Announcements

- Brown Sports
  - FOOTBALL: Bears gain sole posession of first place in the Ivy standings with win over Darthmouth and clinch a share of the Ivy Title
  - SOCCER: Claim Share of Ivy Title
- No Class on Wednesday November 23
- Homework--due in TA mailboxes by Nov. 23, 5pm
- Midterms have NOT been graded, but I'm looking forward to the comments...or maybe I shouldn't be?!?
- Section this week: going over the midterm answers

Outline

- The Mundell-Fleming model:
  IS-LM for the small open economy
  - NOTE: all of this was done on the board...the slides are an accompanyment that was not used in lecture

The Mundell-Fleming Model

- *Key assumption:*
  Small open economy with perfect capital mobility.

$$r = r^*$$

- Goods market equilibrium---the *IS** curve:

$$Y = C(Y - T) + I(r^*) + G + NX(e)$$

where

e = nominal exchange rate

Short Run Analysis: real exchange rates and nominal exchange rates are thus related

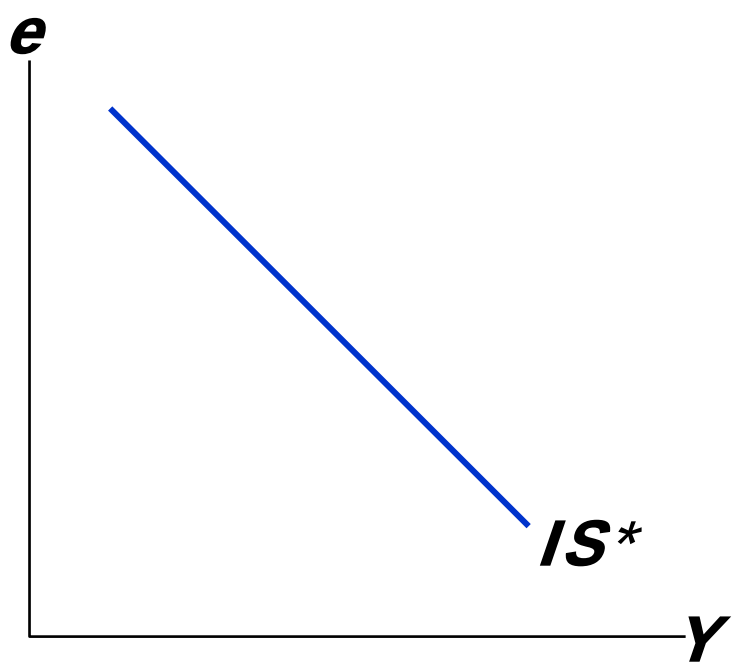
The *IS** curve: Goods Market Eq'm

$$Y = C(Y - T) + I(r^*) + G + NX(e)$$

The *IS** curve is drawn for a given value of r^*.

Intuition for the slope:

$$\downarrow e \Rightarrow \uparrow NX \Rightarrow \uparrow Y$$

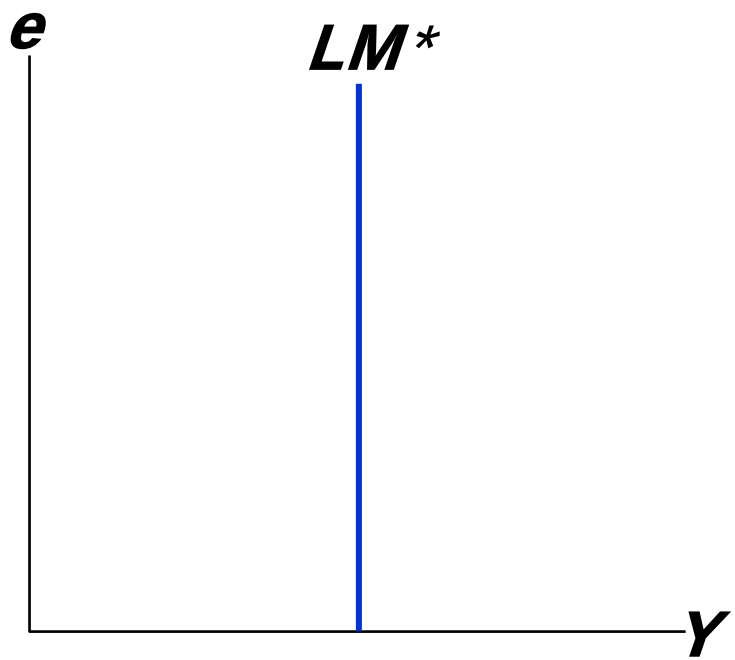


The *LM** curve: Money Market Eq'm

$$M/P = L(r^*, Y)$$

The *LM** curve

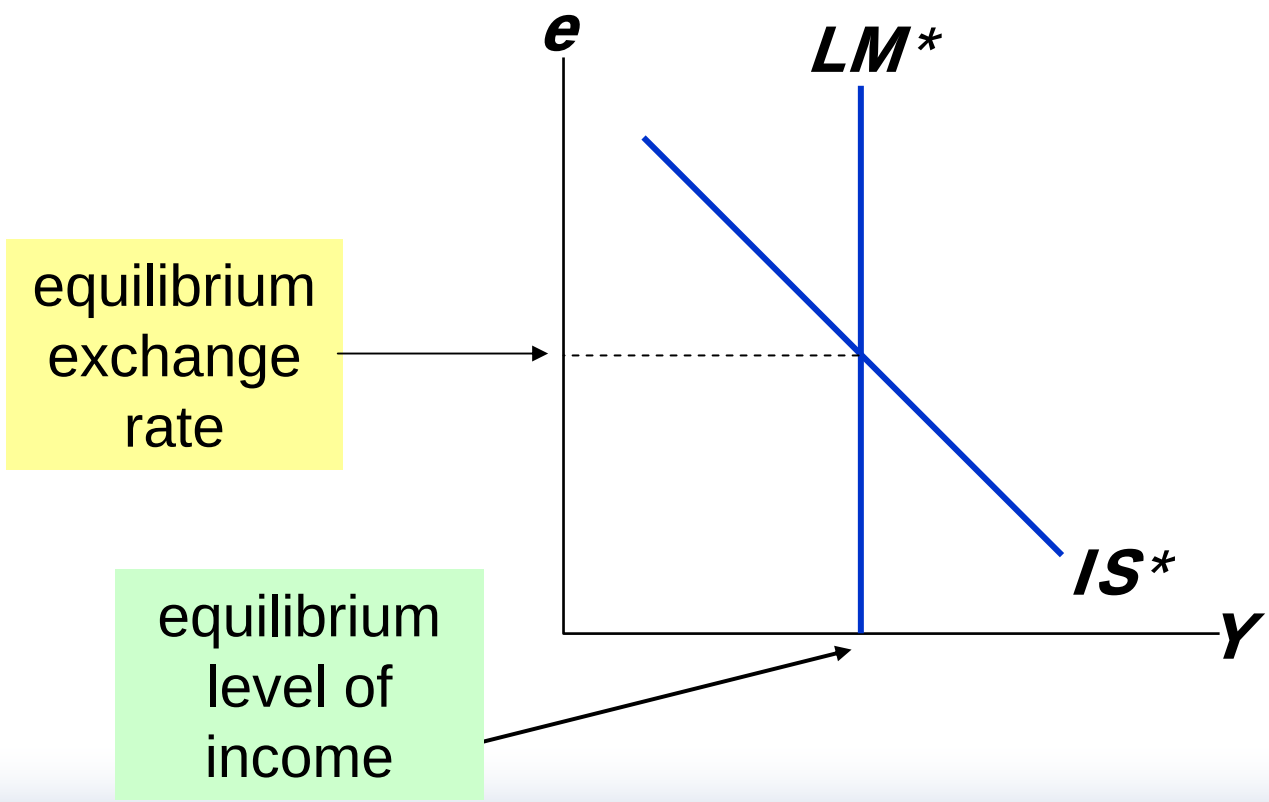
- is drawn for a given value of r^*
- is vertical because: given r^*, there is only one value of Y that equates money demand with supply, regardless of e.



Equilibrium in the Mundell-Fleming model

$$Y = C(Y - T) + I(r^*) + G + NX(e)$$

$$M/P = L(r^*, Y)$$



Floating & fixed exchange rates

- In a system of **floating exchange rates**, ***e*** is allowed to fluctuate in response to changing economic conditions.
- In contrast, under **fixed exchange rates**, the central bank trades domestic for foreign currency at a predetermined price.
- We now consider fiscal, monetary, and trade policy: first in a floating exchange rate system, then in a fixed exchange rate system.

Fiscal policy under floating exchange rates

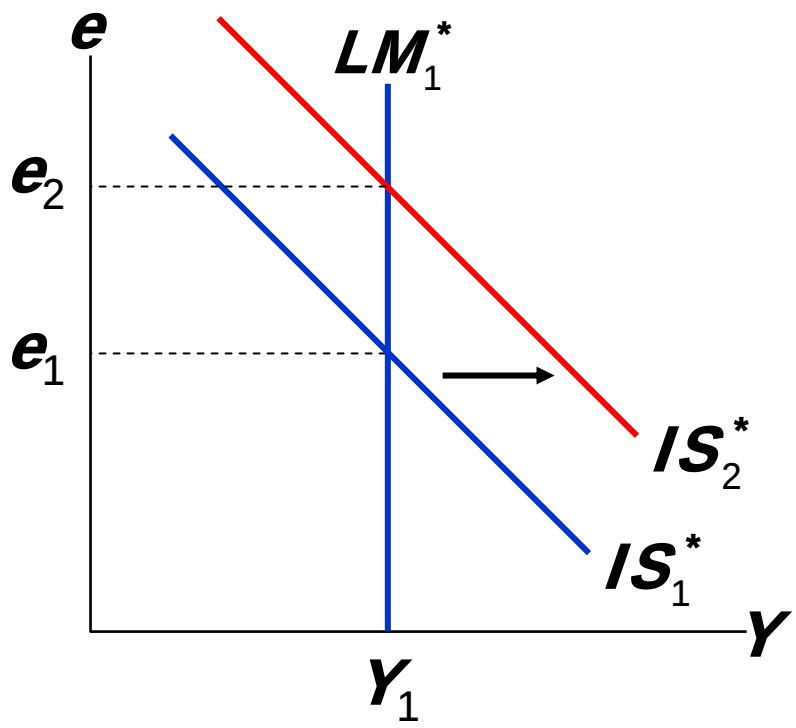
$$Y = C(Y - T) + I(r^*) + G + NX(e)$$

$$M/P = L(r^*, Y)$$

At any given value of e,
a fiscal expansion
increases Y,
shifting IS^* to the right.

Results:

$$\Delta e > 0, \quad \Delta Y = 0$$



Mon. policy under floating exchange rates

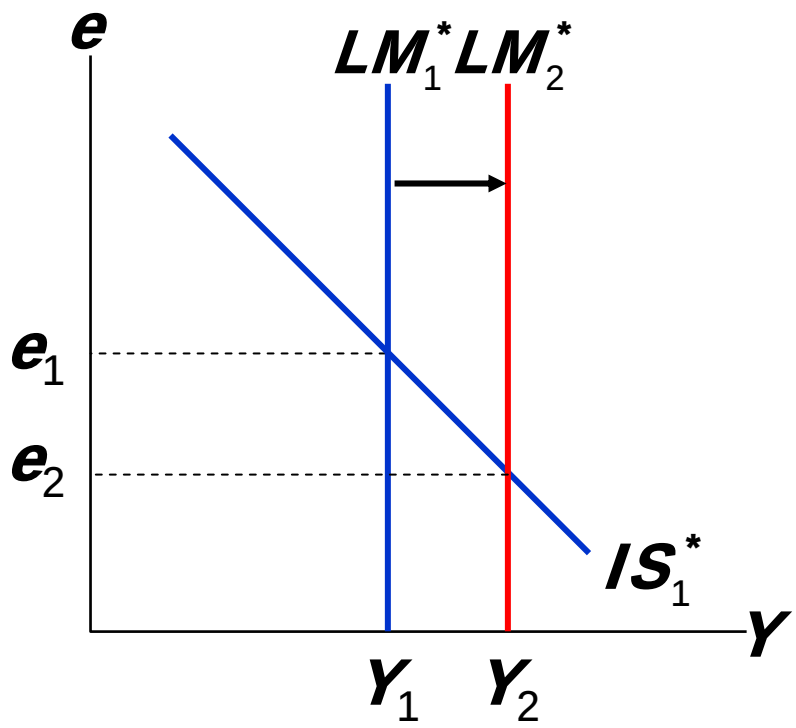
$$Y = C(Y - T) + I(r^*) + G + NX(e)$$

$$M/P = L(r^*, Y)$$

An increase in M shifts LM^* right because Y must rise to restore eq'm in the money market.

Results:

$$\Delta e < 0, \quad \Delta Y > 0$$



Lessons about monetary policy

- Monetary policy affects output by affecting one (or more) of the components of aggregate demand:

  closed economy: $\uparrow M \Rightarrow \downarrow r \Rightarrow \uparrow I \Rightarrow \uparrow Y$

  small open economy: $\uparrow M \Rightarrow \downarrow e \Rightarrow \uparrow NX \Rightarrow \uparrow Y$

- Expansionary mon. policy does not raise world aggregate demand, it shifts demand from foreign to domestic products.

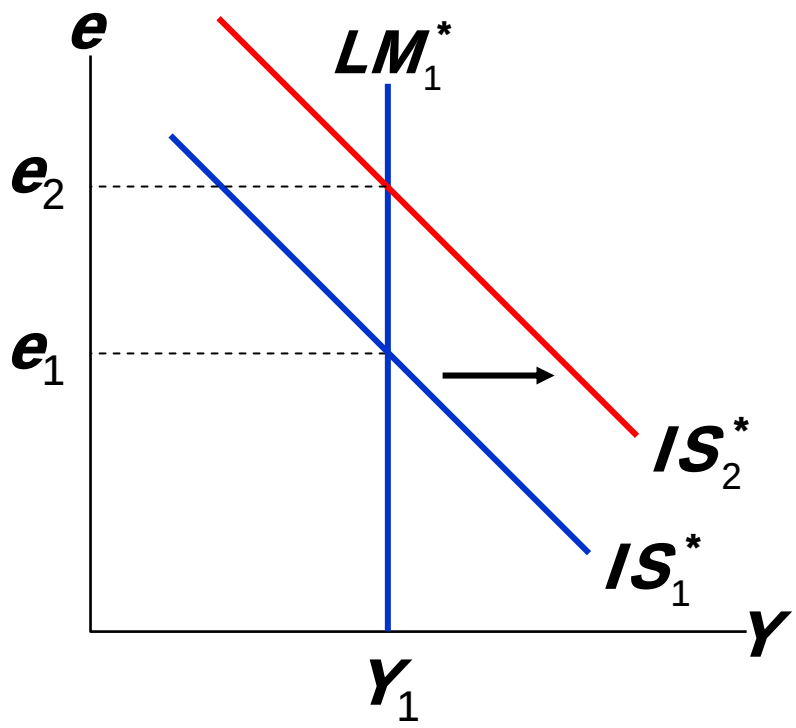
  Thus, the increases in income and employment at home come at the expense of losses abroad.

Trade policy under floating exchange rates

$$Y = C(Y - T) + I(r^*) + G + NX(e)$$

$$M/P = L(r^*, Y)$$

At any given value of e, a tariff or quota reduces imports, increases NX, and shifts IS^* to the right.



Results:

$$\Delta e > 0, \quad \Delta Y = 0$$

Lessons about trade policy

- Import restrictions cannot reduce a trade deficit.
- Even though ***NX*** is unchanged, there is less trade:
  - the trade restriction reduces imports
  - the exchange rate appreciation reduces exports

  Less trade means fewer 'gains from trade.'
- Import restrictions on specific products save jobs in the domestic industries that produce those products, but destroy jobs in export-producing sectors.

  Hence, import restrictions fail to increase total employment.

  Worse yet, import restrictions create "sectoral shifts," which cause frictional unemployment.

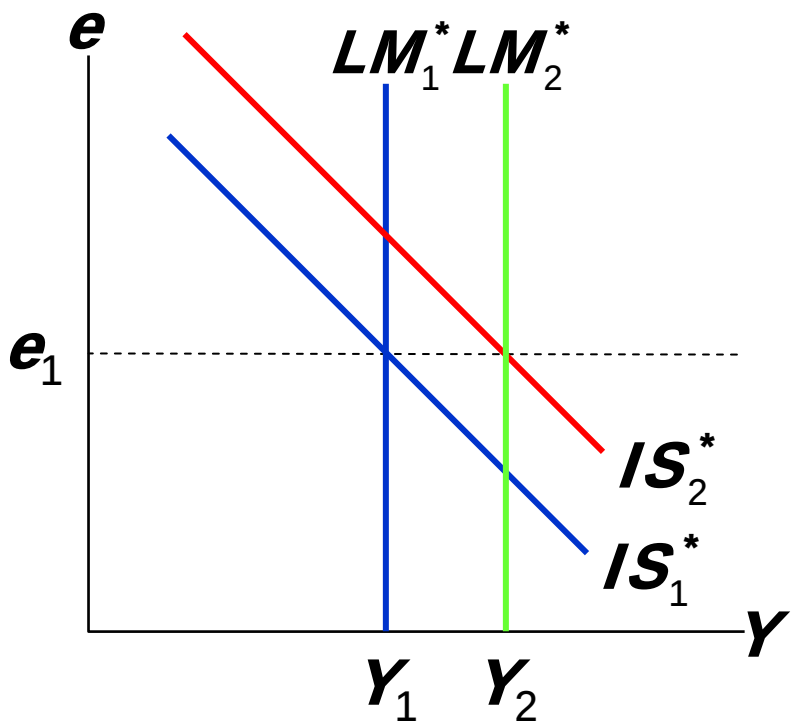
Fixed exchange rates

- Under a system of fixed exchange rates, the country's central bank stands ready to buy or sell the domestic currency for foreign currency at a predetermined rate.
- In the context of the Mundell-Fleming model, the central bank shifts the LM^* curve as required to keep $\boldsymbol{e}$ at its preannounced rate.
- This system fixes the nominal exchange rate. In the long run, when prices are flexible, the real exchange rate can move even if the nominal rate is fixed.

Fiscal policy under fixed exchange rates

Under floating rates, fiscal policy ineffective at changing output.

Under fixed rates, fiscal policy is very effective at changing output.



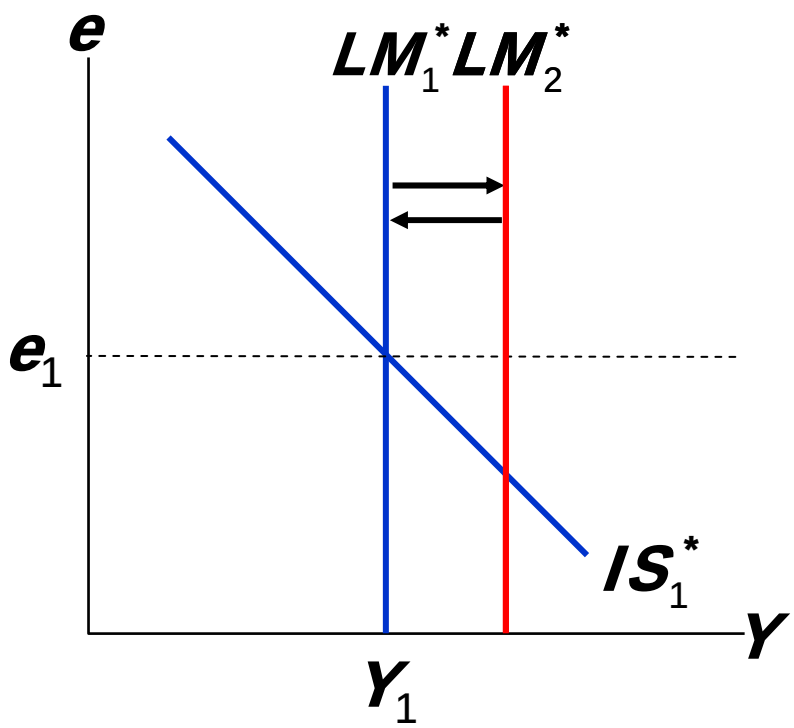
Results:

$\Delta e = 0, \quad \Delta Y > 0$

Mon. policy under fixed exchange rates

Under floating rates, monetary policy is very effective at changing output.

Under fixed rates, monetary policy cannot be used to affect output.



Results:

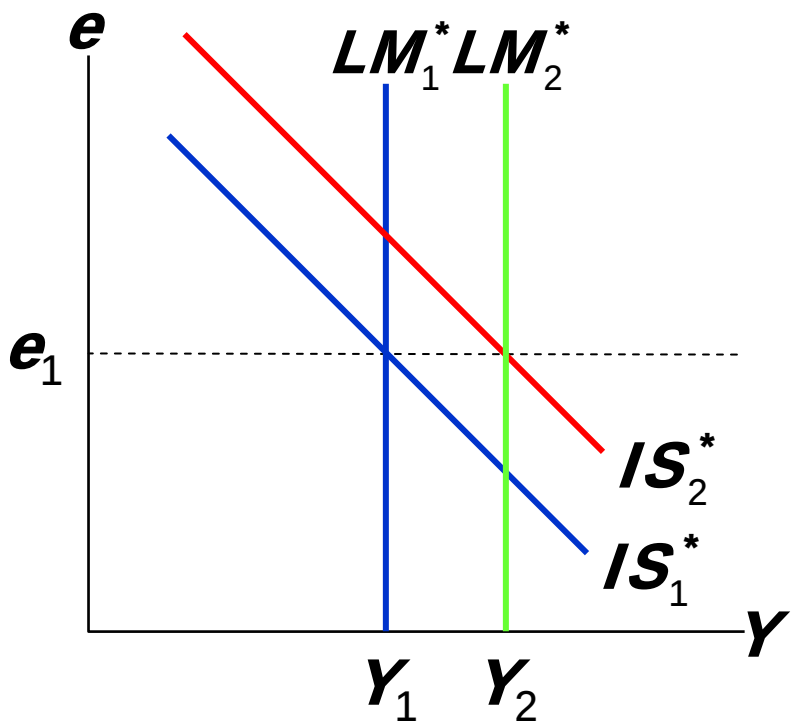
$$\Delta e = 0, \quad \Delta Y = 0$$

Trade policy under fixed exchange rates

Under floating rates, import restrictions do not affect ***Y*** or ***NX***.

Under fixed rates, import restrictions increase ***Y*** and ***NX***.

But, these gains come at the expense of other countries, as the policy merely shifts demand from foreign to domestic goods.



M-F: summary of policy effects

	type of exchange rate regime:					
	floating			fixed		
	impact on:					
Policy	***Y***	***e***	***NX***	***Y***	***e***	***NX***
fiscal expansion	0	↑	↓	↑	0	0
mon. expansion	↑	↓	↑	0	0	0
import restriction	0	↑	0	↑	0	↑

Summary

1. Mundell-Fleming model
   - the IS-LM model for a small open economy.
   - takes ***P*** as given
   - can show how policies and shocks affect income and the exchange rate
2. Fiscal policy
   - affects income under fixed exchange rates, but not under floating exchange rates.
3. Monetary policy
   - affects income under floating exchange rates.
   - Under fixed exchange rates, monetary policy is not available to affect output.