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Variations in economic activity—aggregate demand and aggregate supply

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The big picture

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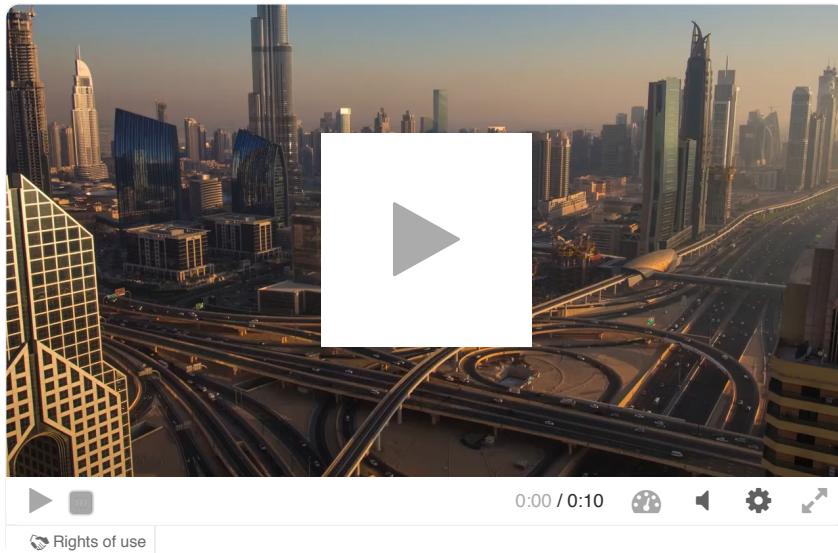
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As in microeconomics, we must consider the level of demand in an economy. In [subtopic 3.1 \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-29927/\)](#), you saw that firms rely on consumer expenditure in the circular flow of income. This allows them to pay for the factors of production necessary for the production of goods and services. You also saw that households, governments and firms investing in expanding their operations, as well as other countries that demand goods and services from an economy in the form of exports, spend their money on those goods and services.

Governments tend to look at the various ways that they can expand upon the economic possibilities available to them. They are focusing more and more on economic stability over time. Dubai, for example, has risen to become a major metropolis in the middle of the desert. Driven by environmental issues such as climate change, authorities there have realised that they will need to pursue alternative paths to growth to ensure economic stability. They have been working on a [sustainable city](#) ↗ (<https://www.thesustainablecity.ae/>) that will be energy use net zero.

Student
view



Video 1. Dubai's Transformation: From Desert Port to Global City.

ⓘ More information for video 1



Figure 1. What has allowed Dubai to grow from a small port city in the desert to what you can see in the timelapse video?

Credit: Getty Images andresr

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What would happen if we suddenly stopped demanding goods and services? What would be the consequences for individuals, firms or governments? What causes economies to grow and what are the benefits of growth? Understanding what causes people to change their behaviour in response to the macroeconomic climate is essential for economists and governments to be able to influence economic activity. Should Japan raise its VAT (<https://www.bbc.com/news/business-49849484>) and risk diminishing consumer spending and encouraging inflation? Why did India suddenly (<https://www.bbc.com/news/business-37906742>) replace all of its 500 and 1,000 rupee notes? How is it that Nigeria has become the richest country in Africa virtually overnight (<https://www.theatlantic.com/international/archive/2014/04/how-nigeria-became-africas-largest-economy-overnight/360288/>)? Questions such as these can be better understood by considering the macroeconomic policies enacted by governments and their ability to see the variations that occur over time.

Concept

Efficiency

Wellbeing

Economic concepts about how the economy is structured and the ways in which it responds to stimuli are still debatable today. Governments might intervene in national economies to influence people's choices and to drive greater efficiency. However, there are many opinions regarding how markets will respond to these interventions. There is no single answer in relation to what governments should do. The timing of an intervention or the most efficient policy to enact are all open to discussion. Sometimes, the question is whether there should be any interventions at all!

In this section, you will look at some of these important questions, such as:

- What drives economic growth?
- How should the government guide the economy in times of boom and bust?
- How can we allocate our national resources in the most efficient ways possible?



Student view

3. Macroeconomics / 3.2 Variations in economic activity—aggregate demand and aggregate supply

Aggregate demand

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It is difficult to know exactly how much people *want* to spend in an economy. Answers to surveys carried out by a country's statistics organisation are very hypothetical indeed. Instead, the data is gathered by measuring the actual spending by different participants in the economy. Aggregate demand (AD) is the total demand for goods and services produced in an economy and consists of consumption expenditure, government expenditure, investment spending and spending on net exports within a given time period. This is the same quantity as GDP; see subtopic 3.1 ([https://app.kognity.com/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-29927/](/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-29927/)).

Therefore, we can calculate aggregate demand using the following formula:

$$\text{Aggregate demand} = C + I + G + (X - M)$$



Shape of the aggregate demand curve

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There are similar reasons why the aggregate demand curve is downward sloping like the market demand curve in microeconomics. As shown in **Figure 1**, as the average price level in the economy falls from P_1 to P_2 , there is an increase in the number of goods and services demanded in the economy from Y_1 to Y_2 . In individual markets, consumers increase the quantity demanded with lower prices because they feel richer (the income effect) or they move away from other goods (the substitution effect). The behaviour of participants in an entire economy is similar but because there are many different participants who make up the economy, we have to make a few changes to our explanation.

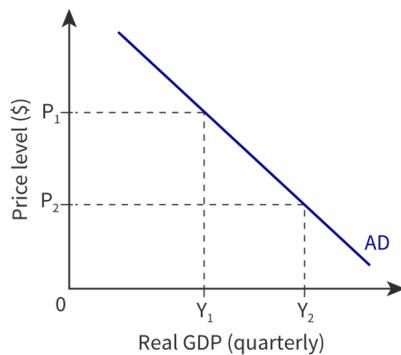


Figure 1. Aggregate demand (AD).

More information for figure 1

The image is a graph representing the aggregate demand (AD) curve. The X-axis is labeled "Real GDP (quarterly)," and the Y-axis is labeled "Price level (\$)." The graph shows a downward-sloping line labeled "AD," indicating the relationship between the price level and real GDP. The price level decreases from P_1 to P_2 , and the real GDP increases from Y_1 to Y_2 , illustrating the inverse relationship between price level and quantity demanded.

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Student view

ⓘ Exam tip

Be careful not to confuse the labels on the Aggregate Demand diagram with those on the Demand diagram. Remember, price becomes price level and quantity becomes real GDP or national output.

⚠ Be aware

There is no requirement in the syllabus for you to explain the reasons why the AD curve is downward sloping. This is to aid your understanding of the fundamentals of Macroeconomics.

There are three reasons that explain the negative slope of the aggregate demand curve:

1. The wealth effect: As the average price level falls, the wealth of participants in the economy increases in real terms as their ability to purchase goods and services improves. The real value of assets, like property or stock, is now higher.
2. The interest rate effect: At lower price levels, interest rates are lower too, giving people more disposable income to spend and with which to demand higher volumes of output. The incentive to save is also lower.

3. **The net balance effect:** A lower price level makes goods and services relatively cheaper for foreign countries to buy. Therefore, the demand for exports rises and the demand for imports from abroad falls, increasing the net trade balance and leaving it in an overall better position.



Figure 2. Consumer spending can make up a large portion of GDP as consumers fulfill wants and needs.

Credit: Getty Images andresr

There is a big difference between the AD curve in macroeconomics and the demand curve in microeconomics. In microeconomics, the downward-sloping demand curve is closely related to the diminishing marginal utility that the consumer derives from the next unit of goods purchased. The only incentive to buy another unit is if the price falls. In macroeconomics, the idea of diminishing marginal utility does not play any part. The downward slope of the AD curve is due to the wealth effect, interest rate effect and net balance effect outlined above. In microeconomics, the horizontal axis measures the quantity of a single good, while in macroeconomics, the horizontal axis represents the quantity of *total output*, or real GDP. This also represents the total income of an economy, as we have seen in the circular flow model.



International Mindedness

Some countries of the world generate most of their aggregate demand through consumption, others by government spending and still others by net exports. Each country may have variations in its macroeconomic structures that could help explain why those differences exist.

2 section questions ▾

3. Macroeconomics / 3.2 Variations in economic activity—aggregate demand and aggregate supply

Determinants of aggregate demand components

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There are many factors that cause the behaviour of participants in the economy to change. Much like with demand in the microeconomics unit, there are movements along the AD curve due to price level changes. The AD curve also shifts due to changes in other determinants affecting the aggregate demand components. Although they appear to be similar, these determinants are different, since aggregate demand is measuring an entire economy and not a market. Participants respond to different external forces, such as government policies, geopolitical influences and sudden financial crises in the banking sectors (like the Great Depression of the 1930s and the Great Recession of 2008–2009).

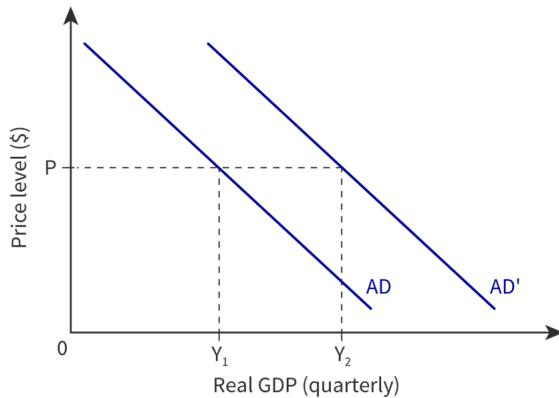


Figure 1. Aggregate demand shifting to the right.

More information for figure 1

The image is a graph illustrating the shift of an aggregate demand curve. The X-axis represents Real GDP (quarterly), increasing to the right, while the Y-axis represents the Price level (\$), increasing upwards. The graph features two diagonal lines, labeled AD and AD', which are demand curves sloping downward from left to right, indicating a negative relationship between the price level and GDP. The initial demand curve, AD, shifts to the right to AD', depicting an increase in aggregate demand. The shift suggests that at any given price level, the real output demanded increases from Y₁ to Y₂. Horizontal dashed lines extend from a labeled point P on the Y-axis to intersect both AD curves, marking price levels and corresponding GDPs. Vertical lines drop from Y₁ and Y₂ on the X-axis to intersect the respective demand curves, illustrating the change in GDP resulting from the shift in aggregate demand.

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Student
view

When any of the components of aggregate demand (consumption, investment, government spending or net exports) change, the aggregate demand curve will shift rightward (outward) or leftward (inward) depending on whether the change in the component causes an increase or a decrease of AD. If the change causes an increase, then at any price level, say P in **Figure 1**, aggregate demand will increase from AD₁ to AD₂, and real demanded output from Y₁ to Y₂.

Table 1. Expenditure components of GDP in the third quarter of 2017 for Australia, Germany and Mexico (in millions of USD)

(Source: OECD).

Country	Australia	% of total	Germany	% of total	Mexico	% of total
Consumption	1 082 383	62%	1 740 602	39%	720 931	66%
Investment	449 538	25%	735 487	17%	377 831	35%
Government spending	218 505	12%	440 632	10%	188 970	17%

Country	Australia	% of total	Germany	% of total	Mexico	% of total
Consumption	1 082 383	62%	1 740 602	39%	720 931	66%
Net exports	6 790	< 1%	1 538 042	34%	-195 525	-18%
Total GDP	1 757 216	100%	4 454 763	100%	1 092 201	100%

✓ Important

As in microeconomics, changes to the price level will only cause a movement along the curve. Changes to the components of aggregate demand will shift the curve.

Consumption

The amount that consumers spend or *feel like they can spend* is hugely important to the smooth running of an economy. In most market and mixed economies, consumer expenditure makes up a large portion of a country's real GDP. This is true for all three of the countries in **Table 1**, where for Australia, Germany and Mexico consumption for the third quarter of 2017 made up 62%, 39% and 66% of total expenditure, respectively. There are seven determinants that can cause consumption to change:

- 1. Confidence:** When consumers start feeling anxious about the economy or their own economic prospects, they may choose to reduce their consumption, causing a leftward shift of the AD curve and reduced national output. If consumers feel confident about their future income and employment, they will tend to spend more and the AD curve will shift rightward.

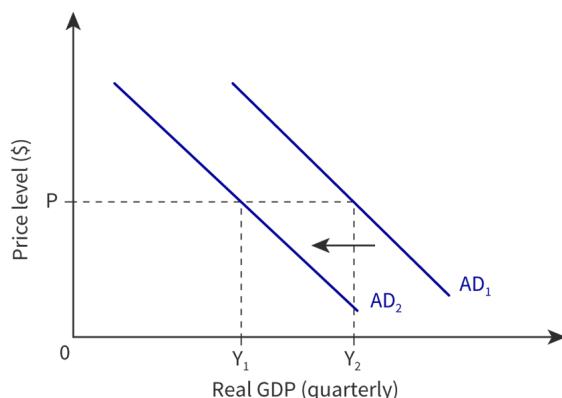


Figure 2. Decrease in consumer confidence following the 2020 coronavirus outbreak.

More information for figure 2

The image is a graph illustrating a leftward shift in the aggregate demand (AD) curve, reflecting a decrease in consumer confidence. The X-axis represents Real GDP (quarterly), with values marked at Y_1 and Y_2 . The Y-axis represents the Price level in dollars, indicated by the label P. Two aggregate demand curves are shown: AD_1 and AD_2 . AD_2 is positioned to the left of AD_1 , denoting a decrease in real GDP from Y_2 to Y_1 while maintaining the same price level at P. A horizontal arrow pointing left illustrates the shift from AD_1 to AD_2 .

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2. Unemployment: The threat of becoming unemployed is a big factor of concern for people, but also for annual real incomes. This in turn influences the ability to consume goods and services. Unemployment is an indicator that is closely monitored (<https://www.cnbc.com/2019/12/31/us-consumer-confidence-december-2019.html>) by governments, especially in relation to seasonal changes.

1. Real interest rates: Most people also tend to buy property or other large purchases by taking out a mortgage or loan with the bank and paying back a monthly sum that includes interest. When interest rates fall, this makes it easier for people to borrow money and spend, as the repayment on that borrowing becomes lower. On the other hand, interest rates also encourage or discourage people to save. As interest rates increase, the incentive to save rises: a leakage to the economy. If interest rates decrease, the incentive to save falls, which encourages consumer spending. Like unemployment, real interest rates are a closely monitored indicator (<https://www.npr.org/2023/09/20/1200327332/federal-reserve-inflation-economy-interest-rates>). Lower savings and increased borrowing can both result in a rightward shift of the AD. Accordingly, higher interest rates will encourage saving and discourage borrowing and will shift the AD leftward.

1. Wealth: Wealth must not be confused with income. Income is earned when the factors of production are exchanged for their respective payments. Wealth refers to assets and includes ownership of property, bonds, shares of a company, and so on. When asset prices rise in a country, it can provide aggregate demand with an enormous boost as people feel wealthier and more able to spend. This was particularly true in the run-up to the financial crisis in 2008, when the housing market in many countries experienced speculative bubbles as property prices rose. AD in the economy will shift rightward when people feel wealthy, leftward when they feel less so due to falling prices of property or falling value of shares owned.

1. Personal taxes: The amount that we have to pay in tax to the government varies from country to country but, generally, most countries pay for public services using the revenue earned from taxes. There are many different types of taxes that have to be paid, including income taxes, indirect taxes and import duties.

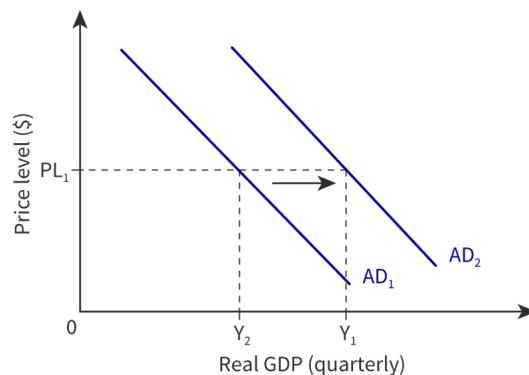


Figure 3. Decrease in tax rates in the USA in 2017.



The image is a graph depicting a shift in aggregate demand. The graph has two axes: the X-axis represents Real GDP (quarterly), starting from 0 and moving to the right with points labeled Y1 and Y2. The Y-axis represents the price level in dollars, starting from 0 and increasing upwards. There are two downward sloping curves labeled AD1 and AD2. AD1 is to the left, and AD2 is to the right, indicating a rightward shift in aggregate demand. Both curves intersect a horizontal line at price level PL1. The shift from Y1 to Y2 on the X-axis is marked by a rightward arrow.

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When income taxes decrease, our disposable income, or the amount of income left to spend on other things, increases, causing consumption to increase. As mentioned in [subtopic 3.1.8 \(/study/app/pp/sid-186-cid-754025/book/investigation-id-31052/\)](#), the [2017 Tax Cuts and Jobs Act ↗ \(https://taxfoundation.org/tax-reform-explained-tax-cuts-and-jobs-act/\)](#) aimed at precisely this outcome. As tax rates went down, aggregate demand shifted rightward, contributing to economic growth.

1. Level of household indebtedness:

Most people have to borrow money not only to buy their home but also for other large purchases like university education, cars and home renovations. In some countries, private sector net debt exceeds annual national output several times over. To see how worldwide debt compares, see [here ↗ \(https://commodity.com/debt-clock/\)](#).

Borrowing money and spending is good for GDP in the short term, as it allows people to increase consumption. However, in the long term, individuals deprive themselves of future consumption to pay back the debt with interest. This will mean a short-run shift of AD rightward that might result in a later leftward shift as debt is repaid.



1. Expectations of future price level:

Consumers may decide to spend more and save less if they expect prices to rise in the future. This price rise is called inflation. On the other hand, consumers may decide to spend less and save more if they expect prices to fall in the future. This price fall is called deflation. You will learn about inflation and deflation in the next subtopic. When consumers expect future inflation, they tend to spend more in the present, shifting AD rightward.

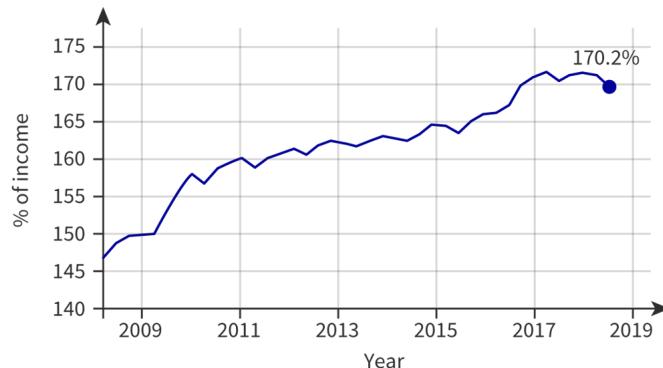


Figure 4. As household debt in Canada rises, it allows for greater consumption, while also causing greater repayments, which may decrease future consumption in the economy.

Source: "Statistics Canada (<https://www150.statcan.gc.ca/n1/pub/11-626-x/11-626-x2019005-eng.htm>)"

More information for figure 4

Investment

Investment spending in economics is a distinctly different form of investment from what you might expect. Often, we use the term to refer to the kind of investment that takes place in financial markets, such as the stock market, bond market and foreign exchange market. In economics, we call this financial investment. The general term investment refers to planned or induced investment that *businesses do* to add to their capital stock for expansion, such as building new factories or purchase of machinery. It can also include replacing worn-out equipment over time.

There are five factors that affect the level of investment:

1. Interest rates: As with consumers, interest rates play a big role in determining a firm's decision to borrow.

Sometimes, firms borrow to finance large-scale investment. This is because it is easier to manage repayments with smaller amounts rather than to save the money and spend it all at once.

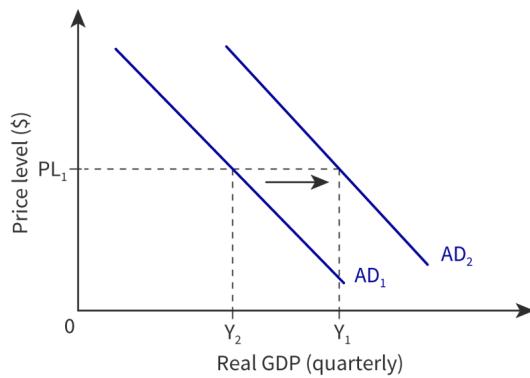


Figure 5. Lower interest rates in the UK in 2020.

More information for figure 5

Higher interest rates make borrowing less attractive and can cause investment to fall (AD shifts leftward). In contrast, lower interest rates may encourage borrowing and investment (AD shifts rightward) as long as the perceived reward of that investment through increased consumption is higher than the interest rate.

1. Business confidence: The health of the economy is important for all businesses as they need to be able to plan for the future. For example, if prices are rapidly rising in an economy, or a recession appears to be looming, firms are unlikely to spend or plan for expansion. They will cut their costs (causing AD to shift leftward). Like consumer confidence, business confidence is closely monitored (<http://finance.yahoo.com/news/uk-economy-gdp-growth-recession-ons-figures-economic-output-official-alarm-113107308.html>) as a warning sign of an economic slowdown.

1. Technology: Investing in the innovation of technology can ultimately lead to market growth, reduced costs and time saved, allowing countries to make the best use of their resources. For example, consider [this video segment](#) (<https://youtu.be/SJT6L-wDBhc?t=1380>) on hydroponics, a new way of growing plants without soil. Improvements in technology reduce the need for using more resources than are necessary and decrease production costs, causing AD to shift rightward. However, technological innovation itself takes time and costs money to develop. It also costs a lot of money to implement the new technology into a business, and training for staff is often required before this technology can be used.

1. Business taxes:

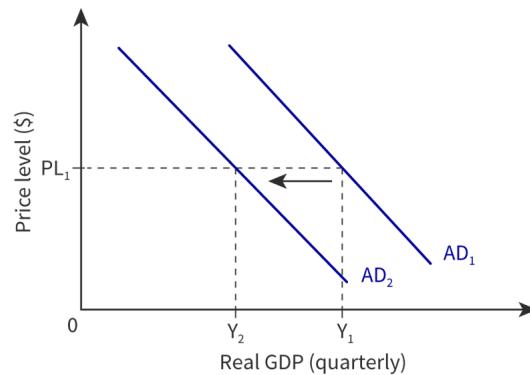


Figure 6. Increase in business taxes.

[More information for figure 6](#)

Like consumers, firms also pay taxes to the government. Raising business taxes reduces the amount left for investment and causes leftward shift of AD. Therefore, it is important that taxes are set to an appropriate level. This means that governments are not discouraging firms from setting up businesses in their country or from making investments.

1. Level of corporate indebtedness: Like consumers, firms also borrow money to finance their expansion. This is especially true for entrepreneurs starting new businesses. They will often approach banks to lend them the start-up capital necessary to launch their brand. These debts have to be paid with future earnings and so can slow future investment, causing a leftward shift of AD.

⚠ Be aware

Investment in the economy does **not** refer to investment in the stock market or other financial markets. That is called financial investment. When we say investment, we mean spending on capital by firms for their own expansion — something that will happen less if the economic climate is not healthy.

Government

Governments spend vast quantities of money in their economies, such as on hospitals, roads, public sector employees, and so on. What they spend the money on largely depends on their political and economic priorities.

Political priorities change as governing parties change in a state. When a new government is elected, it will often have different priorities compared to the last one. As it will have new powers over government expenditure, such as how much tax is levied, different sectors of society will be prioritised, such as education, healthcare, defence, welfare and so on.

Economic priorities are based on the health of the economy. They may change depending on current and future predictions of how the economy is doing at achieving macroeconomic goals, such as employment or low and stable inflation. For example, governments may increase spending on social welfare programmes, such as unemployment, during a recession. Many countries ↗

(<http://www.oecd.org/els/soc/OECD2012SocialSpendingDuringTheCrisis8pages.pdf>) did this following the 2008 financial crisis, most notably France, Denmark and Sweden.

Spending by the government as part of national economic activity varies by nation, but some of the more developed countries ↗ (<http://data.oecd.org/chart/5On6>) of the world have nearly 50% of their GDP accounted for by government spending.

Net exports

Some countries are heavily reliant on their trade balance to generate growth, such as China, Japan and many oil-exporting countries such as the UAE. Have a look at this map ↗ (<https://data.worldbank.org/indicator/BN.GSR.GNFS.CD?end=2018&start=2018&view=map>) of the world trade balances to view countries' current net exports.

International Mindedness

Some countries are net importers, like Spain, India and the USA, while others, like South Korea, Germany and Japan, are net exporters. Much of the world's goods and services are made partially or wholly outside the countries they are consumed in and raw materials are sourced from all over the world, requiring a vast and complicated network of international trade.

Net trade in goods and services (BoP, current US\$) 2018

Data from [World Bank](#)

Figure 7. How much do countries of the world import and export with one another?

 More information for figure 7

Trade enables countries to benefit from each other's strengths in production in the global economy. Whilst this is a good thing, it can be problematic if countries become overdependent on each other and too many factors change beyond control. Here are three important factors that may affect trade and net exports.

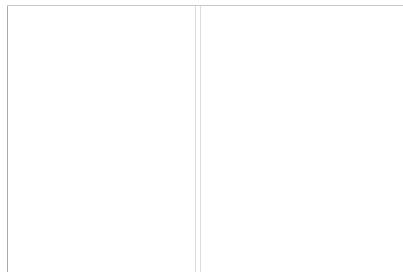


Figure 8. Factors Affect Trade and Net Exports.

 More information for figure 8

- 1. Income of trading partners:** Economic growth abroad is necessary to sustain demand for exports and, as we saw during the financial crisis of 2008, it is not always guaranteed. The growth of large emerging consumer markets like China, India and Indonesia has provided large boosts in the exports for developed markets like Germany, Japan and the USA. As incomes have risen in the emerging markets, a greater demand for the exports of the developed markets has resulted in a shift of AD, increasing growth for Germany, Japan and the USA. However, this relationship also means that these economies are linked. A slowdown in consumption in one economy can result in a leftward shift of AD in another, as consumers become less willing or able to purchase the exports. In early 2020, [Japan and Germany wobbles](https://www.theguardian.com/business/2020/feb/17/japan-economy-heading-for-recession-and-germany-wobbles)'s growth was impacted when the economy of one of their largest trading partners slowed down and consumption of their goods and services slumped.

2. **Exchange rates:** The values of currencies determine the relative prices of goods and services traded. When exchange rates appreciate, more of one currency is required to purchase another, and therefore more money is needed to acquire the same good. This makes exports less competitive abroad, but also makes it cheaper to import goods and services, which will cause a leftward shift of AD. Depreciation causes the opposite to happen. Changes in the exchange rate may affect the aggregate demand, but to what extent depends on the size of the trade balance and relative price elasticity of demand (PED) of imports and exports. More on this will be discussed in [topic 4: The global economy \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-30650/\)](#).
3. **Changes in trade policies:** Countries might change their trade policies, which will affect the way that they interact with other economies. They might impose restrictions on the way goods or services are imported from another country, or change the way they support their own industries when competing with foreign firms. Countries can also:
 - a. impose taxes on imports, known as tariffs
 - b. impose restrictions on volumes of goods imported, known as quotas or voluntary export restrictions (VER)
 - c. support their own industries with subsidies.
4. Less traditional methods also include exchange rate manipulation and health and safety requirements. When countries increase the level of protectionism, other countries struggle to sell the same volume of goods and services. The aggregate demand then increases for the importing country and falls for the exporting country. For example, in 2019, US president Donald Trump said he would place tariffs on steel and aluminium coming into the US from [Brazil and Argentina](#) (<https://www.bbc.com/news/business-50633500>). This was an effort to protect domestic producers and decrease imports.

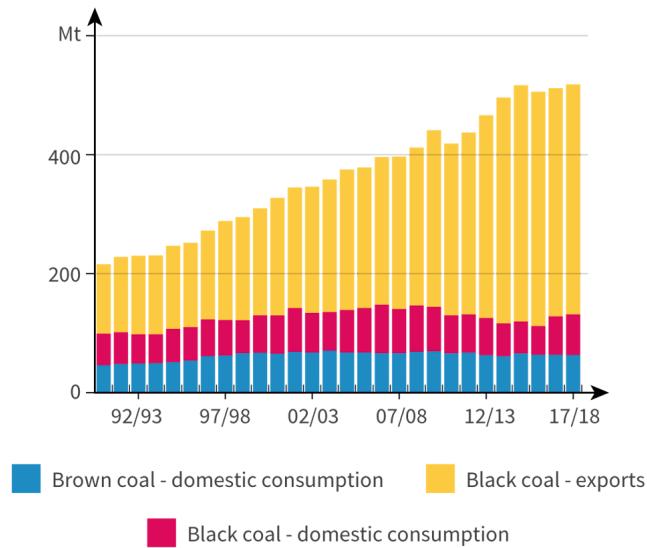


Figure 9. As coal production in Australia has increased, so has its export of coal.

Source: "Geoscience Australia (<https://www.ga.gov.au/data-pubs/data-and-publications-search/publications/australian-minerals-resource-assessment/coal>)"

More information for figure 9

The image is a stacked bar chart illustrating coal production and export trends in Australia over several years. The X-axis represents the time period from 1992/93 to 2017/18, with intervals labeled as 92/93, 97/98, 02/03, 07/08, 12/13, and 17/18. The Y-axis represents the coal quantity in million tonnes (Mt), with intervals marked at 0, 200, and 400 Mt.

The chart uses three colors to differentiate between types of coal and their uses: blue for brown coal domestic consumption, red for black coal domestic consumption, and yellow for black coal exports. Each bar represents the total of these three components for a given year, stacked on top of each other.

Overall, the chart shows a trend of increasing coal production and export over time, with a notable rise in black coal exports, depicted by the expanding yellow section of the bars. The domestic consumption of both brown and black coal appears relatively stable compared to the export growth.

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Case study

Australian reliance on exports

The Australian economy is highly dependent on exports. In particular, exports of mined natural resources account for roughly 6% of GDP. Of that, 3.7% comes from coal. Mining and exporting of natural resources such as gold and iron ore have a long history in Australia. The demand for natural resources, such as fossil fuels like coal from Australia, has increased due to the expansion of emerging economies like China and India.



Rig

Video 1. Australia's Coal Production and Exports on the Rise.

 More information for video 1

Figure 10. As coal production in Australia has increased, so has its export of coal.

A full 24% of exported coal from Australia goes to China. In 2019, it was reported that the Chinese government was turning towards natural gas in order to generate electricity. Imports would be curbed in an effort to support the domestic Chinese coal industry. This might signal a possible end to what has been a boom to Australian coal exports and their contribution to overall Australian GDP.

Source: Adapted from [China gas demand to surge in 2019, but maybe not enough to sop up LNG glut](https://www.reuters.com/article/us-china-gas-beijinggas/china-gas-demand-to-surge-in-2019-but-maybe-not-enough-to-sop-up-lng-glut-idUSKCN1RKOBW) (<https://www.reuters.com/article/us-china-gas-beijinggas/china-gas-demand-to-surge-in-2019-but-maybe-not-enough-to-sop-up-lng-glut-idUSKCN1RKOBW>), Reuters and [Australia's coal bonanza at risk as Chinese import 'ban' spreads](https://www.theguardian.com/environment/2019/mar/22/chinese-ports-restricting-australian-coal-on-the-rise-as-export-bonanza-in-danger#:~:text=The%20number%20of%20Chinese%20ports,structural%20change%20to%20the%20economy.) (<https://www.theguardian.com/environment/2019/mar/22/chinese-ports-restricting-australian-coal-on-the-rise-as-export-bonanza-in-danger#:~:text=The%20number%20of%20Chinese%20ports,structural%20change%20to%20the%20economy.>), The Guardian.

- What will likely happen to the AD of Australia as China begins to slow its buying of Australian coal?
- What is likely to happen to the GDP of Australia?
- Consider the fact that China is shifting from imports to consuming its own coal production. What effect will this have on China's GDP?

Visit this page (<http://wits.worldbank.org/visualization/detailed-country-analysis-visualization.html>) for a visual representation of the imports and exports of your country to others.

4 section questions ▾

3. Macroeconomics / 3.2 Variations in economic activity—aggregate demand and aggregate supply

Aggregate supply

Section

Student...

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Feedback



Print (/study/app/pp/sid-186-cid-754025/book/aggregate-supply-id-30342/print/)

Assign



The behaviour of firms is the subject of one of the most heated debates in economics. How firms make decisions regarding the prices of resources and goods has wide-reaching implications for our daily lives. As in microeconomics, we have to consider the volume of output that firms are willing and able to provide to the marketplace given the numerous factors that affect their ability to do so. However, in macroeconomics, aggregate supply is treated differently depending on the time period considered: we will consider aggregate supply (AS) in the short and long run for the whole economy.

Aggregate supply in the short run

Aggregate supply is the total quantity of goods and services produced in an economy (real GDP) over a specific time period at different price levels. The short run in macroeconomics is considered to be the length of time during which resource prices stay relatively constant. Firms do not typically face changing costs on a daily or weekly basis; this would be very unstable indeed. There is, therefore, a positive relationship between the output that firms are willing and able to provide and the selling price of goods and services in the economy. As firms receive higher prices for the goods that they sell, they will be more willing and able to produce output, as long as their costs of production, especially wages, remain constant in the short run. If we look at the short-run aggregate supply (SRAS) curve in **Figure 1**, as the price level rises in the economy from P_1 to P_2 , real GDP or real output in the economy can increase from Y_1 to Y_2 .



Student view

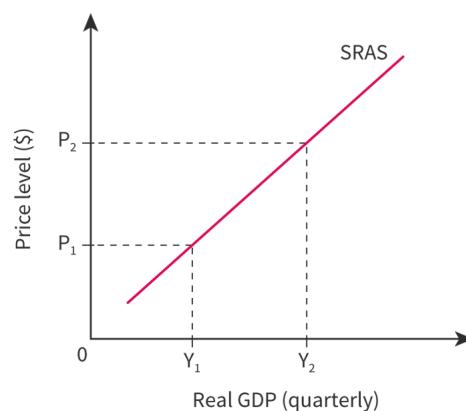


Figure 1. Aggregate supply in the short run.

More information for figure 1

The graph illustrates the short-run aggregate supply (SRAS) curve. The X-axis is labeled 'Real GDP (quarterly)' and the Y-axis is labeled 'Price level (\$)'. The graph shows that as the price level increases from P_1 to P_2 , the real GDP increases from Y_1 to Y_2 . This represents the positive relationship between price level and real GDP in the short run, depicted by the upward-sloping line labeled SRAS.

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✓ Important

The short run in macroeconomics is the period during which resource prices or costs of production remain relatively constant, especially wages.

Determinants of short-run aggregate supply (SRAS)

The aggregate supply curve is upward sloping, much like the supply curve you see in microeconomics. Anything that causes shifts in the short-run aggregate supply curve can be broadly categorised as determinants causing changes in costs of factors of production. In the short-run aggregate supply curve, this includes:

- resource prices
- government intervention
- government subsidies
- supply shocks.

A rightward shift in SRAS means that firms produce a larger quantity of real GDP at any price level, or short-run aggregate supply increases. A leftward shift in SRAS means that firms produce a smaller quantity of real GDP at any price level, or a decrease in short-run aggregate supply.

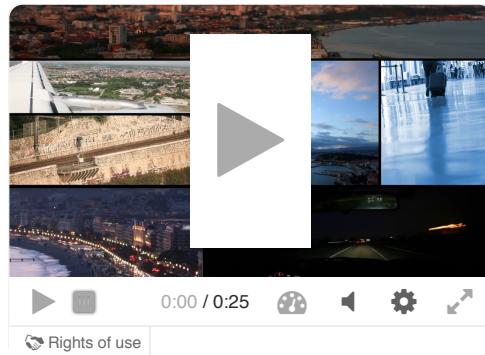


Figure 2. The Impact of Energy Prices on Economies.

More information for figure 2

The video explores the dependence of economies on energy through a dynamic seven-quadrant montage of urban landscapes and transportation scenes. It highlights how energy powers daily life, from bustling cityscapes and air travel to trains, highways, and personal commutes, emphasizing the impact of energy prices on the cost of goods and services.

At the top, a city transitions from day to night, glowing with lights as vehicles move

continuously. The central section is divided into four parts featuring an aircraft soaring through the sky, a speeding train on a track; a harbor with a boat approaching the dock at sunset under dark clouds; and an individual pulling a trolley in an airport.

The bottom section consists of two frames: one captures a busy nighttime highway filled with vehicles moving in opposite directions, while the other shows a high-speed car on a brightly lit highway flanked by tall buildings.

The seamless transitions between these scenes underscore energy's crucial role in infrastructure, transportation, and economic activity, demonstrating its deep connection to everyday life and global commerce.

Resource prices

Just like you learned in microeconomics, the price of inputs relating to production can have a significant impact on a firm's productive capacity and ability. In macroeconomics, the same is true. However, in this case it means that any price changes will be so significant that they will have an impact on the majority of firms within a country. For example, consider changes in energy costs such as generated electricity or oil. Think for a moment about what might happen if the price of electricity suddenly doubled. Anything that is plugged in or charged is now twice as expensive to operate. Firms would be impacted disproportionately, but **all** firms would be affected. Sometimes, this happens as infrastructure ages or fails to keep up with population growth. For example, in the US, the electricity provider [Pacific Gas & Electric has been struggling](https://www.theguardian.com/business/2020/jan/13/californias-wildfire-risk-keeps-getting-worse-now-a-decade-of-blackouts-lie-ahead) (<https://www.theguardian.com/business/2020/jan/13/californias-wildfire-risk-keeps-getting-worse-now-a-decade-of-blackouts-lie-ahead>) to keep California supplied with power due to increasing seasonal wildfires in the region and climate change. As a result, many businesses are facing higher costs in generating consistent electrical power to run their operations across the state and [some are even shutting down](https://www.latimes.com/california/story/2020-01-04/jimtown-store-wine-country-fires-blackouts) (<https://www.latimes.com/california/story/2020-01-04/jimtown-store-wine-country-fires-blackouts>). When this happens, the short-run aggregate supply curve (SRAS) shifts to the left. This is because the short-term production capability of firms, as well as the number of firms in the economy, decreases. Of course, the opposite can also be true. If energy prices fall, then the SRAS will shift to the right as resource prices to firms are reduced.

Another example of changes in resource prices is the cost of labour. Labour costs are the major costs for firms, so any increase required by the government in wages and salaries, such as changes in minimum wage legislation, will affect the production costs of firms across the entire economy. It should be noted that wages and salaries usually do not decrease as labour contracts are usually signed on a fixed wage, labour unions resist wage cuts, and firms avoid wage cuts as it affects morale and productivity.



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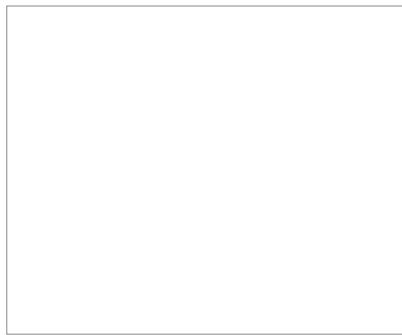


Figure 3. If energy prices fall, production costs for firms will be lower. This results in the aggregate supply of a country increasing.

More information for figure 3

An interactive line graph illustrating how changes in Short-Run Aggregate Supply (SRAS) impact real GDP and price levels in an economy. The horizontal axis represents Real GDP, indicating the total output in the economy, and the vertical axis represents Price Level, showing the overall price changes in the market.

The interface includes a slider control at the top, which allows users to shift the SRAS curve (blue line), demonstrating the effects of supply-side changes. As the SRAS curve moves, the new equilibrium point is established, altering both price levels (P) and real GDP (Y). The changes are dynamically reflected on the graph, helping us visualize supply-side adjustments.

An increase in Short-Run Aggregate Supply (SRAS) occurs when production becomes more efficient or less expensive, shifting the SRAS curve rightward. This leads to higher real GDP and lower price levels, contributing to economic growth and reduced inflation. Conversely, a decrease in SRAS happens when production costs rise or economic disruptions occur, shifting the curve leftward. This results in lower real GDP and higher price levels, leading to inflation and reduced economic output.

The graph demonstrates how changes in production costs, labor markets, and technological advancements shift SRAS. Users can observe how supply shocks can trigger cost-push inflation or economic expansion. Users can connect to real-world factors like oil price shocks, productivity improvements, and policy interventions.

Student view

Government intervention

- Regulation:

Governments can choose to increase or decrease the amount of regulation firms face. This allows firms to retain or spend more of their revenue to meet those regulations. Although regulations are meant to keep workers safe, the environment clean, and market movements fair, it is argued ↗ (<https://www.forbes.com/sites/adammillsap/2019/07/23/how-too-much-regulation-hurts-americas-poor/#50c33bf2271f>) that they can slow economic growth if they become outdated or oppressive. Firms are unable or disincentivised to invest in more and better factors of production.

- Changes in business taxes:

Governments can lower taxes for citizens, which provides them with a greater disposable income. This enables them to consume more and boost the aggregate demand in an economy. Similarly, governments can lower taxes for businesses, which allows them to keep a greater share of their profit. This means that they can reinvest their money to increase the number or efficiency of the factors of production that they use. Governments, such as in China ↗ (<http://www.chinadaily.com.cn/a/201904/18/WS5cb7d348a3104842260b6dbb.html>), will often extend a tax cut to businesses when they see private investment in the economy slowing down.

Government subsidies

Governments may provide subsidies to firms in order for them to be able to expand on their productive resources, whether it is in quality or quantity. Governments might decide to provide these subsidies in one of two different ways. For example, they might decide to subsidise:

1. an industry that holds a large share of the nation's economic capacity. In many less economically developed countries, there is not an industry that would fit this criteria as they are many and varied. However, in some developing economies that are commodity driven, such as Nigeria ↗ (https://dataviz.worldbank.org/t/WITS/views/Countryprofile/CountryAnalysis?:embed=y&:loadOrderID=0&:display_s_Ghana ↗ (<https://www.aljazeera.com/ajimpact/chocolate-danger-ghana-cocoa-output-hit-hard-dry-hot-winds-200219142354072.html>)), subsidies may have a large enough impact to shift the SRAS curve (although this happens rarely).
2. an energy provider. As you have seen in the Resource prices subsection above, if energy production is subsidised, that means prices for energy will decrease. This results in cheaper production costs for many, if not all, firms in an economy. While many citizens enjoy the low energy prices, the removal of a subsidy can have a wider economic impact: for example, the proposed fuel subsidy cuts in Ecuador ↗ (<https://www.reuters.com/article/us-ecuador-protests/ecuadors-moreno-scaps-fuel-subsidy-cuts-in-big-win-for-indigenous-groups-idUSKBN1WT265>) sparked widespread violent protests in late 2019.

⚠ Be aware

Subsidies can explain an outward shift of the SRAS, but this will only actually happen in some very specific cases. It is also worth noting that subsidies represent an opportunity cost in spending for governments as the funds could be used in an alternative way.

① Exam tip

Students will often use subsidies to describe an increase in SRAS as a way for governments to implement this supply-side policy. However, students should be careful when using subsidies as an explanation, because subsidies are usually used to target specific industries. In most economies, no one industry accounts for a large share of an economy's productive capacity.

Supply shocks

A supply shock refers to what happens to the overall aggregate supply in a country when it is affected by an event. In the 1970s, the Western world experienced a supply shock as the price of oil rose sharply. All firms in the economies of Western countries were impacted by this, as they all used fuel derived from oil for energy. Supply shocks can also occur if there are large-scale natural or human-made disasters that delay or destroy the regular production of a business in the short run, such as droughts, wildfires, floods and financial crises. Climate change is especially harmful to countries that

 rely heavily on agricultural products for export revenue, such as economically developing nations. These environmental factors and their impact are [expected to worsen](https://www.cnbc.com/2020/01/17/developing-nations-more-exposed-to-climate-risks-mckinsey-finds.html) (<https://www.cnbc.com/2020/01/17/developing-nations-more-exposed-to-climate-risks-mckinsey-finds.html>) over time.

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Activity

Either in a group or independently, have a look at the list of countries by GDP sector [here](https://en.wikipedia.org/wiki/List_of_countries_by_GDP_sector_composition) (https://en.wikipedia.org/wiki/List_of_countries_by_GDP_sector_composition). Decide which ones are currently largely dependent on agriculture for their economic activity. Which countries would be most harmed by climate change right now? What about in the future?

Now, look [here](https://coastal.climatecentral.org/map/7/137.7064/35.4002/?theme=sea_level_rise&map_type=coastal_dem_comparison&elevation_model=coastal_dem&forecast_year=2050&pat) (https://coastal.climatecentral.org/map/7/137.7064/35.4002/?theme=sea_level_rise&map_type=coastal_dem_comparison&elevation_model=coastal_dem&forecast_year=2050&pat) see which countries are expected to experience coastal flooding, potentially damaging crucial ports required for exporting agricultural products.

Are there any countries that feature in **both** of your searches?

Alternative views of aggregate supply

In the long run, all factors of production are variable. It is not the costs of production that will determine how much firms can produce, but instead, the quality and quantity of factors of production available to firms at any one moment in time.

There are two schools of thought that have very different fundamental views about the role of government in managing the economy: the 'new classical' or 'monetarist' school and the 'Keynesian' school. The central focus of their disagreement is long-run aggregate supply, and we will explore both of these views below.

The new classical school

The new classical, also known as the monetarist, school of thought primarily believes in the power of the market. As you saw in the sections on microeconomics, if prices are allowed to be fully flexible (not setting any price controls or introducing taxes or subsidies), markets can correct any shortages or surpluses. In addition, when markets reach equilibrium, community surplus is maximised through allocative efficiency.

 Student view

This is also true in the macroeconomy. If resource prices are allowed to rise and fall according to market behaviour, then all resources can be fully employed in the long run, maximising the nation's output. The economy will always return to the full employment level of output (or potential GDP) as the price level has no effect on the full *potential* of output. Therefore, we can draw a perfectly inelastic long-run aggregate supply (LRAS) curve.

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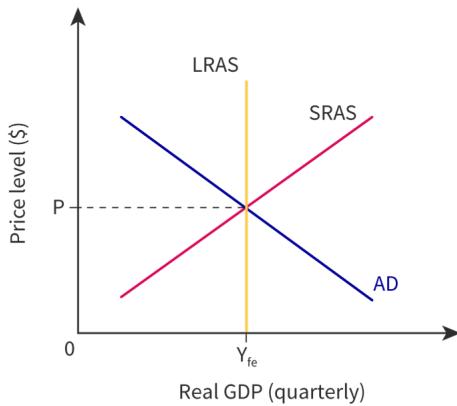


Figure 4. Full employment equilibrium according to the new classical school.

More information for figure 4

The graph depicts a full employment equilibrium according to the new classical school. It features three lines: LRAS, SRAS, and AD. The X-axis represents Real GDP (quarterly), marked as (Y_{fe}), indicating the full employment level of output. The Y-axis indicates the price level in dollars. The LRAS line is vertical, showing an inelastic long-run aggregate supply. It intersects with the SRAS and AD lines at equilibrium point P. The SRAS is upward sloping, and the AD is downward sloping. These intersections illustrate how price levels and GDP can adjust to each other to maintain full employment without affecting potential GDP.

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The new classical school assumes that if prices are fully flexible in the long run, the price level does not affect the level of output of firms and their profits, so firms have no incentive to produce more in the long run. If the price level of goods and services falls, and firms can lower wages of workers, then firms can employ the same number of workers and produce the same output.

Student view

The Keynesian school



Figure 5. Keynes asserted that 'in the long run, we are all dead.' He advocated for government action in the short run.

Credit: Getty Images Tim Gidal / Stringer

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John Maynard Keynes was an economist from the United Kingdom, a Cambridge University professor who had much success as a policy advisor during World War I. He became a controversial figure when he walked out of negotiations for the Treaty of Versailles as a protest against the huge interest rate payments that were to be demanded from Germany. His main contribution was to explain why the economy was not recovering in the way that the new classical school suggested it would. His reasoning was that resource prices exhibit downward inflexibility. Some of Keynes' most influential work was right in the middle of the Great Depression, a time that clearly illustrated his ideas.

When there is spare capacity in the economy and firms look for ways to cut costs, Keynes argued that they cannot do this by cutting wages. Nowadays, wages are protected by labour contracts, trade unions and minimum wage laws. As a result, the economy gets stuck in a short-run position. As you can see in **Figure 6**, when output falls below the full employment level of output, Y_{fe} , the price level stays relatively constant at P_1 . Rather than adjusting to lower prices and therefore coming back to full employment, an economy can remain operating below its full potential. This is called a 'recessionary gap'. You will learn more about this in [section 3.2.5 \(/study/app/pp/sid-186-cid-754025/book/equilibrium-in-the-long-run-id-31062/\)](#).

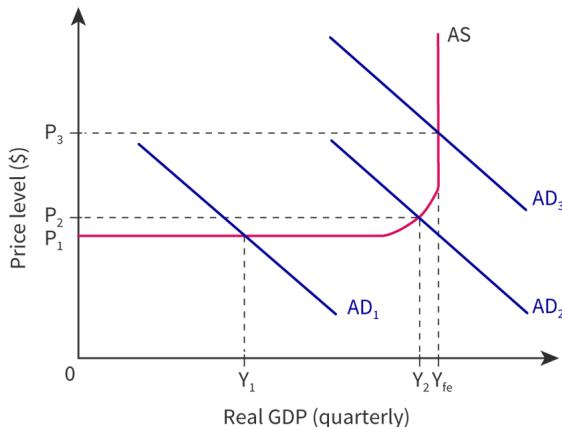


Figure 6. Impact of an increase in aggregate demand depends on the amount of spare capacity in the economy.

More information for figure 6

Student view

The graph depicts the relationship between the price level and real GDP on a Keynesian Aggregate Supply (AS) curve. The X-axis represents Real GDP (quarterly) and is labeled with points Y_1 , Y_2 , and Y_{fe} (full employment). The Y-axis represents Price Level (\$), labeled with P_1 , P_2 , and P_3 . The AS curve is red and has an upward slope beyond the point Y_{fe} , indicating increased price levels with increased GDP. Three Aggregate Demand (AD) curves labeled AD_1 , AD_2 , and AD_3 , depicted in blue, illustrate different levels of aggregate demand at various price levels. The graph suggests that when output is below the full employment level (Y_{fe}), the price level remains constant at P_1 . If aggregate demand increases (from AD_1 to AD_2 or AD_3), the price remains the same up to a certain point of GDP output, illustrating the concept of spare capacity in the economy and a 'recessionary gap'.

[Generated by AI]

The Keynesian AS curve is divided into three sections:

- The horizontal section, where there is a good deal of spare capacity in the economy
- The upward sloping section, where there is some spare capacity but we are beginning to see some competition for scarce resources



- The vertical section, where full employment is reached

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Unless wages fall, firms have no choice but to make workers redundant during a recession. This is because they sell fewer goods, as aggregate demand is low, and so look for ways to keep profits from falling. This explains the gap between Y_1 and Y_{fe} and the resulting unemployment in the labour force. Firms find it very difficult to reduce people's wages, although it is not impossible to do so.

Firms are also very reluctant to reduce the prices of the goods and services they sell. There are more likely to be other areas where costs can be cut rather than reducing prices and, subsequently, revenues. All of this depends on the severity and duration of the crisis, and wage and price cuts are more likely to occur in very deep or long-lasting recessions. It is only when the economy nears Y_{fe} and resources have to be allocated between competing uses that prices start to rise.

✓ Important

The new classical school believes that the prices of goods and resources are (or at least should be) fully flexible in both directions. The Keynesian school thinks that it is more realistic to assume that prices are downwardly inflexible or 'sticky'.

Aggregate supply and factors of production

While the SRAS curve shifts due to factors that change the costs of production, the LRAS represents the potential capacity of an economy's factors of production. In other words, the quantity and quality of a country's land, labour and capital.

You might find that these terms sound familiar, as they are the factors of production that you encountered in previous topics. You may remember from the microeconomics section that a production possibilities curve (PPC) also represents a country's potential capacity. The PPC and LRAS share similar factors that shift the curves leftward (inward) or rightward (outward) representing changes in the nation's potential economic capacity.

 Student view

Any changes in the quantity or quality of the factors of production can cause a shift in the LRAS curve. This includes anything that has a significant impact on the land, labour or capital in an economy. Whether using the new classical or Keynesian view, the LRAS curve will shift rightward (outward) if any of the factors increase in quality or quantity. In turn, this increases the potential of the economy. If those same factors of production decrease in quality or quantity, the LRAS curve will shift leftward (inward). We will now explore these factors of production in more detail within the context of long-run aggregate supply.

Land

Land refers to the natural resources and inputs that a country has available. For example, new discoveries of oil deposits might increase the amount of land as a factor of production, since there will be *more* capacity in the economy. Land can also be used more efficiently or improved if, for example, there are new methods of using oil more efficiently. This will increase the *quality* of the land available through improvements in technology. You can see this in **Figure 7** as the LRAS increases in the new classical view.



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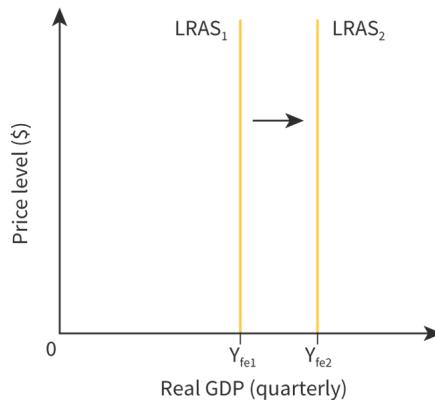


Figure 7. An increase in the long-run aggregate supply (new classical view).

More information for figure 7

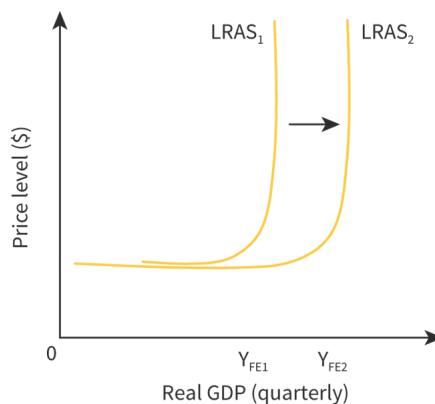
The graph illustrates the new classical view of an increase in the long-run aggregate supply (LRAS). The X-axis represents Real GDP (quarterly) with points marked as Y_{fe1} and Y_{fe2}, indicating different equilibrium states. The Y-axis represents the Price level (\$), which does not change in this graph. Two vertical lines, labeled LRAS₁ and LRAS₂, indicate the shift in the supply curve. The first line, LRAS₁, is positioned at Y_{fe1}, and the second line, LRAS₂, is positioned more to the right at Y_{fe2}, demonstrating an increase in GDP without a change in price level. An arrow pointing from LRAS₁ to LRAS₂ indicates this rightward shift. This graph depicts a scenario where improvements in technology or resources have increased the potential output of the economy without affecting the price level.

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Labour

Student view

Labour refers to the people that make up the labour force of the country. Immigration or domestic birth rates can increase the quantity of labour that is available. This means there are *more* people in the labour force as migrants of working age arrive or those born domestically reach working age. Labour can also be used more efficiently or improved if, for example, the workforce can become more skilled or educated (http://www.xinhuanet.com/english/2018-01/24/c_136921448.htm). This would increase the *quality* of labour, or what economists sometimes call the 'human capital' of a country. As the quality of labour rises with education and training, we would assume this change is permanent, so the LRAS curve will shift rightward (outward). As you may recall from **Figure 6**, the Keynesian AS curve is divided into three sections. The vertical section is where full employment is reached. **Figure 8** describes the Keynesian viewpoint in which the LRAS section shifts to the right. Improvements in technology are also playing a role in the productivity of workers as they are assisted by ever-increasing advances.





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Figure 8. An increase in the long-run aggregate supply (Keynesian view).[More information for figure 8](#)

The graph depicts a Keynesian Long-Run Aggregate Supply (LRAS) curve, illustrating an economic concept where the supply curve shifts from LRAS1 to LRAS2. This shift is shown as an arrow pointing to the right, indicating an increase in the long-run aggregate supply. The X-axis is labeled "Real GDP (quarterly)" and includes two points, Y_FE1 and Y_FE2, marking different levels of full employment GDP. The Y-axis is labeled "Price level (\$)", showing the relationship between price levels and output. The graph visually represents how improvements such as increased labor efficiency or technological advancements lead to growth in potential output without increasing prices, which is evidenced by the rightward shift of the curve.

[Generated by AI]

Capital

Capital refers to the tools and machinery that are used in economic production. This might be the machines used in a factory or the infrastructure of a country, such as roads and railways to transport goods. To improve the quantity of capital means to invest in those means of production, such as *more* factories being built or *more* roads and railways. To improve the quality of capital means changes in the productivity of capital are required, such as a factory being retrofitted to be more energy efficient or a new, faster railway being built.

Improvements in technology

Included in this are new discoveries and technological breakthroughs that allow for greater output with the same or fewer inputs, increasing the economic possibilities of every country. Consider the changes in [the past and present ↗](#) (<https://www.nationalgeographic.com/foodfeatures/green-revolution/>) to the foods we eat and fibres we wear. As crops have been genetically modified the ability to grow more with fewer inputs has allowed our capacity to feed the population to grow as crops are pest and climate resistant.

Increases to efficiency



General improvements to efficiency, such as better-trained labour or more efficient production methods, can also lead to long-term changes in the LRAS as the capacity to produce has increased. In the short run we can also see these in changes to the AS. These may occur through business, as well as to entire economies through government regulation or industry practices such as investing in [new production technologies ↗](#) (<https://www.sammobile.com/news/samsung-improves-chip-production-efficiency-process-improvement/>).

Changes in institutions

The changes that might occur in institutions also have an effect on the LRAS as the signals to market forces allow for more or less capacity in growth. This may include factors such as:

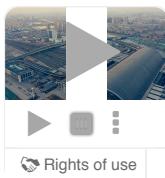
- the degree of private to public ownership of resources
- degree of competition
- quantity and quality of government regulations
- bureaucracy (or the lack of it)

Consider the regulations concerning trading blocs between countries and [trading partners ↗](#) (<https://harvardpolitics.com/world/asean-beats-the-odds/>). Globalisation has enabled nations to expand their production capabilities by providing more opportunities for firms to access the global market.

Case study

China's expanding high-speed rail network

China's economy has been of great global interest as its GDP has climbed [\(https://youtu.be/wykaDgXoajc\)](https://youtu.be/wykaDgXoajc) from the tenth largest in 1980 all the way up to the second largest in 2019. As this has occurred, China has led a massive, mostly government-led, investment programme for building new capital infrastructure across the country. This includes roads, railways, bridges, airports and communications networks. In the last decade alone, China has had a massive expansion of its high-speed rail network, which now claims 35 000 kilometres of track. China has even invested in a driverless 'smart' high-speed train , improving on the quality of the capital.



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Figure 9. Railway in China.

[More information for figure 9](#)

- What type of impact will this investment in increasing high-speed rail have on the long-run aggregate supply?
- How will this investment impact the GDP of China?
- Is investment in infrastructure like railways always a good idea? Justify your answer.

Like China, the United States is geographically a large country. Why doesn't the United States have high-speed rail? For more on US high-speed rail [read here](https://america.cgtn.com/2017/10/25/what-if-the-us-had-chinas-bullet-trains). [\(https://america.cgtn.com/2017/10/25/what-if-the-us-had-chinas-bullet-trains\)](https://america.cgtn.com/2017/10/25/what-if-the-us-had-chinas-bullet-trains)For more on the future plans of China high-speed rail, [take a look at this](https://www.rt.com/business/477099-china-railway-investments-2020/). [\(https://www.rt.com/business/477099-china-railway-investments-2020/\)](https://www.rt.com/business/477099-china-railway-investments-2020/)

Theory of Knowledge

New classical economists and Keynesians have a different view of the aggregate supply curve. It seems economists do not agree on basic foundation principles in economics.

In Dani Rodrik's book [Economics Rules](http://eprints.lse.ac.uk/84173/1/Thoma_Book%20review%20economics%20rules_2017.pdf) ([\(http://eprints.lse.ac.uk/84173/1/Thoma_Book%20review%20economics%20rules_2017.pdf\)](http://eprints.lse.ac.uk/84173/1/Thoma_Book%20review%20economics%20rules_2017.pdf)), he argues that models such as the AS curve are 'both economics' strength and its Achilles heel'. He explains that contradictory models in economics are not a death knell for economics, if we know how to choose between them. Rodrik explains that economics progresses 'one model at a time' "horizontally" (by multiplying models) rather than "vertically" (by newer models replacing older ones).'

The answer, says Rodrik, is that economists must 'learn how to shift among different models more fluidly.'

Knowledge question: What evidence must economists collect to know which model is appropriate?



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Feedback

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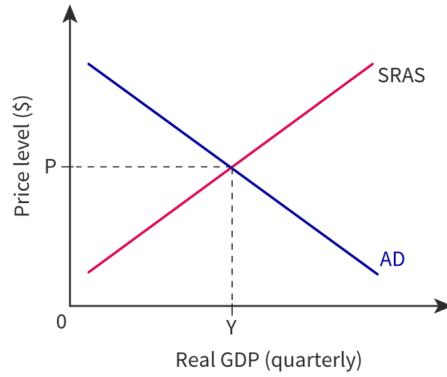
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Macroeconomic equilibrium in the short run

As you have seen in microeconomics, the output produced in an economy at a given time is dependent on the interaction between aggregate supply and aggregate demand. This, and the resulting price level, has a variety of consequences for economic stability, but of course the new classical and Keynesian approaches differ in their assessment of these outcomes.

Equilibrium in the short run

Equilibrium in the short run is determined by the intersection of aggregate demand and short-run aggregate supply, as shown in **Figure 1**. The result is real output at Y and an average price level of P . At this point there is no upward or downward pressure on prices, and all output produced is bought.



Student view

Figure 1. Equilibrium of aggregate demand—supply curves in the short run.

ⓘ More information for figure 1

As seen in **Figure 2a**, a decrease in AD will cause the economy to produce below its full employment level, which is called a recessionary or deflationary gap. The real GDP is below the potential GDP at Y_e .

Figure 2b shows a situation where AD increases and the real GDP is more than the potential GDP. The economy is in an inflationary gap, or experiences inflationary pressure, as the price level is increasing and unemployment is below the Natural rate of unemployment (NRU). The economy is operating beyond its full employment level of Y_e .

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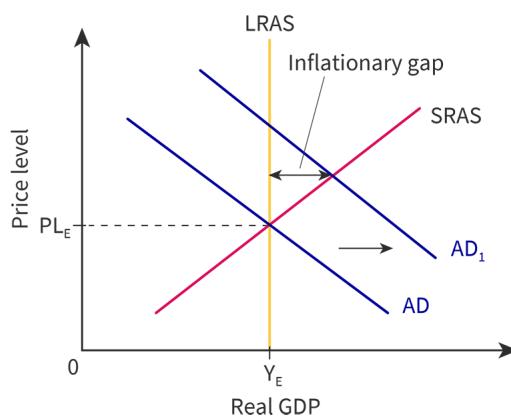
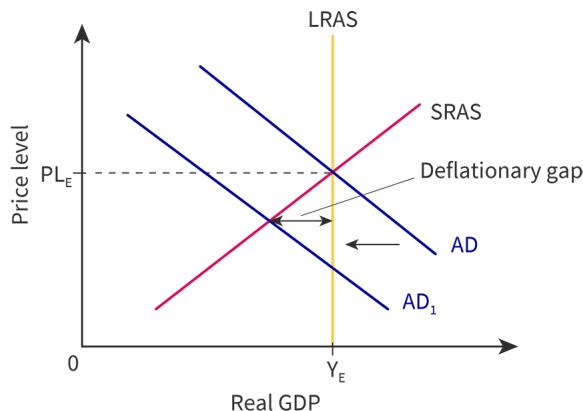


Figure 2a. Short-run deflationary gap. **Figure 2b.** Short-run inflationary gap.

More information for figure 2

The image contains two diagrams labeled as Figure 2a and Figure 2b. Each diagram illustrates economic concepts with intersecting lines and labeled areas. Figure 2a shows a deflationary gap, where real GDP is less than potential GDP, indicating economic underperformance. The diagram includes labels for axes representing GDP levels and unemployment rates, with intersecting curves showing aggregate demand and supply.

Figure 2b illustrates an inflationary gap, where real GDP exceeds potential GDP, indicating economic pressure and employment beyond the natural rate. It includes similar elements such as GDP level axes and curves depicting shifts in aggregate demand and supply, highlighting the inflationary pressure due to increased demand.

Student view

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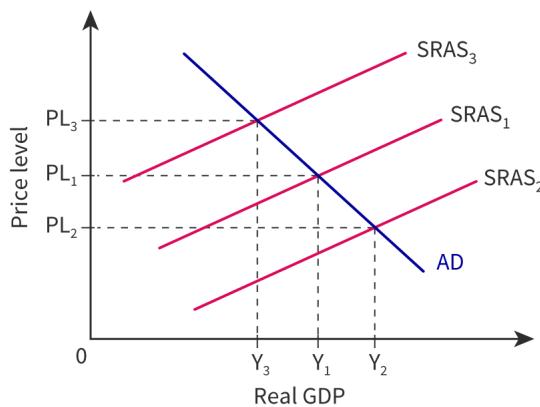


Figure 2c. SRAS1 shifts leftwards, causing stagflation.



The graph illustrates the short-run aggregate supply curve (SRAS) shifting leftwards, depicted by three red lines labeled SRAS1, SRAS2, and SRAS3. The horizontal axis represents Real GDP, marked with points Y1, Y2, and Y3, while the vertical axis signifies the Price Level, marked with PL1, PL2, and PL3. The blue line represents the Aggregate Demand (AD) curve. SRAS1 shifts to SRAS2 and SRAS3, indicating a decrease in real GDP and an increase in the overall price level, demonstrating the economic condition known as stagflation.

[Generated by AI]

Shifts in SRAS also can affect the short-run macroeconomic equilibrium in the economy. As seen in **Figure 2c**, SRAS₁ can shift leftwards if there is a supply shock or increase in the resource prices. Then the economy will produce less real GDP but the price level will increase. This economic situation is known as stagflation and is especially undesirable in the economy as there is a falling GDP, rising unemployment and a rising price level.

When SRAS shifts rightwards due to changes in any of the determinants of the SRAS, this indicates an expansion of real GDP and a fall in price level.

These short-run fluctuations in AD and SRAS explain the fluctuations of the business cycle.

Be aware

When using AD and AS to show the real GDP of an economy, don't use the variable Q to label the x-axis. Use the variable Y. Why?

This represents income and, in this case, national income in the economy. You may remember using this variable to examine YED, or income elasticity of demand, in [subtopic 2.5 \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-29882/\)](#).



Shifts in aggregate demand

During periods when aggregate supply remains steady (caused by stable resource prices), it is the aggregate demand that will create the shifts in output associated with the phases of the business cycle. If we look at **Figure 3**, an increase in aggregate demand from AD₁ to AD₂ will result in an increase in real output from Y₁ to Y₂. The average price level will need to increase too, from P₁ to P₂, to allow firms to cover the increased production costs associated with increased volumes of output.

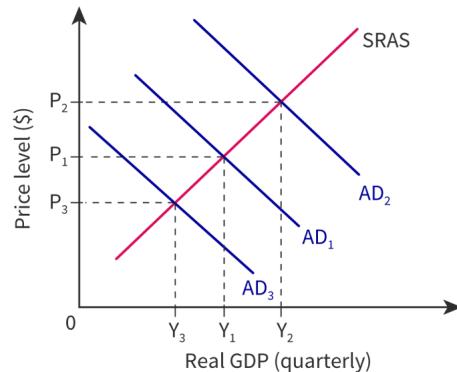


Figure 3. Shifting aggregate demand

More information for figure 3

The graph represents the concept of shifting aggregate demand and its impact on the economy, with a focus on the business cycle. It features two axes: the Y-axis labeled as "Price level (\$)" and the X-axis labeled as "Real GDP (quarterly)." The Y-axis has three key points marked as P1, P2, and P3, representing different price levels. The X-axis shows points Y1, Y2, and Y3, indicating different levels of real GDP.

The graph includes a pink line labeled "SRAS" (Short-Run Aggregate Supply) which is upward sloping from left to right, showing a positive correlation between price level and real GDP. There are three blue lines marked as AD1, AD2, and AD3, representing different states of Aggregate Demand. AD1 is positioned between AD2 on the right and AD3 on the left.

When aggregate demand increases from AD1 to AD2, real GDP rises from Y1 to Y2. Conversely, when aggregate demand decreases from AD1 to AD3, real GDP falls from Y1 to Y3. The price levels correspondingly adjust: increasing from P1 to P2 with higher demand, and decreasing from P1 to P3 with lower demand. This illustrates the shifts in real output and prices due to changes in aggregate demand over time, following the dynamics of the business cycle.

[Generated by AI]



The opposite is also true. When aggregate demand falls from AD₁ to AD₃, firms will have to reduce output as they will no longer be able to sell it at the original price level. Therefore, prices may also need to fall from P₁ to P₃ in order to convince consumers to keep spending. As aggregate demand shifts along the SRAS curve, there will always be a positive correlation between the price level and the real output of the economy.

This can happen if any of the components of consumption, investment, government spending or net exports change. For example (<https://www.reuters.com/article/us-economy-gdp/u-s-fourth-quarter-gdp-revised-down-profits-weak-idUSKCN1R91HN>), during the fourth quarter of 2018, US exports fell because of slowing global demand and uncertainty over the trade war between the US and China. Real GDP growth was only 2.2%, down from a predicted 2.6%.

Shifts in short-run aggregate supply

As mentioned previously in the subtopic, there are a number of things that can shift the supply curve into increasing or decreasing supply. One that seems to touch every aspect of the economy is fuel and, specifically, the price of oil.

Fuel price fluctuations can wreak havoc on a nation's economy. The world saw dramatic increases in oil prices during the 1970s, but more recently there have been some further disruptions to the supply and price of this important commodity. In 2008, oil prices reached USD 145 per barrel, and although the financial crisis caused this to fall again by the end of the

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year, oil prices returned to relatively high levels. However, since 2015, oil prices have fallen dramatically since the US began to explore its shale gas reserves using a technology called hydraulic fracturing (http://www.europarl.europa.eu/RegData/etudes/briefing_note/join/2013/491498/EXPO-AFET_SP%282013%29491498_EN.pdf). In the spring of 2020 oil futures even briefly went negative (<https://www.cnbc.com/2020/04/26/why-oil-prices-went-negative-and-why-they-can-go-negative-again.html>) as Russia and Saudi Arabia, two of the world's largest producers, engaged in a price war that coincided with a sharp drop in demand during coronavirus lockdowns around the world.

Figure 4. Brent crude oil prices from 1990 to 2020 (Source: EIA).

The United States has responded to the high-price environment with technological innovations in shale gas extraction and investments in green energy (<https://youtu.be/r3DKj5KT5Ts?t=737>). As a result, oil prices have fallen steeply in the past few years. This has affected countries in different ways, depending on how heavily they are reliant on oil for export revenue. Many of the members of the Organization of the Petroleum Exporting Countries (OPEC) benefit from a higher oil price, but other countries that are import-dependent for fuel, like Japan, benefit from lower prices.

Student view

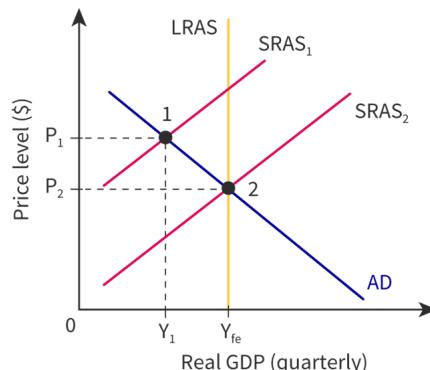


Figure 5. Shifts in short-run aggregate supply.

More information for figure 5

The graph illustrates the shifts in short-run aggregate supply (SRAS) in relation to real GDP and price level. The X-axis represents Real GDP (quarterly), with significant points marked as Y_1 and Y_{fe} (full employment equilibrium). The Y-axis indicates the Price level (\$) with important levels P_1 and P_2 . Three lines are drawn: AD (Aggregate Demand, shown in blue), $SRAS_1$ (Short-run Aggregate Supply initially, shown in pink), and $SRAS_2$ (Short-run Aggregate Supply after the shift, shown in red). A vertical yellow line represents LRAS (Long-run Aggregate Supply). Points 1 and 2 indicate the positions before and after the shift in SRAS. When SRAS shifts right from $SRAS_1$ to $SRAS_2$, the intersection with AD moves the economy to a higher level of real GDP, reaching full employment equilibrium, with a lower price level from P_1 to P_2 . This indicates the economic adjustment to changes in resource prices, assuming constant aggregate demand.

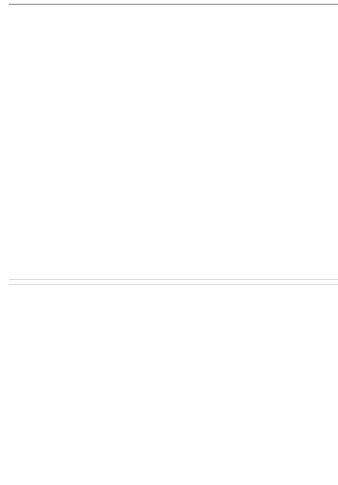
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Look at **Figure 5** to see what happens to economic output and the price level in the economy. If we assume aggregate demand remains constant, a decrease in resource prices will cause aggregate supply to shift to the right in the short run, from SRAS₁ to SRAS₂ – in this case, bringing the real GDP to the economy's full employment equilibrium or Y_{fe}. At this level, there is a natural rate of unemployment, even with all factors of production considered at full employment. This is due to changes in the economy and resource mobility as factors of production are moved from one form of production to another. All economies will have a percentage of resources unemployed at any given time. You will learn more about this in [section 3.2.5 \(/study/app/pp/sid-186-cid-754025/book/equilibrium-in-the-long-run-id-31062/\)](#).

✓ **Important**

Shifts in short-run aggregate supply will only be caused by changes in the costs of production. These include resource prices, changes in business taxes, government subsidies and supply shocks.

This applet shows the effects of shifts in aggregate demand and aggregate supply.



✖
Student view

Figure 6. Equilibrium of Aggregate Demand—Supply Curves in the Short Run.

🔗 More information for figure 6

The interactive chart demonstrates the effects of shifts in Aggregate Demand (AD) and Short-Run Aggregate Supply (SRAS) on the economy. Users can manipulate sliders to shift AD and SRAS curves, visualizing changes in price levels and real GDP. Chart plots Price Level (\$) on the vertical axis and Real GDP (Q) on the horizontal axis to depict macroeconomic equilibrium. The Reset button restores the default equilibrium state, making it easier to observe different scenarios.

AD Slider (pink) moves the AD curve left or right, showing the impact of changes in consumer spending, investment, government policies, or net exports. SRAS Slider (blue) adjusts the Short-Run Aggregate Supply curve, illustrating effects like supply shocks, changes in production costs, or technological advancements. SRAS Curve (blue) reflects the total production of goods and services at different price levels.

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The intersection of AD and SRAS curves determines the equilibrium price level (P_1) and real GDP (Y_1). A rightward shift of AD or SRAS leads to increased GDP and possibly inflation, indicating economic expansion. A leftward shift of AD or SRAS results in lower GDP and possibly deflation or recession.

This interactive chart provides a dynamic way to explore how shifts in AD and SRAS impact the economy. By adjusting the sliders, users can visualize the effects of economic policies, external shocks, and market fluctuations on price levels and real GDP. Understanding these interactions is crucial for analyzing economic stability, making informed policy decisions, and anticipating potential recessions or inflationary trends.

3 section questions ▾

3. Macroeconomics / 3.2 Variations in economic activity—aggregate demand and aggregate supply

Equilibrium in the long run

Section

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Long-run equilibrium according to the new classical model

From the new classical perspective, because prices are fully flexible, the economy will always tend towards full employment. This is because resource prices can easily rise and fall depending on the economic climate.

Falling aggregate demand

In the case of a recession, when aggregate demand falls, the result is falling output from Y_{fe} to Y_1 , and possibly the price level falling from P_1 to P_2 (see **Figure 1**). This is called a recessionary or deflationary gap and is also represented by the downward phase of the business cycle. As firms struggle to sell their output, they seek ways to cut costs. They can do this by terminating the employment of some workers, but this will damage their ability to produce. As prices are already falling in the economy, firms might cut wages instead, retaining the ability to produce but at lower costs. As wages are a cost of production, aggregate supply increases from $SRAS_1$ to $SRAS_2$. Real output returns to the full employment level, and the general price level is lower. This analysis provides support for the laissez-faire view adopted by the new classical approach, which says that the economy self-corrects in times of difficulty.

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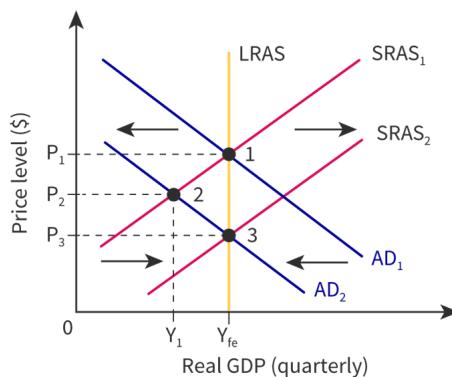


Figure 1. An economy returning to full employment equilibrium after a recession, according to the new classical model.

 More information for figure 1

The graph illustrates an economic model of equilibrium between price level and real GDP. The X-axis represents Real GDP (quarterly), with increments marked from 0 to Y_1 and Y_{fe} . The Y-axis denotes Price level (\$), with values labeled as P_1 , P_2 , and P_3 .

The graph features three intercepting lines. The vertical line is labeled LRAS. Two downward sloping lines are marked AD_1 and AD_2 , representing aggregate demand at different stages. Two upward sloping lines, labeled $SRAS_1$ and $SRAS_2$, signify short-run aggregate supply.

The intersection of AD_1 with $SRAS_1$ occurs at point 1, at price level P_1 and real GDP Y_{fe} , indicating full employment equilibrium. The intersection of AD_2 with $SRAS_1$ is at point 2, at a lower price level P_2 and GDP Y_1 , showcasing a recessionary gap. As the economy self-corrects, the SRAS curve shifts to $SRAS_2$, intersecting AD_2 at point 3, where price level decreases to P_3 and GDP returns to Y_{fe} , achieving a new equilibrium with lower prices.

[Generated by AI]

Rising aggregate demand

The flexibility of prices provides further support for why the government should continue to be conservative in its intervention when the economy is at or near full employment, according to the new classical school.

For example, if the economy experiences an improvement in confidence, and aggregate demand increases from AD_1 to AD_2 (see **Figure 2**), there will be upward pressure on the price level from P_1 to P_2 . This, in turn, will put upward pressure on wages, as workers push for higher wages to cope with increased inflation. This situation is also known as an inflationary gap.

With economic growth, there will be more jobs available in the labour market, and demand for labour will rise. Firms will compete over the remaining workers and workers will have stronger bargaining power when negotiating wages. In the long run, short-run aggregate supply will shift from $SRAS_1$ to $SRAS_2$ and return to the full employment level.

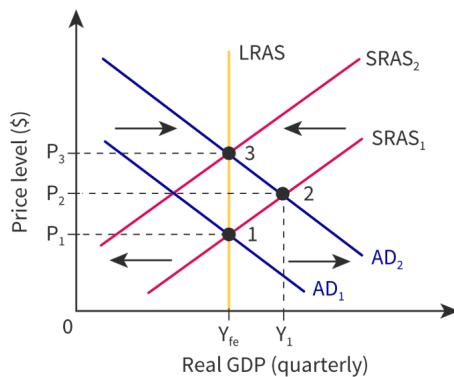


Figure 2. An economy returning to full employment equilibrium after a rise in aggregate demand, according to the new classical model.

More information for figure 2

The graph illustrates an economy returning to full employment equilibrium according to the new classical model. The X-axis represents Real GDP (quarterly) while the Y-axis indicates the Price level (\$). There are three lines on the graph:

1. $SRAS_1$ (pink line) indicating the initial short-run aggregate supply.
2. $SRAS_2$ (pink line) indicating the new short-run aggregate supply after adjustment.
3. AD_1 and AD_2 (blue lines) indicating the initial and new aggregate demand, respectively.
4. LRAS (yellow line) represents the long-run aggregate supply, indicating full employment equilibrium.



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The intersections of these lines are labeled as points 1, 2, and 3. Point 1 represents the initial equilibrium with AD_1 intersecting SRAS_1 at price level P_1 and output level Y_1. Point 2 shows an increase in aggregate demand to AD_2, intersecting SRAS_1 at price level P_2 and output level Y_fe. Point 3 demonstrates the final adjustment where SRAS_2 intersects AD_2 at price level P_3 and output level Y_fe, indicating a return to full employment equilibrium.

[Generated by AI]

As such, there are only short-run fluctuations in output, but the economy will return to the full employment level of output in the long run. Therefore, the new classical perspective advocates a focus on the long-run potential of the economy. This is particularly true in the case of rising aggregate demand, as the short-run increases in output will not hold. Economists who subscribe to this school of thought will want the government to invest in education and infrastructure to boost the productive potential of the economy and shift long-run aggregate supply outwards. The short-run fluctuations in the economy will not affect the real GDP but will only result in increases in the price level, as shown in **Figure 2**.

Another important point that the classical economists made is that the full employment level of output Y_{fe} corresponds to the natural rate of unemployment, as at the long-run equilibrium only the natural rate of unemployment exists.

✓ **Important**

It is really important to understand what happens when aggregate demand rises and falls, according to the new classical perspective.

The following applet shows you the mechanics of the AD/AS diagram from the new classical perspective. In the case of both rising and falling aggregate demand, there will be pressure on wages and therefore costs of production to change. Choose either AD short-run increase or AD short-run decrease, and then click to see what happens to AS in the long run after the change in AD.



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Figure 3. The AD/AS diagram

More information for figure 3

An interactive line graph allows users to explore short-run changes in aggregate demand (AD) and their effects on price levels and real Gross Domestic Product (GDP). The horizontal axis represents Real GDP (Y_{fe}), while the vertical axis represents Price Level (P). There are clickable buttons reading, AS long-run correction and AD short-run decrease, which can either increase or decrease AD in the short run, dynamically shifting the AD curve on the graph. A reset button is also available to return the graph to its initial state.

The interface consists of a standard aggregate demand and supply model, featuring three key curves: the AD curve, the Short-Run Aggregate Supply (SRAS) curve, and the Long-Run Aggregate Supply (LRAS) curve. The AD curve represents the total demand for goods and services in the economy, while the SRAS curve reflects short-term production capacity and price flexibility. The LRAS curve, shown as a vertical line at full employment output (Y_{fe}), represents the economy's long-run productive capacity. The price level (P) is shown on the vertical axis, while real GDP is on the horizontal axis. By engaging with the interactive features, users can observe how changes in AD impact macroeconomic equilibrium. An increase in AD leads to higher price levels and output in the short run, potentially creating inflationary pressures.

A decrease in AD results in lower price levels and reduced GDP, indicating economic contraction. This helps us understand macroeconomic principles such as inflation, recession, and the interaction between short-run and long-run equilibrium. We learn how changes in aggregate demand impact the short-run equilibrium in an economy.

The interactive highlights the difference between short-run fluctuations in AD and the long-run full-employment output (Y_{fe}), represented by the LRAS curve. The model helps users understand how government policies, such as fiscal and monetary interventions, can influence economic stability by shifting AD.



Student
view

Long-run equilibrium according to the Keynesian model

The Keynesian theory developed as a response to the inability of the economies suffering during the Great Depression to correct themselves according to the new classical theory. The belief in an economy's tendency towards full employment governed economic policy of the early 20th century, but a recovery was long overdue by the time John Maynard Keynes published his seminal work *The General Theory of Employment, Interest and Money* in 1936 (seven years after the Wall Street crash and the start of the depression). There was general acknowledgement that the economy may adjust in time, but that in the short run, government action might be needed.

The point of disagreement arises from the assumption that resource prices will fall in a deflationary environment. Keynes advocated increased government spending to help correct the economy. Earlier we discussed how Keynes believed that prices did not always correct downwards because of employment contracts, minimum wage laws and trade unions. He argued that economies could get 'stuck' in a short-run position and would not return to the full employment level of output.

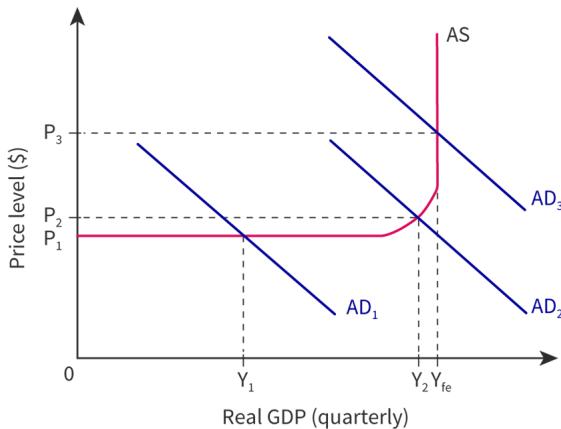


Figure 4. Keynesian aggregate supply and demand.

More information for figure 4

The graph depicts the Keynesian model of aggregate supply (AS) and aggregate demand (AD) curves. The X-axis represents Real GDP (quarterly), while the Y-axis represents the price level (\$). The graph shows three aggregate demand curves labeled AD₁, AD₂, and AD₃, with AD₁ intersecting at a lower price level P₁ and real GDP Y₁, indicating a recessionary gap. The aggregate supply curve AS is upward sloping, transitioning into a vertical line, illustrating that beyond a certain output level (Y_{fe}), the economy is at full employment and price levels rise. The intersection of AD₃ and AS indicates equilibrium at full employment with a higher price level at P₃. The graph illustrates how shifts in aggregate demand can affect price levels and real GDP.

[Generated by AI]



According to Keynes, the economy can achieve equilibrium below the full employment level of output and stay in that position until the government intervenes, which is referred to as a deflationary gap or recessionary gap as both the price level and the real GDP (rGDP) are decreasing with the leftward shift of AD. In **Figure 4**, this would correspond to aggregate demand being at AD₁, with a real output of Y₁ and the price level at P₁, in a position with lower rGDP and PL than AD₃ at full employment. Keynes believed that economies could get stuck at Y₁ unless otherwise assisted by government spending. It is only when aggregate demand increases to AD₂ that upward pressure starts to build on the price level.

So, according to the Keynesian economic school of thought, the economy can get stuck at Y₁, below the full employment level of income, which is also considered equal to the natural unemployment rate by the economists. As a result the rate of unemployment will be much higher than the natural rate of unemployment.

✓ Important

For both schools of thought, reaching the full employment level of output is the same as reaching the economic potential of the economy, which is determined by the quality and quantity of the factors of production. This can also be illustrated by the production possibility curve (production possibility frontier).

As resources become more fully employed, it is only by raising prices that resources can be redistributed from one use to another. In the labour market, a shortage of workers means that firms will have to compete with each other for existing workers by offering higher wages. Paying higher wages means that firms will have to raise the selling price of goods and services, so the average price level rises throughout the entire economy.

It is when the economy reaches this point that the government should concentrate on investing in the long-run potential of the economy.

⚠ Be aware

Students often confuse the causes of shifts in the curves.

- AD will shift if C, I, G or X — M changes.
- SRAS will shift if costs of production change.
- LRAS will shift if the quantity and/or quality of the factors of production change.

4 section questions ▾

3. Macroeconomics / 3.2 Variations in economic activity—aggregate demand and aggregate supply

Assumptions and implications of the models

Section

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In what ways do we see the core points of contention being discussed today?

Table 1. Summary of differences between two macroeconomic perspectives.

	New classical	Keynesian
Markets	Disequilibrium is corrected by market forces	Some markets can exist in disequilibrium for longer periods
Unemployment	A sign that the labour market is in disequilibrium	Should not be allowed to persist as long-term unemployment reduces economic potential
Wages	Trade unions and minimum wages will reduce the ability of labour market to establish equilibrium	Wages are downward inflexible or 'sticky'
Role of government	Should support markets to be able to return to equilibrium. Labour market policies to improve competitiveness	Government must intervene with government spending during a recession, even if the government must borrow
View of borrowing	Government borrowing crowds out private investment	No crowding out during recessions



The reality of price and wage flexibility

Overview

(/study/app/pp/sid-186-cid-754025/) There is conflicting evidence regarding the flexibility of prices. The extent to which prices fall will depend on the type of goods in question, the severity and length of the economic contraction, and the regulations in place to prevent price fluctuations. Free-market economists would argue that the government should interfere as little as possible to allow prices to correct themselves and for resource allocation to be optimised. This means that economies would also be able to self-correct after a contraction, which might have happened in [Latvia](#) (http://www.washingtonpost.com/opinions/what-we-can-learn-from-latvias-recovery/2011/07/17/gIQAelvcKI_story.html) after the financial crisis of 2008 (although [not everyone agrees](#) (https://www.cnbc.com/id/100558455)).



Figure 1. Inflation data for the United Kingdom from 2005 to 2015.

Source: "ONS UK (<https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/consumerpriceinflation/june2020>)"

More information for figure 1

The graph shows UK inflation data from 2005 to 2015, comparing the Consumer Price Index (CPI) and Retail Price Index (RPI). The X-axis represents years from 2006 to 2015, while the Y-axis represents the inflation rate, ranging from -2 to 6. Two lines are displayed: the blue line represents the Consumer Price Index, and the pink line represents the Retail Price Index.

Student view

The CPI starts at about 2.1 in 2006, rises and falls sharply around 2009, peaking slightly above 4, and declines again toward 2015, reaching below zero.

The RPI begins at around 2.6, increases to above 5 by 2008, experiences a sharp drop in 2009 similar to CPI, recovers and fluctuates around 5 until 2012, and then declines steadily, falling below zero by 2015. Both indices depict similar trends at different scales across this period, with notable convergence and divergence points on the graph.

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As we will see in [subtopic 3.3 \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-30344/\)](#), when we cover inflation in greater detail, not all measurements of price changes include the same goods and services. Some can include goods and services bought by consumers or only bought by producers, or they can exclude certain more price volatile goods like food and energy. For example, as shown in **Figure 1**, the consumer price index in the United Kingdom during the global financial crisis of 2008 did not register any deflation but the retail price index showed deflation of more than 1%.

Situations in some countries suggest that deflation is likely if the economic contraction is lasting. The Japanese economy has barely grown since the 1990s and has intermittently suffered from deflation for more than 20 years. The severity of the crisis may also create a deflationary environment. **Figure 2** shows inflation data from three countries, with their recession period shaded. As you can see, not all recessions resulted in inflation turning negative.

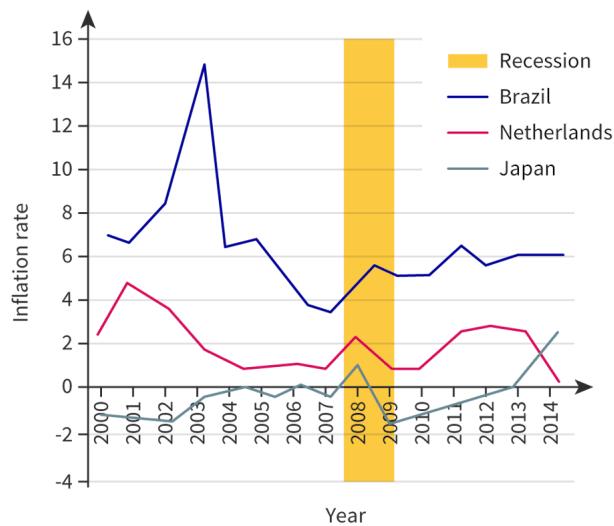


Figure 2. Inflation data from Brazil, Japan and the Netherlands.

Source: " [World Bank Data](https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?end=2019&locations=JP-BR-NL&start=2000&view=chart) (<https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?end=2019&locations=JP-BR-NL&start=2000&view=chart>). "

More information for figure 2

The image is a line graph depicting inflation rates in Brazil, the Netherlands, and Japan from 2000 to 2014. The X-axis represents years, ranging from 2000 to 2014, and the Y-axis represents inflation rates, ranging from -4 to 16. Three lines represent the different countries: Brazil (blue), Netherlands (pink), and Japan (teal). The graph includes a highlighted area from 2008 to 2009 labeled 'Recession'. Brazil's inflation rate starts high around 8% in 2000, peaks at 16% in 2003, and fluctuates before stabilizing at around 6% by 2014. The Netherlands' rate begins at 4%, drops to below 1% by 2005, and then fluctuates around 2%. Japan's inflation is close to 0% throughout the period with minor fluctuations, dropping to below -2% around 2010 before slightly rising. Overall, the graph shows Brazil's significant volatility compared to the more stable trends in the Netherlands and Japan.

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The government's role in the economy

New classical economists would argue for less government intervention in markets when it comes to prices and resource allocation. Although there are some important conditions concerning externalities and worker safety, they believe that prices allow markets to self-correct in times of recession. Therefore, it is the government's role to reduce restrictions on markets and engage in what might be deemed a 'supply-side' policy. This means policies that might increase the aggregate supply of the economy by expanding business investment, production and growth, and lowering unemployment. This is done by creating growth through increasing the quantity and quality of the factors of production. There have been many attempts by governments around the world to do this in the past decade and their success or failure is contested.

In contrast, Keynesians would argue the exact opposite. They believe that it is more important for governments to focus on the present, more so than looking towards long-term growth. They argue that governments should intervene in the markets, especially when economic activity is low, by implementing fiscal and monetary policy. This is based on another distinction between new classical and Keynesian economists: the assumption that people are rational, as you have



learned in [section 2.4 \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-30262/\)](#).

Keynes coined the term 'animal spirits', which can be summarised as being the feelings of people and businesses in an economy. When we perceive things to be going well in the economy, we tend to feel well ourselves. When we perceive things to be going poorly, we tend to focus more on the negative aspects of our lives.

Keynes believed the economy could get 'stuck' in a recession, not only because of sticky prices, but also because of low animal spirits (or feelings) of people in the economy. As we have discussed previously in this [subtopic \(/study/app/pp/sid-186-cid-754025/book/the-big-picture-id-30486/\)](#), this means the government would have to intervene to spend and invest, propelling the economy forward until animal spirits had recovered. Many politicians today [implement these policies ↗ \(https://www.cnbc.com/2020/01/31/new-coronavirus-will-likely-push-china-to-step-up-stimulus.html\)](#) at the first sign of economic slowdown. Implementing expansionary policies would result in AD shifting rightward. You can see an increase in AD in **Figure 3**. New classical economists would largely disagree with this view and would assume that stakeholders in the economy will act rationally.

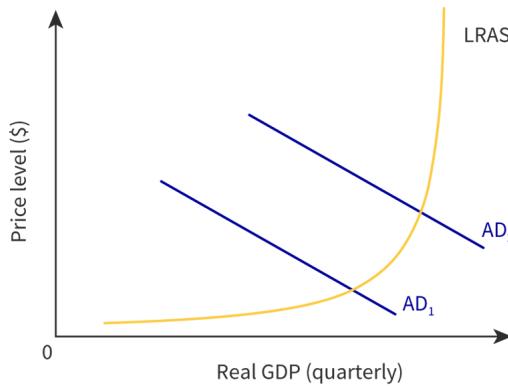


Figure 3. As the government institutes expansionary policy, the AD curve shifts to the right with increased government spending, consumption, and/or investment.

More information for figure 3

The graph depicts economic curves representing an AD (Aggregate Demand) and LRAS (Long-Run Aggregate Supply) model. The X-axis is labeled "Real GDP (quarterly)", showing economic output over time, and the Y-axis is labeled "Price level (\$)", indicating the price levels. The AD curve, shown in blue, shifts from AD₁ to AD₂, moving rightward. This shift suggests increased aggregate demand due to expansionary policy. The LRAS curve, in yellow, is vertical, indicating potential GDP which does not change in the short term. The curves illustrate how increased government spending, investment, or consumption affect the overall economy by shifting the AD curve to the right.

[Generated by AI]

A final difference between the two schools of thought is based on government budgets and deficits. Keynesians see recessions as times when governments should borrow and spend to boost the economy, and because borrowing would be less likely to crowd out private investment. This is what Keynes called [the paradox of thrift. ↗ \(https://youtu.be/qrHyDztQlBY\)](#)

However, the new classical view takes a harder line on deficit spending. They believe that government borrowing [crowds out private investors ↗ \(https://slate.com/business/2020/01/trump-trillion-dollar-deficit-should-make-you-furious.html\)](#) from the market. As governments engage in deficit spending, that money may be raised by selling bonds to domestic

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investors. Therefore, those investors do not save their money in banks and other institutions, reducing the supply and raising the price of those funds. In this case, that price is expressed in terms of an interest rate. You can see this reduced supply driving up interest rates in **Figure 4**.

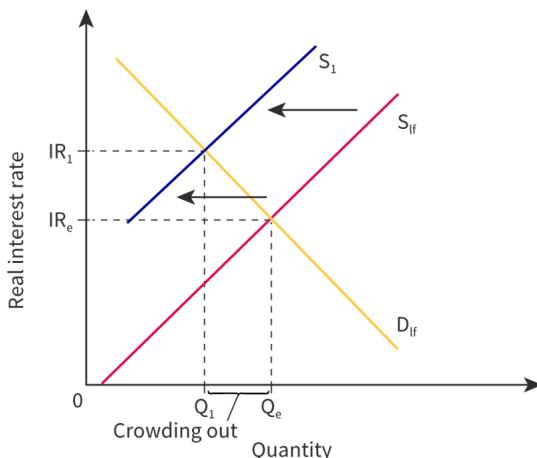


Figure 4. As the government begins to sell bonds to finance deficit spending, savers will be more likely to buy those bonds and less likely to save their money in private banks. This reduces the supply of loanable funds and raises interest rates.

More information for figure 4

The graph illustrates the supply and demand dynamics of loanable funds overlaid with interest rates and quantities. The X-axis represents the quantity of loanable funds while the Y-axis represents the real interest rate. Two supply lines are present: an initial supply line (S_1) in blue and a secondary supply line (S_{lf}) in yellow. The demand line for loanable funds (D_{lf}) is in red.

The interest rate is denoted on the Y-axis by two horizontal dashed lines: IR_1 and IR_e , with IR_1 above IR_e . The quantity of loanable funds is indicated by vertical dashed lines for Q_1 and Q_e , positioned such that Q_1 is to the left of Q_e . The shift arrows indicate a reduction in supply and increase in interest rates.

The graph suggests an economic scenario where increased government bond sales reduce loanable funds supply, increasing interest rates from IR_e to IR_1 , as indicated by the shift from the initial supply curve S_1 to the new supply curve S_{lf} . This leads to "crowding out," represented by the movement from Q_e to Q_1 .

Student view

[Generated by AI]

Table 2. Current writers supporting the new classical and Keynesian schools

New classical	Keynesian
Arjo Klamer, Dutch economist and author of <i>Conversations with Economists</i>	Paul Krugman, Princeton University and Nobel laureate, regular New York Times columnist .
Niall Ferguson, Harvard University, writer for the <i>Financial Times</i> .	Simon Wren-Lewis, University of Oxford, author of Mainly Macro blog.
Glen Hubbard, Columbia University	Janet Yellen, Brookings Institute, former head of the US Federal Reserve.
Scott Sumner, author of the Money Illusion blog.	Joseph Stiglitz, former Chief Economist at IMF and Nobel laureate.