IESE Business School
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# The AS/AD Model





## 1. Introduction

The Aggregate Supply – Aggregate Demand model (AS/AD for short) is designed for analyzing the short-run behavior of a closed economy. The main feature of such an economy is the following cycle: output Y oscillates around its potential or full-employment level Y*. If Y>Y*, higher inflation is the result; if Y<Y*, unemployment is unnecessarily high.

Stabilization policies – monetary and fiscal – aim at keeping Y as close as possible to Y* by manipulating aggregate demand (changing Y* is a long-run, supply-side, structural issue). The AS/AD model provides an easy understanding of the workings and effectiveness of stabilization policy measures.

The key variables of the model (the endogenous variables) are output Y (assumed to be a good proxy for employment) and price level P. In some versions, the price level is replaced by the rate of inflation. The model can also be specified in terms of the actual and potential rates of output growth. In the standard textbook version, the model is built in three steps: first the aggregate supply curve; then the IS/LM curves which represent output and interest rate; and lastly the aggregate demand curve which plots output and price level. The intermediate step is omitted here.

## 2. The (Short-Run) Aggregate Supply Curve

The AS curve (sometimes called SRAS to distinguish it from a long-run supply curve) shows the aggregate output supplied by firms as a function of the price level. It is tempting to derive it from the individual supply curves of firms (which are upward-sloping since they correspond to the MC curve in a competitive market), but this is not quite correct (Y is not the quantity of a particular good, P is not its corresponding price). Alternative explanations, not all of them consistent, are set forth by different authors:

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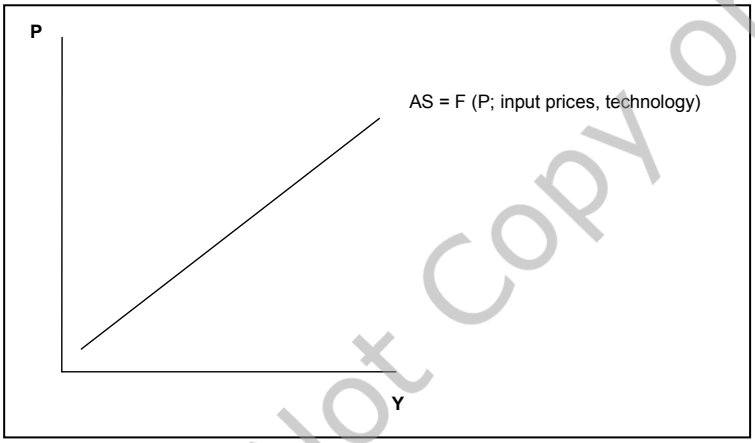
a) A simple rationale is to assume that when P rises, chances are individual p's will have risen for most firms, and that the individual output response will result in a palpable increase in GDP.

b) Firms are assumed to use a fixed markup over factor costs to determine the price of their goods (a common, not unreasonable assumption). Since, when Y approaches Y*, factor prices will rise, firms will raise their individual prices: a higher P will be the result. (Colander, 307)

c) When P rises, the real wage falls (if the nominal wage remains constant); at a lower real wage, firms are willing to increase hiring: as a result, Y will rise (L. Taylor, 160)

The AS curve will have a positive slope (Figure 1.1);

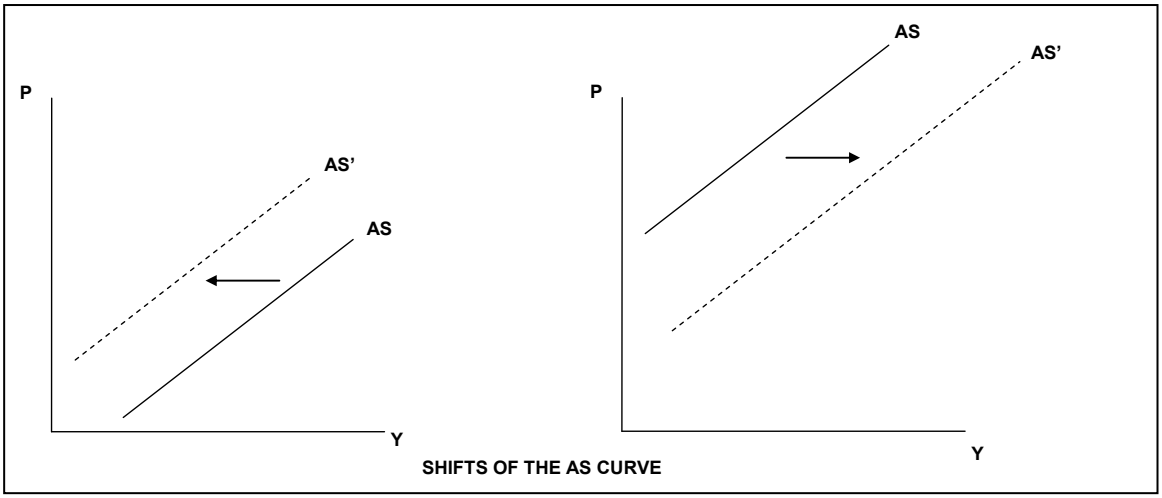
**Figure 1.1.**
**The SRAS**




it will shift when variables other than Y or P change: for instance, if input prices rise, firms will offer a small amount of product at the old price level: the AS curve will move upwards (Figure 1.2); it will be sensitive to changes in productivity: higher productivity implies lower unit costs, hence the firm will be willing to supply a higher amount of output at the same price (Figure 1.3); Notice that P is an index of final goods prices: when wages change, the old price level remains the same.

**Figure 1.2.**
**Higher input prices**

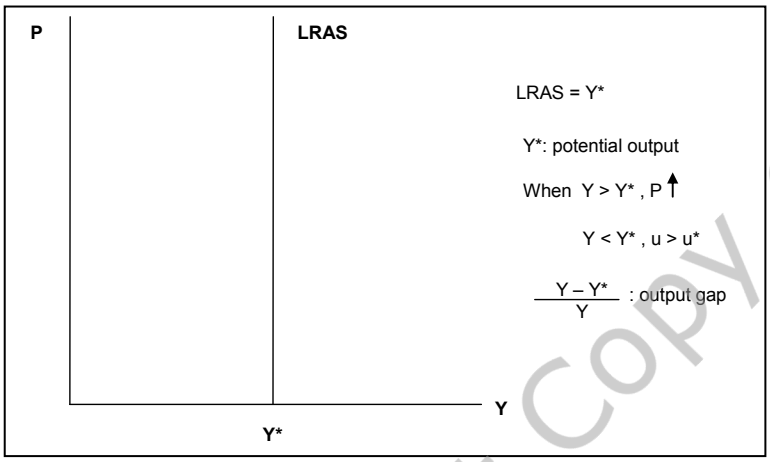
**Figure 1.3.**
**Higher productivity**



## 3. The Long-Run Aggregate Supply or Potential Output

The existence of a vertical long-run aggregate supply is also explained in various ways. The simplest one is to assume that there is a physical limit to the amount of output that can be produced with a given technology, a given capital stock and more or less given supplies of production factors; when that limit is reached, output will not change no matter how much the price level rises. That limit is usually called potential output, Y*, and the LRAS is simply a vertical line with Y* as the abscissa. (Figure 2.1.)

**Figure 2.1.**
**The long-run AS curve**




A crucial element of the AS/AD analysis is the assumption that, if enough time is allowed, Y tends to Y*. The reasoning is always the same: when Y<Y*, as at point A in Figure 2.2., unemployment is higher than it could be; unemployed workers, willing to work at less than the current wage rate, will put downward pressure on the wage level, thus lowering wage costs; the SRAS curve will move downwards until a point such as A' is reached. Similarly, if one starts from a point such as A on Figure 2.3., a tight labor market will exert upward pressure on wage costs, and AS will shift upwards until a point such as A' is reached.

**Figure 2.2.**
**Underemployment**

**Figure 2.3.**
**Overheating**