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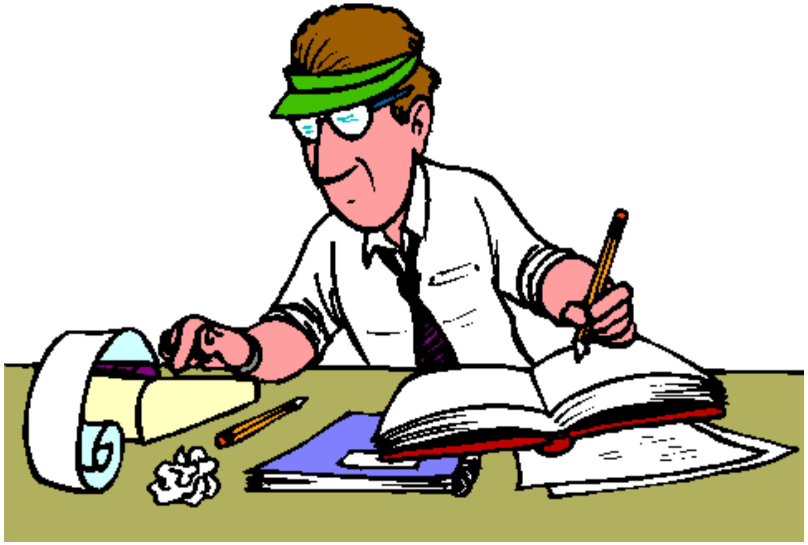
# 9



# The Aggregate Expenditures Model…AKA – *Keynesian Economics*

O 9.1

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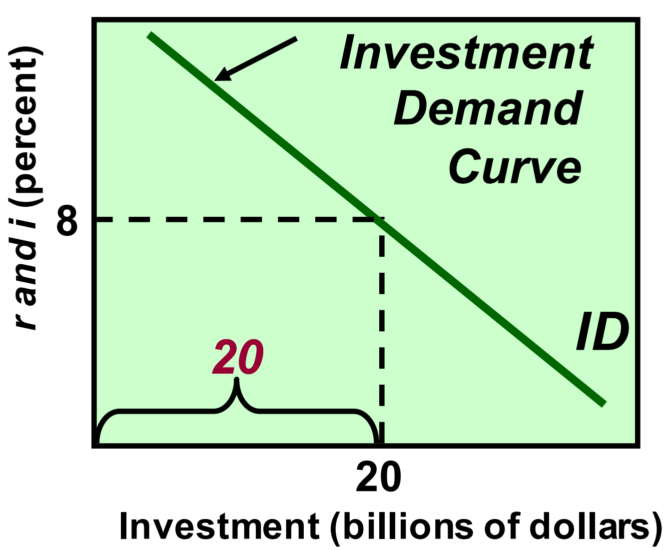
# Chapter Objectives

- Economists Combine Consumption and Investment to Depict an Aggregate Expenditures Schedule for a Private Closed Economy
- Three Characteristics of the Equilibrium Level of Real GDP in a Private Closed Economy
  - AE = Output
  - Saving = Investment
  - No Unplanned Changes in Inventories
- How Changes in Equilibrium Real GDP Occur and Relate to Multiplier
- Integrate Government and Foreign Sectors into AE
- Recessionary and Expansionary Expenditure Gaps

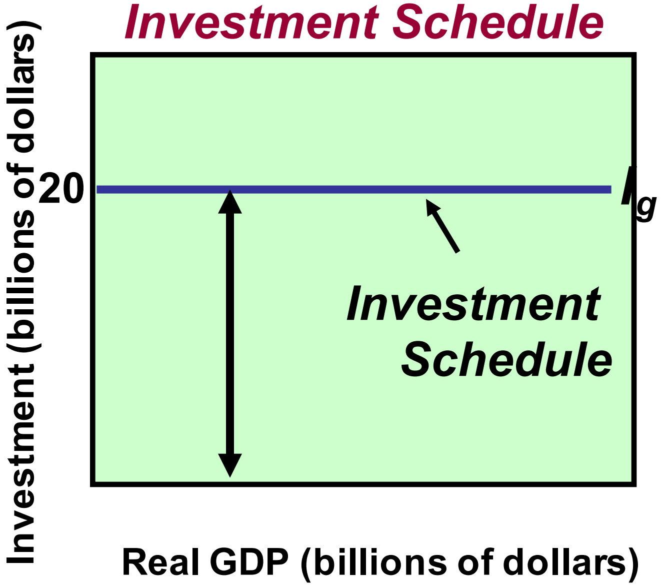
# Consumption and Investment

- **Simplifications**
  - **<u>Private Closed Economy</u>** – no trade (X), no gov (G), real GDP=DI, inside the PPC (can increase production with available resources)
  - **<u>Planned Investment</u>** – represents investment plans of businesses (like the consumption function for individuals)
  - **<u>Investment Schedule</u>** – shows investment at each level of GDP

*Investment Demand Curve*




*Investment Schedule*



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# Consumption and Investment

- **Real Domestic Output – firms will produce the exact level of output that they can expect to receive as income from selling that output.**
- **Aggregate Expenditures (private, closed economy) = consumption *(C)* + investment *(I)***
- **Aggregate Expenditures Schedule = the amount that will be spent at each possible level of output or income *(C+I)*.**

W 9.1

# Consumption and Investment

- **Equilibrium GDP** – output level where production creates the exact level of total spending to purchase all the output.
  - **Equilibrium GDP**: $C + I_g = GDP$ (DI)
  - Production and spending rates are in balance
  - Inventories are not increasing (no surplus) or decreasing (no shortage)

- **Disequilibrium** – output or production levels do not match spending levels.
  - If GDP < spending, inventories ↓, businesses will increase production, employment ↑, income↑
  - If GDP > spending, inventories ↑, businesses will reduce production, employment ↓, income ↓

# Consumption and Investment

| | (1) Employment | (2) Real Domestic Output (and Income) (GDP=DI) | (3) Consumption (C) | (4) Saving (S) (1-2) | (5) Investment ($I_g$) | (6) Aggregate Expenditures ($C+I_g$) | (7) Unplanned Changes in Inventories (+ or -) | (8) Tendency of Employment Output and Income |
|---|---|---|---|---|---|---|---|---|
| | | | | *…in Billions of Dollars* | | | | |
| (1) | 40 | $370 | $375 | $-5 | 20 | $395 | $-25 | Increase |
| (2) | 45 | 390 | 390 | 0 | 20 | 410 | -20 | Increase |
| (3) | 50 | 410 | 405 | 5 | 20 | 425 | -15 | Increase |
| (4) | 55 | 430 | 420 | 10 | 20 | 440 | -10 | Increase |
| (5) | 60 | 450 | 435 | 15 | 20 | 455 | -5 | Increase |
| *(6)* | *65* | *470* | *450* | *20* | *20* | *470* | *0* | *Equilibrium* |
| (7) | 70 | 490 | 465 | 25 | 20 | 485 | +5 | Decrease |
| (8) | 75 | 510 | 480 | 30 | 20 | 500 | +10 | Decrease |
| (9) | 80 | 530 | 495 | 35 | 20 | 515 | +15 | Decrease |
| (10) | 85 | 550 | 510 | 40 | 20 | 530 | +20 | Decrease |

***Graphically…***

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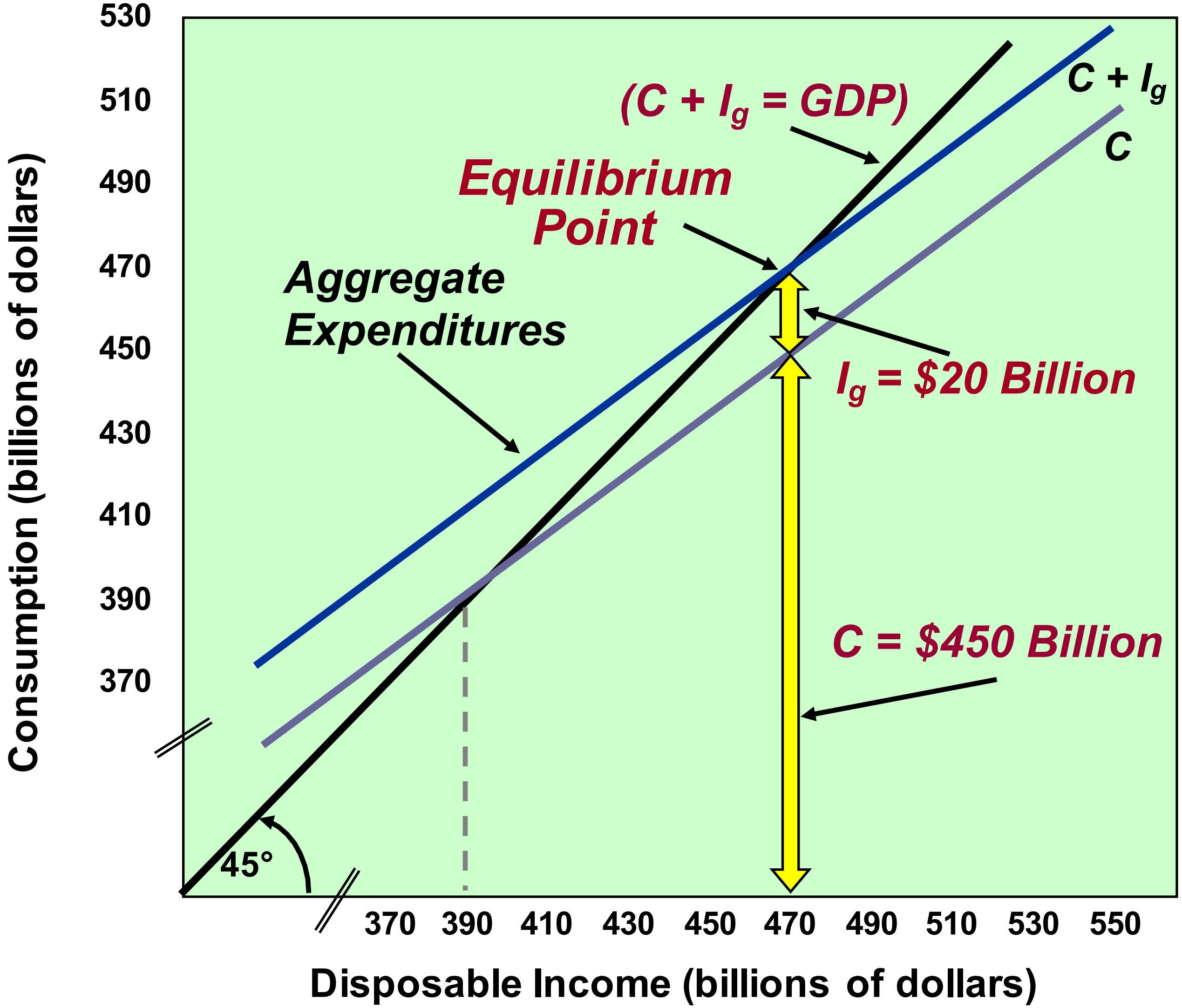
# Consumption and Investment
## *Equilibrium GDP*

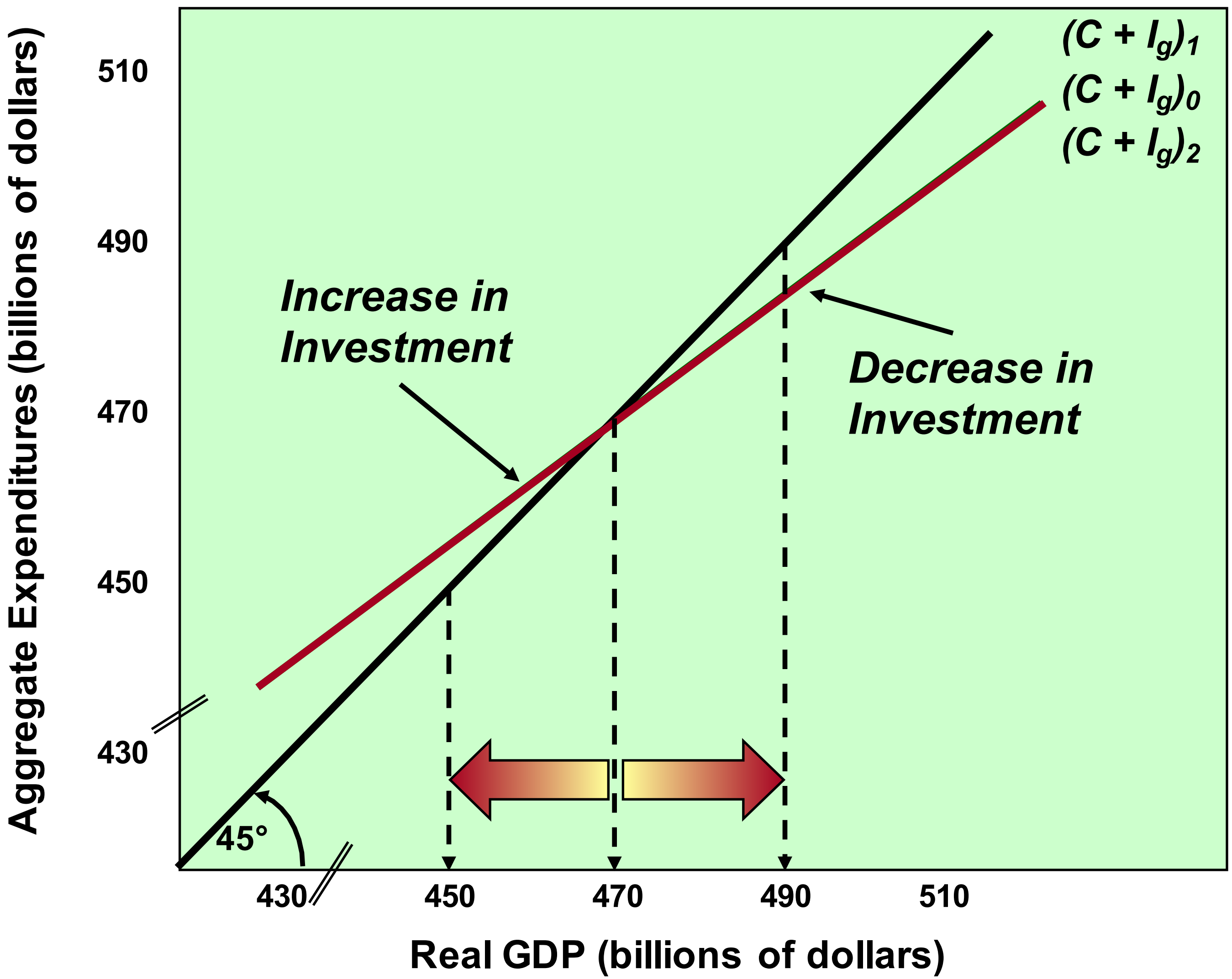



G 9.1

# Equilibrium GDP

- Other Features…
- Saving Equals Planned Investment
  - Leakage (savings) – a withdrawal of spending from the cycle
  - Injection (investment) – spending added to the cycle
    - S<I, below equilibrium GDP
    - S>I, above equilibrium GDP
- No Unplanned Changes in Inventories – increases in inventories are really investment, decreases in inventories are really disinvestment.

# Changes in Equilibrium GDP
## …and the Multiplier



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# International Trade

- **Net Exports and Aggregate Expenditures** – a private open economy must consider net exports (X)
  - AE = C+I+X
- **Net Exports Schedule** – lists the amount of net exports that will occur at each level of GDP. (X is independent of GDP)

# International Trade

- **Net Exports and Equilibrium GDP**
  - Positive Net Exports (increase equilibrium GDP)
  - Negative Net Exports (decrease equilibrium GDP)

- **International Economic Linkages**
  - Prosperity Abroad ☺(helps us sell our exports)
  - Tariffs ☺ ☹ (can be used by the US to limit imports or against the US to limit our exports)
  - Exchange Rates – weak dollar = ↑net Exports, ↑ real GDP, inflation?

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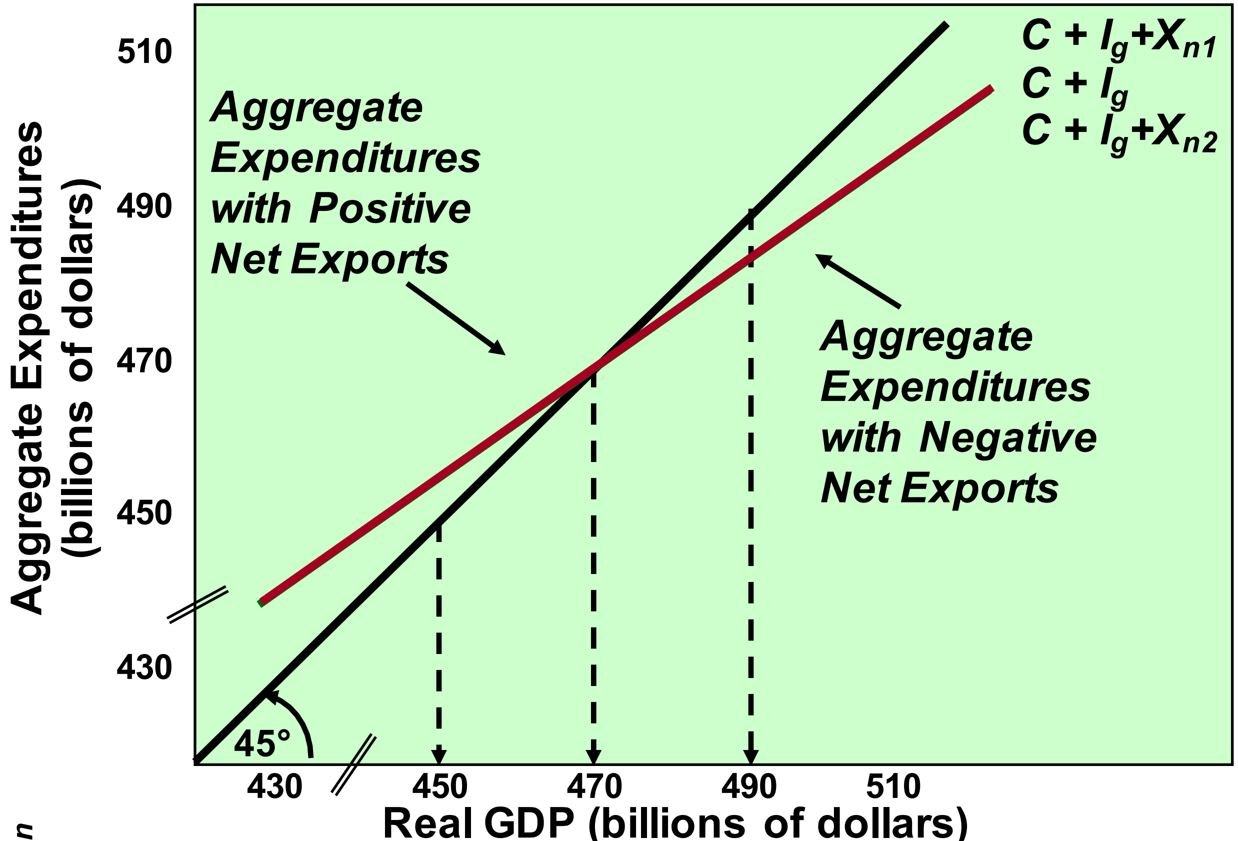
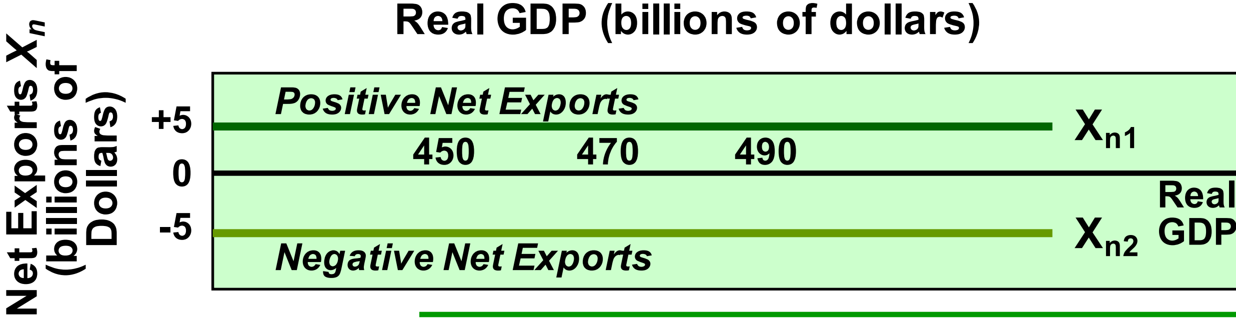
# International Trade

## *Net Exports and Equilibrium GDP*






Key Terms

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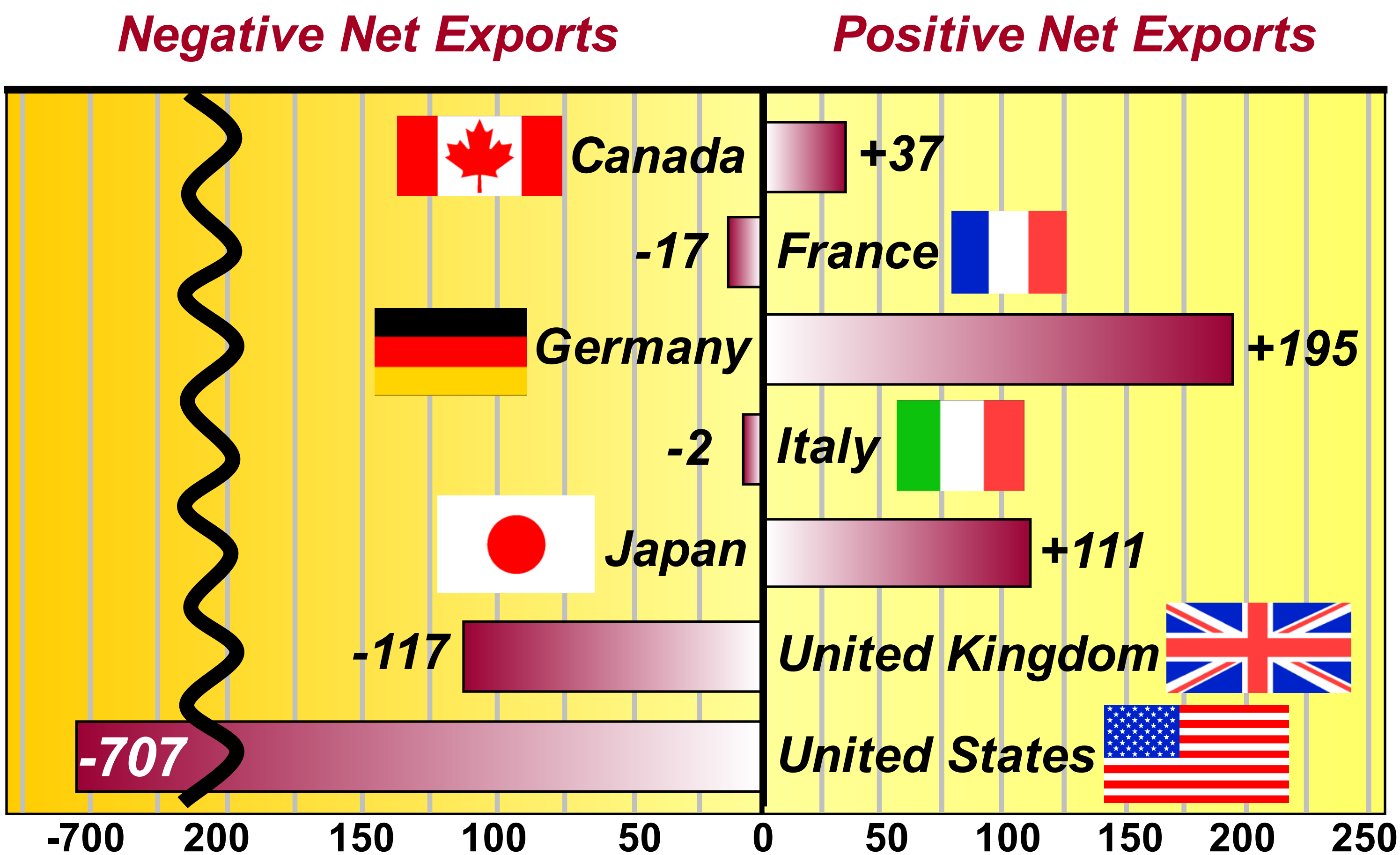
# International Trade

## GLOBAL PERSPECTIVE

### *Net Exports of Goods - Select Nations, 2004*




*Source: World Trade Organization*

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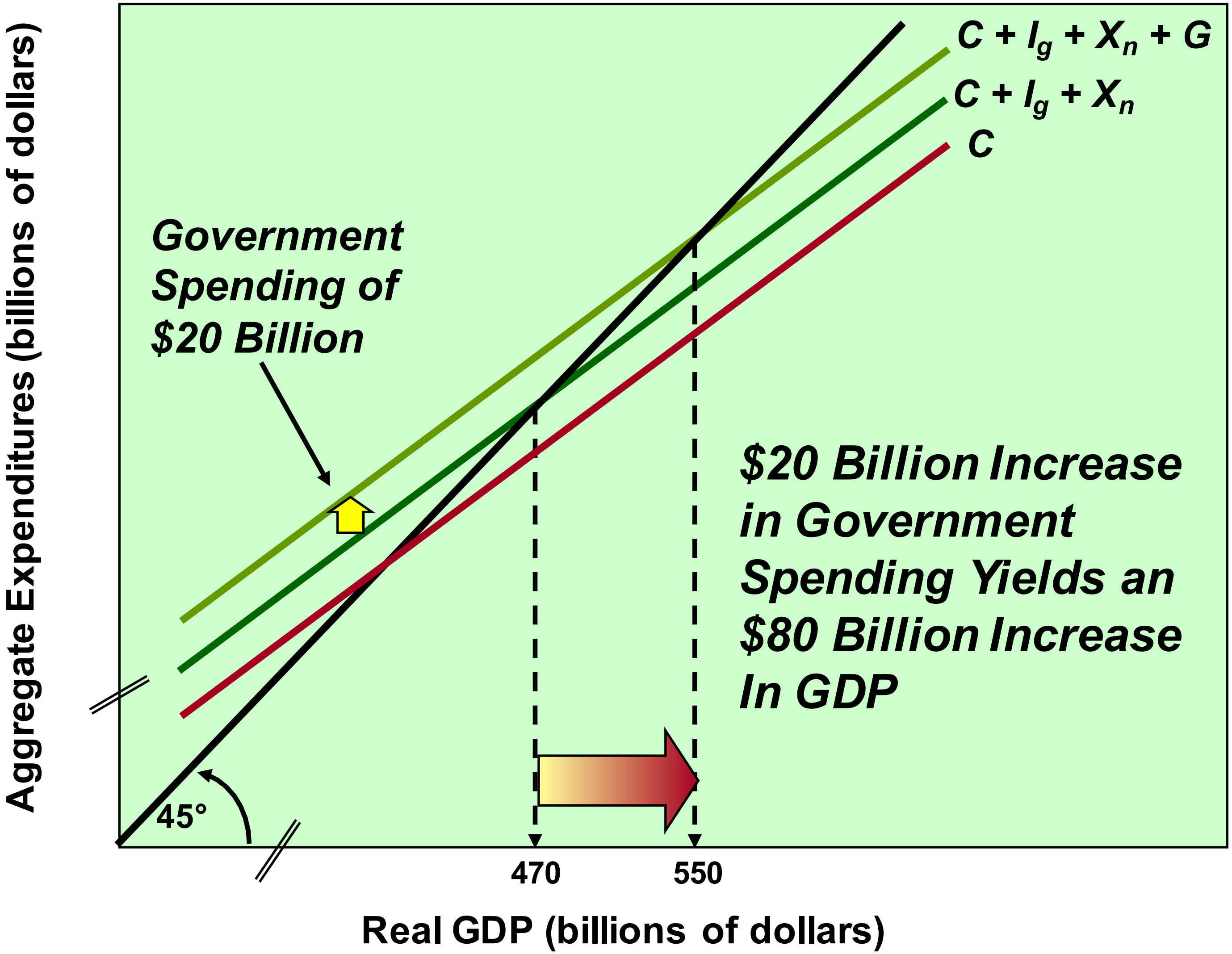
# Adding the Public Sector

## *Government Purchases and GDP*

| | (1) Level of Output and Income (GDP=DI) | (2) Consump-tion (C) | (3) Saving (S) | (4) Investment ($I_g$) | (5) Net Exports ($X_n$): Exports (X) | (5) Net Exports ($X_n$): Imports (M) | (6) Government (G) | (7) Aggregate Expenditures ($C+I_g+X_n+G$) (2)+(4)+(5)+(6) |
|---|---|---|---|---|---|---|---|---|
| | *…in Billions of Dollars* | | | | | | | |
| (1) | $370 | $375 | $-5 | $20 | 10 | 10 | 20 | $415 |
| (2) | 390 | 390 | 0 | 20 | 10 | 10 | 20 | 430 |
| (3) | 410 | 405 | 5 | 20 | 10 | 10 | 20 | 445 |
| (4) | 430 | 420 | 10 | 20 | 10 | 10 | 20 | 460 |
| (5) | 450 | 435 | 15 | 20 | 10 | 10 | 20 | 475 |
| (6) | 470 | 450 | 20 | 20 | 10 | 10 | 20 | 490 |
| (7) | 490 | 465 | 25 | 20 | 10 | 10 | 20 | 505 |
| (8) | 510 | 480 | 30 | 20 | 10 | 10 | 20 | 520 |
| (9) | 530 | 495 | 35 | 20 | 10 | 10 | 20 | 535 |
| *(10)* | *550* | *510* | *40* | *20* | *10* | *10* | *20* | *550* |

# Adding the Public Sector

## *Government Spending and GDP*







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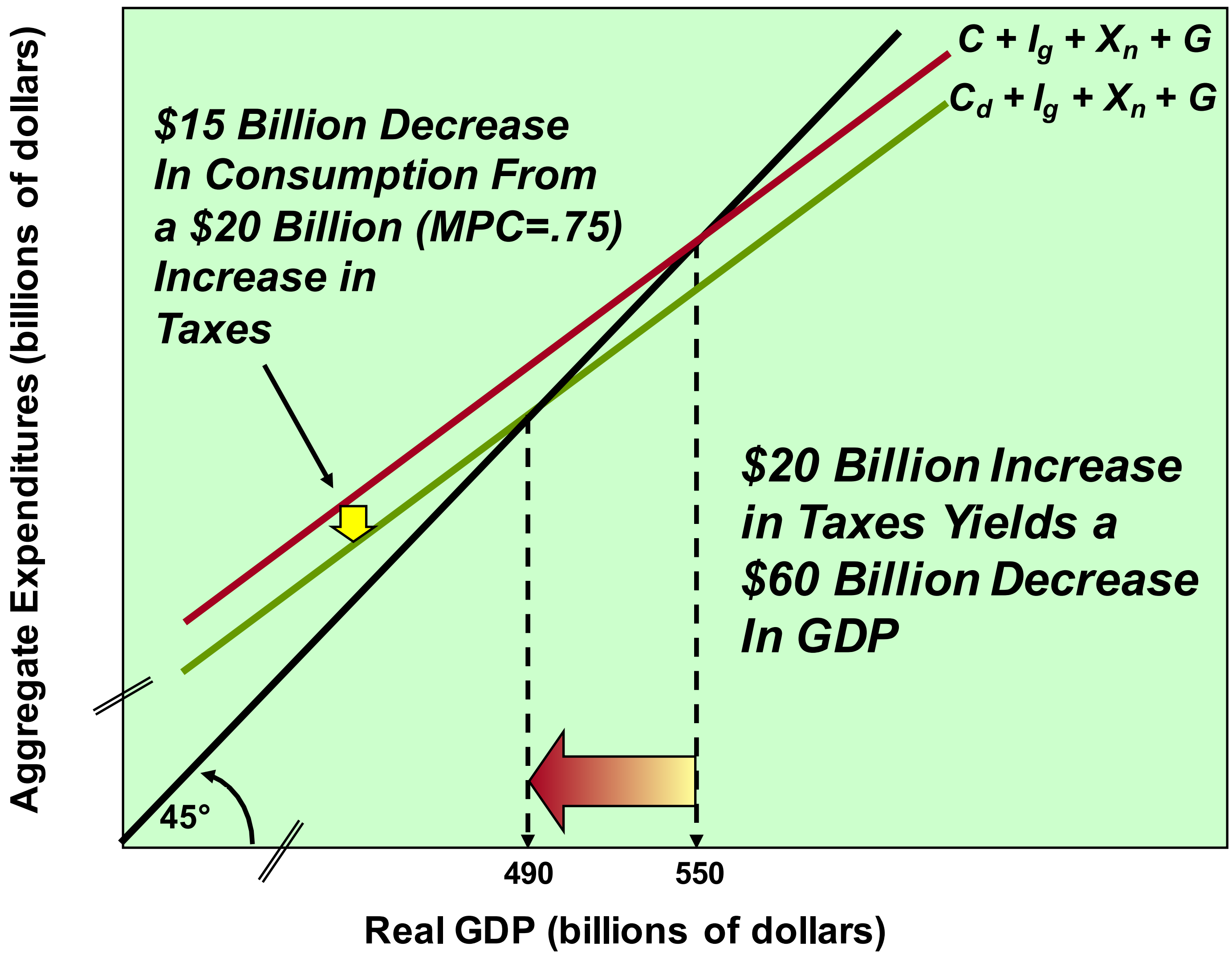
# Adding the Public Sector

## *Lump-Sum Tax Increase and GDP*



# Adding the Public Sector

$$C_d + I_g + X_n + G = GDP$$

W 9.2

- **Leakages** - (savings, imports, taxes) – a withdrawal of spending from the cycle
- **Injections** (investment, exports, gov spending) – spending added to the cycle
- ***At Equilibrium:***

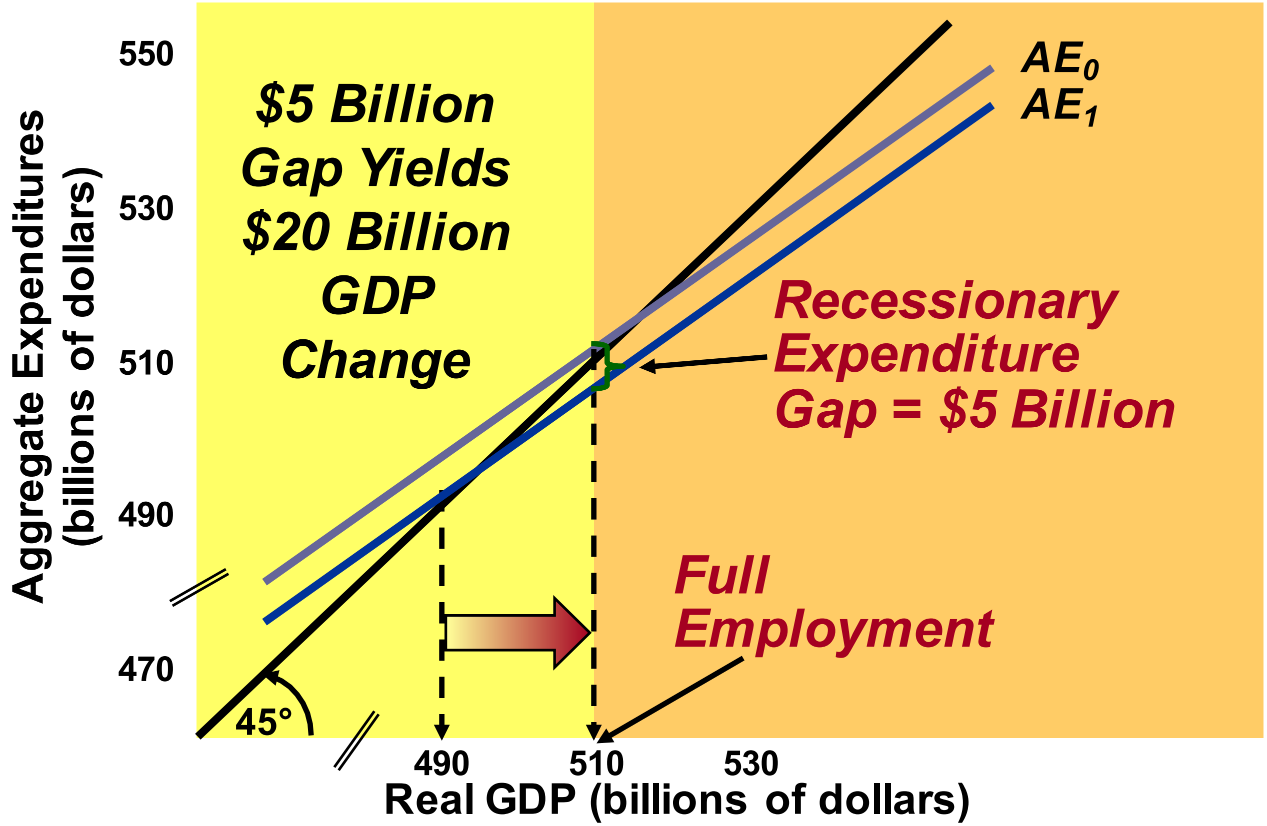
$$S_d + M + T = I_g + X + G$$

- S+M+T < I+X+G, below equilibrium GDP
- S+M+T >I+X+G, above equilibrium GDP

G 9.2

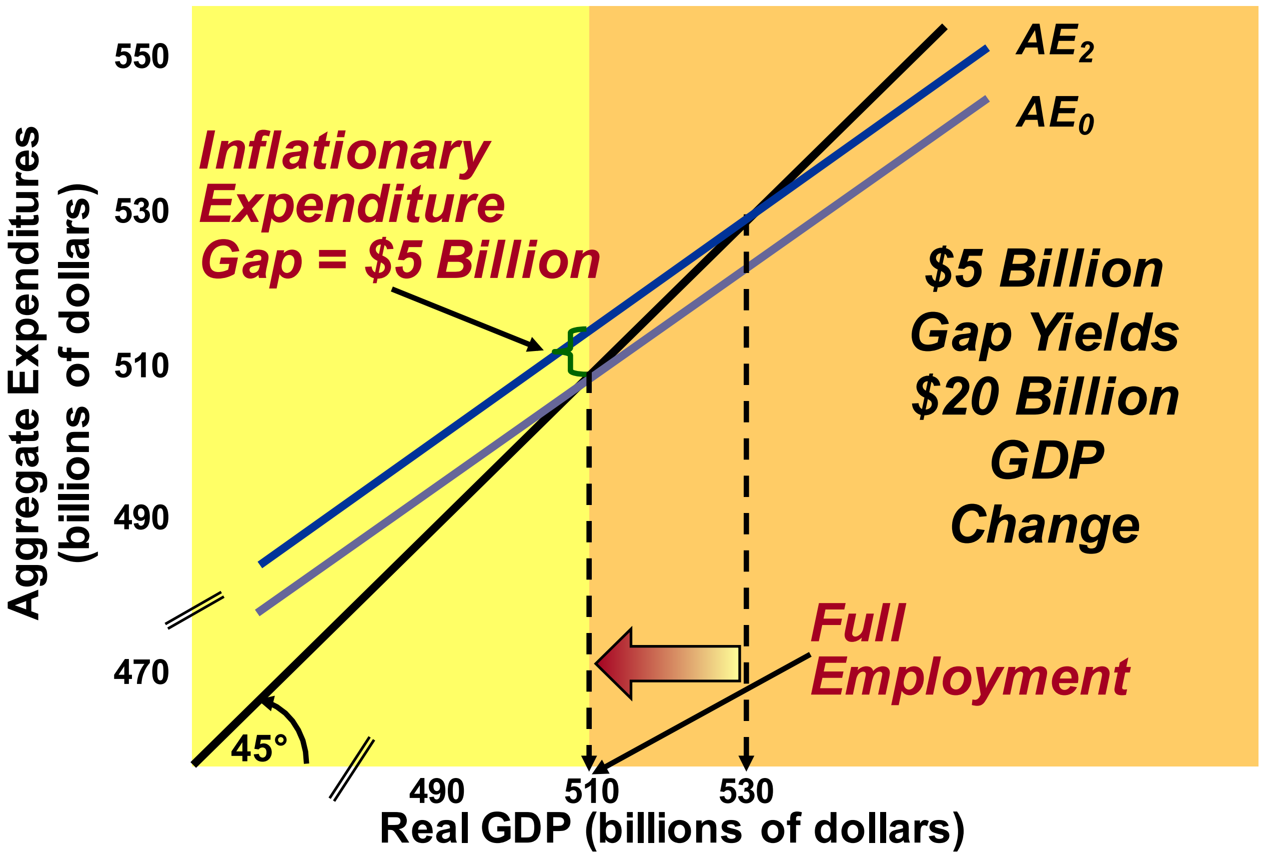
# Equilibrium Versus Full-Employment GDP

**<u>*Recessionary Expenditure Gap*</u>– the amount by which aggregate expenditures *(at full-employment)* fall short of GDP. *(vertical distance on graph)***



# Equilibrium Versus Full-Employment GDP

***Inflationary Expenditure Gap*** **– the amount by which aggregate expenditures *(at full-employment)* exceed GDP. *(vertical distance on graph)***



# Equilibrium Versus Full-Employment GDP

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- Application:
  - U.S. Recession of 2001
    - Inflationary Expenditure Gap
  - U.S. Inflation in the Late 1980s
  - Full-Employment Output with Large Negative Net Exports
    - Negative Net Exports

# Equilibrium Versus Full-Employment GDP

- Limitations of the Model
  - Does Not Show Price Level Changes
  - Ignores Premature Demand-Pull Inflation
  - Limits Real GDP to the Full-Employment Level of Output
  - Does Not Deal with Cost-Push Inflation
  - Does Not Allow for "Self-Correction"






Key Terms
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# Say’s Law - The Great Depression and Keynes

Last Word

- Classical School – Automatic Self-Adjustment to Full Employment – Mill, Ricardo
- Views Based Upon “Say’s Law” - J.B. Say (1767-1832) – Supply Creates its Own Demand
- Great Depression Caused Questions
- Keynes Answered in his General Theory of Employment, Interest, and Money
- Income and Saving Discrepancies
- Volatility in Investment Spending
- Cyclical Unemployment Can Occur
- Government Should Be Active in the Recovery Process

O 9.2

# Key Terms

- planned investment
- investment schedule
- aggregate expenditures schedule
- equilibrium GDP
- leakage
- injection
- unplanned changes in inventories
- net exports
- lump-sum tax
- recessionary-expenditure gap
- inflationary-expenditure gap

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# Next Chapter Preview…

## Aggregate Demand and Aggregate Supply

Chapter 10!