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Economics 202
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Homework #4 (due by 9:00pm on ~~Friday, February 27~~ Monday, March 2)

*Please submit your answers to this homework through the Assignment link at Blackboard. **No credit will be given for answers submitted in class or emailed to the professor, regardless of the excuse.** This includes unique excuses like my roommate ate my homework, as well as more traditional excuses like “I lost my Internet”. Please note that all submissions are final, again – regardless of the excuse (which includes “I accidentally hit the submit button”) and that if you do not correctly submit your work, then you will not receive credit. I.e., Blackboard has a Save button and a Save and Submit button, and you must use the Save and Submit button to submit your answers. If you are unfamiliar with Blackboard, then it would be a good idea to visit the class page at Blackboard and check out the homework assignments as they are posted.*

Please note that when Blackboard grades homework answers, more specifically – answers to the fill-in-the-blank questions – your answer must match exactly with the answer that Blackboard is looking for. Below, you’ll find some instructions on how to properly format these answers. A more complete discussion of these rules is provided at Blackboard. Reading this section is strongly recommended.

Formatting matters with the answers in these questions. For this reason, **understand that your answer can be technically correct but graded as wrong because you didn't follow the directions provided below.** Given that formatting is considered part of your answer, a wrongly formatted answer is still a wrong answer. I.e., you will not have points added to your homework score if you got answers wrong due to formatting mistakes. However, this is still something you will want to bring to Professor Haworth’s attention. *In addition, if you are not sure how to round an answer (e.g. whether 3.25 rounds to 3.2 or 3.3), then please contact Professor Haworth to get your questions answered.*

Homework Questions 1, 4-6 and 8

*(a) **Questions #1, 4-6 and 8:** please express your answer as a whole number (with or without a comma) and not in terms of dollars. E.g., an answer of 8 of should be expressed as 8, and not 8.0, and an answer of 10,000.25 should be expressed as 10000 or 10,000 and not as 10,000.25, \$10,000, etc.*

*(b) **Questions #1, 4-6 and 8:** if your answer is negative (i.e. a decrease), then please record your answer with the negative sign directly in front of your answer. E.g., an answer that says something has decreased by 1000 should be expressed as -1000 and not - 1000 or just 1000.*

Homework #4 Questions

Use the equations below to answer Questions #1-6. These equations describe the expenditures within a particular macroeconomy and we'll assume the equations conform to the assumptions associated with the fixed price level Aggregate Expenditure model. All values for expenditure and income are dollar amounts, but for simplicity, we've dropped the \$ below.

Note: be sure to read the formatting instructions for Questions 1a-1c, and 4-6.

$C = 0.9(DI) + 5000$	(C = consumption expenditures, DI = disposable income)
$I = 5000$	(I = investment expenditure)
$G = 5000$	(G = government expenditure)
$X = 3000$	(X = spending on exports)
$M = 2000$	(M = spending on imports)
$DI = Y - T$	(Y = real GDP, T = tax revenues)
$T = 3000$	

- 1a. The value of this economy's government expenditure multiplier is _____
- 1b. The value of this economy's tax multiplier is _____

2. Which of the following is a true statement about the government budget in this economy?
 - a. this economy is currently experiencing a government budget deficit
 - b. this economy is currently experiencing a government budget surplus
 - c. this economy is currently experiencing a balanced government budget

3. What is the status of this economy's trade balance?
 - a. trade deficit
 - b. trade surplus
 - c. net exports of zero

4. Assume that Y^* = equilibrium GDP and Y_p = Potential GDP. If $Y_p - Y^* = 18,000$, then we have an output gap. If government chooses to use government spending to close this output gap, then they do so by changing government expenditure by _____

5. Assume that Y^* = equilibrium GDP and Y_p = Potential GDP. If $Y_p - Y^* = 18,000$, then we have an output gap. If government chooses to use taxes to close this output gap, then they do so by changing taxes by _____

6. If both government spending (G) and taxes (T) increase by 5000, then equilibrium GDP changes by _____

The equations below should be used to answer Questions #7-8. The equations describe the expenditures within Country X and we'll assume that they conform to the assumptions we've made in lecture regarding the fixed price level Aggregate Expenditure model. All values for expenditure and income are dollar amounts, but for simplicity, we've dropped the \$ below.

Note: be sure to read the formatting instructions for Questions 7 and 9.

$C = 0.8(DI) + 8000$	(C = consumption expenditures, DI = disposable income)
$I = 4000$	(I = investment expenditure)
$G = 5000$	(G = government expenditure)
$X = 4000$	(X = spending on exports)
$M = 2000$	(M = spending on imports)
$DI = Y - T$	(Y = real GDP, T = tax revenues)
$T = 5000$	

7. Given the value of equilibrium GDP in this economy, if we determine that Potential GDP is 50,000, then what type of output gap exists in the economy described by the equations above?
- inflationary gap
 - recessionary gap
 - there is no output gap

Use the equations above to answer Question #8.

8. Two fiscal policy options available to government are to change government spending (G) or changes taxes (T). Note that if government increases spending without changing taxes, government must be borrowing money to do so. *Use the equations above to show how changes in G or T affect equilibrium GDP.*

- If (only) G increases by 5,000, then equilibrium GDP changes by _____
- If (only) T increases by 5,000, then equilibrium GDP changes by _____

One option that government has with fiscal policy is to engage in balanced budget spending (i.e., increase both G and T by equal amounts – e.g. increase both G and T by 3000).

- Assume there's an output gap of 3,000 (i.e. $Y_p - Y^* = 3,000$), and so government's goal is to increase equilibrium GDP by 3,000. If government seeks to increase equilibrium GDP by 10,000, but do so with balanced budget spending (i.e. through an equal change in G and T), then government must increase G and T by _____

9. When an economy produces more than their Potential real GDP, we have a(n) _____ output gap, and this output gap can be closed with fiscal policy if government implements a(n) _____ in government spending or _____ in taxes.

- a. recessionary; decrease; increase
- b. recessionary; increase; decrease
- c. inflationary; decrease; increase
- d. inflationary; increase; decrease

10. When the economy is experiencing a recession, the most likely demand management policy would involve government implementing a(n) _____ in order to _____

- a. elimination of business-related laws, increase the economy's Aggregate Supply
- b. increase in the tax rate on income; increase the amount of available labor
- c. increase in capital gains taxes; force rich businesses to pay their fair share
- d. increase in income taxes; increase Aggregate Expenditure
- e. increase in government spending; increase Aggregate Expenditure

11. When implementing expansionary vs contractionary fiscal policy in different output gaps, we discussed in class how this implementation is likely not symmetric. As discussed in class, which of the following is a true statement about this asymmetry.

- a. contractionary fiscal policy during an inflationary gap is more difficult for politicians to implement than expansionary fiscal policy during a recessionary gap
- b. expansionary fiscal policy during an inflationary gap is more difficult for politicians to implement than contractionary fiscal policy during a recessionary gap
- c. contractionary fiscal policy during a recessionary gap is more difficult for politicians to implement than expansionary fiscal policy during an inflationary gap
- d. expansionary fiscal policy during a recessionary gap is more difficult for politicians to implement than contractionary fiscal policy during an inflationary gap

12. Find the Homework #4 folder within Course Content at Blackboard, and read the article *When the US paid off the entire National Debt* before answering the question below.

When President Andrew Jackson led the US to pay off the National Debt, what happened after that:

- a. government surplus money was used to purchase large amounts of government land
- b. the country headed into a large depression that would last 6 years
- c. distributing government surplus money to states allowed state banks to discontinue their printing of money
- d. all of the above
- e. none of the above

13. Find the Homework #4 folder within the Course Content section of Blackboard, and read the article *Federal Spending and the Government Budget*. before answering the question below. *Select every statement below which, according to this article, is a correct statement:*

- a. the Federal Government spent just over \$6 trillion in fiscal year 2023
- b. an obligation is a federal spending outlay, and not a planned or future payment
- c. mandatory spending represents about 2/3 of annual federal spending
- d. Congress allocates over half of their discretionary budget towards national defense
- e. Medicare and Social Security are examples of discretionary spending
- f. federal spending has decreased between fiscal year 2022 and fiscal year 2023
- g. discretionary federal spending includes spending on transportation, education, housing, and social service programs, as well as science and environmental organizations
- h. in fiscal year 2023, federal spending was equal to 23% of the total gross domestic product

The website www.usgovernmentsspending.com reports the Federal Debt to GDP ratio from 1792 through 2026. This historical series of Debt-GDP ratios is included in a file entitled *DebtGDPratios.pdf*. Find the Homework #4 folder within the Course Content section of Blackboard and use this file to answer the questions below.

The Debt-GDP ratio is located in the far right column (not including the column that reports whether the ratio is actual “a” or estimated “e”). Match the value you find in the table to the closest value on the list of Debt-GDP ratios below. Note that you'll use the same list for both questions.

14. What is the smallest value for the Debt-GDP ratio between 1792 and 2024?

15. Prior to 2020, when Covid first significantly affected the US economy, what is the largest value for the Debt-GDP ratio?

Debt-GDP ratios

- A. 0.00%
- B. 0.02%
- C. 0.69%
- D. 32.27%
- E. 59.92%
- F. 90.41%
- G. 119.12%
- H. 124.27%
- I. 128.76%
- J. 134.71%
- K. none of the above