Macroeconomic Dynamics and Monetary Economics

ECO 301: Money and Banking

Goals

- Specific Goals
  - Explain causes and consequences for changes in macroeconomic outcomes including real GDP, employment, and inflation.
  - Describe and illustrate how changes in money supply affect interest rates, inflation, and real GDP in the short run and long run.
  - Evaluate an economy's performance and suggest appropriate monetary policy.
- Learning Objectives
  - LO7: Identify and analyze macroeconomic problems using graphical and computational models and prescribe appropriate monetary policy solutions.

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- Aggregate demand Chapter 17, pp. 597-601
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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 in both short-run and long-run due to the *real balances effect* and the *foreign purchases effect*.
- **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.
  - This causes exports to fall and imports to rise.

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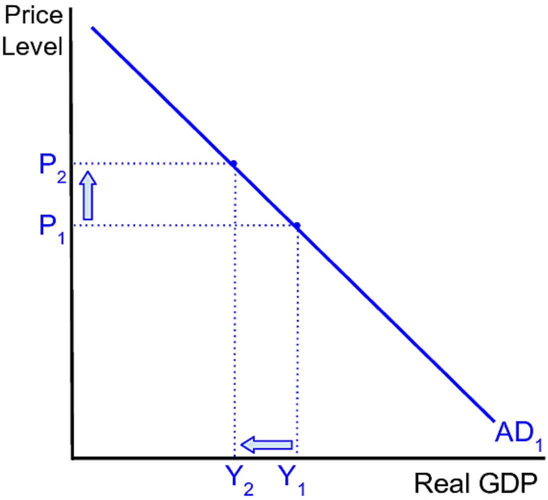

Determinants of Aggregate Demand

- 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.
    - When consumer wealth increases, aggregate demand increases, causing it to shift 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.
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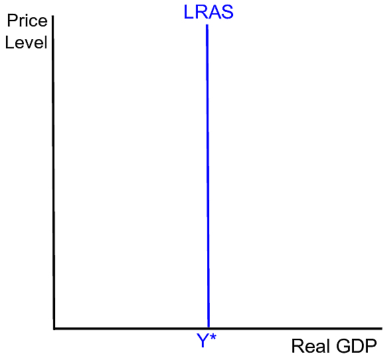
Long-Run Aggregate Supply

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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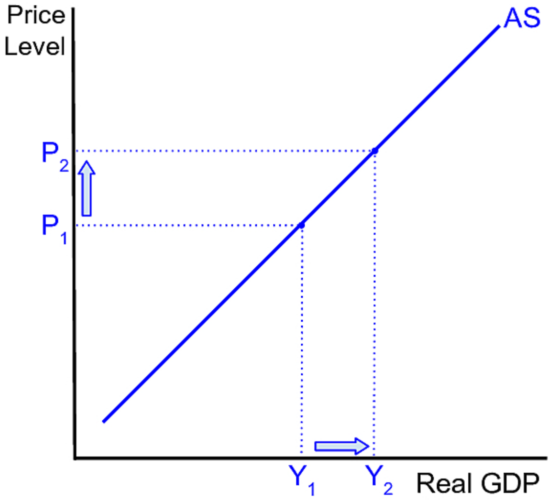

Determinants of Aggregate Supply

- 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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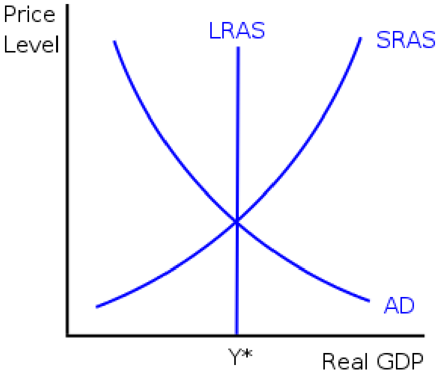
Equilibrium

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



Inflation

- Inflation can come from two sources, excess demand or increases in production costs.
- **Demand-pull inflation**: when increases in demand cause inflation.
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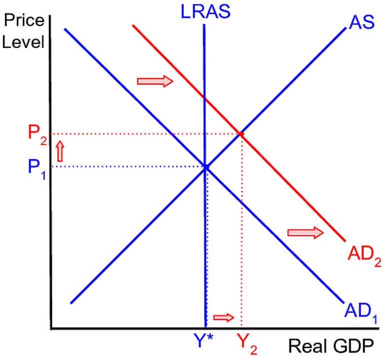
Demand-Pull Inflation

- 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.



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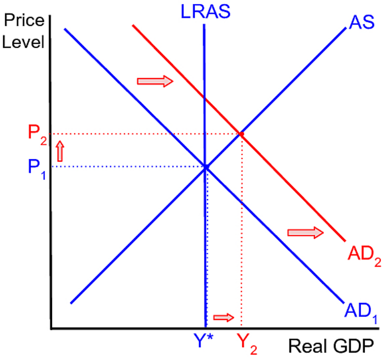

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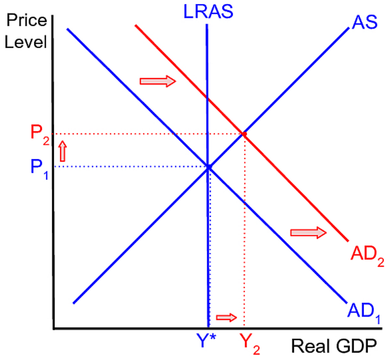
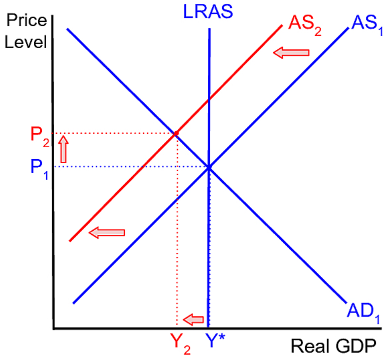


Cost-push Inflation

- 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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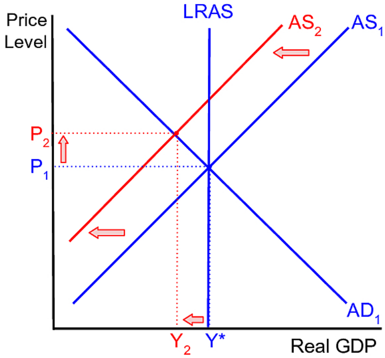

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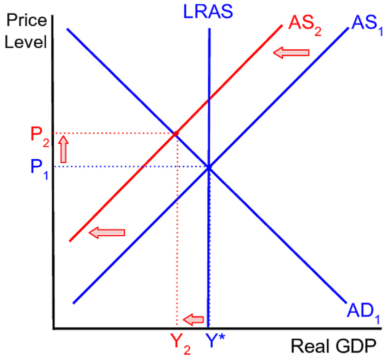

Durable Goods vs Services Explanation for Inflation

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

- Aggregate supply curve is upward sloping because wages are sticky.
- 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.
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- Firm's per-unit labor costs do not increase because wages are fixed in the short run.
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- This shifts the SRAS curve to the left.

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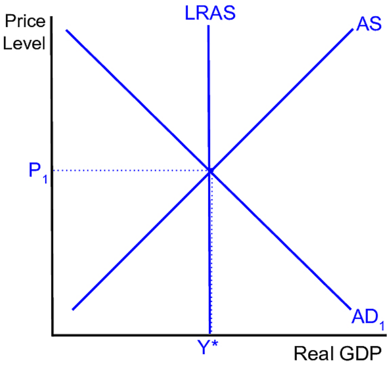
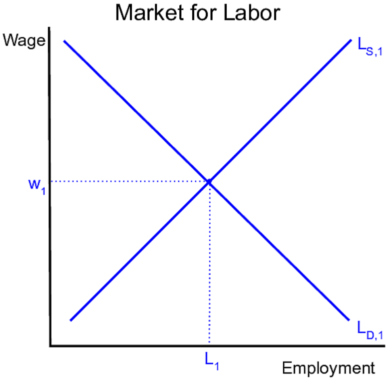
Example: Increase in Aggregate Demand

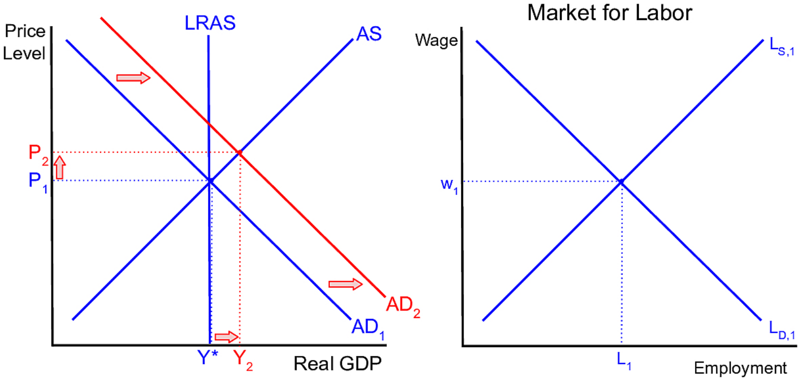




Suppose there is an improvement in consumer confidence

$\rightarrow$ higher consumption demand

Example: Increase in Aggregate Demand



Aggregate demand shifts right

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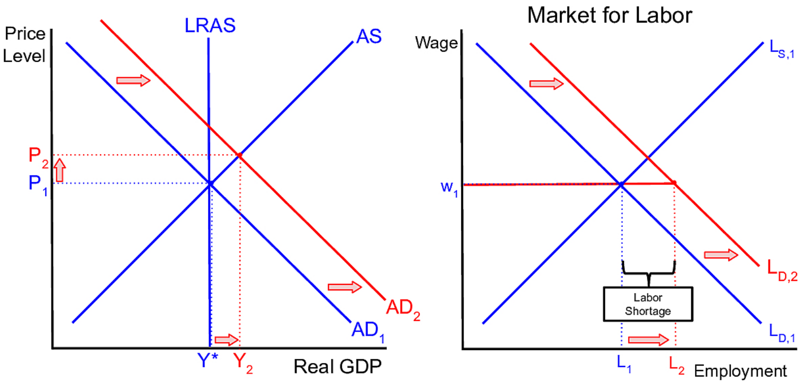

Businesses are producing more → labor demand shifts right
Sticky wages lead to labor market shortage

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

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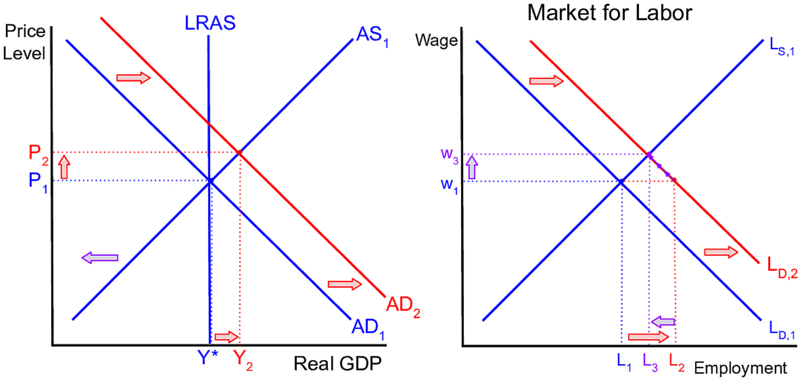

Wages increase over time, in transition from short-run to long-run

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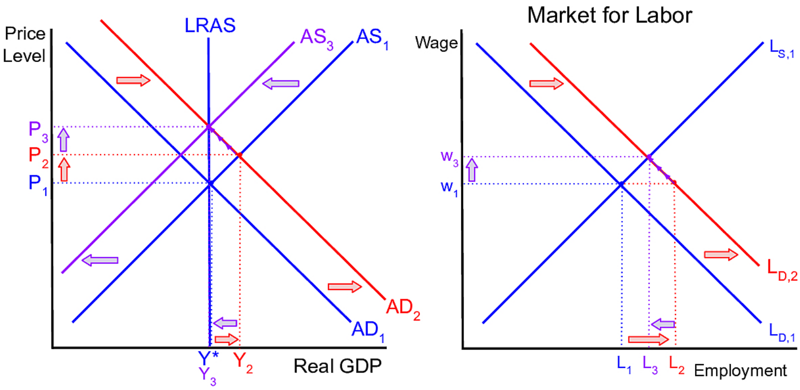

Increase in wages is an increase in production costs → Aggregate supply shifts left

Short-run outcomes: Real GDP at potential, ↑ wages, ↑ employment, ↑ price level

Market for Money and Aggregate Demand

Outcomes for the market for money affect aggregate demand.

Suppose the Fed decreases interest rates

1. Investment increases
2. Consumption increases
3. Net exports increase
   - Lower interest rates $\rightarrow$ lower return on financial investments in the U.S., decrease in demand for dollars.
   - Value of the dollar falls.
     - U.S. residents buy fewer foreign goods $\rightarrow$ decrease in imports.
     - U.S. goods become relatively less expensive $\rightarrow$ increase in exports.
4. All of these things cause AD to shift left

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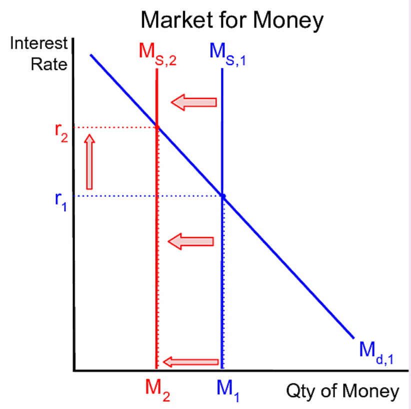
Contractionary Monetary Policy

Contractionary Monetary Policy

- A decrease in money supply
- Fed conducts an open market ________ of bonds
- Shifts money supply left
- Leads to an increase in the interest rate

Decrease in Money Supply

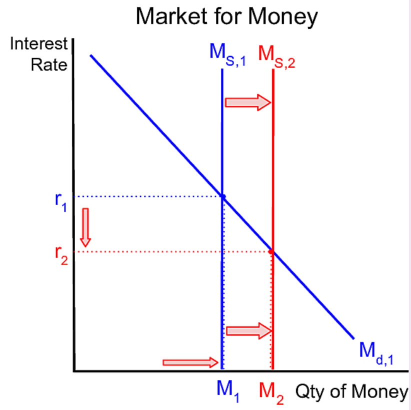


Expansionary Monetary Policy

Expansionary Monetary Policy

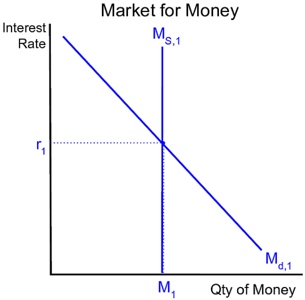
- An increase in money supply
- Fed conducts an open market ________ of bonds
- Shifts money supply right
- Leads to a decrease in the interest rate

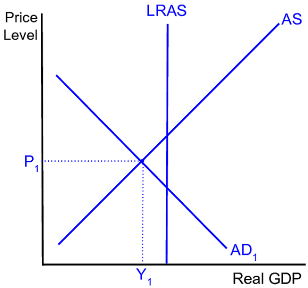
Increase in Money Supply



Monetary Policy to Counteract Recession

- Suppose the economy is in a recession with low inflation.





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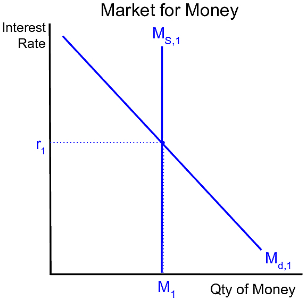
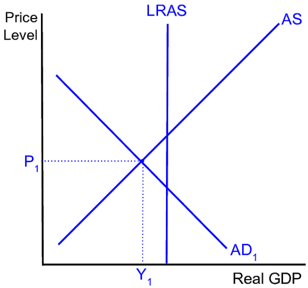
- Suppose the economy is in a recession with low inflation.
- *Increase* money supply by making an open market *purchase* of bonds.





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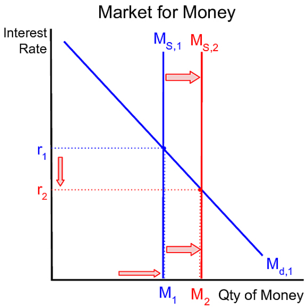
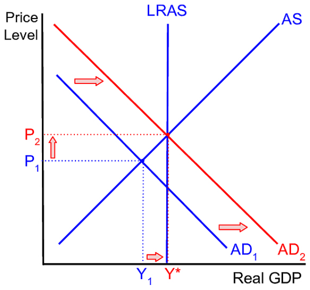
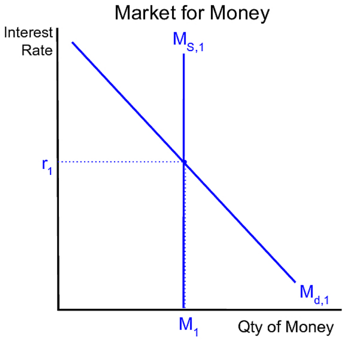
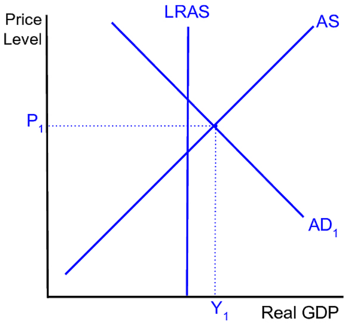




Controlling the Inflation Rate





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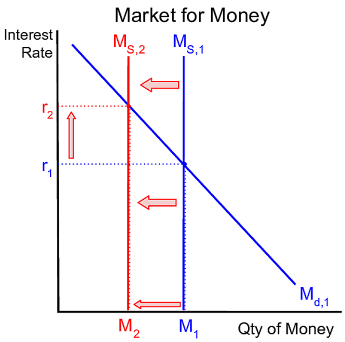

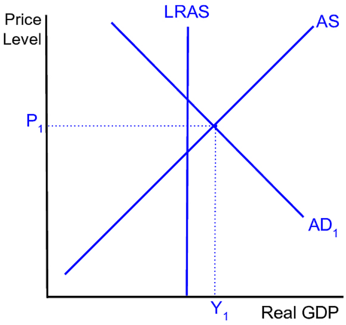

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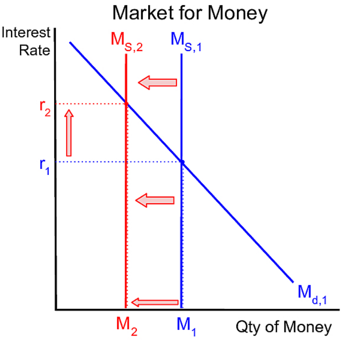
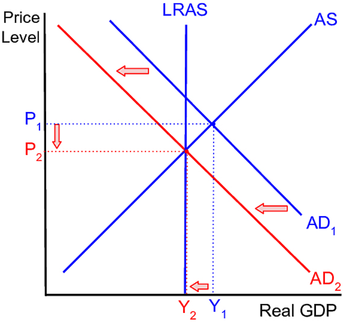
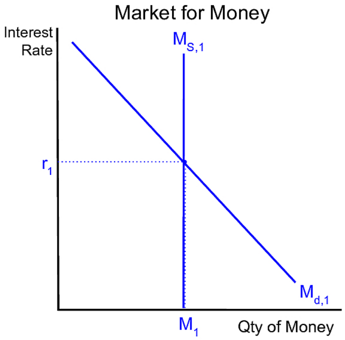




Long-Run Impact on Monetary Policy



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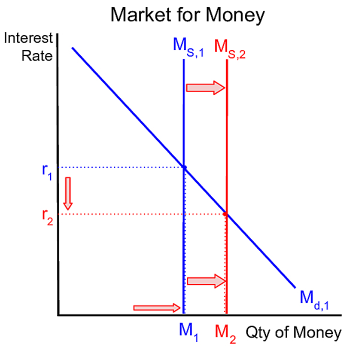

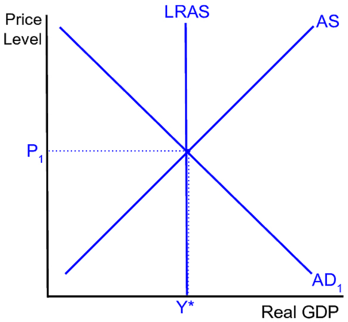

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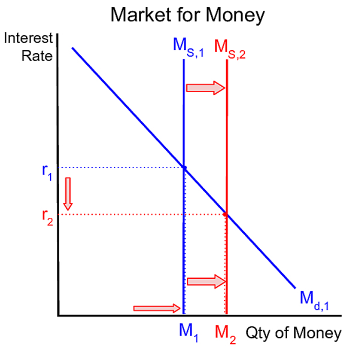

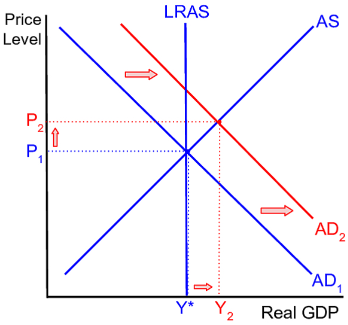

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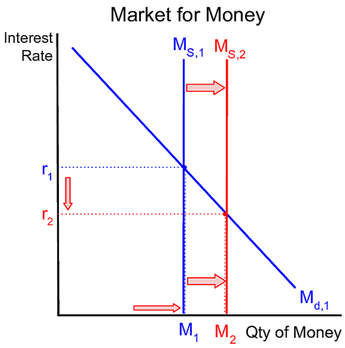
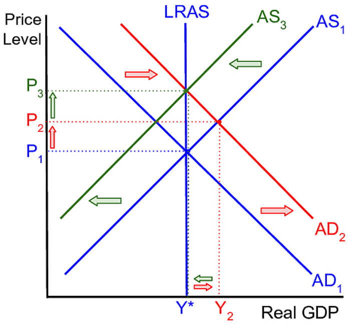
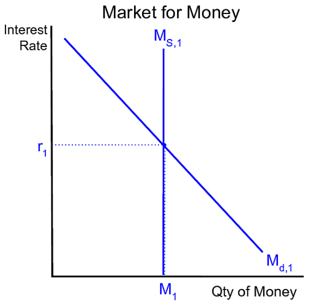
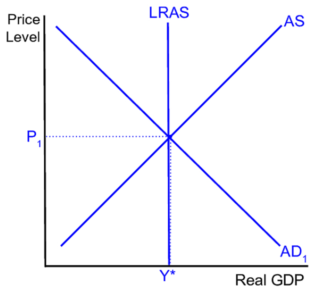




Impact of Financial innovation

- Banks improve online banking process.
- What effect does this type of financial innovation have on the money market and goods market?





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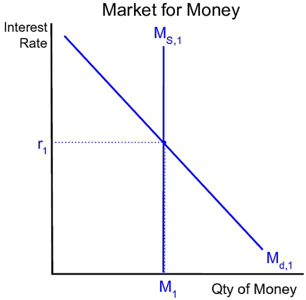

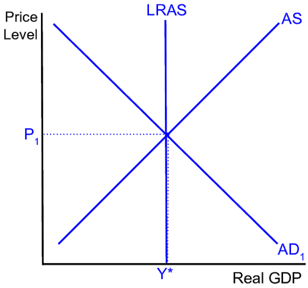

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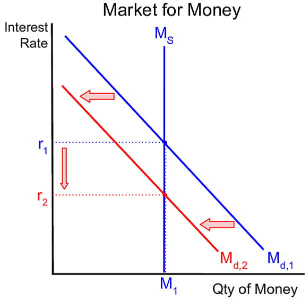

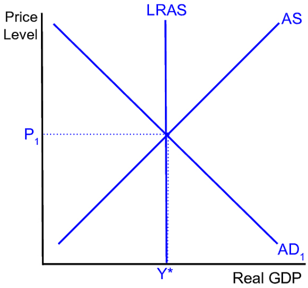

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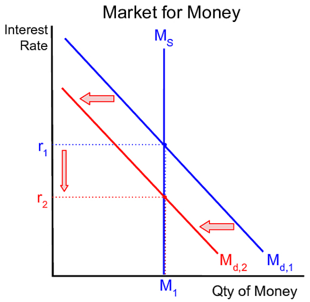

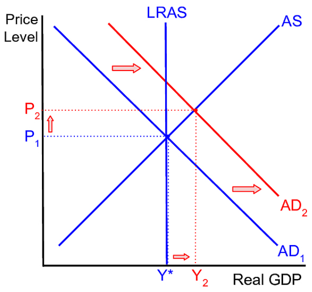

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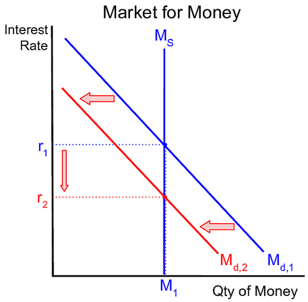

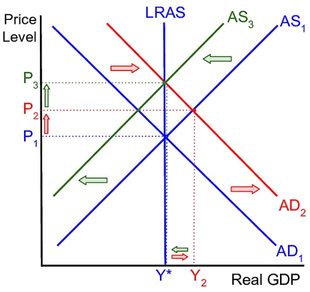

Reading and Exercises

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  Multiple-choice, 10 questions, unlimited attempts allowed, only best score counts
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