

Chapter 20 Aggregate supply and the interaction of aggregate demand and supply

Answers to Knowledge checks

- 20.1** In the short run, firms will find it costly to increase output because they will face higher costs of inputs, such as labour or raw materials. They will therefore only be prepared to supply more output at a higher price.
- 20.2** An increase on the average overall price level will induce a movement up along the *SRAS* curve.
- 20.3** A fall in labour costs would encourage firms to supply more output at any given price, so the *SRAS* curve would shift to the right.
- 20.4** This would be the neoclassical (monetarist) position. They argue that the *LRAS* curve is vertical at the full employment level of output.
- 20.5** Equilibrium real output would be higher, because at the price level P_n , under neoclassical assumptions real output always tends to the full employment level — in other words, the *LRAS* curve is vertical at Y_{FE} .

Answers to Exercises and Case studies

Exercise 20.1

- a** The discovery of a new source of a raw material that reduces its price will lower costs and enable firms to supply more output at any given price, so the *SRAS* curve will shift to the **right**.
- b** An increase in the exchange rate (*ceteris paribus*) has a major impact on aggregate demand, by reducing the competitiveness of domestic exports. However, there may also be a supply-side effect, because an appreciation of the exchange rate reduces the domestic price of imports, so firms that rely on imported intermediate goods may find that their costs have decreased, encouraging them to supply more output at any given price.
- c** An increase in wage rates (i.e. in labour costs) means that firms will be prepared to supply less output at any given price, so the *SRAS* curve would shift to the left.
- d** A fall in oil prices reduces firms' costs, so they are prepared to supply more output at any given price, and the *SRAS* curve shifts to the right.

Exercise 20.2

- a** A fall in the exchange rate that affects the prices of imported inputs would raise the costs faced by firms, so in the short run, aggregate supply will shift to the left. Whether the shift will also affect the long-run aggregate supply curve is less clear, as the fall in the exchange rate may be only temporary, depending on what caused it. It is likely that the exchange rate will readjust in the long run.
- b** An increase in the rate of immigration allows the workforce to expand, and should shift the long-run aggregate supply curve to the right, as there has been an increase in the potential capacity of the economy.
- c** An increase in the price of oil would shift the short-run aggregate supply curve to the left, as it increases the costs firms face. The price of oil has shown fluctuations over the years, so it may well be that the increase will not be long-lasting.

- d A reduction in corporation tax improves the profitability of firms, so a rightward shift in aggregate supply would be expected. If this is a permanent change, then long-run aggregate supply would be affected.
- e The introduction of new and improved computers reduces costs faced by firms and raises productivity, expanding the long-run ability of the economy to produce. Long-run aggregate supply shifts to the right.

Exercise 20.3

- a A technological advance that improves the efficiency of capital raises the productive capacity of the economy and shifts the aggregate supply curve to the right, as in Figure A20.1a, where aggregate supply moves from $LRAS_0$ to $LRAS_1$. Initially the equilibrium general price level was P_0 and real output was Y_0 . After the supply shift the general price level falls to P_1 and real output (GDP) rises to Y_1 . Figure A20.1b shows that the effects are very similar if the starting position of the economy is in the more elastic part of aggregate supply. Don't forget that the elasticity of aggregate demand is also important in determining the outcome.

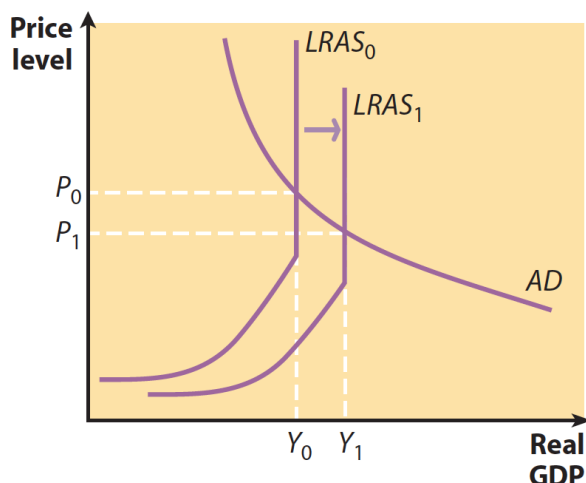


Figure A20.1a A supply shock

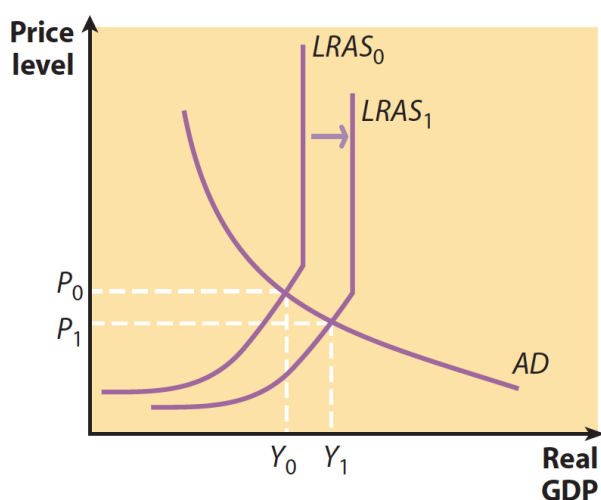


Figure A20.1b A supply shock revisited

- b If a financial crisis reduces the demand for exports, the impact is on aggregate demand. Figure A20.2a illustrates the effects. Aggregate demand shifts from AD_0 to AD_1 . The result is a large fall in the general price level, from P_0 to P_1 , but no change in real GDP. When the starting

position of the economy is further to the left, as in Figure A20.2b, the effect is felt in output as well as in prices, as the aggregate supply curve is more elastic.

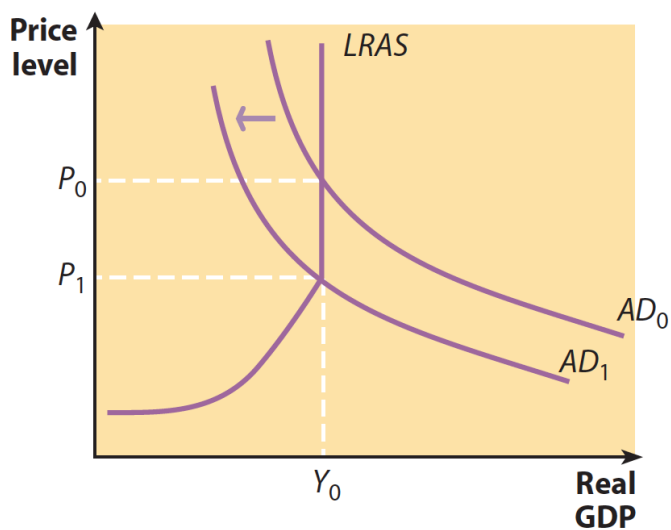


Figure A20.2a A shift in aggregate demand

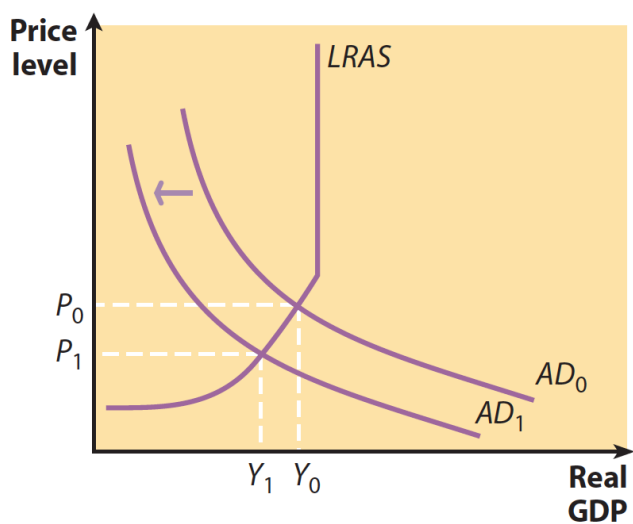


Figure A20.2b A shift in aggregate demand again

- c** If firms increase their investment spending because they are more optimistic about future demand for their goods, the aggregate demand curve shifts to the right, as in Figure A20.3.

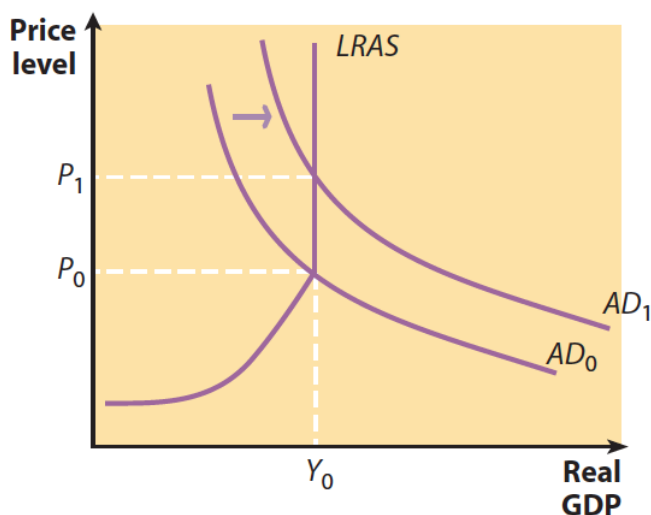


Figure A20.3 A rightward shift in aggregate demand

When aggregate demand moves from AD_0 to AD_1 , the general price level rises from P_0 to P_1 , but real GDP remains at Y_0 . The effect here is only on price than on output because the economy starts at full capacity. If, as in the previous question, the initial equilibrium had been further to the left — in the elastic section of the aggregate supply curve — the effect on output would have been apparent. Notice that if the increase in investment spending leads to an increase in productive capacity, then the long-run effect is a shift of the $LRAS$ curve as well.

- d** If the introduction of new health and safety legislation increases the costs faced by firms, this will induce them to supply less output at any given price level, and the aggregate supply curve will shift to the left, as in Figure A20.4. Following a shift of aggregate supply from $LRAS_0$ to $LRAS_1$, the general price level rises from P_0 to P_1 and real output falls from Y_0 to Y_1 . Again, starting the economy off further to the left makes little difference to the result.

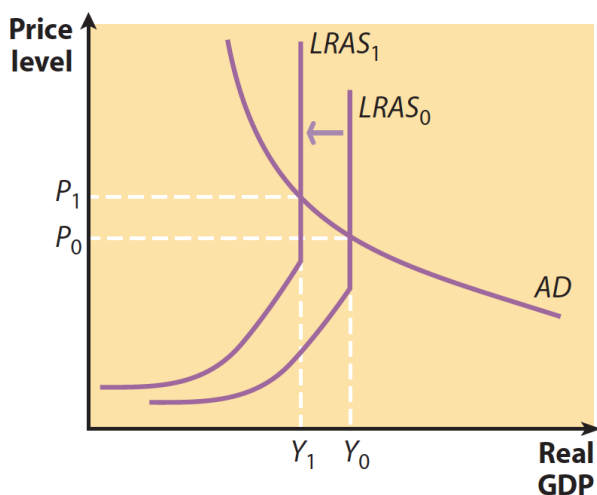


Figure A20.4 A negative supply shock

Notice that the starting position is more important for a demand change than for a supply shock, as the key issue determining whether it is the general price level or the level of real output that is affected is the elasticity of the aggregate supply curve, i.e. a move **along** the supply curve following a demand shock.

Case study 20.1

The importance of expectations

- a** The passage describes a number of different factors affecting the economy at the time. For one thing, oil prices were being pushed to all-time high levels, and other world commodity prices were also being pushed up because of various pressures, in particular those arising from the rapid growth of China's economy. One effect of these changes was to increase the costs faced by firms in the UK. This would be expected to mean that firms would be prepared to supply less output at any given price level. If this is the case, the result would be a leftward shift of the $LRAS$ curve. This is shown in Figure A20.5 as a shift from $LRAS_0$ to $LRAS_1$.

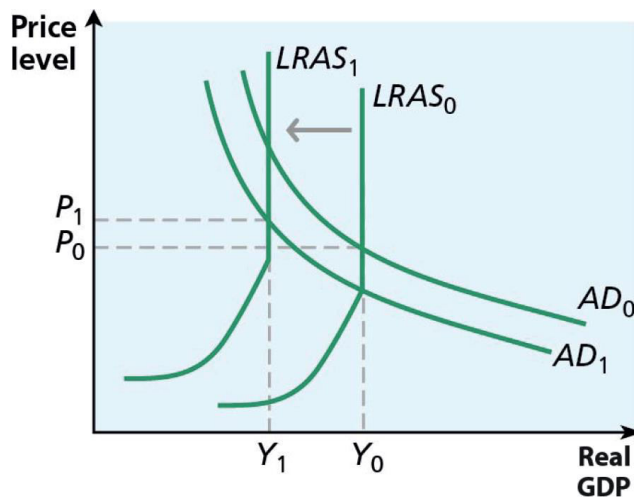


Figure A20.5 Changes in AD and $LRAS$

However, there were also things happening to affect the position of aggregate demand. These are set out in the second paragraph. Business confidence was reported to be low, and people were expecting a recession to affect the economy. In addition, house prices were falling.

- b** As for the impact of Brexit, this may depend on decisions and events that are happening even as you are reading this and thinking about the question, which makes it hard for me to comment.

Answers to end-of-chapter questions

A Multiple-choice questions

- 1 c. Increased spending on imports
- 2 a. An increase in AD will not lead to an increase in real GDP
- 3 d. It is impossible to state

B Knowledge and understanding questions

- 4 Macroeconomic equilibrium occurs at the intersection of AD and $SRAS$ in the short run, and between AD and $LRAS$ in the long run. It is where $AD = AS$.

A full explanation of macroeconomic equilibrium	2 marks
A vague or partial explanation of macroeconomic equilibrium	1 mark

- 5 As $SRAS$ increases there is an extension of AD leading to an increase in GDP and the price level.

An explanation of the effects of an increase in	up to 2
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<i>SRAS</i> on macroeconomic equilibrium	marks
A diagram showing an increase in <i>SRAS</i> on macroeconomic equilibrium	up to 2 marks

6 Factors may include:

- Productivity of the factors of production (land, labour, capital)
- Increased factors of production (land, labour, capital)
- Increased capital investment
- Improvements in enterprise and innovation

Two factors explained	4 marks
One factor explained AND one factor identified	3 marks
One factor explained OR two factors identified	2 marks
One factor identified	1 mark

C Stimulus response question

7 a

AO1 Knowledge	1 mark
AO2 Application	1 mark
AO3 Analysis	2 marks

Knowledge (1 mark) is likely to include:

- *AD*

Application (1 mark) is likely to include:

- Application of the building of HS2 to *AD*

Analysis (2 marks) is likely to include:

Analysis of the effect of the building of HS2, for example:

- Increase in investment leading to an increase in *AD*
- Increase in government spending leading to an increase in *AD*

AO1 Knowledge	1 mark
AO2 Application	1 mark
AO3 Analysis	2 marks

- Shift of the *AD* curve to the right
- Increase in GDP

b

Knowledge (1 mark) is likely to include:

- *LRAS*

Application (1 mark) is likely to include:

- Application of the building of HS2 to *LRAS*

Analysis (2 marks) is likely to include:

Analysis of the effect of the building of HS2, for example:

- Increase in investment leading to an increase in *LRAS*

- Increase in infrastructure around HS2, leading to an increase in *LRAS*
- Shift of the *LRAS* curve to the right
- Possible increase in GDP