

$$\varepsilon = \frac{eP}{P^*}$$

$\frac{P}{P^*}$ is a constant in our model, therefore a change in e will change ε proportionally.

This implies that we can write the Net Exports as a function of the nominal exchange rate instead of the real exchange rate: $NX(e)$, with $\frac{dNX(e)}{de} < 0$, an increase (decrease) in the nominal exchange rate will decrease (increase) the Trade Balance.

The Mundell-Fleming Model

We use an IS-LM model where now we have an extra term in the IS curve that is given by $NX(e)$. Differently from the standard IS-LM model that was derived in the $(r-Y)$ -space, the Mundell-Fleming model is derived in the $(e-Y)$ space. The reason is given by assumptions 1) and 2) made before. Under those assumptions the domestic interest rate (r) is always equal to the world interest rate (r^*), therefore it cannot be determined in the domestic country. This means that we consider the domestic interest rate as given in our analysis. The first building block is given by the IS curve in an open economy. We denote the IS curve in an open economy as IS^* to make it different from the IS curve derived in a closed economy. The main ingredients of this open economy IS curve are:

Real Interest Rate: $r = r^*$

Consumption function: $C = C(Y - T)$

Investment function: $I = I(r)$

Government expenditure exogenous: G

Net Exports function: $NX(e)$

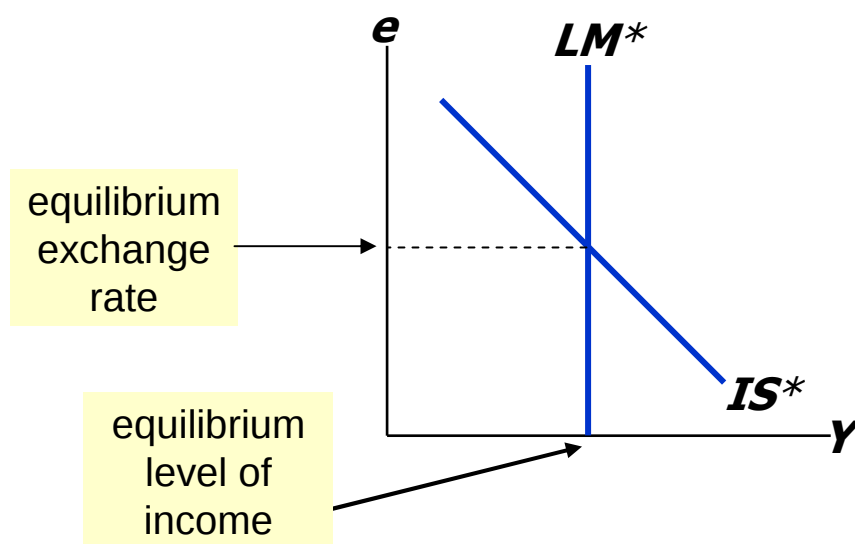
The National Identity in an open economy gives us:

$$Y = C + I + G + NX$$

Using the function defined above into that we obtain:

$$Y = C(Y - T) + I(r^*) + G + NX(e) \quad 1)$$

Equation 1) implicitly defines a relationship between the nominal exchange rate and the level of Real Income in the goods market (implicitly because we are working with general functional form, for example we do not know explicitly the consumption function or the net exports function). Equation 1) gives us implicitly the IS^* for a small open economy when there is perfect capital mobility. What is the relationship between e and Y implied by 1)? Negative or positive? We know it is going to be



Floating and 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. In this case suppose the central bank wants to maintain a fixed exchange rate between the UK pound and the US dollar, for example a 1 to 1 exchange rate = 1 dollar = 1 Pound.

Let's focus only on the trade balance (NX):

Exports from UK to US increase: in this case UK citizens receive dollars that they need to convert into pounds. Therefore in UK this will represent a **supply of dollars** and a **demand for pounds**.

Imports to UK from US: in this case UK importers convert their pounds into dollars to pay for the US goods imported. Therefore we have that imports in this case represents a **demand for dollars** and a **supply of pounds**.

Sterilisation to keep Fixed the Exchange Rate

If a country wants to keep a fixed exchange rate regime the central bank must intervene in the foreign exchange market every time there is a tendency for the exchange rate to move away from the fixed rate. Suppose that the UK central bank wants to keep a fixed exchange rate between the pound and the dollars at the level e_0 .

Now, suppose that at the exchange rate e_0 we have that in UK, $NX < 0$.

This means that at e_0 we have imports (M) greater than exports (X). In terms of demand and supply of pounds: now there is an excess of supply for pounds (and an excess of demand for dollars).