



Soochow University, Winter Session I, 2021
ECON202 (Dr. Lei Pan)
Mid-term Exam Solution
Due Friday, December 24 2021 at 2:50pm Taipei Time

Instruction to Students:

1. The exam duration is **2 hours plus 10 minutes** reading time.
2. This is a **closed-book** exam and calculators are permitted.
3. This exam consists of **THREE** sections: Section A: TRUE/FALSE questions, Section B: multiple-choice questions, and Section C: problem solving questions.
 4. Read each statement in Section A carefully. State “TRUE” or “FALSE” for each of the statement. You **MUST** justify your answers. There are four questions in total, each of them is worth 5 marks.
 5. 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 3 marks.
 6. The third section contains four problem solving questions. All of them carrying 20 marks in total. Student **MUST** answer each question in Section C on a **FRESH** page of the answer book.
 7. 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 penalized for guessing.
 8. You may work on the three 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.

Merry Christmas and Good luck!



Section A: TRUE/FALSE Questions [Total = 20 marks]

Consider each of the following statement. Say whether you believe the statement is true or false. Briefly explain your answer in words. Note that most of the marks will be given for the explanation.

Question 1. [5 marks] GDP is the value of all goods and services produced in the economy.

Answer False. GDP is the value of all FINAL goods and services produced in the economy in a given period of time.

Question 2. [5 marks] The following relationship always holds: GDP deflator $>$ CPI $>$ Core CPI (energy and food prices are removed).

Answer False. This relationship does not always hold. It is true that the GDP deflator is a broader price index than the CPI which, in turn, is broader than the Core CPI. But the equation is saying that the deflator is always greater than the CPI which in turn is always greater than the Core CPI and this is not always true, for the behavior of the indices depends upon the behavior of the prices of components of those indices. For example, CPI is often MORE than core CPI after cyclones decimate certain food crops and raise food prices.

Question 3. [5 marks] If the actual rate of unemployment is above the natural rate of unemployment, then the economy is operating above its full capacity.

Answer False. In fact it is the exact opposite. The natural rate of unemployment is the unemployment rate that exists when the economy is operating at potential GDP, i.e. full capacity.

Question 4. [5 marks] The saving curve in the loanable funds model is upward sloping because interest rate has a positive effect on saving.

Answer False. Interest rate can have a positive effect on saving due to the substitution effect. Interest rate can also negatively impacts saving due to wealth effect. Therefore, theoretically the influence of interest rate on saving is ambiguous. The saving curve in the loanable funds model is upward sloping because empirical macroeconomic research find that substitution effect dominates in the real world.

Section B: Multiple Choice Questions [Total = 60 marks]

Choose ONE of the best answers for each of the following questions. Each question is worth 3 marks.

Question 5. [3 marks] Which of the following is NOT correct?

A. The consumer price index gives economists a way of turning dollar figures into meaningful measures of purchasing power.

B. The consumer price index is used to measure the quantity of goods and services that the economy is producing.

C. The consumer price index is used by economists to measure the inflation rate.

D. The consumer price index is used to monitor changes in the cost of living over time.

Answer B

Question 6. [3 marks] A good is produced by a firm in 2012, added to the firm's inventory in 2012, and sold to a household in 2013. As a result, on net,

A. 2012 GDP increased and 2013 GDP decreased.

B. 2012 GDP increased and 2013 GDP did not change.

C. 2012 GDP did not change and 2013 GDP increased.

D. 2012 GDP decreased and 2013 GDP increased.

Answer B

Question 7. [3 marks] Consider the following three items of spending by the government: (1) the federal government pays a \$500 unemployment benefit to an unemployed person; (2) the federal government makes a \$2,000 salary payment to a Navy lieutenant; (3) the city of Bozeman, Montana makes a \$10,000 payment to ABC Lighting Company for street lights in Bozeman. Which of these payments contributes directly to government purchases in the national income accounts?

A. only item (1)

B. only items (2) and (3)

C. only items (1) and (2)

D. only item (2)

Answer B

Question 8. [3 marks] Which of the following is NOT a reason that paying efficiency wages may increase a firm's profit?

A. Efficiency wages decrease a country's natural rate of unemployment and therefore increase its standard of living.

B. Efficiency wages decrease worker turnover and therefore decrease hiring and training costs.

C. Efficiency wages decrease worker shirking and therefore increase worker productivity.

D. Efficiency wages increase worker health and therefore increase worker productivity.

Answer A

Question 9. [3 marks] The BLS classifies people who would like to work but have given up looking for a job as

A. unemployed. If they were classified as out of the labor force, the reported unemployment rate would be larger.

B. unemployed. If they were classified as out of the labor force, the reported unemployment rate would be smaller.

C. out of the labor force. If they were classified as unemployed, the reported unemployment rate would be larger.

D. out of the labor force. If they were classified as unemployed, the reported unemployment rate would be smaller.

Answer C

Question 10. [3 marks] If there is a shortage of loanable funds, then

A. the demand for loanable funds will shift right so the real interest rate rises.

- B. the supply of loanable funds will shift left so the real interest rate falls.
- C. there will be no shifts of the curves, but the real interest rate rises.
- D. there will be no shifts of the curves, but the real interest rate falls.

Answer C

Question 11. [3 marks] When inflation rises, the nominal interest rate

- A. rises, and people desire to hold less money.
- B. rises, and people desire to hold more money.
- C. falls, and people desire to hold more money.
- D. falls, and people desire to hold less money

Answer A

Question 12. [3 marks] Risk aversion helps to explain various things we observe in the economy, including

- A. adherence to the old adage, “Don’t put all your eggs in one basket.”
- B. insurance.
- C. the risk-return trade-off.
- D. All of the above are correct

Answer D

Question 13. [3 marks] In 2009, the imaginary nation of Dorados had a population of 8,000 and real GDP of 3,000,000. During the year its real GDP per capita grew by about 2.9%. Which of the following sets of growth rates is approximately consistent with this growth in real GDP?

- A. 2% population growth and 6% real GDP growth
- B. 6% population growth and 2% real GDP growth
- C. 4% population growth and 7% real GDP growth

D. 7% population growth and 4% real GDP growth

Answer C

Question 14. [3 marks] Which of the following is human capital?

A. understanding how to use a company's accounting software

B. a student loan

C. training videos for new corporate employees

D. All of the above are correct.

Answer A

Question 15. [3 marks] The group of economists who believed that the macroeconomy worked very well on its own were

A. microeconomists

B. macroeconomists

C. classical economists

D. Keynesian economists

Answer C

Question 16. [3 marks] Rapid economic growth is important because it

A. makes some people richer

B. eliminates scarcity

C. makes the unemployment rate zero

D. allows the average person to consume more goods and services

Answer D

Question 17. [3 marks] Dennis is an excellent typist. However, because he has been unable to adapt to his company's new computer system, he has lost his job. He is

currently seeking another secretarial position, but it is likely that he will have to acquire new skills to become employable as a secretary again. Dennis would best be described as

- A. frictionally unemployed
- B. not in the labor force
- C. structurally unemployed
- D. cyclically unemployed

Answer C

Question 18. [3 marks] Substitution bias

- A. is one factor that causes the consumer price index to underestimate the inflation rate
- B. is caused by the poor quality of many products
- C. is one of the primary causes of inflation
- D. involves consumer behavior that helps explain why the consumer price index overestimates the inflation rate

Answer D

Question 19. [3 marks] Assume that the U.S. population is 300 million. If 70 million individuals are legally classified as unable to work (or are less than 16 years of age), 80 million are classified as unwilling to work, and 14 million are unemployed, what is the unemployment rate?

- A. 9.3 percent
- B. 6.4 percent
- C. 10.3 percent
- D. 6.7 percent

Answer A

Question 20. [3 marks] If the labor market is in equilibrium, there is no

- A. frictional unemployment
- B. structural unemployment
- C. unemployment
- D. cyclical unemployment

Answer D

Question 21. [3 marks] If the government wants to encourage spending on research and development, it should

- A. raise tax rates on corporate profits to raise money for the research
- B. encourage firms and households to spend money instead of saving it
- C. increase the number of years during which an inventor has exclusive patent rights to market an invention
- D. reduce patent protection so many individuals can use new products in their own research

Answer C

Question 22. [3 marks] Any pro-growth policy that increases investment requires

- A. a sacrifice of current consumption spending
- B. reduced government spending
- C. decreased production of capital goods
- D. increased production of consumption goods

Answer A

Question 23. [3 marks] Suppose that the level of real GDP is \$1,000,000 and the economy has 10,000 workers. Labor productivity is

- A. \$100 per worker

- B. \$0.01 per worker
- C. \$1,000,000 per worker
- D. \$1,000 per worker

Answer A

Question 24. [3 marks] Because markets may not clear for several months or even several years, the classical model

- A. is no longer considered valuable by mainstream economists
- B. has no value when explaining a situation where excess supply exists
- C. is irrelevant to any discussion of a market in which excess demand exists
- D. does a better job of explaining long-run growth than short-run fluctuations

Answer D

Section C: Problem Solving Questions [Total = 20 marks]

Question 25. [5 marks] Decide whether each of the following transactions is included in GDP. If the transaction is included, determine which component of final spending it represents. If the transaction is excluded from GDP, explain why.

- (a) [1 mark] Your local ice cream maker buys peaches to make peach ice cream.

Answer The peaches are an intermediate good in the production of peach ice-cream by the peach maker, so the peaches should not be included if the peach ice-cream are counted.

- (b) [1 mark] Your local ice cream maker buys a new and improved ice cream maker.

Answer Yes, the new machine is part of private investment.

- (c) [1 mark] You buy peach ice cream from your local ice cream maker.

Answer Yes, your purchase of ice cream is part of consumption expenditures.

(d) [1 mark] Your local ice cream maker sells peach ice cream to a restaurant that serves peach smoothies.

Answer The peach ice-cream is an intermediate good in the production of peach smoothies, so the peaches ice-cream should not be included if the peach smoothies are counted.

(e) [1 mark] Your cousin in Canada buys peach ice cream from your local ice cream maker.

Answer Yes, your cousin's purchase is export expenditures.

Question 26. [5 marks] In Merryland, there are only 3 goods: popcorn, movie shows, and diet drinks. The following table shows the prices and quantities produced of these goods in 1980, 1990, and 1991:

	1980		1990		1991	
	P	Q	P	Q	P	Q
Popcorn	1.00	500	1.00	600	1.05	590
Movie Shows	5.00	300	10.00	200	10.50	210
Diet Drinks	0.70	300	0.80	400	0.75	420

Note: The quantities (Q) in the table above are not used in answering the questions below. These would be used, however, to calculate both GDP and the GDP deflator. (The GDP deflator is the price index associated with GDP, where the bundle of goods under consideration is the aggregate output of the economy. It is used to convert between nominal and real GDP.)

(a) [3 marks] A “market bundle” for a typical family is deemed to be 5 popcorn, 3 movie shows, and 3 diet drinks. Compute the consumer price index (CPI) for each of the three years, using 1980 as the base year.

Answer The consumer price index for 1980 is 100. This is easily seen:

$$\begin{aligned} \text{CPI}_{1980} &= \frac{\text{cost of buying the market bundle in 1980}}{\text{cost of buying the market bundle in 1980}} \times 100 \\ &= \frac{(5 \times 1.00) + (3 \times 5.00) + (3 \times 0.70)}{(5 \times 1.00) + (3 \times 5.00) + (3 \times 0.70)} \times 100 \\ &= 100 \end{aligned}$$

The consumer price index for 1990 and 1991, respectively, is:

$$\begin{aligned}
\text{CPI}_{1990} &= \frac{\text{cost of buying the market bundle in 1990}}{\text{cost of buying the market bundle in 1980}} \times 100 \\
&= \frac{(5 \times 1.00) + (3 \times 10.00) + (3 \times 0.80)}{(5 \times 1.00) + (3 \times 5.00) + (3 \times 0.70)} \times 100 \\
&= 169.2
\end{aligned}$$

$$\begin{aligned}
\text{CPI}_{1991} &= \frac{\text{cost of buying the market bundle in 1991}}{\text{cost of buying the market bundle in 1980}} \times 100 \\
&= \frac{(5 \times 1.05) + (3 \times 10.50) + (3 \times 0.75)}{(5 \times 1.00) + (3 \times 5.00) + (3 \times 0.70)} \times 100 \\
&= 176.5
\end{aligned}$$

(b) [2 marks] What was the rate of inflation from 1990 to 1991, using the CPI you calculated in (a)?

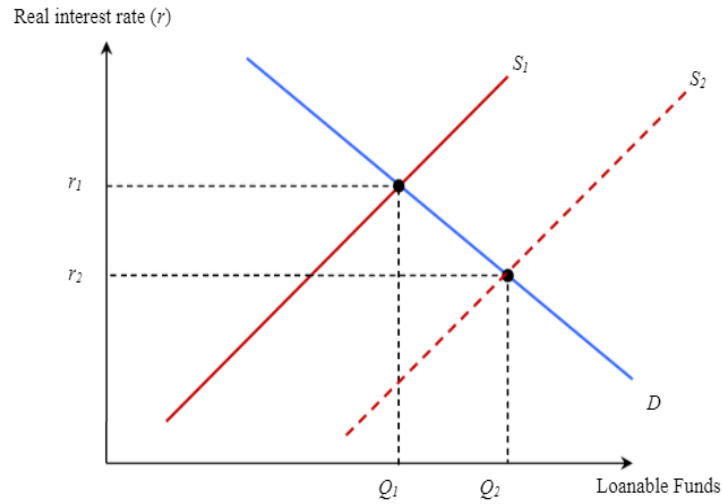
Answer The rate of inflation equals the percentage change in the price index from 1990 to 1991. This is:

$$\frac{\text{CPI}_{1991} - \text{CPI}_{1990}}{\text{CPI}_{1990}} \times 100 = \frac{176.5 - 169.2}{169.2} \times 100 = 4.3\%$$

Question 27. [5 marks] Use the loanable funds market diagram to analyze the effects of the following on saving, investment and real interest rate. Explain your reasoning.

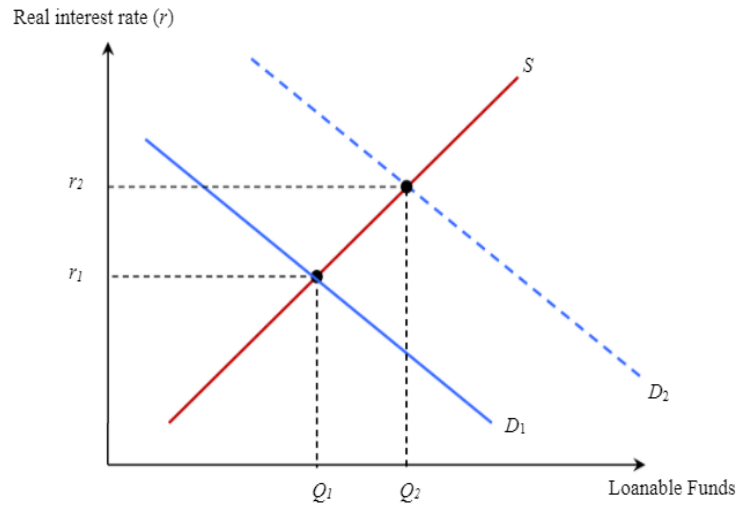
(a) [2 marks] Consumers become more future-oriented and thus decide to save more.

Answer It shifts the supply of loanable funds to the right from S_1 to S_2 , causes saving and planned investment to increase and the real interest rate to decrease. (see diagram on the next page)



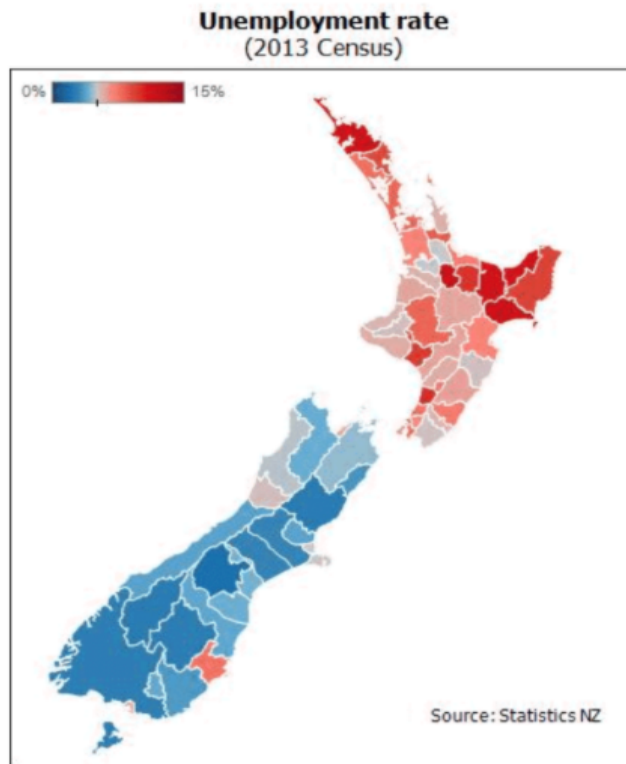
(b) [3 marks] The government introduces an investment tax credit (assume it is offset by other types of taxes, so total net taxes, T , remain unchanged).

Answer



The investment tax credit encourages investment, shifting the demand for loanable funds curve from D_1 to D_2 . Saving and investment increase, as does the real interest rate.

Question 28. [5 marks] Answer the following questions using the data map of New Zealand below.



(a) [1 mark] Describe in words what the data are saying.

Answer The data show a definite spatial pattern in the unemployment rate across different geographical units in New Zealand. Very roughly speaking, unemployment rises as you move north, and falls as you move south. And overall the South Island in 2013 had areas with lower unemployment than those in the North Island.

(b) [2 marks] Speculate as to what might account for the patterns observed in the unemployment data?

Answer There are a number of ways to go here. First, there could be a mismatch between location of labour force and location of local jobs. This could suggest the possible presence of structural unemployment which is often regionally concentrated. There also might be significant spatial concentrations of groups that have trouble getting employed, e.g. very young workers, older workers, and socioeconomically disadvantaged workers.

Of course these are all broad statements made just on the basis of the map, not including contextual knowledge such as location of major cities, e.g. Wellington and Christchurch. Population densities are typically correlated with employment densities which, of course, affect local unemployment rates.

(c) [2 marks] What are some possible policy solutions that government might use to address the unemployment patterns that seem to present themselves in the data?

Answer There is obviously not much information to go on, but two major solutions could be (1) retraining and reskilling of the local labour force so they can obtain the jobs available locally and (2) facilitating movement of people from high unemployment areas to low unemployment areas so they can access better job markets. Governments might also seek to bring more jobs to their local areas by subsidizing local employers and businesses – but this can be a costly and uncertain undertaking and generally not favoured by economists.

End of Examination