Chapter 18 Practice Problems

1. Suppose the demand for reserves became less stable. How would monetary policy be affected?
   It would become more difficult for the central bank to determine the supply of reserves required to achieve the target federal funds rate. The rate would become more volatile and monetary policy will become less effective.

2. From 1979 to 1982, the FOMC used money growth as an intermediate target. To do so, the committee instructed the Open Market Trading Desk to target the level of reserves in the banking system. What was the justification for doing so? Explain why the result was unstable interest rates. Would you advocate a return to reserve targeting? Why or why not?
   In 1979, the Fed had to reduce inflation. It would not have been politically acceptable for the Fed to explicitly raise interest rates to the level required to bring down inflation, so instead the Fed targeted reserves. When the Fed attempts to keep the supply of reserves constant, changes in the demand for reserves change the interest rate, resulting in increased volatility. Because changes in the interest rate affect the real economy, targeting the federal funds rate is a much more effective monetary policy than targeting reserves.

3. Use your knowledge of the problems associated with asymmetric information to explain why, prior to the change in the Federal Reserve’s discount lending facility in 2002, banks were extremely unlikely to borrow from the facility despite funds being available at a rate below the target federal funds rate?
   In the absence of the participants in the federal funds market having full information about each other, signals played a very important role. If a bank borrowed from the discount window, even if it were just to overcome a very short-term liquidity shortage at a sound bank, this would likely be interpreted by the market as evidence of this bank being in trouble. Consequently, other participants in the federal funds market would be unwilling to make un-collateralized loans to this bank in the future. Banks were willing to pay very high interest rates for funds in the marketplace to avoid sending this signal.

4. Suppose the demand for reserves is stable. Use a graph of the market for Bank Reserves to show how the Open Market Trading Desk would implement a decision by the FOMC to raise the target federal funds rate. You should assume that the 100 basis point spread between the discount rate and the target federal funds rate is maintained.
   To achieve a higher target for the federal funds rate, the Open Market Trading Desk would carry out open market sales, shifting the supply of reserves to the left until demand and supply of reserves intersect at the new target federal funds rate. The corresponding rise in the discount rate to maintain the 100 basis-point spread means that the supply of reserves becomes perfectly elastic at a higher rate.
5. Suppose, one morning, the Open Market Trading Desk drastically under-estimates the demand for reserves when deciding the quantity of reserves to supply to the market. Use the graph of the Market for Bank Reserves to show why the market federal funds rate will not exceed the discount rate regardless of how large the gap between estimated and actual reserve demand.

If the actual demand for reserves were larger than the estimated demand, the actual reserve demand curve would be farther to the right than the estimated demand curve. If the gap is large enough, the demand and supply curves for reserves would intersect on the horizontal portion of the reserve supply curve. As banks can get whatever quantity of reserves they need through discount loans, they will not be willing to borrow in the federal funds market at a rate above the discount rate. Therefore, no matter how great the underestimate of reserve demand, the market federal funds rate will not rise more than 100 basis points above the target.
6. Consider a situation where reserve requirements were binding and the Federal Reserve decided to reduce the requirements. Use the graph of the Market for Bank Reserves to illustrate how the Open Market Trading Desk would react to this change assuming the demand for excess reserves remains unchanged. If required reserves fell with no change in desired excess reserves, then demand for reserves would fall. To hit the target federal funds rate, the Open Market Trading Desk would carry out open market sales to reduce the supply of reserves until the supply and demand curves for reserves intersected at the target rate.

7. If the Treasury has just paid for a supercomputer and as a result its deposits with the Fed fall, what defensive open market operations will the manager of the open market desk undertake? Without any Fed response, the Treasury’s purchase would increase the money base. To neutralize this, the Fed would pursue an open market purchase in the same amount as the computer purchase. This would leave the money base unaffected.

8. You often read in the newspaper that the Fed has just lowered the discount rate. Does this signal that the Fed is moving to a more expansionary monetary policy? Why or why not? Most likely not. If the federal funds rate target is initially below the discount rate and the federal funds target, then the shift in the supply curve has no effect on the federal funds rate. Furthermore, the Fed usually moves the discount rate in line with changes in the federal funds rate target so that changes in the discount rate provide no additional information about the direction of monetary policy.