Topics for Today

1.) Risk Premia in the FX Market

2.) Sterilized Intervention + Managed Floating

3.) The Monetary Approach to the Balance of Payments

Risk Premia in the FX Market

So far we have assumed investors are risk neutral, which means they only care about expected returns. This assumption was an important ingredient in our analysis of fx market equilibrium (i.e., UIP).

However, there is lots of evidence suggesting investors are risk averse, which means they also care about the variance of returns.

It is important to remember that only "systematic" (nondiversifiable) risk is priced in efficient capital markets. To study risk premia in the fx market, we therefore need to adopt a portfolio perspective, i.e., we must ask "How does a given asset contribute to the overall variance of a portfolio?" (as opposed to its own individual variance).

There is no widely agreed upon, empirically consistent, model of risk premia in financial markets!

Instead, there are several theories that are consistent with some aspects of the data, but inconsistent with others.

We're going to examine one called the "portfolio balance approach", which focuses on the relative supplies of "outside" assets denominated in different currencies.

Bonds that are in "zero net supply" (i.e., they are issued by one person & bought by another) do not affect the aggregate risk exposure of the economy (ignoring default risk!). This is because one person's loss will be offset by another's gain.

However, govt. bonds are sometimes regarded as outside assets, or net wealth, since people might not fully capitalize their future tax liabilities. (Note, this assumes Ricardian Equivalence does not hold).

Before, with risk neutrality, this demand schedule was perfectly flat, or "infinitely elastic".

Next, let

B = Total supply of govt. bonds (determined by fiscal policy)

A = The supply of govt. bonds held by the Central Bank (determined by monetary policy, i.e., open market operations).

Therefore,

Market Supply (held by public) = B - A

As always, the equilibrium is determined by the equality of Demand & Supply!

Therefore, we focus on net supplies of govt. bonds.

UIP with Risk Premium

$$R = R^* + \frac{E^e - E}{E} + \rho$$

ρ: Risk Premium on domestic assets

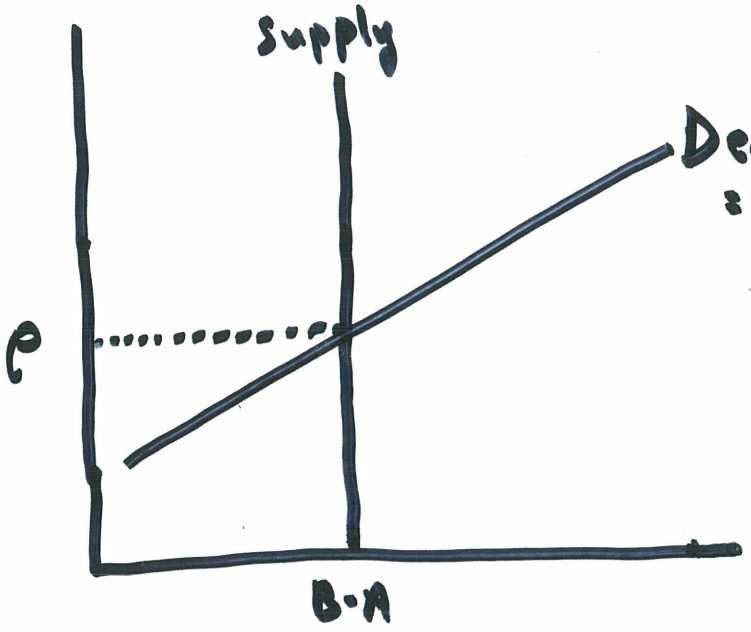
Note, 1.) When domestic assets become riskier, they must offer a higher expected return.

2.) ρ can be negative if foreign assets are riskier.

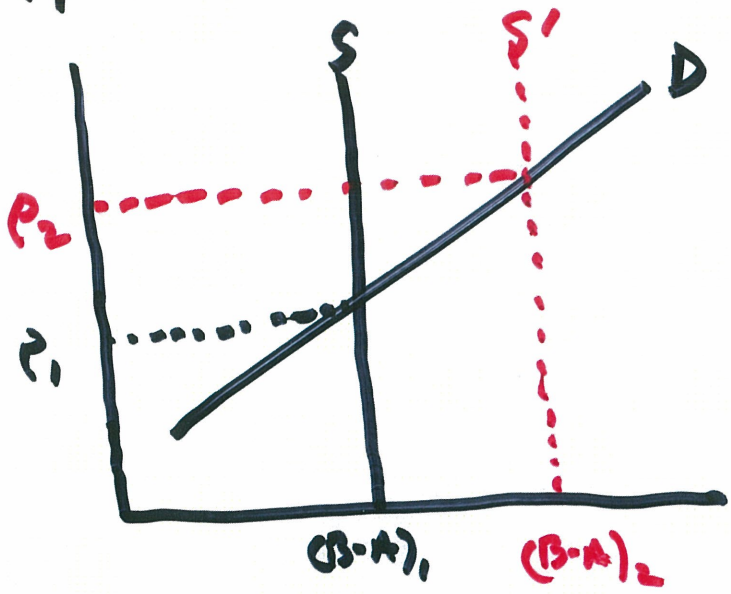
Our goal is to determine ρ as a function of exogenous variables.

We first assume that the demand for domestic assets is upward sloping function of their expected rate of return,

$$\text{Demand} = B^d\left[R - R^* - \frac{E^e - E}{E}\right]$$



Suppose $(B-A)\uparrow$, either because $B\uparrow$ or $A\downarrow$



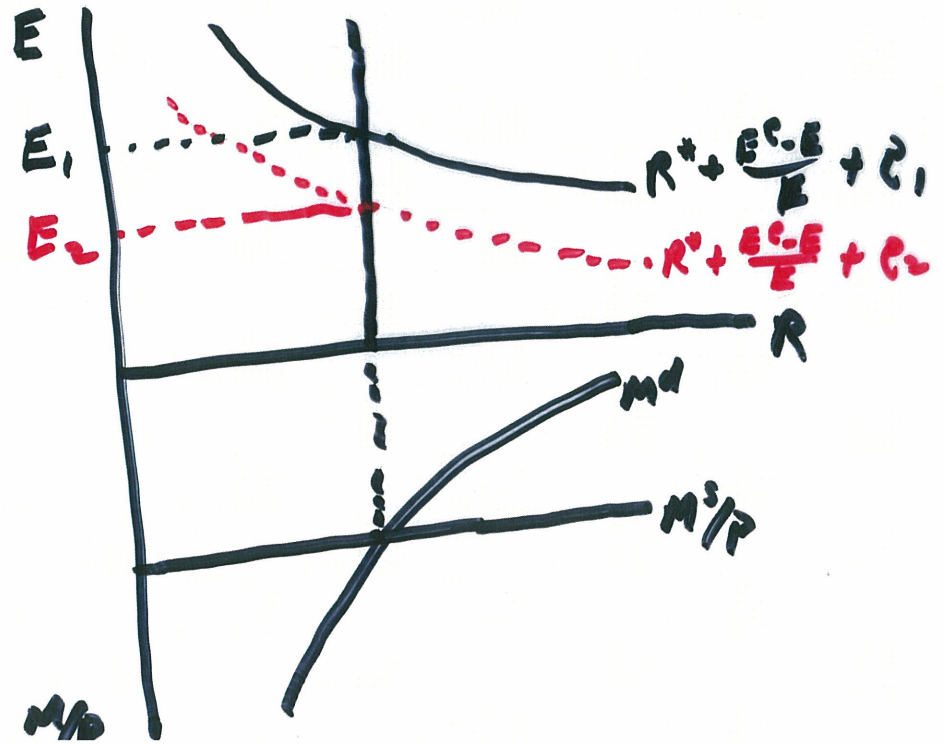
Therefore, $(B-A)\uparrow \Rightarrow e\uparrow$

Intuition: As $(B-A)\uparrow$, people are being asked to devote more of their portfolios to domestic assets. This exposes them to more ex. rate risk. They will only hold the extra domestic assets if they offer a higher expected return

There are many reasons why B-A might increase. For example, a bond-financed fiscal expansion that is not monetized by the Central Bank would increase B.

However, a more interesting possibility for us now would by a sterilized sale of fx reserves. Remember, in this case the CB buys domestic assets at the same time it sells foreign assets. That is, A ↑ ⇒ B-A ↓ ⇒ C ↓

Sterilized Sale of fx



Note

The ex. rate appreciates even though the money supply does not change!

In principle, the ability to influence ρ gives the CB some additional policy leverage.

1.) It can influence ex. rates without changing the money supply (and inflation),

Or,

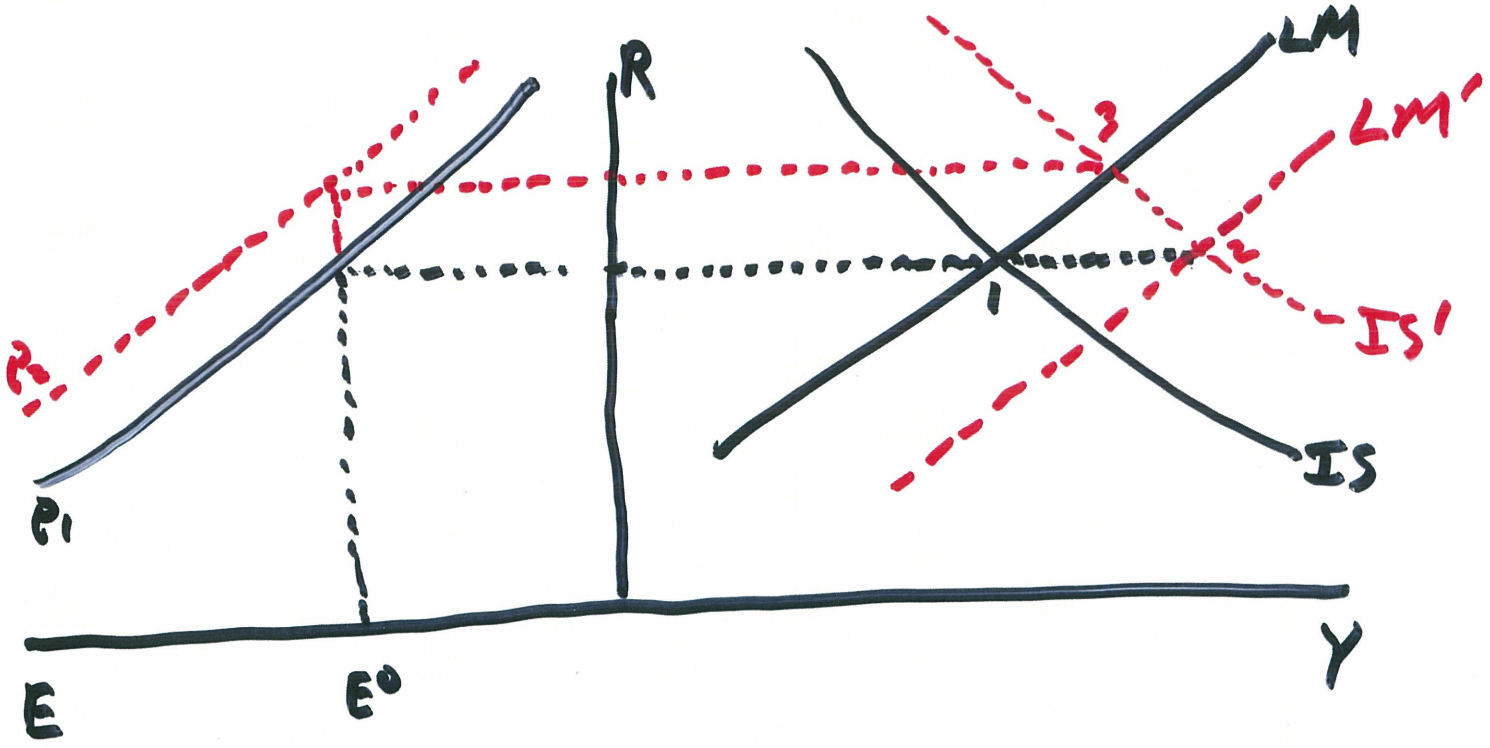
2.) It can change the money supply (in order to address domestic macroeconomic conditions) without changing the ex. rate.

Recent experience in China + Mexico provides examples of both.

Example 1: Current Situation in China

Suppose 1.) China wants to maintain a (nearly) stable ex. rate

2.) NX↑



Without sterilization, LM shifts out and the economy moves to pt. 2, creating considerable inflation risk.

With sterilization, A↓, (B-A)↑, ⇒ P↑

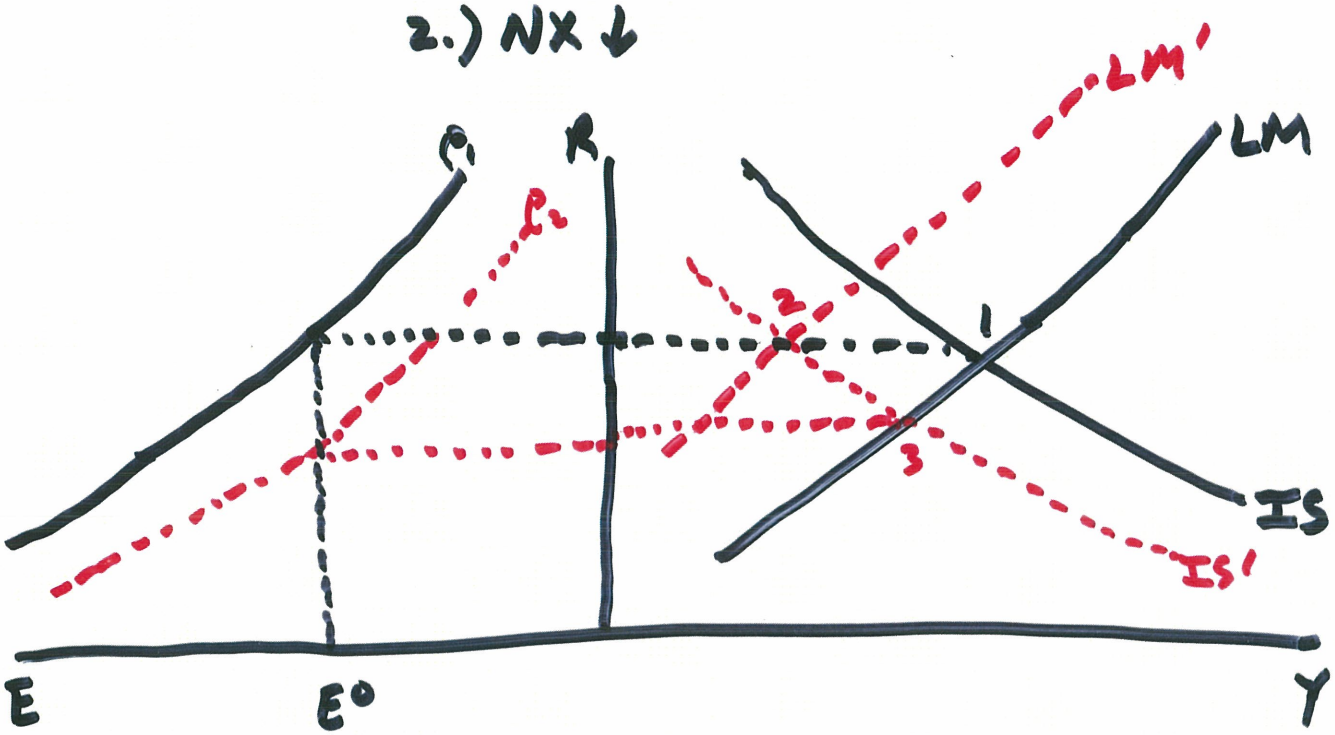
Now the economy only moves to pt. 3, reducing the inflation risk.

Are there any costs to this strategy?
Hint: Consider the interest earnings on the CB's port.

Example 2 : Mexico 1994

Suppose 1.) Mexico wants a stable ex. rate

2.) NX ↓



Without sterilization, LM shifts left, and the economy moves to pt. 2, creating a serious recession.

With sterilization, $A\uparrow$, $(B \cdot A)\downarrow \Rightarrow r\downarrow$

Now the economy only moves to pt. 3, reducing the severity of the recession.

Are there any potential problems with this strategy?

Hint: What's happening to the CB's stock of fx reserves?

Sterilization in Action

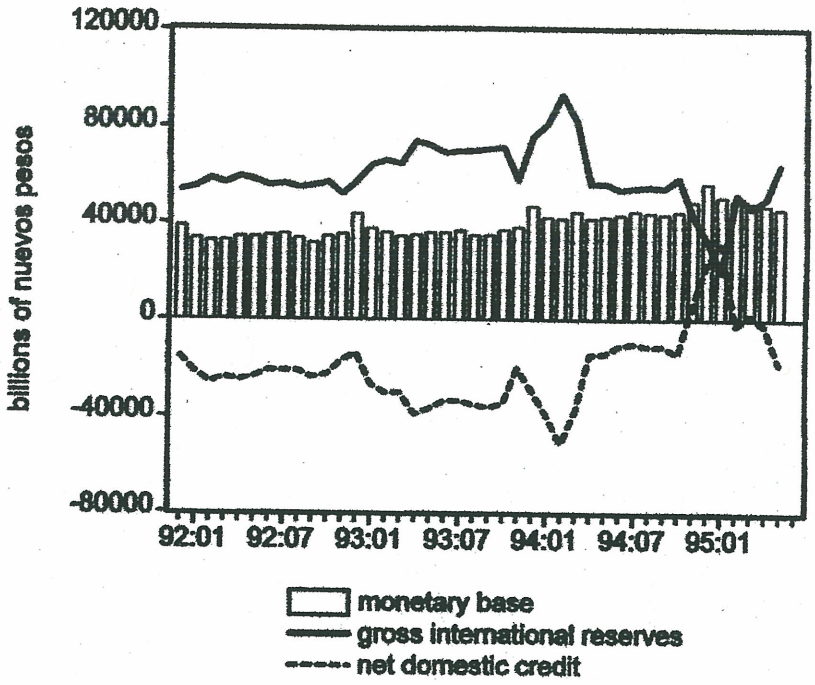


Fig. 6. Base money, foreign reserves, and net domestic credit of the Bank of Mexico.

The Monetary Approach to the Balance of Payments

We noted earlier that with fixed ex. rates, Central Banks may need to intervene in the fx market.

These interventions show up in the BOP in the "official settlements balance".

These interventions also change the M^s

BOP Deficit $\Longrightarrow$ CB sells fx

(defined as CA + private financial acct) $\Longrightarrow$ $M^s \downarrow$

BOP Surplus $\Longrightarrow$ CB buys fx

$\Longrightarrow$ $M^s \uparrow$

The Monetary Approach to the BOP reverses this link to develop a theory of the BOP.

$M^s > M^d \Longrightarrow$ BOP Deficits (e.g., excess money creation to finance fiscal deficits)

$M^s < M^d \Longrightarrow$ BOP Suplus (e.g., rapid economic growth, which raises money demand)