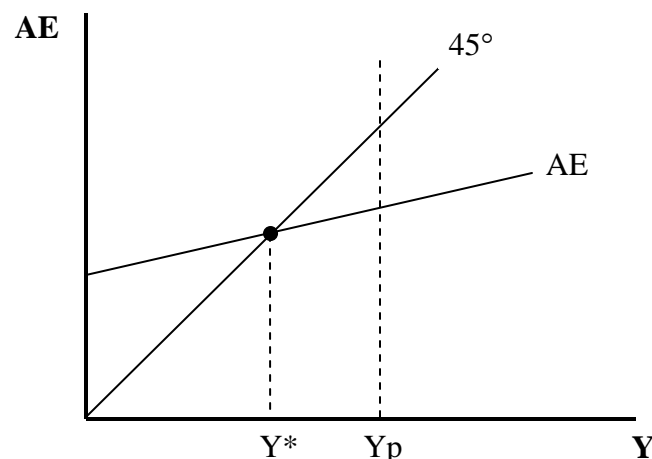


4 Macro Markets – Goods and Services

When we talk about goods and services, we're discussing GDP and we have 2 models where we explain how GDP is determined, the Aggregate Expenditure model (AE model) and the Aggregate Demand/Aggregate Supply model (AD/AS model). We can use either model, but we'll demonstrate how both work. The one thing each has in common is to explain how we get our equilibrium GDP.

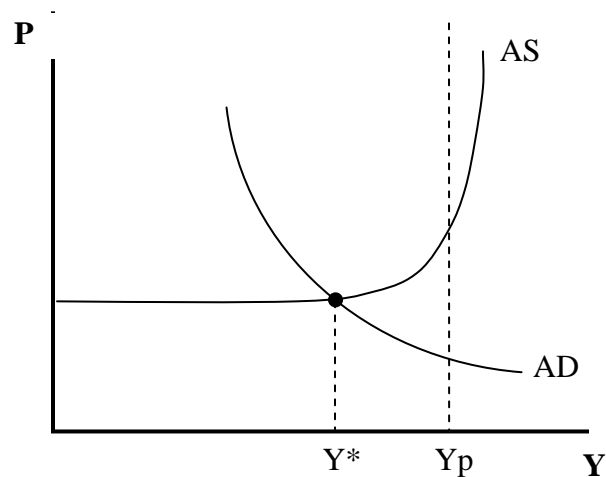
The AE model is considered a fixed price level model, in that the price level (P) is not a variable we want to explain. Rather, this model focuses specifically on explaining GDP by looking at how GDP responds to changes in expenditure, or as we also put it, changes in the overall demand for goods and services. When working with the AE model, we've got a simplified model that allows us to use math in our discussion without much trouble. We won't get into that math here, but we use it to calculate equilibrium GDP and whenever we work with the various multipliers from the fiscal policy section.

The graph for AE has AE on one axis and GDP (Y) on the other axis. Given that the economy is thought to be at equilibrium when the overall expenditure on goods and services is the same as the value of goods and services produced in an economy (i.e. which basically says that demand is equal to supply), we have an equilibrium condition that says $AE = Y$ in this model. This condition is what we use to solve for equilibrium GDP when we do the math. Changes in anything related to AE that's not included on the graph, e.g. P , but also government expenditure, investment expenditure, etc., can cause a shift in AE. In this model, changes in P cause shifts, but shifts in AE do not lead to changes in P .



If the economy heads into a recessionary gap (this is depicted above), then we know that AE needs to shift upwards until AE crosses the 45° line where the dotted line from Y_p crosses, i.e. AE and the 45 line intersect above Y_p . Using the multiplier equations within the AE model, we can actually calculate how much to change government spending, taxes, etc., to get the shift we want – which closes this gap. Similarly, for an inflationary gap.

When working instead with the AD/AS model, we have something where it's more difficult to use any math. An example of this graph is provided below, where we see a very typical looking demand curve for AD, and not so typical supply curve for AS. Of course the intersection of AD and AS give us the equilibrium price level (P^*) and GDP (Y^*).



Why does AS look like the curve depicted above? The answer comes from observing the economy and noting that when GDP changes during a deep recession, we tend to see very small changes in the price level (P), but when GDP changes during a period of full employment (or an inflationary gap), we tend to see much sharper increases in P . What that means is this. When AD shifts along AS when we're far from Potential GDP, those new equilibrium points should not reflect much change in P , which implies that AS must be relatively flat when we're far from Potential GDP. When AD shifts along AS when we're at Potential GDP, those new equilibrium points reflect big changes in P , so AS must be relatively steep at that point. Of course, where AS gets close to vertical, we also know that we are likely near full employment since it's possible to produce more than potential GDP for relatively brief periods of time.

Changes in expenditure, from changes in government spending to changes in investment (which involves firms spending money on building, machines and equipment), all cause shifts in AD. Note that both fiscal and monetary policy are designed to cause these changes in spending. When spending increases, we now know that we can get sharp increases in P during

periods of full employment or near-full employment, but relatively small changes in GDP. That suggests to us that the basic solution to recessionary gaps is to increase spending, and for inflationary gaps, it's to decrease spending.