Open Economy AS/AD Model: Policy Analysis (Fixed Exchange Rate)

Prof. Lutz Hendricks

Econ520

October 12, 2023

Model Recap

AS:

$$Y/L = F\left(\frac{P}{P^e}\frac{1}{1+m}, z\right) \tag{1}$$

AD:

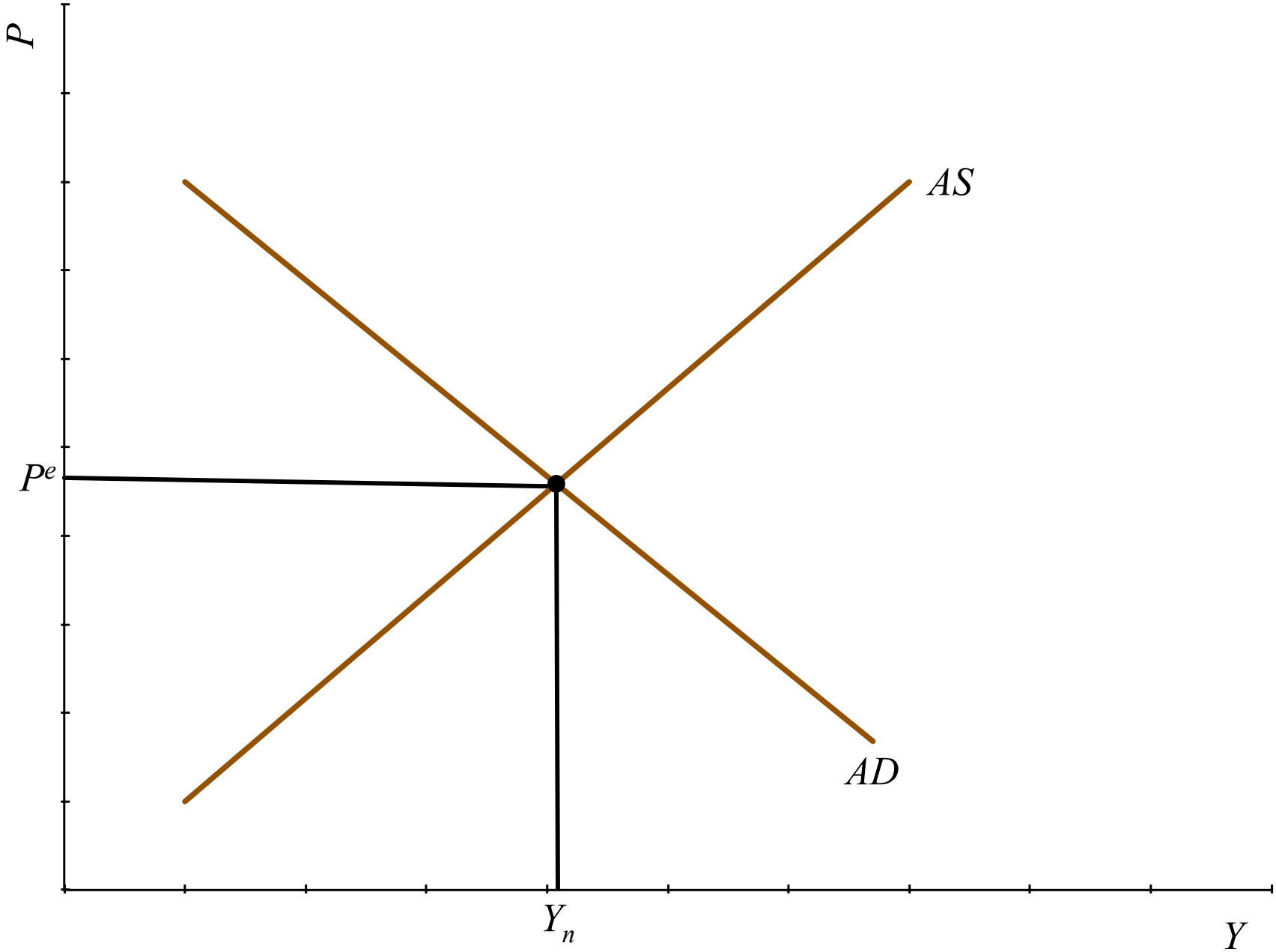
$$Y = Y\left(P/(\bar{E}P^*), G, T\right) \tag{2}$$

Short run: P^e is given.

Medium run: $P^e = P$.

Transition: $P^e \to P$ shifts AS.

Government spending



$G\uparrow$: Medium run

$P^e = P$

MR-AS fixed $Y = Y_n$.

AD shifts up $\implies P\uparrow$

$NX\downarrow$ due to higher prices.

Money market: $M/P = Y \times L(i^*)$ is unchanged

Overall result:

- full crowding out
- the government ends up sending all of its extra demand abroad!

$G\uparrow$: Short run

P^e fixed

AD shifts up.

Move along AS

- higher P and Y

$NX\downarrow$ because $P\uparrow$ and $Y\uparrow$

- partial crowding out

Money market: $M/P = YL(i^*)$

- $M\uparrow$ to offset higher P and higher Y

Draw IS/LM diagram for more intuition (and understanding transition) ...

Devaluation

Suppose the economy is in recession with $Y < Y_n$.

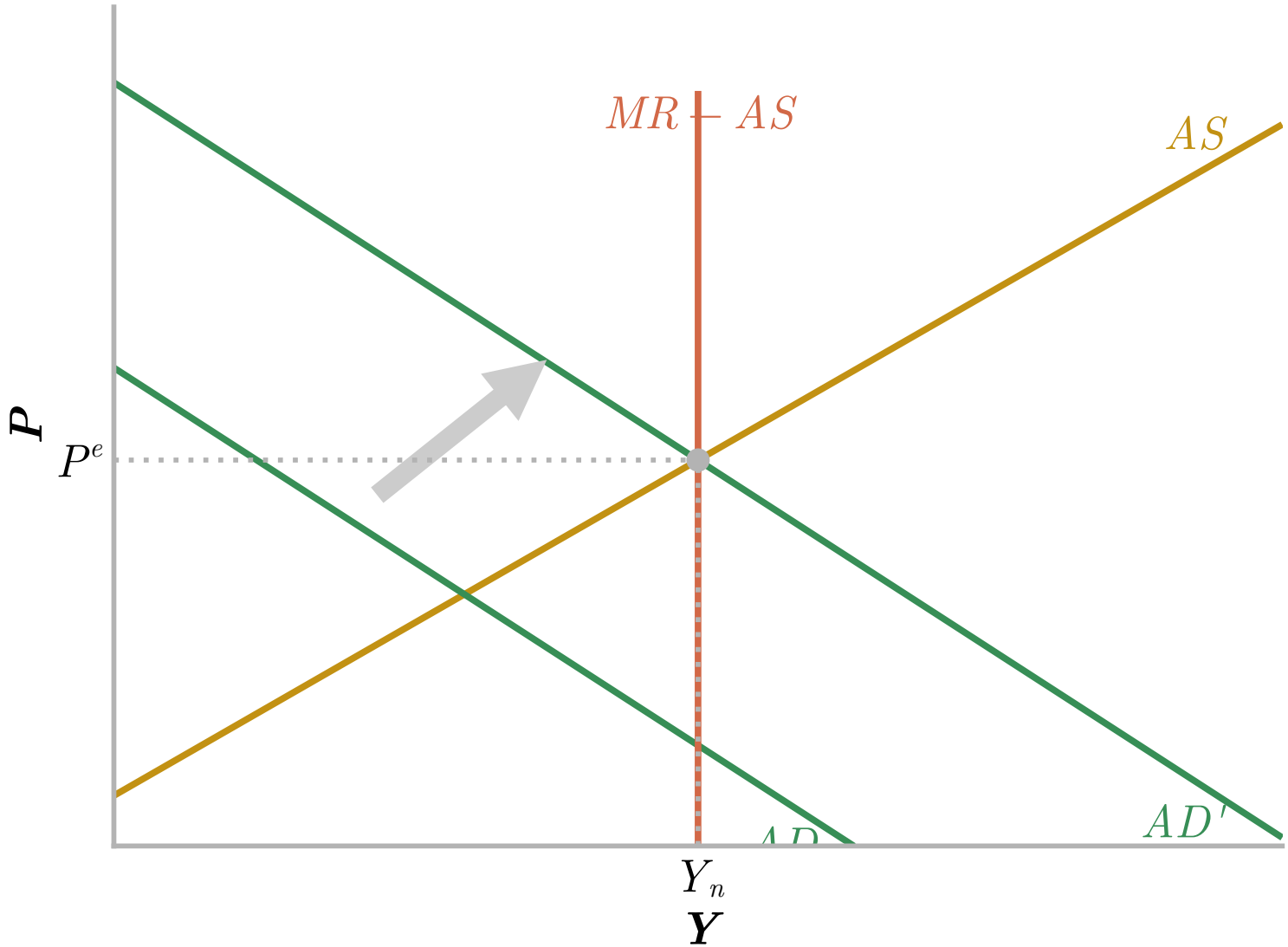
What are the options?

1. $G \uparrow$ (budget deficit, $NX \downarrow$)
2. Wait for the AS curve to shift
   takes time (how does it work?)

Instead of waiting for P to fall, why not simply lower E?

- The effect on the real exchange rate and on demand is the same.
- Avoid the painful period of unemployment.

Devaluation



A Free Lunch?

Now fixed exchange rates look like a free lunch.

- Avoid exchange rate volatility
- Gain instant adjustment to full employment through devaluation.

What's the catch?

- Hint: what happens to E^e?

International Spillovers

What are the effects of a devaluation on the other country?

- "Beggar my neighbor"

Trade Restrictions

Do tariffs fix the trade deficit?

> *The most important economic truth to grasp about the U.S. trade deficit is that it has virtually nothing to do with trade policy. A nation's trade deficit is determined by the flow of investment funds into or out of the country. And those flows are determined by how much the people of a nation save and invest — two variables that are only marginally affected by trade policy. – Daniel Griswold, 1998*

How is it possible that making foreign goods more expensive does not reduce imports?

Trade Restrictions

Tariff shifts AD right: NX rises, holding everything else fixed.

Short run:

- the same as other AD shifters: $Y \uparrow, P \uparrow$
- the Fed must raise M to prevent i from rising
- tariffs work in the short run (while price expectations are fixed)

But not clear that NX/Y improves:

$$\underbrace{\frac{I}{Y}}_{?} = \underbrace{\frac{Y-C-T}{Y}}_{S^P \text{ unchanged}} + \underbrace{\frac{T-G}{Y}}_{S^G ?} + \underbrace{\frac{NX}{Y}}_{?} \tag{3}$$

Trade Restrictions

Medium run:

- vertical AS curve fixes $Y = Y_n$
- tariffs don't work – what gives?
- prices rise until NX is unchanged again

Price adjustments mimic the role of exchange rate adjustments.

Even with a fixed exchange rate, tariffs do not improve the trade balance.

Review Questions

1. Real demand shocks are extra powerful under fixed exchange rates. Why?

Recap

1. Demand shocks do not change output in the MR
   As in the closed economy: Y_n is determined by labor supply and productivity.
2. Increase domestic demand (e.g., $G \uparrow$):
   - MR: full crowding out via $NX \downarrow$
   - real exchange rate moves even with fixed E
3. Increase in foreign demand (e.g., devaluation):
   - MR: no change in NX
   - tariffs don't work

Reading

- Blanchard / Johnson, Macroeconomics, 6th ed., ch. 21

Additional reading:

- Jones, Macroeconomics, ch. 15.