

Importance of the Assumptions in the Heckscher-Ohlin (H-O) Theorem

The Heckscher-Ohlin (H-O) model occupies a very important place among the theories of international trade, as it demonstrates that, **under certain assumptions**, a **difference in factor abundance** between two countries will **be sufficient to create profitable trade opportunities for both**, even in the **absence of any difference in technology or productivity**. Clearly, if such a remarkable result is to be **guaranteed** when (and only when) certain conditions prevail, then those conditions (assumptions) must be very important in the context of the model. So let us first specify the assumptions of the H-O model. After that, we shall see as to why those 'crucial' assumptions are, after all, crucial.

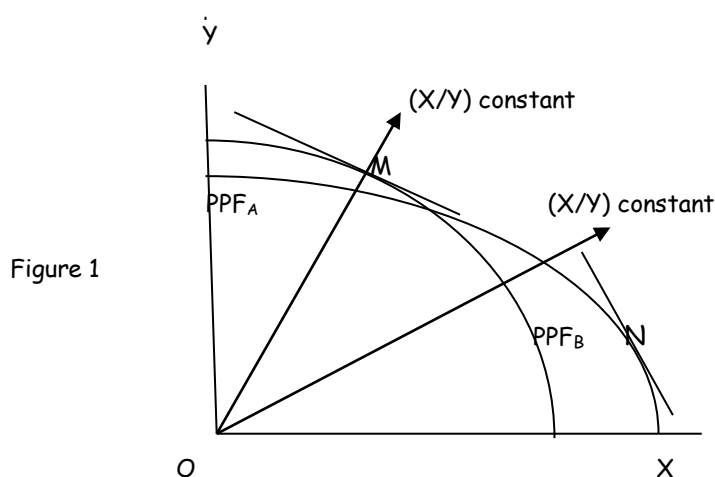
Assumptions

1. There are only two nations (say, A & B) with two goods for trade (say, X and Y) and two factors of production (capital and labour). Say, A is labour abundant and B is capital abundant.
2. For producing the goods, both nations use the same technology and they use uniform factors of production.
3. In both countries, the same good (say, X) is always labour intensive while the other (Y) is always capital intensive. Thus, there is **absence of factor intensity reversal**.
4. **The tastes and preferences of both nations are same and homothetic**
5. **In both nations, the assumption of constant returns to scale is applicable for the production of both X and Y.**
6. In both nations, specialization in production is not complete.
7. Goods and factor markets in both nations are perfectly competitive.
8. There exists perfect mobility of factors of production within each country though international mobility is not possible. So, A (B) always remains labour (capital) abundant, i.e. $(L/K)^A > (L/K)^B$
9. There are no restrictions or limitations to the free flow of international trade.
10. It is assumed that there exists full employment of all resources in both nations.
11. The exports and imports between the nations are balanced. It means that the total value of the exports will be equal to the total value of imports in both nations.

We have underlined above the assumptions which are specifically important for the validity of the H-O theorem. Let us briefly discuss their significance.

Firstly, if the factor intensity of production changes, the theorem cannot be considered valid, as a good may be both labour-intensive and capital-intensive at different factor price ratios. In that case, the basic premise of the theorem breaks down (assumption 3).

Secondly, homothetic and identical tastes ensure that the pre-trade equilibrium in each of the two countries occurs at a point on the relevant PPF such that (P_X / P_Y) is lower (higher) in the labour (capital) abundant country. This is the demand side of the H-O theorem (assumption 4). The figure below captures the importance of this assumption.



The assumptions of identical and CRS production functions (assumptions 2 and 5) in the two countries ensure that for along the same (X/Y) ratio, slope of PPF_A is always lower than that of PPF_B . Two rays have been drawn to highlight this property. However, these supply side assumptions DOES NOT ENSURE the validity of the H-O theorem. Unless we make some assumptions about tastes and preference (the demand side) as mentioned above, we may have pre-trade equilibrium at N in country A and M in country B. In that case, pre-trade (P_X / P_Y) will be lower (higher) in the capital (labour) abundant country. In that case, the H-O theorem breaks down.

Assumptions 8 and 10 are also supply side assumptions. Assumption 8 ensures that country A (B) always remains labour (capital) abundant, i.e. $(L/K)^A > (L/K)^B$ [we are using the physical definition of abundance]. Assumption 10 ensures that production and pre-trade equilibrium take place somewhere on the frontier of the PPF, and NOT INSIDE IT.

This concludes our discussion on the importance of the assumptions in the context of the H-O framework.