

ECON 201: Introduction to Macroeconomics

Professor Robert Gordon

Midterm Exam 2:

November 13, 2019

NAME _____

Circle the **TA session** you attend:

Mario - 3PM

Jason - 3PM

Gaston - 3PM

Mario - 4PM

Jason - 4PM

Gaston - 4PM

Directions: This test is in two parts, a multiple choice question part and a short-answer part. Use this answer packet to complete the exam. Calculators are permitted. Books, notes, reference materials, etc. are prohibited. Good luck!

Part 1: Referring to the questions in the Multiple Choice Questions Packet, choose the one alternative that best completes the statement or answers the question. Each question is worth one point. There is no penalty to guessing, so be sure to answer all of them. Write your answers in the following table using capital letters.

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30

PART I - Multiple Choice Questions

1. The modern macroeconomic tools used by the government are ____ policy and ____ policy.
 - A. tax; antitrust
 - B. fiscal; monetary
 - C. monetary; exchange rate
 - D. capital; labor

2. Long-run growth is a(n):
 - A. sustained upward trend in the economy's overall output per person, which generates higher incomes and a higher standard of living for its members.
 - B. increase in the rate of inflation across time, which reduces real salaries.
 - C. increase in the overall output of the economy over a three- or four-year period
 - D. reduction in the price level over decades.

3. In the United States which of the following was lower in 2018 than in 2000?
 - A. U.S. household real net worth
 - B. U.S. real GDP per capita
 - C. U.S. stock market index
 - D. percentage of men not working

4. Which statement about the U.S. economy is FALSE?
 - A. Since the Second World War, aggregate output has grown more slowly than the population.
 - B. Since the Second World War, aggregate output has grown more rapidly than the population.
 - C. Since the Second World War, macroeconomic policy has helped make the economy more stable
 - D. Long-run growth per capita is the key to higher wages and a rising standard of living.

5. The paradox of thrift highlights:
 - A. the role of investment in the macroeconomy
 - B. how individual decisions to save more may worsen a recession
 - C. how an increase in spending occurs during recessions
 - D. irrational behavior on the part of households

6. Which item would NOT be included in GDP?
 - A. the dollar value of a repair job done by your cousin on her own car
 - B. the dollar value of a lawyer's service
 - C. new car sales by a local dealer
 - D. production of new cars that were not sold in the current year

7.

Table: Employment Data

Full-time employed	20 million
Not working but looking for work	2 million
Part-time employed	10 million
Discouraged workers	1 million

The unemployment rate in this economy is ____%.

- A. 39.4
- B. 30.3
- C. 9.1
- D. 6.25

8. Unemployment rates are usually higher in Europe than they are in the United States because:
- A. the minimum wage is higher in the United States than it is in Europe
 - B. U.S. economic policy is much more effective than is European economic policy
 - C. there are more unskilled, uneducated workers in Europe than there are in the United States.
 - D. unemployment benefits are more generous in Europe than they are in the United States.
9. An example that does NOT illustrate financial assets and/or liabilities is:
- A. Loans
 - B. Stocks and bonds
 - C. Real estate
 - D. Bank deposits
10. The article "Progress Paradoxes" singles out suicide as evidence of unhappiness in one or more countries. Which country or countries?
- A. China
 - B. India
 - C. U.S.
 - D. (A) and (B)
 - E. (B) and (C)
11. Disposable income in a particular period is:
- A. Total earned income
 - B. Earned income plus government transfer payments
 - C. earned income plus government transfer payments less taxes
 - D. earned income plus government transfer payments less taxes and savings

12.

Table: Investment Spending, Private Spending, and Capital Inflows

	Northlandia	Southlandia
Investment spending as a percentage of GDP	25%	30%
Private savings as a percentage of GDP	10	35
Capital inflow as a percentage of GDP	5	-5

Northlandia has a ____, while Southlandia has a ____.

- A. balanced budget; budget deficit
- B. budget deficit; balanced budget
- C. budget surplus; balanced budget
- D. balanced budget; balanced budget

13. In the 1980s, which factor contributed to slow growth in Latin America countries?

- A. reliance on the drug trade
- B. excessive government intervention in the economy
- C. an overly high birth rate
- D. excessive reliance on the United States for foreign trade

14. Long-run economic growth is:

- A. higher in countries with a weak rule of law and excessive government intervention
- B. lower in countries with a strong government and independent judiciary
- C. lower in countries whose courts enforce property rights and whose government protects its citizens
- D. higher in countries with a strong rule of law and political stability

15. Holding the human capital per worker and technology unchanged, the estimated aggregate production function in Jamaica is $Y / L = 50 * K / L$, where Y = real output, L = number of workers, and K = quantity of physical capital. If $K / L = \$81$, then real GDP per worker is:

- A. \$4,050
- B. \$4,000
- C. \$4,096
- D. \$40,500

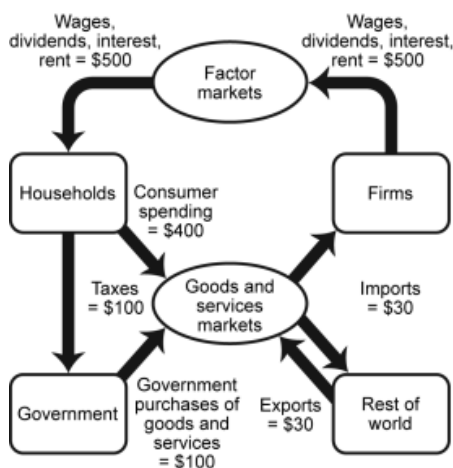
16. The consumer price index in 1979 was 72.6. In 1980, it was 82.4. What was the rate of inflation from 1979 to 1980?

- A. 13.5%
- B. 11.89%
- C. 17.6%
- D. 9.8%

17. There are two countries on a peninsula. The first has a real GDP per capita annual growth rate of 2% and its neighbor to the south has an annual growth rate of 5%. How much sooner will the country in the south double its GDP per capita than its neighbor in the north?

- A. 5 years
- B. 10 years
- C. 15 years
- D. 21 years

18.



If the circular-flow model is in equilibrium (the sum of money flowing into each box is equal to the sum of the money flowing out of it) and there is a decrease in exports, holding everything else constant, which outcome is likely to occur?

- A. a decrease in the nominal GDP
- B. an increase in the real GDP
- C. a decrease in the unemployment rate
- D. an increase in the inflation rate

19. Use Figure above: Circular-Flow Model. How does the government finance its purchases of goods and services?

- A. by printing money
- B. by taxes
- C. by borrowing
- D. by taxes and borrowing

20. In the course packet reading item on counting the employed, the first interview between the agent and the household was conducted

- A. by landline phone
- B. in person
- C. by smart phone
- D. by e-mail

21. In a textbook graph discussed in the lecture and in the course packet readings, Germany has been singled out for special attention. Which of the following is not a characteristic of the German economy?

- A. government budget deficit
- B. vocational training
- C. net capital outflows
- D. higher wages of manufacturing workers relative to college graduates than in the U.S.

22. A lecture graph showing the nominal interest rate on government bonds and the rate of inflation since 1950 shows that the real interest rate was more than 4 percent in the decade of the _____ and was zero in the decade of the _____.

- A. 1970s; 1980s
- B. 1980s; 1990s
- C. 1970s; 2000s
- D. 1980s; 2010s

23. If a country runs a trade deficit, its investment spending is probably:

- A. above its level of saving
- B. less than its level of saving
- C. equal to its level of saving
- D. equal to zero

24. The article "Worlds Apart" shows that North Korea has more than South Korea of each of the following except one item. Which item?

- A. military personnel
- B. electricity production
- C. coal production
- D. railway mileage

25. A decrease in inventories is:
- A. a fall in investment spending
 - B. an increase in investment spending that will lead to an increase in sales
 - C. thought to have no impact on investment since it is not part of investment spending
 - D. part of government spending
26. Increases in unemployment compensation:
- A. reduce unemployment
 - B. increase unemployment
 - C. increase the number of jobs available
 - D. decrease the number of jobs available
27. In a closed economy, national savings equals private savings:
- A. minus consumption spending
 - B. plus the budget balance
 - C. minus investment spending
 - D. minus tax receipts
28. According to the efficient markets hypothesis, if you are trying to find out what a stock is really worth, you should:
- A. examine its recent price changes
 - B. study the underlying determinants of the company's future profits
 - C. study past trends in the stock price
 - D. look up the current stock price
29. The costs that arise from the way inflation makes money a less reliable unit of measurement are:
- A. shoe-leather costs
 - B. menu costs
 - C. unit-of-account costs
 - D. medium of exchange costs
30. In the course packet article about using four criteria to measure economic welfare, the ratio of economic welfare for France compared to the U.S. is 92 percent compared to a ratio of only 67 percent for real GDP per capita. Which of the following four welfare criteria does NOT account for the higher welfare ranking of France compared to the U.S.?
- A. life expectancy
 - B. inequality
 - C. consumption per capita
 - D. leisure time

ANSWERS

1 B

2 A

3 A

4 A

5 B

6 A

7 D

8 D

9 C

10 E

11 C

12 C

13 B

14 D

15 A

16 A

17 D

18 A

19 B

20 B

21 A

22 D

23 A

24 B

25 A

26 B

27 B

28 D

29 C

30 C

Part 2: Solve the following problems in the space provided. *Show your work.*

Problem 1 (7 points)

Consider the following prices and quantities of wine and cheese produced in the United States in 2017 and 2018. Assume that wine and cheese are the only two goods produced or consumed in this economy.

	2017		2018	
	Price	Quantity	Price	Quantity
Wine	8	25	10	20
Cheese	18	20	15	25

Use the above information to complete the following table. (0.5 points per cell)

	2017	2018
Nominal GDP	560	575
Real GDP with 2017 prices	560	610
Real GDP with 2018 prices	550	575
GDP Deflator with base year 2017	100	94.26
GDP Deflator with base year 2018	101.81	100

- (2 points) What is the percentage growth in chain-weighted real GDP? *Use the LN formula for calculating percent change.* _____

Growth rate in Real GDP with 2017 prices: $100 \cdot \ln(610/560) = 8.55$

Growth rate in Real GDP with 2018 prices: $100 \cdot \ln(575/550) = 4.45$

Taking the average: $[8.55+4.45]/2 = 6.5$

Problem 2 (5 points)

Use the following table to answer questions 1-5. *If necessary, round to the second decimal place.*

	2014	2018
Consumption	\$100	\$120
Investment	\$40	\$50
Government Spending	\$12	\$15
Tax Revenues	\$25	\$15
Transfers	\$35	\$30
Imports	\$10	\$9
Exports	\$8	\$11
Rate of Interest	2%	4%

1. (1 point) What was GDP in 2014? _____

$$\mathbf{GDP = C + I + G + X - IM = 100 + 40 + 12 + 8 - 10 = 150}$$

2. (1 point) What was Net Capital Inflow in 2018? _____

$$\mathbf{NCI = Net Imports = Imports - Exports = 9 - 11 = -2}$$

3. (2 point) What was private savings ($S_{private}$) in 2014? _____

$$\mathbf{From\ the\ handout\ SP + SG + NCI = I\ so\ SP = I - SG - NCI = 40 - (25 - 12 - 35) - 2 = 60}$$

4. (2 point) Suppose that in 2018 Tax Revenues were \$20 instead of \$15, with everything else remaining the same. Would the rate of interest be higher or lower than 4%? BRIEFLY explain how you know. (One sentence is enough.) **Hint:** Think about the market for loanable funds.

Lower. Higher tax revenues imply lower demand for loanable funds, which implies a lower interest rate, all else equal.

Note on grading: One point was given if you correctly identified it would rise or fall without a correct explanation.

Problem 3 (4 points)

Consider the following table which reports quantities of individuals in various employment and age categories. (Units are in millions of people.)

Age	Full-time workers	Part-time workers	Searching for work	Does not want a job (excluding minors and retirees)	Retirees	Minors	Total
<16 years	0	0	0	0	0	30	30
16-30	60	30	10	2	0	0	102
30-55	80	15	5	3	0	0	103
>55	25	15	2	1	45	0	88
Total	165	60	17	6	45	30	323

Use the table to answer the following questions. Report answers as percentages, rounding to the second decimal place:

- (1 point) Calculate the **Unemployment Rate** for this economy. _____
 $17/(165+60+17) = 7.02\%$
- (1 point) Calculate the **Labor Force Participation Rate** for this economy. _____
 $(165+60+17)/(165+60+17+6+45)=82.59\%$
- (2 points) Suppose that 5 million people who are currently searching for work give up and stop looking because they feel discouraged about their job prospects. What would the new **Unemployment Rate** be? _____
 $12/(165+60+12+5) = 5.06\%$

Problem 4 (5 points)

Consider the following average rents for two-bedroom apartments in three major metro areas and their respective growth rates:

	Average rent, 2018	Growth rate
San Francisco	\$4200	2.00%
New York	\$4000	-1.00%
Boston	\$2800	3.00%

Using the above table, answer the following questions. **Round all values to the nearest two decimal places, including percentages.** Use the natural log formula shown in class, when applicable.

Assume the growth rates never change.

1. In how many years will the average rent in San Francisco double? _____

Using the rule of 70 gets $70/2=35$.

If you explicitly calculated using $100*\ln(2)$, that's fine too.

2. In how many years will average rent in New York reach \$3000? _____

$100*\ln(3000/4000)/(-1) = 28.76$ years

3. In 10 years, which city will have the lowest average rent? What will that average rent be?

New York: 3619.34

Boston: 3779.60

The rent in San Francisco is growing and started above everyone else, so there was no point in calculating this.

4. In how many years will Boston's average rent catch up to San Francisco's average rent?

Note that $g = 100*\ln(x/y)/s$ can be rewritten as

$$\ln(x) = (s*g)/100 + \ln(y)$$

(Note: it is a property of logarithms that $\ln(x/y) = \ln(x) - \ln(y)$)

Let x be the average rent, which has converged for these two cities. Because the average rent is the same in this future date, $\ln(x)$ will be the same, and we can write:

$$(s*2)/100 + \ln(4200) = (s*3)/100 + \ln(2800)$$

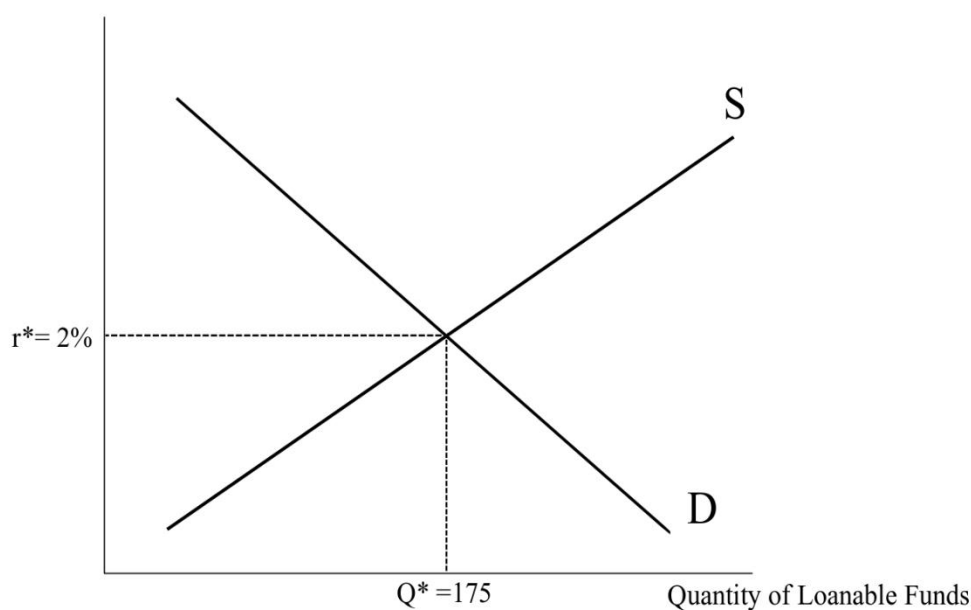
Solving this for s gets $s = 40.55$ years

5. Suppose Chicago has an average rent of \$2000. Suppose also that Chicago's average rent will be \$2600 in 10 years. What is the growth rate in Chicago's average rent?

$$\ln(2600/2000)*100/10 = 2.62\%$$

Problem 5 (8 points)

Consider the market for loanable funds in the United States, depicted in the figure below.



Use the figure to answer the following questions.

1. (2 points) Suppose that a new technology causes investment to decrease at every interest rate. Sketch the resulting change in the market for loanable funds. Does the domestic equilibrium interest rate increase or decrease?

Interest rate decreases (shift the D curve inward, new intersection is below old one)

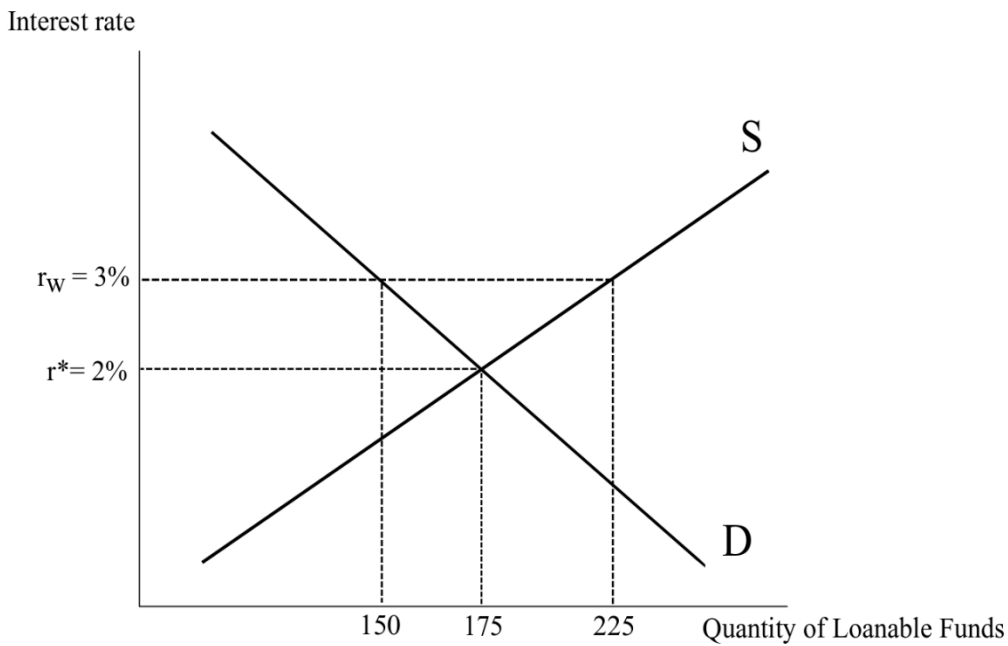
Note on grading: One point was given for sketching the graph correctly. One point was given for identifying that the rate decreased. If it was *abundantly* clear from your graph that the equilibrium rate decreased, you got full credit even if you didn't write it out explicitly.

2. (2 points) Suppose that the US government decreases taxes without decreasing its spending or its transfers. Sketch the resulting change in the market for loanable funds. Does the interest rate increase or decrease?

Interest rate increases (Decrease in taxes causes decrease in government saving, which means a decrease in national savings. NS curve shifts inward, causing interest rates to rise.)

Same grading criteria as above.

Suppose now that the United States economy is open, with international equilibrium interest rate r_w . The market for loanable funds is shown below.



Use the figure to answer the following questions.

1. (2 point) Based on the figure, will the United States see capital inflows, capital outflows, or neither?

Capital outflows

2. (2 points) What will be the amount of the capital inflows or outflows?

225-150=75