Introduction to Macroeconomics · M5 · 2014-15

Problem Set 3 · Multiple choice questions

1. The money multiplier relates
(a) the nominal interest rate to the discount factor.
(b) the interest rate to the inflation rate.
(c) the trade balance to the monetary base.
(d) the money stock M1 to the monetary base M0.

2. Using the discount factor, if the one year interest rate is 10%, the price at the issue date of T-bill with face value €1,000 is
(a) $1{,}000 \cdot (1 + 0.1)$
(b) $\frac{1+10}{1{,}000}$
(c) $\frac{1{,}000}{1+10}$
(d) $\frac{1{,}000}{1+0.1}$

3. Which of the following sentences is not true?
(a) Nominal interest rate and price of financial assets tend to be inversely correlated.
(b) When the central bank executes an open market operation, the nominal interest rate tends to be inversely correlated with M1.
(c) The discount rate is inversely correlated with the nominal interest rate.
(d) None of the above

4. The discount factor associated with interest rate $i = 50\%$
(a) cannot be calculated.
(b) is also 50%.
(c) is smaller than 1.
(d) is greater than 1.

5. The concept of discount factor is directly related to
(a) real GDP per capita.
(b) the reserve ratio or the liquidity ratio.
(c) the monetary aggregate M3.
(d) None of the above

6. At the issue date, the price of a T-bill to mature in one year and with face value €1,000 is €400. By arbitrage, which must be interest rate for loans maturing in one year?
(a) There is no relationship between the price of the T-bill and the interest rate
(b) Exactly 40%
(c) Smaller than 40%
(d) Greater than 40%

7. The discount factor is directly related to
(a) the CPI inflation rate.
(b) the money multiplier.
(c) the nominal interest rate.
(d) None of the above

8. The money multiplier directly relates
(a) the nominal interest rate to the reserve ratio.
(b) M1 to M0.
(c) the currency held by the public to the face value of T-bills.
(d) the open market operations to the bank reserves.

9. If the nominal interest rate falls, then, necessarily,
(a) the associated discount factor also falls.
(b) the price of financial assets also falls.
(c) the real interest rate rises.
(d) None of the above

10. The nominal interest rate on a one-year loan is 5%. Assuming arbitrage, find the likely initial price of a T-bill with the same time to maturity as the loan and with face value equal to 100.
(a) There is not enough information to determine the answer.
(b) The price is the discounted value of 5%.
(c) The price is $100 \cdot (1 + 0.05) = 105$.
(d) None of the above

11. Firms cannot obtain from banks the amount of desired credit. As a result, firms have decided to sell all the government bonds they own. What measure by the central bank can offset the effect on the nominal interest rate typically caused by the sale of bonds?
(a) An increase in the reserve requirements
(b) A rise in the central bank's discount rate
(c) An expansionary open market operation
(d) None of the above

12. Which one is a monetary policy instrument of central banks?
(a) The money multiplier
(b) The reserve ratio
(c) The GDP deflator
(d) The inflation rate

13. What is not true about an expansionary open market operation?
(a) It is executed by the central bank.
(b) In the liquidity market model, it is represented by a shift of the supply of liquidity function to the right.
(c) It tends to cause an increase in the price of financial assets.
(d) It causes an increase in the interest rate.

14. A contractionary open market operation
(a) consists of reducing reserve requirements.
(b) consists of purchasing financial assets.
(c) consists of purchasing foreign firms.
(d) None of the above

15. An expansionary monetary policy aims at rising
(a) the money stock.
(b) the government budget deficit.
(c) foreign real GDP.
(d) None of the above

16. If the central bank sells financial assets,
(a) a rise of the interest rate is to be expected.
(b) a fall of the interest rate is to be expected.
(c) the money stock increases.
(d) the money multiplier automatically puts up because both the liquidity ratio and the reserve ratio rise.

17. If the real interest rate remains constant, then, assuming the Fisher effect, a 3-point increase in the inflation rate
(a) will be accompanied by a 3-point reduction in the nominal interest rate.
(b) will cause no effect on the nominal interest rate.
(c) is simply impossible.
(d) None of the above

18. According to the liquidity market model (with upward-sloping supply function), what could not explain a rise in the interest rate?
(a) An increase in the budget deficit
(b) An open market operation
(c) A reduction of the number of banks combined with a rise in unemployment
(d) An increase in the number of banks combined with a fall in the number of firms

19. The interest rate has dropped. A possible explanation is that
(a) there are more banks and fewer firms.
(b) there are fewer banks and fewer firms.
(c) there are fewer banks and more firms.
(d) None of the above

20. What could explain a rise in both the interest rate and the amount of liquidity?
(a) An open market operation by the central bank
(b) An increase in unemployment
(c) Neither (a) nor (d)
(d) A rise in the budget deficit combined with an increase in the number of banks

21. The sale of financial assets implemented by the central bank
(a) tends to reduce the interest rate.
(b) tends to reduce the money supply.
(c) increases the money multiplier because it necessarily causes a fall in the liquidity ratio.
(d) tends to rise the interest rate.

22. Which is the following is not a monetary policy instrument of a central bank?
(a) Open market operations
(b) Reserve requirements
(c) Interest rates set by the central bank
(d) None of the above

23. A negative real interest rate
(a) is impossible.
(b) is not impossible.
(c) is the consequence of having a nominal interest rate equal to the inflation rate.
(d) None of the above.

24. The real interest rate
(a) links M1 with M2.
(b) is, in general, equal to the real GDP.
(c) coincides with the discount factor.
(d) depends on the nominal interest rate and the inflation rate.

25. A negative real interest rate
(a) necessarily implies a negative inflation rate.
(b) arises when the nominal interest rate is greater than the inflation rate.
(c) occurs when the inflation rate is greater than the nominal interest rate.
(d) is a plain impossibility.

26. According to the Fisher equation, if real interest rate is 4% and nominal interest rate is 6%, then the inflation rate is, roughly,
(a) 10%.
(b) 2%.
(c) −2%.
(d) None of the above

27. Which concept is unrelated to the nominal interest rate?
(a) The Fisher effect
(b) The price of T-bills
(c) The fundamental macroeconomic identity
(d) None of the above

28. What decision by the central bank could offset the effect on the interest rate of a worsening in the expectations concerning the short-term evolution of the economic activity?
(a) The reduction of the reserve ratio
(b) The reduction of the discount rate (the interest rate at which the central bank furnishes loans to the banks)
(c) The purchase of financial assets
(d) None of the above

29. If the number of banks increases and the number of firms decreases, it is likely that the nominal interest rate
(a) none of the following.
(b) will necessarily remain constant.
(c) will rise.
(d) will fall.

30. According to the Fisher effect, a surge in the inflation rate causes
(a) a reduction in the unemployment rate.
(b) an increase in real GDP.
(c) a reduction in the nominal interest rate.
(d) an increase in the nominal interest rate.

31. The government budget deficit has increa-sed. In the liquidity market model with increa-sing supply function, what could neutralize the effect on the interest rate of that increase?
(a) A contractionary open market operation
(b) That the most important banks go bankrupt.
(c) That firms sell financial assets they own to finance new investment projects.
(d) An increase in unemployment combined with the closure of 20% of all the factories.

32. The Fisher effect relates the
(a) economy growth rate and the nominal interest rate.
(b) economy growth rate and the inflation rate.
(c) trade balance or the government budget deficit and the nominal interest rate .
(d) inflation rate and the nominal interest rate.

33. Identify a monetary policy instrument of central banks.
(a) The money multiplier
(b) The GDP deflator inflation rate
(c) The rate of growth of the real GDP
(d) None of the above

34. If the central bank executes an expansionary open market operation and, simultaneously, the government issues bonds to finance an increase in the government expenditure, the interest rate in the liquidity market with increasing supply function necessarily
(a) rises.
(b) falls.
(c) remains constant.
(d) None of the above

35. A shift to the right of the (upward-sloping) supply of liquidity function combined with a shift to the right of the demand for liquidity function necessarily causes
(a) a fall in the equilibrium amount of liquidity.
(b) a rise in the equilibrium interest rate.
(c) a fall in the equilibrium interest rate.
(d) a rise in the equilibrium amount of liquidity.

36. How can a central bank increase the economy's liquidity (money supply)?
(a) By selling financial assets in an OMO
(b) By increasing the reserve ratio
(c) By reducing the liquidity ratio
(d) By purchasing financial assets in an OMO

37. With increasing supply, the interest rate has fallen. What could not explain this result?
(a) That both the supply of liquidity and the demand for liquidity have shifted.
(b) That only the supply of liquidity has shifted.
(c) That only the demand for liquidity has shifted.
(d) That the supply of liquidity has shifted to the left and the demand for liquidity to the right.

38. The nominal interest rate has fallen. A possible explanation is that
(a) one of every three firms has closed down.
(b) the central bank has sold government bonds.
(c) the government budget deficit has risen.
(d) None of the above

39. With increasing supply, which event could cause a fall in the interest rate but not a rise?
(a) Having fewer banks and fewer firms
(b) Having fewer banks but more firms
(c) Neither (a), nor (b), nor (d)
(d) Having more banks but fewer firms

40. When the central bank sells financial assets
(a) the interest rate tends to rise.
(b) the interest rate tends to fall.
(c) liquidity tends to grow.
(d) the money multiplier increases because the sale of financial assets causes a rise in the reserve and liquidity ratios.

41. The interest rate is never affected by changes
(a) in the inflation rate.
(b) in the government budget.
(c) in the monetary policy.
(d) None of the above

42. The central bank can provide liquidity by
(a) conducting an open market operation in which the central bank sells financial assets.
(b) raising the reserve requirements.
(c) raising the people's liquidity ratio.
(d) conducting an open market operation in which the central bank purchases financial assets.

43. When the central bank sells financial assets,
(a) the nominal interest rate tends to decline.
(b) liquidity tends to rise.
(c) the money multiplier goes up because the sale causes a rise in both the reserve ratio and the liquidity ratio.
(d) the nominal interest rate tends to increase.

44. What sentence is not true?
(a) The central bank affects directly M0.
(b) The money multiplier links M0 with M1.
(c) An increase in the reserve ratio lowers the money multiplier.
(d) The ECB sets the value of the Euribor by means of a tender procedure.

45. The main refinancing operations (MROs)
(a) are the interest rates set by the European Central Bank.
(b) are also known as the marginal lending facility.
(c) are a particular case of the *cum hoc* fallacy.
(d) constitute a tool of monetary policy.

46. Which sentence is not false?
(a) The General Council is the main decision-making body of the European Central Bank.
(b) The Eurosystem is exactly the same institution as the European Central Bank.
(c) The European System of Central Banks is the monetary authority of the eurozone.
(d) The Executive Board of the European Central Bank implements the monetary policy decided by the Governing Council.

47. Which one is a monetary policy instrument of central banks?
(a) The money multiplier
(b) The reserve ratio
(c) The GDP deflator
(d) The inflation rate

48. Which rate is not set by the European Central Bank?
(a) The interest rate on the marginal lending facility.
(b) The interest rate of the main refinancing operations when they are executed in the form of a fixed rate tender.
(c) The Euribor
(d) None of the above

49. The main refinancing operations (MROs) of the European Central Bank are
(a) open markets operations.
(b) standing facilities.
(c) reserve requirements.
(d) an absorbing liquidity procedure under the direct control of the General Council of the European Central Bank.

50. Which option lists two monetary policy instruments of the central bank?
(a) GDP deflator and open market operations
(b) Real interest rate and inflation rate
(c) Reserve requirements and nominal GDP
(d) None of the above

51. Suppose the rate of return of loans and T-bills is the same and that both assets have the same maturity. If the face value of T-bills is 1,090 and the interest rate corresponding to loans is 9%, then the price of T-bills when they are issued is
(a) negative.
(b) higher than 1,000.
(c) lower than 1,000 but positive.
(d) 1,000.

52. Select the sentence that is not true.
(a) The interest rate could be interpreted as a measure of the borrowers' patience (or impatience).
(b) A rise in the liquidity ratio lowers the money multiplier.
(c) The discount factor transforms future monetary values into present monetary values.
(d) The money multiplier links the money stock with the interest rate and the price of financial assets.

53. The discount factor is directly related to
(a) the reserve ratio.
(b) the money creation process.
(c) the unit of account property of money.
(d) the interest rate of the economy.

54. The real interest rate is, initially, positive and is given by the Fisher equation. If both the nominal interest rate and the inflation rate are cut by half, then the real interest rate
(a) is also cut by half.
(b) does not change.
(c) falls.
(d) becomes zero.

55. With an increasing supply, in which case the domestic interest rate could remain unaltered?
(a) A tax previously levied on loans and paid by borrowers is now removed and, simultaneously, the central bank executes a contractionary open market operation.
(b) 50% of the domestic firms go bankrupt and unemployment surges.
(c) Foreign banks settle new offices in the domestic economy while the government budget deficit doubles.
(d) None of the above

56. With an upward-sloping supply function, what could not explain a fall in the interest rate?
(a) Having fewer banks when more firms are created.
(b) An expansionary open market operation executed when unemployment increases.
(c) An increase in reserve requirements when the central bank buys financial assets.
(d) Having more banks when reserve requirements are increased.

57. According to the Fisher effect,
(a) the nominal interest rate is always constant.
(b) the nominal interest rate reacts to changes in the inflation rate.
(c) the nominal GDP reacts to changes in the GDP deflator.
(d) the real interest rate can never be negative.

58. In the liquidity market model with increasing supply function, what follows necessarily from a contractionary open market operation and the issuing of financial assets by firms to fund investment projects?
(a) A fall in the interest rate and a rise in the amount of liquidity
(b) A rise in both the interest rate and the amount of liquidity
(c) A fall in the amount of liquidity
(d) None of the above

59. According to the liquidity market model with increasing supply function, what could not in general explain an increase in the interest rate?
(a) A contractionary open market operation
(b) A lowering of the reserve ratio
(c) An increase in the government budge deficit
(d) The bankruptcy of a significant number of banks

60. In which case at least one of the terms is not directly related to the European Central Bank?
(a) Eurosystem and marginal interest rate of a variable interest rate tender main refinancing operation.
(b) Governing Council and marginal lending facility.
(c) Interest rate on the main refinancing operations and government budget deficit.
(d) Deposit facility and European System of Central Banks.

61. A contractionary open market operation
(a) consists of buying or selling financial assets.
(b) is typically carried out by firms that need funds to finance investment projects.
(c) tends to rise the interest rate.
(d) None of the above

62. Which sentence is not true?
(a) If the Fisher equation holds, having always a constant real interest rate justifies the Fisher effect.
(b) An expansionary open market operation does not shift the demand for liquidity function to the left.
(c) The purchase of (interest-bearing) financial assets can be considered an indirect demand for liquidity.
(d) The Fisher equation does not relate the nominal interest rate with the nominal GDP or with the net private savings of the economy.

63. If the interest rate between t and $t + 1$ is $i =$ 10%, then
(a) the price in t of a T-bill issued in t that promises to pay €1,000 in $t + 1$ is also 10%.
(b) the discount factor is equal to 10%.
(c) by arbitrage the nominal (or face) value of a T-bill is 10%.
(d) None of the above

64. A fixed rate tender with full allotment is
(a) an example of the Fisher effect.
(b) sometimes an instance of the phenomenon called "securitization" and sometimes a government purchase.
(c) a way of conducting open market operations.
(d) an illustration of the fallacy of composition when there are arbitrage opportunities in the presence of a negative discount factor.

65. Banks have suddenly decided to sell securities they own. What policy by the central bank neutralizes the effect on the interest rate of the securities sale (assuming an upward sloping supply of liquidity function)?
(a) A contractionary open market operation.
(b) An increase in the reserve requirements.
(c) An increase in the interest rate at which the central bank lends to banks.
(d) None of the above

66. What event does not tend to rise the equilibrium interest rate in the liquidity market model with an upward sloping supply of liquidity function?
(a) A contractionary open market operation
(b) An increase in the amount of financial assets that households would like to sell.
(c) An increase in the amount of reserves that banks are legally required to hold at the central bank.
(d) None of the above

67. Which sentence is not false?
(a) If the real interest rate equals the inflation rate, then the nominal interest rate is zero.
(b) If the government budget runs a surplus and there is a trade deficit, then investment **I** equals savings **S**.
(c) With a positive nominal interest rate, the present discounted value of $x > 0$ euros is smaller than x.
(d) If the money multiplier increases, then the bank reserves also increase.

68. The central bank purchases T-bills from banks. What is the effect on **M0**, **M1**, and the interest rate i?
(a) **M1** and i go down, while **M0** goes up.
(b) **M1** and **M0** go down, while i goes up.
(c) **M1** and **M0** go up, while i goes down.
(d) None of the above

69. When a central bank purchases financial assets,
(a) a contractionary open market operation is conducted.
(b) the monetary base diminishes.
(c) downward pressure is exerted on the interest rate.
(d) None of the above

70. Which sentence is not false?
(a) The Fisher effect links the inflation rate with the real GDP growth rate.
(b) The savings identity links the money multiplier with deposits.
(c) The money multiplier links the money stock with the monetary base.
(d) The real interest rate links the GDP deflator with nominal GDP.

71. Which two concepts are not inversely related (in general, one increases when the other decreases and vice versa)?
(a) Discount factor and nominal interest rate
(b) Prices of financial assets and nominal interest rate
(c) M1 and M0
(d) Real GDP and GDP deflator when nominal GDP is held fixed.

72. What combination of events could not explain a fall in the equilibrium interest rate in the liquidity market model with an upward sloping supply of liquidity function?
(a) Several important banks go bankrupt and the central bank conducts an expansionary open market operation.
(b) The government budget deficit grows and the central bank reduces the reserve requirements.
(c) Firms increase the amount of financial assets they would like to buy whereas households reduce the amount of financial assets they would like to sell.
(d) None of the above

73. A fall in the interest rate is not to be expected if
(a) the central bank drops to zero the amount of reserves banks must hold at the central bank.
(b) the government issues financial assets to finance a rise in the government budget deficit.
(c) households increase their purchases of financial assets.
(d) None of the above

74. The interest rate is likely to diminish when
(a) the central bank increases the amount of reserves that banks must deposit in the central bank.
(b) the government substantially increases the issuance of government bonds and T-bills.
(c) families reduce their liquidity ratio.
(d) None of the above

75. According to the Fisher equation,
(a) the nominal exchange rate is the real exchange rate plus the inflation rate.
(b) the unemployment rate is inversely related to the inflation rate.
(c) by subtracting the inflation rate from the nominal interest rate the real interset rate is obtained.
(d) None of the above

76. According to the liquidity market model, what could not explain, in principle, a fall in the interest rate?
(a) An expansionary open market operation
(b) A reduction in the reserve ratio
(c) A massive selling of financial assets
(d) Foreign banks enter the domestic banking system