Outline

Real Exchange Rate

Open Economy Macro

→ Temporary Short run shocks.
   \[ E^* \]
   Not changed \[ P \text{ fixed} \]

→ IS-LM model.
   ( Mundell-Fleming Model).

→ Experiment
   High \( S \), Low \( M \)

\[ \text{IS-LM} \left\{ \begin{align*}
\text{Early 80's dollar appreciated} \\
\text{US current account went into deficit.} \\
\text{US economy strong} \\
\text{tight money} \\
\text{loose S.}
\end{align*} \right. \\
\text{Beggar-thy-neighbor policy.} \]
Real exchange rate

\[ E = \frac{\text{domestic currency}}{\text{foreign currency}}. \]

Appreciation: \( E \uparrow \)
Depreciation: \( E \downarrow \)

\( E \) = quantity of domestic goods you give up to acquire one unit of foreign goods.

Unit of foreign goods
\( p^x \) = foreign currency.
\( E p^x \) = domestic currency.

\[ \frac{E p^x}{p} = n + \text{domestic goods} \]

\[ E = \frac{\text{open economy}}{\text{US dollar real depreciation}} \]

\( Z = C^o + I^o + S^o + \frac{X^o - \Pi^o}{NX} \)

Japan, Britain, Italy
\[ NX = NX(y, y^*, ε) \]

\[ NX = X - M \]

\[ c_{foreign} + c_{domestic} = c_0 + c_1(y - T) \]

\[ M = c_{foreign} + I_{foreign} + G_{foreign} \]

US historical data: \( y \) high tend to see \( NX \) low.

\[ ε \uparrow = \frac{E p^*}{p} \uparrow \]

⇒ foreign goods more expensive relative to domestic goods.

\[ X(ε) + M(ε) \]

(Marshall-Lerner conditions)

Not something we will discuss
Open Economy Macro

Importance, in short run, of demand, for \( Y \).

Medium run, Demand has zero importance for \( Y \) does have impact on the composition.

Long Run: composition of spending matters for \( Y \) because \( I \) matters for the resources that are available for production in the future.

Worst episode in US history.

Great Depression demand.

\[ \text{AS} \]

\[ \text{tariffs} \uparrow \]

\[ \text{foreign AD} \]

\[ \text{tariffs} \uparrow \]

Trade in the 30's stopped,
Short run model:

- Fixed
- $E^e$

Planned = $E - b_i$

$C_0 + c_r(Y - T)$

$C_0L \sim$ pessimism of household.

$E$ expectation of stock market collapse could shift up.

Endogenous variables: $Y, E, E$. 

Goods market: IS curve

Money market: $\frac{M^s}{p} = L(i)Y$.

$\text{UIP} \quad i = r_s^* + \frac{E^e}{E} - 1$
\[ Z = C_0 + C_1 (y - T) + \Psi - 6i + \bar{6} + N \times (y, y', e). \]

\[ \varepsilon = \frac{E_{\text{P}}^*}{P} \]

\[ \dot{i} = i^* + \frac{E^*}{E} - 1 \]

\[ \dot{i} = 1 \quad i - i^* + 1 = \frac{E^*}{E} \]

\[ E = \frac{E_{\text{P}}^*}{i - i^* + 1} \]

The path expected to be taken is depicted.

\[ Z = C_0 + C_1 (y - T) + \Psi - 6i + \bar{6} + N \times (y, y', \frac{E_{\text{P}}^*}{p (i - i^* + 1)}) \]

The slope is depicted.
\[ z = c_0 + c_1 (y - t) + \xi - b_i \]

\[ \frac{p^* E^e}{p(1 - \pi^*)} + nx(y, y^*, \frac{p^* E^e}{p(1 - \pi^*)}) \]

\[ i \quad \text{planned} \quad \uparrow \]

\[ E \uparrow \quad \text{(because asset traders want to get out of US)} \]

\[ E = \frac{Ep^*}{p} \quad \uparrow \]

\[ nx \uparrow \]
Begja Neigh

Love $i \rightarrow E \uparrow$ means $N \times$ higher.