

Homework Assignment 1

ECON 2020: Intermediate Macroeconomic Theory

Instructions:

This assignment has a total of 100 points. Please answer all the questions to the best of your ability. Answers should be as specific as possible. Make sure to cover all the details to get full credit.

Problem 1: (15 points)

State whether each of the following statements are “True” or “False” and Explain why.

- “Nominal GDP growth rate is used by economists to assess how fast production in the economy is growing.” (5 points)
- “The government budget deficit is given as $(G+TA-TR)$.” (5 points)
- “All housing expenditures, including new housing construction are counted as consumption spending.” (5 points)

Problem 2: (8 points)

The typical household in nation X buys 4 loaves of bread, 3 pounds of cheese & 8 books each week. The prices of these goods in years 2015, 2016 & 2017 are given in the table below:

| Year | Price of a loaf of bread | Price of a pound of cheese | Price of a book |
|------|--------------------------|----------------------------|-----------------|
| 2015 | \$1 | \$3 | \$10 |
| 2016 | \$2 | \$6 | \$20 |
| 2017 | \$3 | \$6 | \$25 |

- Calculate CPI in 2017, using 2016 as the base year. (2 points)
- Calculate CPI in 2015, using 2016 as the base year. (2 points)
- Calculate rate of inflation between 2015 & 2016. (2 points)
- Calculate rate of inflation between 2016 & 2017. (2 points)

Problem 3: (7 points)

What would happen to GDP if the government hired unemployed workers who had been receiving an amount \$0.5 TR in unemployment benefits, as government employees and now paid them \$1 TR ? Explain.

Problem 4: (20 points)

“Inflation is always a monetary phenomenon in the long-run.”

1. State whether the above statement is “True” or “False”. (2 points)
2. Explain your answer using the Quantity Theory of Money assuming that the velocity of money and the level of output is constant in the long-run. (9 points)
3. Graph the AD-AS model in the long-run (when the AS curve is vertical) to provide your reasoning and show how the prices are changing in your model. (9 points)

Problem 5: (10 points)

Use the Quantity Theory of Money to explain why the AD curve is downward sloping.

Problem 6: (20 points)

“In the event of a negative short-term aggregate supply shock, accommodating policy can be effectively used, but at the cost of higher inflation.”

1. Use the AD-AS model including both the short-run and long-run supply curves to explain the statement above. Label each curve as well as different levels of price and output to get full credit. (15 points)
2. Provide an example of a recession caused by a negative aggregate supply shock in the U.S. history. (5 points)

Problem 7: (10 points for each economic shock)

Use AD-AS model to analyze how the following shocks will affect economic activity in the short and long run; for each shock:

- a) *Illustrate changes that will occur using AD-AS graph, in short-run and explain why each curve shifts.*
- b) *Determine how the prices and the output will be affected in the short-run.*
- c) *On the same diagram, illustrate how the economy can adjust in the long-run (moving to the potential level of output) by a shift in the SRAS curve.*
- d) *Determine how the prices and output will be affected in the long-run.*

The shocks are:

1. Consumers become optimistic about their future earnings and start consuming more.
2. A country the U.S. trades with (consider a major export of goods and services to that country) experiences a recession.