

Using The Fluctuations Model

- (1) changes in G
- (2) changes in Monetary Policy
- (3) Price Shocks.

Show how real GDP returns to potential GDP over time.

Time horizons:

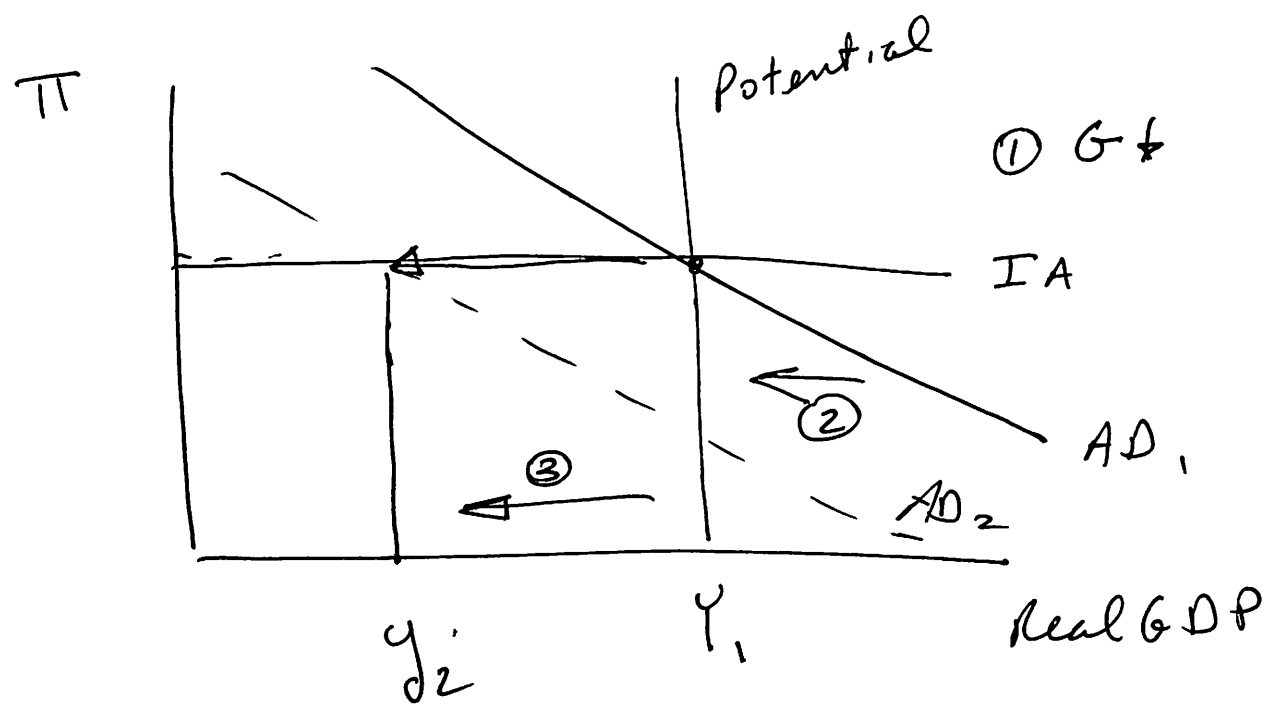
Short-run (1 year)

Medium Run (2-3 years)

Long-run (4-5 years)

- In short-run, The inflation adjustment line is fixed (and flat).
- In the medium-run it shifts.
- In the long-run, its adjustments are complete.

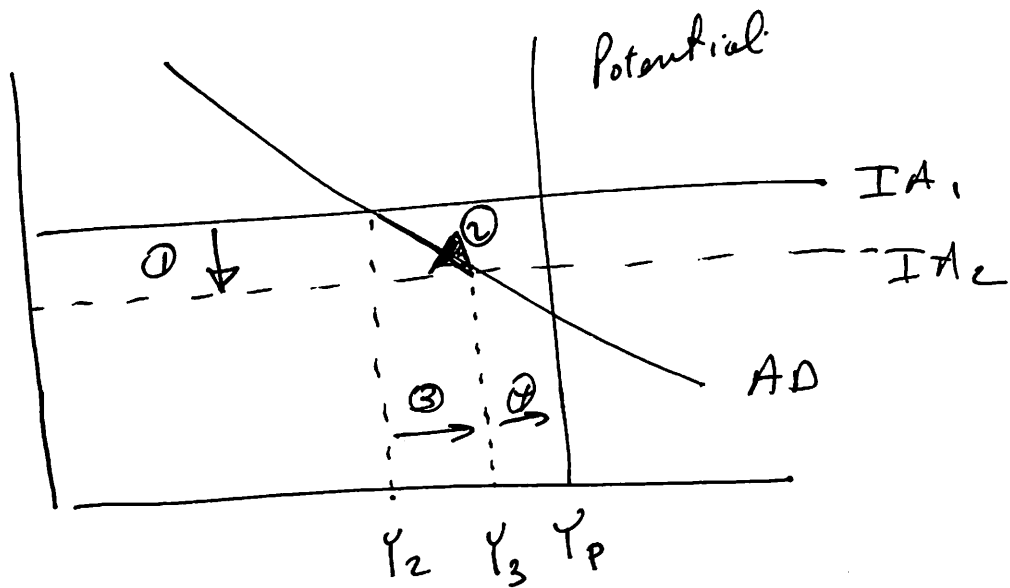
- ① Suppose G falls. ② AD will decline
- ③ Real GDP falls.



In SHORT-run, inflation doesn't adjust.
 so when AD falls, Real GDP falls to Y_2

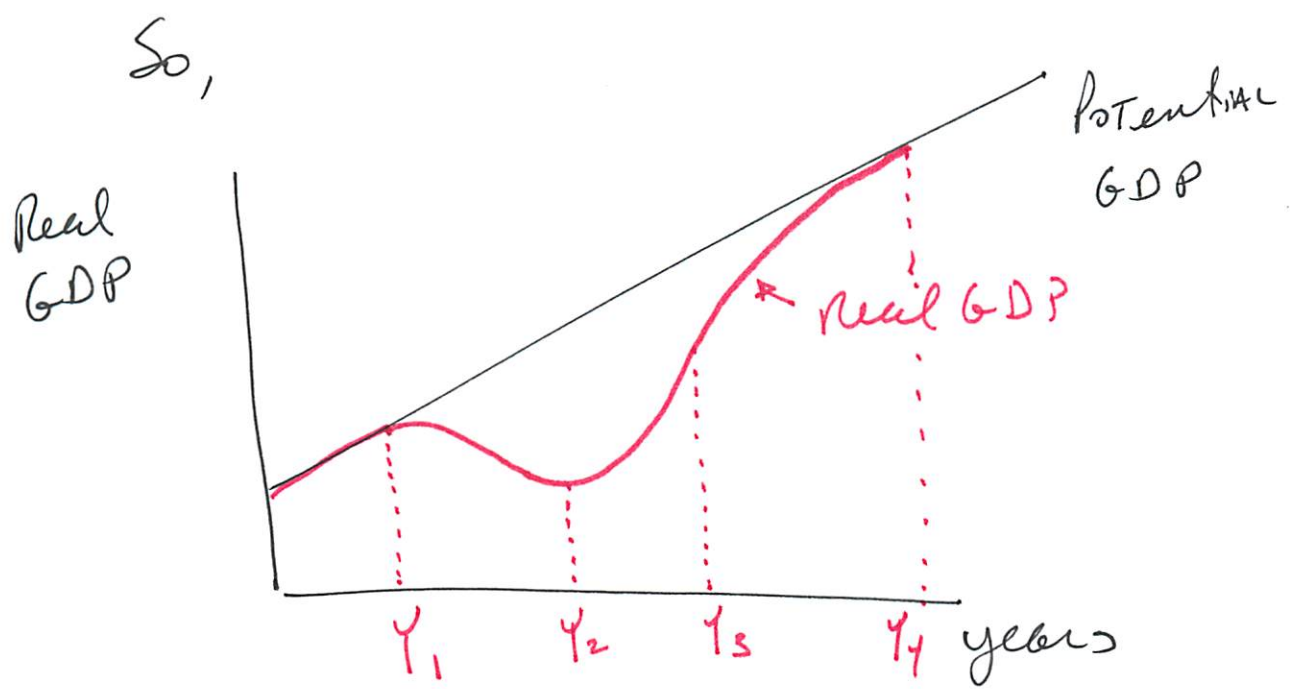
Then, since Real GDP is Below Potential, inflation will start to adjust downward (Fed lowers real interest rates which stimulates AD.)

In medium-run, IA starts to move down and real GDP starts to rise as π falls.



IA Since $Y_2 < Y_P$, ¹ IA Adjusts downward. As ² π falls AD increases. ³ The result is an increase in Y_2 to Y_3 .

④ This continues until IA adjusts downward to the point where real GDP = Potential.



AT Y_1 , $G \downarrow$, In short-run, GDP fell below Potential to Y_2 . It starts to recover as IA Adjusts (Y_3) and finally returns to Potential (Y_4).

Components of GDP

What happens to C, I, NX
in short-run & long-run when
 $G \downarrow$ falls?

We measure this relative to potential
GDP (sometimes referred to as the
baseline).

* In short-run, IA (and real interest rates)
 ~~$G \downarrow$~~
Do NOT change.

$$Y = C + I + G + NX$$

① $G \downarrow \rightarrow Y \downarrow \rightarrow C \downarrow$
since C depends on Y .

② Since interest rates don't Δ
 I won't change.

③ If $Y \downarrow$ (income falls), Imports
will fall. $NX \uparrow$

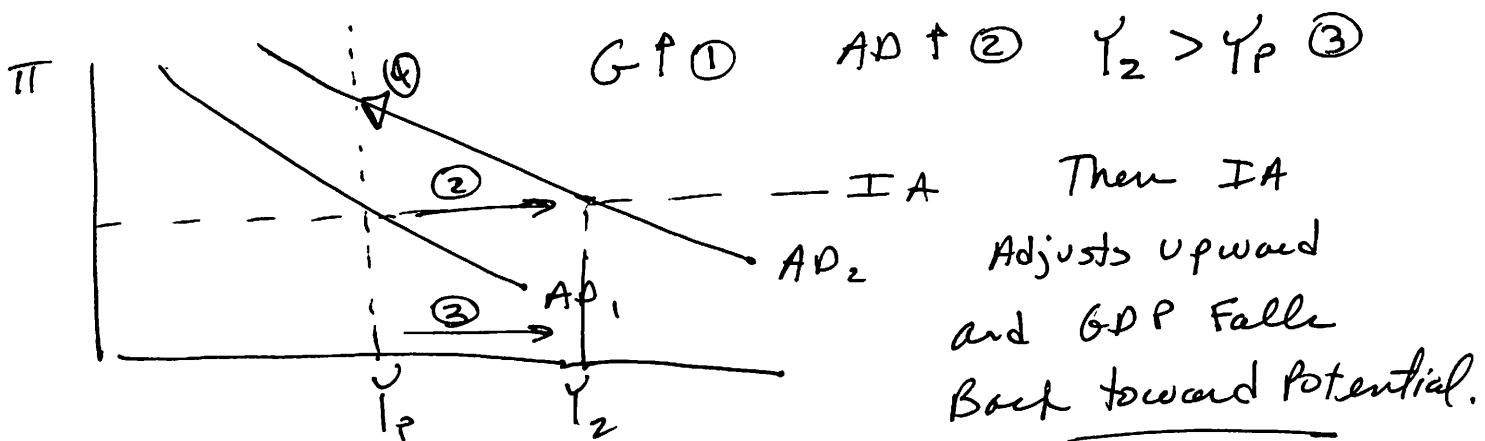
In the long-run, Real interest rate (r) will fall with the decline in inflation.

- ① $r \downarrow \rightarrow C \uparrow$
- ② $r \downarrow \rightarrow I \uparrow$
- ③ $r \downarrow \rightarrow$ Foreign Currency \downarrow $\frac{\$}{\text{Foreign Currency}}$
 - \rightarrow Exports $\uparrow \rightarrow NX \uparrow$
 - \rightarrow Imports \downarrow

$$Y = \uparrow C + \uparrow I + \downarrow G + NX \uparrow$$

Govt share of economy falls and non-government share rises.

All of this works in reverse if $G \uparrow$



Other factors that would
cause AD to shift.

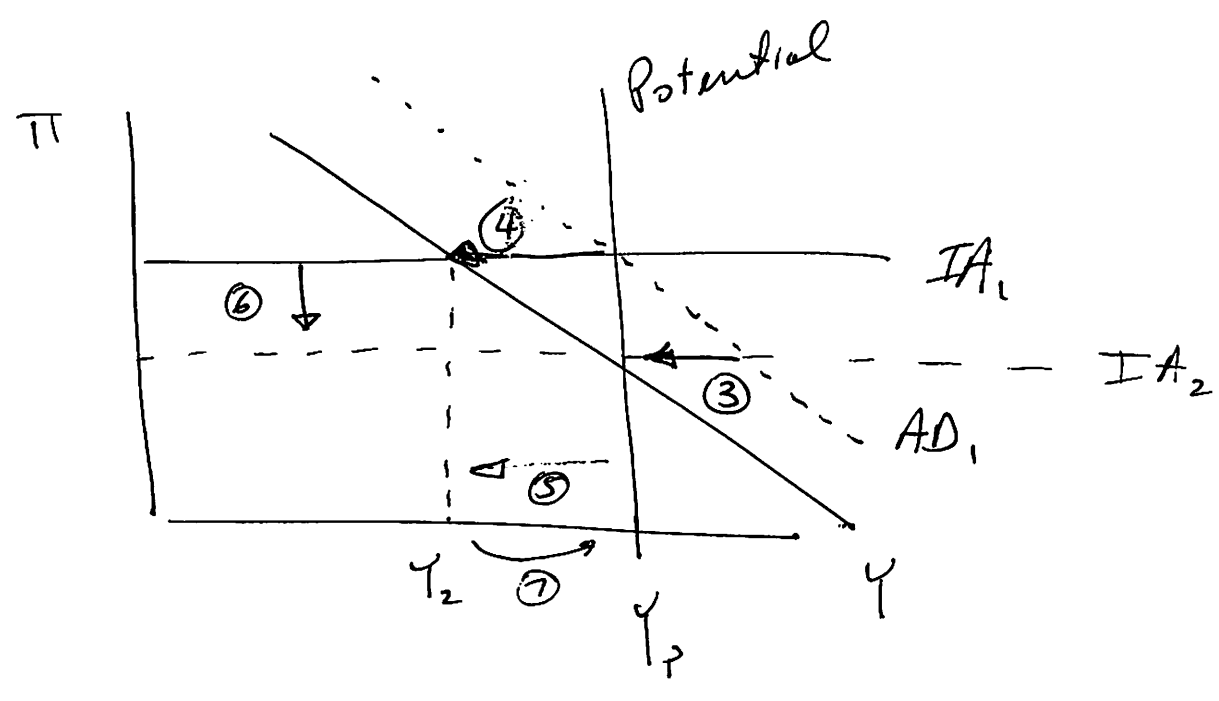
- ① Δ Taxes
- ② Δ Consumer Confidence
- ③ Δ Foreign Demand
(e.g., Recession in Euro-zone)

Monetary Policy

Suppose FED wants to reduce the inflation rate. Change the targeted inflation from 10% to 3%, e.g.

To reduce inflation, the FED raises interest rates. This reduces AD.

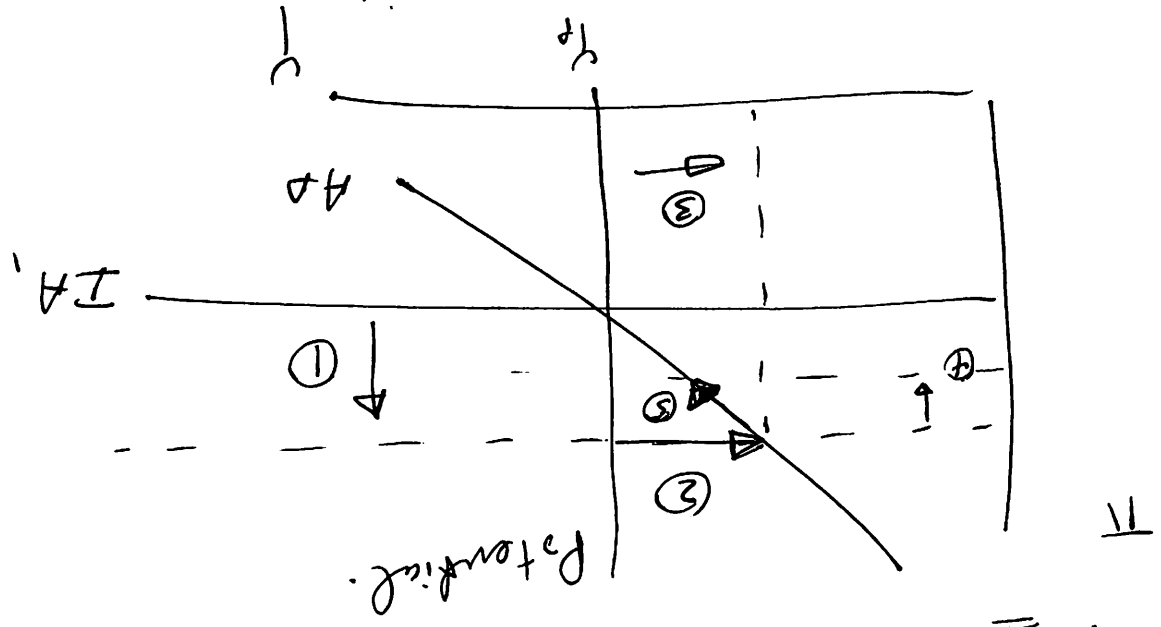
- ① Target inflation reduced.
- ② The FED increases interest rate to "cool" the economy.
- ③ as $r \uparrow \rightarrow AD \downarrow$
- ④ in short-run, FA can't adjust so, ⑤ Real GDP falls.
- ⑥ Then, FA starts to adjust
- ⑦ ⑧ Eventually, FA returns GDP to potential.



Price Shocks

An unexpected change in the price of a key commodity (like oil). This causes a shift in IA .

An unexpected increase in oil price would cause IA to adjust upward. Higher price for everything.



- ① Price shock causes IA to increase.
- ② In short-run, IA does not adjust so, real GDP falls
- ③

Finans

Since IA is now higher,
 FED increases Real Interest
 Rates. $I \downarrow$, $NX \downarrow$

- ③ $Y_2 < Y_p$ so there is
 downward pressure on prices ④
 as consumers purchase less.
 IA starts to recover. ④
 lower inflation follows and AD
 rises ⑤. Eventually IA
 returns to where it started.

It is possible that the FED takes
 no action and waits for price
 shock to end by itself. IA
 shifts back down once the "crisis"
 ends.

STAGFLATION

Periods of High inflation
and lower output.

Consistent with Price
sticks.