THE PRICE EFFECT (it is actually a COST effect because it changes the cost of production, thus affecting the SUPPLY of goods)

_with the case of a devaluation of £ ⇋ appreciation of US$|

With our example in Reading 9, we saw that the UK initially benefits with the devaluation of the £: the UK exports more (UK goods became cheaper) and imports less (US goods became more expensive). However, the UK still imports some goods from the US: either food or goods that are used as inputs in the UK production. If those inputs are more expensive, costs of production (and prices) in the UK increase, that is, inflation happens in the UK. On the other hand, there might occur a deflation in the US due to lower production costs (since imports of British inputs are cheaper).

As a result, inflation in the UK partially counterbalances the advantage that the UK has got with the devaluation of the exchange rate. With inflation in the UK, British goods become more expensive for US consumers, so UK exports decrease. On the other hand, US goods are cheaper due to the deflation in US, causing UK imports to increase.

__Upper Left:__ Since British firms use some US goods as inputs in the production, and US goods are more expensive after the $ appreciation, then costs of UK goods increase. Thus, supply of UK goods decreases (i.e., the supply of US imports decreases): the supply curve shifts up from $S'$ to $S''$.

__Upper Right:__ Since some of American firms are using UK inputs, it costs them less to produce after the £ devaluation. This means that the supply curve of US goods (and the supply of US exports) shifts down from $S$ to $S'$ (i.e., the supply increases).

__Lower Left:__ Since it is more expensive to produce in the UK, the supply of UK goods (and the supply of UK exports) shifts up from $S$ to $S'$ (i.e., the supply decreases).

__Lower Right:__ After the £ devaluation, it is cheaper to produce in the US because UK inputs used in the production are cheaper. Thus, supply of US goods (i.e., the supply of UK imports) increases: the supply curve shifts down from $S'$ to $S''$. 
THE INCOME EFFECT (it affects the DEMAND of goods)
[keep in mind that we are analyzing the case of a devaluation of \( \text{£} \) \( \Rightarrow \) appreciation of US$]

Take a look at the income = expenditure equilibrium equation:
\[
Y = C + I + G + X - M.
\]
As there is MPC and MPS, there also exists MPM (Marginal Propensity to Import = by how much imports change when income changes by $1). The above equation can be written as:
\[
Y = (C_0 +\text{MPC}\times Y) + I + G + X - (M_0 +\text{MPM}\times Y),
\]
where \( C_0 \)= autonomous consumption and \( M_0 \)=autonomous imports.

At first, from the UK side, devaluation of \( \text{£} \) induces the UK's Y to increase, because they will export more and import less. However, from this increase in Y, part will be spent on more imports (that is, as income increases in the UK, their imports from US also increases), counterbalancing the initial decrease in imports.
The opposite will happen in the US. Since it is cheaper to buy abroad after $ appreciation, Americans buy more goods from the UK, and less from their own production. This results in decreased production of US goods, that is, decreased US income. Thus, with less income, Americans will spend less on UK imports (their demand for UK goods decreases).

Upper Left: Appreciation of US$ implies that X decreases, while M increases in the US => Y decreases. With lowered income, Americans demand less imports from the UK (from D to D').
Upper Right: Income increases in the UK, increasing the demand for goods from the US (from D' to D'', i.e., they will demand more US exports).
Lower Left: Demand for UK goods decreases (from D' to D'') because income of Americans decreased (i.e., Americans want less UK exports).
Lower Right: Since income increased in the UK, they demand more goods from the US (from D to D').