

Chapter 10

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Aggregate Demand and Aggregate Supply

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Chapter Objectives

- **Aggregate Demand and the Factors That Cause it to Change**
- **Aggregate Supply and the Factors That Cause it to Change**
- **How AD and AS Determine an Economy's Equilibrium Price Level and the Level of Real GDP**
- **How the AD-AS Model Explains Periods of Demand-Pull Inflation, Cost-Push Inflation, and Recession**

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AD – AS Model

- Aggregate Demand-Aggregate Supply Model (AD-AS Model, also called the classical model) – examines the relationship between inflation, recession, unemployment, and economic growth.
- Aggregate Demand – schedule or curve that shows the amount of real GDP that will be purchased at each possible price level.



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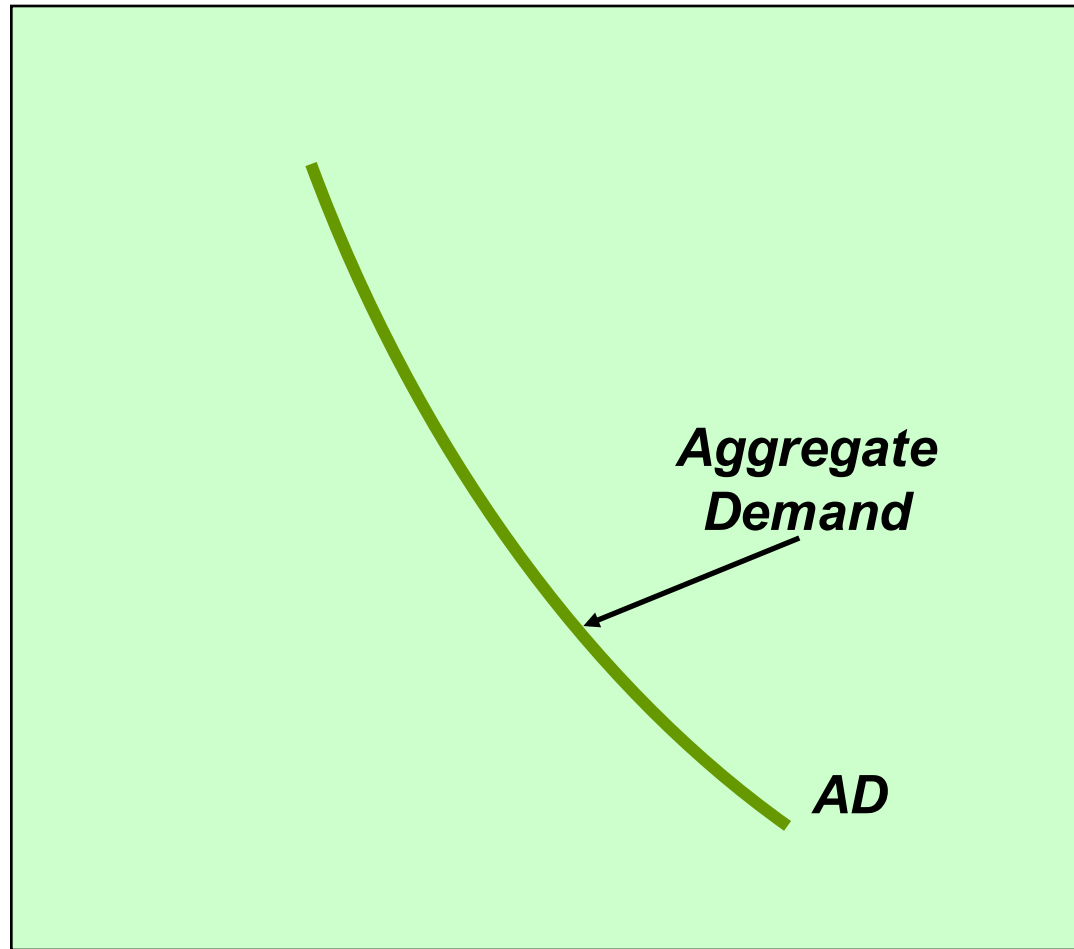
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Price Level



Real Domestic Output, GDP

[Click to Link to Appendix 10: Relationship of AD to the AE Model](#)

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AD – AS Model

- Why the Downward Slope? (not income or substitution effects)
 - Real-Balances Effect – at higher prices, inflation erodes the value of assets and people will buy less.
 - Interest-Rate Effect – when prices are high, demand for money \uparrow , interest rates \uparrow , people spend less
 - Foreign Purchases Effect – at high US prices, people buy more foreign goods, foreigners buy less US goods

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Changes/Shifts in Aggregate Demand (AD)

- Determinants of Aggregate Demand (C+I+G+X) and Multiplier Effect
- 1. Consumer Spending (C)
 - Consumer Wealth - if \uparrow , AD shifts right (wealth effect), if \downarrow AD shifts left.
 - Consumer Expectations – If expecting incomes \uparrow , AD shifts right, if income is expected to \downarrow , AD shifts left
 - Household Debt – if debt \uparrow , AD shifts right, if debt \downarrow , AD shifts left
 - Personal Taxes – If taxes \uparrow , AD shifts left, if taxes \downarrow , Ad shifts right

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Changes/Shifts in Aggregate Demand (AD)

2. Investment Spending (I)

- Real Interest Rates – if \uparrow , $Inv \downarrow$, AD shifts left
- Expected Returns -
 - Future Business Conditions - if positive, $Inv \uparrow$, AD shifts right
 - Technology – new tech, $Inv \uparrow$, AD shifts right
 - Degree of Excess Capacity – lots of unused capital, $Inv \downarrow$, AD shifts left
 - Business Taxes – if taxes \uparrow , $Inv \downarrow$, AD shifts left

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Changes in Aggregate Demand

3. Government Spending (G) – if $G \uparrow$, AD shifts right. If $G \downarrow$, AD shifts left.

4. Net Export Spending (X)

- **National Income Abroad** – If \uparrow , $X \uparrow$, AD shifts right. If \downarrow , $X \downarrow$, AD shifts left.
 - **Exchange Rates** – If $\$ \uparrow$, exports \downarrow , AD shifts left. If $\$ \downarrow$, exports \uparrow , AD shifts right.

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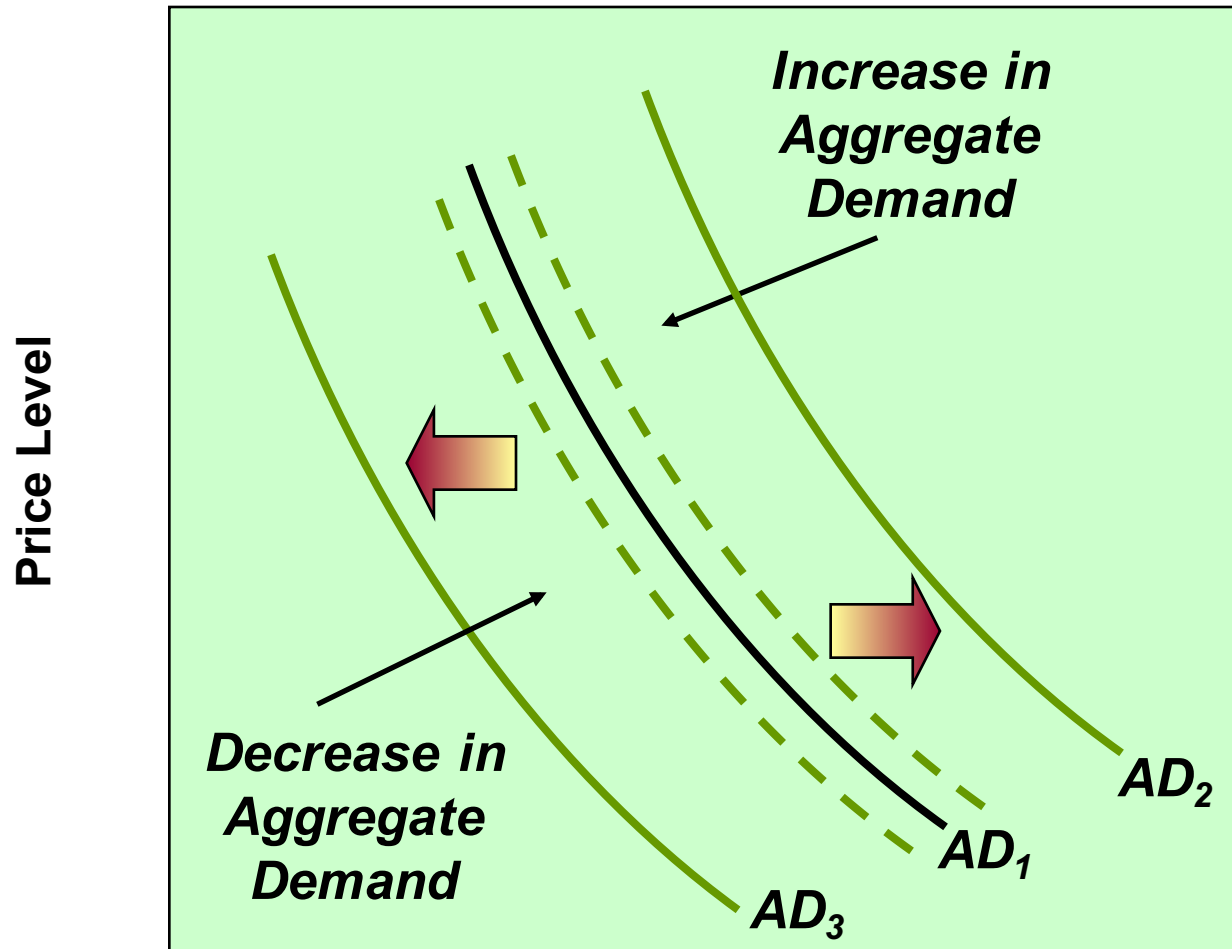
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Real Domestic Output, GDP

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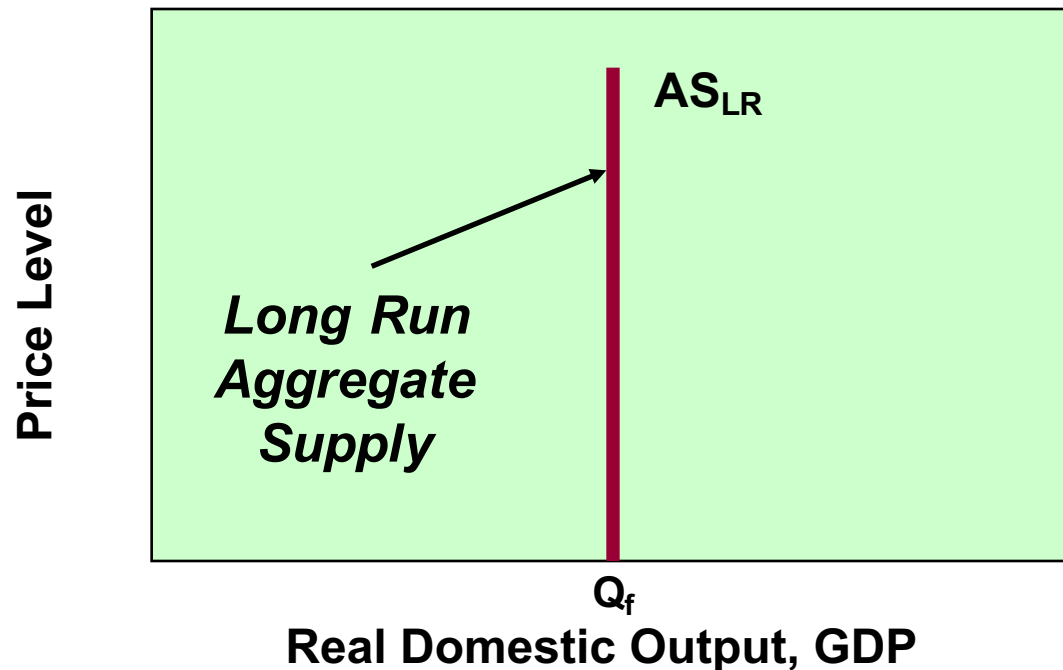
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Aggregate Supply

Aggregate Supply – a schedule or curve showing the level of real domestic output that firms will produce at each price level

Aggregate Supply in the Long Run – vertical because changes in wages/inputs = changes in price. No incentive to change output.



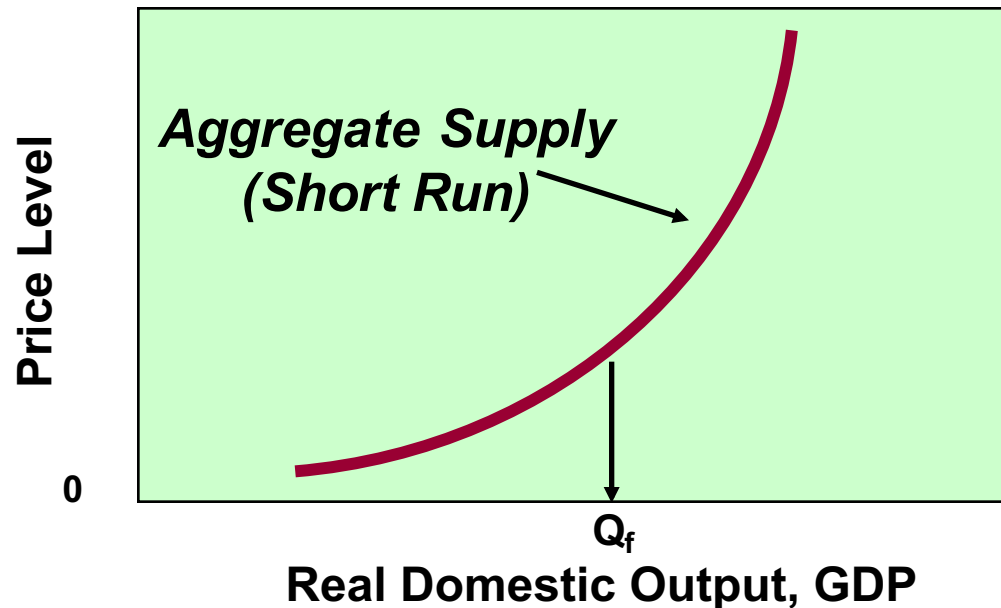
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Aggregate Supply

Aggregate Supply in the Short Run

- wages/input prices do not respond to price changes AKA “sticky prices”
- Positive relationship b/w prices and output

$$\text{Per-Unit Production Cost} = \frac{\text{Total Input Cost}}{\text{Units of Output}}$$



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Changes/Shifts in Aggregate Supply

• Determinants of Aggregate Supply

1. Input Prices *** (*per-unit cost* ↓, *AS* ↑)***

– Domestic Resource Prices – if wages/inputs ↑, *AS* ↓ (shift left). If wages/inputs ↓, *AS* ↑ (shift right)

– Prices of Imported Resources – if \$ ↑ (appreciates or is stronger), imports ↑. If \$ ↓ (depreciates or weaker), imports ↓.

– Market Power - change in level of control over an input price can shift *AS* (EX – If OPEC is strong they can raise the price of inputs, *AS* ↓, if inputs are cheaper, *AS* ↑)

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2. Productivity – relationship between real output and the resources used to produce that output.

- if productivity ↑, per-unit costs ↓, AS ↑ (shifts right).
- If productivity ↓, per-unit costs ↑, AS ↓ (shifts left).

Understanding Productivity

$$\text{Productivity} = \frac{\text{Total Output}}{\text{Total Inputs}}$$

$$\frac{\text{Total Output}}{\text{Total Inputs}} = \frac{10}{5} = 2$$



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Changes/Shifts in Aggregate Supply

3. Legal-Institutional Environment

– Business Taxes and Subsidies

- if taxes \uparrow , per-unit costs \uparrow , $AS\downarrow$ (shifts left)
- If subsidies \uparrow , per-unit costs \downarrow , $AS\uparrow$ (right)

– Government Regulation

- if \uparrow , per-unit costs \uparrow , $AS\downarrow$ (shifts left)
- If less gov regulation, per-unit costs \downarrow , $AS\uparrow$ (shifts right)

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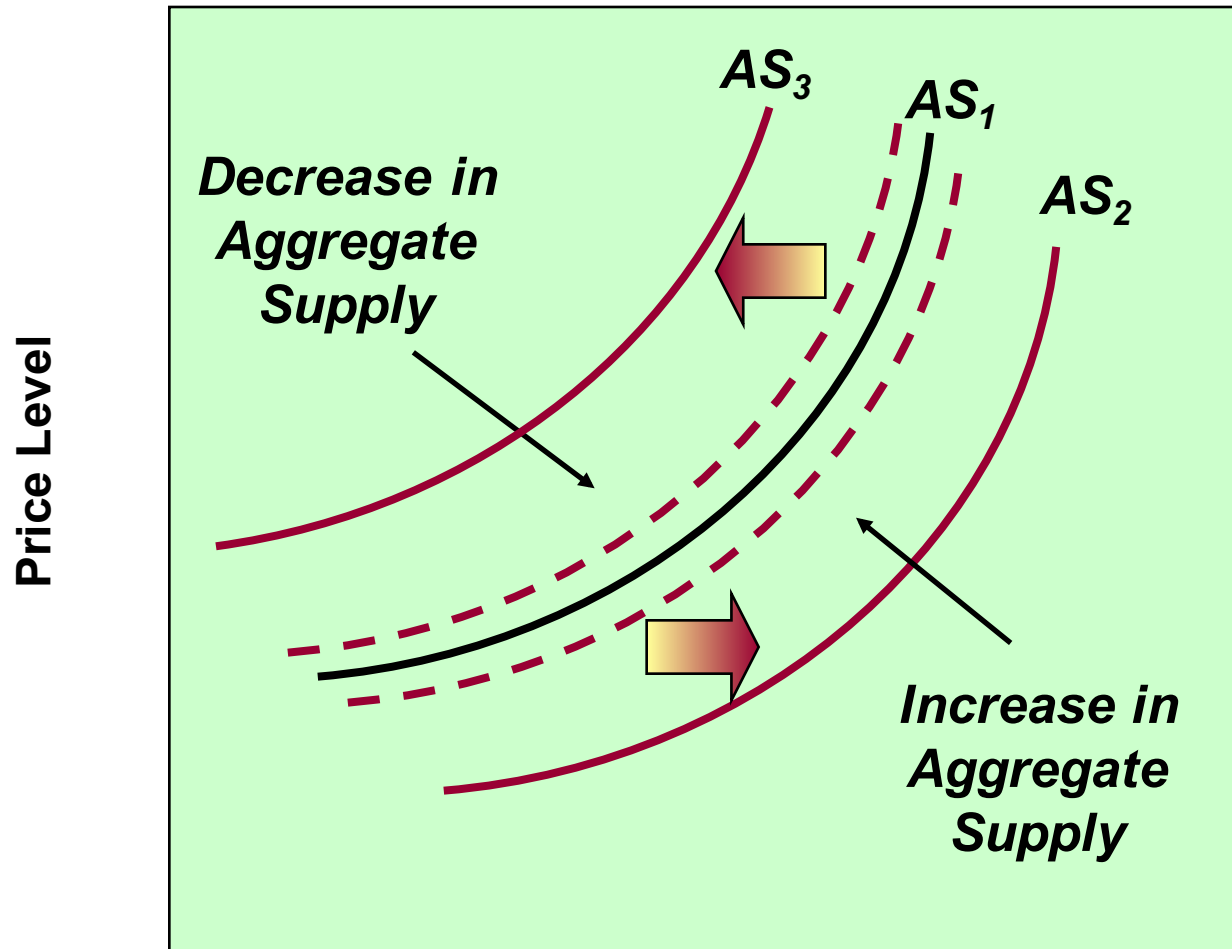
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Real Domestic Output, GDP

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Tabular View...

Real Output Demanded (Billions)	Price Level (Index Number)	Real Output Supplied (Billions)
\$506	108	\$513
508	104	512
510	100	510
512	96	507
514	92	502

Equilibrium Price Level and Equilibrium Price Level

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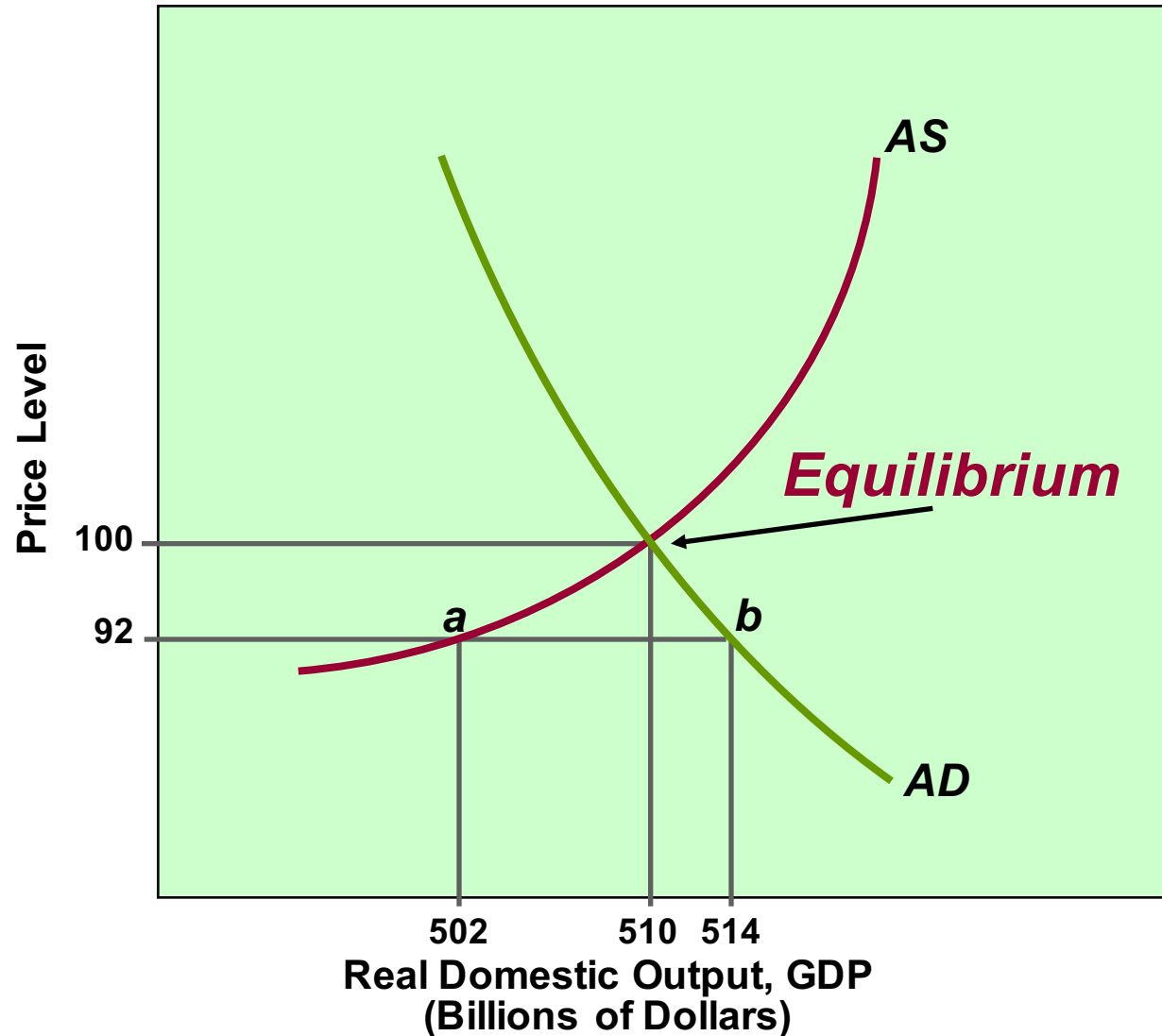
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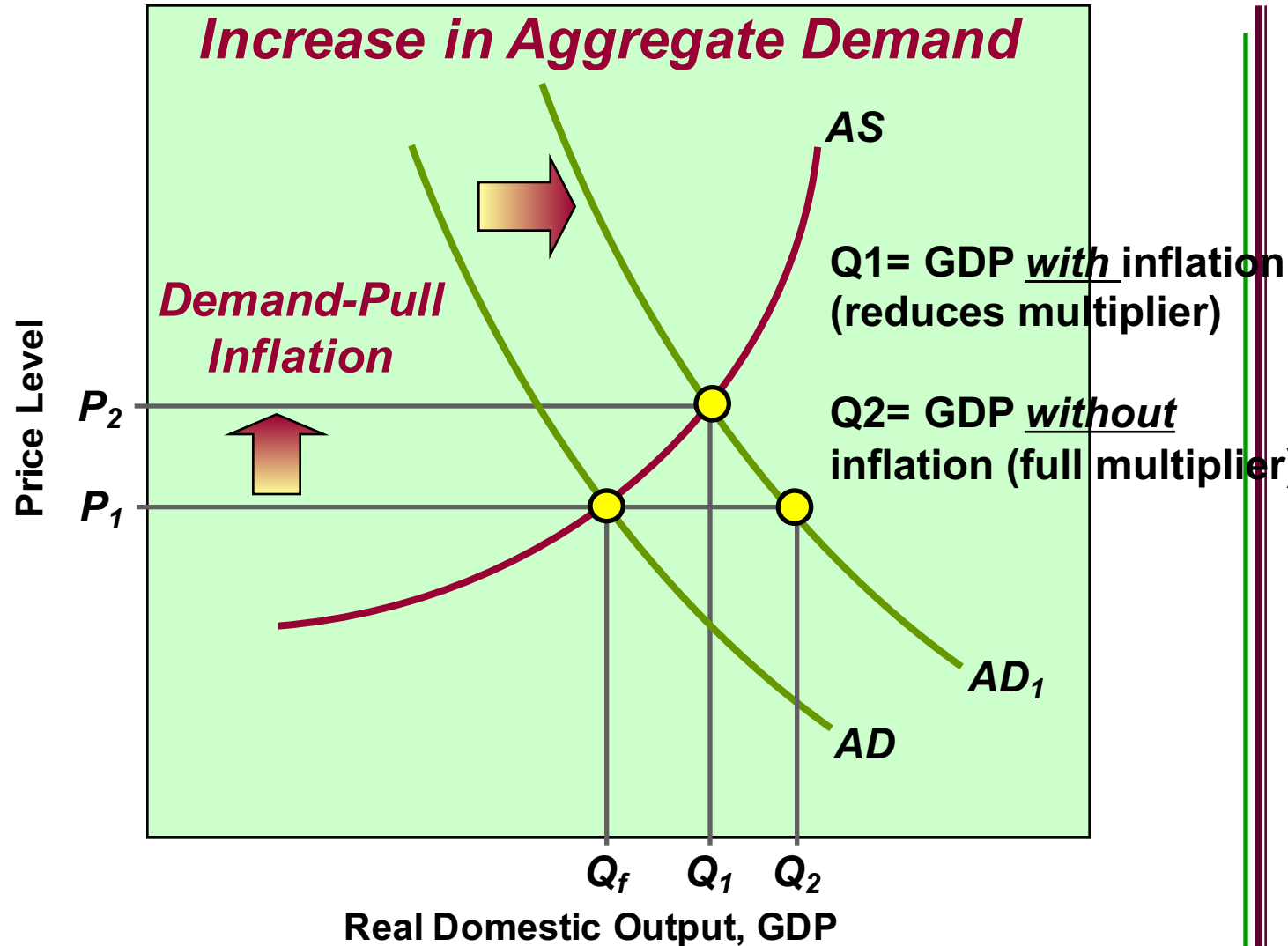
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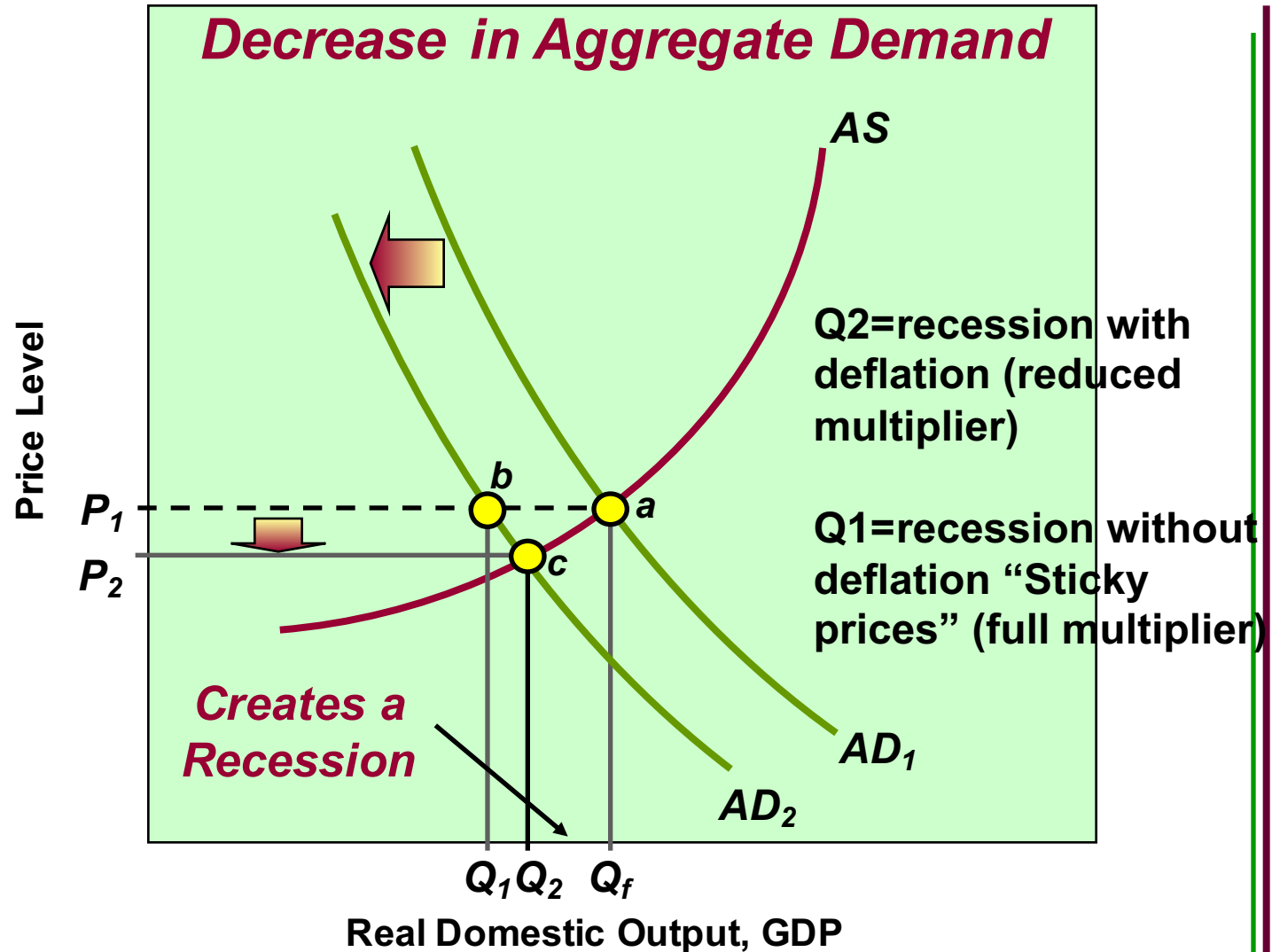
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- Recession and Cyclical Unemployment
 - occurs when real GDP is reduced due to a decrease in AD
- Deflation – a decline in the price level (rarely happens when AD decreases)
- Downward Price Inflexibility (“sticky prices”) Due to:
 - Fear of Price Wars – initial price cuts start a chain reaction
 - Menu Costs – the cost of actually changing prices
 - Wage Contracts – long-term contracts, union strength
 - Morale, Effort, and Productivity
 - Efficiency Wages – lower wages may reduce productivity
 - Minimum Wage – legal price floor preventing wages from being reduced

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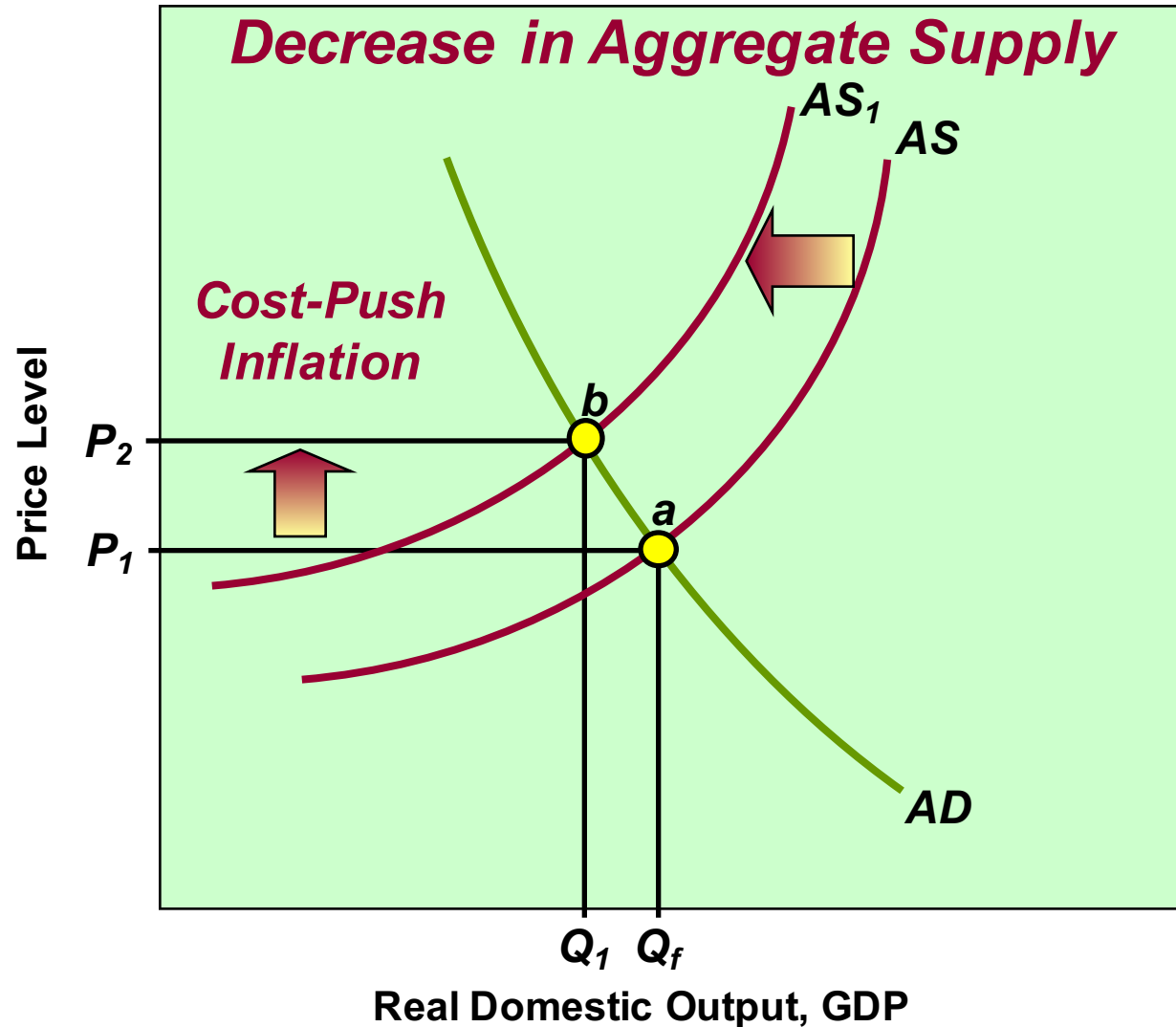
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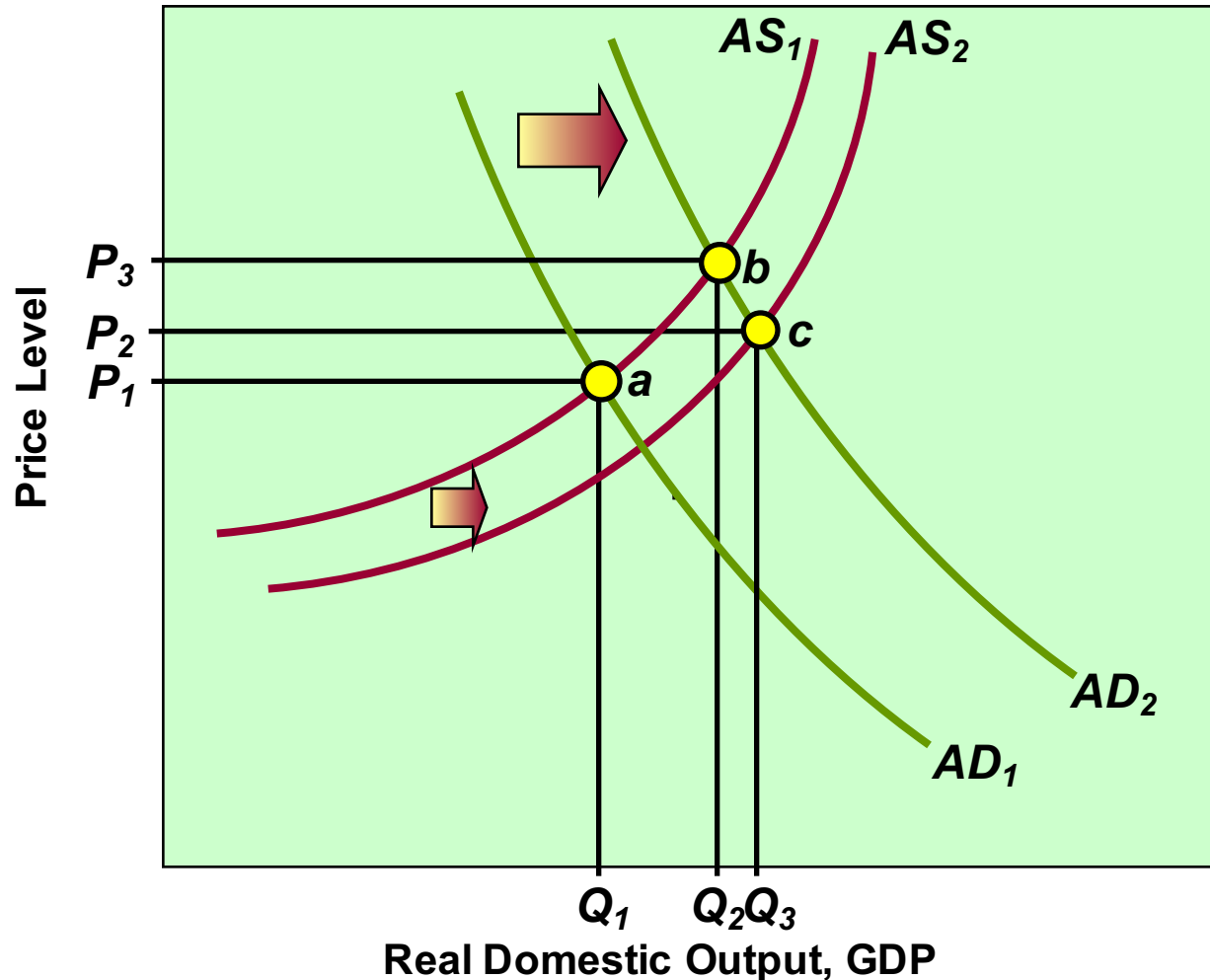
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Increases in Aggregate Supply – Full-Employment With Price-Level Stability



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Has the Impact of Oil Prices Diminished?



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Several Aggregate Supply Shocks

- Shifts in Aggregate Supply
- Significant Changes in Oil Prices Brought Rapid Cost-Push Inflation
- Rising Unemployment
- Recent Fears of Reoccurrence
- Core Inflation Rate Remaining Steady

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Has the Impact of Oil Prices Diminished?



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Lower Production Costs and High Productivity are Compensating for Oil Prices

- **Aggregate Supply Did Not Decline**
- **Productivity Impact:**
 - 14,000 Btus per \$1 of GDP in 1970
 - 7,000 Btus per \$1 of GDP in 2005
- **Result is 33% Less Sensitive to Oil Price Fluctuations**
- **Federal Reserve Vigilance in Managing Price Stability**

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Key Terms

- aggregate demand-
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(AD-AS) model
- aggregate demand
- real-balances effect
- interest-rate effect
- foreign purchases
effect
- determinants of
aggregate demand
- aggregate supply
- long-run aggregate
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- short-run aggregate
supply curve
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- equilibrium price
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- equilibrium real
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- menu costs
- efficiency wages

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Fiscal Policy, Deficits, and Debt

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Click to Link to Appendix 10: Relationship of AD to the AE Model

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The Relationship of the Aggregate Demand Curve to the Aggregate Expenditures Model

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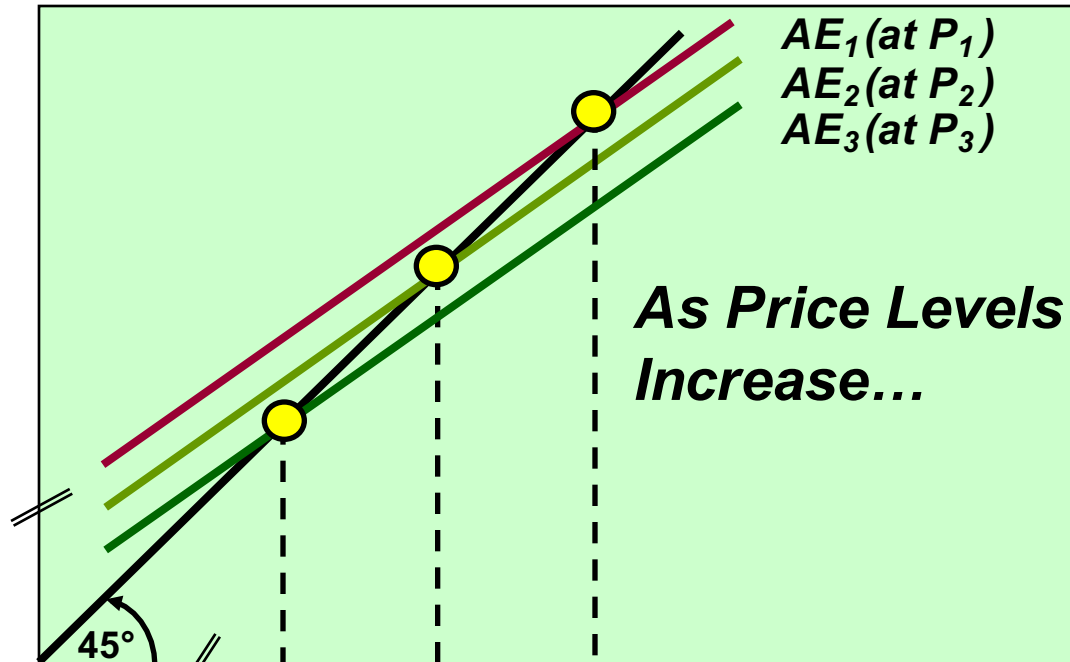
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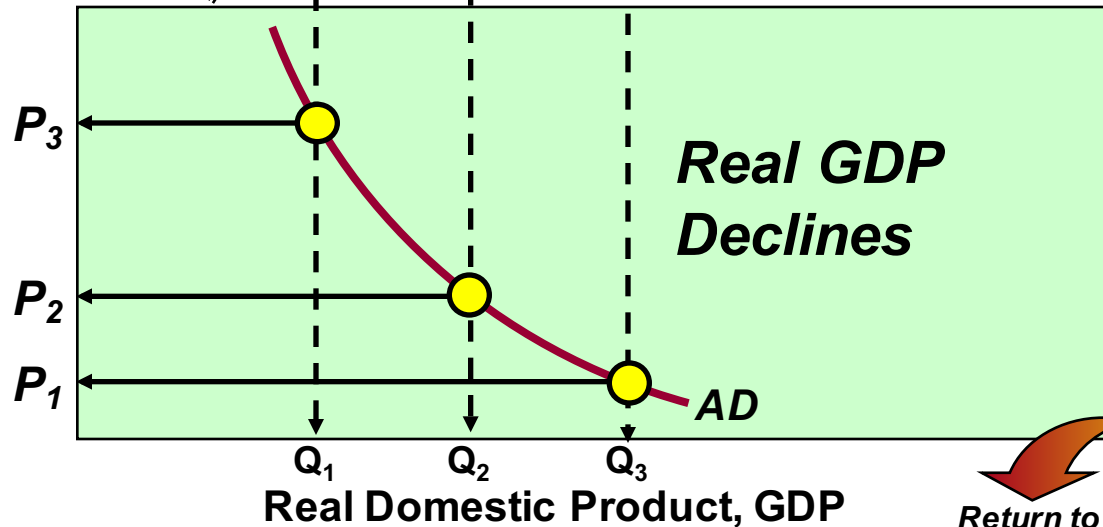
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Aggregate Expenditures
(billions of dollars)



Price Level



Real Domestic Product, GDP



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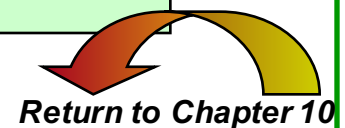
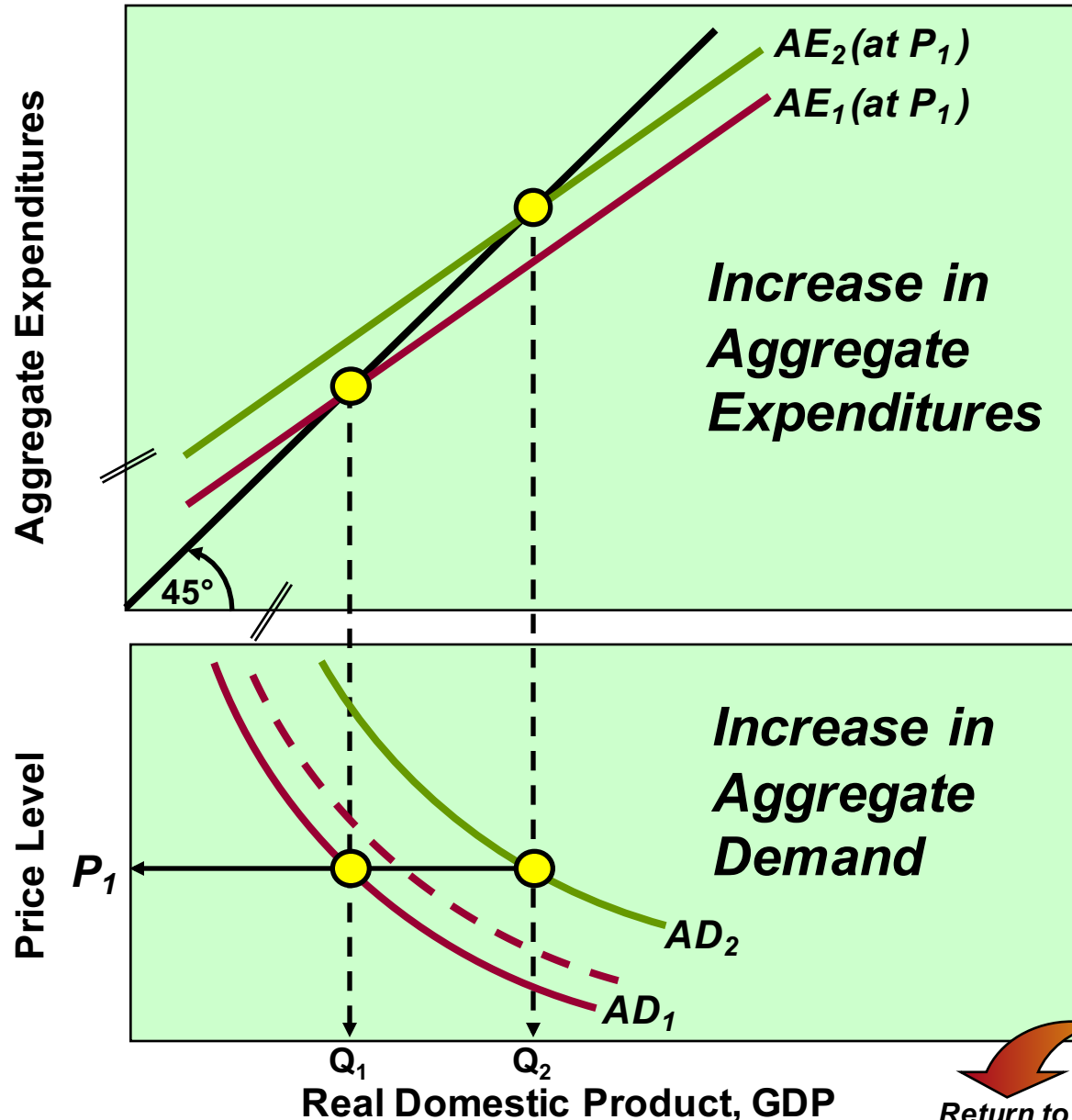
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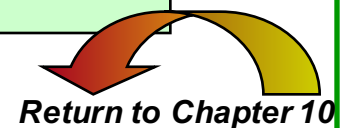
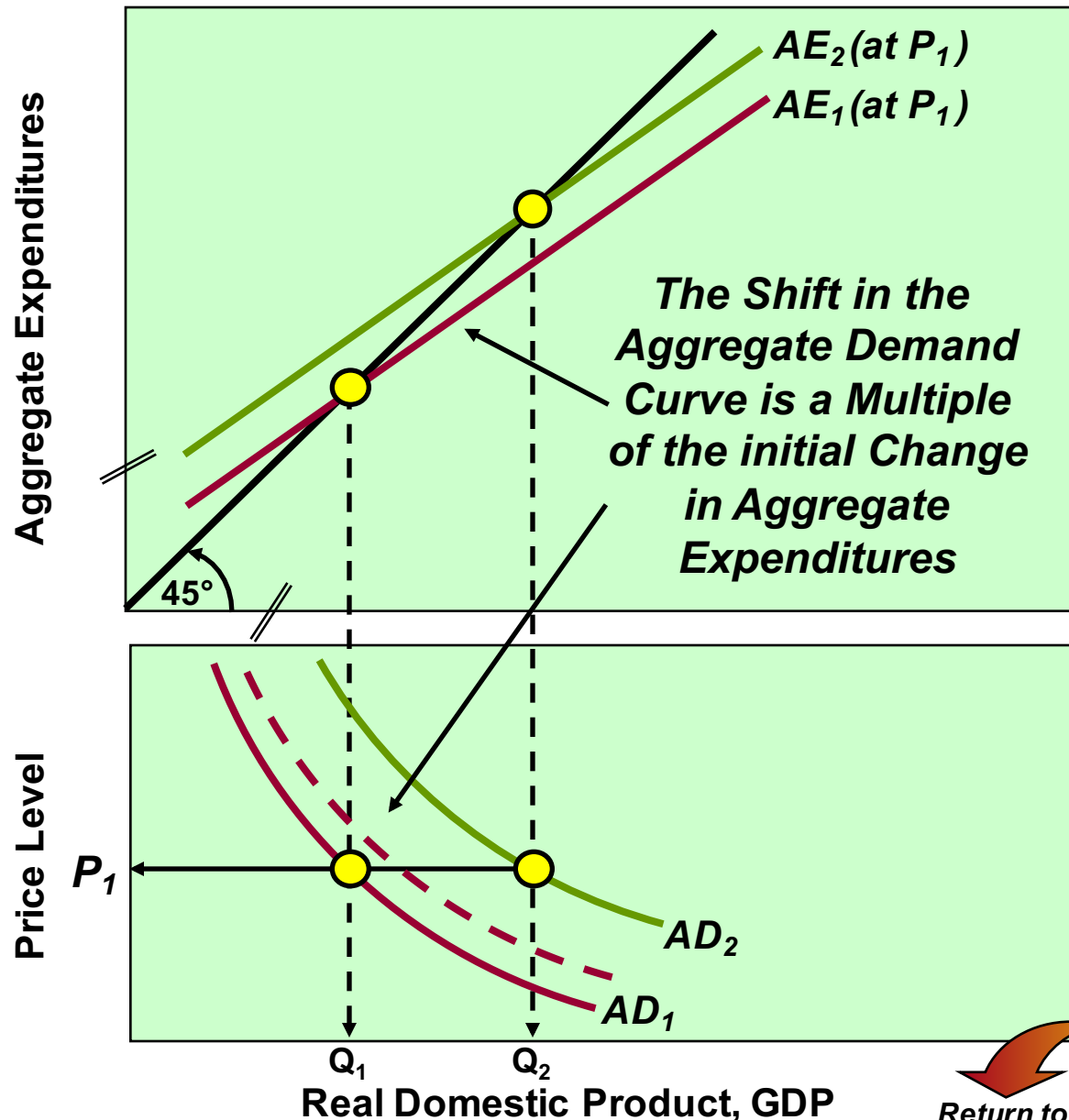
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