zero. How does this change the T-account? Please re-construct a new T-account. (2 points)

Assets	Liabilities
reserve: $1000	D: $10000
Loan: $9000	

2

d) Did the money supply in EconLand change when the bank loaned out the excess reserves? Explain your answer. (1 point)

~~ΔC = C₂ − C₁ = 0~~

Ms will increase because the bank loaned out the excess means ΔC↑ and ΔD not change.

1

e) What is the value of the money multiplier in EconLand? (1 point)

~~AA~~

$r \cdot r = \frac{R}{D} = \frac{2000}{10000} = 20\%$

$m = \frac{1}{rr} = 5$

f) Suppose that people in EconLand start to use currency ONLY to facilitate their monetary transactions, how does it affect the size of the money multiplier, please calculate. (2 points)

Currency only facilitate their money ~~r·r = 100%~~ transactions ⇒ means r·r = 100%

$m = \frac{1}{r \cdot r} = 1$

the size of the money multiplier not change.

8

3. [12 points in total] Using the following information about the three economies, Mediumland, Upland and Downland, to answer the following questions.

	MediumLand	UpLand	DownLand
Y	$1,000	$5,000	$4,000
C	800	3,500	3,000
I	80	1100	800
G	100	800	300
EX	50	400	400
IM	30	500	500
T	50	600	600
TR	20	200	200

(Note: There represents taxes not net taxes)

I $S-I=NX \Rightarrow I=S-NX=Y-C-G-EX+IM$

a) Find the Investment spendings in these three economies, show your calculations. (3 points)

$I_{ML} = Y_{ML} - C_{ML} - G_{ML} - (EX_{ML} - IM_{ML}) = 1000 - 800 - 100 - (50-30) = 80 \Rightarrow 1000-800-100-50+30 = 80$

$I_{UL} = Y_{UL} - C_{UL} - G_{UL} - (EX_{UL} - IM_{UL}) = 5000 - 3500 - 800 - (400-500) = \$1100 \Rightarrow 5000-3500-800-400+500 = 800$

$I_{DL} = Y_{DL} - C_{DL} - G_{DL} - (EX_{DL} - IM_{DL}) = 4000 - 3000 - 300 - (400-500) = \$800$

2

b) From the information you are given and your calculation in part a), fill in the following table. (9 points)

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	MediumLand	UpLand	DownLand
$S_{private}$	170 ~~70~~	1100 ~~700~~ -400 ~~-200~~ ~~700~~	600 200
S_{public}	-70 -110	-400 -300	100 200
CI	-20 ~~-30~~ 20	100 ~~1100~~ ~~1100~~	100 ~~1100~~

1

$S_p = Y - T + TR - C$

$S_G = T - TR - G$

$NCO = S - I$