

16 MACROECONOMIC EQUILIBRIUM

REAL-WORLD ISSUE:

Why does economic activity vary over time and why does this matter? How do governments manage the economy and how effective are their policies?

By the end of this chapter, you should be able to:

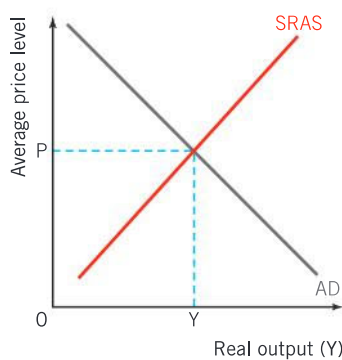
- Identify the short-run equilibrium level of national income/output
- Illustrate equilibrium output in the short run
- Explain and illustrate the monetarist/new classical perspective on long-run macroeconomic equilibrium
- Explain and illustrate the Keynesian perspective on long-run macroeconomic equilibrium
- Explain and illustrate that the difference between the equilibrium level of national income and the full-employment level of national income will result in an inflationary or deflationary gap
- Discuss the difference between Keynesian and new classical economists in their view of macroeconomic equilibrium in the long run.

Remember that national income is equivalent to the level of output that a country produces and is a key sign of the economic health of an economy. The actual level of output, and its corresponding price level, is determined by the interaction between aggregate demand and aggregate supply. Our next important concept is that of the equilibrium level of national income (or output). Simply put, the equilibrium level of national income is where aggregate demand is equal to aggregate supply. But, as shown in the previous chapter, economists distinguish between a short-run and a long-run aggregate supply curve; therefore, we have a short-run and a long-run macroeconomic equilibrium.

Although we don't get into a detailed look at unemployment and inflation until Chapters 19 and 20, there are constant references to these two major macroeconomic topics in this chapter. Joblessness and rapidly rising prices can be a significant problem in any economy.

What level of output in the economy represents short-run equilibrium?

The economy is in short-run equilibrium where aggregate demand equals short-run aggregate supply (SRAS). Graphically, it looks very much like the short-run equilibrium for a particular market, but of course the labels on the axes are different, as shown in Figure 16.1.

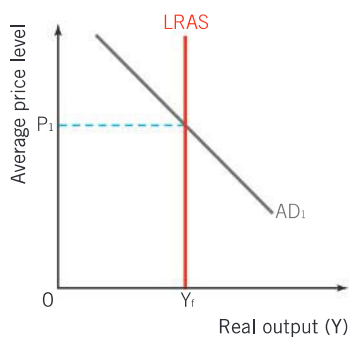


▲ **Figure 16.1** Short-run equilibrium output

The economy is in short-run equilibrium where aggregate demand equals short-run aggregate supply, producing an output level of Y at the price level of P . The output produced by the economy is exactly equal to the total demand in the economy and so there is no reason for producers to change their levels of output. Because aggregate demand is equal to aggregate supply, there is no upward or downward pressure on the price level. In other words, there is no inflationary or deflationary pressure. As long as nothing changes to influence AD or AS , the economy rests at this equilibrium.

What level of output in the economy represents long-run equilibrium?

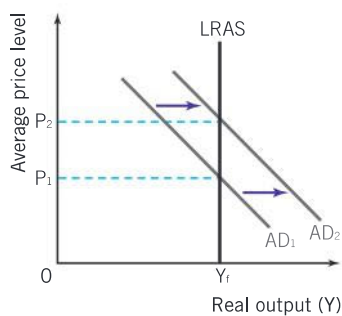
The long-run equilibrium is where aggregate demand is equal to long-run aggregate supply. Given that there is disagreement among economists as to the shape of the long-run aggregate supply curve, we distinguish between the Keynesian equilibrium output in the long run and the new classical equilibrium output.



▲ **Figure 16.2** The new classical perspective of long-run equilibrium

What is the new classical perspective?

According to new classical economists, the economy will always move towards its long-run equilibrium at the full-employment level of output. Thus, the long-run equilibrium is where the aggregate demand curve meets the vertical long-run aggregate supply curve as shown in Figure 16.2.



▲ **Figure 16.3** The new classical perspective of the impact of an increase in AD in the long run

The impact of any changes in aggregate demand will be on the price level only. This is illustrated in Figure 16.3, where an increase in aggregate demand from AD_1 to AD_2 results in an increase in the price level from P_1 to P_2 without any increase in the level of real output.

It is valuable to look at the adjustment from the short run to the long run in order to understand the new classical perspective. Both Keynesian and new classical economists agree on the shape of the short-run aggregate supply curve, but, as stated above, the new classical economists argue that the economy will always move automatically to its long-run equilibrium.



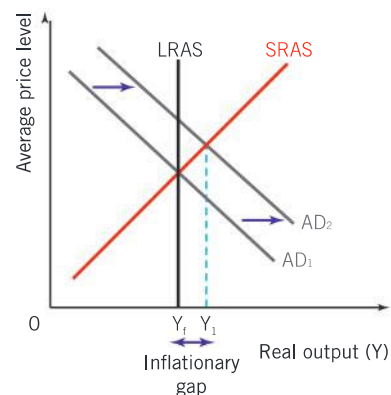
The word “automatically” in the last sentence means “without any government intervention” and illustrates the significance that the new classical economists place on free markets. In their view, there may be a short-run increase in output if there is an increase in aggregate demand, but the economy will always return to its long-run equilibrium.

The new classical perspective showing a combination of the short run and the long run is illustrated in Figure 16.4 and Figure 16.5. Initially, the economy is at its long-run equilibrium at Y_f . If there is an increase in aggregate demand, AD_1 to AD_2 , due to changes in any of the components of aggregate demand then, in the short run, there will be an increase in output from Y_f to Y_1 . In this case the economy would be experiencing what is known as an *inflationary gap*, where the economy is in equilibrium at a level of output that is greater than the full employment level of output. This is illustrated in Figure 16.4.

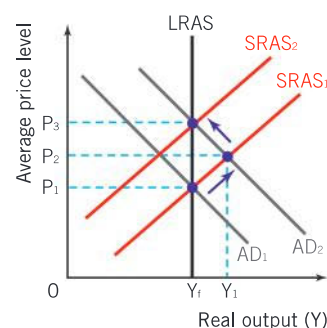
However, according to the new classical economists, this is only possible in the short run. It is possible for output to increase along the short-run aggregate supply curve by paying existing workers overtime wages as a short-term solution. But as the economy is originally at the full-employment level of output, there are no unemployed resources. In their effort to increase their output, the firms in the economy are competing for increasingly scarce labour and capital and, as the diagram shows, the increase in aggregate demand results in an increase in the price level from P_1 to P_2 as shown in Figure 16.5. The increase in the average price level means that, on average, all prices in the economy have risen as the firms bid up the prices of the factors of production in order to increase their output. The rise in the price level means an increase in costs to firms as the prices of the factors of production (eg the prices of labour, raw materials and capital) have risen. At this point, you must remember what happens to short-run aggregate supply when the costs of production rise. The result is a shift in the short-run aggregate supply from $SRAS_1$ to $SRAS_2$. Although firms were willing to supply a higher level of output due to the higher prices they were receiving in the short run, their higher costs of production result in no real gain, so they reduce output back to Y_f . The final result is that output returns to its full employment level, but at a higher price level of P_3 .

We can use similar analysis to see what happens if aggregate demand falls. This is illustrated in Figure 16.7. Originally, the economy is at its long-run equilibrium where AD_1 intersects with $SRAS_1$, at output Y_f and price level P_1 . A fall in aggregate demand from AD_1 to AD_2 , due to changes in any of the components of aggregate demand, results in a fall in the level of national output from Y_f to Y_1 and a decrease in the price level. In this case, the economy would be experiencing what is known as a *deflationary (or recessionary) gap*, where the economy is in equilibrium at a level of output that is less than the full-employment level of output.

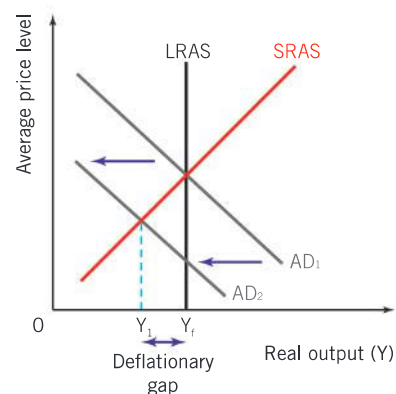
In the short run, the economy will produce at less than full employment output; however, this deflationary gap will not persist. The fall in the



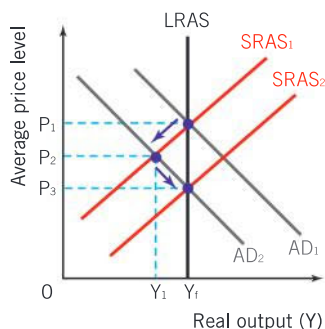
▲ Figure 16.4 An inflationary gap in the new classical model



▲ Figure 16.5 The new classical perspective of the impact of an increase in AD in the short run and in the long run



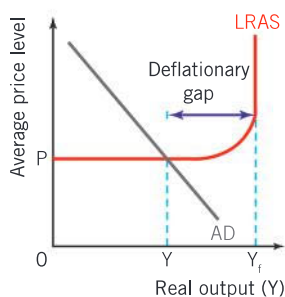
▲ Figure 16.6 An deflationary gap in the new classical model



▲ Figure 16.7 The new classical perspective of the impact of a decrease in AD in the short run and in the long run

price level means that the prices of the economy's factors of production have fallen. This is shown in Figure 16.7. This means that firms' costs of production fall and this results in a shift in the short-run aggregate supply from $SRAS_1$ to $SRAS_2$. As the diagram shows, the economy returns to its long-run equilibrium at the full-employment level of output, at a lower price level.

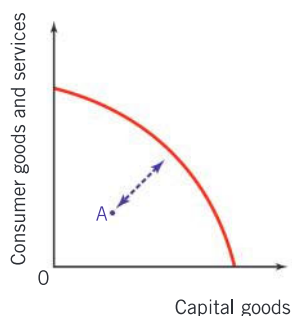
The diagrams and explanations illustrate the new classical perspective of the long-run equilibrium in the economy. What is important is the conclusion that the long-run equilibrium level of output is equal to the full-employment level of income and that the economy will move towards this equilibrium without any government intervention as a result of free market forces. According to this model, an increase in aggregate demand will be purely inflationary in the long run and thus there is no role for the government to play in trying to deliberately steer the economy towards full employment. Although there may be deviations from full employment in the short run, new classical economists would not see a role for the government in filling these gaps. They would recommend leaving the economy to market forces, rather than using government policies to manage the level of aggregate demand.



▲ Figure 16.8 The Keynesian perspective of long-run equilibrium output below the full employment level of output

What is the Keynesian perspective?

In both new classical and Keynesian analysis, the equilibrium level of output is where aggregate demand is equal to long-run aggregate supply. According to the Keynesian economists, however, this equilibrium level of output may occur at different levels. Significantly, they believe that the economy may be in long-run equilibrium at a level of output below the full employment level of national income (Y_f). This will be the case if the economy is operating at a level where there is spare capacity. In this view, the equilibrium level of output depends mainly on the level of aggregate demand in the economy. Figure 16.8 illustrates this important view of the Keynesian perspective.

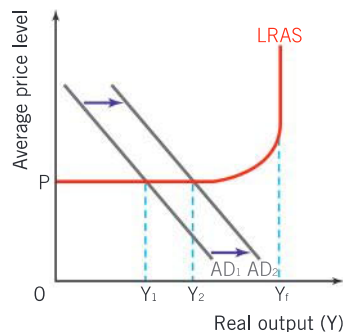


▲ Figure 16.9 Output gap illustrating the difference between an economy's actual output and its potential output

If aggregate demand is at the level shown in Figure 16.8, then equilibrium will occur at a real output level of Y , with a price level of P . As noted in the previous chapter, aggregate supply can be perfectly elastic because of the existence of spare capacity, with high levels of unused factors of production such as unemployed workers and/or underutilized capital. It is important to observe that in this case, the equilibrium level of output is below the full-employment level of output. We say that there is a deflationary gap whereby the level of aggregate demand in the economy is not sufficient to buy up the potential output that could be produced by the economy at the full-employment level of output. This may also be referred to as an *output gap* and, though not easily measurable, could be shown as the distance from a point inside a country's hypothetical production possibilities curve to a point on the curve, as shown in Figure 16.9.



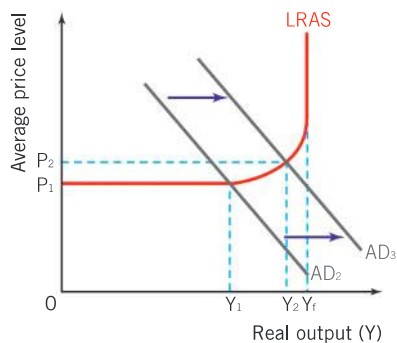
In the Keynesian view, aggregate demand can increase such that there is an increase in the level of real output, without any consequent increase in the price level. This is shown in Figure 16.10.



▲ **Figure 16.10** The Keynesian perspective of the impact of an increase in AD when the economy is operating below full employment

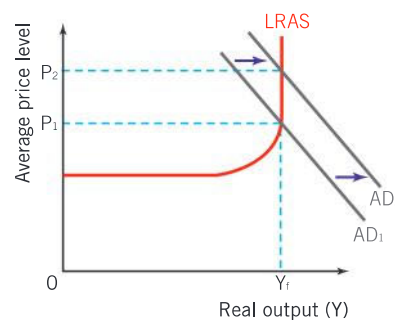
If there is an increase in aggregate demand from AD_1 to AD_2 , then there will be an increase in real output from Y_1 to Y_2 , but no change in the price level. This is due to the existence of spare capacity in the economy. Producers can employ the unused factors of production to increase output with no increase in costs. Thus, there is no inflationary pressure.

If aggregate demand increases further, to AD_3 as in Figure 16.11, then the economy starts to experience inflationary pressure as available factors of production become scarcer and their prices are bid up. The price level rises from P_1 to P_2 to compensate producers for their higher costs.



▲ **Figure 16.11** The Keynesian perspective of the impact of an increase in AD when the economy is close to full employment

If the economy is operating at full employment and there is an increase in aggregate demand, then the outcome will be “purely inflationary”. That is, there is no increase in output and the only change is an increase in the price level. This is because it is impossible for the economy to produce any further increase in output in the long run, given the existing factors of production. This is illustrated in Figure 16.12.



▲ **Figure 16.12** The Keynesian perspective of the impact of an increase in AD when the economy is at full employment

An increase in aggregate demand from AD_1 to AD_2 results in no change in output as the economy cannot produce output beyond the full-employment level of output. The only impact is an increase in the price level from P_1 to P_2 to allocate the scarce resources among the competing components of aggregate demand, ie consumers, producers, the government and the foreign sector.

Exercise 16.1

ATL Thinking and Communication

Using the Keynesian model:

1. Draw and fully label an AD/AS diagram with AD at a level that creates a deflationary/recessionary gap.
2. Identify the three different phases of the Keynesian AS curve on the diagram.
3. Add two AD curves to each phase of the AS curve (ie six AD curves in all).
4. Explain what will happen if there is a shift to the right in AD in each of the phases, using the AD curves that you have drawn.

Exercise 16.2

ATL Thinking and Communication

Using the new classical model:

1. Draw and label fully an AD/AS diagram with the economy in short-run equilibrium at the full-employment level of income.
2. Add and label a new AD curve to the right of the one that you have drawn.
3. Explain what will happen in the short run and the long run.

EXAMINATION QUESTIONS

Paper 1, Part (a) questions

1. Explain the difference between the equilibrium level of output and the full-employment level of output. [10 marks]
2. Explain the effects of an increase in long-run aggregate supply on national income and the price level. [10 marks]
3. Explain, from a new classical perspective, how an increase in aggregate demand will affect an economy in the short run and the long run. [10 marks]