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Gwartney - Stroup  
Sobel - Macpherson

## Economic Instability

**Full Length Text** — Part: 3 Chapter: 10  
**Macro Only Text** — Part: 3 Chapter: 10

To Accompany “Economics: Private and Public Choice 12th ed.”  
James Gwartney, Richard Stroup, Russell Sobel, & David Macpherson  
Slides authored and animated by:  
James Gwartney, David Macpherson, & Charles Skipton

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## Anticipated and Unanticipated Changes

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## Anticipated & Unanticipated Changes

- **Anticipated changes** are fully expected by economic participants.
- Decision makers have time to adjust to them before they occur.
- **Unanticipated changes** catch people by surprise.

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## Shifts in Aggregate Demand

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## Shifts in Aggregate Demand

- The **aggregate demand (AD)** curve indicates the quantity of goods and services that will be demanded at alternative price levels.
- An increase in **aggregate demand** (a shift of the **AD** curve to the right) indicates that decision makers will purchase a larger quantity of goods and services at each different price level.
- A decrease in **aggregate demand** (a shift of the **AD** curve to the left) indicates that decision makers will purchase a smaller quantity of goods and services at each different price level.

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## Factors that Shift Aggregate Demand

- The following factors will cause a shift in **aggregate demand** outward (*inward*):
  - An increase (*decrease*) in real wealth.
  - A decrease (*increase*) in the real interest rate.
  - An increase in the optimism (*pessimism*) of businesses and consumers about future economic conditions.
  - An increase (*decline*) in the expected rate of inflation.
  - Higher (*lower*) real incomes abroad.
  - A reduction (*increase*) in the exchange rate value of the nation's currency.

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### Shifts in Aggregate Demand

- An increase in real wealth, such as would result from a stock market boom, would increase **aggregate demand**, shifting the entire curve to the right (from  $AD_0$  to  $AD_1$ ).
- In contrast, a reduction in real wealth decreases **aggregate demand**, shifting  $AD$  left (from  $AD_0$  to  $AD_2$ ).

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### Consumer Sentiment Index: A Measure of Optimism

- Below is the consumer sentiment index for 1978-2007.
- This measure attempts to capture consumers' optimism and pessimism regarding the future of the economy.
- Moves toward optimism tend to increase  $AD$ , while moves toward pessimism (*shaded*) tend to decrease  $AD$ .
- Note how the index turns down prior to (or during) the recessions of the period.

Source: <http://www.economicpi.com>

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### Questions for Thought:

1. Explain how and why each of the following factors would influence current aggregate demand in the United States:
  - (a) An increased fear of recession.
  - (b) An increased fear of inflation.
  - (c) The rapid growth of real income in Canada and Western Europe.
  - (d) A reduction in the real interest rate.
  - (e) A higher price level (*be careful*).
  - (f) A stock market decline.

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## Shifts in Aggregate Supply

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## Long- and Short-Run Aggregate Supply

- When considering shifts in aggregate supply, it is important to distinguish between the *long run* and *short run*.
- **Shifts in LRAS:**  
A long run change in aggregate supply indicates that it will be possible to achieve and sustain a larger rate of output.
  - A shift in the *long run aggregate supply* curve (*LRAS*) will cause the *short run aggregate supply* (*SRAS*) curve to shift in the same direction.
  - Shifts in *LRAS* are an alternative way of indicating that there has been a shift in the economy's production possibilities curve.

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## Long- and Short-Run Aggregate Supply

- **Shifts in SRAS:**  
Changes that *temporarily* alter the productive capability of an economy will shift the *SRAS* curve, but not the *LRAS* curve.

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### Shifts in Aggregate Supply

- Factors that increase (decrease) **LRAS**:
  - Increase (decrease) in the supply of resources.
  - Improvement (deterioration) in technology and productivity.
  - Institutional changes that increase (reduce) the efficiency of resource use.
- Factors that increase (decrease) **SRAS**:
  - A decrease (increase) in resource prices — hence, production costs.
  - A reduction (increase) in expected inflation.
  - Favorable (unfavorable) supply shocks, such as good (bad) weather or a reduction (increase) in the world price of a key imported resource.

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### Shifts in Aggregate Supply

The left graph shows the Long-Run Aggregate Supply (LRAS) curve shifting from  $LRAS_1$  to  $LRAS_2$ . The vertical axis is Price Level and the horizontal axis is Goods & Services (real GDP). The shift is to the right, from  $Y_{F1}$  to  $Y_{F2}$ .

The right graph shows the Short-Run Aggregate Supply (SRAS) curve shifting from  $SRAS_1$  to  $SRAS_2$ . The vertical axis is Price Level and the horizontal axis is Goods & Services (real GDP). The shift is to the right.

- Such factors as an increase in the stock of capital or an improvement in technology will expand an economy's potential output and shift **LRAS** to the right (note that when the **LRAS** curve shifts, so too does **SRAS**).
- Such factors as a reduction in resource prices or favorable weather would shift **SRAS** to the right (note that here the **LRAS** curve will remain constant).

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### Questions for Thought:

1. Indicate how the following would influence U.S. aggregate supply in the short run:
  - (a) An increase in real wage rates
  - (b) A severe freeze that destroys half of the orange crop in Florida
  - (c) An increase in the expected rate of inflation
  - (d) An increase in the world price of oil
  - (e) Abundant rainfall during the growing season of agricultural states

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### Questions for Thought:

2. Which of the following would be most likely to shift the *long run aggregate supply* curve (*LRAS*) to the left?
  - a. Unfavorable weather conditions that reduced the size of this year's grain harvest.
  - b. An increase in labor productivity as the result of improved computer technology and expansion in the Internet.
  - c. An increase in the cost of security as the result of terrorist activities.
3. How would an increase in the economy's production possibilities influence the *LRAS*?

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### Growth in Aggregate Supply

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### The Impact of Steady Economic Growth

- Expansions in the productive capacity of the economy like those resulting from capital formation or improvements in technology will shift the economy's *LRAS* curve to the right.
- When growth of the economy is steady and predictable, it will be anticipated by decision makers.
- Anticipated increases in output (*LRAS*) need not disrupt macroeconomic equilibrium.

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### Growth in Aggregate Supply

- Consider the impact that capital formation or a technological advancement has on an economy.
- Both *LRAS* and *SRAS* increase (to *LRAS*<sub>2</sub> and *SRAS*<sub>2</sub>); full employment output expands from *Y*<sub>F1</sub> to *Y*<sub>F2</sub>.
- A sustainable, higher level of real output is the result.

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### Unanticipated Changes and Market Adjustments

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### Unanticipated Changes in Aggregate Demand

- In the short-run, output will deviate from full employment capacity as prices in the goods and services market deviate from the price level that people expected.
- Unanticipated changes in aggregate demand often lead to such deviations.

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### Unanticipated Increase in Aggregate Demand

- Impact of *unanticipated increase* in *AD*:
  - Initially, the strong demand and higher price level in the goods & services market will temporarily improve profit margins.
  - Output will increase, the rate of unemployment will drop below the natural rate, and output will temporarily exceed the economy's long-run potential.
  - With time, however, contracts will be modified and resource prices will rise and return to their competitive position relative to product prices.
  - Once this happens, output will recede to the economy's long-run potential.

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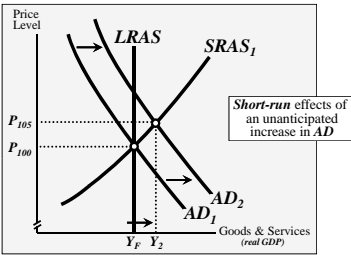
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### Increase in AD: Short Run



The graph shows the short-run aggregate demand model. The vertical axis is Price Level, with  $P_{100}$  and  $P_{105}$  marked. The horizontal axis is Goods & Services (real GDP), with  $Y_F$  and  $Y_2$  marked. A vertical line represents Long-Run Aggregate Supply (*LRAS*) at  $Y_F$ . Two upward-sloping Short-Run Aggregate Supply curves are shown: *SRAS*<sub>1</sub> and *SRAS*<sub>2</sub>. Two downward-sloping Aggregate Demand curves are shown: *AD*<sub>1</sub> and *AD*<sub>2</sub>. The initial equilibrium is at the intersection of *AD*<sub>1</sub> and *SRAS*<sub>1</sub>, corresponding to price level  $P_{100}$  and output  $Y_F$ . An unanticipated increase in aggregate demand shifts the curve to *AD*<sub>2</sub>. The new short-run equilibrium is at the intersection of *AD*<sub>2</sub> and *SRAS*<sub>1</sub>, corresponding to a higher price level  $P_{105}$  and higher output  $Y_2$ . A text box notes: "Short-run effects of an unanticipated increase in AD".

- In response to an unanticipated increase in *AD* for goods & services (shift from *AD*<sub>1</sub> to *AD*<sub>2</sub>), prices rise to  $P_{105}$  and output will increase to  $Y_2$ , temporarily exceeding full-employment capacity.

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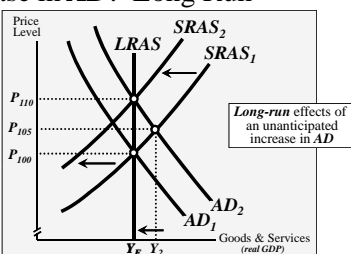
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### Increase in AD: Long Run



The graph shows the long-run aggregate demand model. The vertical axis is Price Level, with  $P_{100}$ ,  $P_{105}$ , and  $P_{110}$  marked. The horizontal axis is Goods & Services (real GDP), with  $Y_F$  and  $Y_2$  marked. A vertical line represents Long-Run Aggregate Supply (*LRAS*) at  $Y_F$ . Two upward-sloping Short-Run Aggregate Supply curves are shown: *SRAS*<sub>1</sub> and *SRAS*<sub>2</sub>. Two downward-sloping Aggregate Demand curves are shown: *AD*<sub>1</sub> and *AD*<sub>2</sub>. The initial long-run equilibrium is at the intersection of *AD*<sub>1</sub> and *LRAS*, corresponding to price level  $P_{100}$  and output  $Y_F$ . An unanticipated increase in aggregate demand shifts the curve to *AD*<sub>2</sub>. The short-run equilibrium moves to the intersection of *AD*<sub>2</sub> and *SRAS*<sub>1</sub>, corresponding to price level  $P_{105}$  and output  $Y_2$ . Over time, higher resource prices shift the short-run aggregate supply curve leftward to *SRAS*<sub>2</sub>. The new long-run equilibrium is at the intersection of *AD*<sub>2</sub> and *SRAS*<sub>2</sub>, corresponding to a higher price level  $P_{110}$  and output  $Y_F$ . A text box notes: "Long-run effects of an unanticipated increase in AD".

- With time, resource market prices, including labor, rise due to the strong demand. Higher costs reduce *SRAS*<sub>1</sub> to *SRAS*<sub>2</sub>.
- In the long-run, a new equilibrium at a higher price level,  $P_{110}$ , and output consistent with long-run potential will occur.
- So, the increase in demand only *temporarily* expands output.

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### Unanticipated Decrease in Aggregate Demand

- Impact of **unanticipated reduction** in *AD*:
  - Weak demand and lower prices in the goods & services market will reduce profit margins. Many firms will incur losses.
  - Firms will reduce output, the unemployment rate will rise above the natural rate, and output will temporarily fall short of the economy's long-run potential.
  - With time, long-term contracts will be modified.
  - Eventually, lower resource prices and a lower real interest rate will direct the economy back to long-run equilibrium, but this may be a lengthy and painful process.

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### Decrease in *AD*: Short Run

Short-run effects of an unanticipated reduction in *AD*

- The short-run impact of an unanticipated reduction in *AD* (shift from  $AD_1$  to  $AD_2$ ) will be a decline in output (to  $Y_2$ ), and a lower price level ( $P_{95}$ ).
- Temporarily, profit margins decline, output falls, and unemployment rises above its natural rate.

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### Decrease in *AD*: Long Run

Long-run effects of an unanticipated reduction in *AD*

- In the long-run, weak demand and excess supply in the resource market lead to lower resource prices (including labor) resulting in an expansion in *SRAS* ( $SRAS_1$  to  $SRAS_2$ ).
- A new equilibrium at a lower price level,  $P_{90}$ , and an output consistent with long-run potential will result.

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## Unanticipated Changes in Short-Run Aggregate Supply

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## Unanticipated Changes in Short-Run Aggregate Supply

- Unanticipated changes in short-run aggregate supply (**SRAS**) can catch people by surprise. Thus, they are often referred to as *supply shocks*.
- A supply shock is an unexpected event that temporarily increases or decreases aggregate supply.

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## Impact of Increase in **SRAS**

- **SRAS** shifts to the right – output temporarily exceeds the economy's long-run potential.
- Since the temporarily favorable supply conditions cannot be counted on in the future, the economy's long-term production capacity will not be altered.
- If individuals recognize that they will be unable to maintain their current high level of income, they will increase their saving. Lower interest rates, and additional capital formation may result.

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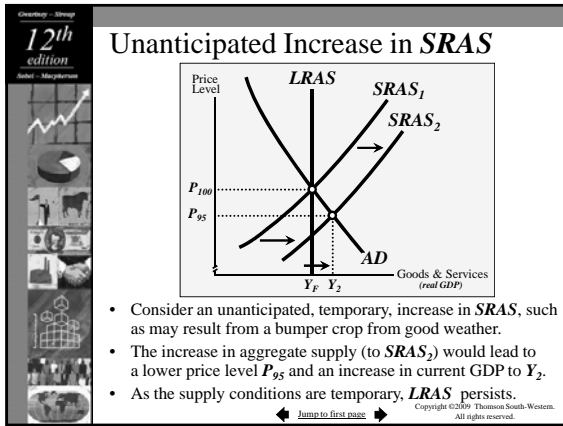
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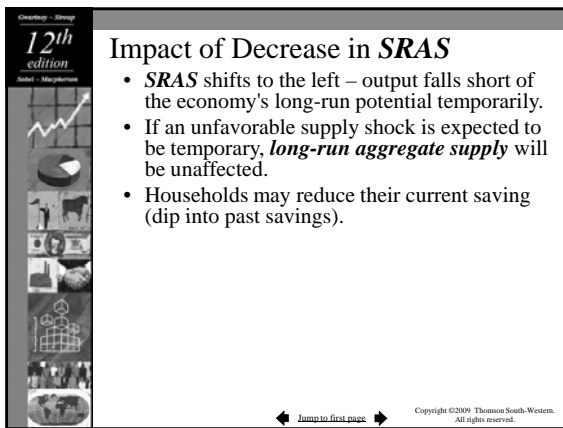
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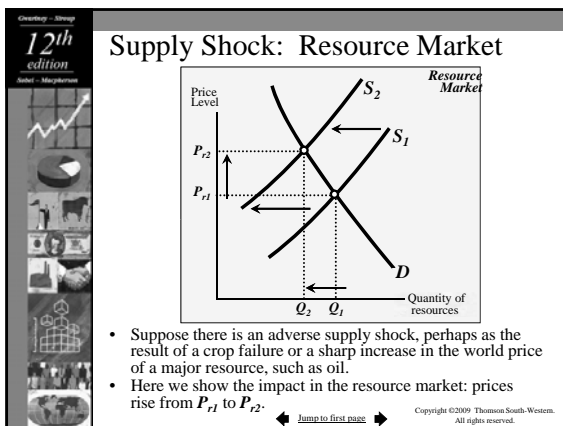
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### Supply Shock: Product Market

The graph shows the AD-AS model. The vertical axis is Price Level, with  $P_{100}$  and  $P_{110}$  marked. The horizontal axis is Goods & Services (real GDP), with  $Y_2$  and  $Y_F$  marked. A downward-sloping AD curve is shown. A vertical LRAS curve is at  $Y_F$ . Two upward-sloping SRAS curves are shown:  $SRAS_1(P_{r1})$  and  $SRAS_2(P_{r2})$ , with an arrow indicating a leftward shift. The initial equilibrium is at point A ( $P_{100}, Y_F$ ). The new short-run equilibrium is at point B ( $P_{110}, Y_2$ ).

- As shown here, the higher resource prices shift  $SRAS$  to the left in the product market; in the short-run, the price level rises to  $P_{110}$  and output falls to  $Y_2$ .
- What happens in the long-run depends on whether the supply shock is temporary or permanent.

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### Effects of Adverse Supply Shock

The graph shows the AD-AS model. The vertical axis is Price Level, with  $P_{100}$  and  $P_{110}$  marked. The horizontal axis is Goods & Services (real GDP), with  $Y_2$  and  $Y_F$  marked. A downward-sloping AD curve is shown. A vertical LRAS curve is at  $Y_F$ . Two upward-sloping SRAS curves are shown:  $SRAS_1(P_{r1})$  and  $SRAS_2(P_{r2})$ , with an arrow indicating a rightward shift. The initial equilibrium is at point A ( $P_{100}, Y_F$ ). The new short-run equilibrium is at point B ( $P_{110}, Y_2$ ).

- If the adverse supply shock is **temporary**, resource prices will eventually fall in the future, shifting  $SRAS_2$  back to  $SRAS_1$ , returning equilibrium to (A).
- If the adverse supply factor is **permanent**, the productive potential of the economy will shrink ( $LRAS$  shifts left and  $Y_2$  becomes  $Y_{r2}$ ) and (B) will become the long-run equilibrium.

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### The Price Level, Inflation, and the AD-AS Model

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### Price Level, Inflation, and the *AD-AS* Model

- The basic *AD-AS model* focuses on how the general level of prices influence the choices of business decision makers.
- Disequilibrium occurs when the actual price level is either greater than or less than the anticipated level.

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### Price Level, Inflation, and the *AD-AS* Model

- The actual price level will also differ from the level people anticipated when the rate of inflation differs from what is expected.
- **When the inflation rate is greater than anticipated**, this implies a higher than anticipated price level. As a result, profit margins will be attractive and business firms will respond with an expansion in output.
- **When the inflation rate is less than anticipated**, this implies a lower than anticipated price level. As a result, profit margins will be unattractive and businesses will reduce their output.

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### Disequilibrium and Economic Instability

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### The AD-AS Model and Instability

- The AD-AS model indicates that unanticipated changes will disrupt macro equilibrium and result in economic instability.
- **Recessions** occur because prices in the goods and services market are low relative to the costs of production and resource prices.
  - The two causes of **recessions**:
    - unanticipated reductions in **AD**, and,
    - unfavorable supply shocks.
- An **unsustainable boom** occurs when prices in the goods and services market are high relative to resource prices and other costs.
  - The two causes of **booms** are:
    - unanticipated increases in **AD**, and,
    - favorable supply shocks.

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### Two Forces Directing the Economy Back to Equilibrium

- The AD-AS model indicates that there are two forces that will help direct an economy back to long-run equilibrium:
  - **Changes in real resource prices:**
    - During a **recession**, real resource prices will tend to fall because the demand for resources will be weak and the rate of unemployment high.
    - During a **boom**, real resources prices will tend to rise because demand for resources will be strong and the unemployment rate low.

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### Two Forces Directing the Economy Back to Equilibrium

- The AD-AS model indicates that there are two forces that will help direct an economy back to long-run equilibrium:
  - **Changes in real interest rates:**
    - During a **recession**, real interest rates will tend to decline because of the weak demand for investment.
    - During a **boom**, real interest rates will tend to rise because of the strong demand for investment.

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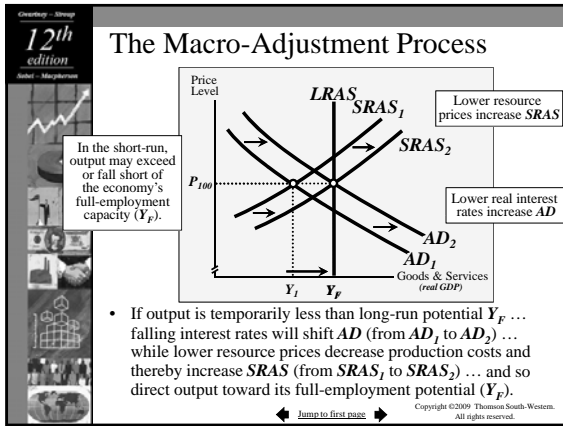
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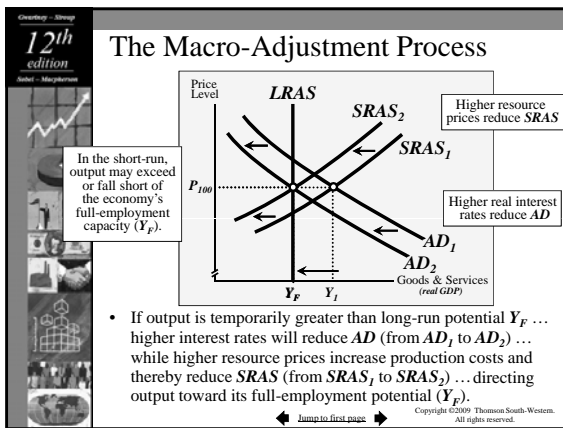
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**Questions for Thought:**

1. Suppose consumers and investors suddenly become more pessimistic about the future and therefore decide to reduce their consumption and investment spending. How will a market economy adjust to this increase in pessimism?
2. “If the general level of prices is higher than business decision makers anticipated when they entered into long-term contracts for raw materials and other resources, profit margins will be abnormally low and the economy will fall into a recession.” Is this statement true?

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**Questions for Thought:**

3. Which of the following would be most likely to throw the U.S. economy into a recession?

- a. A reduction in transaction costs as the result of the growth and development of the Internet.
- b. An unanticipated reduction in the world price of oil.
- c. An unanticipated reduction in *AD* as the result of a sharp decline in consumer confidence.

4. During 2006 there was a substantial increase in stock prices and the world price of oil. Within the framework of the *AD-AS model*, how would these two changes influence the U.S. economy? Explain the expected impact on output and the price level.

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**Questions for Thought:**

5. When actual output is less than the economy's full employment level of output, how will real resource prices and real interest rates adjust?

6. Construct the *AD*, *SRAS*, and *LRAS* curves for an economy experiencing:

- (a) full employment equilibrium,
- (b) an economic boom, and,
- (c) a recession.

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**The Great Depression and Keynesian Economics**

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### The Great Depression and Keynesian Economics

- The huge decline in output, prolonged unemployment, and lengthy duration of the Great Depression during the 1930s provided the foundation for Keynesian economics.
- Keynesian economists did not believe that falling real interest rates and lower real resource prices would direct the economy back to full employment.

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### Keynesian Equilibrium

- The English economist John Maynard Keynes developed a theory that explained why depressed conditions like those of the 1930s would persist.
  - In the Keynesian view, equilibrium occurs when total spending equals current output. When this is the case, producers have no reason to either expand or contract output.
  - If total spending (demand) is deficient, depressed conditions and high levels of unemployment will persist.
  - This is precisely what Keynes believed happened during the 1930s.

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### Keynesian Equilibrium

- **Aggregate demand** is key to the Keynesian macroeconomic model.
  - Keynes believed that weak **aggregate demand** was the cause of the Great Depression.
- Keynes argued that even a minor disturbance would be amplified into a major disruption because of the **expenditure multiplier**.

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### The Expenditure Multiplier

- The **expenditure multiplier**:  
The view that an independent change in expenditures (such as investment) leads to an even larger change in aggregate output.
- The multiplier principle builds on the point that one individual's spending becomes the income of another.
- Income recipients will spend a portion of their additional earnings on consumption. In turn, their consumption expenditures will generate additional income for others who also spend a portion of it.
- Thus, growth in spending can expand output by a multiple of the original increase.

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### The Multiplier Principle

Expenditure stage	Additional income (dollars)	Additional consumption (dollars)	Marginal propensity to consume
Round 1	1,000,000	750,000	3/4
Round 2	750,000	562,500	3/4
Round 3	562,500	421,875	3/4
Round 4	421,875	316,406	3/4
Round 5	316,406	237,305	3/4
All others	949,219	711,914	3/4
<b>Total</b>	<b>4,000,000</b>	<b>3,000,000</b>	<b>3/4</b>

For simplicity (here) it is assumed that all additions to income are either spent domestically or saved.

- The **multiplier** concept is fundamentally based upon the proportion of additional income that households choose to spend on consumption: the **marginal propensity to consume** (here assumed to be 75% = 3/4).
- Here, a \$1,000,000 injection is spent, received as payment, saved and spent, received as payment, saved and spent ... etc. ... until ...effectively, \$4 million is spent in the economy.

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### The Multiplier

- The term multiplier is also used to indicate the number by which the initial change in spending is multiplied to obtain the total increase in output.
  - In the previous example, a \$1 million initial increase in spending expanded output by a total of \$4 million. Thus the multiplier was 4.
  - The size of the multiplier increases with the **marginal propensity to consume (MPC)**.
  - Specifically the relationship between the MPC and the multiplier follows this equation:

$$M = \frac{1}{1 - MPC}$$

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### The Real-World and the Multiplier

- In evaluating the importance of the multiplier, one should remember:
  - an increase in government spending will require either higher taxes or additional government borrowing
    - this will often generate secondary effects, reducing spending in other areas
  - it takes time for the multiplier to work
  - the *multiplier effect* implies that the additional spending brings idle resources into production without price changes -- this is unlikely to be the case during normal times
- During normal times, the demand stimulus effect of additional spending is substantially weaker than the multiplier suggests.

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### The Evolution to the Modern View of Economic Instability

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### The Modern View of Keynesian Analysis

- While the Keynesian view of macro instability dominated during 1950-1980, this is no longer the case. Three major factors altered thinking about the Keynesian view:
  - Analysis of the 1930s indicates that perverse policy, particularly a sharp contraction in the supply of money, played a central role in the depth and length of the Great Depression.
  - The Keynesian view could not explain the simultaneous occurrence of high inflation and high unemployment during the 1970s.
  - The relative stability of recent decades indicates that a market economy is more stable than the Keynesian model implies.

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### The Modern View of Economic Instability

- Most modern economists believe that the stability of a market economy is much less fragile than was perceived in the aftermath of the Great Depression.
- The large consumption component of *Aggregate Demand (AD)* is relatively stable over the business cycle.
- If not short-circuited by perverse policy, resource price and interest rate adjustments will keep a modern economy on track.

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### Questions for Thought:

1. What is the multiplier principle? Does the multiplier principle make it more or less difficult to stabilize the economy? Explain.
2. Why did John Maynard Keynes think the high level of unemployment persisted during the Great Depression? What did he think needed to be done to avoid the destructive impact of circumstances like those of the 1930s?
3. How did the Great Depression alter thinking of economists about economic instability? How has the experience of the last several decades altered thinking about instability?

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## Addendum to Chapter 10

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## The Keynesian Model of Spending and Output

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## The Keynesian Aggregate Expenditure (AE) Model

- All models make simplifying assumptions.
- Within the framework of the Aggregate Expenditure (AE) model:
  - There is a specific full-employment level of output.
  - Wages and prices are completely inflexible until full-employment is reached.
  - Once full employment is reached, increases in demand lead only to higher prices.

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## The Keynesian Aggregate Expenditure (AE) Model

- In the *Keynesian AE model*:
  - as income expands, consumption increases, but by a lesser amount than the increase in income,
  - both planned investment and government expenditures are independent of income, and,
  - planned net exports decline as income increases.

Aggregate expenditures	=	Planned consumption	+	Planned investment	+	Planned government expenditures	+	Planned net exports
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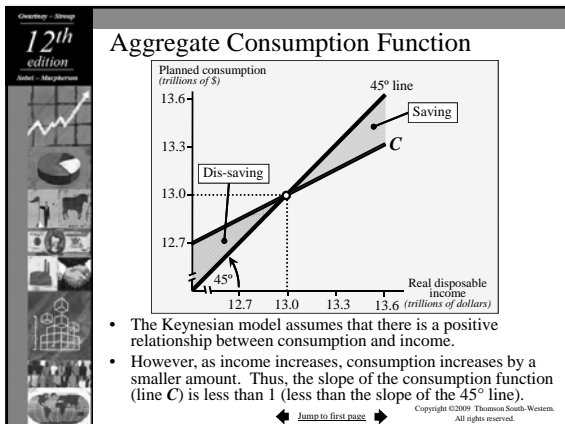
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**Income and Net Exports**

Total output (real GDP in trillions)	Planned exports (trillions)	Planned imports (trillions)	Planned net exports (trillions)
\$12.4	\$1.2	\$1.00	\$0.20
12.7	1.2	1.05	0.15
13.0	1.2	1.10	0.10
13.3	1.2	1.15	0.05
13.6	1.2	1.20	0.00

- Because exports are determined by income abroad, they are constant at \$1.2 trillion.
- Imports increase as domestic income expands.
- Thus, planned net exports fall as domestic income increases.

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**Keynesian Equilibrium**

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### Keynesian Equilibrium

- According to the Keynesian viewpoint, equilibrium occurs when:  
$$\text{Planned aggregate expenditures} = \text{Current output}$$
- When this is the case:
  - businesses are able to sell the total amount of goods & services that they produce, and,
  - there are no unexpected changes in inventories, so,
  - producers have no reason to either expand or contract their output during the next period.

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### Keynesian Equilibrium

- When  $\text{Total aggregate expenditures} < \text{Current output}$   
firms accumulate unplanned additions to inventories that will cause them to cut back on future output and employment.
- When  $\text{Total aggregate expenditures} > \text{Current output}$   
inventories fall and businesses respond with an expansion in output in an effort to restore inventories to their normal levels.

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### Keynesian Equilibrium

- Keynesian equilibrium can occur at less than the full employment output level.
  - When it does, the high rate of unemployment will persist into the future.
- **Aggregate demand** is key to the Keynesian macroeconomic model.
  - Keynes believed that weak **aggregate demand** was the cause of the Great Depression.

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**An Example of Keynesian Equilibrium**

Total Output (real GDP)	Planned aggregate expenditures	Planned consumption	Planned investment plus government expenditures	Planned net exports	Tendency of output
\$ 12.4	12.70	\$9.1	\$3.4	\$0.20	Expand
12.7	12.85	9.3	3.4	0.15	Expand
13.0	13.00	9.5	3.4	0.10	Equilibrium
13.3	13.15	9.7	3.4	0.05	Contract
13.6	13.30	9.9	3.4	0.00	Contract

**Recall:** Planned Aggregate Expenditures = Planned Consumption plus Planned Investment plus Planned Government Expenditures plus Planned Net Exports.

- In the Keynesian system, when **total output** is less than **planned aggregate expenditures**, purchases exceed output and inventories decline. Firms **expand** their output to rebuild their inventories to regular levels.
- When **output** is more than **planned aggregate expenditures**, output exceeds purchases, and inventories rise. Firms **reduce** output in order to reduce excessive inventories.
- When **planned aggregate expenditures** equal **total output**, there is Keynesian macroeconomic **equilibrium**.

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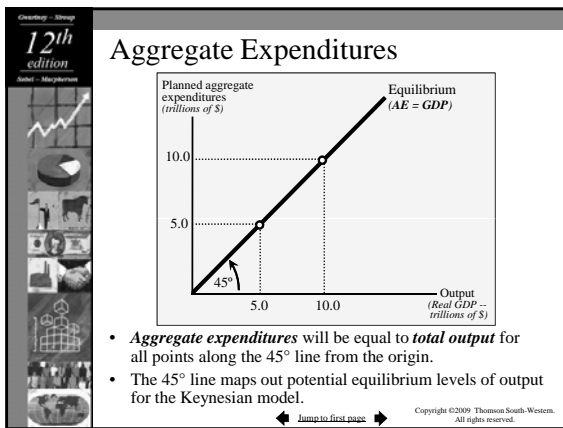
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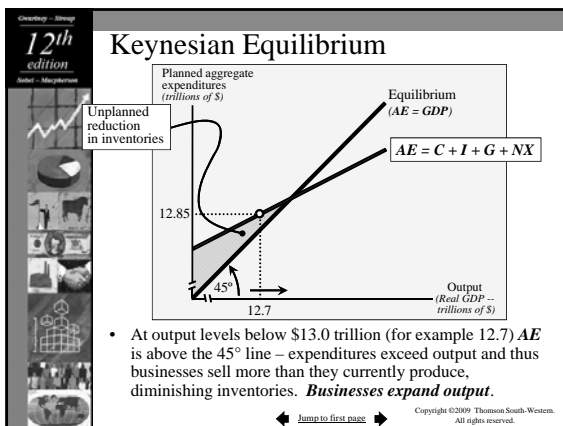
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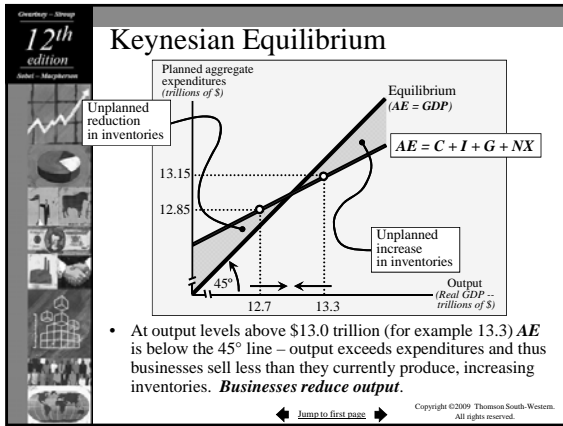
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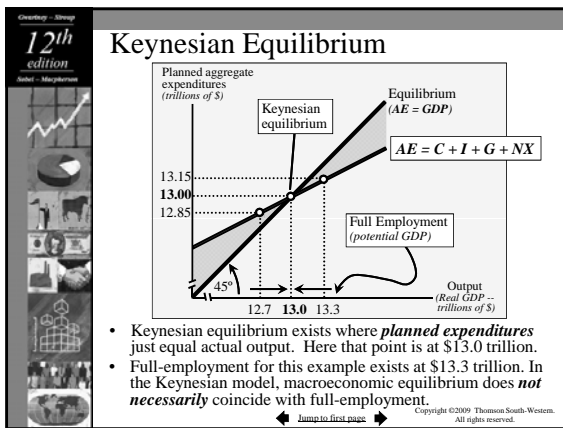
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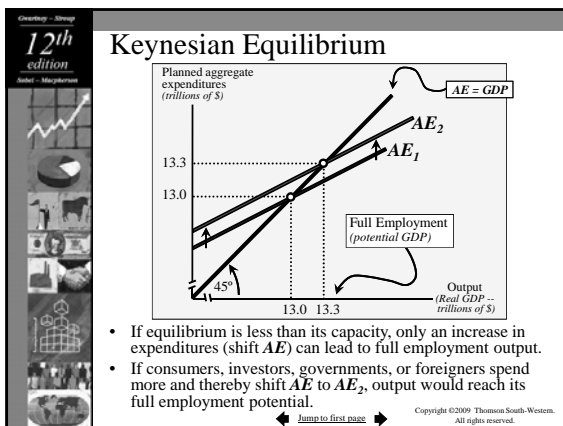
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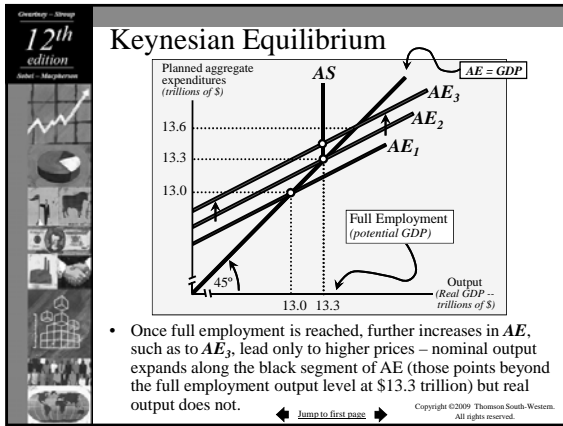
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**Major Implications**

- According to the Keynesian view, regulation of aggregate expenditures is the centerpiece of sound macro policy.
- If aggregate expenditures are large enough to achieve the economy's potential output, but not so large as to result in inflation, full employment and price stability can be maintained.

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**Questions for Thought:**

- According to the Keynesian view, which of the following is true?
  - Businesses will produce only the quantity of goods and services they believe consumers, investors, governments, and foreigners will plan to buy.
  - If planned aggregate expenditures are less than full employment output, output will fall short of its potential.
  - Equilibrium can only occur at the full employment rate of output.

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**Questions for Thought:**

2. Within the framework of the Keynesian model, if the planned expenditures on goods and services were less than current output,
  - a. business firms would reduce their output and lay off workers in the near future.
  - b. the wage rates of workers would decline and thereby help to direct the economy to full employment.
3. Which of the following is the primary source of changes in output within the framework of the Keynesian model?
  - a. changes in aggregate expenditures
  - b. changes in interest rates
  - c. changes in wage rates

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**End  
Chapter 10**

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