

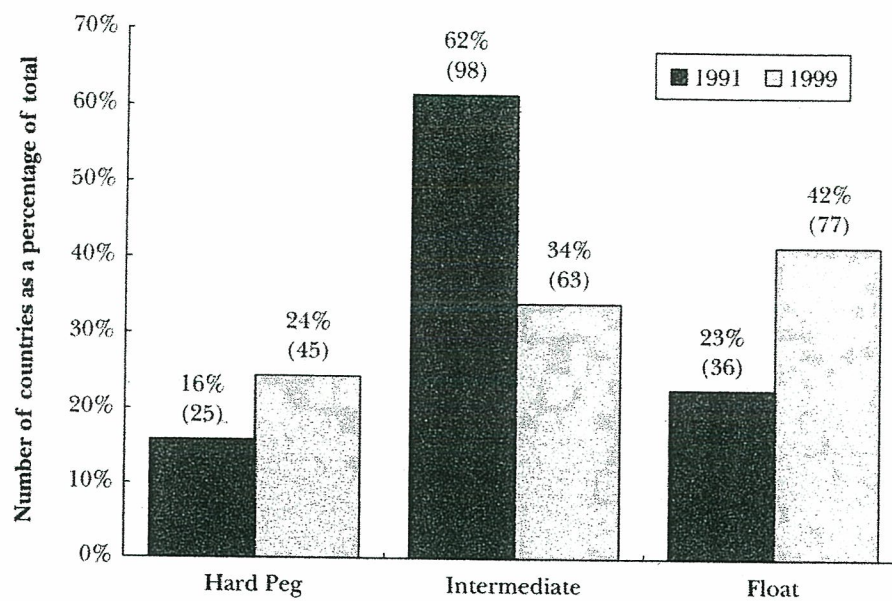
Topics for Today

- ① Why we need to study fixed exchange rate systems
- ② The mechanics of Central Bank
fx market intervention
- ③ Sterilized Intervention

Why Study Fixed Exchange Rates?

- 1.) Many countries + regions operate under a fixed exchange rate system
 - Individual European Countries, China, Hong Kong, Singapore, many small developing countries
- 2.) Even countries with officially floating currencies try to "manage" their exchange rates at various times.
 - U.S., Europe, Japan, U.K., Canada
- 3.) Policy Evaluation - Many proposals to reform the international financial system call for various kinds of fixed ex. rate systems. Are these proposals good or bad?
- 4.) History - For most of recorded human history, "countries" have operated under effectively fixed ex. rates (currency pegged to the price of gold or silver).

Figure 1
All Countries: Exchange Rate Regimes, 1991 and 1999



Source: IMF.

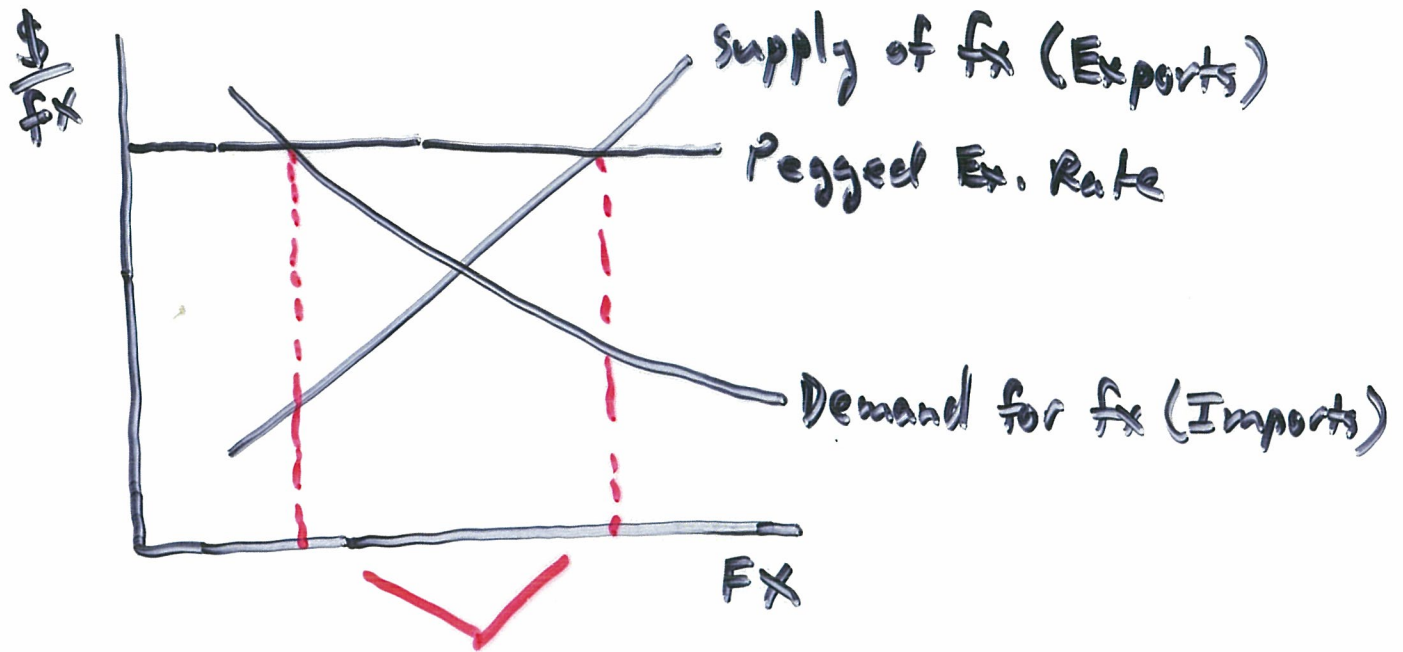
Note: The number of countries is in parenthesis.

How do you Fix an Ex. Rate?

Basic issue : Since an ex. rate is the relative price of 2 currencies a country has many bilateral ex. rates. Need to decide what you are going to peg to. Without cooperation from foreign countries, you can only peg your currency to one other currency (or linear combo of currencies).

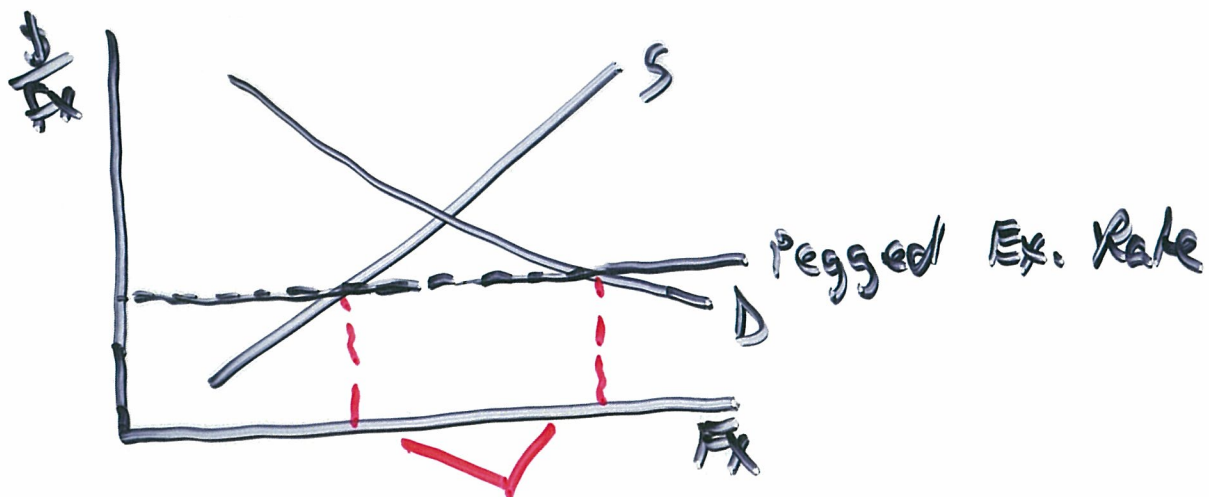
Essentially, pegging the value of your currency is no different from pegging the price of wheat or milk. The govt. needs to intervene in the market to soak up excess supply or to supply any excess demand.

Excess Supply of FX



Excess Supply of fx
Govt. needs to purchase fx with domestic currency.

Excess Demand for FX



Excess Demand for fx
Govt. needs to sell fx in exchange for domestic currency

Note: With flexible ex. rates, the govt. doesn't have to intervene. The price adjusts to clear the market.

The Mechanics of Central Bank Intervention

To understand exactly how Central Banks fix the ex. rate, we need to understand the Central Bank's balance sheet.

Assets	Liabilities
Domestic Assets	Bank Deposits
↑↓ Foreign Assets	Currency in Circulation

Remember, an economy's money supply is a multiple of the liabilities of the Central Bank. If total liabilities change, then the money supply changes.

Fixing the ex. rate involves buying and selling foreign assets

If at the pegged ex. rate there is an overall Balance of Payments deficit (sum of current + financial accts), then the Central Bank needs to sell fx, which reduces the domestic money supply

If at the pegged ex. rate there is an overall Balance of Payments surplus, then the Central Bank needs to buy fx, which increases the domestic money supply

Main Point : With fixed exchange rates, there is an automatic link between BOP deficits and surpluses and changes in the domestic money supply

BOP Deficit $\Rightarrow$ Money Supply $\downarrow$

BOP Surplus $\Rightarrow$ Money Supply $\uparrow$

Note: These Money Supply changes tend to restore balance in the BOP.

Money Supply $\downarrow \Rightarrow$ Domestic Prices $\downarrow$

$\Rightarrow$ Domestic Goods become more competitive

$\Rightarrow NX \uparrow$

$\Rightarrow$ BOP deficit eliminated

Money Supply $\uparrow \Rightarrow$ Domestic Prices $\uparrow$

$\Rightarrow$ Domestic Goods become less competitive

$\Rightarrow NX \downarrow$

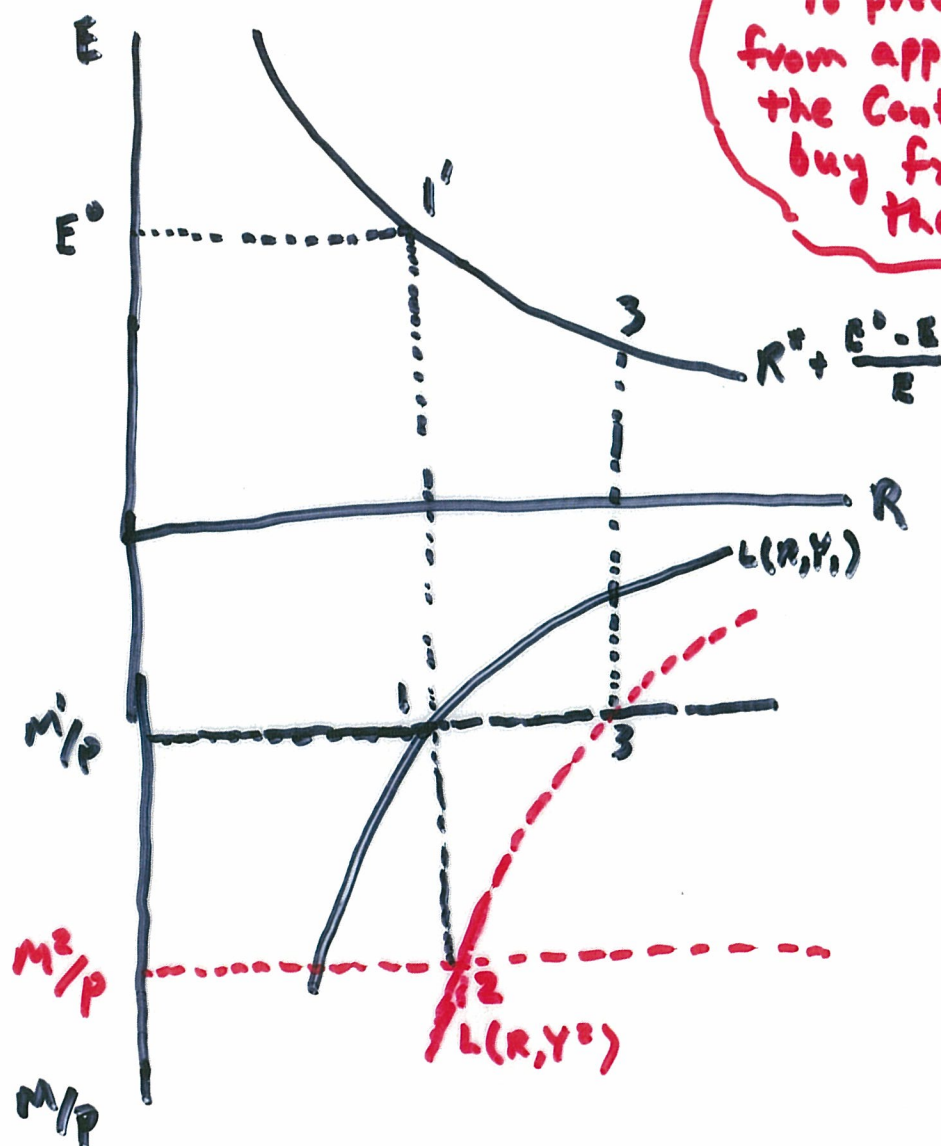
$\Rightarrow$ BOP surplus eliminated

This is just Hume's "price-specie-flow mechanism"

Asset Market Equilibrium with a Fixed Ex. Rate

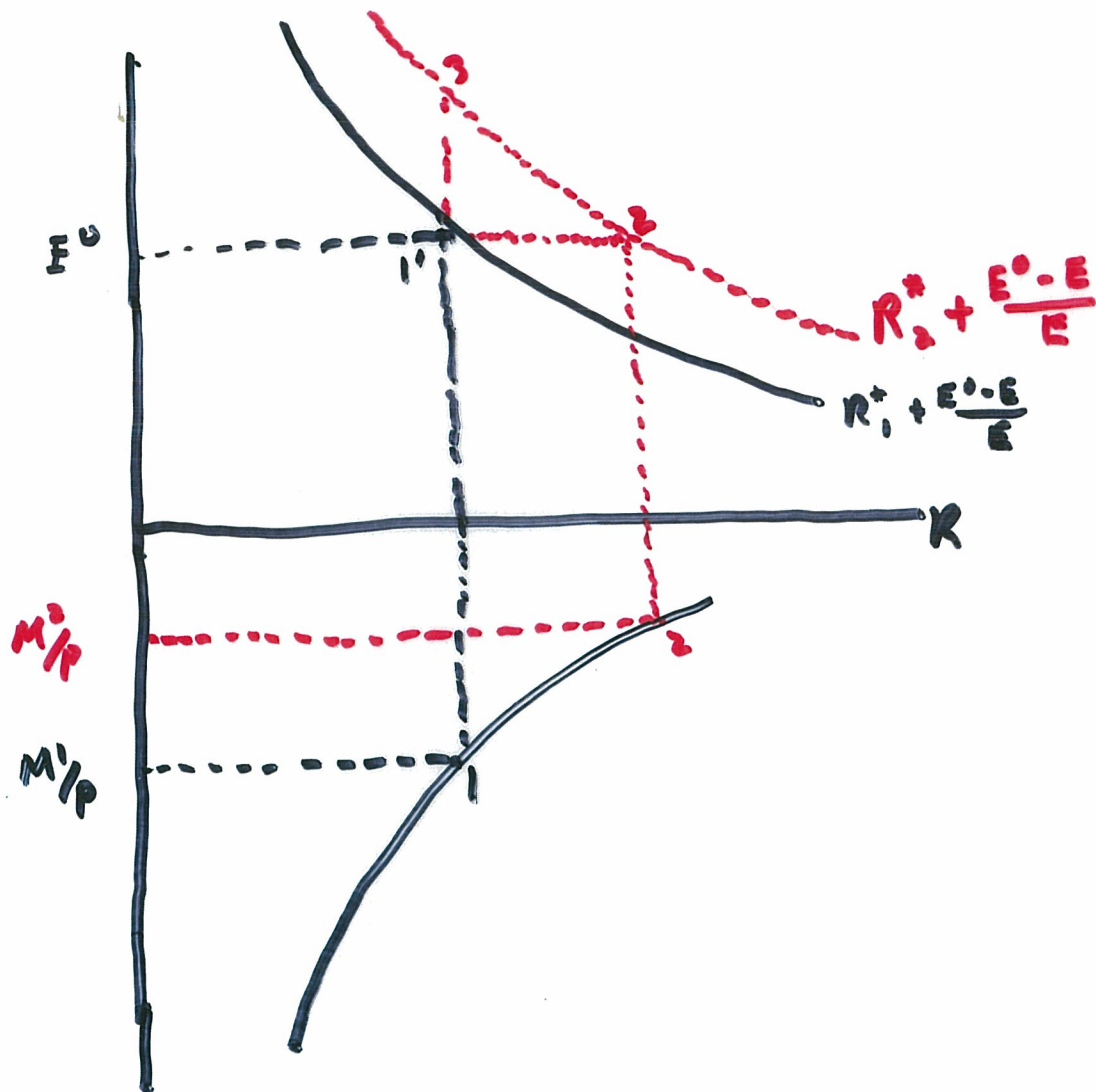
Suppose the exchange rate is pegged at E^0 , and is expected to remain at E^0 . That is, the peg is credible. This means $E^e = E^0$, and therefore, from UIP, $R = R^*$.

Now suppose $Y \uparrow$. How do the asset markets respond?



To prevent the ex. rate from appreciating to pt. 3, the Central Bank must buy fx and increase the m^s to pt. 2

Now suppose instead $R^* \uparrow$ (perhaps due to a foreign monetary contraction).



Now, to prevent the domestic currency from depreciating to pt. 3, the Central Bank must sell fx. This contracts the domestic money supply to M^2 . Note that in effect the domestic economy "imports" the foreign monetary contraction.

Sterilized Intervention

Sometimes govts. want to avoid the money supply implications of fx market intervention.

They may fear that a $M^s \downarrow$ will lead to a recession or that a $M^s \uparrow$ will produce inflation.

Hence, they may try to sterilize the fx intervention, by undertaking offsetting transactions with domestic assets.

Sterilized Sale of fx

A	L
↑ Domestic Assets	Bank Deposits
↓ Foreign Assets	Currency

To offset sale of fx, buy domestic assets.

Note, total liabilities (mont. base) does not change

Sterilized Purchase of fx

A	L
↓ Domestic Assets	Bank Dep.
↑ Foreign Assets	Currency

To offset purchase of fx, sell domestic assets.

Again, total liabilities do not change.

The net impact of sterilized intervention is to change the currency composition of the Central Bank's balance sheet (with an opposite change in the private sector's balance sheet).

Under certain conditions this can influence the exchange, even when the money supply isn't allowed to change.

Problem with Sterilization: The automatic adjustment of the BOP is short-circuited. BOP imbalances persist.