

Aggregate Supply and Aggregate Demand

Econ 120: Global Macroeconomics

Goals

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- Specific Goals
 - Be able to explain GDP fluctuations when the price level is also flexible.
 - Explain how real GDP and the price level are related in the short run.
- Learning Objectives
 - LO5: Use the model of aggregate demand and supply to evaluate the short-run and long-run impacts of fiscal and monetary policy on production, employment, and the price level.
 - GELO1: Students will be able to use mathematical and logical methods to solve problems.
 - GELO2: Students will be able to construct and use models to analyze, explain, or predict phenomena.

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Reading and Exercises

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- Modules 30, 31, and 32
- **Canvas Quiz due Wednesday 11:59 PM.**
Multiple-choice, 10 questions, unlimited attempts allowed, only best score counts
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Aggregate Demand

- **Aggregate demand:** schedule or curve that shows the quantities of real GDP that buyers collectively desire to purchase at each price level.
- Aggregate demand is downward sloping - *but not for the same reason the demand curve for a single product is downward sloping.*
- Recall demand curves for single goods slope downward because of the substitution effect and the income effect.

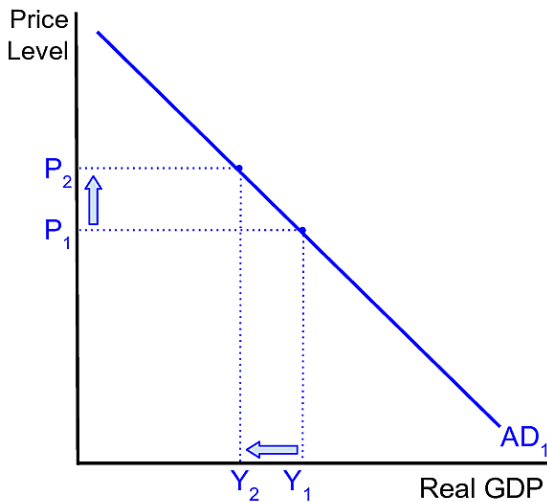
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Aggregate Demand



Downward sloping AD

- **Real balances effect:** when the price level increases, the purchasing power of the consumers' accumulated savings balances decreases.
 - With a lower real savings balance, consumers decrease consumption.
- **Foreign purchases effect:** When the price level rises relative to the price level in foreign countries, the foreign demand for U.S. products decreases. Similarly, the demand for imports increases.
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Determinants of AD

- When something *besides the price level* affects the AD, this causes the AD curve to shift.
- The following affect *consumption* and therefore shift AD.
 - Consumer wealth: financial assets such as savings accounts, stocks, and bonds, and physical assets that consumers can borrow against like houses and land.
 - An increase in wealth increases consumption, which shifts AD to the right.
 - Household indebtedness: if household debt increases, AD shifts to the left.
 - Taxes: Increase in taxes decreases consumption, AD shifts to the left.
 - Consumer expectations: expectations about future income or future taxes can shift AD.
 - Real interest rate: an increase in the real interest rate decreases consumption which shifts AD to the left.

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Long-Run Aggregate Supply

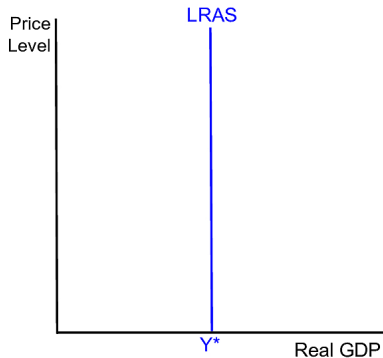
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Long-run aggregate supply:

In the long run the economy uses all factors of production efficiently.

Vertical line at **potential GDP**.

Price level does not affect production *possibilities*.



Short-Run Aggregate Supply

- In the short run, wages in labor markets are slow to adjust.
- Increases in price level lead to higher marginal revenues for firms
- Sticky wages: Biggest chunk of firms' marginal costs do not change
- Higher marginal revenue + sticky marginal costs \rightarrow increase production
- Short-run aggregate supply curve is upward sloping.

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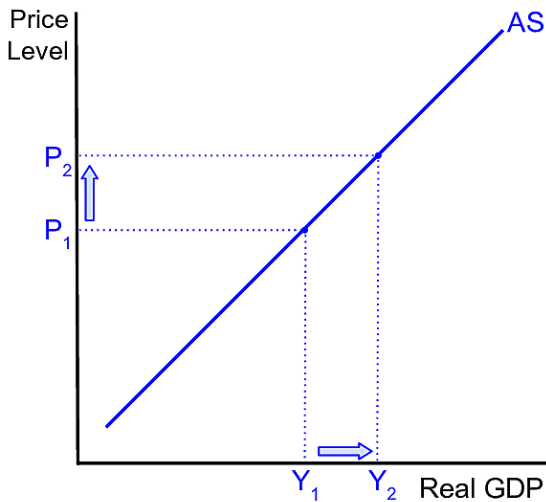
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Short run aggregate supply



Determinants of AS

- When something *besides the price level* affects AS, this shifts AS.
- Prices of factors of production: when the price of labor, capital, or land increase, this shifts AS to the left.
- Technology: an increase in technology shifts AS to the right.
- Business taxes can affect output decisions of firms and shift AS.
- Other government regulation.

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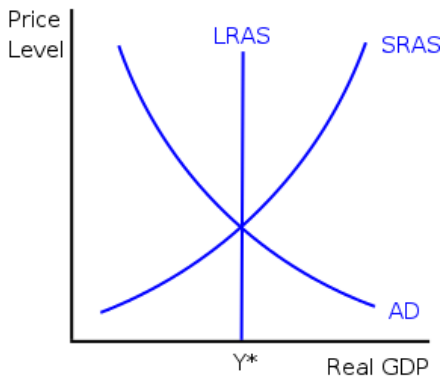
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Equilibrium

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In equilibrium, real GDP and the price level are determined by the intersection of AS and AD



Inflation

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- **Demand pull inflation:** when increases in demand cause inflation.
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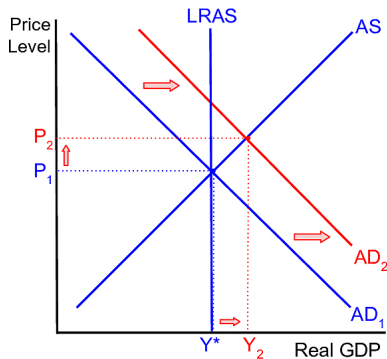
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Demand pull inflation

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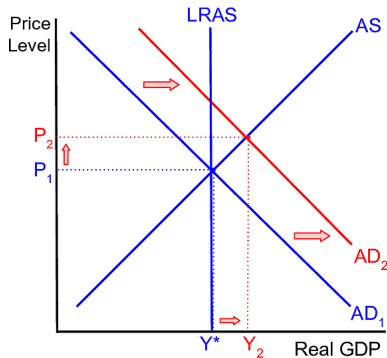
- Demand pull inflation begins when AD increases.
- Causes real GDP to increase and the price level to rise.
- Recall: **inflationary gap**: when aggregate expenditures is equal to real GDP above potential GDP.



Demand pull inflation

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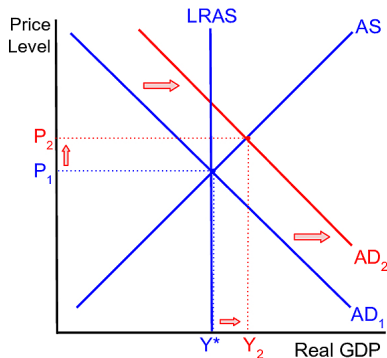
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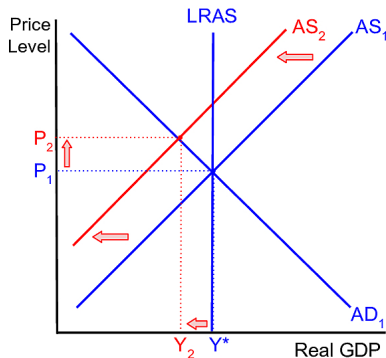
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Cost push inflation

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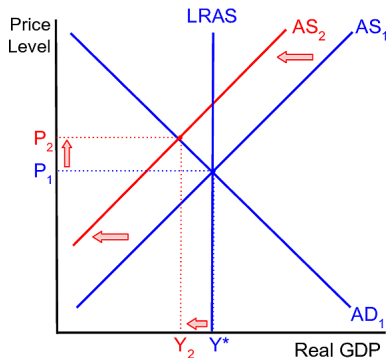
- Cost-push inflation begins when an increase in production cost shifts SRAS to the left.
- Causes real GDP to fall and price level to rise.
- **Stagflation**: when there is unemployment and high inflation at the same time.



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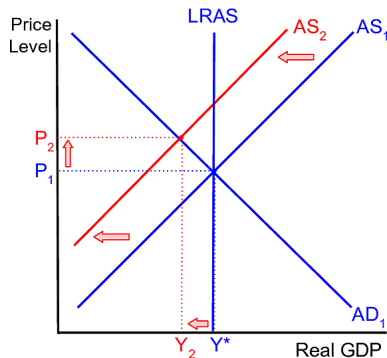
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Durable Goods vs Services Explanation for Inflation 16/ 19

Monetary Policy in Times of Structural Reallocation

Prepared for the 2021 Jackson Hole Economic Policy Symposium

Stagflation in 2021

- During COVID, demand decreases for *services*, increased for *durable goods*
- *Downward sticky prices*:
Unemployment increases in services sector
- *Upward flexible prices*: Durable goods more expensive
- *Slow to increase production*:
Shortages in durable goods
- Outcome: Unemployment & Inflation & Shortages



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Long-run equilibrium

- Recall why the short run aggregate supply curve is upward sloping.
- Suppose AD shifts to the right.
- Firms will be able to sell more goods. Firms hire more labor and produce more goods.
- Firm's per-unit labor costs do not increase because wages are fixed in the short run.
- In the long run, there is an excess demand for labor, wages will increase.
- This shifts the SRAS curve to the left.

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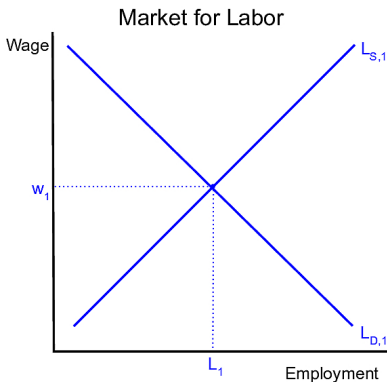
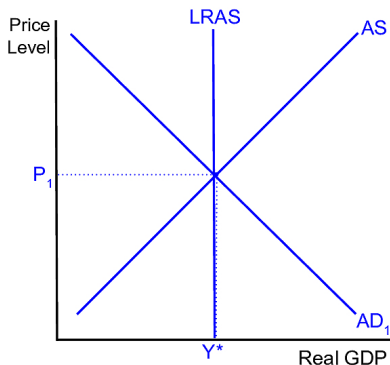
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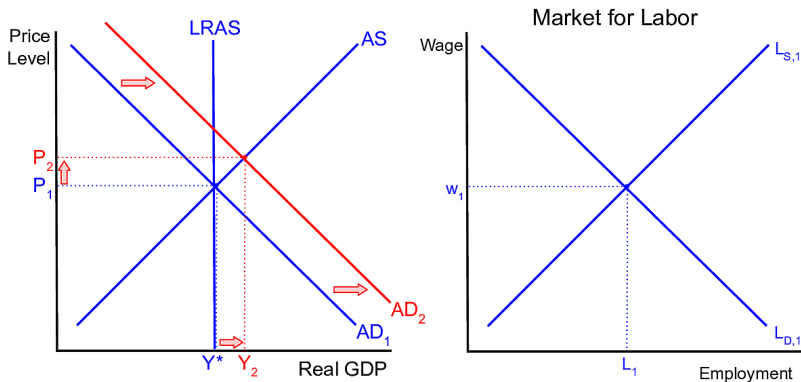
Example: Increase in Aggregate Demand

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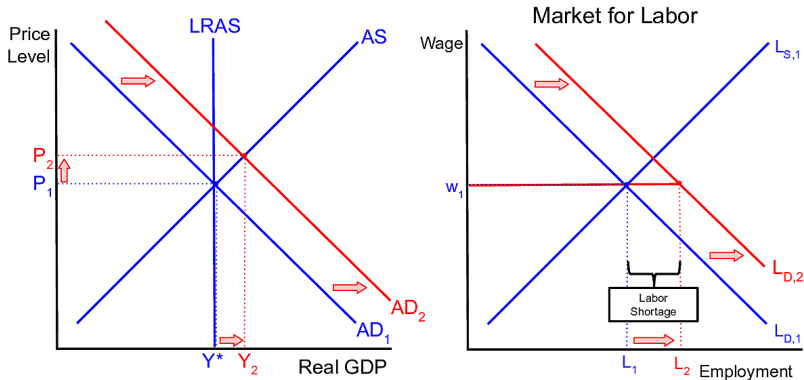
Suppose there is an improvement in consumer confidence
→ higher consumption demand

Example: Increase in Aggregate Demand



Aggregate demand shifts right

Example: Increase in Aggregate Demand

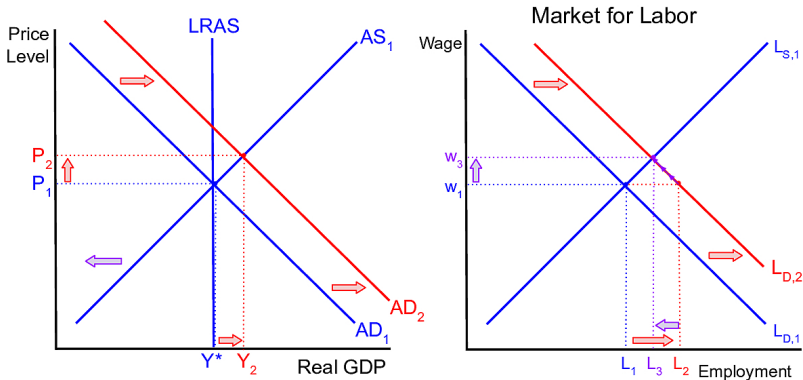


Businesses are producing more → labor demand shifts right

Sticky wages lead to labor market shortage

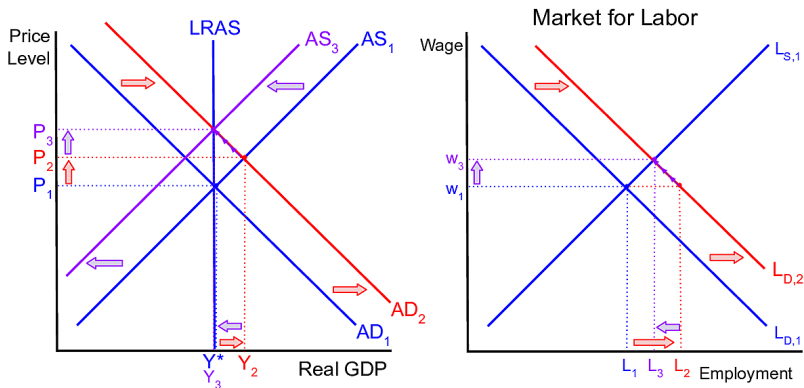
Short-run outcomes: ↑ real GDP, ↑ employment, ↑ price level

Example: Increase in Aggregate Demand



Wages increase over time, in transition from short-run to long-run

Example: Increase in Aggregate Demand



Increase in wages is an increase in production costs \rightarrow Aggregate supply shifts left
Short-run outcomes: Real GDP at potential, \uparrow wages, \uparrow employment, \uparrow price level

Examples

For each of the following, show (a) the short-run outcome for price level and real GDP, (b) the short-run and long-run outcomes in the market for labor, and (c) the long-run outcome for price level and real GDP.

- 1 Suppose business confidence drops, leading to an decrease in capital investment.
- 2 Suppose an increase in energy prices leads to an increase in the costs of production.
- 3 Suppose the U.S. dollar appreciates, leading to a(n) _____ in exports and a(n) _____ in imports.
- 4 Suppose the government increases spending.
- 5 Suppose the government cuts income taxes.
- 6 Suppose the government cuts business taxes.