

Capital Movements, Speculation and Counter-cyclical Economic Policies.

Some reflections in the aftermath of the global economic crisis

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What is the Balance of Payments?⁽¹⁾

It accounts all the transactions (commercial and financial) among domestic agents and foreign agents

Exports (X): home-produced goods sold by domestic agents to foreigners

Imports (IM): foreign goods bought by domestic agents

Capital Inflows (KI): Domestic assets (liabilities issued by domestic agents
– es: an Italian Government Bond – bought by foreign agents

Capital Outflows (KO): Foreign assets (liabilities issued by foreign agents
– es: a US Government Bond – bought by domestic actors)

What is the Balance of Payments?(2)

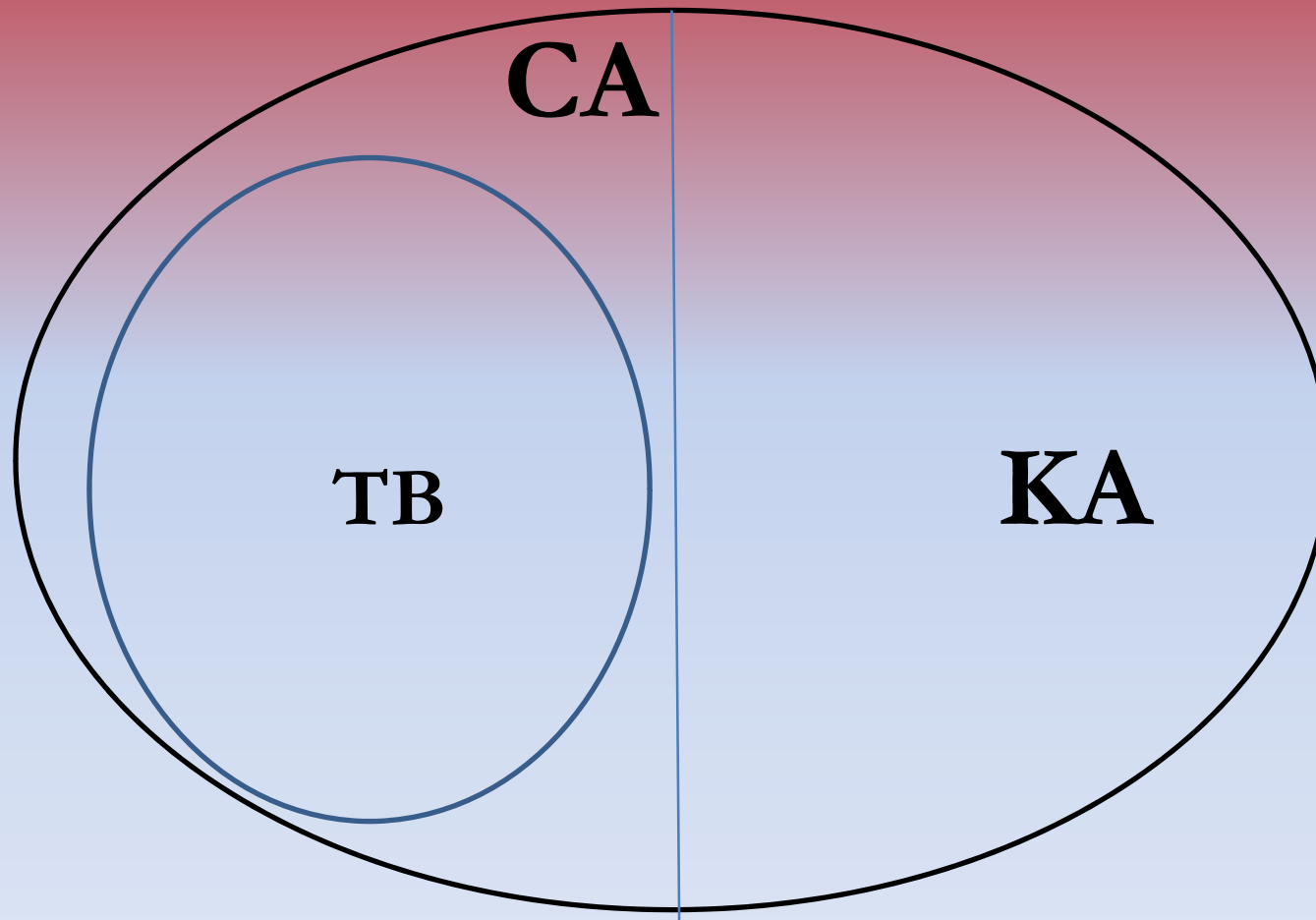
$$BP = (X-M) + (KI-KO)$$

Trade Balance (TB=X-IM): or “net exports”, is the difference between the values of domestic goods sold abroad and the value of foreign products bought by domestic agents.

N.B: trade balance is a component of the more general “current account CA” which also includes remittances and current transfers (food aid for instance).

Capital Account (KA =KI-KO): Is the difference between domestic assets bought by foreigners and foreign assets held by domestic agents.

What is the Balance of Payments?⁽³⁾



Equilibrium in the Balance of Payments

The balance of Payments must always be in equilibrium, i.e. $BP = 0$. This imply: $(TB = -KA)$

1. $(IM > X)$ and $(TB < 0)$ then $(KI > KO)$ and $(KA > 0)$: If we buy from foreigners more than what we sold to them, we need foreigners to lend us money (KI); foreigners buy liabilities issued by domestic agents in order to finance their expenditures

2. $(IM < X)$ and $(TB > 0)$ then $(KI < KO)$ and $(KA < 0)$: If the value of domestic goods sold to foreign agents is higher than the value of goods we buy from them, foreigners need someone to lend them money (make them credit): we may them credit (KO) by buying liabilities issued by foreign agents (es: we finance expenditures of the US governments by buying US Treasury Bonds).

Which is the adjusting process?

If BP is not initially in equilibrium, something must change to restore it. There are two different ways, depending on the **exchange rate regime**

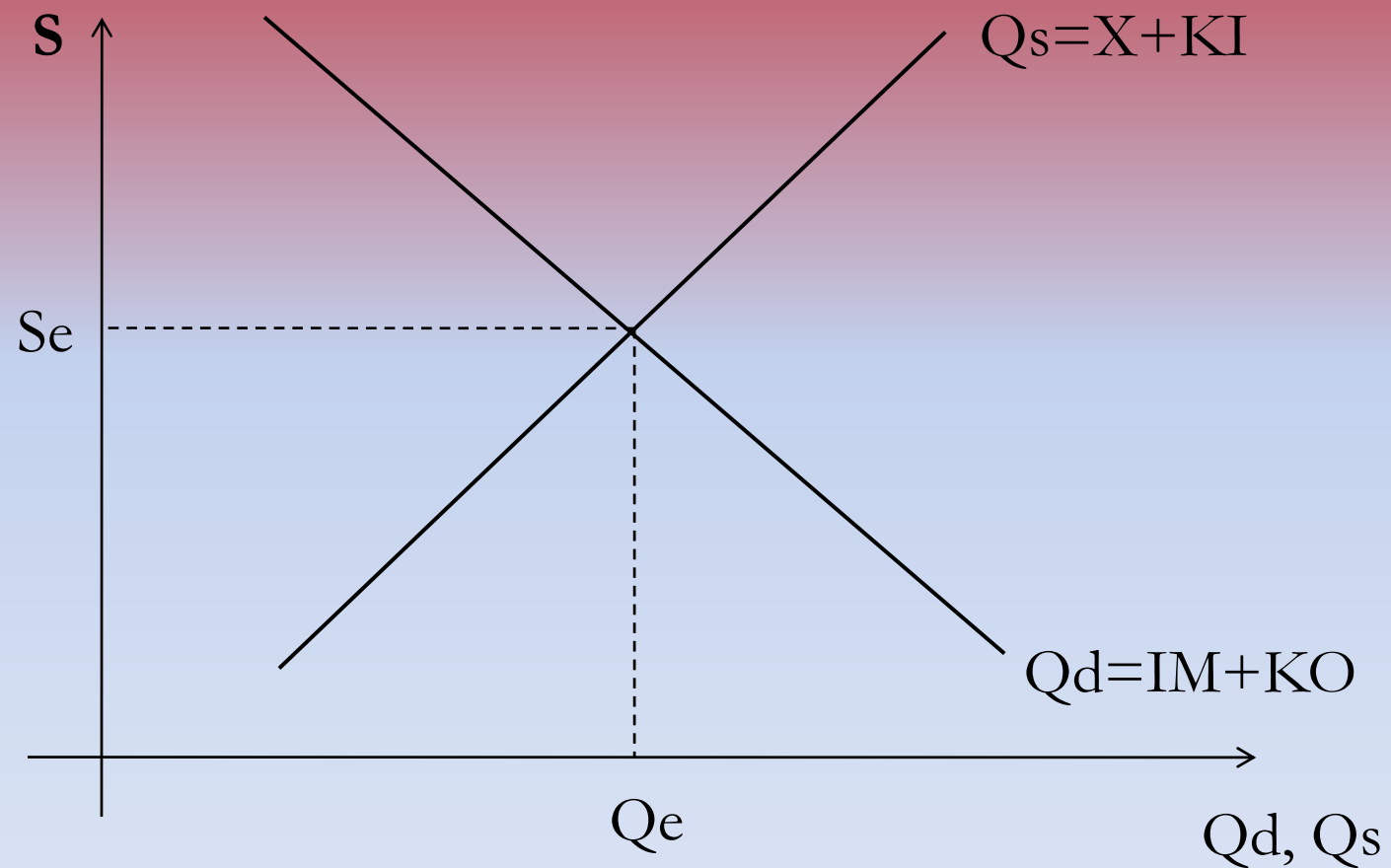
- 1. Flexible exchange rate regime:** The *exchange rate* (S) is the value of the domestic currency in terms of the foreign currency (es: how many Euros we need in order to buy a Dollar). In this case, the exchange rate may fluctuate and adjust in order to ensure equilibrium in the Balance of Payments.
- 2. Fixed exchange rate regime:** The domestic Central Bank takes a political commitment and decides that the value of domestic currency in terms of foreign currency can not change. In this case, equilibrium in the BP is established through variations in *Foreign Reserves (FR)*, i.e. foreign activities (Dollars) held by the domestic Central Bank.

A flexible exchange rate regime⁽¹⁾

Demand of foreign currency (dollars) in terms of domestic currency (euros): domestic agents (Italian citizens) who want to buy foreign goods or foreign liabilities (US government bonds) must first sell euros and **buy** dollars.

Supply of foreign currency (dollars) in terms of domestic currency (euros): foreign agents (US citizens) who want to buy domestic goods or domestic liabilities (Italian government bonds) must first **sell** dollars and buy euros.

A flexible exchange rate regime⁽²⁾



A flexible exchange rate regime⁽³⁾

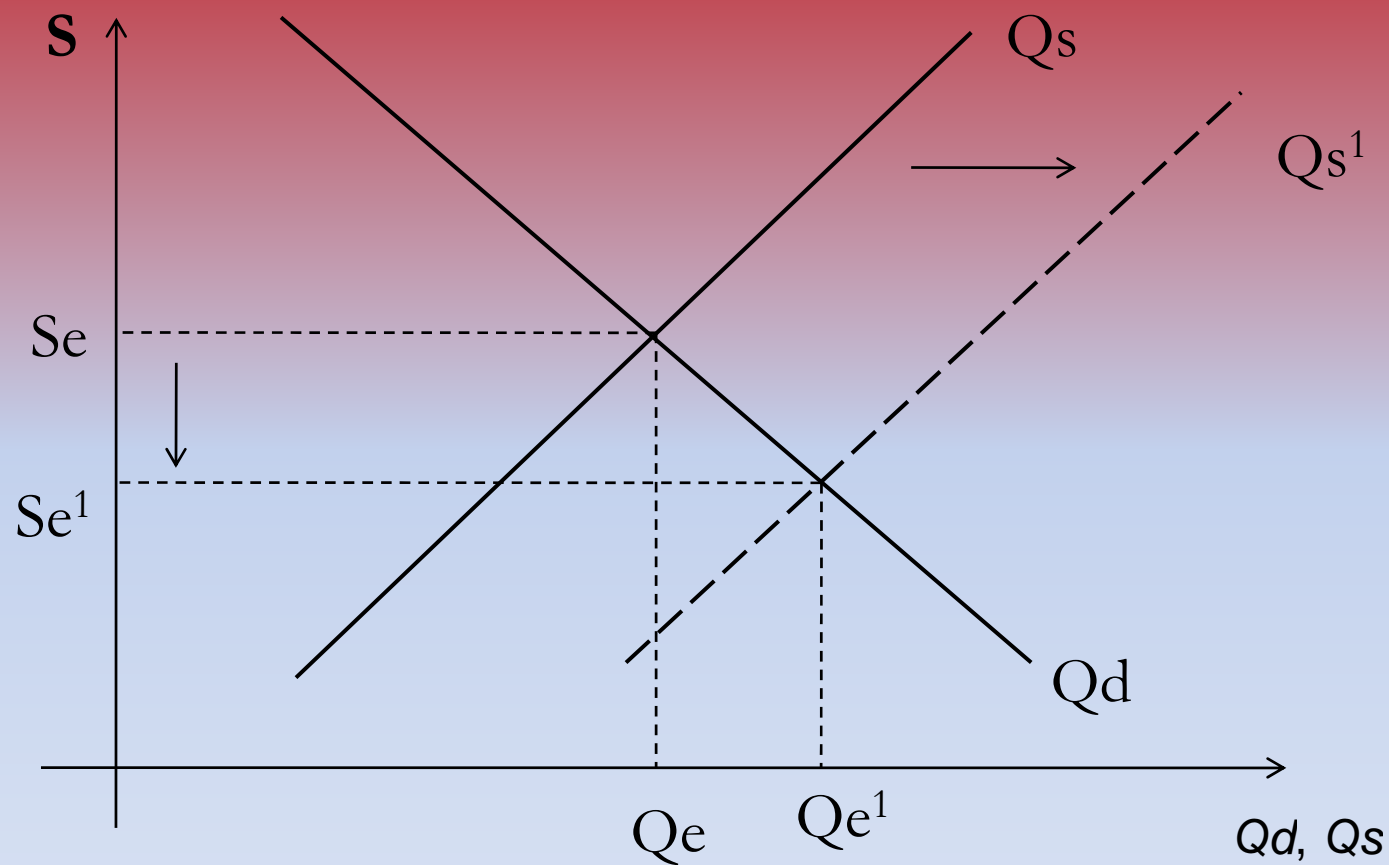
Demand of dollars (Qd): It slopes downward because there is a negative relationship between the demand of dollars and the exchange rate (note: The higher S, the more depreciate is domestic currency in terms of dollars – we need more euros to buy one dollar): the higher S, the cheaper are domestic goods and therefore the lower are imports (M) and capital outflows (KO)

Supply of dollars (Qs): It slopes upward because there is a positive relationship between the supply of dollars and the exchange rate: the higher S, the cheaper are domestic goods and therefore the higher are exports (X) and capital inflows (KI)

The equilibrium level of the exchange rate S_e : it equilibrates the demand of dollars with the supply of dollars ($Q_d=Q_s$) and therefore it ensures equilibrium in the BP:

$$\mathbf{X+KI - (IM+KO)=0 \text{ then } (X-IM)+(KI-KO)=0}$$

What does it happens in case of a surge in capital inflows?



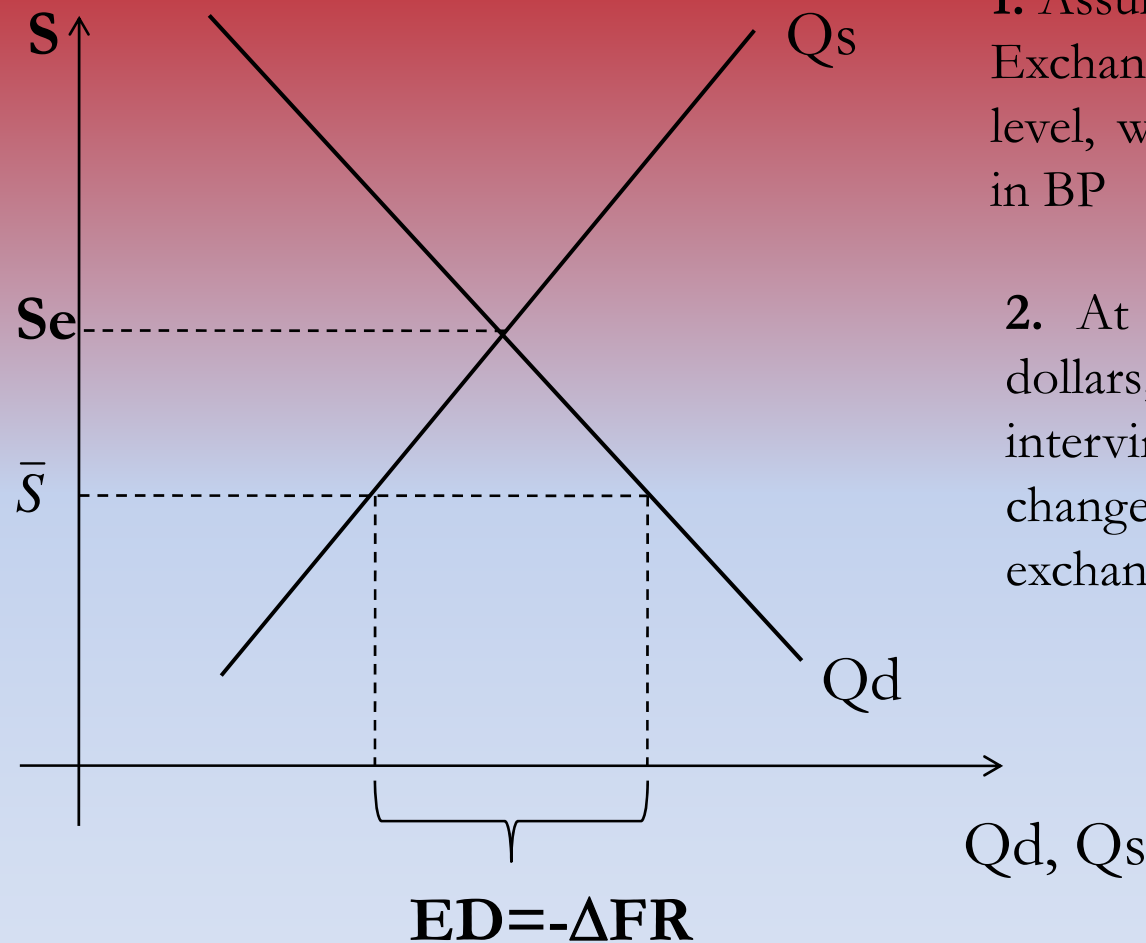
There is an **appreciation of the domestic currency** (euro) vs the foreign currency (dollars): **S decreases** (i.e: we need less euros than before to buy one dollar)

A Fixed exchange rate regime⁽¹⁾

Sometimes domestic monetary authorities decides to fix the value of the domestic currency in terms of the foreign currency (S is fixed at level \bar{S}): this is a way to send a message to economic agents in order to ensure them that domestic authorities will fight against inflation (in order to preserve the competitiveness of domestic goods) and not to devalue.

In this case domestic monetary authorities are forced to intervene on currency markets to maintain the exchange rate at the pre-ordered level: they have to sell foreign currency (dollars) or buy them in order to eliminate potential excess supply or excess demand of dollars on the currency market. Monetary authorities intervenes by changing their **Foreign Reserves (FR)**, i.e. the stock of foreign currency they hold

A Fixed exchange rate regime⁽²⁾



1. Assume domestic authority to fix the Exchange rate at a too much appreciated level, which does not ensure equilibrium in BP

2. At there is an excess demand for dollars; domestic authorities have to intervene and continuously sell dollars in change of euros to maintain the exchange rate fixed

3. This means a continuous reductions in foreign reserves (i.e. a negative variations $-\Delta FR$ in Foreign Reserves)

The Balance of Payments and the Money Supply⁽¹⁾

Money Supply (M): quantity of domestic currency introduced in the economic systems. It is controlled by the domestic Central Bank (and also depends on Commercial Banks behaviour) through the so-called **Base Money BM**. In order to understand the money supply, we have to learn something about the Central Bank balance sheet.

Central Bank Balance Sheet			
Assets		Liabilities	
Foreing assets	FR	Circulating Money	C
Domestic assets	DC	Commercial Banks' deposits to the Central Bank	Dcb

The Balance of Payments and the Money Supply⁽²⁾

The Balance Sheet of the Central Bank must always be in equilibrium so that assets=liabilities

We Know that:

1. the **Base Money BM** is: **$BM=C+D_{cb}=FR+DC$**
2. the Money Supply **M** is a multiple of the Base Money(BM): **$M=\beta(BM)$**

Therefore:

$$M=\beta(FR+DC)$$

and

$$\Delta M=\beta(\Delta FR+\Delta DC)$$

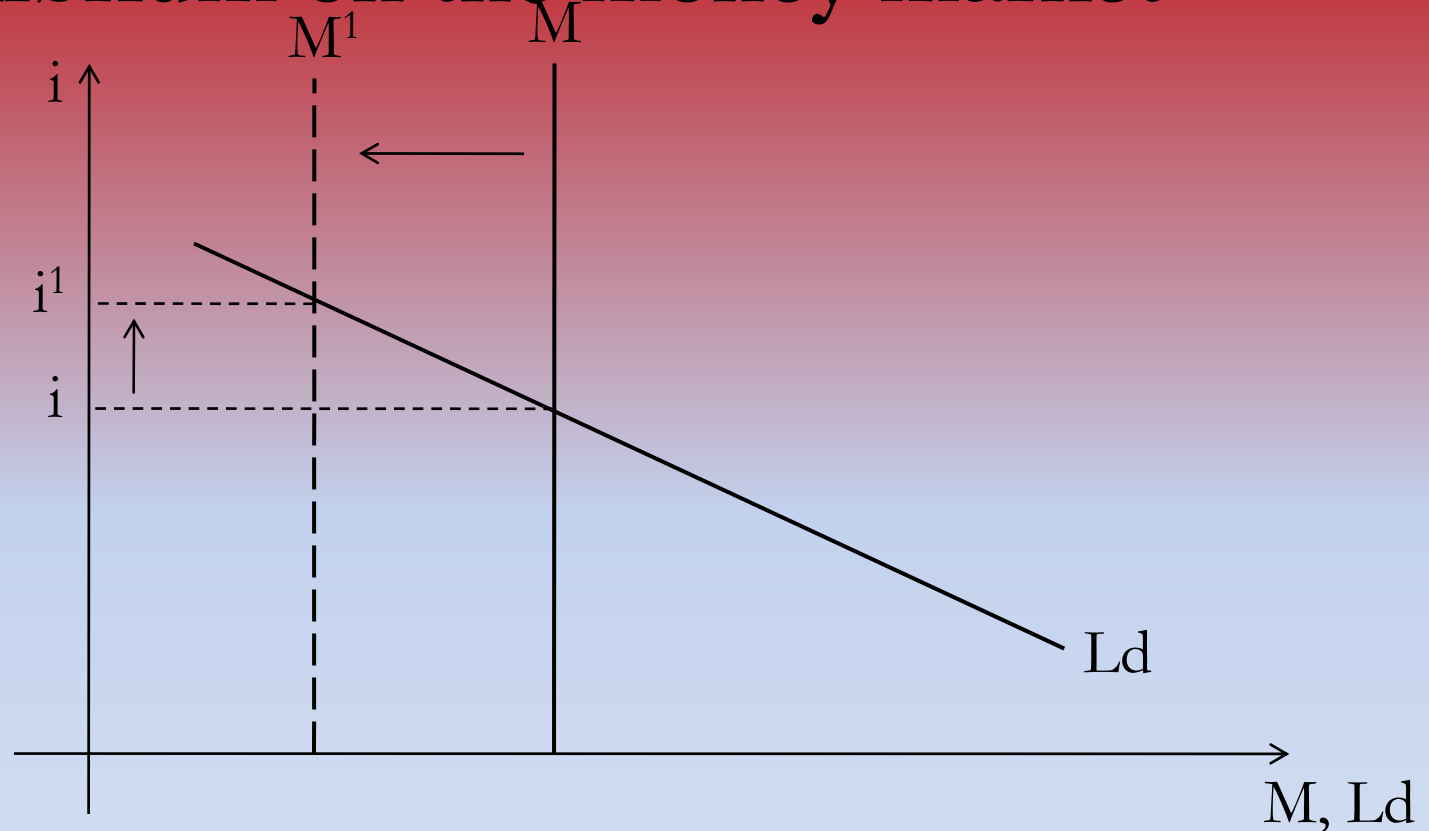
1. FR = foreign channel to create Base Money (BM) and to expand the money supply
2. DC = domestic channel to create Base Money (BM) and to expand money supply

The Balance of Payments and the Money Supply⁽³⁾

An expansion in the stock of foreign reserves ($\Delta FR > 0$): Ceteris Paribus, this means an increase in the base money and in the money supply: we have an **expansionary monetary policy** and a reduction in the domestic interest rate on the money market

An reduction in the stock of foreign reserves ($\Delta FR < 0$): Ceteris Paribus, this means a contraction in the base money and in the money supply: we have a **restrictive monetary policy** and an increase in the domestic interest rate on the money market

The Balance of Payments and the equilibrium on the money market⁽¹⁾



What happens in case of a reduction in Foreign Reserves FR?

1. M decreases and moves to the left
2. The equilibrium level of the interest rate increase.

The Balance of Payments and the equilibrium on the money market⁽²⁾

Monetary authorities lose independence: monetary policy must automatically be implemented according to the goal of maintaining the exchange rate fixed.

Depending on what happens on international markets, in particular financial markets, monetary authorities have to adapt their monetary policy and space for counter-cyclical monetary policy is reduced.

Capital movements, Balance of Payments and Monetary policy⁽¹⁾

What rule guides capital movements (speculative capital movements in particular) and the allocation of financial resources worldwide?

The Uncovered Interest Parity (UIP)

$$i_d = i_{usa} + (\Delta S^e/S)$$

i_d = interest rate on domestic activities denominated in euros

i_{usa} = interest rate on foreign activities denominated in dollars

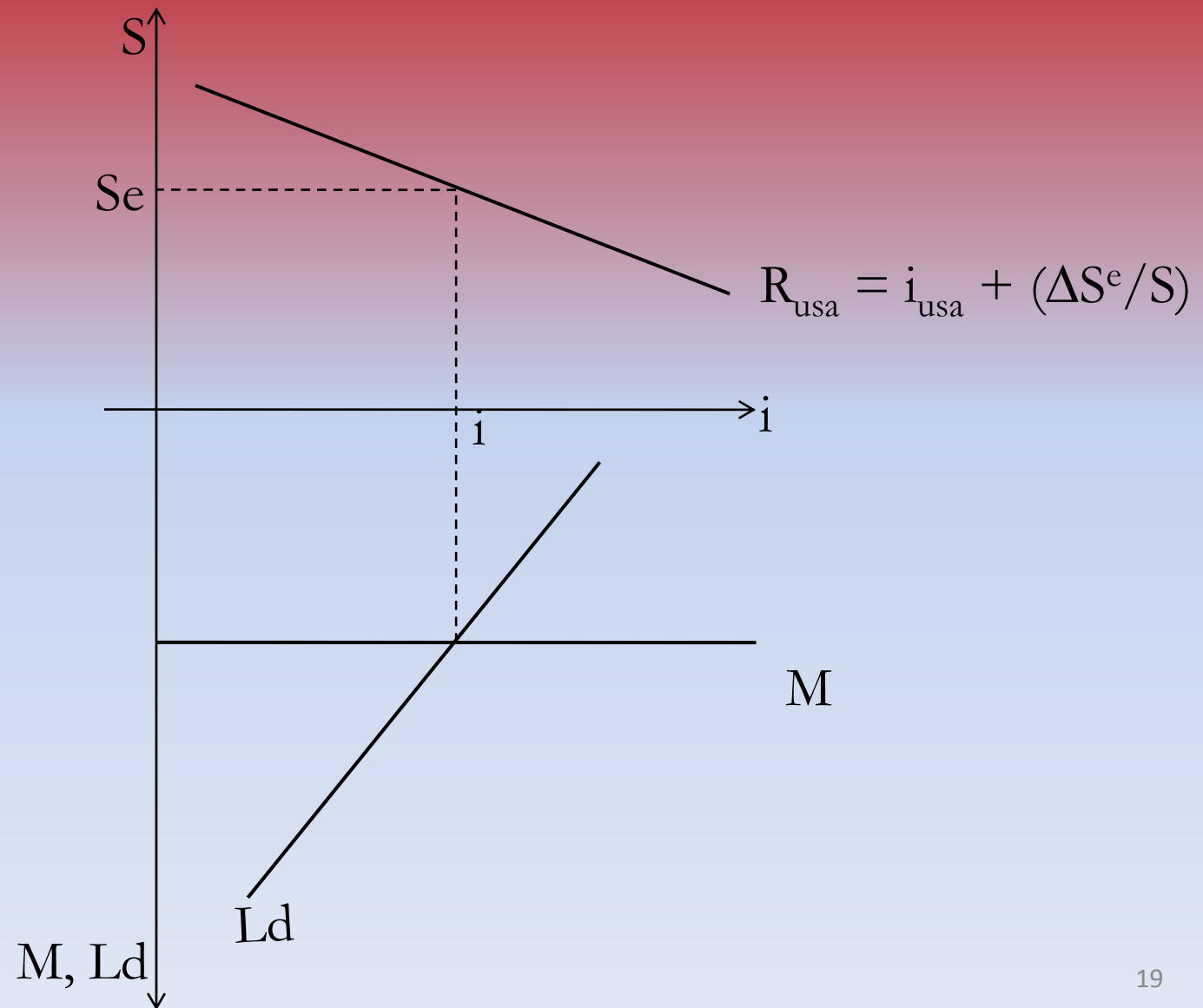
$(\Delta S^e/S) = (S^e_{t+1} - S_t)/S_t$ Expected percentage variation in exchange rate

IF:

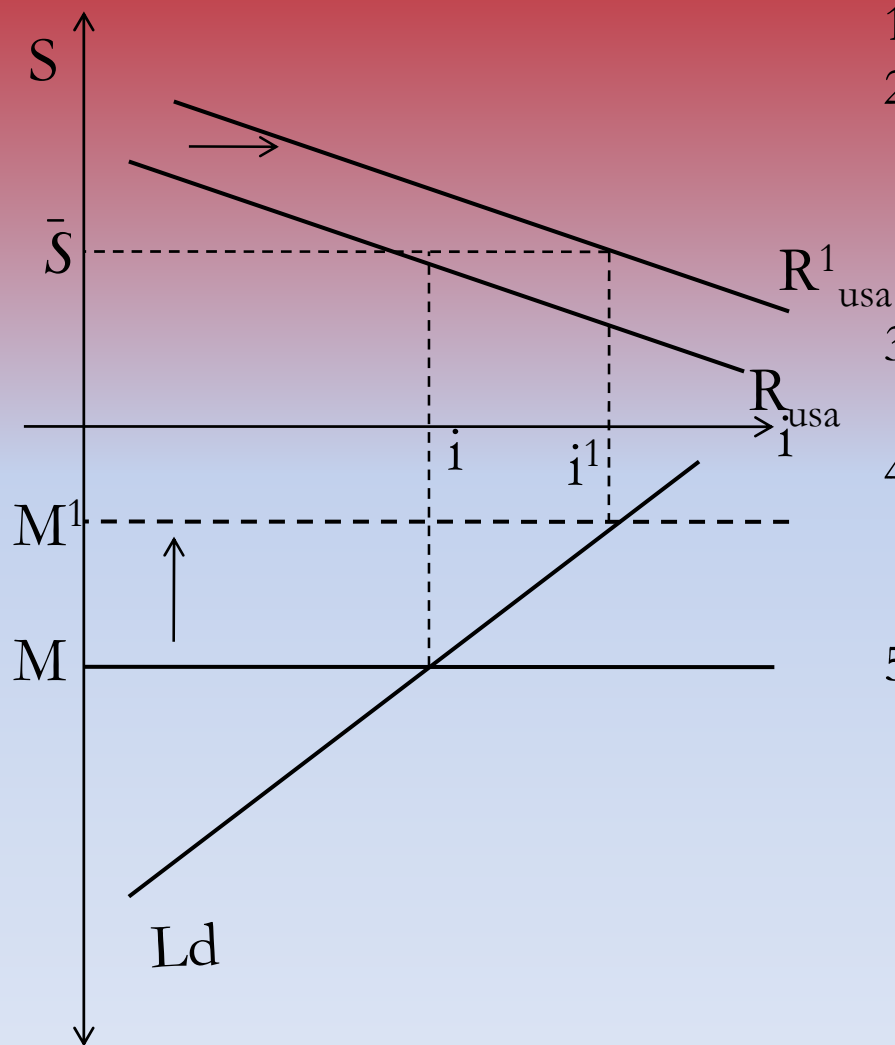
$i_d > i_{usa} + (\Delta S^e/S)$ we will invest at home and buy domestic assets

$i_d < i_{usa} + (\Delta S^e/S)$ we will invest abroad and buy foreign assets

Capital movements, Balance of Payments and Monetary policy⁽²⁾

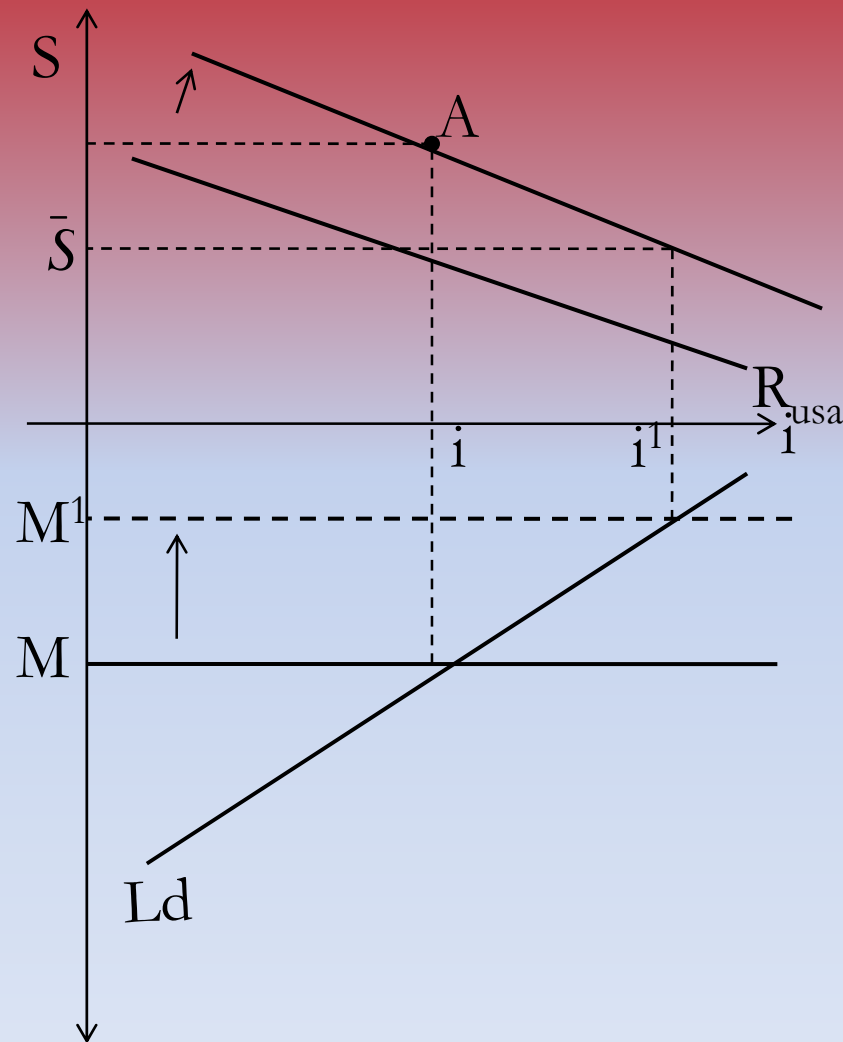


What does in happens in case of Capital flights



1. Assume there is a fixed exchange rate
2. International investors suddenly convince themselves that such an exchange rate is too much appreciated and that the domestic country has to devalue
3. UIP does not apply any longer and capital outflows start to take place.
4. If the domestic Central Bank want to maintain the exchange rate fixed, it has to implement a restrictive monetary policy.
5. This is costly, given that it means a restrictive monetary policy and possibly an economic recession at home

Self-fulfilling Expectations



Let assume that a country is experiencing a bad recession and has a strong and overevaluated exchange rate (es: Argentina in 2001). Financial investors and speculators start to believe that soon or later the country will devaluate and start to attack the domestic currency and give rise to capital outflows (leave the country)

Domestic monetary authorities may implement a restrictive monetary policy but this is costly: the economic crisis will worsen even further

Domestic authorities may give up and let the exchange rate float freely and abandon the fixed exchange rate regime. The economy ends up in point **A**

Problems

It is not always easy to devalue:

1. Many domestic assets may be denominated in dollars (Argentina 2001, East Asean Countries 1997) and a devaluation increases the burden of debt: many firms may go bankruptcy because they are incapable to pay back their debts. Even good firms that make profits may go to bankruptcy. This of course have a very high social cost
2. We may follow prescriptions of the IMF and introduce a restrictive monetary policy and increase interest rates in order to stop capital outflows and confince investors to keep on investing in our country. But with higher interst rates most firms will still risk to go to bankruptcy

In many cases there are no ways out of the crisis and we simply have to choose the less painfull solution

Potential precaution

Krugman (2008) and Stiglitz (2008) propose to set restrictions and controls in capital movements, in particular capital outflows:

1. Capital outflows, in particular speculative investments are pro-cyclical and increase the instability of an economic system (many successful developing countries did that).
2. It is capital liberalization that set the conditions for future financial crises (several financial crises have occurred some years after capital movement liberalization):

Initial capital liberalization with a fixed exchange rate regime → huge capital inflows with the ensuing monetary expansion → increase in domestic inflation and increasing trade balance deficits (due to low exports and much higher imports) → increasing foreign debt in order to finance trade deficits → outbreak of the financial crisis when foreign investors lose trust in the economy system and want to go away.