Tools of Monetary Policy

• Open market operations
  - Affect the quantity of reserves and the monetary base

• Changes in borrowed reserves
  - Affect the monetary base

• Changes in reserve requirements
  - Affect the money multiplier

• Federal funds rate—the interest rate on overnight loans of reserves from one bank to another
  - Primary indicator of the stance of monetary policy
Demand in the Market for Reserves

- What happens to the quantity of reserves demanded, holding everything else constant, as the federal funds rate changes?
- Two components: required reserves and excess reserves
  - Excess reserves are insurance against deposit outflows
  - The cost of holding these is the interest rate that could have been earned
- As the federal funds rate decreases, the opportunity cost of holding excess reserves falls and the quantity of reserves demanded rises
- Downward sloping demand curve
Supply in the Market for Reserves

- Two components: non-borrowed and borrowed reserves
- Cost of borrowing from the Fed is the discount rate
- Borrowing from the Fed is a substitute for borrowing from other banks
- If $i_{ff} < i_d$, then banks will not borrow from the Fed and borrowed reserves are zero
- The supply curve will be vertical
- As $i_{ff}$ rises above $i_d$, banks will borrow more and more at $i_d$, and re-lend at $i_{ff}$
- The supply curve is horizontal (perfectly elastic) at $i_d$
**Figure 1** Equilibrium in the Market for Reserves
Affecting the Federal Funds Rate

- An open market purchase causes the federal funds rate to fall; an open market sale causes the federal funds rate to rise ➞ shifting the supply curve
- If the intersection of supply and demand occurs on the vertical section of the supply curve, a change in the discount rate will have no effect on the federal funds rate
Affecting the Federal Funds Rate (cont’d)

• If the intersection of supply and demand occurs on the horizontal section of the supply curve, a change in the discount rate shifts that portion of the supply curve and the federal funds rate may either rise or fall depending on the change in the discount rate.

• When the Fed raises reserve requirement, the federal funds rate rises and when the Fed decreases reserve requirement, the federal funds rate falls ➞ shifting the demand curve.
FIGURE 2  Response to an Open Market Operation
FIGURE 3  Response to a Change in the Discount Rate
FIGURE 4  Response to a Change in Required Reserves
Open Market Operations

• Dynamic open market operations
• Defensive open market operations
• Primary dealers
• TRAPS (Trading Room Automated Processing System)
• Repurchase agreements
• Matched sale-purchase agreements
Advantages of Open Market Operations

• The Fed has complete control over the volume
• Flexible and precise
• Easily reversed
• Quickly implemented
Discount Policy

- Discount window
- Primary credit—standing lending facility
- Secondary credit
- Seasonal credit
- Lender of last resort to prevent financial panics
  - Creates moral hazard problem
**Figure 5** How the Primary Credit Facility Puts a Ceiling on the Federal Funds Rate
Advantages and Disadvantages of Discount Policy

• Used to perform role of lender of last resort

• Cannot be controlled by the Fed; the decision maker is the bank

• Discount facility is used as a backup facility to prevent the federal funds rate from rising too far above the target
Reserve Requirements

- Depository Institutions Deregulation and Monetary Control Act of 1980 sets the reserve requirement the same for all depository institutions

- 3% of the first $48.3 million of checkable deposits; 10% of checkable deposits over $48.3 million

- The Fed can vary the 10% requirement between 8% to 14%
Disadvantages of Reserve Requirements

- No longer binding for most banks
- Can cause liquidity problems
- Increases uncertainty
- Recommendations to eliminate
The Channel/Corridor System

• Sets up a standing lending facility (lombard facility) and stands ready to loan overnight any amount banks ask for at a fixed interest rate (lombard rate)

• The supply of reserves is infinitely elastic at this interest rate

• Another standing facility is set up that pays banks a fixed interest rate on any deposits they would like to keep at the central bank
The Channel/Corridor System (cont’d)

- The supply of reserves is also infinitely elastic at this interest rate.
- In between these two interest rates the quantity supplied is equal to the non-borrowed reserves.
- The demand curve has its usual downward slope.
FIGURE 6  The Channel/Corridor System for Setting Interest Rates
Monetary Policy Tools of the European Central Bank

• Open market operations
  - Main refinancing operations
    - Weekly reverse transactions
  - Longer-term refinancing operations

• Lending to banks
  - Marginal lending facility/marginal lending rate
  - Deposit facility
Monetary Policy Tools of the European Central Bank (cont’d)

- Reserve Requirements
  - 2% of the total amount of checking deposits and other short-term deposits
  - Pays interest on those deposits so cost of complying is low