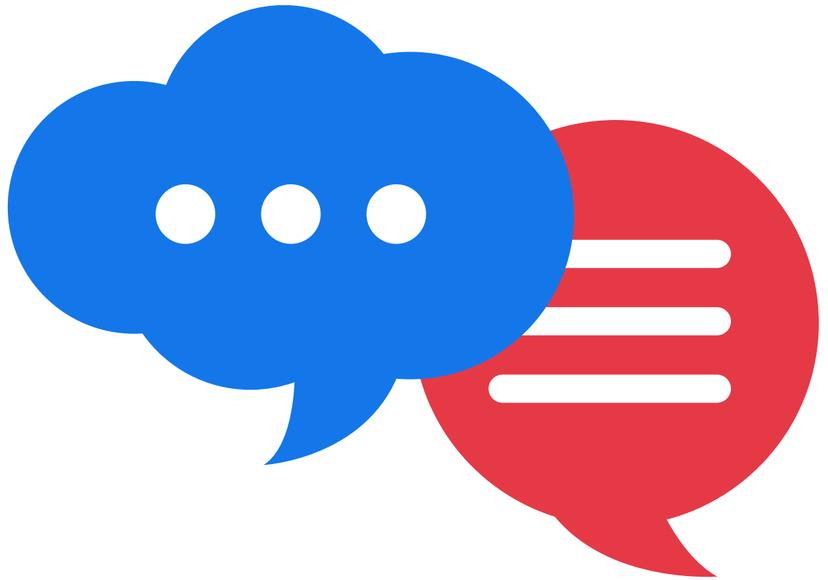
Macroeconomic Objectives

Inflation

3.3

We have broadly discussed inflation before. Take two minutes and come up with a definition with a partner.



3 Macro Objectives

1. Economic Growth
2. Low Unemployment Rate
3. Low and Stable Inflation

Possible additional goals: Sustainable Debt, Equity, and Income Distribution

Definition

Inflation is a general or sustained increase in the average price level.

Inflation Rate – The percent change in prices from year to year

Have you ever heard your parents or grandparents thought about things being cheaper?

Examples

In 1992, $1 has the same purchasing power as $2 today.

In 1950, $1 has the same purchasing power as $11.62 today.

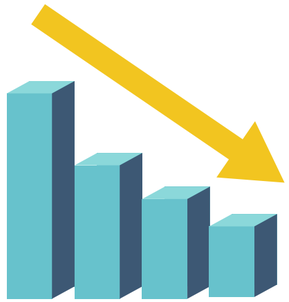
When inflation occurs, money loses power

Definition

Deflation is a sustained decrease in the average price level or a negative inflation rate.

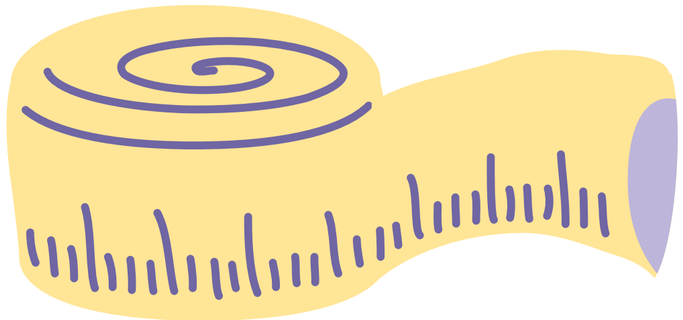
– Isn't deflation good???

No. People hoard money and assets due to an increase in value. This decreases consumer spending (GDP).



Disinflation is when the average price level is continuing to rise but at a slower rate. The rate of inflation is still positive but lower than previously recorded.

Measuring Inflation (HL Only)



How to Measure Inflation?

Consumer Price Index (CPI) is the average price of goods and services that consumers typically buy (**market basket**) expressed as an index.

There are two ways to look at inflation over time

1. The Inflation Rate
2. Price Index

Examples

- The Korean inflation rate in 2014 was 0.8%
- The CPI for 2014 was 180 (base year 2000) meaning that prices have increased 80% since 2000

How to Measure Inflation?

Good	Year 1	Year 2	Year 3
Bananas	$.25	$.50	$.75
Milk	$1.75	$2.50	$2.75
Bread	$2.00	$2.00	$2.50

To get the market basket, add up all of the items in each year.

How to Measure Inflation?

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Bread	$2.00	$2.00	$2.50
Market Basket	$4.00	$5.00	$6.00

To get the market basket, add up all of the items in each year.

CPI

The most commonly used measure of inflation is Consumer Price Index.

How it works

1. The base year is given an index of 100
2. Each following year is also given an index.

$$CPI = \frac{\text{Price of market basket (current year)}}{\text{Price of market basket (base year)}} \times 100$$

Example

2000: The total market basket is 20 Euro (Base year). Index = 100

2006: The total market basket is 25 Euro (Current Year) Index = 125

Inflation increased by 25% from 2000 to 2006

Practice

Good	Year 1	Year 2	Year 3
Bananas	$.25	$.50	$.75
Milk	$1.75	$2.50	$2.75
Bread	$2.00	$2.00	$2.50
Market Basket	$4.00	$5.00	$6.00

Calculate the market basket from our example. Use 1 as the base year.

Year 1 CPI:

Year 2 CPI:

Year 3 CPI:

Practice

Good	Year 1	Year 2	Year 3
Bananas	$.25	$.50	$.75
Milk	$1.75	$2.50	$2.75
Bread	$2.00	$2.00	$2.50
Market Basket	$4.00	$5.00	$6.00

Calculate the market basket from our example. Use 1 as the base year.

Year 1 CPI: **100**

Year 2 CPI: **125**

Year 3 CPI: **150**

Practice

Good	Year 1	Year 2	Year 3
Bananas	$.25	$.50	$.75
Milk	$1.75	$2.50	$2.75
Bread	$2.00	$2.00	$2.50
Market Basket	$4.00	$5.00	$6.00

The index is then used to calculate the inflation rate.
Using the index calculates the inflation for each year.

Year 1 Inflation Rate to Base Year:
Year 2 Inflation Rate to Base Year :
Year 3 Inflation Rate toBase Year:

Practice

Good	Year 1	Year 2	Year 3
Bananas	$.25	$.50	$.75
Milk	$1.75	$2.50	$2.75
Bread	$2.00	$2.00	$2.50
Market Basket	$4.00	$5.00	$6.00

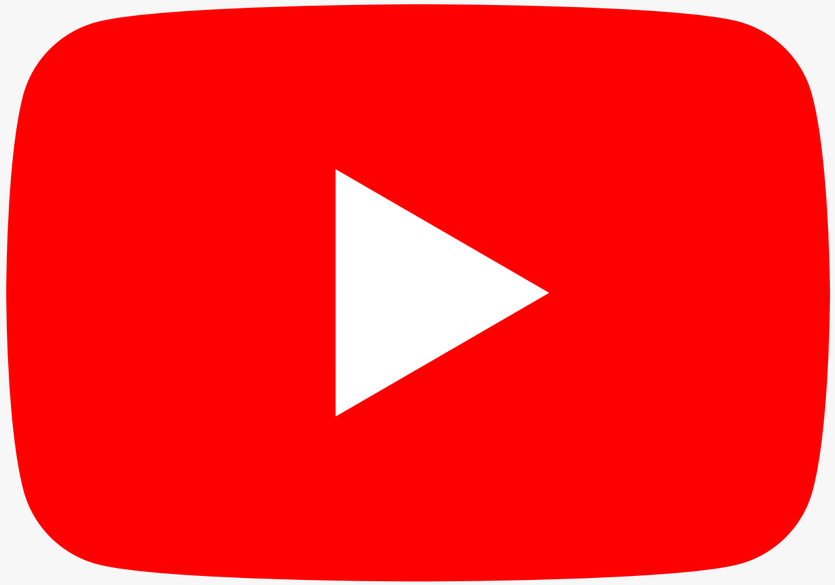
The index is then used to calculate the inflation rate.

Using the CPI, calculate the inflation for each year

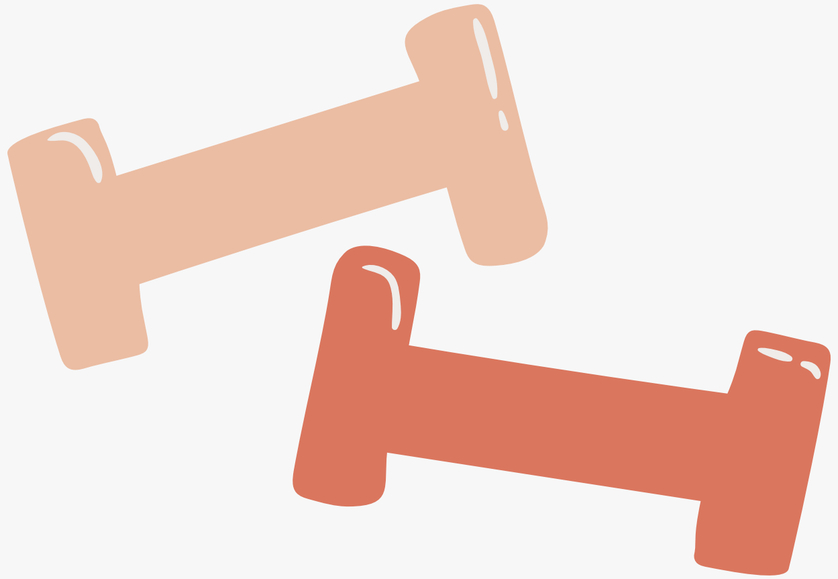
Year 1 Inflation Rate to Base Year: **0%**

Year 2 Inflation Rate toBase Year : **25%**

Year 3 Inflation Rate toBase Year: **50%**



CPI Weighted Index (HL Only)



Weighted CPI

At times, market basket categories may be weighted to give a more accurate assessmeent

Weighting and Prices for Market Basket Goods In Italy

Goods or Service	Weighting	2020 (Euros)	2021 (Euros)
Food	40%	450	500
Rent/Mortgage	30%	420	480
Clothing	15%	200	230
Healthcare	10%	180	220
Entertainment	5%	120	170
Total Market Basket	N/A	360	409

Weighted CPI

Simply multiply the weight with the basket price

Market Basket for 2020
(450 x 0.4) + (400 x 0.3) + (200 x 0.15) + (180 x 0.1) + (120 x 0.5).

180 + 126 + 30 + 18 + 6 = 360

Calculate the inflation rate from 2020 to 2021.

Attempt to find it using the index system AND the percentage change formula.

Weighting and Prices for Market Basket Goods In Italy

Goods or Service	Weighting	2020 (Euros)	2021 (Euros)
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Rent/Mortgage	30%	420	480
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Total Market Basket	N/A	360	409

Weighted CPI

Calculate the inflation rate from 2020 to 2021.

13.61%

Weighting and Prices for Market Basket Goods In Italy

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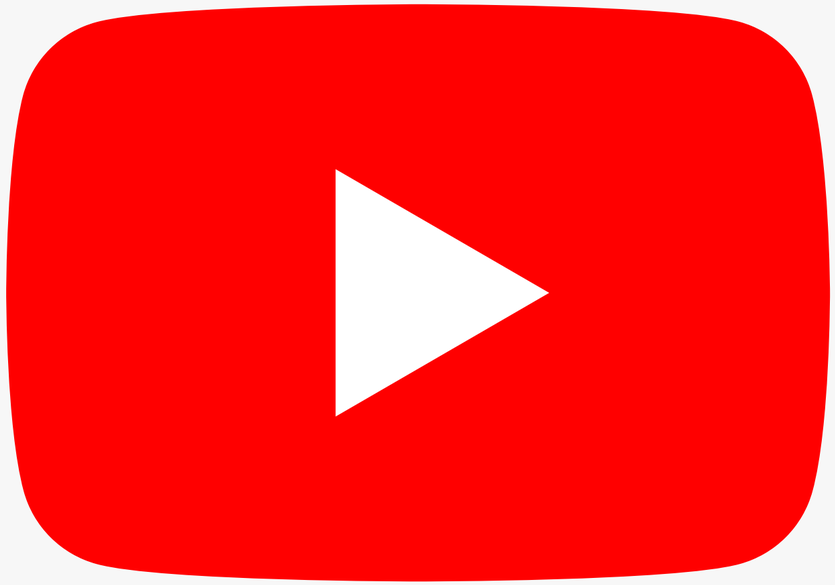


Calculating a Weighted Price Index

Problems with CPI

Problems With CPI

- **Selection of Goods**
  - What are "typical household goods"?
- **New Products**
  - CPI may not include the newest products in the market basket.
- **Updates on Product Quality**
  - CPI does not account for the improvement in the quality of products that improve economic well-being.

Practice Question

A Refresher on Real GDP

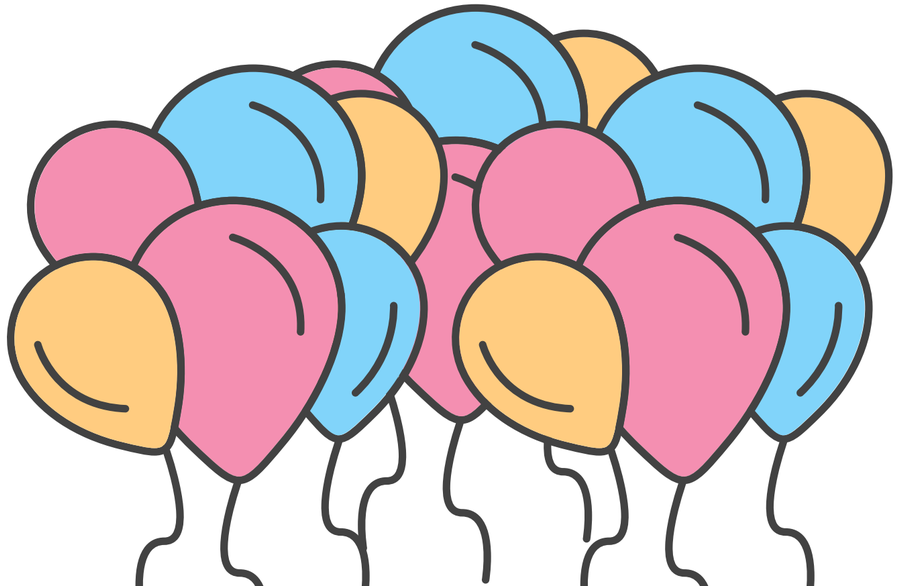
Real GDP/GNI

Calculated by using a "Deflator". These deflators essentially deflate the nominal values allowing for an accurate Real GDP.

$$\text{Real GDP/GNI} = \frac{\text{Nominal GDP/GNI}}{\text{Price Deflator (CPI)}} \times 100$$

Paper 2 Math

Causes of Inflation



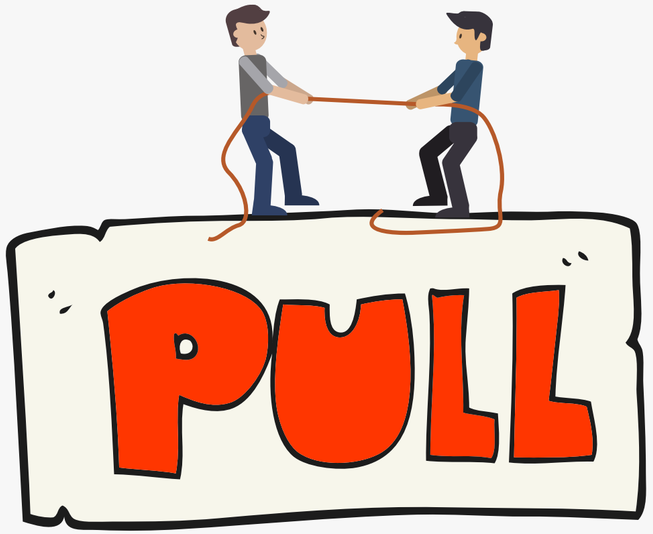
Two Types

Cost-Push

Inflation as a result of an increase in costs of production in the economy (Increase in price of raw materials, imports, or labour). Price Level is PUSHED UP.

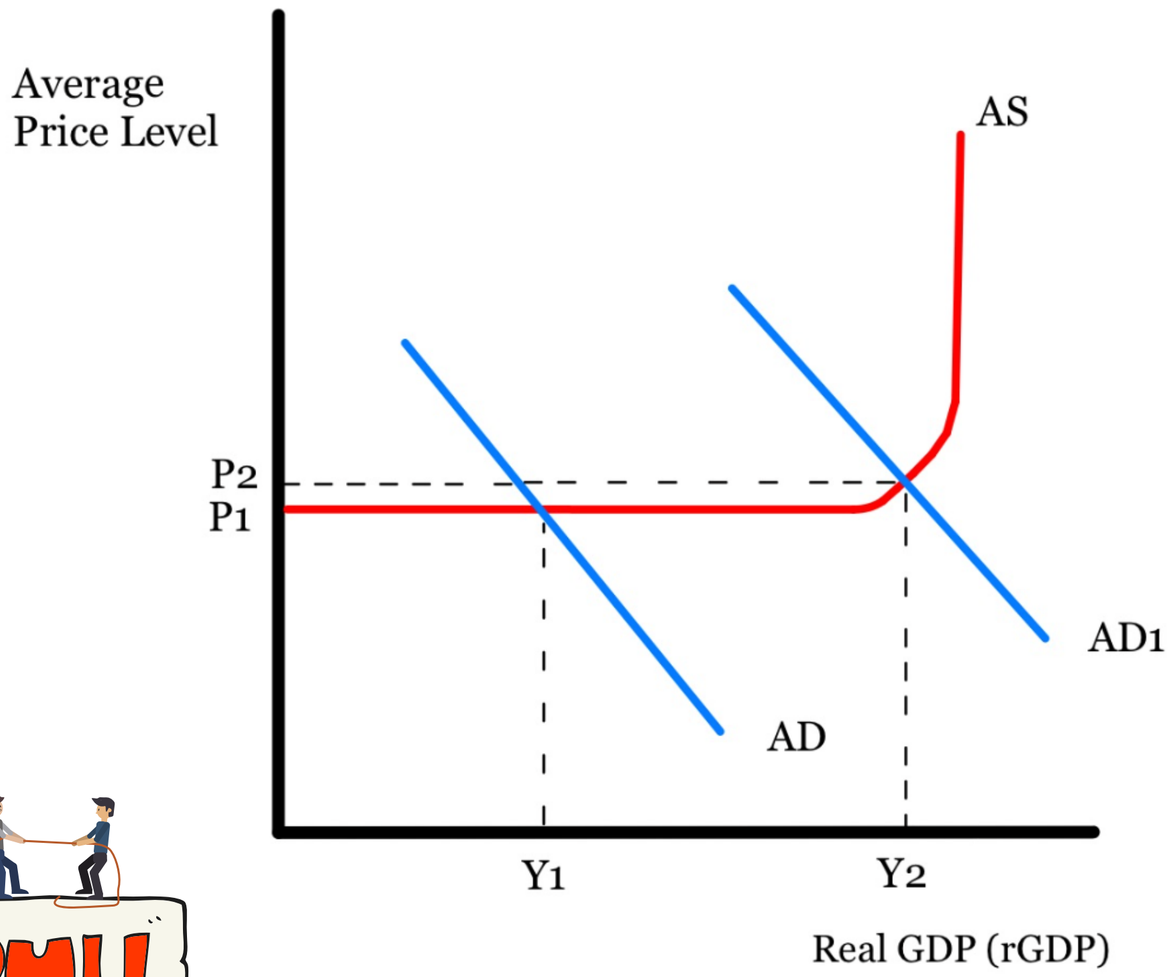
Demand-Pull

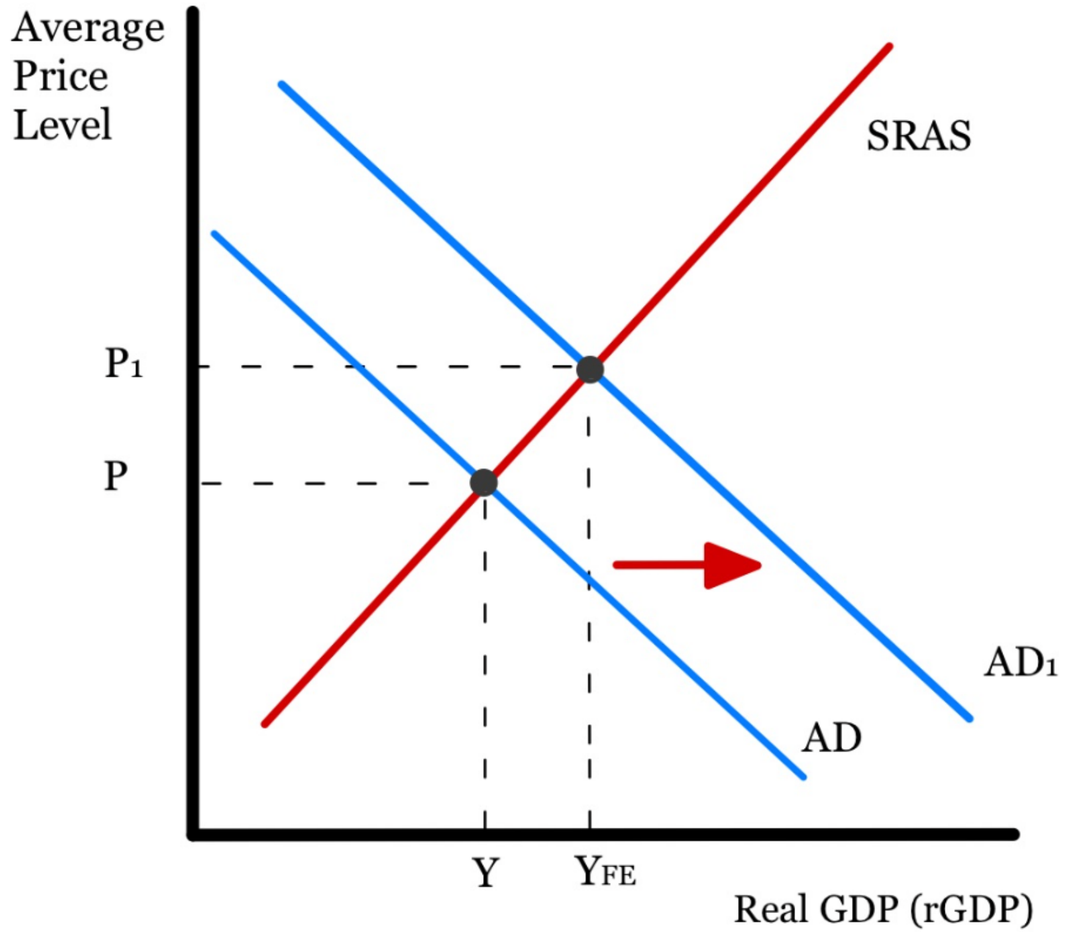
Inflation as a result of an increase in AD (C, I,G, Xn). Price Level is PULLED UP

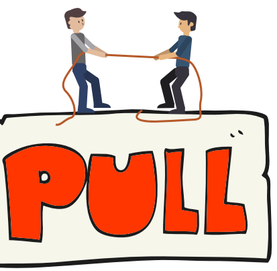


Demand-Pull

Inflation as a result of an increase in AD (C, I,G, Xn). Price Level is PULLED UP







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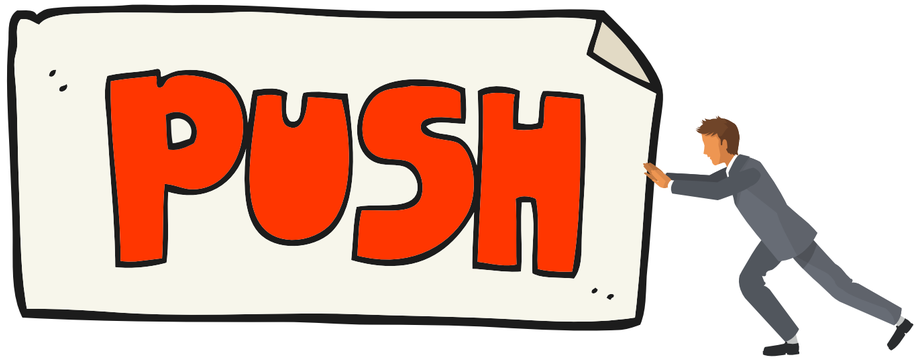
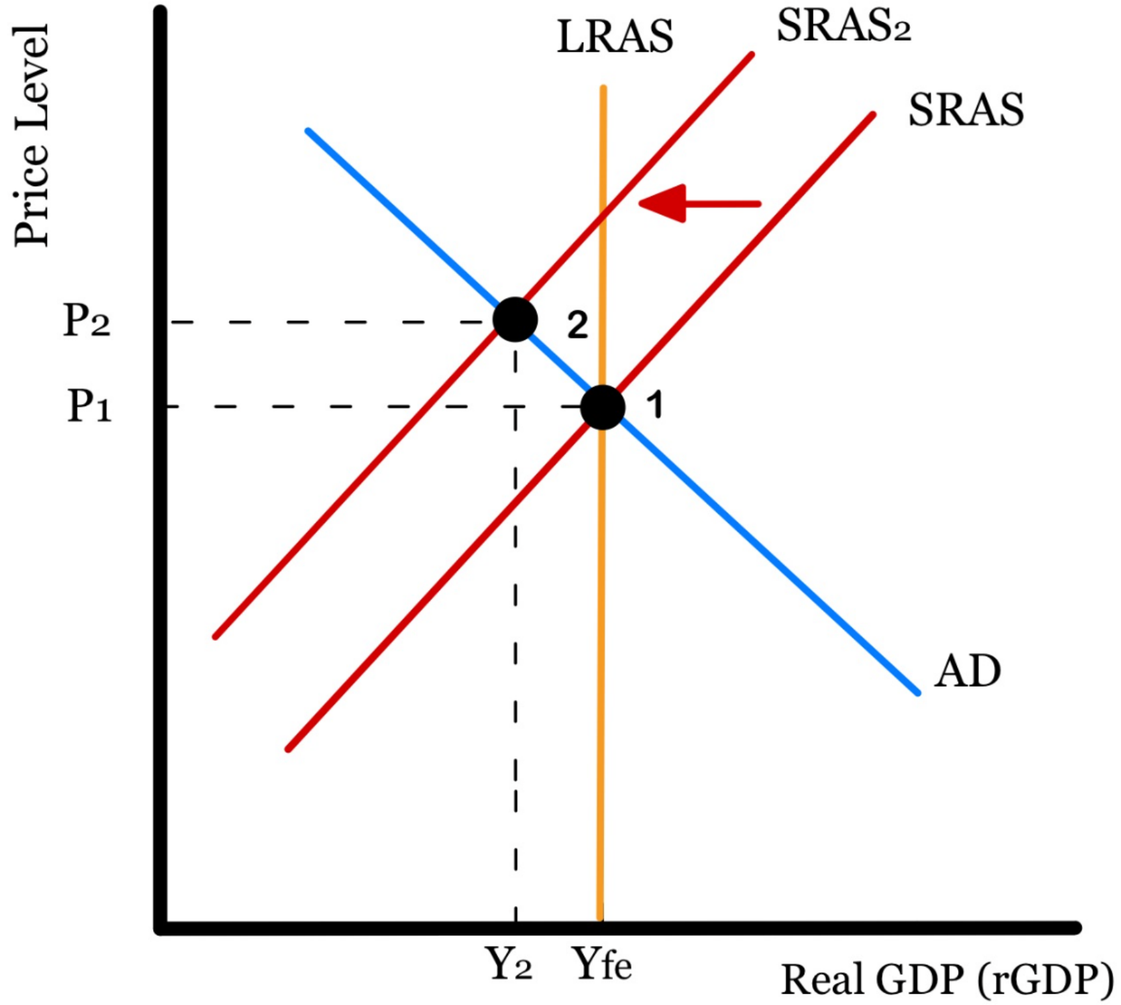




Also note...

An increase in the money supply can also lead to inflation. If there is too much money in circulation, spending increased (Increase AD) resulting in inflation.

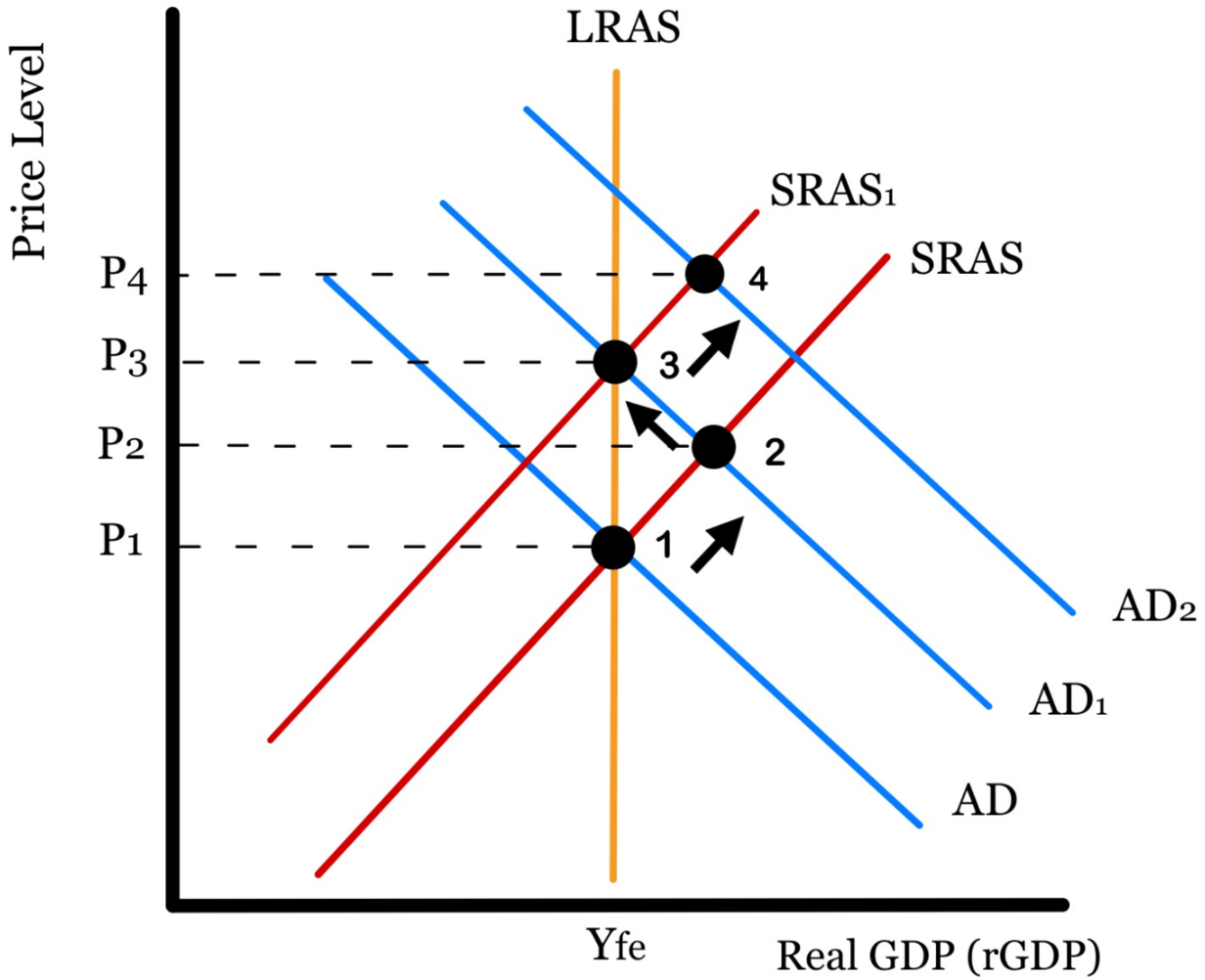
Inflation Spiral

Inflationary Spiral

Demand-pull inflation and Cost-push inflation **combined**

- As consumers drive prices higher, businesses also pay higher prices
- Additionally, workers demand higher wages due to the increase in the cost of living.
- These events fuel even more inflation
- The cycle builds on itself

Inflation Spiral



Cost of High Inflation Rate

Costs of High Inflation

Uncertainty – Lack of confidence leads to businesses and consumers being careful.

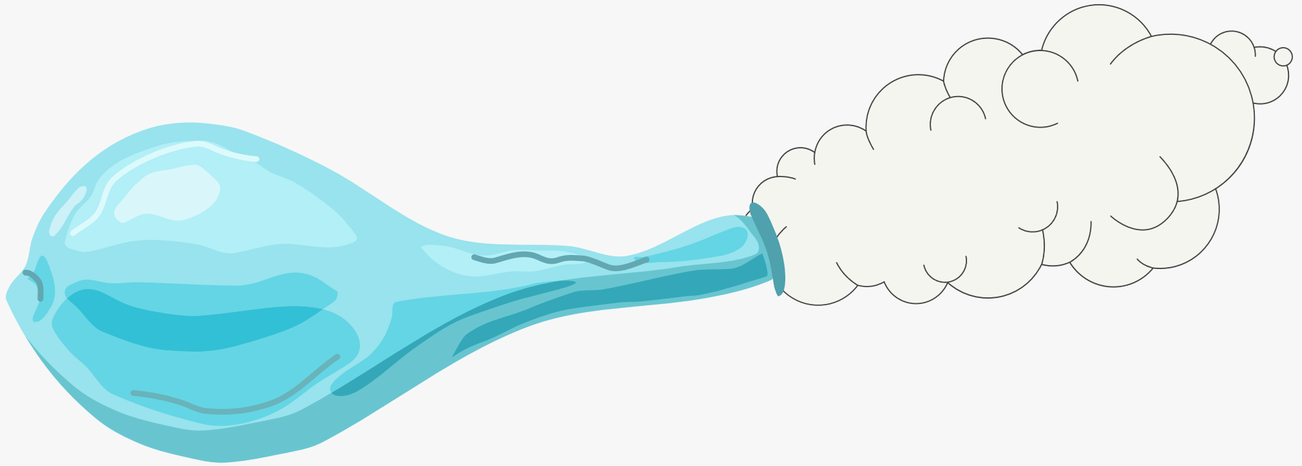
Redistribution effects – Low-income households are affected more than higher-income households.

Savings effects – If the inflation rate is greater than an interest rate, you are better off not saving money.

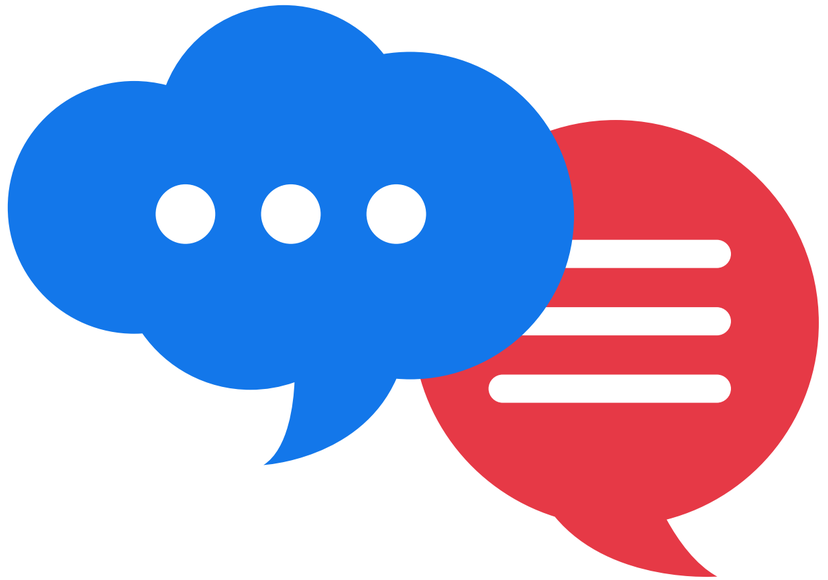
Decrease in economic growth – A decrease in purchasing power and uncertainty leads suppliers and consumers to reduce economic activity.

Damage to exports – Inflation makes domestic goods more expensive for trading partners.

Costs of Deflation



Discuss the differences between deflation and disinflation.



Costs of Deflation

Uncertainty – Lack of confidence leads to businesses and consumers being careful.

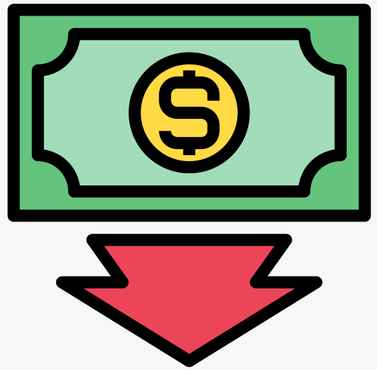
Deferred Consumption– Consumers defer to spend money as their money is gaining value.

Cyclical Unemployment– Deflation typically indicates falling economic output, meaning firms may have to lay off workers.

Increase in Real Value of Debt – Size of real debt grows as money gains in purchasing power.

Redistributive Effects – Winners: fixed income earners and lenders (banks). Losers: borrowers and providers of fixed incomes (e.g. government)

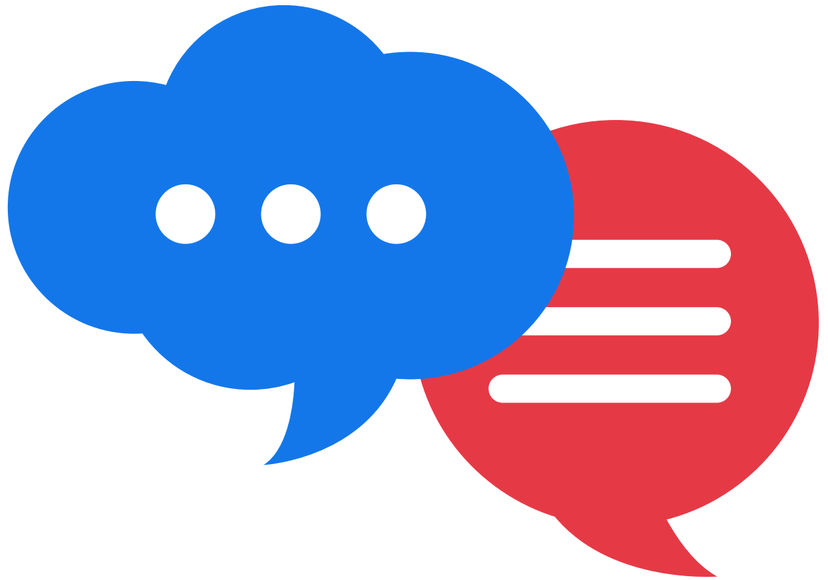
Policy Ineffectiveness – Even with the use of expansionary monetary and fiscal policies, it will be difficult to convince firms and consumers to borrow money.



The Relationship Between Unemployment and Inflation

Are the economic goals of low inflation and low unemployment in conflict with each other?

How?



Potential Conflict Between Macroeconomic Objectives

1. Low unemployment and low inflation
2. High economic growth and low inflation
3. High economic growth and environmental sustainability
4. High economic growth and equity in income distribution

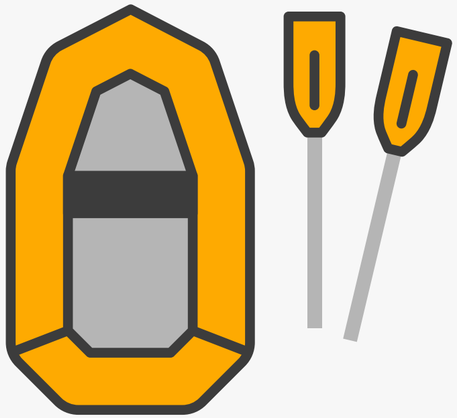
Review!

Rules

1. Don't use any economic terminology. Plain English
2. Focus on the Concept, not definition

Name That Concept

- Inflation
- Deflation
- Disinflation
- CPI
- Market Basket

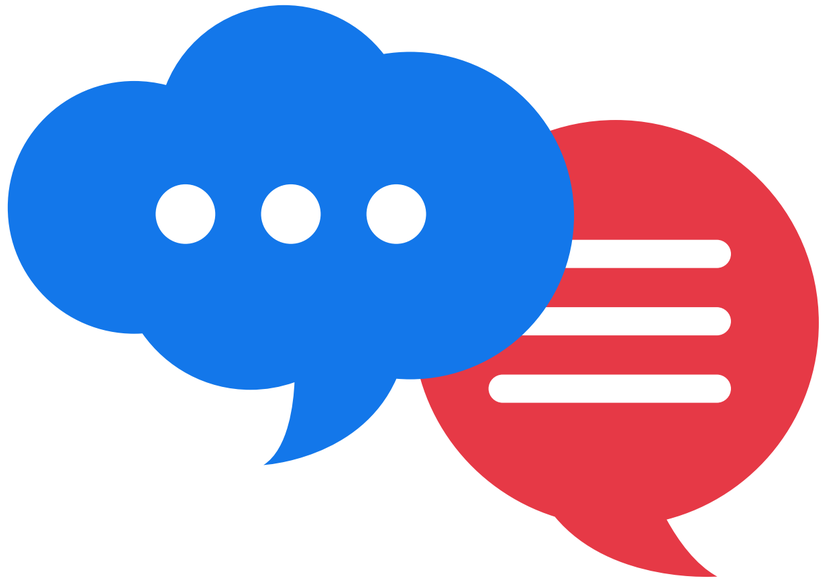


Name That Concept

- Purchasing Power
- Cost-Push Inflation
- Demand-Pull Inflation

The Phillips Curve (HL Only)

What happens to unemployment and inflation when AD increases?

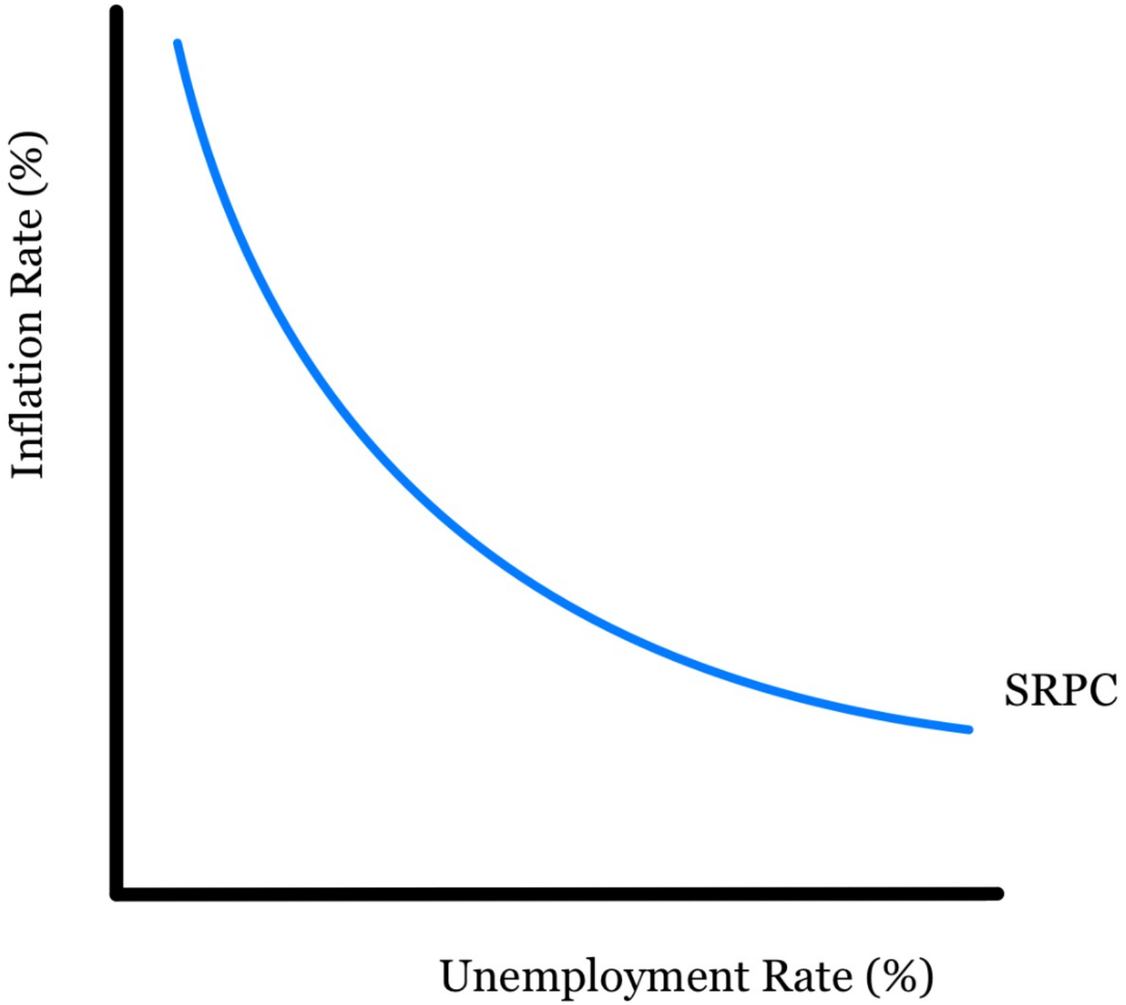


Phillips Curve

A diagram representing the relationship between unemployment and inflation.

Essentials of the Phillips Curve

- Inflation Rate (%) on Y-Axis
- Unemployment Rate (%) on X-Axis
- Two types of Phillips Curve
  - Short-Run (SRPC)
  - Long-Run (LRPC)

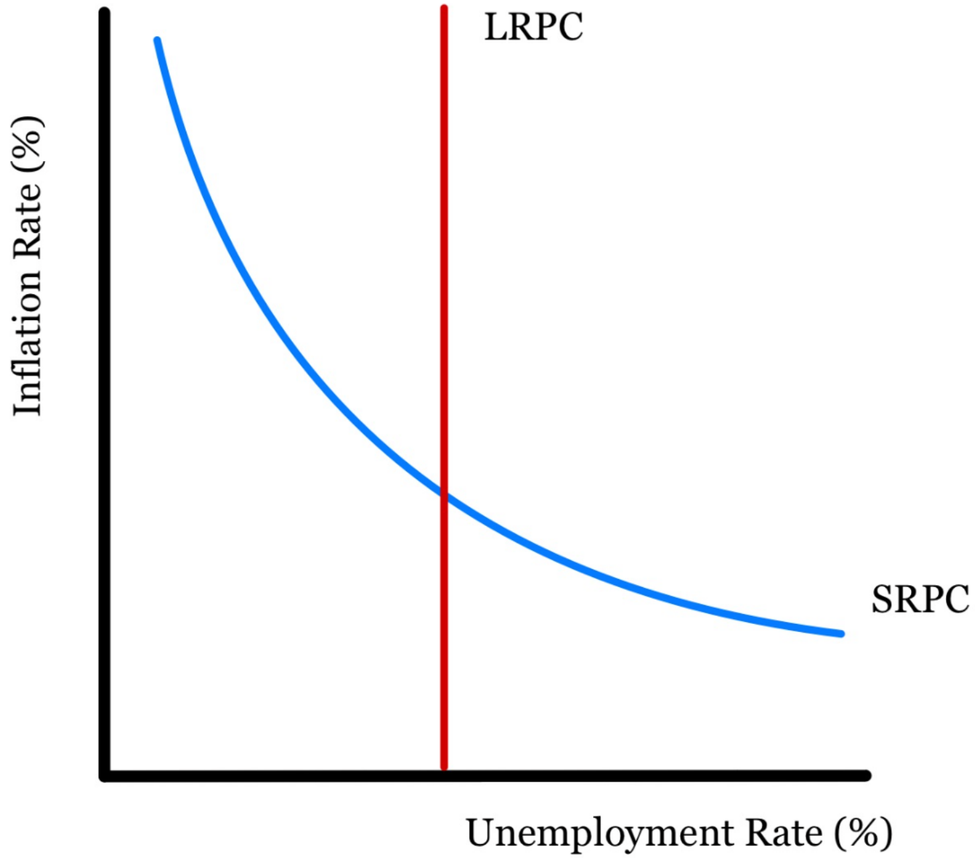


Phillips Curve

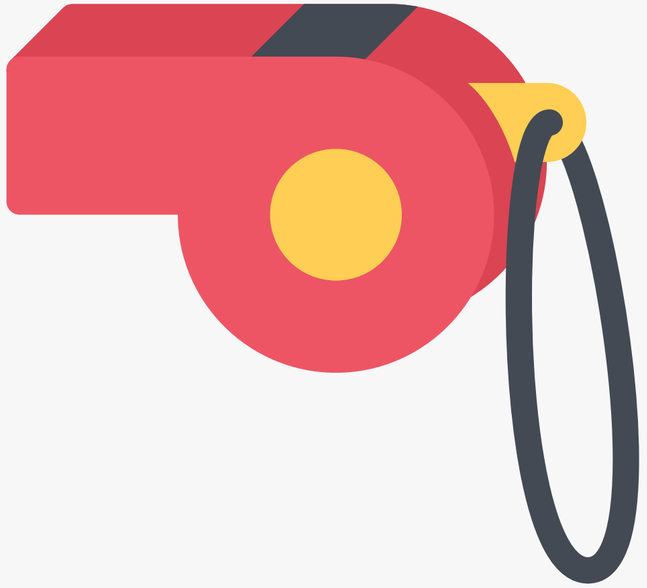
Long-Run Phillips Curve

This represents the idea that there is no trade-off between inflation and unemployment.

LRPC = Natural Rate of Unemployment (NRU) or Full Employment



Practice



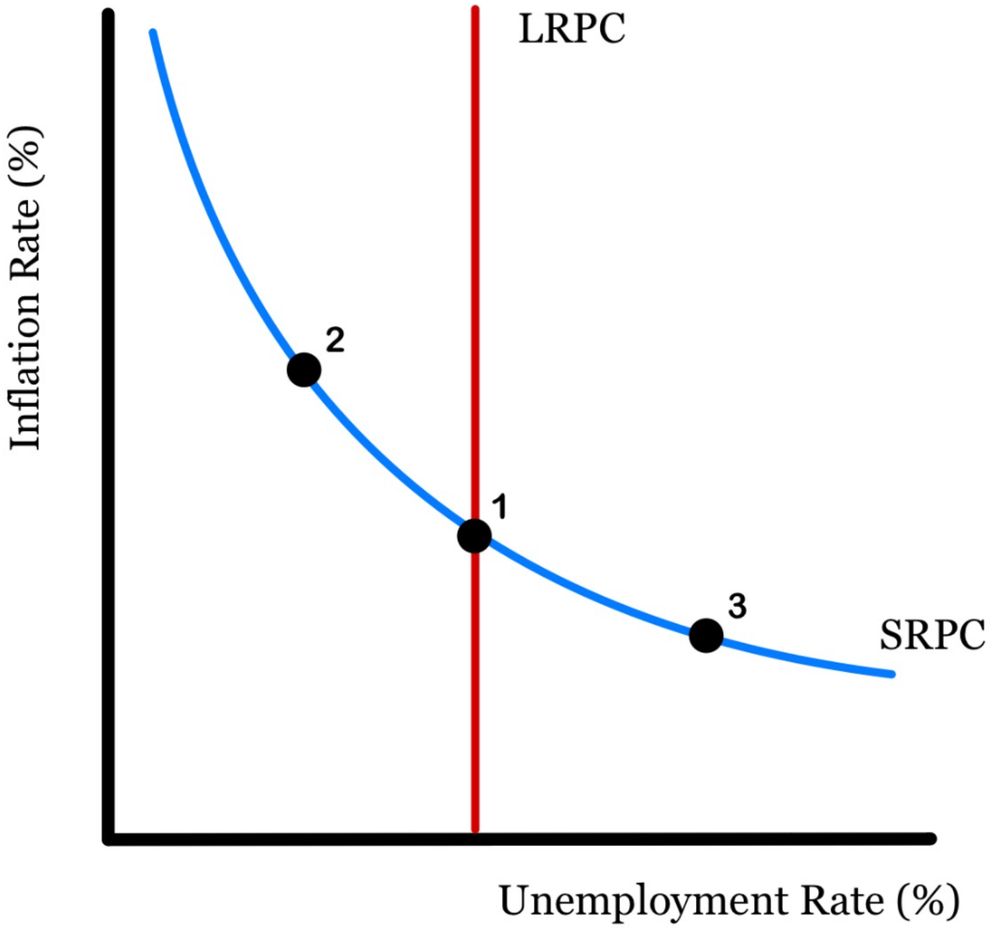
Practice

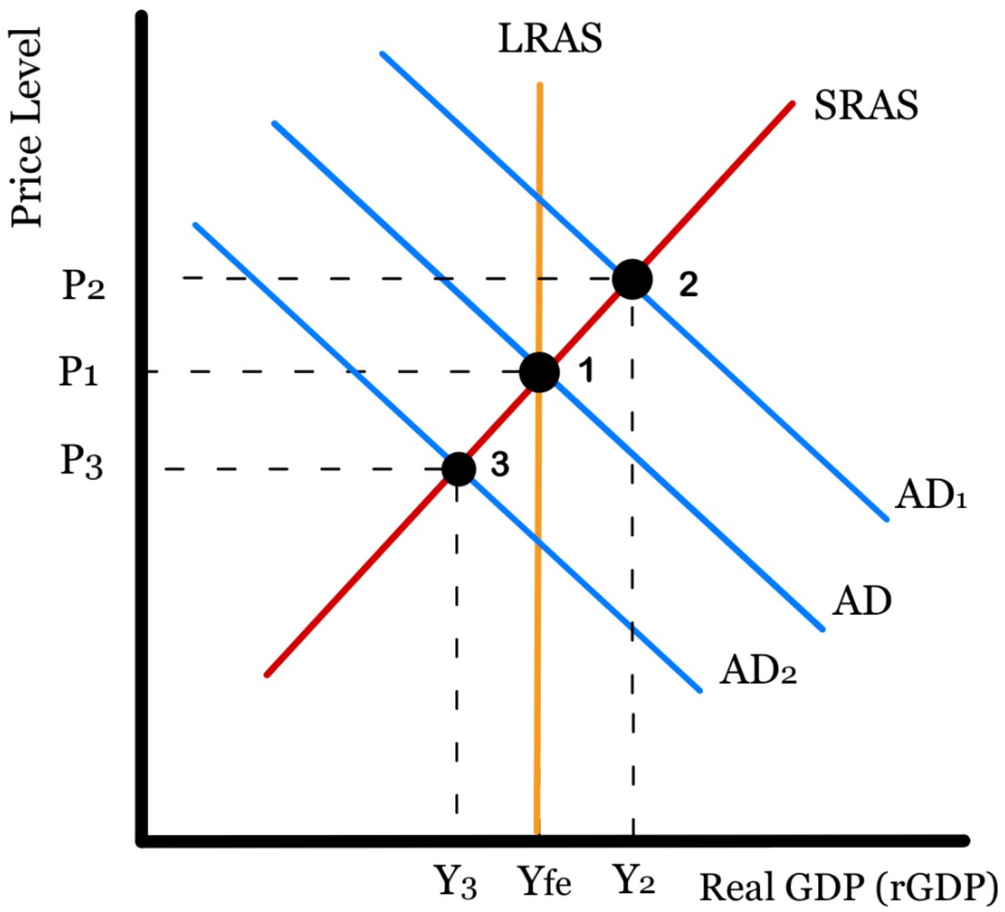
Draw the effects of an increase of AD on a Phillips Curve?

Draw the effects of a decrease of AD on a Phillips Curve?

Practice

A change in AD results in movement along the Phillips Curve.





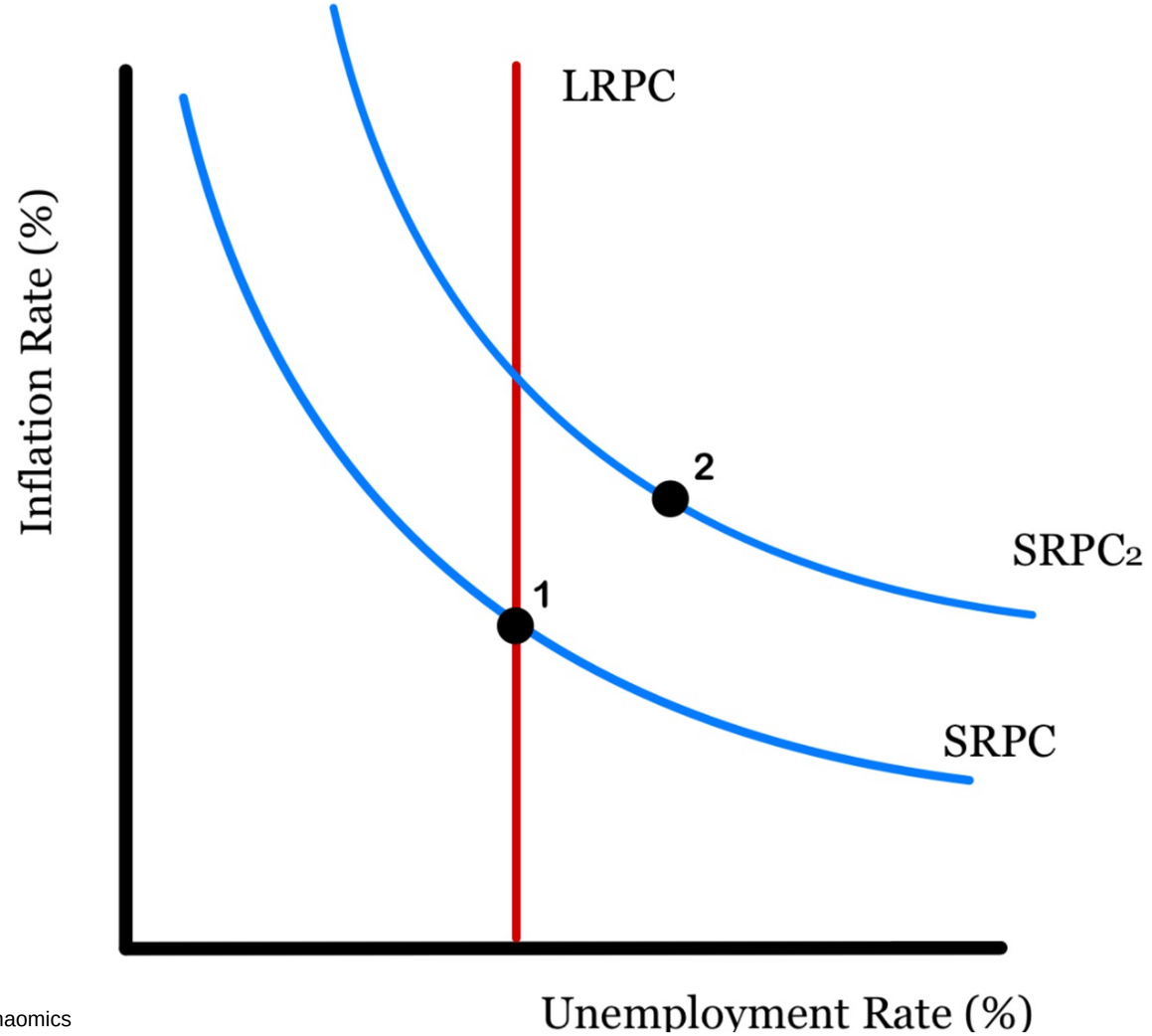
Practice

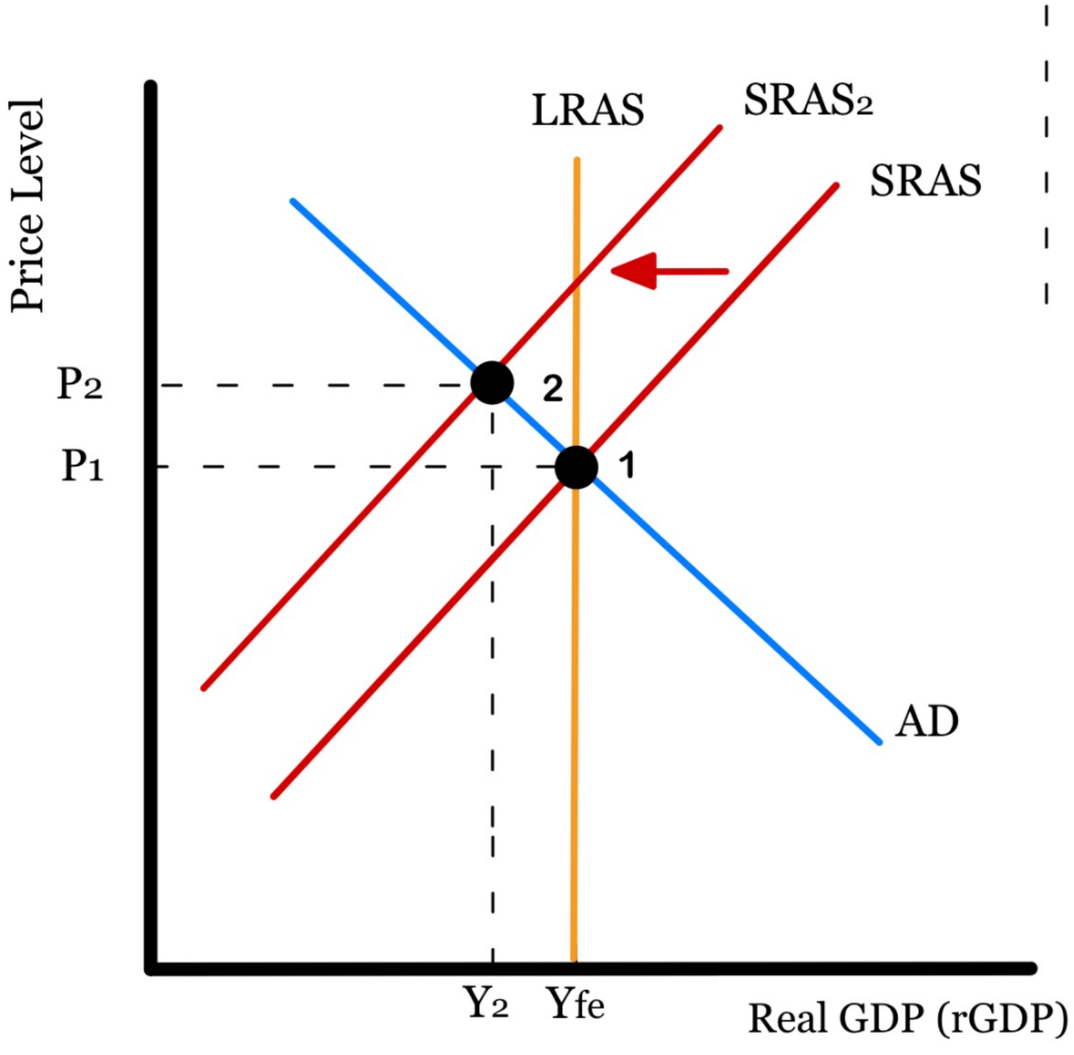
Everything works fine until we experience a simultaneous increase of inflation and unemployment.

Draw the affect of stagflation on a Phillips Curve.

Practice

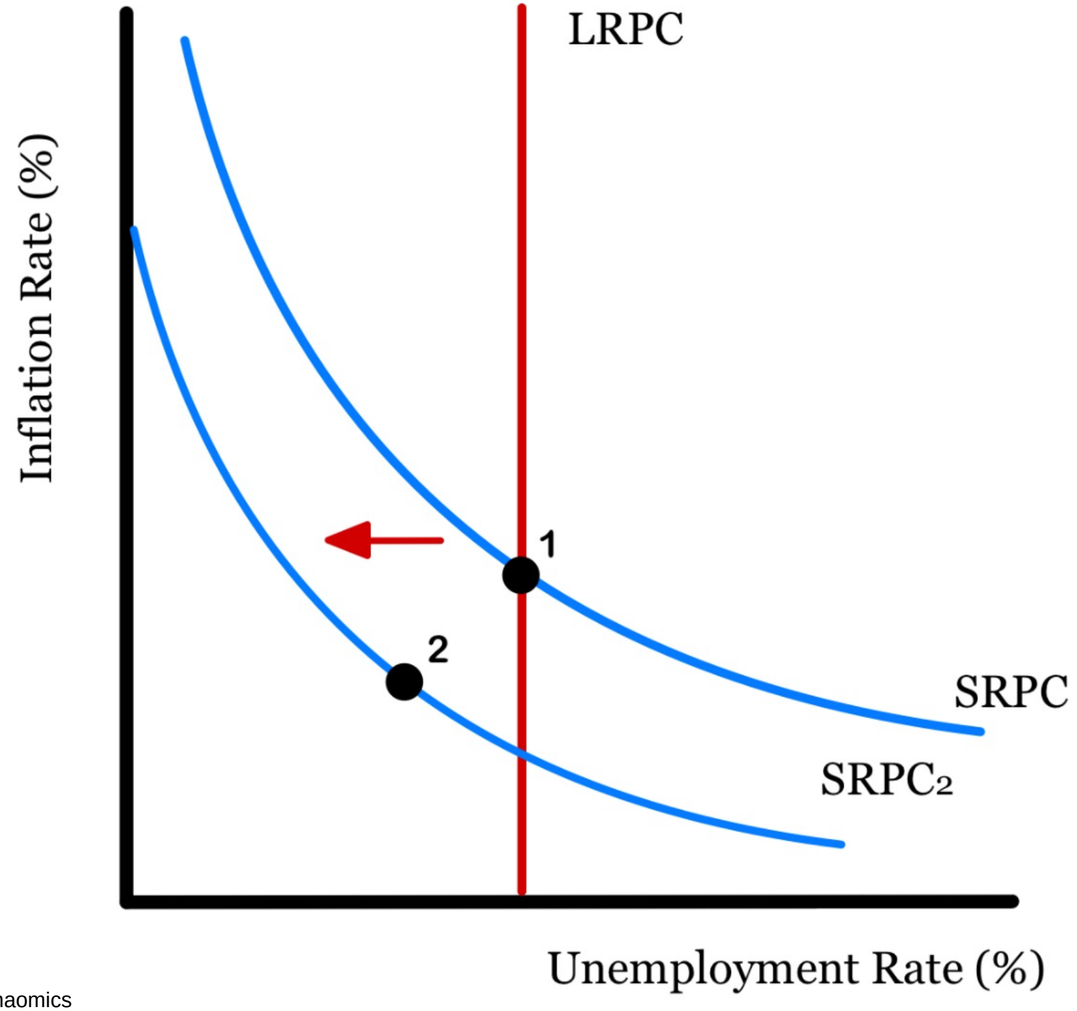
A change in SRAS results in shift of the Short-Run Phillips Curve.

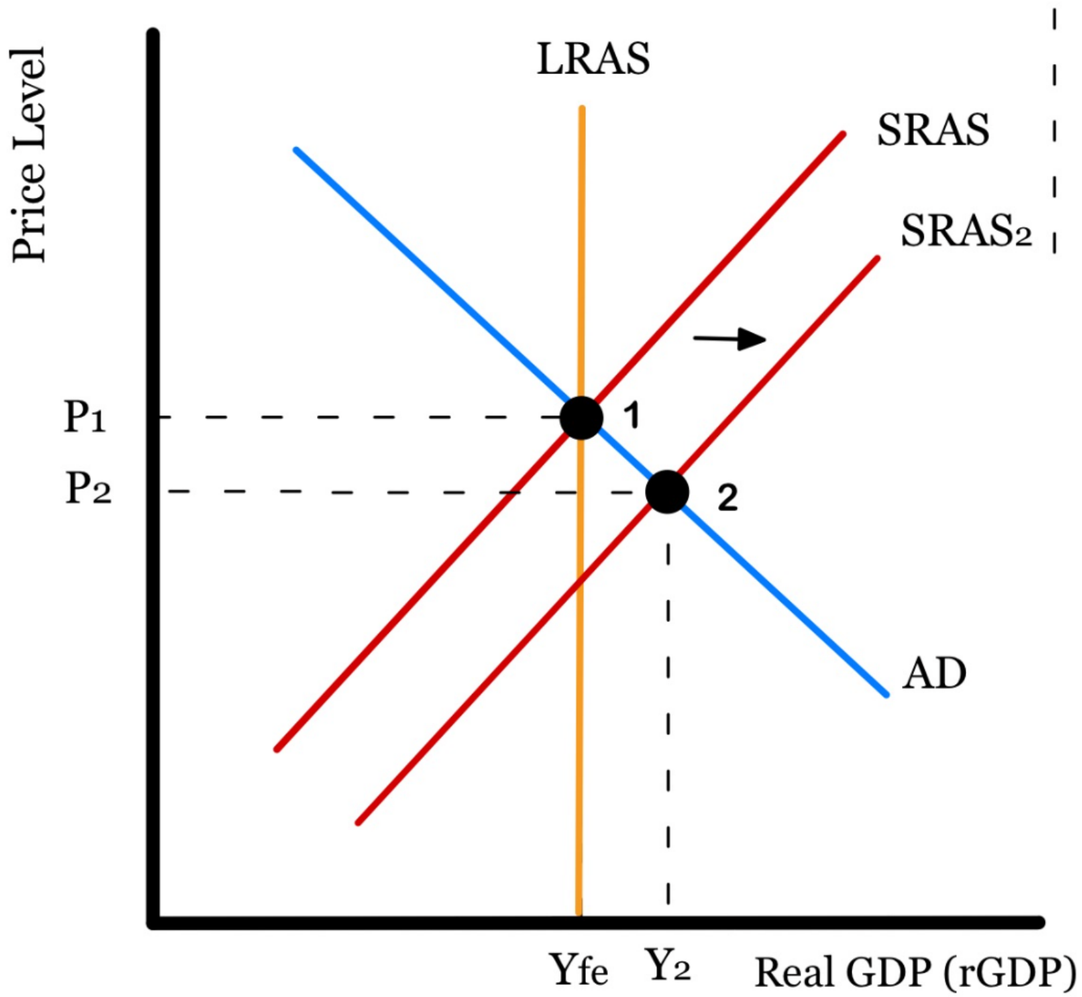




Practice

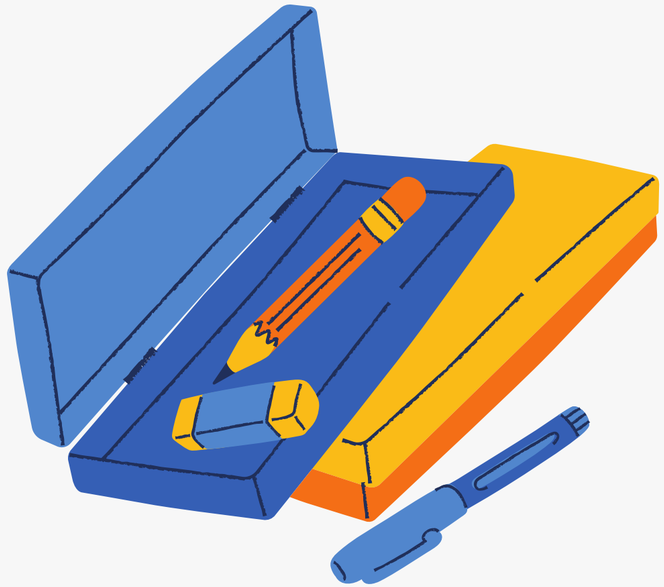
A change in SRAS results in shift of the Short-Run Phillips Curve.





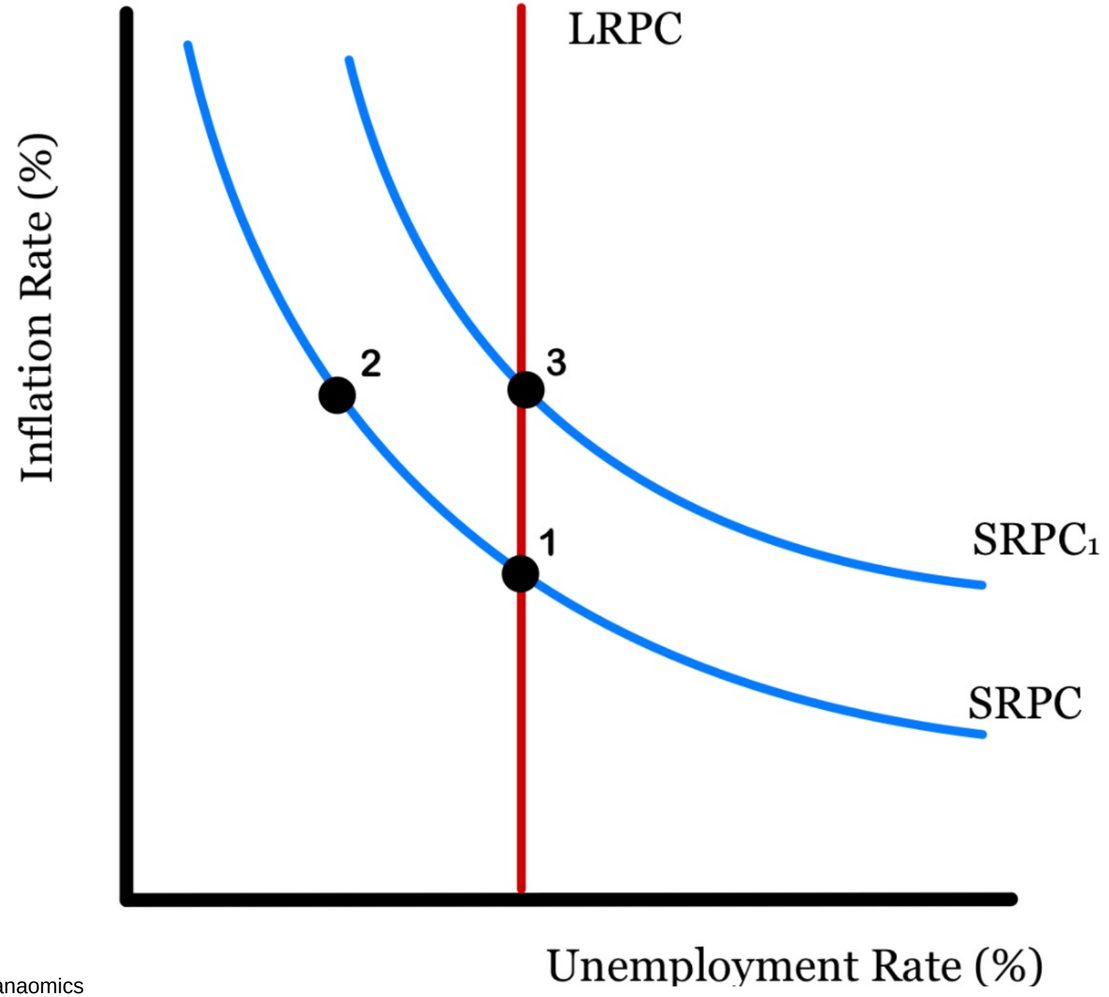
Practice

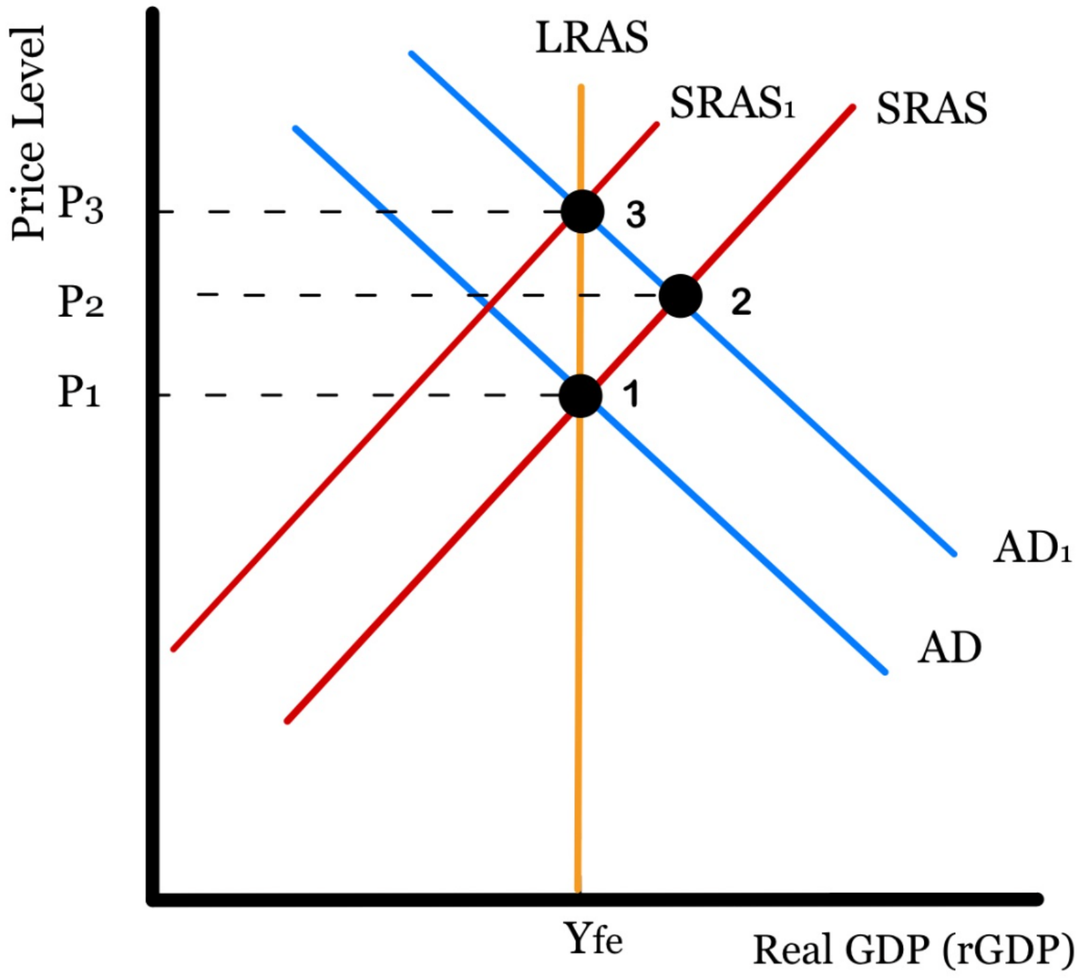
Draw the affects of an increase of AD with a long-run adjustment (neo-classical) on a Phillips Curve.



Practice

Neo-Classical Long-Run Adjustment to an increase in AD.





Deficits and Debt (HL Only)

Definition

Budget

The government creates a budget yearly that outlines their revenue and how they plan to spend money.

Budget Deficit = Government Spending > Government Revenue

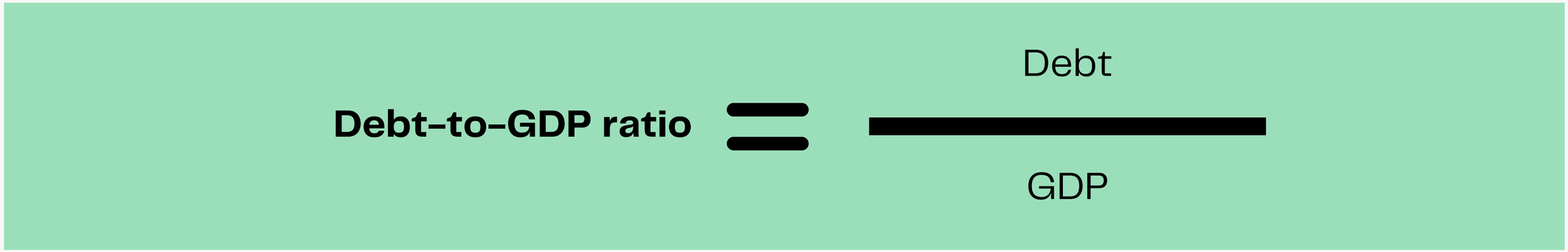
Budget Surplus = Government Spending < Government Revenue

Balanced Budget = Government Spending = Government Revenue

Debt-to-GDP Ratio

Government Debt is the cumulation of Government Deficits.

To measure the sustainability of government debt, the debt-to-GDP ratio should be used.



The higher the ratio, the more difficult it will be to repay the debt

Cost of High Government Debt

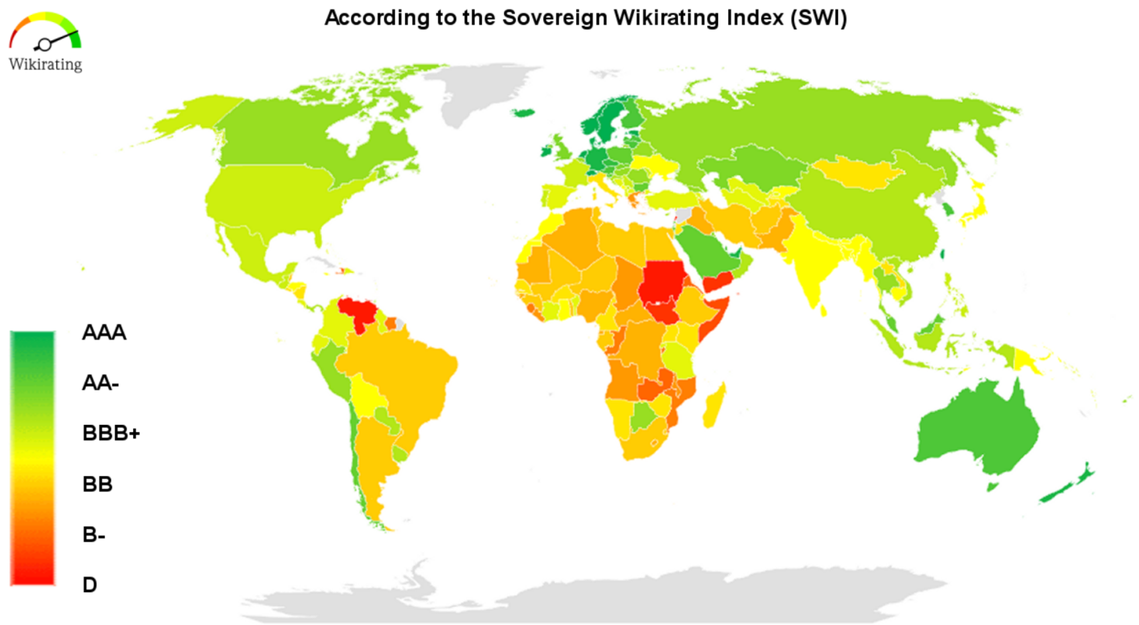
Debt-Servicing Cost

As the debt-to-GDP ratio increases, more money must be paid to creditors to cover the interest.

Debt-servicing is the repayment of principal/interest on the debt owed.

Credit Ratings

Countries have a credit rating similar to an individual's credit score. The rating represents an assessment of how likely a government is able to repay its debt.

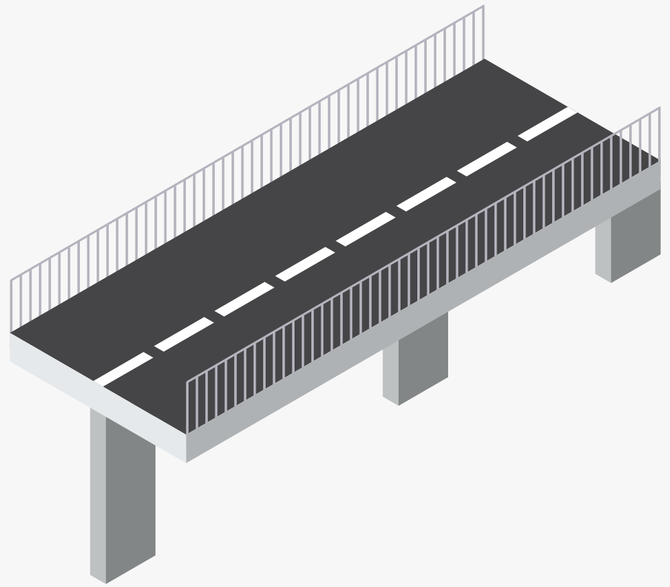


Source: Wikirating

Cost of High Government Debt

Impacts on Future Government Spending

A government that must pay its debts is unable to use that money to promote economic growth by spending on Education, Healthcare, or Infrastructure.



Methods To Know If Debt Is Sustainable

Some countries repay their debt back regularly, while others struggle to service their debts.

Factors that indicate the sustainability of debt

- Political Stability
- Composition of Debt (how long owed? internal or external debt?)
- Vulnerability (Countries that rely heavily on trade)

Practice Question

Paper 1

M14/3/ECONO/HP1/ENG/TZ1/XX

(a) Using **two** AD/AS diagrams, explain cost-push and demand-pull inflation. *[10 marks]*

(b) "The rate of inflation can be most effectively reduced through the use of monetary policy." To what extent do you agree with this statement? *[15 marks]*

Mark Scheme

(a) Using *two* AD/AS diagrams, explain cost-push and demand-pull inflation. ***[10 marks]***

Answers **may** include:

- definition of inflation
- cost-push diagrams to illustrate cost-push inflation (shift SRAS left) and demand-pull inflation (shift AD right)
- an explanation of cost-push and demand-pull inflation
- examples of instances of cost-push and demand-pull inflation.

Candidates may offer explanations of the causes and consequences of cost-push and demand-pull inflation. This is not required by the question but may be rewarded if used to explain the meaning of cost-push and demand-pull inflation.

Mark Scheme

(b) **"The rate of inflation can be most effectively reduced through the use of monetary policy." To what extent do you agree with this statement?** ***[15 marks]***

N.B. It should be noted that definitions, theory, and examples that have already been given in part (a), and then referred to in part (b) should be rewarded.

Answers **may** include:

- definitions of rate of inflation and monetary policy
- diagrams to show the use of monetary and other policies in reducing the rate of inflation
- an explanation of the use of monetary policy, fiscal policy and supply-side policies to control inflation
- examples of where monetary and other policies have been used
- synthesis or evaluation (to what extent).

Command term
"To what extent" requires candidates to consider the merits or otherwise of an argument or concept.

Consideration of the merits of the statement **may** include: the advantages and disadvantages of the use of monetary policy and other policies used to control inflation.

Examiners should be aware that candidates may take a different approach which, if appropriate, should be rewarded.

Opinions or conclusions should be presented clearly and should be supported by appropriate examples.

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