

I. Multiple Choice

1. Which of the following best describes the primary function of money as a medium of exchange?
 - A) It allows purchasing power to be stored and used at a later date
 - B) It provides a common unit for expressing the value of goods and services
 - C) It eliminates the need for a double coincidence of wants in transactions
 - D) It ensures that the price level remains stable over time
2. Which of the following is included in M1 but NOT in M2?
 - A) Savings account deposits
 - B) Small time deposits
 - C) Money market account balances
 - D) None of the above — M1 is a subset of M2, not the other way around
3. Which of the following is included in M2 but NOT in M1?
 - A) Currency in circulation
 - B) Demand deposits in checking accounts
 - C) Savings accounts and money market deposits
 - D) Coins held by the public
4. The money demand curve is downward sloping because:
 - A) Higher interest rates reduce the purchasing power of money
 - B) At higher interest rates, the opportunity cost of holding money rises, so people hold less of it
 - C) The Fed decreases the money supply when interest rates rise
 - D) Higher interest rates encourage banks to lend more, reducing demand for cash
5. Which of the following would cause the money demand curve to shift to the right?
 - A) A decrease in the overall price level
 - B) A decline in real GDP
 - C) An increase in nominal income and economic activity
 - D) A decrease in the nominal interest rate
6. In the money market, the money supply curve is drawn as a vertical line because:
 - A) The quantity of money supplied does not change in the short run under any circumstances
 - B) The money supply is set by the Federal Reserve and is independent of the interest rate
 - C) Banks always hold exactly the required amount of reserves regardless of interest rates
 - D) The demand for money is perfectly inelastic at all interest rates
7. If the Federal Reserve conducts an open market purchase of Treasury bonds, which of the following will occur in the money market?
 - A) The money supply curve shifts left, raising the nominal interest rate
 - B) The money demand curve shifts right, raising the nominal interest rate
 - C) The money supply curve shifts right, lowering the nominal interest rate
 - D) The money demand curve shifts left, lowering the nominal interest rate

8. If the Federal Reserve sells Treasury securities on the open market, which of the following correctly describes the effect on bank reserves and the money supply?
- A) Bank reserves increase; money supply expands
 - B) Bank reserves decrease; money supply contracts
 - C) Bank reserves are unchanged; only the composition of the money supply changes
 - D) Bank reserves increase; money supply contracts
9. Which of the following is the Fed's most frequently used monetary policy tool?
- A) Changes in the required reserve ratio
 - B) Changes in the discount rate
 - C) Open market operations
 - D) Interest on reserve balances
10. The discount rate is best described as:
- A) The interest rate banks charge each other for overnight loans of reserves
 - B) The interest rate the Federal Reserve charges commercial banks for direct loans
 - C) The rate at which the Fed pays interest on bank reserves held at the Fed
 - D) The target interest rate set by the FOMC for interbank lending
11. Which of the following actions by the Federal Reserve would be considered expansionary monetary policy?
- A) Selling Treasury securities on the open market
 - B) Raising the required reserve ratio
 - C) Raising the discount rate
 - D) Buying Treasury securities on the open market
12. The Federal Open Market Committee (FOMC) is responsible for:
- A) Setting tax rates and government spending levels to stabilize the economy
 - B) Regulating the stock market and ensuring fair trading practices
 - C) Setting monetary policy by targeting the federal funds rate
 - D) Approving the federal government's annual budget
13. A bank has \$500,000 in deposits and the required reserve ratio is 20%. Which of the following correctly describes the bank's required and excess reserves if it currently holds \$120,000 in total reserves?
- A) Required reserves = \$100,000; excess reserves = \$20,000
 - B) Required reserves = \$120,000; excess reserves = \$0
 - C) Required reserves = \$20,000; excess reserves = \$100,000
 - D) Required reserves = \$100,000; excess reserves = \$120,000
14. If the required reserve ratio is 25%, what is the money multiplier?
- A) 2.5
 - B) 4
 - C) 5
 - D) 25

15. A bank receives a new deposit of \$10,000. If the required reserve ratio is 10%, what is the maximum amount of new money that can ultimately be created throughout the entire banking system from this deposit?

- A) \$1,000
- B) \$9,000
- C) \$10,000
- D) \$90,000

16. Which of the following explains why the actual money multiplier is typically smaller than the theoretical money multiplier?

- A) Banks are legally prohibited from lending more than 50% of their excess reserves
- B) The Federal Reserve adjusts the required reserve ratio to offset multiplier effects
- C) Banks hold some excess reserves and households hold some cash outside the banking system
- D) Open market operations always neutralize the multiplier effect of new deposits

17. A bank's T-account shows total reserves of \$200,000 and total deposits of \$1,000,000. If the required reserve ratio is 15%, how much can this bank lend out?

- A) \$150,000
- B) \$50,000
- C) \$200,000
- D) \$800,000

18. Which of the following correctly describes the relationship between bond prices and interest rates?

- A) Bond prices and interest rates move in the same direction
- B) Bond prices rise when interest rates rise because bonds become more attractive
- C) Bond prices fall when interest rates rise because the present value of fixed payments decreases
- D) Bond prices are unaffected by changes in market interest rates

19. A bond has a face value of \$1,000 and pays an annual coupon of \$50. If market interest rates rise above 5%, what happens to the market price of this bond?

- A) It rises above \$1,000, because the bond is now more valuable
- B) It remains at \$1,000, because the face value is fixed
- C) It falls below \$1,000, because the fixed coupon is less attractive relative to new market rates
- D) It falls to zero, because no one wants bonds when interest rates are high

20. The present value of \$1,210 to be received two years from now, assuming an interest rate of 10%, is:

- A) \$1,100
- B) \$1,000
- C) \$900
- D) \$1,210

21. Which of the following best explains why the present value of a future payment decreases when the interest rate increases?

- A) Higher interest rates reduce the face value of financial instruments
- B) A higher discount rate reduces the worth of future cash flows in today's dollars

- C) Higher interest rates cause inflation, which erodes the real value of future payments
 - D) The Federal Reserve reduces money supply when interest rates rise, reducing present values
22. The investment demand curve is downward sloping because:
- A) Higher real interest rates reduce the cost of borrowing, encouraging more investment
 - B) At high real interest rates, fewer investment projects generate returns above borrowing costs
 - C) Investment spending automatically falls when the money supply decreases
 - D) Firms reduce investment when consumer confidence is low, regardless of interest rates
23. Which of the following would shift the investment demand curve to the right?
- A) An increase in the real interest rate
 - B) A decrease in business confidence about future profits
 - C) Technological innovation that raises the expected return on capital
 - D) A contractionary monetary policy that raises borrowing costs
24. In the loanable funds market, which of the following correctly describes the supply of loanable funds?
- A) It comes from borrowers seeking funds for investment and is downward sloping
 - B) It comes from savers and is upward sloping, reflecting the higher return offered at higher real interest rates
 - C) It is vertical, set by the Federal Reserve independently of the real interest rate
 - D) It comes from the government and shifts with changes in the federal budget
25. Which of the following would cause the supply of loanable funds to shift to the right?
- A) An increase in the government budget deficit
 - B) A decrease in household saving due to falling consumer confidence
 - C) An increase in foreign capital flowing into the domestic economy
 - D) A rise in the real interest rate
26. The government increases its budget deficit by spending more than it collects in tax revenue. According to the loanable funds model, which of the following correctly describes the effect?
- A) The supply of loanable funds increases, lowering the real interest rate
 - B) The loanable funds demand increases, raising real interest rate and reducing private investment
 - C) The loanable funds demand falls, reducing real interest rate and raising private investment
 - D) The supply of loanable funds decreases, raising the real interest rate and increasing saving
27. Crowding out occurs when:
- A) The Fed sells bonds, reducing the money supply and raising nominal interest rates
 - B) Government deficits increase the demand for loanable funds, raise the real interest rate, and reduce private investment
 - C) Higher inflation expectations cause firms to postpone investment spending
 - D) An increase in household saving reduces consumption and slows economic growth
28. Which of the following correctly distinguishes the money market from the loanable funds market?
- A) The money market determines the real interest rate; the loanable funds market determines the nominal interest rate

- B) The money market reflects short-run nominal interest rates set by Fed policy; the loanable funds market reflects long-run real rates determined by saving and investment
 - C) The money market involves only banks; the loanable funds market involves only households and firms
 - D) The two markets always produce the same equilibrium interest rate
29. If the Federal Reserve lowers the federal funds rate target, which of the following sequences best describes the monetary transmission mechanism?
- A) Interest rates fall → money demand decreases → investment falls → AD decreases
 - B) Money supply increases → interest rates fall → investment increases → AD increases
 - C) Interest rates fall → government spending increases → taxes decrease → AD increases
 - D) Money supply decreases → interest rates fall → saving increases → AD increases
30. Which of the following is the primary difference between a bond and a stock?
- A) Bonds represent ownership in a company; stocks represent a debt obligation
 - B) Stocks offer guaranteed fixed payments; bonds offer variable dividends
 - C) Bonds are debt instruments with fixed payments; stocks represent equity ownership with no guaranteed return
 - D) Stocks mature at a fixed date; bonds can be held indefinitely
31. Which of the following statements about the Federal Reserve's independence is most accurate?
- A) The Fed is fully controlled by Congress, which approves all monetary policy decisions
 - B) The Fed's independence is designed to allow policy decisions based on economic conditions rather than electoral cycle
 - C) The President can dismiss Fed governors at will, giving the executive branch direct control over monetary policy
 - D) The Fed's independence means it operates without any Congressional oversight
32. Which of the following would most likely cause the money demand curve to shift to the left?
- A) An increase in real GDP
 - B) A rise in the overall price level
 - C) The widespread adoption of electronic payment systems that reduce the need for cash
 - D) An increase in the nominal interest rate
33. Which of the following correctly describes the effect of raising the required reserve ratio?
- A) Banks can lend more, expanding the money supply
 - B) Banks must hold more in reserves, reducing their ability to lend, contracting the money supply
 - C) The federal funds rate automatically falls as banks compete for reserves
 - D) The money multiplier increases, amplifying the effect of new deposits
34. The federal funds rate differs from the discount rate in that:
- A) The federal funds rate is set by Congress; the discount rate is set by the Fed
 - B) The federal funds rate is for interbank lending; the discount rate applies to Fed loans to banks
 - C) The discount rate is lower than the federal funds rate, making it preferred for borrowing
 - D) The federal funds rate is for long-term borrowing; the discount rate is for the short-term

35. A country's households decide to save a larger fraction of their income. Using the loanable funds model, which of the following best describes the outcome?
- A) The demand for loanable funds increases, raising the real interest rate
 - B) The supply of loanable funds decreases, raising the real interest rate
 - C) The supply of loanable funds increases, lowering real interest rate and encouraging investment
 - D) The demand for loanable funds decreases, lowering real interest rate and discouraging saving
36. Which of the following correctly describes fiat money?
- A) It derives its value from a commodity like gold or silver held in reserve
 - B) It has intrinsic value independent of government declaration
 - C) Its value is backed by physical assets held at the Federal Reserve
 - D) It has no intrinsic value and is accepted as money by law and social convention
37. If a bond's coupon rate is 4% and market interest rates rise to 6%, what happens to the bond's market price relative to its face value?
- A) It trades above face value because its coupon is relatively attractive
 - B) It trades at face value because the coupon rate is fixed
 - C) It trades below face value because its fixed coupon is less attractive than new market rates
 - D) It trades at exactly zero because no rational investor would buy a below-market bond
38. Which of the following best explains why banks view borrowing from the Fed's discount window as a last resort?
- A) The discount rate is typically set below the federal funds rate, making it unprofitable
 - B) Borrowing from the Fed signals financial weakness to regulators and other market participants
 - C) The Fed requires collateral equal to twice the value of the loan
 - D) Congress must approve all discount window borrowing above a set threshold
39. In the loanable funds market, an increase in business optimism about future investment returns would:
- A) Shift the supply of loanable funds rightward, reducing the real interest rate
 - B) Shift the demand for loanable funds leftward, reducing the real interest rate
 - C) Shift the demand for loanable funds rightward, raising the real interest rate
 - D) Shift the supply of loanable funds leftward, raising the real interest rate
40. Which of the following statements about M1 and M2 is correct?
- A) M2 is a subset of M1, meaning all M2 assets are also in M1
 - B) M1 includes savings accounts and small time deposits that M2 does not
 - C) M1 is the more liquid measure; M2 adds less liquid assets on top of M1
 - D) M2 excludes currency in circulation since physical cash is not part of the money supply
41. When the Fed pays a higher interest rate on reserve balances (IORB), which of the following is the most likely effect?
- A) Banks lend more aggressively, expanding the money supply
 - B) Banks hold more reserves rather than lending them out, reducing the money multiplier's effect

- C) Households increase their savings deposits, shifting money demand rightward
D) The federal funds rate falls as banks compete less aggressively for reserves
42. Which of the following correctly states what happens to the present value of a bond's future cash flows when the market interest rate falls?
- A) Present value falls because future payments are discounted more heavily
B) Present value rises because future payments are discounted less heavily
C) Present value is unchanged because the bond's coupon and face value are fixed
D) Present value falls because the bond becomes riskier at lower interest rates
43. The monetary transmission mechanism links monetary policy to real economic activity. Which of the following correctly orders the chain of events following an expansionary open market operation?
- A) Bond prices fall → interest rates rise → investment falls → aggregate demand falls
B) Bond prices rise → interest rates fall → investment rises → aggregate demand rise
C) Interest rates rise → bond prices fall → investment rises → aggregate demand rises
D) Money demand falls → interest rates fall → saving increases → aggregate demand rises
44. Which of the following is NOT one of the three functions of money?
- A) Medium of exchange
B) Store of value
C) Measure of productivity
D) Unit of account
45. A commercial bank currently has no excess reserves. A customer deposits \$5,000 in cash. If the required reserve ratio is 20%, how much of this deposit can the bank immediately lend out?
- A) \$5,000
B) \$4,000
C) \$1,000
D) \$25,000

II. True or False

1. The Federal Reserve prints currency to increase the money supply when it conducts open market purchases.
2. M2 includes all assets in M1 plus less liquid assets such as savings accounts and small time deposits.
3. The money supply curve is downward sloping because banks supply more money at higher interest rates.
4. When the Fed buys Treasury securities, bank reserves increase and the money supply expands.
5. The discount rate is the interest rate at which banks lend reserves to one another overnight.

6. Raising the required reserve ratio is an expansionary monetary policy tool because it frees up more reserves for lending.
7. The money multiplier equals one divided by the required reserve ratio.
8. The actual money multiplier is typically larger than the theoretical multiplier because banks always lend out all their excess reserves.
9. Bond prices and market interest rates move in opposite directions.
10. Purchasing shares of stock in a publicly traded company counts as investment (I) in the GDP expenditure formula.
11. The loanable funds market determines the nominal interest rate, while the money market determines the real interest rate.
12. Crowding out occurs when government borrowing raises the real interest rate, reducing private investment.
13. The present value of a future payment increases when the interest rate increases.
14. The Federal Open Market Committee meets approximately eight times per year to set monetary policy.
15. An increase in household saving shifts the supply of loanable funds rightward, lowering the real interest rate.

III. Fill in the Blank

1. The three functions of money are _____, _____, and _____.
2. _____ money has no intrinsic value and is accepted as a medium of exchange by government decree, while _____ money derives its value from the commodity it is made of.
3. M1 includes _____, _____, and _____. M2 adds _____, _____, and _____ on top of M1.
4. In the money market, the vertical axis measures the _____ interest rate, while in the loanable funds market, the vertical axis measures the _____ interest rate.
5. The formula for the simple money multiplier is: Money Multiplier = _____.
6. If the required reserve ratio is 5%, the money multiplier is _____. An initial injection of \$2,000 in excess reserves could ultimately expand the money supply by a maximum of \$.

7. When the Fed buys bonds on the open market, bank reserves _____, the money supply _____, and the nominal interest rate _____.
8. The interest rate the Fed charges banks for direct loans is called the _____, while the rate banks charge each other for overnight loans of reserves is called the _____.
9. The formula for present value is: $PV =$ _____.
10. When market interest rates rise, bond prices _____, because the present value of the bond's fixed future payments _____.
11. Government deficit spending _____ the demand for loanable funds, which _____ the real interest rate and _____ private investment — a phenomenon called _____.
12. The _____ is the policymaking body of the Federal Reserve responsible for setting the target federal funds rate. It consists of the seven _____ plus _____ of the twelve regional bank presidents.
13. Banks hold _____ reserves beyond what is legally required. When banks hold more of these rather than lending, the actual money multiplier is _____ than the theoretical maximum.
14. An increase in real GDP or the price level shifts money _____ to the right, which, with a fixed money supply, causes the nominal interest rate to _____.
15. The monetary policy _____ mechanism describes the chain from Fed policy → interest rates → investment → aggregate demand.

IV. Matching

Match each term with its correct definition.

Terms	Definition
1. Fiat money	A. The interest rate banks charge one another for overnight loans
2. Federal funds rate	B. The purchase or sale of Treasury securities by the Fed to influence the money supply
3. Excess reserves	C. Money with no intrinsic value, accepted by government decree and social convention
4. Crowding out	D. The fraction of deposits banks are required to hold in reserve

5. Present value	E. The phenomenon where government borrowing raises real interest rates and reduces private investment
6. Open market operations	F. Reserves held beyond what is legally required; available to lend
7. Required reserve ratio	G. The today's dollar equivalent of a future payment, discounted at the prevailing interest rate
8. Loanable funds market	H. A debt instrument promising fixed coupon payments and repayment of face value at maturity
9. Bond	I. The model determining the real interest rate through the supply and demand for saving and borrowing
10. Discount rate	J. The interest rate the Fed charges commercial banks for direct loans from the Fed

V. Short Answer

1. Explain the difference between the money market and the loanable funds market. In your answer, address what each market determines, what the axes represent, and why treating them as identical would be a mistake.
2. Describe the money creation process in a fractional reserve banking system. Start with a \$1,000 deposit and a required reserve ratio of 20%, and trace through at least three rounds of lending to illustrate how the multiplier works.
3. Explain the inverse relationship between bond prices and interest rates. Why does a bond's market price fall when market interest rates rise, even though the bond's coupon and face value remain unchanged?
4. Explain the concept of crowding out. Under what conditions might crowding out be more or less severe?
5. Describe the monetary policy transmission mechanism. How does an open market purchase by the Fed ultimately affect investment and aggregate demand?
6. What is present value, and why does it matter for understanding financial markets? Use the concept to explain why longer-maturity bonds are more sensitive to interest rate changes than shorter-maturity bonds.
7. Distinguish between expansionary and contractionary monetary policy. For each, identify the specific tools the Fed would use, the direction of their effect on the money supply, and the intended macroeconomic outcome.

8. Explain the difference between M1 and M2. Why does this distinction matter for understanding monetary policy and the economy?

VI. Calculations

Show all work clearly. Include units in your final answer.

1. A bank receives a new deposit of \$20,000. The required reserve ratio is 10%.
 - A) Calculate the bank's required reserves and excess reserves from this deposit.
 - B) Calculate the money multiplier.
 - C) What is the maximum amount by which the money supply expands due to the initial deposit?
 - D) If the required reserve ratio were lowered to 5%, what would happen to the money multiplier and the maximum expansion of the money supply? Calculate both.

2. A bank has the following balance sheet:

ASSETS	LIABILITIES
Reserves: \$80,000	Deposits: \$400,000
Loans: \$320,000	

The required reserve ratio is 15%.

- A) Calculate the bank's required reserves and excess reserves.
 - B) How much additional money can this bank lend out immediately?
 - C) A new customer deposits \$10,000 in cash. Update the T-account and calculate the new required reserves, excess reserves, and the amount the bank can now lend out from this deposit.
 - D) If the bank lends out all its excess reserves from part C, what does the T-account look like after the loan is made?
3. The following question concerns present and future values.
 - A) What is the present value of \$5,500 received one year from now if the interest rate is 10%?
 - B) What is the present value of \$12,100 received two years from now if the interest rate is 10%?
 - C) A bond pays a single lump sum of \$10,000 at the end of three years and nothing in between. If the market interest rate is 8%, what is the bond's present value today?
 - D) If the market interest rate in part C rises to 12%, recalculate the bond's present value. What does this illustrate about the relationship between interest rates and bond prices?
 4. An economy has a fixed money supply of \$800 billion. The current nominal interest rate is 4%.
 - A) If the Federal Reserve increases the money supply to \$950 billion through open market purchases, what direction does the money supply curve shift and what happens to the nominal interest rate (increase, decrease, or stay the same)?
 - B) Separately, suppose instead that real GDP increases significantly, raising the demand for money. What happens to the money demand curve and the nominal interest rate, holding the

money supply fixed?

C) If the nominal interest rate is 4% and the inflation rate is 1.5%, what is the real interest rate?

D) Using your answer from part C, if business investment is negatively related to the real interest rate and the real rate falls by 2 percentage points, explain qualitatively how this affects investment and aggregate demand.

5. Suppose the real interest rate in the loanable funds market is initially 3%, with equilibrium quantity of loanable funds at \$500 billion.

A) The government increases its deficit by \$100 billion, entering the loanable funds market as a borrower. In which direction does the demand for loanable funds shift? What happens to the real interest rate and the quantity of private investment?

B) If the real interest rate rises from 3% to 5% as a result, and private investment falls by \$60 billion, calculate the net change in total loanable funds and explain the concept this illustrates.

C) Under what conditions would crowding out be complete (i.e., every dollar of government borrowing displaces exactly one dollar of private investment)? Is this realistic? Explain.

VII. Graphing

Draw each graph neatly. Label all axes, curves, equilibrium points, and any shifts clearly.

1. Draw a fully labeled money market diagram.

- Label the vertical axis "Nominal Interest Rate (%)" and the horizontal axis "Quantity of Money"
- Draw a vertical money supply curve (M_s) and a downward-sloping money demand curve (M_d)
- Label the equilibrium interest rate i^*
- Show the effect of an open market purchase by the Fed: draw the new M_s curve, label it M_{s2} , and label the new equilibrium interest rate i_2
- Add a brief annotation explaining why the interest rate changed

2. Draw a second money market diagram.

- Show the initial equilibrium with M_s and M_{d1}
- Now show the effect of a significant increase in real GDP, shifting money demand to M_{d2}
- Label the original equilibrium interest rate i_1 and the new equilibrium i_2
- Explain in one sentence below the graph what caused the shift and why the interest rate changed

3. Draw the investment demand curve.

- Label the vertical axis "Real Interest Rate (%)" and the horizontal axis "Investment Spending (\$)"
- Draw the downward-sloping investment demand curve (ID_1)
- Show a movement along the curve from a higher to a lower real interest rate and label the corresponding increase in investment
- Then draw a new curve ID_2 to the right of ID_1 to represent an increase in business confidence. Label it and explain what caused the shift

4. Draw a fully labeled loanable funds market diagram.

- Label the vertical axis "Real Interest Rate (%)" and the horizontal axis "Quantity of Loanable Funds (\$)"
- Draw the upward-sloping supply of loanable funds (SLF) and downward-sloping demand for loanable funds (DLF)
- Label equilibrium real interest rate r^* and equilibrium quantity Q^*
- Show the effect of an increase in the government budget deficit: shift the appropriate curve, label it, and identify the new equilibrium r_2 and Q_2
- Label the crowding out effect by marking the reduction in private investment on your diagram

5. Draw a second loanable funds diagram.

- Show the initial equilibrium
- Now show the effect of an increase in household saving, shifting the supply of loanable funds rightward to SLF_2
- Label the new lower real interest rate r_2 and the new equilibrium quantity Q_2
- Explain in one sentence how this lower real interest rate affects private investment and aggregate demand

VIII. Long Answer (IB Students Only)

1. The following question concerns money, banking, and money creation.

- A) Define the money multiplier and explain the role of the required reserve ratio in it.
- B) Using a numerical example with a required reserve ratio of 10% and an initial deposit of \$5,000, trace the money creation process through at least three rounds of lending. Calculate the theoretical maximum expansion of the money supply.
- C) Explain two reasons why the actual increase in the money supply is likely to be smaller than the theoretical maximum calculated in part B.
- D) Using a fully labeled T-account, show the balance sheet of a bank that has received a \$5,000 deposit, held required reserves, and lent out all excess reserves.
- E) Evaluate the effectiveness of the required reserve ratio as a monetary policy tool compared to open market operations. In your answer, consider the frequency of use, the precision of each tool, and the practical limitations of each.

2. The following question concerns the money market and monetary policy.

- A) Using a fully labeled money market diagram, show the equilibrium nominal interest rate. Explain what determines the position of both the money supply and the money demand curve.
- B) The economy enters a recession. The Federal Reserve responds with expansionary monetary policy. Using your diagram, show and explain the effect of this policy on the money market and the nominal interest rate. Identify the specific tool(s) the Fed is most likely to use.
- C) Explain the monetary transmission mechanism — the chain of events through which the Fed's action in part B affects investment and aggregate demand in the real economy.
- D) Explain two factors that could limit the effectiveness of expansionary monetary policy in

stimulating the economy. Your answer should refer to the money market, the investment demand curve, or the loanable funds market where relevant.

E) Some economists argue that monetary policy is more effective than fiscal policy at stabilizing the economy; others disagree. Using your knowledge of the monetary transmission mechanism and the loanable funds market (particularly crowding out), evaluate this claim.

3. The following question concerns **the loanable funds market and interest rates**.

A) Draw a fully labeled loanable funds market diagram showing the equilibrium real interest rate and quantity of loanable funds. Identify what constitutes supply and demand for loanable funds.

B) The government increases its budget deficit significantly. Using your diagram, show and explain the effect on the loanable funds market. What happens to the real interest rate and to private investment?

C) Define crowding out and explain the mechanism through which it occurs. Under what conditions is crowding out likely to be large, and under what conditions is it small or negligible?

D) Suppose that at the same time as the government increases its deficit, foreign investors increase their lending to the domestic economy. Using a new loanable funds diagram, show how this capital inflow affects the outcome described in part B. Does it worsen or offset the crowding out effect? Explain.

E) Distinguish between the loanable funds market and the money market. A student claims that both markets determine the same interest rate and are interchangeable. Evaluate this claim.