

Chapter 6

THE CAUSES OF INTERNATIONAL TRADE

6.1 The no-trade model

In the previous chapter, we emphasized that countries gain from trade by importing what is relatively costly to produce at home and by exporting what is produced relatively cheaply (efficiently) at home. But what are the underlying characteristics of an economy that give it its pattern of comparative advantage? Part II of this book, comprising Chapters 6-13, turns to this question. Chapters 7-10 examine alternative sources of *differences* between countries that can give rise to trade. Chapters 11 and 12 focus on scale economies and imperfect competition, which can give rise to trade even between identical economies. Part II of the book is thus concerned with the determinants of the *direction of trade*: what determines the pattern of imports and exports by particular countries.

In fact, the trade of any country is a complex outcome of many causes all operating at the same time. There is in general no single cause of trade, but in order to understand the overall picture, we need to study how each possible cause of trade operates. A convenient method of examining the causes of trade is to begin by imagining a world in which there is no trade. In terms of our simple model, this would be true if all autarky price ratios were identical, and there were no scale economies. Thus we begin by imagining a situation in which all countries have identical, convex production sets, and where the same set of community indifference curves prevails in all countries. We are thus assuming that all countries can be represented by the situation of Figure 6. 1.

Figure 6.1

What assumptions are sufficient in order that the demand and supply situations in all countries be identical? On the demand side it is sufficient to assume that identical and homogeneous tastes exist throughout the world. On the production side it was found that three things determine the position and shape of the production possibility curve - technology, returns to scale, and factor endowments. Thus to achieve identical production possibility curves in all countries, it is clearly sufficient to assume that all countries have the same constant-returns production functions and that all countries have the same factor endowments.

These assumptions will give the same aggregate demand and supply relationships in all countries, but there is one further restriction that we must impose. We are seeking conditions such that commodity price ratios will be the same in all countries, and this will only be the case if commodity prices are determined by aggregate demand and supply. We must, in other words, ensure that equilibrium prices are determined by the tangency between the highest community indifference curve and the production possibility curve as shown in Figure 6.1, and to ensure this we assume that there are no distortions, in the model. Distortions include taxes, subsidies, and imperfect competition. We can thus write down a set of five conditions that are jointly sufficient to guarantee the no-trade situation. These are:

1. Identical production functions among countries
2. The same relative endowments in all countries
3. Constant returns to scale
4. Identical and homogeneous tastes in all countries
5. No distortions (e.g., taxes, subsidies, imperfect competition)

While these five conditions are sufficient to imply that there will be no trade, there are obviously many other models that could be invented in which autarky prices would be identical so that no trade would take place. In other words, while these assumptions are sufficient for no trade, they are by no means necessary. This is illustrated in Figure 6.2, where HH' and FF' are the production frontiers for

countries h and f , respectively. Production conditions are clearly different in the two countries, with h producing relatively more X_2 and f relatively more X_1 at any common price ratio. Demand conditions also differ, however, and in the situation shown the differences in demand just offset the production conditions, leaving autarky prices identical.

Figure 6.2

These five conditions are important not simply because they describe a world in which there will be no trade, for such a situation is clearly not of much interest, but because they summarize the various things that can *cause* trade. If four of the five conditions hold, in other words, then the relaxation of the fifth will give rise to a situation in which trade will be possible. These five conditions can thus be thought of as the five broadly defined determinants of, or *bases* for trade.

6.2 Methodology

The relaxation of any one of the five assumptions listed could give rise to a situation in which international trade could take place. The approach that will be employed will be to relax each of the assumptions in turn, maintaining all four of the others, and to examine the implications for international trade. For example, to examine the implications of factor-endowment differences, it will be assumed that while preferences are identical and homogeneous across countries, all countries have the same production functions, that these production functions exhibit constant returns to scale, that endowments are proportional in all countries, and that there are no distortions in the model.

At this stage of the analysis, then, the question of whether the model is "realistic" is not a relevant one, for no claim has been made about its predictive powers. In each of the models developed in subsequent chapters, the strict assumptions made are necessary in order to isolate the effects of the particular determinant being examined. The assumptions of no distortions, of identical production functions, and so on, are made, not as descriptions of the real world, but simply as a methodological device to allow individual determinants to be considered in isolation.

While the question of realism is not relevant for the kind of *theoretical* experiments that we have just described, it is of course the principal focus of *empirical* analysis. If one is interested in empirical tests of trade models, one will be faced with the question of what assumptions are appropriate for a model used to explain real-world trade flows. If the implications of the various determinants of trade models are different, then ideally we would wish to include any variable which could cause trade. In practice, of course, some simplification will be necessary, and it will be very much up to the investigator to decide which of the variables he thinks are important and which are not, and how the model is to be constructed.

To make this last point a bit more strongly, it is reasonable to believe that *none* of conditions 1-5 hold between any two countries in the world (although in some cases, a condition would be "close" to holding). In examining the characteristics of North America versus the European Union versus Africa, for example, we would find that the US and Canada had a higher ratio of land endowment to labor endowment relative to Europe. North America and Europe have higher endowments of physical and human capital relative to unskilled labor when compared to Africa, and would have superior technology as well. We would find that many important industries such as aircraft, autos, and chemicals had strong scale economies. We would find that tastes differ across countries, and that they are far from homogeneous in any country (e.g., the share of income spent on food declines steadily with per capita income). Countries have tax systems that differ significantly from one another, and many industries are characterized by small numbers of firms and significant imperfect competition (generally those industries with strong scale economies).

The assumption that two countries have only one basis for trade (only one of conditions 1-5 fails to hold) is made for the purposes of understanding that basis' individual contributions to determining trade. It is the job of empirical analysis to determine the quantitative importance of the five bases for trade.

As a final point, we should emphasize that theories of trade based the relaxation of one of the five factors identified above are not conflicting theories. It is not the case, as it might be in physics for example, that if one theory is true then the others must be false. All of these factors surely contribute in some positive measure to actual trade. The empirical question is thus not which are true and which are false, the question is how much does each basis contribute to total trade.

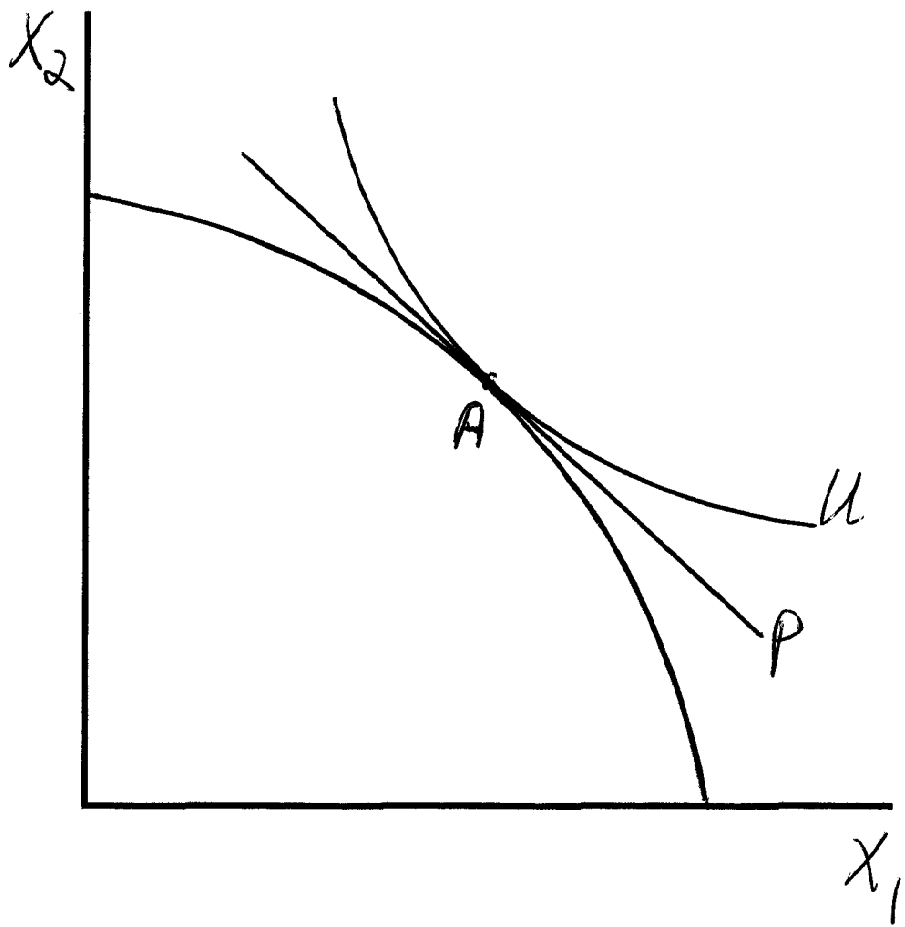


Figure 6.1

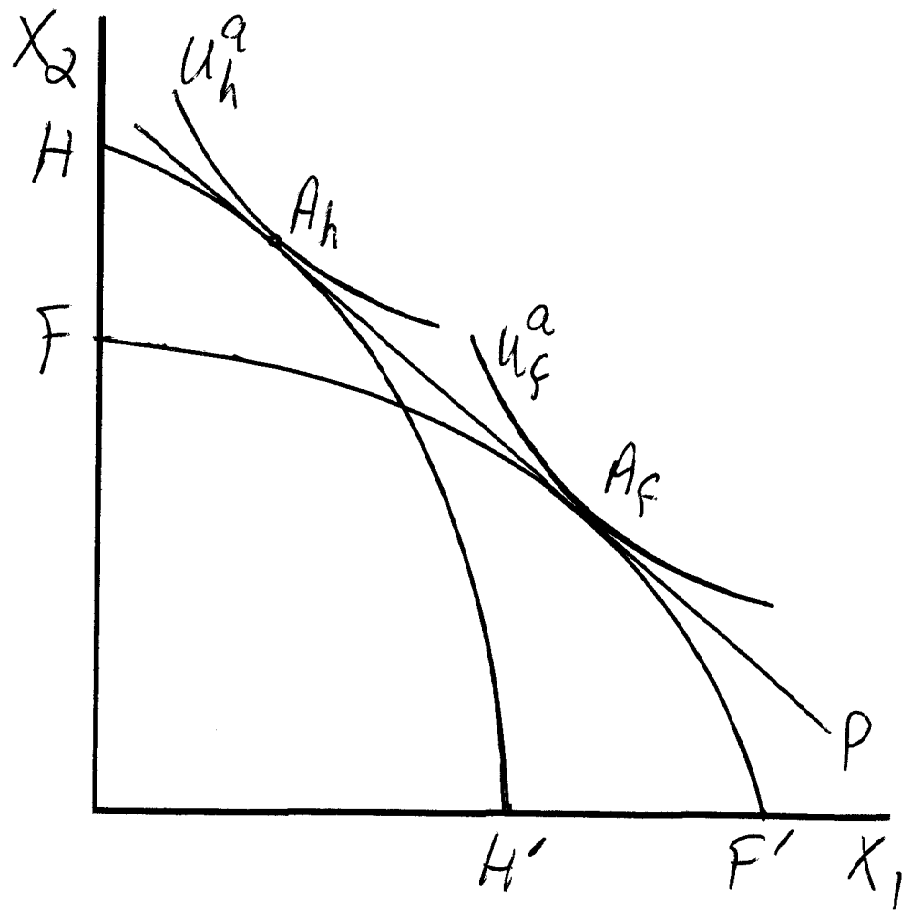


Figure 6.2