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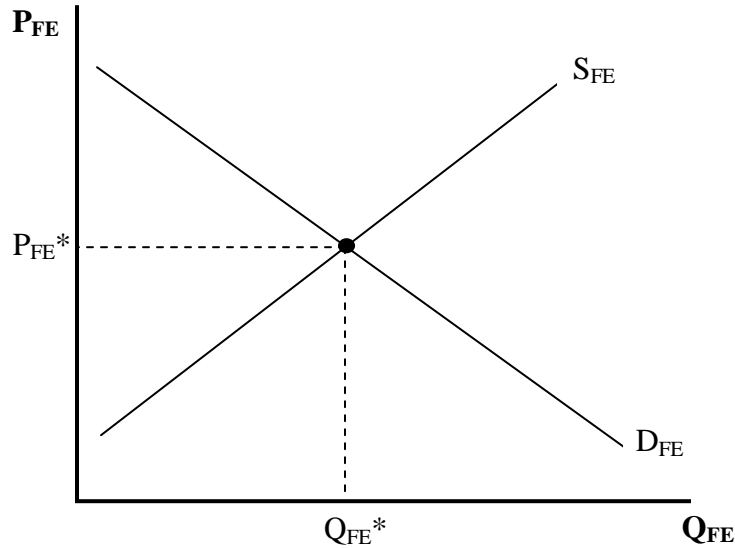
#### **4 Macro Markets – Foreign Exchange**

Every country has its own currency, so if you want to buy goods and services from another country, you effectively need to trade dollars for their currency in order to make that transaction. The same thing applies when investment money flows between countries in the form of capital inflow or outflow. Now, quite obviously, we can buy foreign made goods here in the US without converting our currency into some other country's currency, but the point is that somewhere along the line of bringing those foreign goods and services to market, someone had to make that conversion. We'll keep things simple and assume that if you want to buy a foreign good or service, you are the one who needs to convert dollars into that country's currency.

What we call foreign exchange is actually the foreign currency we need to buy foreign goods and services. E.g., if we are trading with Japan, then yen would be the foreign exchange. To consider the market for a foreign currency (the foreign exchange), we need to decide which two countries are engaging in trade. Let's assume it's the US and Japan, and we'll do our example below from the perspective of US citizens (which makes dollars the domestic currency, and yen the foreign exchange).

Next, we must determine the demand for foreign exchange, and then the supply of foreign exchange. To understand the demand, we must ask ourselves why US citizens would need this foreign currency, the yen. We need yen to buy Japanese goods and services, what we in the US would call imports. If we experience an increase in imports, then we would clearly need more yen, which would affect our demand for yen. We also need yen to invest in Japan (i.e. purchase Japanese capital). If more US citizens invest in Japan than Japanese citizens invest in the US, we have net capital outflow. Given that those US citizens would need to acquire more yen to make that investment, we realize that capital outflow affects our demand for yen as well. That also means that the supply of yen must then be affected by Japanese citizens providing us with yen when they exchange yen for dollars in order to buy our goods and services, or invest in our economy. We illustrate these two curves in the graph on the next page.

The demand for foreign exchange ( $D_{FE}$ ) is the demand for yen and this curve shifts whenever there's a change in imports or capital outflow (shifting outward when we need more yen, and inward if we need less yen). The supply of foreign exchange ( $S_{FE}$ ) is the supply of yen and this curve shifts whenever there's a change in exports or capital inflow (shifting outward when more yen is being provided to us, and shifting inward when less yen is being provided).



The price of foreign exchange ( $P_{FE}$ ) is actually the exchange rate between the yen and dollar here. One way to refer to  $P_{FE}$  is as the dollar price of yen, which we could also express as  $\$/¥$  (where  $\$$  = dollars and  $¥$  = yen). If  $\$/¥ = 2$ , then the exchange rate is 2 dollars for every 1 yen. The equilibrium quantity of foreign exchange ( $Q_{FE}^*$ ) occurs when we discover the exchange rate that allows the quantity of yen demanded to equal the quantity of yen supplied.

Let's examine the effect of a couple changes on this graph to better understand how shifts in one of these two curves will affect things.

**Example 1: Increase in imports.**

An increase in imports will affect the demand for yen ( $D_{FE}$ ) and cause this curve to shift rightward as more US citizens need to acquire yen in order to buy Japanese goods. When  $D_{FE}$  shifts to the right, we see an increase in both  $P_{FE}^*$  and  $Q_{FE}^*$ . Let's assume that this increase in price involves moving from  $P_{FE}^*$  to  $P_{FE}^{**}$ , and assume further that  $P_{FE}^* = 2$  and  $P_{FE}^{**} = 4$ . What that tells us is each yen has appreciated in value. Prior to the shift, 1 yen could get 2 dollars, but after the shift, 1 yen could get 4 dollars. The yen has appreciated relative to the dollar, and the dollar has depreciated relative to the yen (remember, this is only a comparison of Japan to the US). This means that Japanese goods are more expensive for US citizens, but US goods are less expensive for Japanese citizens. One possible result of this change is that Japanese citizens might start buying more US goods, since US goods are now less expensive for Japanese citizens.

**Example 2: Increase in net capital inflow.**

An increase in net capital inflow will affect the supply of yen ( $S_{FE}$ ) and cause this curve to shift rightward as more Japanese citizens are investing in the US (i.e. buying US capital) and must

trade their yen for our dollars in order to do that investing. All of these yen being provided to us in exchange for dollars causes the supply of yen to increase. When  $S_{FE}$  shifts to the right, we see a decrease in  $P_{FE}^*$  and an increase in  $Q_{FE}^*$ . Let's assume that this decrease in price involves moving from where  $P_{FE}^* = 2$  to where  $P_{FE}^{**} = 1$ . Prior to the shift, 1 yen could get 2 dollars, but after the shift, 1 yen could only get 1 dollar. The yen has depreciated relative to the dollar, and the dollar has appreciated relative to the yen. Japanese goods are becoming less expensive for US citizens, and US goods are becoming more expensive for Japanese citizens. Of course, after this change, we can assume that US citizens might start buying more Japanese goods, as Japanese goods are now less expensive for US citizens.