

## INTEREST RATES AND MONETARY POLICY

### I. INTEREST RATES

- a. Review table 17.1 on page 417 for differing interest rates
- b. THE DEMAND FOR MONEY – Two reasons to hold some wealth in money: for purchases and as an asset.

- i. TRANSACTIONS DEMAND,  $D_t$ :

Convenient to purchase goods and services. The demand for money as a medium of exchange is called TRANSACTIONS DEMAND.

1. Level of nominal GDP is the main determinant of the amount of money demanded for transactions. The larger the total money value of all G & S exchanged in the economy, the larger the amount of money (greater the transaction demand) needed to negotiate those transactions.
    2. Figure 17.1a on page 419 is a graph of those demands against the interest rate; if amount of money demanded depends EXCLUSIVELY on the level of nominal GDP, the line is vertical at all interest rates: see example of GDP at \$300BB and need money 3 times for exchange.

- ii. ASSET DEMAND,  $D_a$ : Second reason for holding money is a store of value.

1. There is an ASSET DEMAND for money to hold money as an asset;

why? Because it is totally liquid and also attractive to hold when the value of other assets are declining. There is no risk of CAPITAL LOSS when holding money.

- a. A household or business incurs an opportunity cost when holding money.
- b. The amount of money held varies INVERSELY with the interest rate: as interest rate DECREASES, the amount of money held as a store of value INCREASES.
- c. This is expressed in figure 17.1b on page 419.

iii. TOTAL DEMAND FOR MONEY,  $D_m$ : We find figure 17.1c as a graphical representation of the total demand for money; adding 17.1a with 17.1b

1. An increase in nominal GDP means the public will want to hold a larger amount of money for transactions, which will shift the total money demand to the right.

iv. THE EQUILIBRIUM INTEREST RATE

1. Figure 17.1c shows the money supply,  $S_m$ . It is vertical because the monetary authorities and financial institutions have determined a particular stock of money.
2. The intersection of money supply and money demand in the MONEY

MARKET determines equilibrium price.

II. TOOLS OF MONETARY POLICY: Exploring how the Federal Reserve can change the supply of money in the economy and thus, the interest rate.

a. OPEN-MARKET OPERATIONS

- i. The FED is the largest single holder of U.S. government securities. The FED issues Treasury bills, notes and bonds to finance budget deficits.
- ii. The FED's OPEN MARKET OPERATIONS consist of buying and selling government bonds to commercial banks and the public.
- iii. It is the MOST IMPORTANT day-to-day instrument for influencing the money supply
- iv. BUYING SECURITIES – the FED buys securities from either commercial banks, thrifts or the public. They, in turn, pay for the bonds which puts money into circulation and increases the money supply.
- v. SELLING SECURITIES- As the FED sells securities, the reserves of the commercial banks are reduced since the money paid by commercial banks is taken out of circulation, thus reducing the money supply.

b. THE RESERVE RATIO – The FED can manipulate the reserve ratio to influence the ability of commercial banks to lend

- i. RAISING THE RESERVE RATIO – increases the amount of money commercial banks must keep in reserve.

Banks lose excess reserves and do not have the money to loan out. Reduces the money supply significantly.

- ii. LOWERING THE RESERVE RATIO – opposite effect
  - 1. Review table 17.2 on page 422
  - 2. Changes the amount of excess reserves (increases), and changes the size of the money multiplier (increases)
- c. THE DISCOUNT RATE – The FED is the “lender of last resort.” The FED makes short-term loans when banks are in need. The interest they charge the banks for these loans is the DISCOUNT RATE.
  - i. Borrowing from the FED by commercial banks increases the reserves and enhances ability to extend credit.
  - ii. FED has power to set the discount rate. Lowering the discount rate increases the money supply and raising the discount rate decreases the money supply.
- d. TERM AUCTION FACILITY – New tool for the FED. Introduced in December 2007
  - i. FED holds 2 auctions each month. Banks bid for the right to borrow reserves for 28 day periods.
  - ii. Secret bidding submission. Have a pool of money to be utilized as reserves to banks. Arrange bids from highest to lowest.
    - 1. Go to bank with the lowest bid that covers the amount the FED wishes to use as reserves. That interest rate

is used for ALL the reserve interest rates

- iii. Lending this way guarantees the amount the FED wishes to put in reserves will be totally utilized.
- iv. Equilibrium interest rate where the quantity demanded for reserves equals the quantity supplied.
- v. Allows banks to secure reserves without looking weak.

e. RELATIVE IMPORTANCE

- i. OPEN MARKET OPERATIONS are the most important of the four tools. Advantage of flexibility and the impact on banks in quick.
- ii. FED has used changing the reserve requirement sparingly. The last change was 1992 from 12% to 10%.
- iii. Until recently, the discount rate was a passive tool the FED would change just to keep in line with equilibrium interest rates. However, during mortgage crisis, FED aggressively lowered the rate.
- iv. FED realized that banks were concerned that borrowing against the discount rate would make them look weak and that is why they instituted the term auction facility.

f. EASY MONEY AND TIGHT MONEY

- i. To increase the money supply, the FED must increase the EXCESS reserves.  
EASY (OR EXPANSIONARY) MONEY POLICY.

1. BUY SECURITIES

2. LOWER THE RESERVE RATIO

- 3. LOWER THE DISCOUNT RATE
    - 4. AUCTION MORE RESERVES
  - ii. To decrease the money supply, the FED must decrease excess reserves. TIGHT (OR RESTRICTIVE) MONETARY POLICY
    - 1. SELL SECURITIES
    - 2. INCREASE THE RESERVE RATIO
    - 3. RAISE THE DISCOUNT RATIO
    - 4. AUCTION FEWER RESERVES.
- III. MONETARY POLICY, REAL GDP, AND THE PRICE LEVEL
  - a. CAUSE-EFFECT CHAIN
    - i. Review figure 17.2
    - ii. MARKET FOR MONEY- figure 17.2a; demand and supply of money are brought together.
      - 1. The interest rate is the opportunity cost of holding money as an asset; the higher the cost, the smaller the amount of money the public wants to hold. Inverse relationship in 17.2a
    - iii. INVESTMENT – figure 17.2b; inverse relationship between the interest rate – cost of borrowing to invest- and the amount of investment spending.
      - 1. Changes in the interest rate mainly affect the investment component of total spending, although they also affect spending on durable goods (auto loans) that are purchased on credit.

2. The impact of changing interest rates is mainly on investment (and through that, on AD, output, employment and price level).  
Figure 17.2b shows that investment spending varies inversely with the interest rate.
- iv. EQUILIBRIUM GDP – figure 17.2c shows the impact of our three interest rates and corresponding levels of investment spending on AD.
  - v. EFFECTS OF AN EASY MONEY POLICY – Review figure 17.2a with real output level Q1; at that level the FED should initiate an easy money policy.
    1. An increase in the money supply will lower the interest rate, increase investment, AD, and equilibrium GDP.
    2. Column 1 in table 17.3 on page 430 summarizes events associated with an easy money policy.
  - vi. EFFECTS OF A TIGHT MONEY POLICY
    1. Assume money supply is \$175BB,  $S_{m3}$  in 17.2a
    2. GDP gap of Q3-Qf which is demand-pull inflation.
    3. Shrink money supply and increase interest rate.
    4. Leftward shift of the AD curve will eliminate the excessive spending and halt demand-pull inflation

5. Column 2 in table 17.3 summarizes the cause-effect chain of a tight money policy.

#### IV. MONETARY POLICY IN ACTION

a. Monetary policy has 2 advantages over fiscal policy:

- i. Speed and flexibility
- ii. Isolation from political pressure

b. Monetary policy can be quickly altered.

- i. FED board members have 14 year terms which isolates them from lobbying
- ii. More politically neutral than fiscal policy; subtler.

c. THE FOCUS ON THE FEDERAL FUNDS RATE

- i. FED focuses monetary policy on altering the FEDERAL FUNDS RATE as needed to stabilize the economy.
- ii. FEDERAL FUNDS RATE is the rate banks and thrifts charge each other on overnight loans made from their excess reserves.
- iii. The FED can control the supply of Federal funds- the supply of reserves in the banking system- it can control the Federal Funds interest rate.
- iv. When it wants to INCREASE the Federal Funds rate, it can sell securities in the open market to reduce bank reserves.
- v. When it wants to DECREASE the Federal Funds rate, it can buy securities in the open market to increase bank reserves.
- vi. The FED can target the Federal Funds rate because it knows that interest rates in

general typically rise and fall with that rate. Review figure 17.3 on page 432

d. REVIEW RECENT U.S. MONETARY POLICY ON PAGE 432

e. PROBLEMS AND COMPLICATIONS

i. LAGS – In monetary policy, there is still a recognition lag and an operational lag, but because the FED can decide and implement policy in a few days, that eliminates the administrative lag.

1. The recognition lag is due to the fact that there are always minor fluctuations in the economy and the FED may not recognize a significant change in the business cycle.

ii. CYCLICAL ASYMMETRY- Monetary policy may be highly effective in slowing expansions and controlling inflation (tight money or restrictive policy), but will have a much more difficult time pushing the economy up from a recession ( easy money or expansionary policy)

1. Easy money policy suffers from “ can lead a horse to water but cannot make him drink.”

2. If business or households lose confidence, will save instead of consume and not shift AD to right.

3. Review pushing a string versus pulling a string on page 434.

iii. REVIEW how the FED responded to the Mortgage Crisis on page 435.