CHAPTER 34

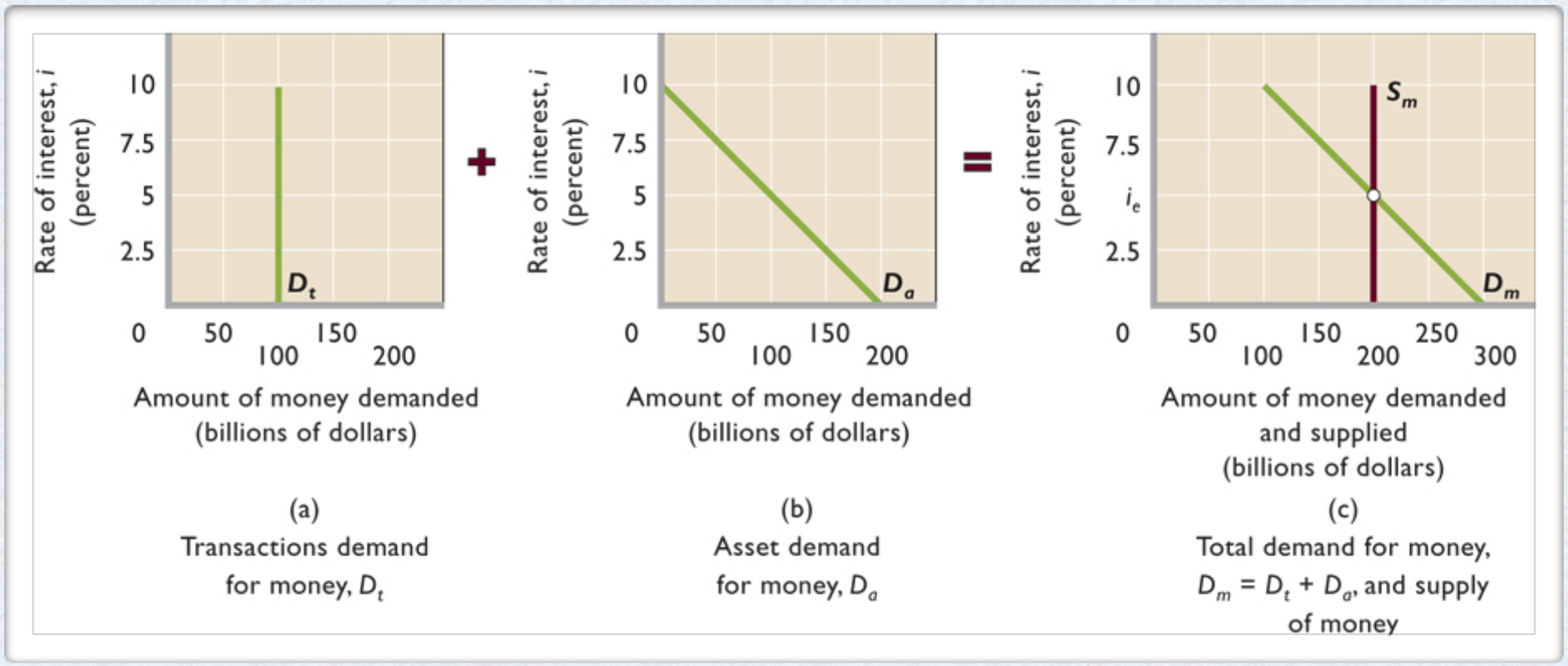
Interest Rates

- **The Demand for Money**
  - **Transactions Demand (D_t)** - the demand for money as a medium of exchange. The transaction demand for money varies directly with nominal GDP
  - **Asset Demand (D_a)** - holding money as a store of value. The amount of money demanded a an asset varies inversely with the rate of interest (which is the opportunity cost of holding money as an asset)
  - **Total Money Demand** - found be adding horizontally asset demand and transaction demand, $D_m = D_a + D_t$ A **change in the nominal GDP**, working through the transactions demand for money, **will shift the total money demand curve**.
  - **Example:** nominal GDP increases from $300B to $450B, V= 3
  - D_t = will shift from $100B to **$150B** ($450B/3)
  - D_m = will **shift to the right** by **$50B**

Interest Rates

The Equilibrium Interest Rate

- **S_m = Supply of money**
- **The demand and supply of money will determine the equilibrium interest rate**
- An increase in the supply of money will lower the equilibrium level of interest rate; a decrease in the supply of money will increase the equilibrium level of interest rate

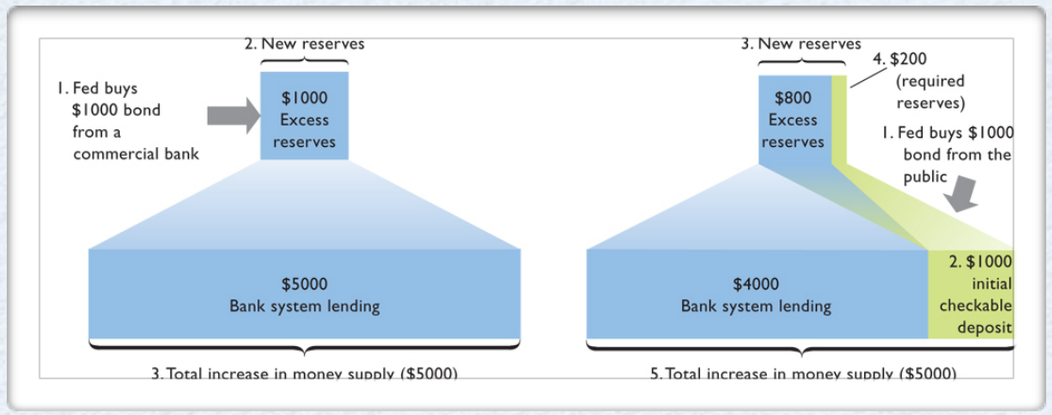


Interest Rates

- **Interest Rates and Bond Prices**
- **Interest rates and bond prices are inversely related**
- The price of bonds are determined by bond demand and bond supply
- **Example:** Bond pays $50 annual interest, with a face value of $1,000, therefore, $50/$1,000=5% interest yield
- Face value falls to $667, therefore, $50/$667=7.5%
- Or face value rises to $2,000, then $50/2,000=2.5%
- Hence, face value goes down, interest rate goes up; face value goes up, interest rate goes down

Tools of Monetary Policy

- **Open Market Operations** - buying/selling government bonds from/to commercial banks and the public
  - **Buying securities**
    - *From commercial banks* - banking reserves go up which then enhances the lending ability of the commercial banks
    - *From the public* - total increase in money supply will be the same as above



- **Selling securities**
  - *To commercial banks* - reduction in commercial bank reserves
  - *To the public* - reduction in commercial bank reserves

Tools of Monetary Policy

- **The Reserve Ratio** - Fed can manipulate the reserve ratio (20%) to influence the commercial bank's ability to lend
  - **Raising the reserve ratio** - 25% - banks ability to lend goes down
  - **Lowering the reserve ratio** - 15% banks ability to lend goes up
- **The Discount Rate** - the interest rate the Fed charges to commercial banks for short-term loans
  - **Increasing the discount rate** will discourage borrowing by commercial banks, hence their ability to loan money will go down
  - **Decreasing the discount rate** will encourage borrowing by commercial banks, hence their ability to loan money will go up

Monetary Policy

- **Tools of Monetary Policy**

  1. **Fed open market operations**
  2. **The reserve ratio**
  3. **The discount rate**

- **Expansionary (Easy) Monetary Policy** - Economy: recession, unemployment, AD needs to rise to ease the recession, therefore, Ms has to go up as well

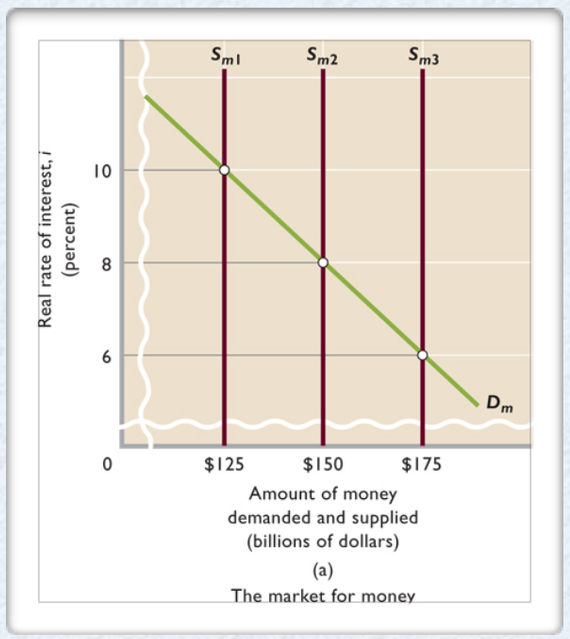
  4. Buy securities
  5. Lower the reserve ratio
  6. Lower the discount rate

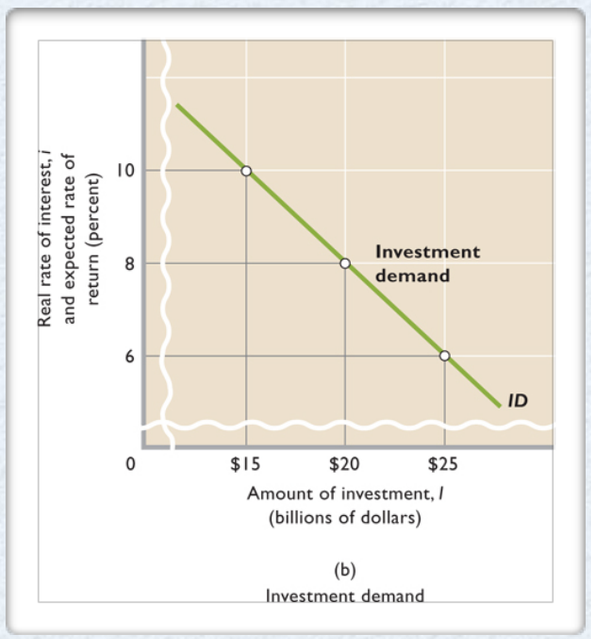
- **Contractionary (Tight) Monetary Policy** - Economy: inflation, AD needs to go down, therefore, Ms has to go down as well

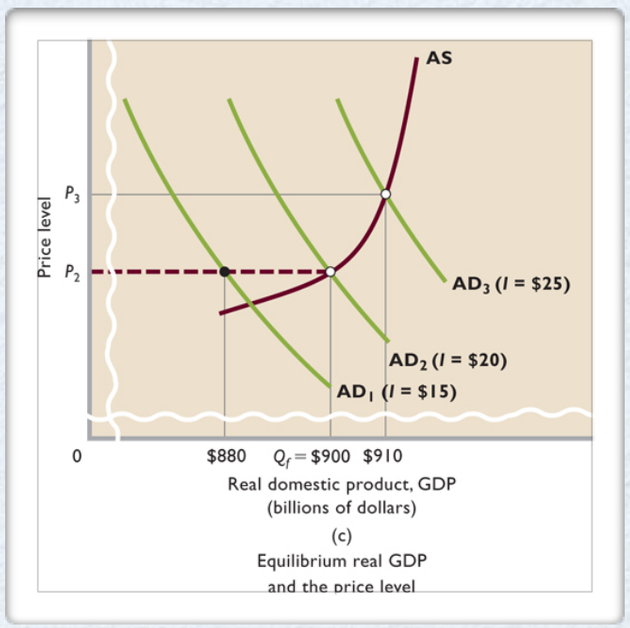
  7. Sell securities
  8. Raise the reserve ratio
  9. Raise the discount rate

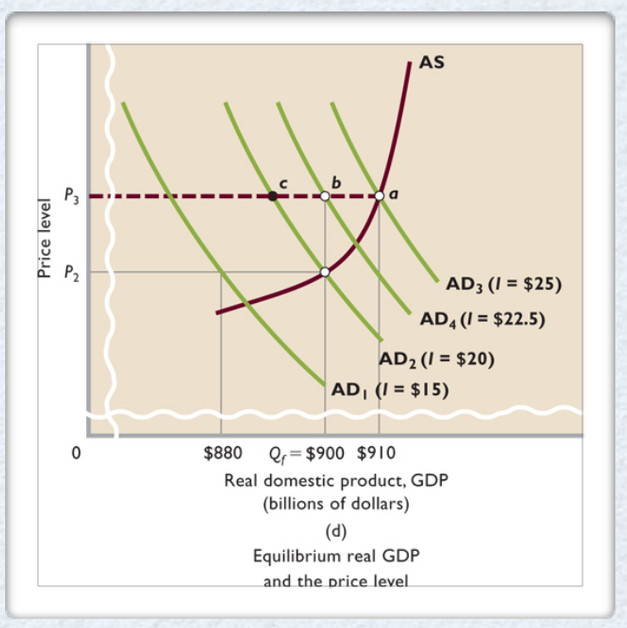
Monetary Policy, Real GDP, and the Price Level

- Expansionary Ms - shifts from S_{m1} to S_{m2} - i goes from 10% to 8% - I goes up from $15B to $20B - shifting AD_1 to AD_2
- Contractionary Ms - at point a the economy is overheating AD_3 has to go down to full employment level of output, point b. In order to do that Ms has to go down, i will go up, I will go down. Multiplier is in effect in the AD shifts









Effects of Monetary Policy

- **Effects of easy monetary policy**
- $\mathbf{S_{m1}}$ = \$125B, Q_1 below full employment level of Q_f - need easy monetary policy
- Options: *buy government securities, lower reserve ratio (R), lower the discount rate*
- Result: excess reserves rise, lending increases, Ms increases, interest rate (i) decreases, investment (I) increases, AD increases, GDP increases (m*I)
- **Effects of tight monetary policy**
- at point **a** there is inflation
- Options: *sell government securities, raise reserve ratio (R), raise the discount rate*
- Result: excess reserves go down, Ms goes down, interest rate (i) goes up, investment (I) goes down, AD goes down, inflation eases