



Problem sets 2: Tools of monetary policy

EE432: Monetary theory and policy

Semester 1/2018

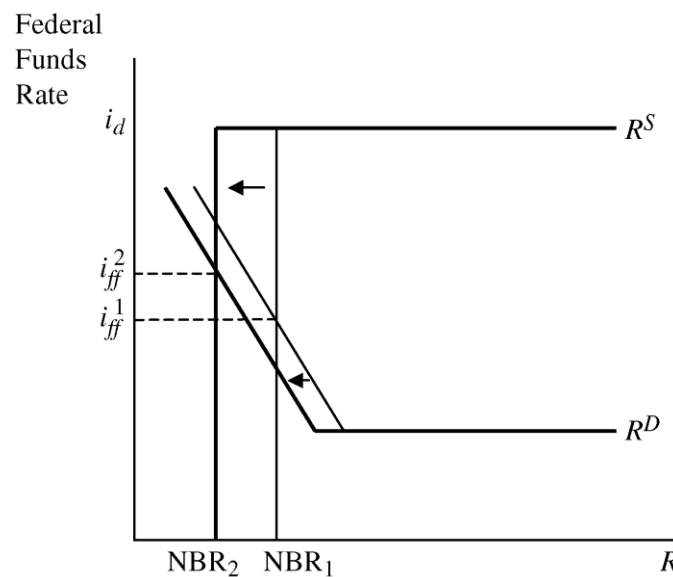
Instructor: Dr. Kittichai Saelee

Due on September 20th, 2018. in class.

- 1) Using the supply and demand analysis of the market for reserves, indicate what happens to the federal funds rate, borrowed reserves, and nonborrowed reserves, holding everything else constant, under the following situations.

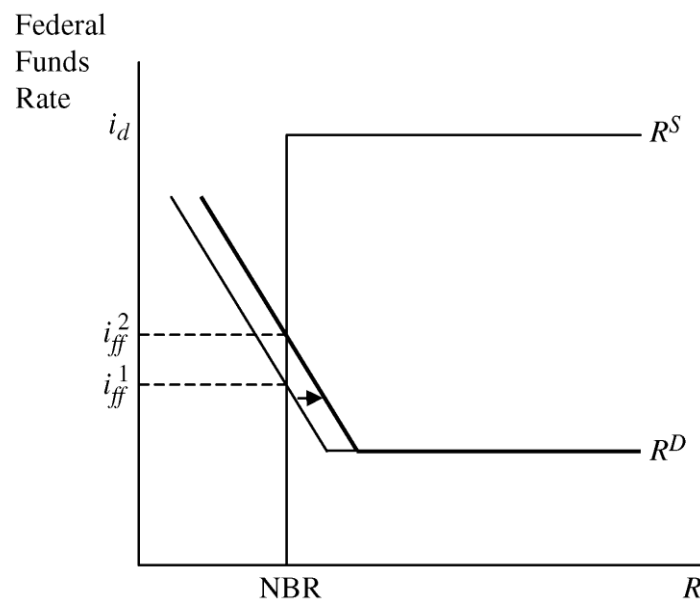
1.1) *Aa switch occurs from deposits into currency*

The switch from deposits into currency lowers the amount of reserves as was shown in the T-accounts of Chapter 14, and this lowers the supply of reserves at any given interest rate, thus shifting the supply curve to the left. The fall in deposits also leads to lower required reserves and hence a shift in the demand curve to the left. However, because the fall in required reserves is only a fraction of the fall in the supply of reserves (because the required reserve ratio is much less than one), the supply curve shifts left by more than the demand curve. Thus if the discount rate is initially above the fed funds target, the fed funds rate will rise (as shown in the graph below). However, if the fed funds rate is at the discount rate, then the fed funds rate will remain at the discount rate.



- 1.2) The economy is surprisingly strong, leading to an increase in the amount of checkable deposits.

A rise in checkable deposits leads to a rise in required reserves at any given interest rate, and thus shifts the demand curve to the right. If the federal funds rate is initially below the discount rate, this then leads to a rise in the federal funds rate. As shown below, borrowed reserves and non-borrowed reserves do not change. If the federal funds rate is initially at the discount rate, then the federal funds rate will just remain at the discount rate, but borrowed reserves will increase.

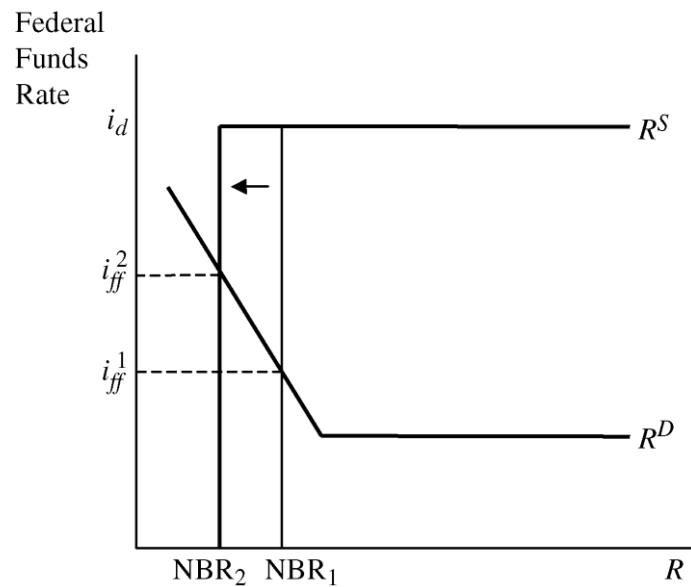


- 1.3) Banks expect an unusually large increase in withdrawals from checking deposit accounts in the future.

If banks expect that an unusually large increase in withdrawals will occur in the future, they will want to hold more excess reserves today, meaning the demand for reserves will increase at any given interest rate. This will have the same effect on the fed funds rate, NBR, and BR as in part 1.1) above.

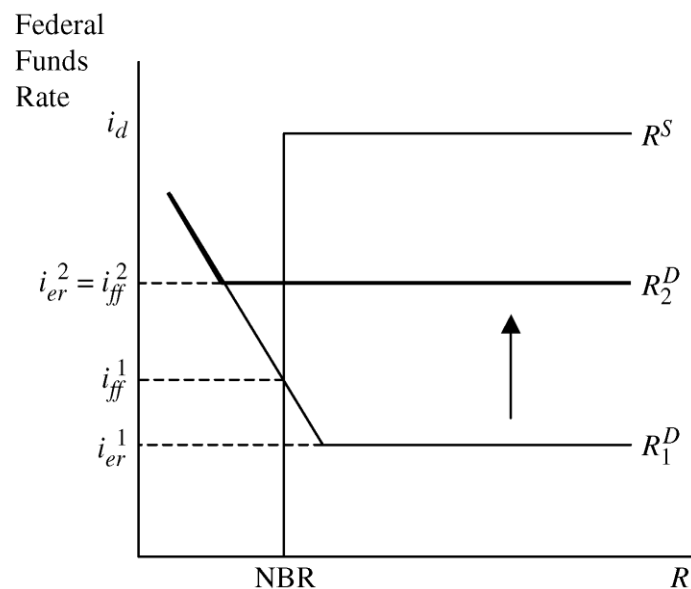
- 1.4) The Fed raises the target federal funds rate.

To raise the target fed funds rate, the Fed will have to conduct an open market sale of securities, which will shift the supply of non-borrowed reserves to the left. The fed funds rate will increase, and as long as the equilibrium fed funds rate remains below the discount rate, borrowed reserves will remain the same.



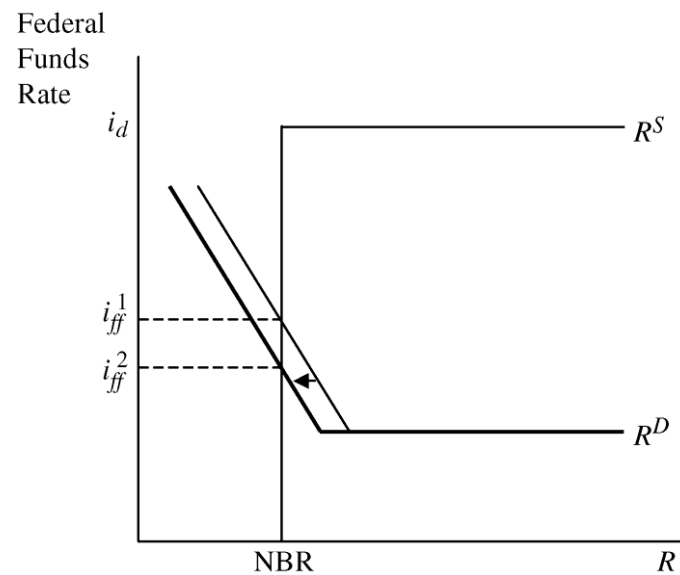
- 1.5) The Fed raises the interest rate on reserves above the current equilibrium federal funds rate.

Raising the interest rate on reserves above the current fed funds rate means that the floor of reserve demand will push the equilibrium fed funds rate up along with the interest rate on reserves. Both borrowed reserves and non-borrowed reserves will remain the same.



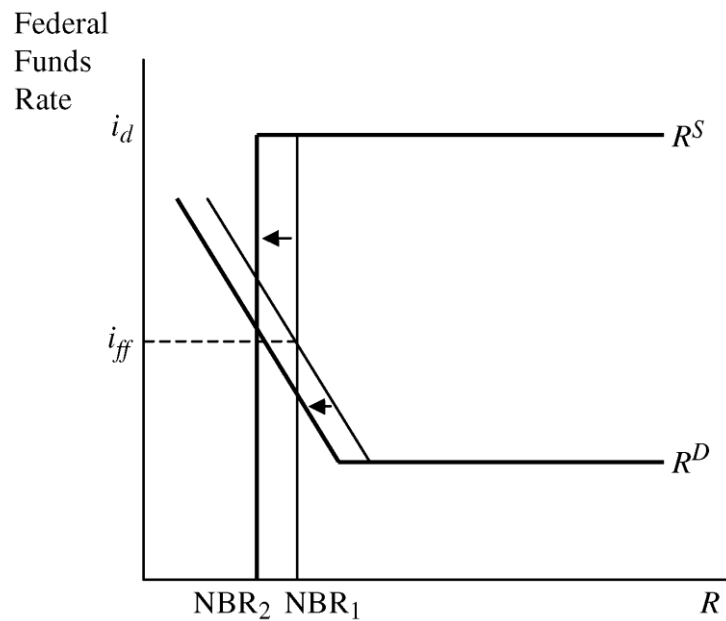
1.6) The Fed reduces reserve requirements.

A decrease in required reserves shifts the demand for reserves line to the left, at any given interest rate. The result is that the fed funds rate decreases, and NBR and BR remain unchanged.



1.7) The Fed reduces reserve requirements and then offsets this action by conducting an open market sale of securities.

With the decrease in required reserves, this reduces reserve demand as shown in part (1.6) above. This will decrease the equilibrium fed funds rate. In order to sterilize the effects and keep the fed funds rate unchanged, the Fed will conduct an open market sale of securities, shifting the reserve supply line to the left. The end result is that the fed funds rate and borrowed reserves will be unchanged, and non-borrowed reserves will decrease.



2) Explain dynamic and defensive open market operations. What is the purpose of each type? Describe two situations when defensive open market operations are used. How are defensive open market operations typically conducted?

Answer: Dynamic OMOs are used to permanently change the monetary base and money supply. Defensive operations are used to offset temporary changes in the monetary base and/or money supply. Defensive operations are used to offset float, shifts in Treasury balances into or out of the Fed, and temporary changes in currency. Defensive purchases are typically conducted by using repurchase agreements, while reverse repos or matched sale-purchase transactions are used to conduct defensive open market sales.

3) How does the change in FED fund rate, attributed to the conventional policy tools, affect the general market interest rates?

4) Discuss the intention and the expected outcome of different QEs policy adopted by the Federal reserve between 2007 and 2014. How do the QEs affect general market interest rates? Why?