Macroeconomics

Homework Solution

Part 1: Multiple choice questions (20 points)

Circle the correct answer clearly.

1) The term "productivity"

a. means the same thing as "efficiency."

b. is seldom used by economists, as its meaning is not precise.

c. refers to the quantity of goods and services produced from each unit of labor input.

d. refers to the variety of goods and services from which households can choose when they shop.

2) Suppose the average income of a citizen of the Czech Republic is higher than the average income of a citizen of Romania. You might conclude that

a. Czech firms are faced with stricter government regulations than Romanian firms.

b. total income is divided among fewer workers in Czech since it has a smaller labor force than Romania.

c. Romania's climate allows for longer growing seasons and therefore Romania can produce large quantities of grain and other crops.

d. productivity in the Czech Republic is higher than in Romania.

3) Large or persistent inflation is almost always caused by

a. excessive government spending.

b. excessive growth in the quantity of money.

c. foreign competition.

d. higher-than-normal levels of productivity.

4) Suppose the Federal Reserve announces that it will be making a change to a key interest rate to decrease the money supply. This is likely because the Federal Reserve is

a. worried about inflation.

b. worried about unemployment.

c. hoping to increase the demand for goods and services.

d. worried that the economy is growing too slowly.

5) In the CPI, goods, and services are weighted according to

a. how long a market has existed for each good or service.

b. the extent to which each good or service is regarded by the government as a necessity.

c. how much consumers buy of each good or service.

d. the number of firms that produce and sell each good or service.

6) We would expect the interest rate on Bond A to be higher than the interest rate on Bond B if the two bonds have identical characteristics except that

a. the credit risk associated with Bond A is lower than the credit risk associated with Bond B.

b. Bond A has a term of 20 years and Bond B has a term of 2 years.

c. Bond A was issued by the city of Philadelphia and Bond B was issued by Red Hat Corporation.

d. All of the above are correct.

7) The designation "natural" implies that the natural rate of unemployment

a. is desirable.

b. is constant over time.

c. is impervious to economic policy.

d. does not go away on its own even in the long run.

8) The labor-force participation rate tells us the fraction of the population that

a. is able to participate in the labor market.

b. has ever been employed.

c. has chosen to participate in the labor market.

d. has chosen not to participate in the labor market.

9) Money is the most liquid asset available because

a. it is a store of value.

b. it is a medium of exchange.

c. it is a unit of account.

d. it has intrinsic value.

10) In a system of 100-percent-reserve banking,

a. banks do not accept deposits.

b. banks do not influence the supply of money.

c. loans are the only asset item for banks.

d. All of the above are correct.

Part 2: True/False questions (20 points)

Indicate whether the statement below is true or false, no need for explanation.

1) Nominal GDP is always great than the real GDP. (F)

2) CPI usually overestimates the increase in the cost of living. (T)

3) Country's productivity is higher when the average worker has more capital goods. (T)

4) If government generates tax revenues that are greater than government's spending, national saving falls. (F)

5) Most spells of unemployment are short, and most unemployment observed at any given time is long-term. (T)

Part 3: Explanation of concepts (30 points)

Answer the following questions. Use graphs if necessary.

1) Using a graph representing the market for loanable funds, show and explain what happens to interest rates and investment if the government budget goes from a deficit to a surplus.

ANSWER: As shown in the graph below, the economy starts in equilibrium at point E0 with interest rate r0 and equilibrium quantity of saving and investment at q0. If the government succeeds in obtaining a surplus, there will be more public saving in the economy and so more national saving at each interest rate, and the supply of loanable funds curve will shift from S0 to S1. The new equilibrium will be at E1, with a lower interest rate, r1 and a higher quantity of saving and investment, q1. Hence, if the federal government succeeds in having a surplus, interest rates will fall and investment will increase.

Market for Loanable Funds
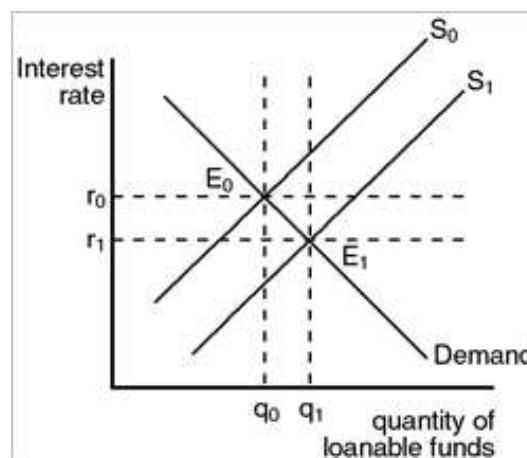
2) Explain briefly what the consumer price index is trying to measure and how it is constructed. Make sure to explain the drawback of the CPI (reasons why it does not measure the cost of living precisely).

ANSWER: The consumer price index measures the overall cost of the goods and services bought by a typical consumer. It is constructed by surveying consumers to determine a basket of goods and services that the typical consumer buys. Prices of these goods and services are used to compute the cost of the basket at different times, and a base year is chosen. To compute the index, we divide the cost of the market basket in the current year by the cost of the market basket in the base year and multiply by 100.

The CPI is an imperfect measure of the cost of living because of (1) substitution bias, (2) the introduction of new goods, and (3) unmeasured quality changes.

3) Give four explanations for why firms might find it profitable to pay wages above the level that balances the quantity of labor supplied and the quantity of labor demanded.

ANSWER: There are four reasons that firms might find it profitable to pay wages above the level that balances the quantity of labor supplied and the quantity of labor demanded: (1) to ensure that workers are in good health so they will be more productive; (2) to reduce worker turnover because it is costly to hire new workers; (3) to make workers eager to keep their jobs, thus discouraging them from shirking; and (4) to attract a better pool of workers.

Part 4: Solve the problem (30 points)

Solve the following problem. Show your work, no points will be granted to solutions without explanation.

Suppose that the Economy of Vinařská contains 2000 $1 bills. Use the *T-account* table (where necessary) while answering the questions below.

a. If people hold all money as currency, what is the quantity of money?

ANSWER: If people hold all money as currency, the quantity of money is $2,000.

b. If people hold all money as demand deposits and banks maintain 100 % reserves, what is the quantity of money?

ANSWER: If people hold all money as demand deposits at banks with 100% reserves, the quantity of money is $2,000.

c. If people hold equal amounts of currency and demand deposits and banks maintain 100 % reserves, what is the quantity of money?

ANSWER: If people have $1,000 in currency and $1,000 in demand deposits, the quantity of money is $2,000.

d. If people hold all money as demand deposits and banks maintain a reserve ratio of 10 %, what is the quantity of money?

ANSWER: If banks have a reserve ratio of 10%, the money multiplier is 1/0.10 = 10. So if people hold all money as demand deposits, the quantity of money is 10 × $2,000 = $20,000.

e. If people hold equal amounts of currency and demand deposits and banks maintain a reserve ratio of 10 %, what is the quantity of money?

ANSWER: If people hold equal amounts of currency (C) and demand deposits (D) and the money multiplier for reserves is 10, then two equations must be satisfied: (1) C = D, so that people have equal amounts of currency and demand deposits; and (2) 10 × ($2,000 – C) = D, so that the money multiplier (10) times the number of dollar bills that are not being held by people ($2,000 – C) equals the amount of demand deposits (D). Using the first equation in the second gives 10 × ($2,000 – D) = D, or $20,000 – 10D = D, or $20,000 = 11 D, so D = $1,818.18. Then C = $1,818.18. The quantity of money is C + D = $3,636.36.

f. Suppose now again that people hold all money as demand deposits. However, suppose that the Vinařská National Bank, for some reason, decides to increase the reserve requirement ratio to 20%. Try to explain the reasoning behind the decision and calculate the quantity of money.