Liberty High School

AP Macroeconomics

Mr. Lopez

Chapter 30

Money Growth and Inflation

Study Guide

Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period:\_\_\_\_\_

Part 1 –Key terms:

1. Inflation:
2. Deflation:
3. Hyperinflation:
4. Quantity Theory of Money:
5. Nominal variables:
6. Real variables:
7. Monetary neutrality:
8. Velocity of money:
9. Inflation tax:
10. Nominal interest rate:
11. Real interest rate:
12. Fisher effect:
13. Shoeleather costs:
14. Menu costs:
15. Capital gains:

Part 2 Problems and short answers:

1. Use the quantity equation for this problem. Suppose the money supply is $200, real ouitput is 1,000 units, and the price per unit of output is $1.00.
	1. What is the value of velocity?
	2. If velocity is fixed at the value you solve for in part a, what does the quantity theory of money suggest will happen if the money supply is increased to $400.00
	3. Is your answer in part b consistent with the classical dichotomy? Explain.
	4. Suppose that when the money supply is doubled from $200 to $400, real output grows a small amount (say 2%). Now what will happen to prices? Do prices more than double, less than double, or exactly double? Why?
	5. When inflation gets very high, people do not like to hold money because it is losing value quickly. Therefore, they spend it faster. If when the money supply is doubled, people spend more quickly, what happens to prices? Do prices more than double, less than double, or exactly double? Why?
	6. Suppose the money supply at the beginning of this problem refers to M1. That is, the M1 money supply is $200. What would the M2 quantity equation look like if the M2 supply were $500 (and all other values were as stated at the beginning of the problem?
2. The following questions are related to the Fisher effect.
	1. To demonstrate your understanding of the Fisher effect, complete the following table.

|  |  |  |
| --- | --- | --- |
| **Real Interest Rate** | **Nominal Interest Rate** | **Inflation Rate** |
| 3% | 10% |  |
|  | 6% | 2% |
| 5% |  | 3% |

The following questions about the fisher effect are unrelated to the table above.

* 1. Suppose people expect inflation to be 3%, and suppose the desired real interest rate is 4%,. What is the nominal rate?
	2. Suppose inflation turns out to be 6%. What is the actual real interest rate on loans that were signed based on expectations in part b above?
	3. Was wealth redistributed to the lender from the borrower or to the borrower from the lender when inflation was expected to be 3% but, in fact turned out to be 6%?
	4. What would have happened had inflation turned out to be only 1%?
1. Income taxes treat nominal interest earned on savings as income even though much of the nominal interest is simply to compensate for inflation.
	1. To see what this does to the incentive to save, complete the following table for both the low-inflation and high-inflation country.

|  |  |  |
| --- | --- | --- |
|  | **Low-Inflation Country** | **High-Inflation Country** |
| Real Interest Rate | 5 | 5 |
| Inflation Rate | 3 | 11 |
| Nominal Interest Rate |  |  |
| Reduced Interest Rate due to 25% tax |  |  |
| After tax nominal interest rate |  |  |
| After tac real interest rate |  |  |

* 1. In which country is there greater incentive to save? Why?
	2. What could the government do to eliminate this problem?
1. If the money supply doubles, what must happen in the long run to the quantity of money demanded and the price level?
2. Explain the classical dichotomy.
3. Within the framework of the classical dichotomy, which type of variable is affected by changes in money and which type is not? What phrase do we use to capture this effect?
4. Is money more likely to be neutral in the long run or the short run? Why?
5. Suppose the money supply was to increase by 10%. Explain what would happen to each variable in the quantity equation.
6. What are the three sources of revenue a government can use to support its expenditures? Which method causes inflation, and who bears the burden of this way of raising revenue?
7. In the long run, what does an increase in the growth rate of the money supply do to real and nominal interest rates?
8. Does inflation erode the value of our income and, thereby lower our standard of living? Explain.
9. What are the costs of inflation when inflation is perfectly anticipated?
10. Suppose inflation turns out to be lower than we expected. Who is likely to gain, borrowers or lenders? Union workers or firms? Why?
11. What is the inconsistency in the following statement? “When inflation is high but stable and predictable, inflation does not redistribute wealth”.
12. Does inflation (if correctly anticipated) make borrowers worse off and lenders better off when it raises nominal interest rates? Why or why not?

Part 3 – True or False

1. \_\_\_\_\_An increase in the price level is the same as a decrease in the value of money.
2. \_\_\_\_\_The quantity theory of money suggest that an increase in the money supply increases real output proportionally.
3. \_\_\_\_\_If the price level were to double, the quantity of money demanded would double because people would need twice as much money to cover the same transactions.
4. \_\_\_\_\_In the long run, an increase in the money supply tends to have an effect on real variables but no effect on nominal variables.
5. \_\_\_\_\_If the money supply is $500, real output is 2,500 units, and the average price of a unit is $2.00, the velocity of money is 10.
6. \_\_\_\_\_The Fisher effect suggests that , in the long run, if the rate of inflation rises from 3% to 7%, the nominal interest rate should increase 4 percentage points, and the real interest rate should remain unchanged.
7. \_\_\_\_\_An inflation “tax” is paid by those who hold money because inflation reduces the value of their money holdings.
8. \_\_\_\_\_Monetary neutrality means a change in the money supply doesn’t cause a change in anything else.
9. \_\_\_\_\_Inflation erodes the value of people’s wages and reduces the standard of living.
10. \_\_\_\_\_Inflation reduces the relative price of goods whose prices have been temporarily held constant to avoid the costs associated with changing prices.
11. \_\_\_\_\_The shoeleather costs of inflation should be approximately the same for a medical doctor and for an unemployed worker.
12. \_\_\_\_\_Inflation tends to stimulate savings because it raises the after-tax real return to saving.
13. \_\_\_\_\_Countries that spend more money than they collect from taxing or borrowing tend to print too much money, which causes inflation.
14. \_\_\_\_\_If inflation turns out to be higher than people expected, wealth is redistributed to lenders from borrowers.
15. \_\_\_\_\_If the nominal interest rate is 7% and inflation is 5%, the real interest rate is 12%.

Part 4 – Critical thinking

Suppose you explain the concept pf an “inflation tax” to a friend. You correctly tell them, “When government prints money to cover its expenditures instead of taxing or borrowing, it causes inflation. An inflation tax is simply the erosion of the value of money from this inflation. Therefore, the burden of the tax lands on those who hold money.” You friend responds, “What is so bad about that? Rich people have all the money so an inflation tax seems fair to me. Maybe the government should finance all of its expenditures by printing money.”

1. Is it true that rich people hold more money than poor people do?
2. Do rich people holder a higher percentage of their income as money than poor people do?
3. Compared to an income tax, does an inflation tax place a greater or lesser burden on the poor? Explain.
4. Are there any other reasons why engaging in an inflation tax is not a good policy?