3. The Federal Reserve buys $5,000 in bonds from Clark Consulting Services, which then deposits the money in a checking account at First Generation Bank.

   (a) As a result of the Federal Reserve's action, what is the change in the money supply if the required reserve ratio is 100 percent?

   (b) If the required reserve ratio is reduced to 10 percent, calculate the following.

      (i) The maximum amount this bank could lend from this deposit

      (ii) The maximum increase in the total money supply from the Federal Reserve's purchase of bonds

   (c) If banks keep some of the deposit as excess reserves, how will this influence the change in the money supply that was determined in part (b)(ii)? Explain.

   (d) If the public decides to hold some money in the form of currency rather than in demand deposits, how will this influence the change in the money supply that was determined in part (b)(ii)? Explain.

END OF EXAMINATION

Question 3

Correct Answer:

(a) Since the required reserve ratio is 100%, the increase in the money supply is limited to the \$5,000 increase in deposits and reserves that results from the Federal Reserve's purchase of \$5,000 of bonds.

(b) If the required reserve ratio is reduced to 10 percent, this bank may now make new loans of \$4,500 (or .9 x \$5,000 = \$4,500). With a required reserve ratio of 10 percent, the money-supply multiplier is equal to 10; thus, the maximum increase in the money supply would be \$50,000 (or \$5,000 x 10 = \$50,000).

(c) If banks maintain excess reserves, the money supply will not increase by the full-multiplied amount or the \$50,000 maximum. Banks will not lend out the full amount of those reserves that may legally be lent.

(d) If the public holds some currency rather than demand deposits, the money supply will not increase by the full-multiplied amount or the \$50,000 maximum. Banks will not receive the maximum amount of new deposits and reserves from which they would be making loans.

Scoring Guideline: 7 points (1+2+2+2)

(a) 1 point: the money supply would increase by \$5,000

(b) 2 points:

1 - for the correct amount, \$4,500 (= 0.9 x 5,000)

1 - for the correct amount from the Fed's action, \$50,000 (= 10 x \$5,000)

(c) 2 points:

1 - the increase in the money supply would be less than \$50,000

1 - Maximum expansion assumes that banks use all of their excess reserves. Now banks make fewer loans and create less than the maximum possible.

(d) 2 points:

1 - the increase in the money supply would be less than \$50,000

1 - increased cash holdings by the public reduce bank deposits, resulting in fewer reserves for the banks