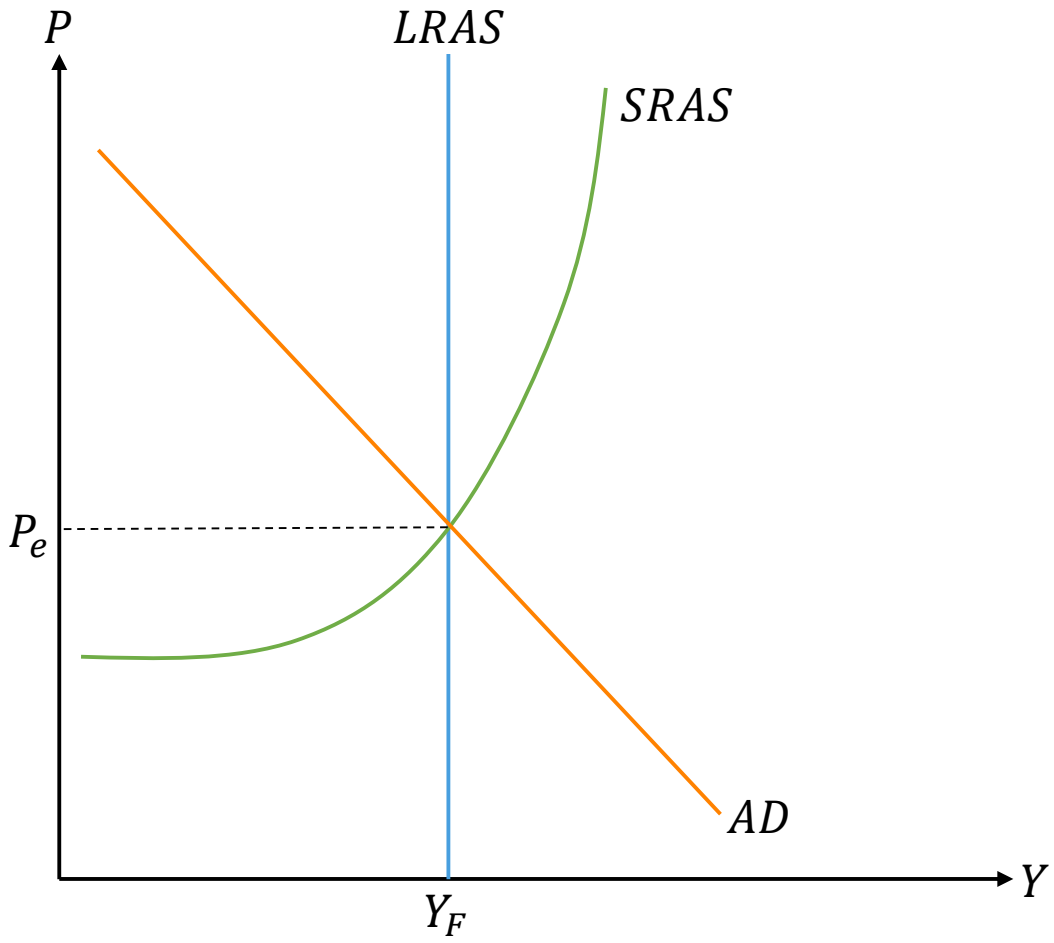
Using the *AD/AS* Model

Comparative Statics in the Short-Run Fluctuations Model

The AD/AS Model

The $LRAS$ curve shows **total productive capacity** in the economy at Y_F, **full-employment output** or **potential GDP**.

The **intersection** of AD, $SRAS$, and $LRAS$ also produces P_e, a constant-inflation-expectation price level.



Using this Model

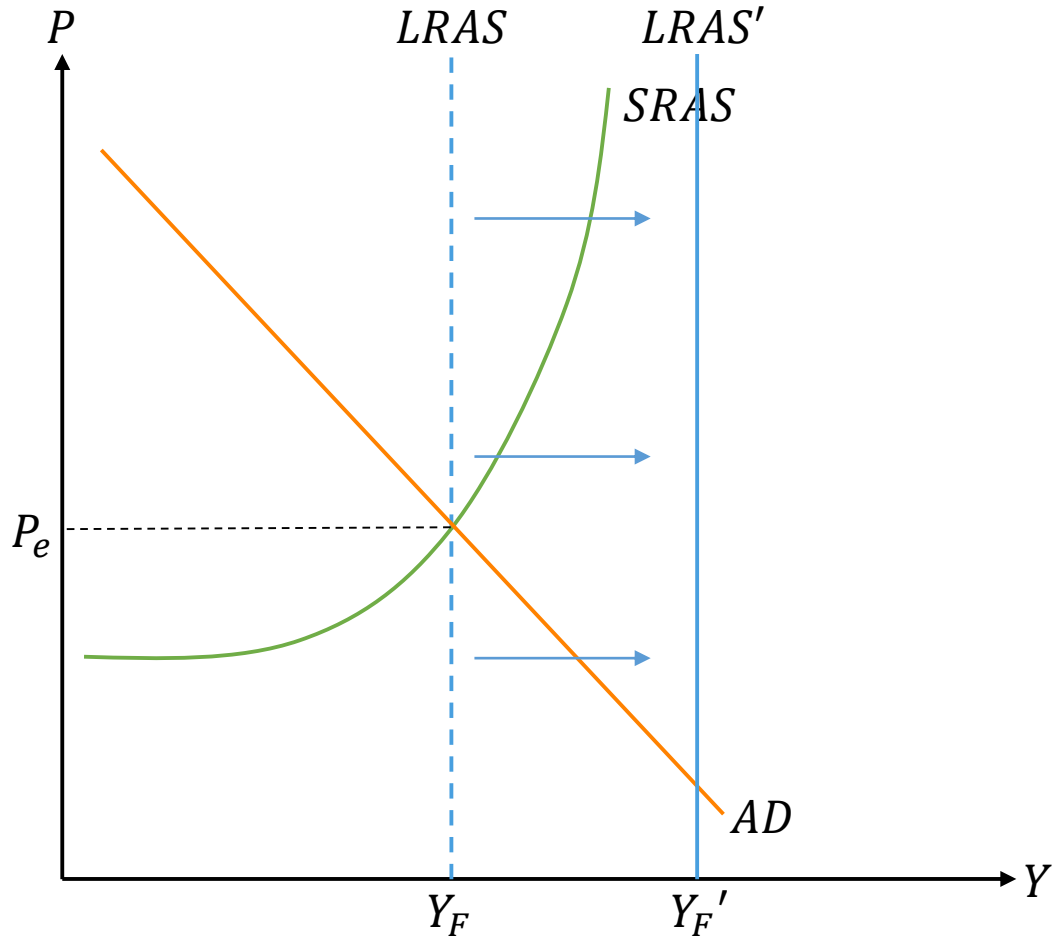
The **anchor** of this model is ***LRAS*** and the Y_F to which it corresponds. The economy must either

a. Return to the *LRAS*, which might also have moved, or
b. There must be some reason why it cannot return to *LRAS*

There will be only a handful of situation (b), so you can generally rely on (a) in re-establishing equilibrium in this model.

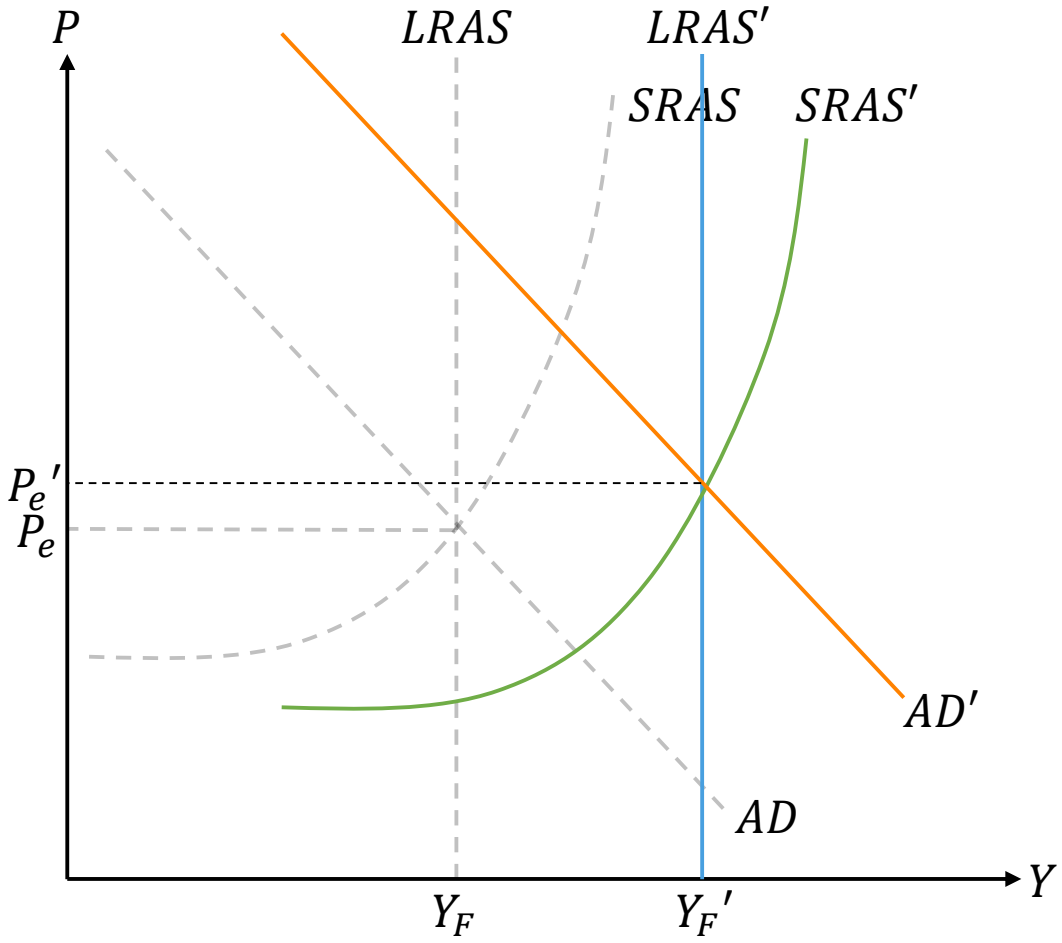
Dynamics in the AD/AS Model

As we discussed in Chapter 7 on Economic Growth, countries with **good economic institutions** (peace, easy taxes, and a tolerable administration of justice) **experience real GDP growth** year after year.



Dynamics in the AD/AS Model

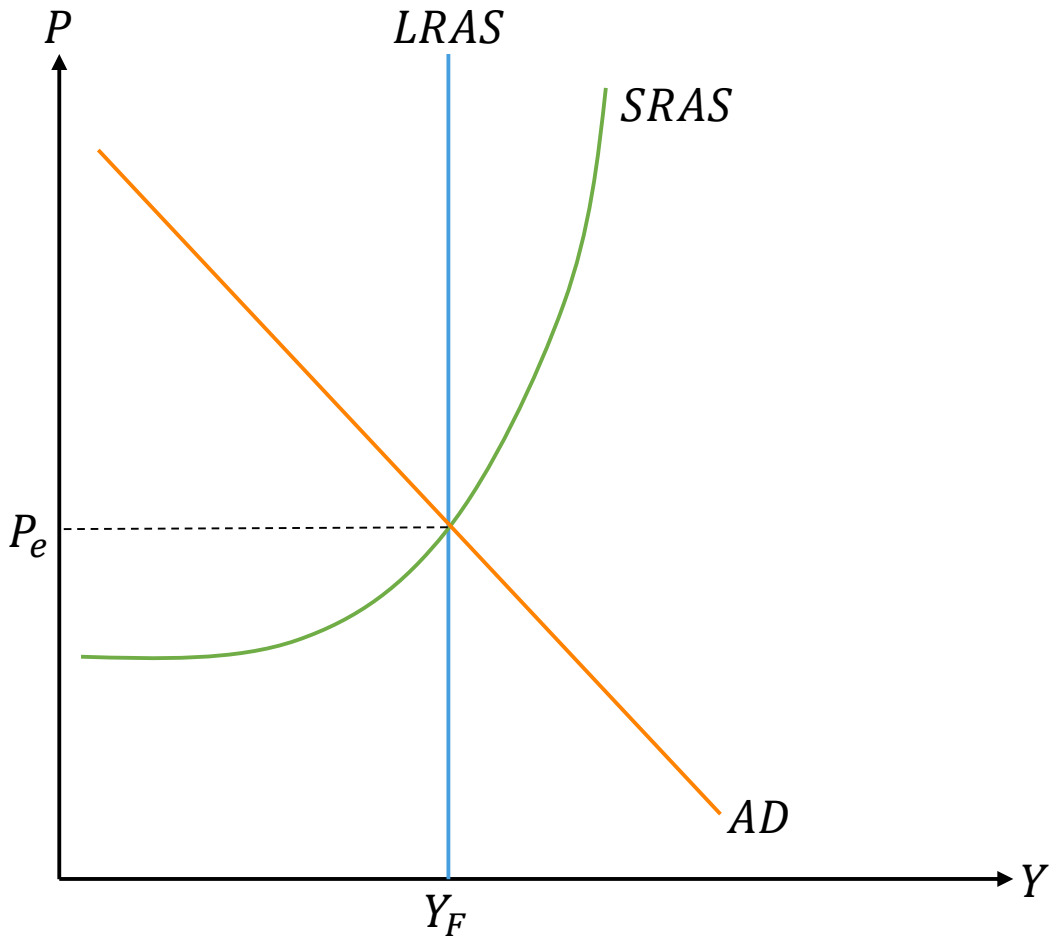
"Secular growth"—as it is often called—generally brings with it an increase in $SRAS$ and AD curves, as both production ($SRAS$) and expenditure (AD) increase as long-run productive capacity increases.



Dynamics in AD/AS

We will now look at changes in $SRAS$ and AD that **do not come** about as a response to **long-run secular growth**.

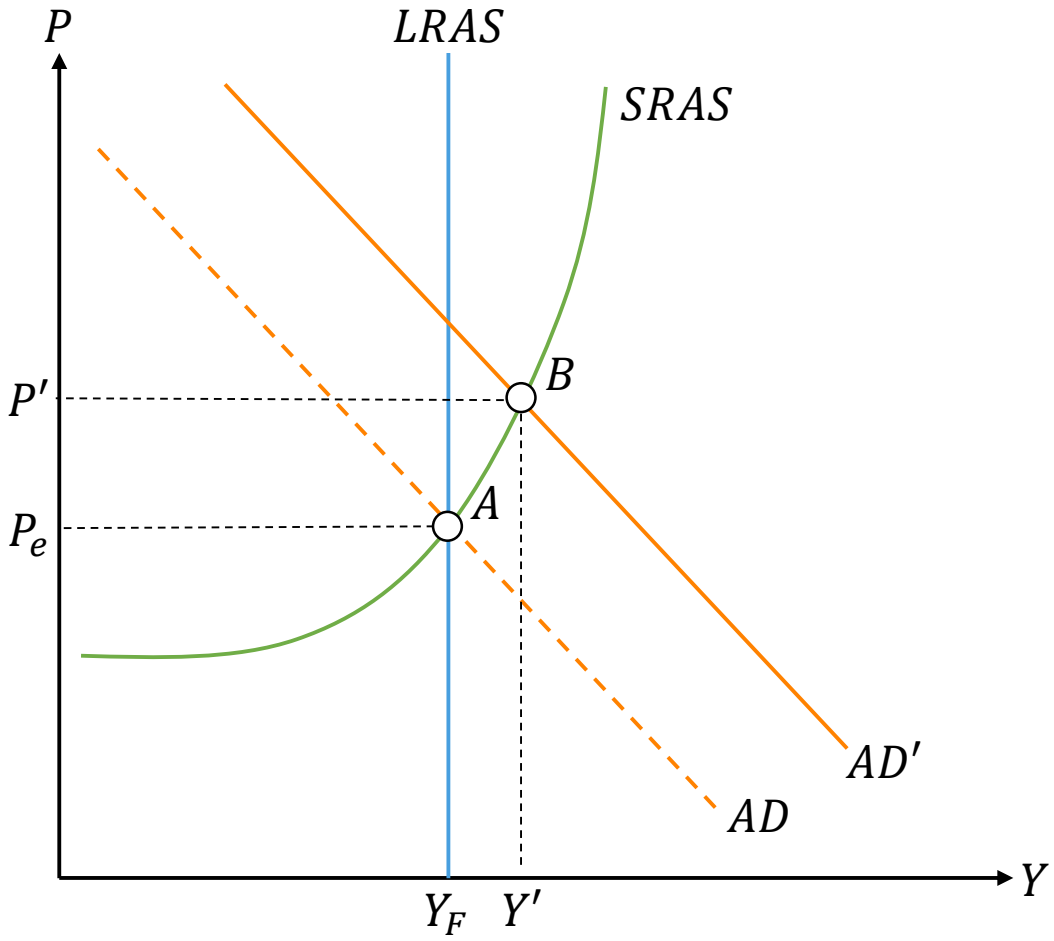
These **shifts in $SRAS$ and AD** will create **cyclical variation** in output and income, i.e., Y.



Shifting AD: Increasing AD

Assuming there has been no change in real productivity ($LRAS$ is steady), let's look at an increase in AD.

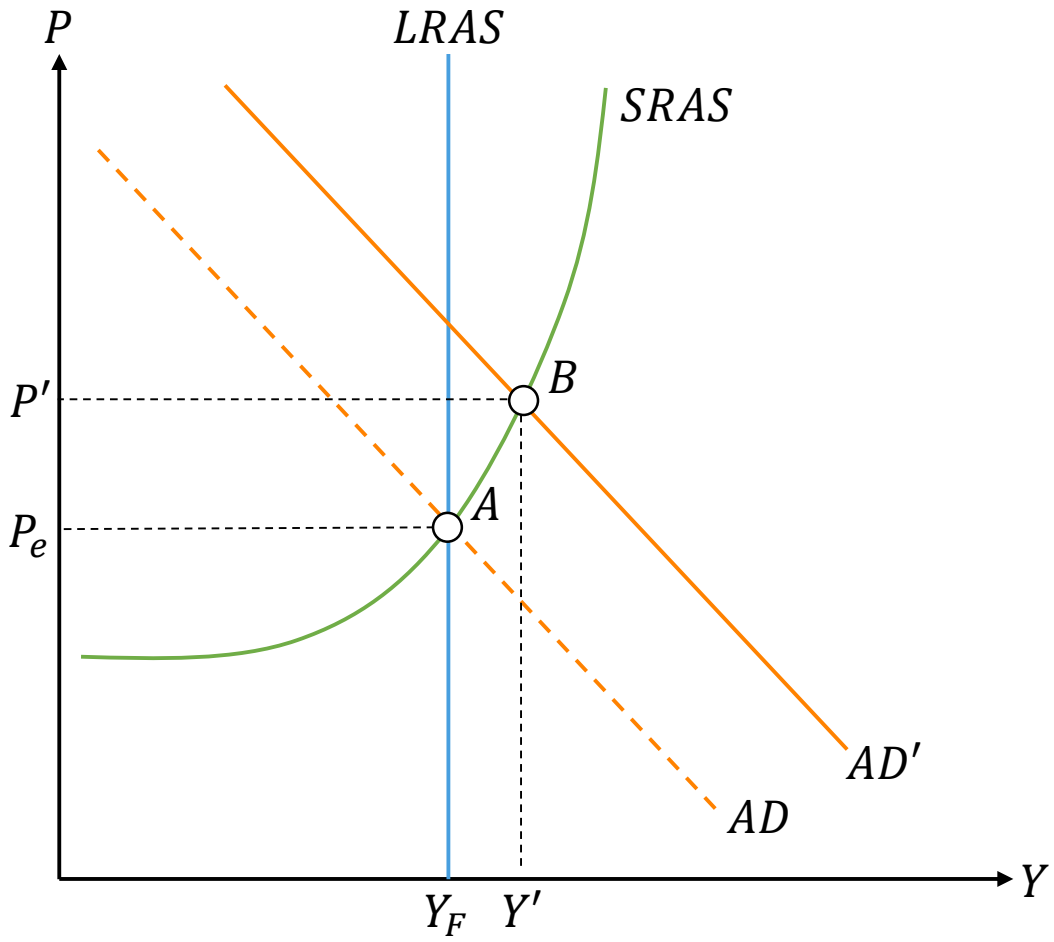
Higher AD leads to a **higher level of output** (Y') and a **higher price level** (P'), as it moves **along** $SRAS$.



Shifting AD: Increasing AD

But this new equilibrium is not sustainable, because the economy cannot realistically produce Y' without an increase in $LRAS$. One of three things must happen:

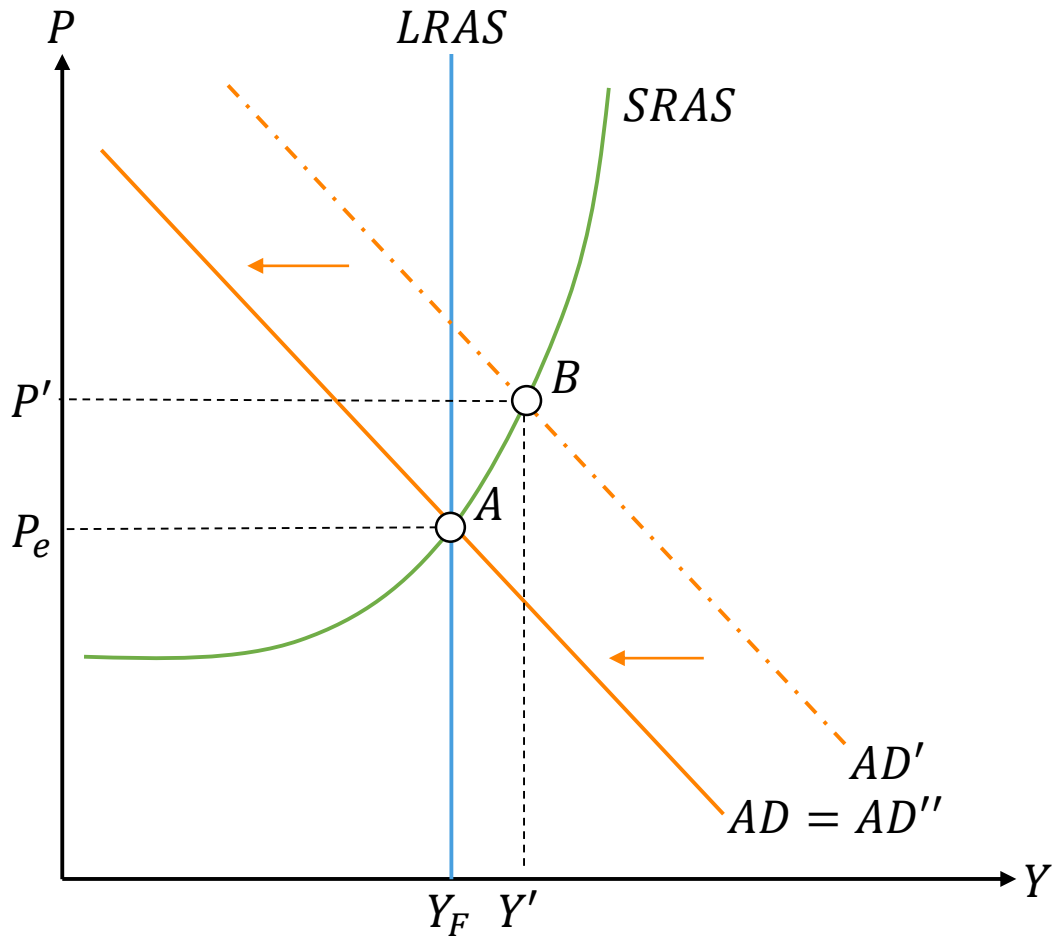
1. The $LRAS$ shifts to the right
2. The $SRAS$ shifts to the left as input prices catch up to output prices
3. The AD reverses itself



Shifting AD: Increasing AD

If the cause of the AD shift was temporary and fleeting, then the AD might shift back on its own.

$$A \rightarrow B \rightarrow A$$

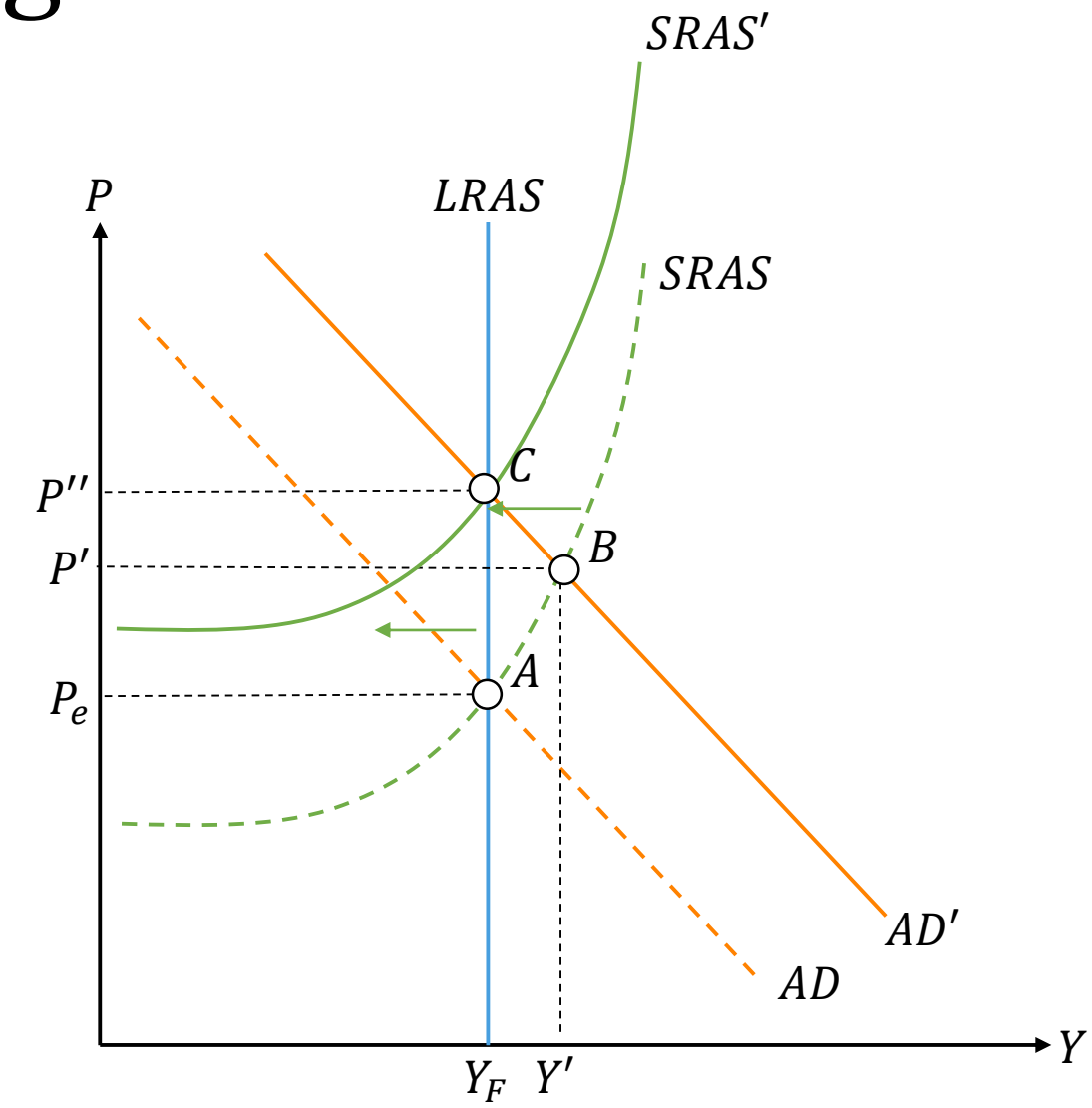


Shifting AD: Increasing AD

More likely, $SRAS$ will shift to the left as **input prices rise** in response to **higher output prices**. This will put even more pressure to raise **the price level**.

The $LRAS$ either moves to the right slightly (or stays stationary). Equilibrium is restored.

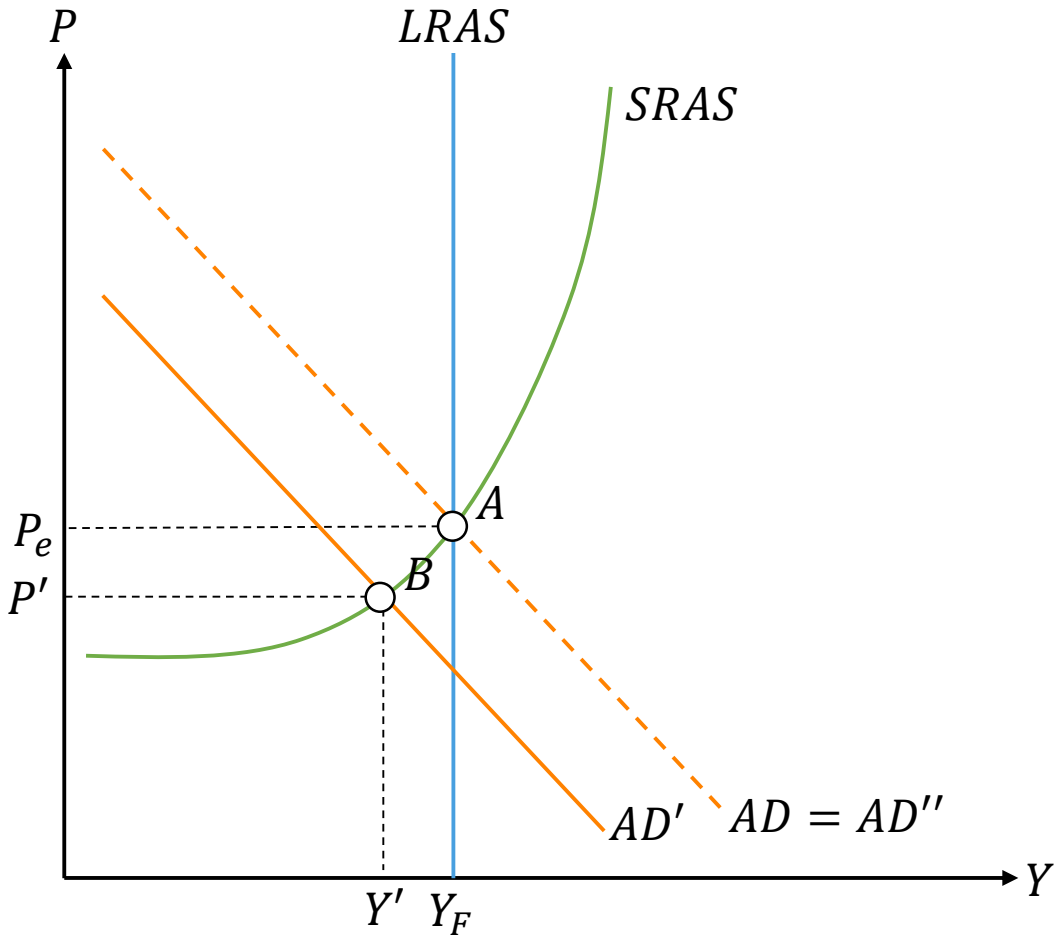
$$A \rightarrow B \rightarrow C$$



Shifting AD: Decreasing AD

Assuming there has been no change in real productivity ($LRAS$ is steady), let's look at a decrease in AD.

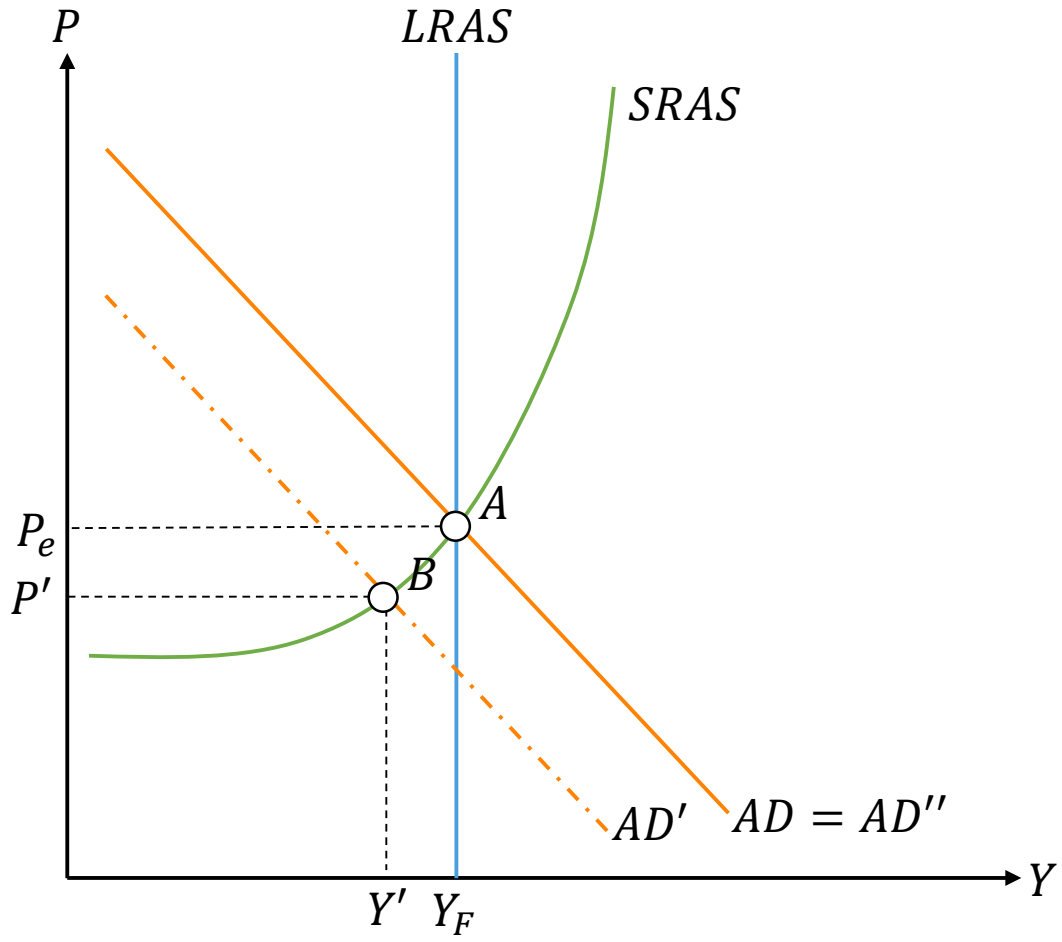
Lower AD leads to a **lower level of output** (Y') and a **lower price level** (P'), as it moves **along** $SRAS$.



Shifting AD: Decreasing AD

Once again, if the cause of the AD shift was temporary and fleeting, then the AD might shift back on its own. This is the **best case scenario**, but unfortunately, it's **quite unlikely**.

$$A \rightarrow B \rightarrow A$$

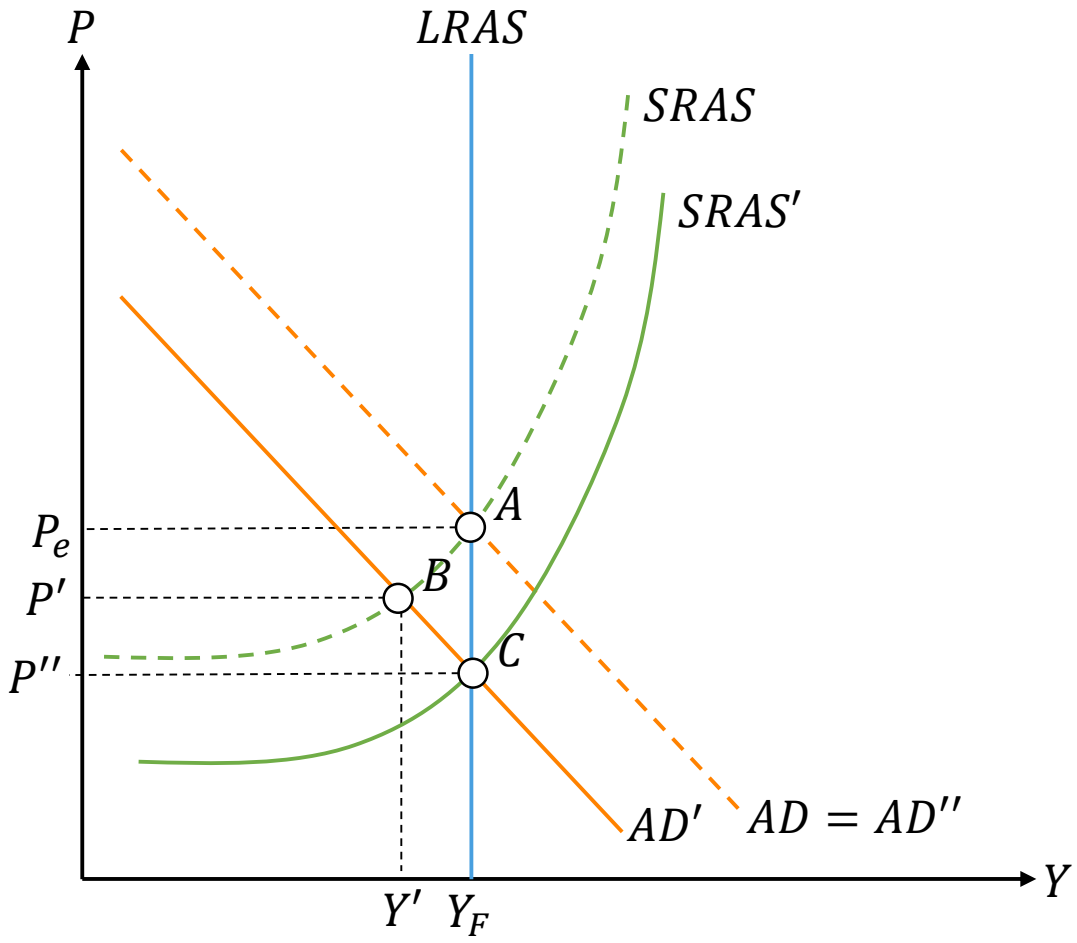


Shifting AD: Decreasing AD

Unlike when there are increases in AD, secular growth (expansion of $LRAS$) does **not** help restore the macroeconomy to equilibrium when AD falls.

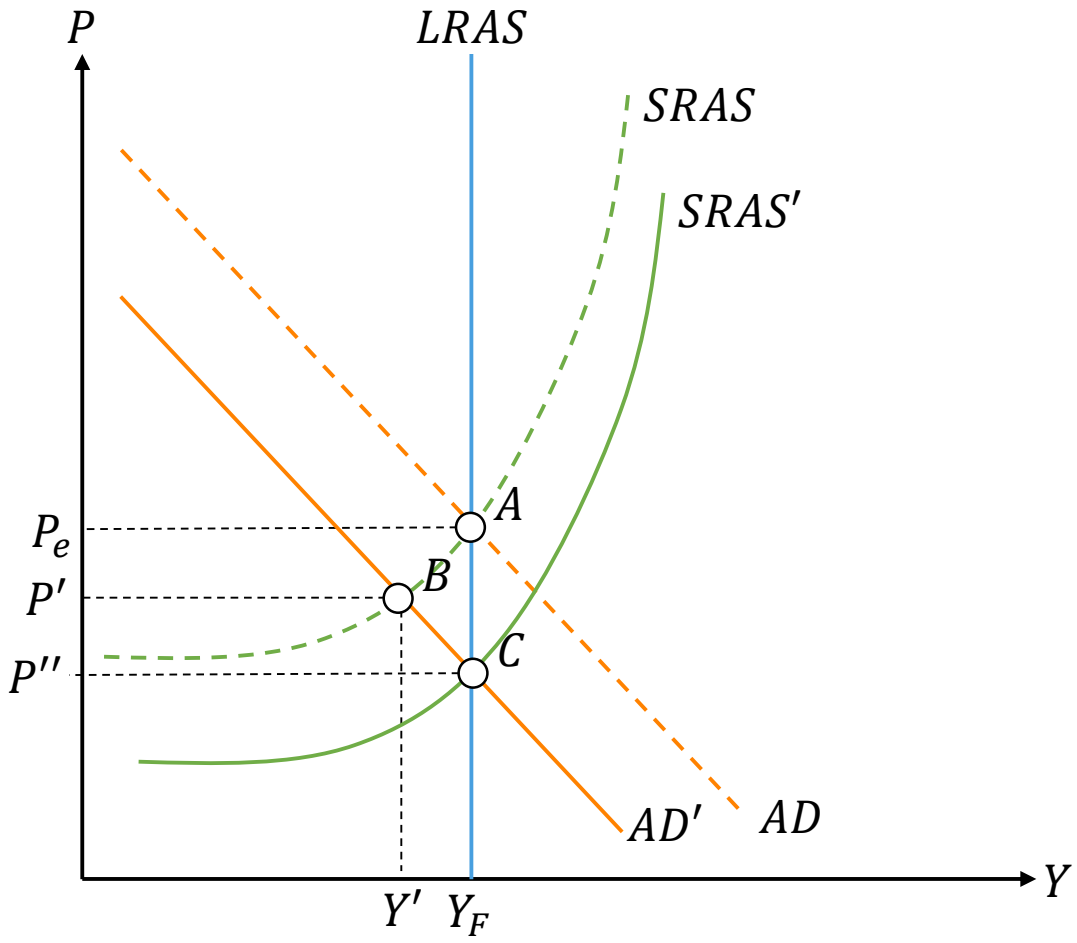
The "natural" solution is **an expansion of *SRAS***, but this, too, is **quite unlikely** because of **sticky factor and output prices**.

$$A \rightarrow B \rightarrow C$$



Shifting *AD*: Decreasing *AD*

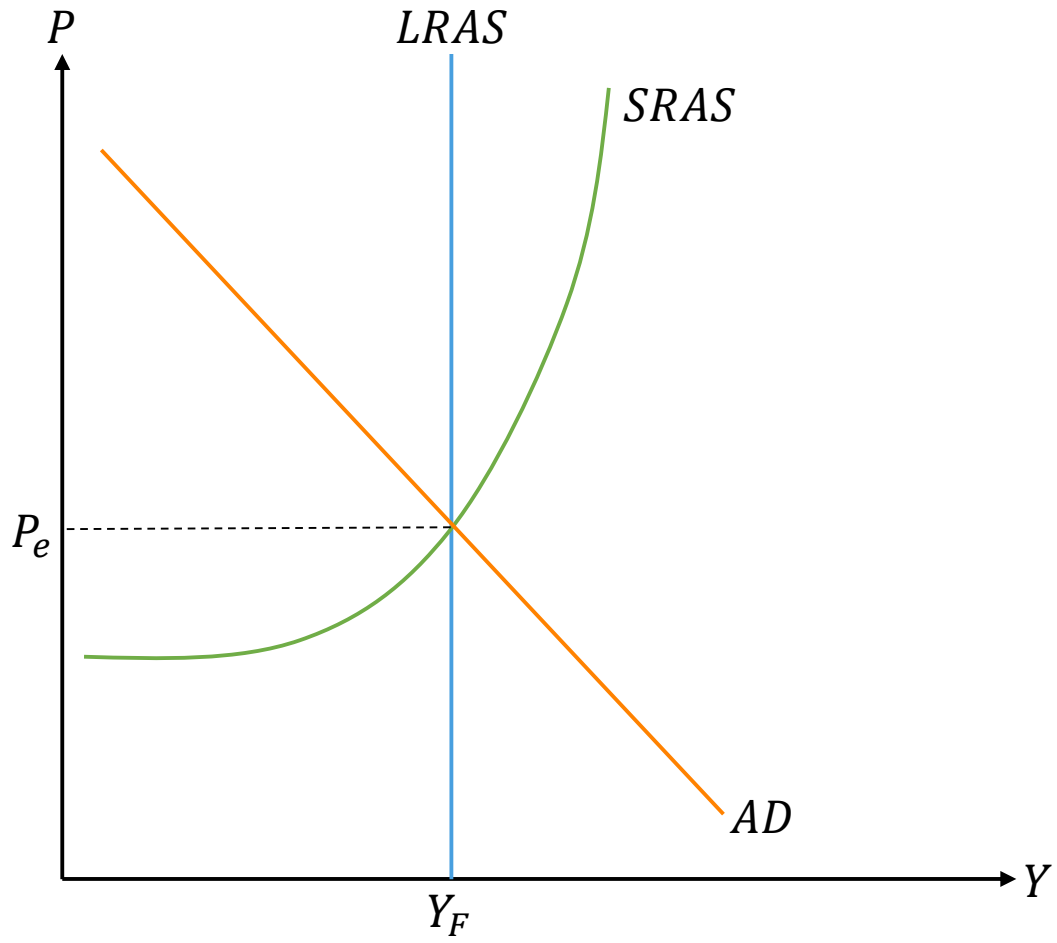
Because prices are **sticky**—slow or unresponsive to adjustment—particularly downward, this "natural" solution is unlikely to happen and the economy may become **"stuck"** or "trapped" in the **suboptimal equilibrium**. This is the Chapter 9 version of the Chapter 8 unemployment equilibrium.



Shifting *SRAS*: Generally

Whenever we are **moving *SRAS* around**, we need to ask ourselves, "Will this change **also affect *LRAS***?"

We need to know—or assume—whether **changes in production** are **temporary or permanent** changes in productivity.

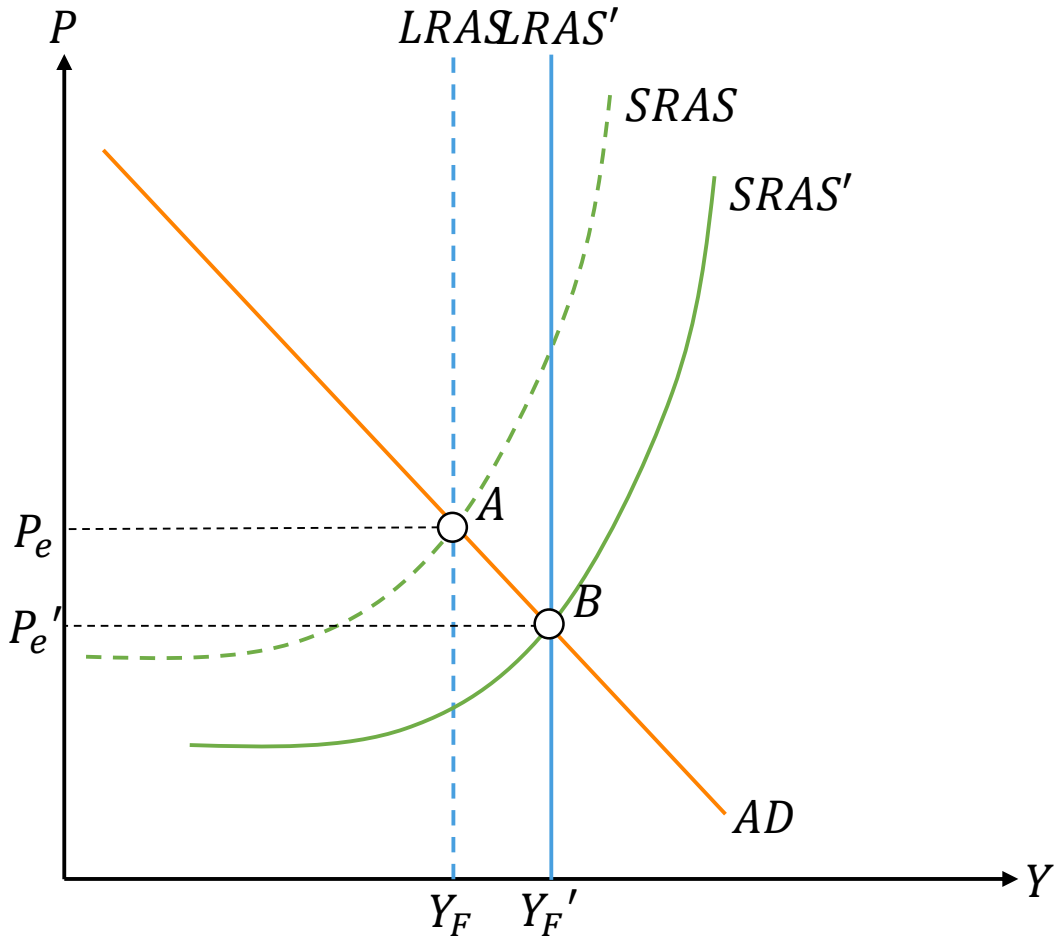


Shifting *SRAS*: Permanent Increase *SRAS*

Suppose we have an increase in *SRAS* due to an **increase in production technology**—something that makes businesses more efficient.

This will **increase *SRAS* and likely *LRAS***. Without an offsetting increase in *AD* (for instance, monetary policy to hold the price level at P_e), **prices will gently fall as productivity increases**.

$$A \rightarrow B$$

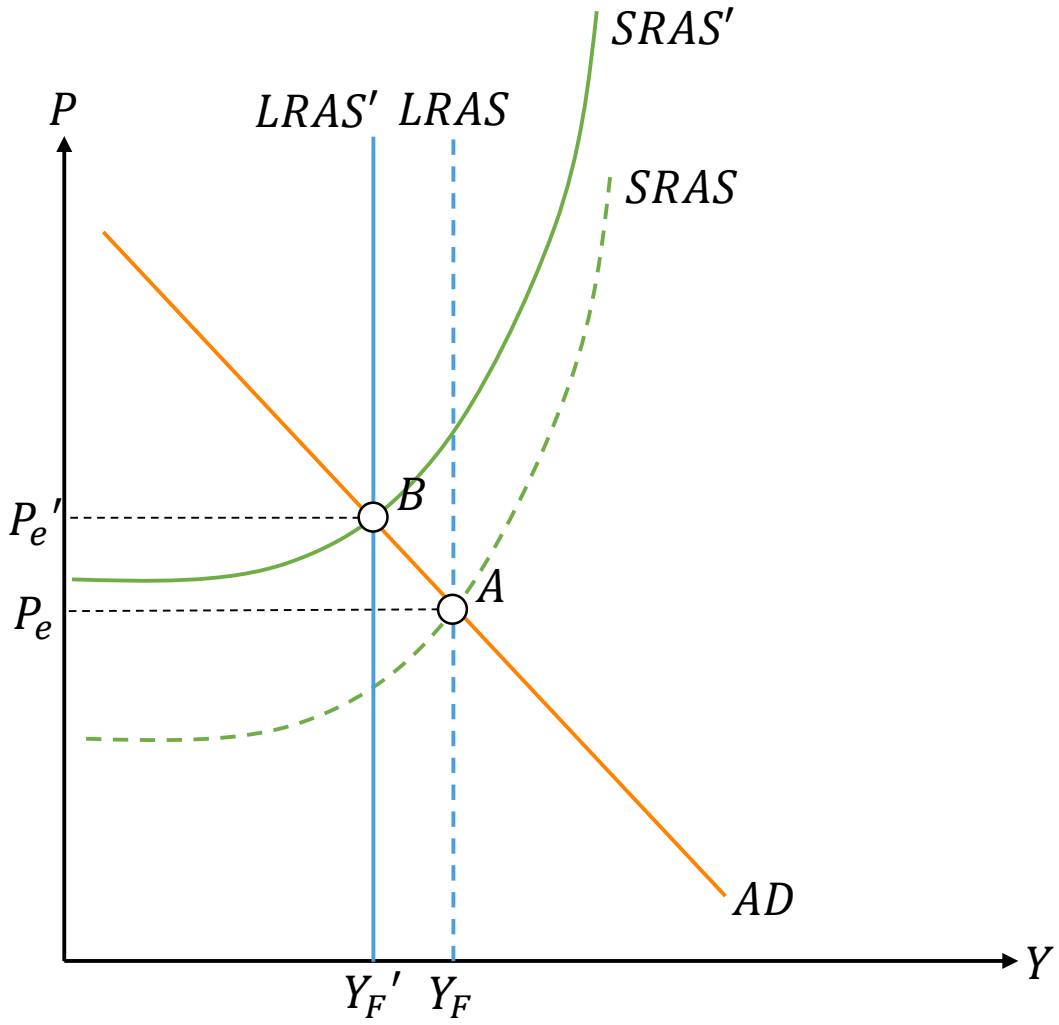


Shifting *SRAS*: Permanent Decrease *SRAS*

Suppose we have a decrease in *SRAS* due to the **exhaustion of a natural resource** and difficulty finding a replacement.

This will **decrease *SRAS* and *LRAS***. Changes in *AD* might raise *Y* a little, but until there is a change in real productivity, the economy will be **stuck with lower output**.

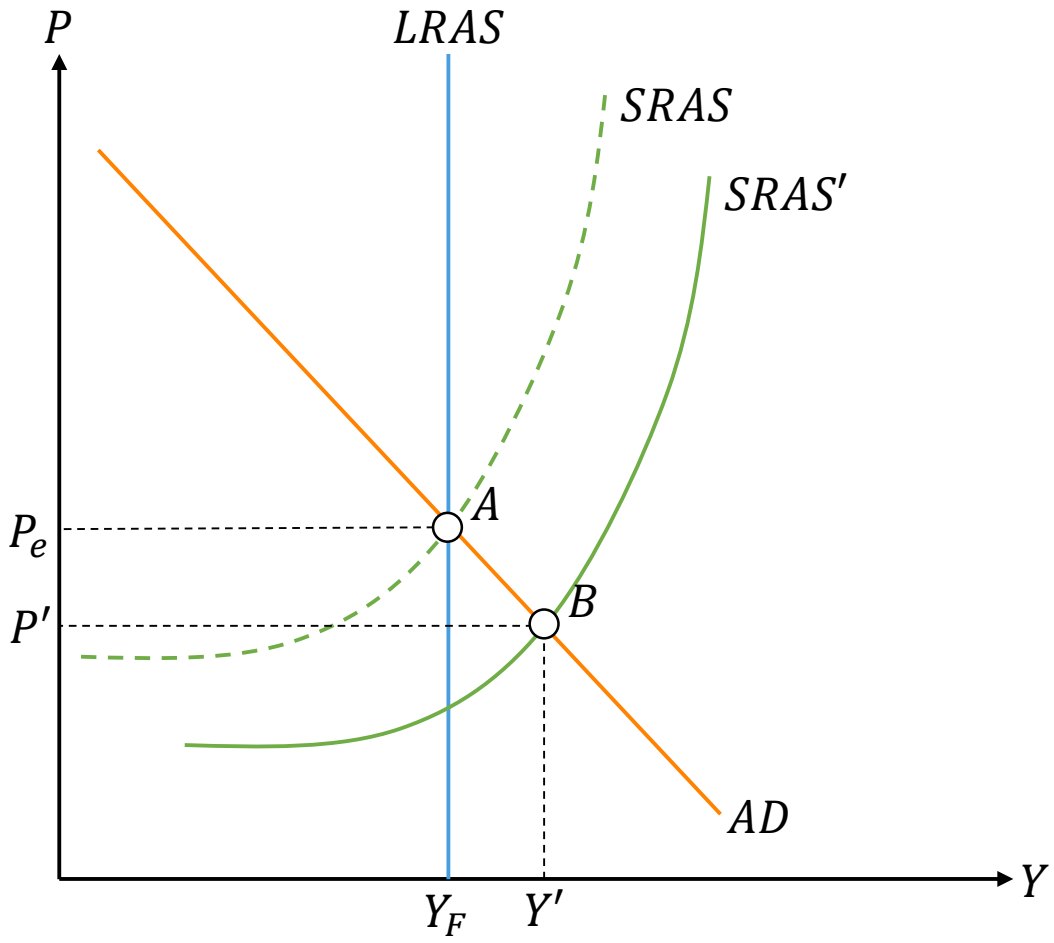
$$A \rightarrow B$$



Shifting *SRAS*: Temporary Increase *SRAS*

Suppose we have a **temporary increase in *SRAS*** due to a **seasonal increase in agricultural yield**. This will increase *SRAS*, but not *LRAS*. 2 possibilities:

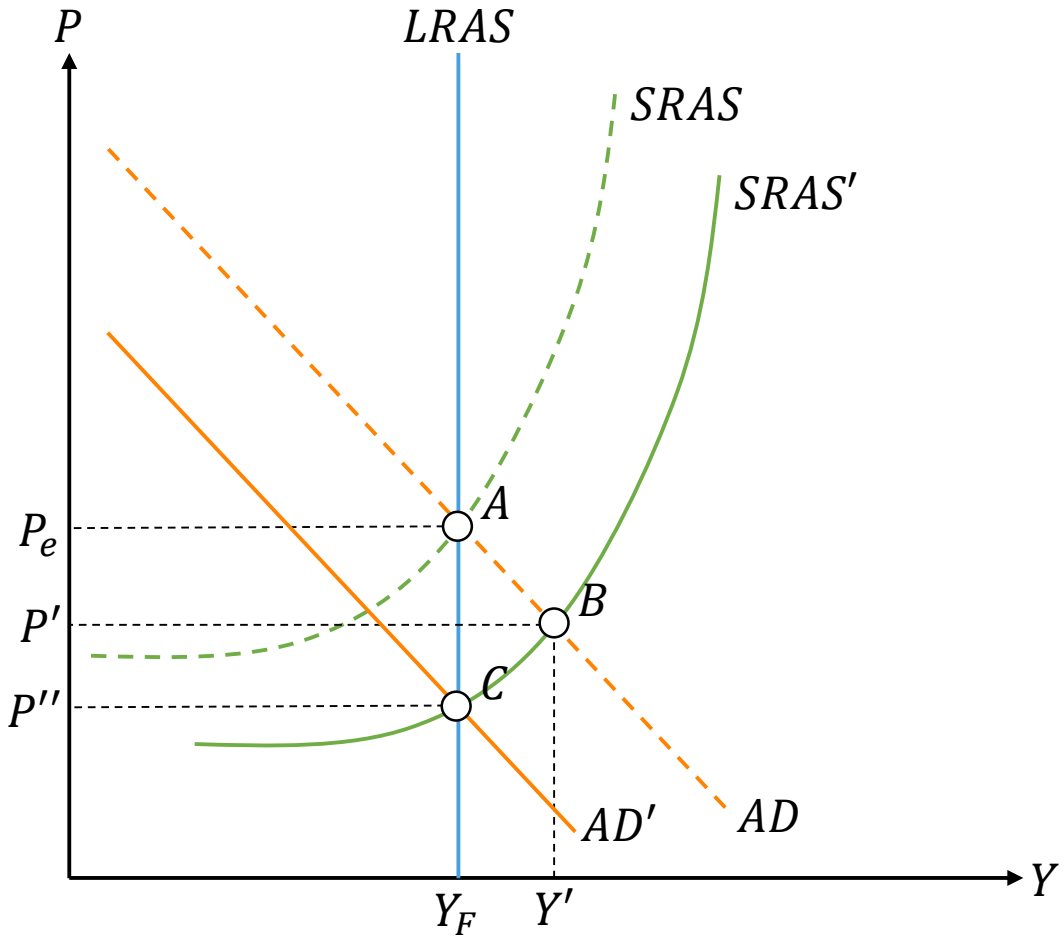
1. Reduce *AD* to bring the economy back to Y_F
2. The *SRAS* will reverse itself when the season is over and yields return to normal



Shifting *SRAS*: Temporary Increase *SRAS*

A reduction in AD will bring the economy back to Y_F and lower the price level even further, but this seems like a **bizarre response** to the "good news" of an especially high yield in agriculture.

$$A \rightarrow B \rightarrow C$$

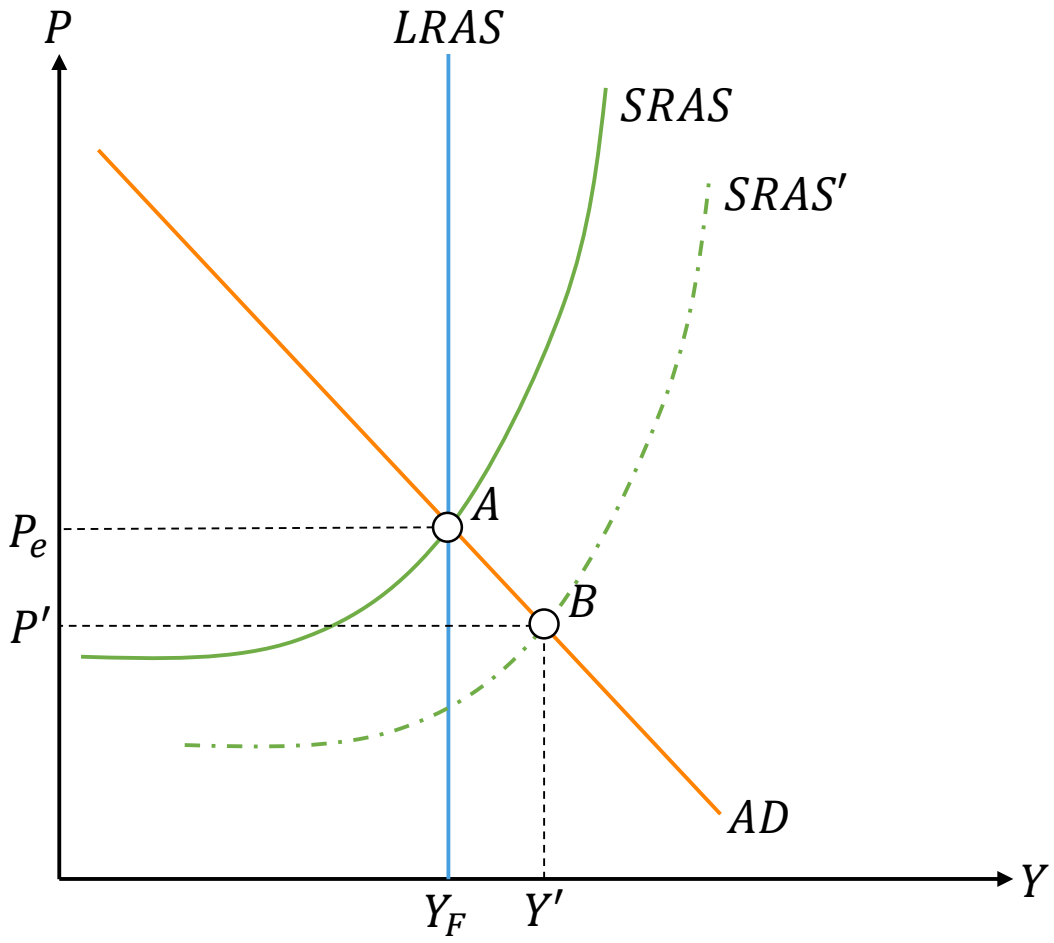


Shifting *SRAS*: Temporary Increase *SRAS*

Instead, the ***SRAS* will reverse itself** when the season is over and yields return to normal.

Output will return to its long-term potential level and the price level will rise.

$$A \rightarrow B \rightarrow A$$

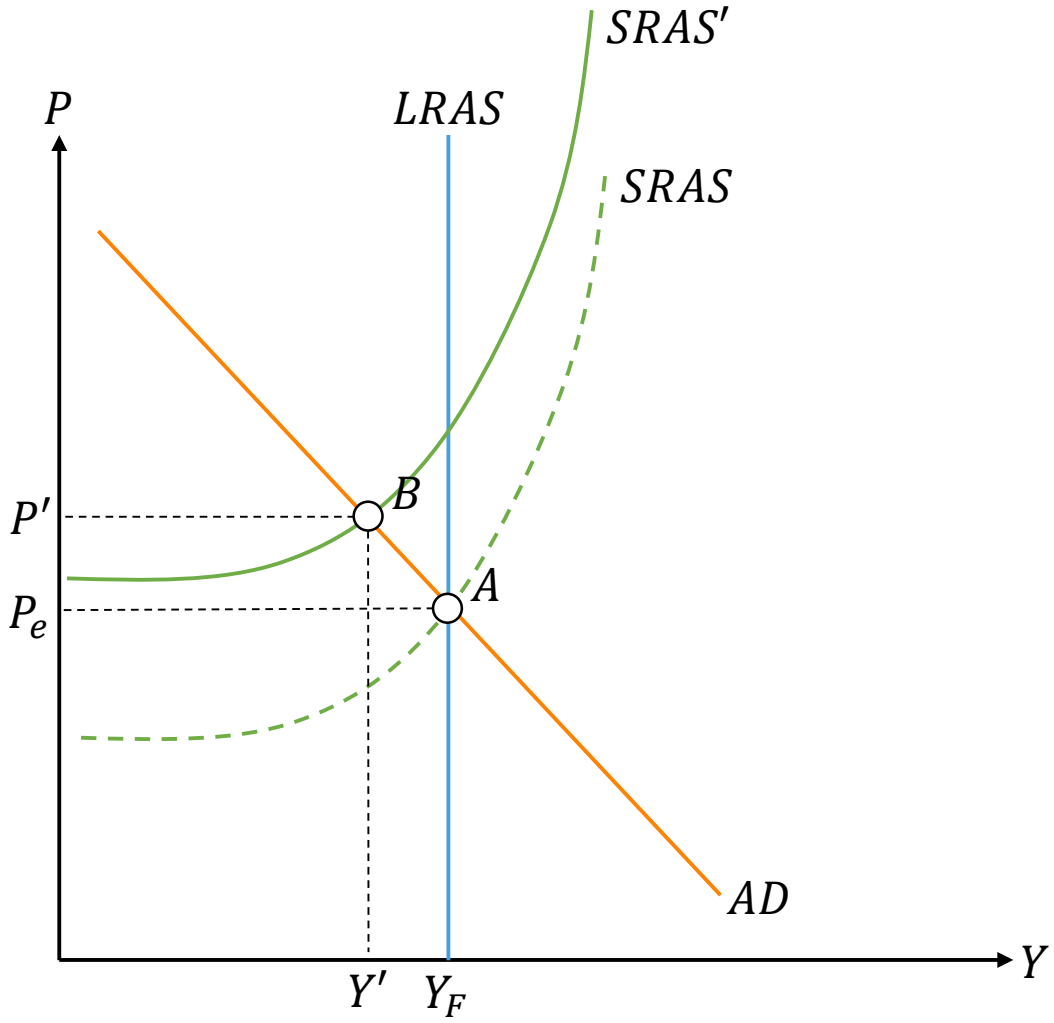


Shifting *SRAS*: Temporary Decrease *SRAS*

Suppose we have a decrease in *SRAS* due to **high prices of inputs brought on by an international supply chain issue**. This will decrease *SRAS*, but not *LRAS*. Again, 2 options:

1. The *SRAS* might reverse itself in time as the crisis passes

2. Increase *AD* to restore the economy to Y_F even at the expense of a higher price level

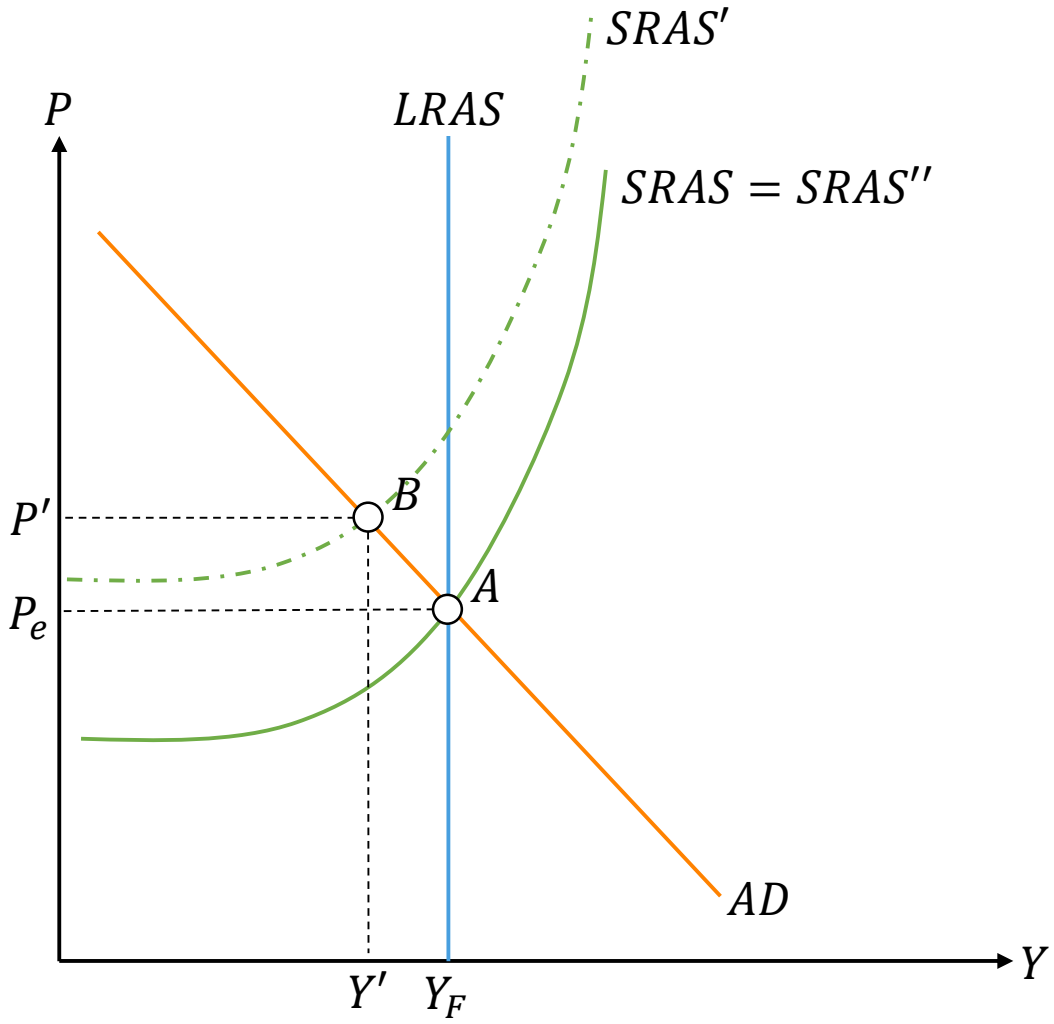


Shifting *SRAS*: Temporary Decrease *SRAS*

If *SRAS* returns to its original location after the temporary crisis ends, the price level gently falls back to P_e and output goes back to Y_F.

$$A \rightarrow B \rightarrow A$$

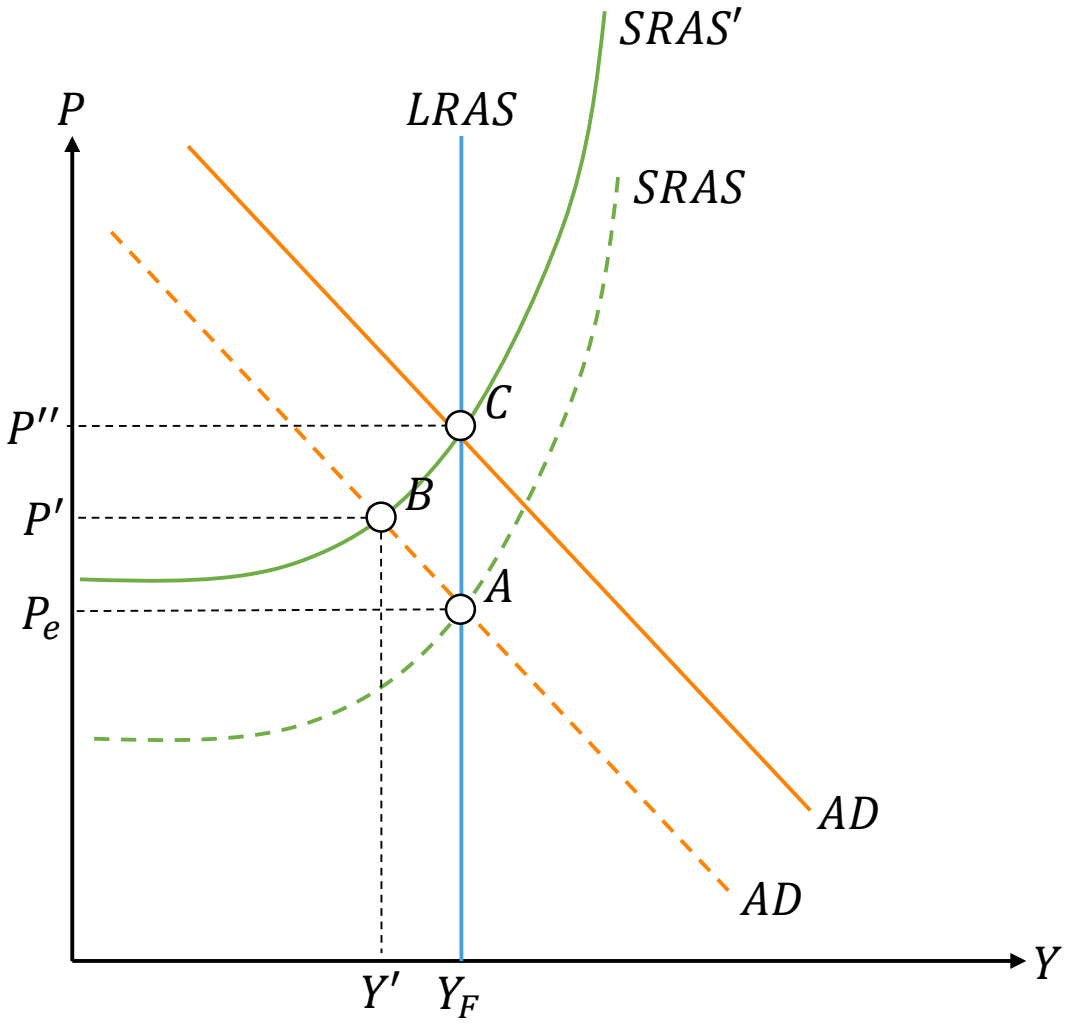
This presupposes that there have **not be fundamental or structural changes in the economy during the crisis**. That assumption might be hopelessly optimistic.



Shifting *SRAS*: Temporary Decrease *SRAS*

On the other hand, an **increase in *AD*** could **restore the economy to Y_F**. The cost to this shift is **an even higher price level** (more inflation) but it would restore total output in the economy.

$$A \rightarrow B \rightarrow C$$



Moving On From Here

We have explored the core possibilities of comparative statics in a macroeconomic equilibrium using the AD/AS model.

We have not explored policy responses to these changes. In chapters 10, 11, 12, and 13, we will develop fiscal and monetary policy, which can move AD curves and restore equilibria in this model.