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Economics 202

Midterm #2: Questions and Solutions

Exam Solutions: The multiple choice answers are given in boldfaced print and the short answer question answers are given below each question.

Part 1. Multiple Choice Questions (2 points each question)

1. According to how economists define investment, which one of the following statements about investment is **false**?

- a. investment includes changes in inventories
- b. investment includes the exchange of all stocks and bonds**
- c. investment decreases when inventories fall
- d. investment includes the purchase of new capital equipment
- e. investment is an expenditure that affects aggregate demand

2. What does the term "autonomous" mean?

- a. the term refers to the use of computers in production
- b. the term refers to how much we consume of certain goods
- c. the term refers to expenditures that do not change with changes in income**
- d. the term refers to a type of transportation expenditure discussed in class

Questions #3-4 relate to data we used to complete homework #3.

3. On homework #3, we saw that all of personal consumption expenditure is divided into three sub-categories. What are the names of those three sub-categories:

- a. durable goods expenditure, nondurable goods expenditure and expenditure on services**
- b. expenditure on services, expenditure on transportation and expenditure on food items
- c. residential housing expenditure, investment expenditure and expenditure on all other goods
- d. domestic goods expenditure, imported goods expenditure and expenditure on services

4. In which expenditure category do we find expenditure on residential housing?

- a. New residential housing is included in Consumption, used residential housing is Investment
- b. Government spending
- c. Consumption
- d. Investment**

5. Based on how we model the Loanable funds market in class (and the textbook), what do we know about the Domestic Savings curve that's included on the graph?

- a. capital inflow causes the quantity of domestic savings to increase
- b. capital outflow causes the quantity of domestic savings to increase
- c. increases in the interest rate causes the quantity of domestic savings to increase**
- d. decreases in the interest rate causes the quantity of domestic savings to increase
- e. both a and b

6. How does the Labor market relate to the Goods and Services market?
- the demand for labor is derived from the level of output in the Goods and Services market
 - decreases in the output of goods and services create an increase in just voluntary unemployment if labor market wages decrease
 - decreases in the output of goods and services create an increase in just involuntary unemployment if labor market wages do not decrease
 - all of the above**
7. Where does "equilibrium" occur in the AE model:
- where the aggregate demand curve intersects the aggregate supply curve
 - where aggregate demand curve intersects the aggregate expenditure curve
 - where income and real GDP are equal
 - where aggregate expenditure and real GDP are equal**
8. What makes the government expenditure multiplier smaller in absolute value?
- the marginal propensity to consume (MPC) decreases**
 - Government spending decreases
 - Investment decreases
 - Taxes are decreased
 - both a and b are correct
9. Which statement about the marginal propensity to save (MPS) is true:
- MPS is the change in Savings divided by the change in Consumption
 - $MPS = 1 - MPC$**
 - the government expenditure multiplier increase in size as the MPS increases
 - the MPS increases whenever consumer Savings increases
10. Which statement about the MPC is true:
- the MPC determines the rate at which autonomous consumption changes
 - the MPC can be greater in value than one
 - the MPC equals consumption expenditure divided by disposable income
 - the MPC increases whenever Consumption increases
 - the MPC shows how consumption changes with any change in disposable income**
11. How does an increase in the MPC affect the economy?
- the tax multiplier will become a positive value
 - more output will be produced**
 - an inflationary gap will occur
 - a recessionary gap will occur
12. If $MPC = 0.5$, then what change in DI would bring a \$70 increase in Consumption?
- it increased by \$70
 - it increased by \$35
 - it increased by \$140**
 - it increased by \$100
 - not enough information is given to calculate an answer

The information below corresponds with questions #13-17.

Assume that a certain country has the following equations describing its macroeconomy:

$C = 0.6(DI) + 1100$	C = consumption, DI = disposable income
$I = 1000$	I = investment
$G = 1000$	G = government spending
$T = 500$	T = tax revenue
$X - M = 0$	X - M = net exports
$DI = Y - T$	Y = real GDP
$Y_p = 10,000$	Y_p = Potential real GDP

13. When this economy produces at equilibrium GDP (Y^*), what will be overall consumption?

- a. C = 4167
- b. C = 3950
- c. C = 5000**
- d. C = 5300
- e. none of the above

14. When this economy produces at equilibrium GDP, what will be overall savings?

- a. S = 2250
- b. S = 2000
- c. S = 1500**
- d. S = 2500
- e. none of the above

15. If this economy is producing at Y^* , how is the average propensity to consume calculated?

- a. divide Y^* by Consumption, evaluated at $(Y^* - T)$
- b. divide Consumption, evaluated at $(Y^* - T)$, by Y^*
- c. divide Consumption, evaluated at Y^* , by Y^*
- d. divide Consumption, evaluated at $(Y^* - T)$, by $(Y^* - T)$**

16. The value associated with this country's (simple) government expenditure multiplier is:

- a. 2.5**
- b. 1.5
- c. 0.6
- d. 5
- e. none of the above

17. The value associated with this country's (simple) tax multiplier is:

- a. - 0.6
- b. - 1.5**
- c. - 2.5
- d. - 5
- e. none of the above

18. If the Aggregate Supply curve (AS) were always vertical, then:
- a. increases in Aggregate Demand (AD) can only give us greater output
 - b. there will be a permanent tradeoff between inflation and the unemployment that accompanies any change in GDP
 - c. the economy would always operate at Potential GDP**
 - d. fiscal policy can close any existing output gap in the short run

19. Which statement about multipliers is true:
- a. government spending multiplier is greater than zero
 - b. government spending multiplier is greater in absolute value than the tax multiplier
 - c. tax multiplier may or may not be greater than one in absolute value, depending on the size of the MPC
 - d. all of the above**

20. Which of the following is the best description of the term “dissaving”:
- a. the Savings that results from having Consumption exceed Disposable Income**
 - b. the decrease in Savings that results from lower income
 - c. the effect that lower investment has on the quantity of Savings
 - d. the change in Savings that will occur when the economy is in a recession

21. In the AE model, if the government decides to increase both government spending and taxes by \$1000, then what effect does this have on the economy?
- a. real GDP will increase by that same \$1000**
 - b. real GDP will remain unchanged
 - c. real GDP will increase by more than that \$1000
 - d. real GDP will increase by less than that \$1000

22. Which of the following is not a belief of Supply Side economists:
- a. deregulation of specific industries
 - b. lowering (marginal) income tax rates
 - c. lowering corporation tax rates
 - d. raising (marginal) tax rates during inflationary gaps**
 - e. none of the above (all are beliefs of Supply Side economists)

23. In the AD/AS model, how does increasing investment affect the economy?
- a. decrease AD initially, and eventually decrease AS
 - b. increase AD initially, and eventually increase AS**
 - c. increase AD initially, but eventually decrease AS
 - d. decrease AD initially, but eventually increase AS

24. Which of the following is **not** an example of fiscal policy:
- a. reducing the expenditure on national parks
 - b. increasing taxes on junk food
 - c. paying off part of the national debt by printing more (new) money**
 - d. eliminating loop holes in the tax code

25. What problems exist with fiscal policy?

- a. it never leads to crowding out
- b. due to the political process, it may be difficult to quickly pass certain kinds of fiscal policy through Congress**
- c. it too frequently uses changes in interest rates
- d. all of the above

26. As discussed in class, what is the basic problem associated with "pork barrel spending"?

- a. the political incentives of politicians are not necessarily compatible with the economic goals of society as a whole**
- b. increasing spending tends to be inflationary
- c. this type of spending tends to raise interest rates
- d. this type of spending tends to occur more during inflationary gaps

27. During an inflationary gap, which example of fiscal policy would work best?

- a. increasing the money supply
- b. increasing government expenditure
- c. increasing taxes**
- d. increasing government expenditure and taxes by the same amount

28. Which of the following best describes how the economy's self-correcting mechanism might work in an *inflationary gap*:

- a. as workers slowly lose their jobs, they ask for wage increases which shifts AS and contracts the economy until things return to equilibrium GDP
- b. as inflation reduces the purchasing power of most workers, these workers ask for wage increases which contracts the economy and returns things to Potential GDP**
- c. as government recognizes the threat of inflation, they pass legislation that is not considered fiscal policy, but has the effect of self-correcting the economy
- d. as taxes are lowered, workers begin to save and invest more

29. The self-correcting mechanism works in all types of gap, but we would expect:

- a. recessionary gaps are more difficult to correct because they involve lower output
- b. inflationary gaps would take longer to correct because workers would be reluctant to ask for the wage increases necessary to close the gap
- c. inflationary gaps take longer to correct since they involve output that is higher than potential
- d. recessionary gaps take longer to correct because workers would hesitate in asking for the wage decreases that are necessary to close the gap**

30. As discussed in class, which of the following is the best description of the "National Debt"?

- a. the sum of all government budget deficits (i.e. over time)**
- b. the difference between each consumer's income and their expenditure
- c. the difference between the amount our country owes other countries and what other countries owe us
- d. the difference between government spending and tax revenues in a specific year

31. Which of the following statement is true about the U.S. Debt-GDP ratio in 2012:
- a. the U.S. Debt-GDP ratio in 2012 is less than 10%
 - b. the U.S. Debt-GDP ratio in 2012 is about 25%
 - c. the U.S. Debt-GDP ratio in 2012 is about 50%
 - d. the U.S. Debt-GDP ratio in 2012 is about 75%
 - e. the U.S. Debt-GDP ratio in 2012 is just over 100%**
32. Which budget balancing philosophy (as discussed in class) tends to be preferred by those who advocate limited government?
- a. balancing annually**
 - b. balancing over the business cycle
 - c. the functional finance approach
 - d. the counter-cyclical approach
33. Which of the statements below is the most direct reason why the following comment is a bad analogy: "If U.S. citizens must balance their checkbook, then so should the U.S. Federal government!"
- a. the U.S. government has fewer constraints on its ability raise finances for expenditure than do U.S. citizens**
 - b. the U.S. government's budget is much larger than that of the typical U.S. citizen
 - c. the U.S. government is involved in exporting and importing goods, but the typical U.S. citizen is not
 - d. the U.S. government has a larger debt to income ratio than typical U.S. citizens
34. Why is it misleading to use a country's total debt when determining whether that country has *borrowed too much money*?
- a. total debt is measured as the accumulated budget deficits of the government
 - b. the level of a country's debt tells us nothing about the country's ability to pay off that debt**
 - c. because debt is positively related to a country's GDP
 - d. because debt is negatively related to a country's GDP
 - e. because debt increases whenever a country runs budget deficits
35. When the number of government bonds increases, what is the most likely general result?
- a. bond prices will rise, interest rates will fall
 - b. bond prices will fall, interest rates will rise**
 - c. both bond prices and interest rates will rise
 - d. both bond prices and interest rates will fall
36. When the number of government bonds increases, what is the most likely cause (below)?
- a. the government is trying to correct an inflationary gap
 - b. the government is experiencing a budget surplus
 - c. the government is trying to correct a situation where the economy is producing at an output level greater than Potential GDP
 - d. the government is trying to correct a situation where the economy's actual unemployment rate is greater than its Natural Rate of Unemployment**

37. Which of the following is the most accurate statement about the term “inside lag”:
- a. the inside lag refers to a period of time when higher rates of consumption are lowering investment spending within the economy
 - b. the inside lag refers to a period of time when investment expenditure is reacting to changes in domestic savings
 - c. the inside lag refers to a period of time between when an economic problem is recognized and a policy is implemented to solve the economic problem**
 - d. the inside lag refers to a period of time between when a policy is implemented to solve an economic problem and the point where the problem is solved domestically

38. As discussed in class, which of the following is the best description of the purpose of the trend line on a business cycle graph:
- a. points above the trend line show us future rates of growth, points below the trend line show us prior rates of growth
 - b. points above the trend line are positive values, points below the trend line are negative values
 - c. the trend line shows us the rate of increase in job growth
 - d. the trend line reveals the depth of any recessionary or inflationary gap
 - e. the trend line reveals the average rate of growth in GDP over time**

39. In its effort to balance the budget, government has decided to lower taxes during recessionary gaps and raise taxes during inflationary gaps. Which budget balancing philosophy is closest to what they've adopted:
- a. the balance annually approach
 - b. the balance over the business cycle approach**
 - c. the functional finance approach
 - d. the demand management approach
 - e. the tax change approach

40. As discussed in class, what is crowding out?
- a. where government borrowing tends to lower (private) investment expenditure**
 - b. where higher taxes lead to lower consumption expenditure
 - c. where higher taxes lead to lower savings
 - d. where increases in nominal wages lead to firms laying off more employees

Part 2. Short Answer Questions (20 points overall)

The equations below correspond with Questions #1-3. To ensure that you receive full credit on each question, please show any relevant work. No work means no credit.

Assume these equations describe expenditure in an economy that fits the assumptions of the AE model from class.

$C = 0.8(DI) + 400$	C = consumption expenditure, DI = disposable income
$I = 800$	I = investment
$G = 200$	G = government expenditure
$X = 1200$	X = exports
$M = 600$	M = imports
$T = 200$	T = tax revenues
$DI = Y - T$	Y = real GDP
$Y_p = 10,000$	Y_p = potential (real) GDP

[5 pts] 1. *Show whether this economy is experiencing a recessionary gap when it produces at equilibrium (real) GDP.*

$$\begin{aligned} Y &= C + I + G + (X - M) \\ Y &= [0.8(Y - 200) + 400] + 800 + 200 + (1200 - 600) \\ Y &= 0.8Y + 1840 \\ Y^* &= 1840/0.2 \\ Y^* &= 9200 \end{aligned}$$

There is a recessionary gap of \$800

Part 2. Short Answer Questions cont.

Question #2 relates to your answer in Question #1. I.e., take your answer in #1 as given, right or wrong, and use it as the basis for answering Question #2. Note that you must use the appropriate multiplier in your answer in order to be eligible for any credit at all on #2.

[5 pts] 2. Using the tax multiplier, what change in T will close this gap?

$$\Delta Y/\Delta T = (-MPC)/(1 - MPC)$$

Plug in the MPC from above and simplify

$$(-MPC)/(1 - MPC) = (-0.8)/(1 - 0.8) = -4$$

$$\Delta Y/\Delta T = -4$$

Plug in the amount of the gap (800) and solve for ΔT

$$800/\Delta T = -4$$

$$\Delta T = 800/(-4)$$

$$\Delta T = -200$$

reduce taxes by \$200

Question #3 corresponds with the equations from Question #1. Note that this question does not build on what you did in Question #2 and that you must use the appropriate multiplier in your answer in order to be eligible for any credit at all on #3.

[5 pts] 3. Using the government expenditure multiplier, show the effect that a \$200 increase in G will have on equilibrium GDP?

$$\Delta Y/\Delta G = 1/(1 - MPC)$$

$$1/(1 - MPC) = 1/(1 - 0.8) = 5$$

$$\Delta Y/\Delta G = 5$$

$$\Delta Y/200 = 5$$

$$\Delta Y = 200 \times 5$$

$$\Delta Y = 1000$$

equilibrium GDP increases by \$1000

Part 2. Short Answer Questions cont.

Credit on the question below will depend upon how clearly you show that you understand the concept that's being addressed.

[5 pts] 4. Explain the validity of the following statement: "government borrowing today is a burden on the taxpayers of tomorrow".

It is generally true that if the government borrows "today", then the government must raise taxes "tomorrow". However, when we define burden as the difference between the cost of borrowing (higher taxes) and the benefit of borrowing (interest payments from the government), then the answer depends upon whether foreign citizens are helping finance our government's debt.

If foreign citizens help finance the debt, then some of the benefit *leaks out* of the economy. The cost of borrowing is unchanged, while the benefit (domestically) of borrowing decreases.

Consequently, taking society's perspective, there is a burden on future generations of taxpayers when the government borrows from foreign citizens.