Reading 9: Changes in Exchange Rates and their effects on Imports and Exports

Example: Let's deal with the US and the UK. Now, we have 4 players, namely, US importers, US exporters, UK importers, and UK exporters.

The exchange rate is the price of one currency in terms of another. For instance, if it takes $4 to buy £1, then for 1$, you can get £0.25. So, the price of a British Pound is $4 and the price of a US Dollar is £0.25.

The concept of the exchange rates is explained in detail in the book (make sure you read the section on exchange rates in Chapter 17). Also, in the book, read about the concepts of
- appreciation: increase in the price of a currency measured [example: appreciation of the dollar is when the price of 1 dollar increases from 90 to 100 yens]
- depreciation (or devaluation): decrease in the price of a currency [example: depreciation of the dollar is when the price of 1 dollar decreases from 120 to 115 yens]

Changes in Demand and Supply of a currency:
In the graphs above, the initial situation shows the exchange market in the equilibrium at $4 per £1 (or £0.25/$1). Now, if the UK starts to demand more US goods, they will need more US$ to import those goods. So, demand for US$ shifts out (see left graph), and the price of US$ will increase to £0.40. At the same time, in the right graph, supply of pounds increases (curve shifts to the right) because there will be more pounds offered (in exchange for US$) in the currency market, reducing the price of the British pound (from $4 to $2.5).

4 Graph Analysis: (Example discussed in lecture)
Assume that we have two countries trading goods, the US produces trucks and the UK produces cars. Assume that the supply of both goods is perfectly elastic (that is, at a price P producers can offer any quantity of the good, but if the price is below P, producers offer zero. That’s why the supply curve is horizontal). Initially, the exchange rate is $4/£1. Now, assume that the dollar appreciates to $2/£1 (which is the same as to say that the pound depreciates). What will happen?
4 Graph

The graphs above represent what happens in US (prices are in $, because US consumers and firms only care about prices in $)

The graphs above represent what happens in UK (prices are in £, because UK consumers and firms only care about prices in £)

There is a dollar appreciation in this example:
Upper Left (US imports): At each price in $, British firms get more £ for their goods (before they got £0.25/$, now they get £0.50/$). Thus, they will supply more goods to US: supply of US imports increases (supply curve shifts down since fewer dollars are being spent on US imports). The amount of US imports increases in the new equilibrium.
Upper Right (US exports): At each price in $, UK consumers will have to pay more for US goods (they will have to pay the double of what they paid before). Thus, they will demand less US goods: demand for US exports decreases (curve shifts down). The amount of US exports decreases in the new equilibrium.
Lower Left (UK exports): At each price in £, Americans has to pay less (in $) for UK good (they pay half of what they paid before). Therefore, Americans will demand more UK goods: demand for UK exports increases (curve shifts up). UK exports a bigger amount of goods to US in the new equilibrium.
Lower Right (UK imports): At each price in £, US firms will get less $ for their products (they will get only half as before). Therefore, the supply of US goods (= UK imports) decreases (the curve shifts up). UK imports less US goods in the new equilibrium.

EFFECTS ON TRADE BALANCE
- Trade deficit = Imports – Exports (when Imports are greater than Exports)
- Trade surplus = Exports – Imports (when Exports are greater than Imports)

From the previous analysis, an appreciation of the dollar generated:
- more US imports and less US exports => US trade deficit increases (or trade surplus decreases)
- more UK exports and less UK imports => UK trade deficit decreases (or trade surplus increases)

Therefore, if one country experiences trade deficit, it will try to depreciate (devaluate) its currency. **Caveat:** technically, to talk about the final effect in the trade balance, we should also know the price elasticity of demand of British consumers for imports, but to make the analysis easier its implications are not considered above.