10.10: Recessionary and Inflationary Gaps in the Income-Expenditure Model

Learning Objectives

- Define potential real GDP and be able to draw and explain the potential GDP line
- Identify appropriate Keynesian policies in response to recessionary and inflationary gaps

The Potential GDP Line

Figure 1 shows a Keynesian cross diagram with one additional feature: the potential GDP line. This feature is a vertical line showing potential real GDP. That is, we know GDP increases from left to right on the graph. At some point we reach potential GDP, and that's what the Line shows. Potential GDP means the same thing here that it means in the AD-AS diagrams: it refers to the quantity of output that the economy can produce with full employment of its labor and physical capital. At any level of GDP less than potential, usually we have less than full employment. If we measure the unemployment rate at potential GDP, we get the natural rate of unemployment, that we defined in our earlier discussion on unemployment and inflation.

Recessionary and Inflationary Gaps

In the Keynesian cross diagram, if the aggregate expenditure line intersects the 45-degree line at the level of potential GDP, then the economy is in sound shape. There is no recession, and unemployment is at the natural rate–what we call full employment. But there is no guarantee that the equilibrium will occur at the potential GDP level of output. The equilibrium might be higher or lower.

Figure 1(a) illustrates a situation where the aggregate expenditure line intersects the 45-degree line at point E_0, which is a real GDP of \$6,000, and which is below the potential GDP of \$7,000. In this situation, the level of aggregate expenditure is too low for GDP to reach its full employment level, and unemployment will occur. The distance between an output level like E_0 that is below potential GDP and the level of potential GDP is called a **recessionary gap**. Because the equilibrium level of real GDP is so low, firms will not wish to hire the full employment number of workers, and unemployment will be high.

What might cause a recessionary gap? Anything that shifts the aggregate expenditure line down is a potential cause of recession, including a decline in consumption, a rise in savings, a fall in investment, a drop in government spending or a rise in taxes, or a fall in exports or a rise in imports. Moreover, an economy that is at equilibrium with a recessionary gap may just stay there and suffer high unemployment for a long time; remember, the meaning of equilibrium is that there is no particular adjustment of prices or quantities in the economy to chase the recession away.

The Keynesian response to a recessionary gap is for the government to reduce taxes or increase spending so that the aggregate expenditure function shifts up from AE_0 to AE_1. When this shift occurs, the new equilibrium E_1 now occurs at potential GDP as shown in Figure 1(a).

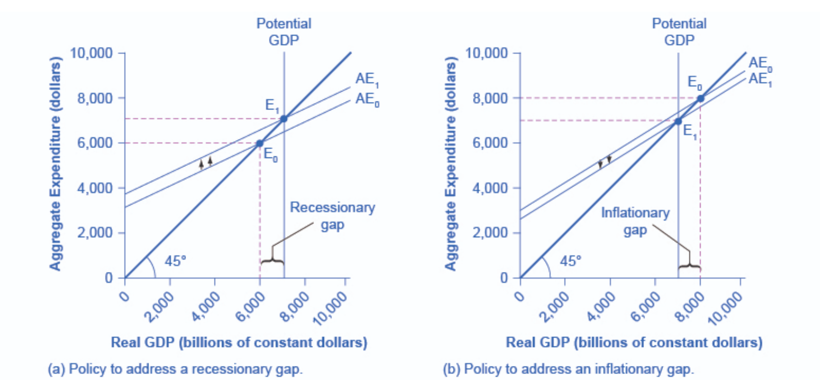

Figure 1.Addressing Recessionary and Inflationary Gaps. (a) If the equilibrium occurs at an output below potential GDP, then a recessionary gap exists. The policy solution to a recessionary gap is to shift the aggregate expenditure schedule up from AE_0 to AE_1, using policies like tax cuts or government spending increases. Then the new equilibrium E_1 occurs at potential GDP. (b)If the equilibrium occurs at an output above potential GDP, then an inflationary gap exists. The policy solution to an inflationary gap is to shift the aggregate expenditure schedule down from AE_0 to AE_1, using policies like tax increases or spending cuts. Then, the new equilibrium E_1 occurs at potential GDP.

Conversely, Figure 1(b) shows a situation where the aggregate expenditure schedule (AE_0) intersects the 45-degree line above potential GDP. The gap between the level of real GDP at the equilibrium E_0 and potential GDP is called an **inflationary gap**. The inflationary gap also requires a bit of interpreting. After all, a naïve reading of the Keynesian cross diagram might suggest that if the aggregate expenditure function is just pushed up high enough, real GDP can be as large as desired—even doubling or tripling the potential GDP level of the economy. This implication is clearly wrong. If the macro equilibrium occurs beyond potential GDP, real GDP is limited to potential; the remaining increase is only nominal. After all, an economy faces some supply-side limits on how much it can produce at a given time with its existing quantities of workers, physical and human capital, technology, and market institutions.

The inflationary gap should be interpreted, not as a literal prediction of how large real GDP will be, but as a statement of how much extra aggregate expenditure is in the economy beyond what is needed to reach potential GDP. An inflationary gap suggests that because the economy cannot produce enough goods and services to absorb this level of aggregate expenditures, the spending will instead cause an inflationary increase in the price level. In this way, even though changes in the price level do not appear explicitly in the Keynesian cross equation, the notion of inflation is implicit in the concept of the inflationary gap.

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The appropriate Keynesian response to an inflationary gap is shown in Figure 1(b). The original intersection of aggregate expenditure line AE_0 and the 45-degree line occurs at $8,000, which is above the level of potential GDP at $7,000. If AE_0 shifts down to AE_1, so that the new equilibrium is at E_1, then the economy will be at potential GDP without pressures for inflationary price increases. The government can achieve a downward shift in aggregate expenditure by increasing taxes on consumers or firms, or by reducing government expenditures.

One final note: recessionary and inflationary gaps are related to the empirical concept of the GDP gap we defined earlier in this module. A recessionary gap corresponds to a positive GDP gap where actual GDP is less than potential, while an inflationary gap corresponds to a negative GDP gap where actual GDP is greater than potential.

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Glossary

[glossary-page][glossary-term]inflationary gap:[/glossary-term][glossary-definition]when macro equilibrium occurs at a level of GDP greater than potential GDP; thus, unemployment is lower than the natural rate[/glossary-definition][glossary-term]potential GDP line:[/glossary-term]
[glossary-definition]vertical line on the Keynesian Cross diagram indicating where GDP (on the horizontal axis) is at potential[/glossary-definition]
[glossary-term]recessionary gap:[/glossary-term][glossary-definition]when macro equilibrium occurs at a level of GDP less than potential GDP; thus, unemployment is higher than the natural rate[/glossary-definition]
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