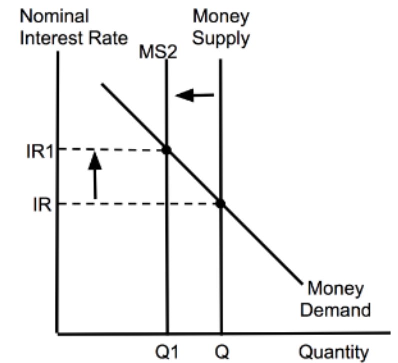
Macroeconomics Unit 4
Free Response Questions

FRQ #1- Assume that the economy of Mexico has a positive output gap and that the central bank takes actions to restore the economy to full-employment. See video in Ultimate Review Packet for detailed explanations.

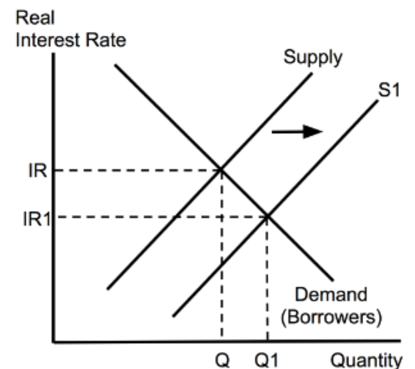


(a) What open-market operation should the central bank take? The central bank should sell bonds.

(b) Draw a correctly labeled graph of the money market and show the effect of the policy identified in part (a) on the nominal interest rate. See top graph.

(c) Based on the change in the interest rate in part (b), what will happen to each of the following in the short run?
  - (i) Prices of previously issued bonds. Bond prices will decrease.
  - (ii) The price level and real GDP. Explain. Price level and real GDP will decrease since the aggregate demand will shift left. Higher nominal interest rates will make it more expensive to take out loans causing investment and consumer spending to decrease.

(d) Now assume that households in Mexico increase their savings. Using a correctly labeled graph of the loanable funds market, show how the increase in savings will affect the real interest rate. See bottom graph.



(e) Given the real interest rate change identified in part (d), what is the long-run effect on potential real gross domestic product in Mexico? Explain. Potential Real GDP will increase. The increased savings rate lowered the real interest rate making it cheaper to take out loans. This will result in more borrowing and an increase in investment and capital stock which will lead to more economic growth in the future.

FRQ #2- The balance sheet below is for Clifford Bank. See video in Ultimate Review Packet for detailed explanations.

Assets		Liabilities	
Excess Reserves	$3,000	Demand Deposits	$20,000
Required Reserves	$2,000	Owner's equity	$10,000
Loans	$15,000		
Government Securities	$10,000		

(a) Calculate the required reserve ratio. The required reserve ratio is 0.1. Required reserves are $2,000 which is 10% of the demand deposits.

(b) Suppose that David deposits $10,000 in cash into his checking account.
  - (i) What is the immediate effect of the cash deposit on the M1 measure of the money supply? The M1 money supply does not change. Cash is part of the M1 money supply.
  - (ii) Calculate the total excess reserves immediately after the deposit. Total excess reserves is $12,000. The original $3,000 plus an additional $9,000 from the deposit.
  - (iii) Calculate the maximum change in the money supply over time from the additional excess reserves from David's deposit. $90,000. The money multiplier is 1 over the reserve requirement or 1/.1. The additional change in excess reserves is $9,000. $9,000 times 10 equals $90,000

(c) Suppose that instead of David depositing $10,000, the central bank purchases $10,000 worth of bonds.
  - (i) Will demand deposits increase, decrease, or stay the same immediately after the purchase? Demand deposits don't change. No new money was deposited by customers. The entire purchase goes into excess reserves.
  - (ii) Calculate the change in excess reserves immediately after the purchase. Increase by $10,000.
  - (iii) Calculate the maximum amount that the money supply can change as a result of the $10,000 purchase of bonds by the Federal Reserve. $100,000. The additional change in excess reserves is $10,000. $10,000 times the money multiplier of 10 equals $100,000.

(d) Identify one reason why the actual change in money supply can be smaller than the maximum change you identified in part (d)(iii). Answers will vary. Examples, households hold more money or banks hold more excess reserves.

Video Help: https://youtu.be/0zYq31r3B3E

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