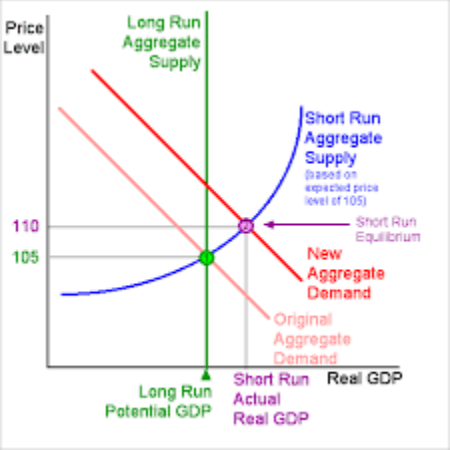
Aggregate Demand and Aggregate Supply



Introduction to AD-AS Model

- AD-AS model is a variable price model.The aggregate expenditures model in Chapters 9 and 10 assumed constant price.
- AD-AS model provides insights on inflation, unemployment and economic growth.

Aggregate demand is a schedule that shows the various amounts of real domestic output that domestic and foreign buyers will desire to purchase at each possible price level.

- The aggregate demand curve is shown in Figure 11-1.
    - It shows an inverse relationship between price level and domestic output.
    - The explanation of the inverse relationship is not the same as for demand for a single product, which centered on substitution and income effects.
        - Substitution effect doesn't apply in the aggregate case, since there is no substitute for "everything."
        - Income effect also doesn't apply in the aggregate case, since income now varies with aggregate output.
    - What is the explanation of inverse relationship between price level and real output in aggregate demand?
        - Real balances effect: When price level falls, the purchasing power of existing financial balances rises, which can increase spending.
        - Interest-rate effect: A decline in price level means lower interest rates which can increase levels of certain types of spending.
        - Foreign purchases effect: When price level falls, other things being equal, U.S. prices will fall relative to foreign prices, which will tend to increase spending on U.S. exports and also decrease import spending in favor of U.S. products that compete with imports.

- Deriving AD-curve from aggregate expenditures model.(See Figure 11-2)
    - Both models measure real GDP on horizontal axis.
    - Suppose initial price level is P_1 and aggregate expenditures AE_1 as shown in Figure 11-2a.Then equilibrium GDP is GDP_1.This is shown in Figure 11-2b.
    - If price rises to P_2, aggregate expenditures will fall to AE_2 because purchasing power of wealth falls, interest rates may rise, and net exports fall.(See Figure 11-2a)Then new equilibrium is at GDP_2 shown also in Figure 11-2b.
    - If price rises to P_3, real asset balance value falls, interest rates rise again, net exports fall and new equilibrium is at GDP_3.Again see Figures 11-2a and 11-2b.
- Determinants of aggregate demand:Determinants are the "other things" (besides price level) that can cause a shift or change in demand (see Figure 11-3 in text).Effects of the following determinants are discussed in more detail in the text.
    - Changes in consumer spending, which can be caused by changes in several factors.
        - Consumer wealth,
        - Consumer expectations,
        - Consumer indebtedness, and
        - Taxes.
    - Changes in investment spending, which can be caused by changes in several factors.
        - Interest rates,
        - Profit expectations,
        - Business taxes,
        - Technology, and
        - Amount of excess capacity.
    - A change in government spending is another determinant.
    - Changes in net export spending unrelated to price level, which may be caused by changes in other factors such as:
        - Income abroad, and
        - Exchange rates: Depreciation of the dollar encourages U.S. exports since U.S. products become less expensive when foreign buyers can obtain more dollars for their currency. Conversely, dollar depreciation discourages import buying in the U.S. because our dollars can't be exchanged for as much foreign currency.

- Aggregate demand shifts and the aggregate expenditures model:
    - When there is a change in one of the determinants of aggregate demand, there will be a change in the aggregate expenditures as well.Look at Figure 11-4.
    - If price level remains constant, then a change in aggregate expenditures is multiplied and the real output rises by more than the initial change in spending (see the lower part of Figure 11-4).The text illustrates the multiplier effect of a change in investment spending.

Aggregate supply is a schedule showing level of real domestic output available at each possible price level.

- Aggregate supply curve may be viewed as having three distinct segments.See Figure 11-5.
    - Horizontal range:where the price level remains constant with substantial output variation.In this range substantial unemployment and excess capacity exist.Economy is far below full-employment output level.
    - Intermediate (upsloping) range:where the expansion of real output is accompanied by rising price level, near to where the full-employment level of output exists.Per unit production costs rise in this stage because as resource markets near full employment their prices will be bid up and, therefore, producer costs rise.
    - Vertical range:where absolute full capacity is assumed, and any attempt to increase output will bid up resource and product prices.We assume full-employment occurs at the "natural rate of unemployment."
- Determinants of aggregate supply:Determinants are the "other things" besides price level that cause changes or shifts in aggregate supply (see Figure 11-6 in text).The following determinants are discussed in more detail in the text.
    - 1. A change in input prices, which can be caused by changes in several factors.
        - Availability of resources (land, labor, capital, entrepreneurial ability),
        - Prices of imported resources, and
        - Market power in certain industries.
    - 2. Change in productivity (productivity = real output / input) can cause changes in per-unit production cost (production cost per unit = total input cost / units of output). If productivity rises, unit production costs will fall. This can shift aggregate supply to the right and lower prices. The reverse is true when productivity falls. Productivity improvement is very important in business efforts to reduce costs.
    - 3. Change in legal-institutional environment, which can be caused by changes in other factors.
        - Business taxes and/or subsidies,
        - Government regulation.

Equilibrium: Real Output and the Price Level

- Equilibrium price and quantity are found where the aggregate demand and supply curves intersect.(See Key Graph 11-7a,b for illustration of why quantity will seek equilibrium where curves intersect.)(Key Questions 4 and 7)
- Try Quick Quiz 11-7.
- Shifting aggregate demand when a determinant changes will change the equilibrium.
    - Demand-pull inflation: Shifts in the intermediate and vertical ranges will cause demand-pull inflation with an increase in aggregate demand (Figures 11-8b and c).
    - Shifts in the horizontal range will cause quantity changes but not price level (Figure 11-8a).
- The multiplier effect is weakened with price level changes in intermediate and vertical ranges of aggregate supply.Real GDP does not change as much in Figure 11-8c as it does in Figures 11-8a even though the aggregate demand shifts are of equal magnitude.Figure 11-9 combines the effects of Figures 11-8a and b.Conclusion:The more price level

increases, the less effect any increase in aggregate demand will have in increasing real GDP.

- Decreases in AD:If AD decreases, recession and cyclical unemployment may result.See Figure 11-10.Prices don't fall easily.
    - Wage contracts are not flexible so businesses can't afford to reduce prices.
    - Also, employers are reluctant to cut wages because of impact on employee effort, etc.
    - Minimum wage laws keep wages above that level.
    - So-called menu costs are difficult to change.
    - Fear of price wars keep prices from being reduced also.
- Shifting aggregate supply occurs when a supply determinant changes.(See Key Questions 5, 7, 8):
    - Leftward shift in curve illustrates cost-push inflation (see Figure 11-11).
    - Rightward shift in curve will cause a decline in price level (see Figure 11-12).See text for discussion of this desirable outcome.

LAST WORD: Why Is Unemployment in Europe So High?

- Several European economies have had high rates of unemployment in the past several years, even before their recessions.
    - In 2000:France, 9.7 percent; Italy, 10.7 percent; Germany, 8.3 percent.
    - These rates compare to a 4.0 percent unemployment rate at the same time in U.S.
- Reasons for high European unemployment rates:
    - High natural rates of unemployment exist due to frictional and structural unemployment.This results from government policies and union contracts, which increase the costs of hiring and reduce the cost of being unemployed.
        - High minimum wages exist.
        - Generous welfare benefits exist for unemployed.
        - Restrictions against firings discourage employment.
        - Thirty to forty days of paid vacation and holidays boost the cost of hiring.
        - High worker absenteeism reduces productivity.
        - High employer cost of fringe benefits discourages hiring.
    - 2. Deficient aggregate demand may also be a cause as shown in Figure 11-7b. European governments have feared inflation and have not undertaken expansionary monetary or fiscal policies. If they did, aggregate demand would expand, and unemployment rates might drop without inflation.
    - 3. Conclusion: Economists in Europe are not sure whether aggregate demand is near full-employment (Figure 11-7a) or is below full employment.