

International Transfers of Income and the Terms of Trade

In this appendix, we describe how large international **transfers of income** can generate substantial changes in the terms of trade for the donor and recipient countries.

In the past, large transfers of income between nations occurred in the aftermath of wars. Germany demanded a payment from France after the latter's defeat in the Franco-Prussian war of 1871; after World War I the victorious Allies demanded large reparations from Germany (which mostly were never paid). After World War II, the United States provided aid to defeated Japan and Germany as well as to its wartime allies to help them rebuild. Since the 1950s, advanced countries have provided aid to poorer nations, although the sums have made a major contribution to the incomes of only a few of the very poorest countries.

International loans are not strictly transfers of income, since the current transfer of spending power that a loan implies comes with an obligation to repay it later. In the short run, however, the economic effects of a sum of money given outright to a nation and the same sum lent to that nation are similar. Thus an analysis of international income transfers is also useful in understanding the effects of international loans.

The Transfer Problem

The issue of how international transfers affect the terms of trade was raised in a famous debate between two great economists, Bertil Ohlin (one of the originators of the factor-proportions theory of trade) and John Maynard Keynes. The subject of the debate was the reparations demanded of Germany after World War I, and the question was how much of a burden these payments represented to the German economy.¹

Keynes, who made a forceful case that the vengeful terms of the Allies (the “Carthaginian peace”) were too harsh, argued that the monetary sums being demanded were an understatement of the true burden on Germany. He pointed out that to pay money to other countries, Germany would have to export more and import less. To do this, he argued, Germany would have to make its exports cheaper relative to its imports. The resulting worsening of Germany's terms of trade would add an excess burden to the direct burden of the payment.

Ohlin questioned whether Keynes was right in assuming that Germany's terms of trade would worsen. He counterargued that when Germany raised taxes to finance its reparations, its demand for foreign goods would automatically decrease. At the same time, the reparation payment would be distributed in other countries in the form of reduced taxes or increased government spending, and some of the resulting increased foreign demand would be for German exports. Thus Germany might be able to reduce imports and increase exports without having its terms of trade worsen.

In the particular case in dispute, the debate turned out to be beside the point: In the end, Germany paid very little of its reparations. The issue of the terms of trade effects of a transfer, however, arises in a surprisingly wide variety of contexts in international economics.

¹See Keynes, “The German Transfer Problem” and Ohlin, “The German Transfer Problem: A Discussion,” both in *Economic Journal* 39 (1929), pp. 1–7 and pp. 172–182, respectively.

Effects of a Transfer on the Terms of Trade

If Home makes a transfer of some of its income to Foreign, Home's income is reduced, and it must reduce its expenditure. Correspondingly, Foreign increases its expenditure. This shift in the national division of world spending may lead to a shift in world relative demand and thus affect the terms of trade.

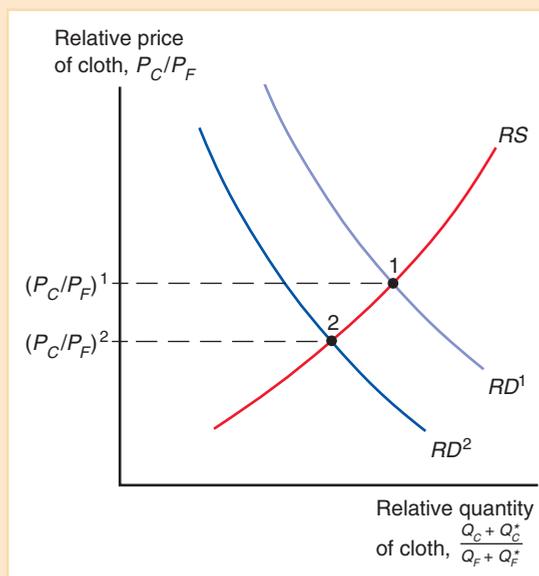
The shift in the RD curve (if it occurs) is the only effect of a transfer of income. The RS curve does not shift. As long as only income is being transferred, and not physical resources like capital equipment, the production of cloth and food for any given relative price will not change in either country. Thus the transfer problem is a purely demand-side issue.

The RD curve does not necessarily shift when world income is redistributed, however (this was Ohlin's point). If Foreign allocates its extra income between cloth and food in the same proportions that Home reduces its spending, then *world* spending on cloth and food will not change. The RD curve will not shift, and there will be no terms of trade effect.

If the two countries do not allocate their change in spending in the same proportions, however, there will be a terms of trade effect; the direction of the effect will depend on the difference in Home and Foreign spending patterns. Suppose that Home allocates a higher proportion of a marginal shift in expenditure to cloth than Foreign does. That is, Home has a higher **marginal propensity to spend** on cloth than Foreign. (Correspondingly, Home in this case must have a lower marginal propensity to spend on food.) Then at any given relative price, Home's transfer payment to Foreign reduces demand for cloth and increases demand for food. In this case the RD curve shifts to the left, from RD^1 to RD^2 (Figure 1) and equilibrium shifts from point 1 to point 2. This shift lowers the relative price of cloth from $(P_C/P_F)^1$ to $(P_C/P_F)^2$, worsening Home's terms of trade (because it exports cloth) while improving Foreign's. This is the case that Keynes described: The indirect effect of an international transfer on terms of trade reinforces its original effect on the incomes of the two countries.

FIGURE 1
Free Trade Equilibrium for a Small Country

The country produces at the point on its production frontier that is tangent to a line whose slope equals relative prices, and it consumes at the point on the budget line tangent to the highest possible indifference curve.



There is, however, another possibility. If Home has a *lower* marginal propensity to spend on cloth, a transfer by Home to Foreign shifts the *RD* curve right, and improves Home's terms of trade at Foreign's expense. This effect offsets both the negative effect on Home's income and the positive effect on Foreign's income.

In general, then, a transfer worsens the donor's terms of trade if the donor has a higher marginal propensity to spend on its export good than the recipient. If the donor has a lower marginal propensity to spend on its export, its terms of trade will actually improve.

A paradoxical possibility is implied by this analysis. A transfer payment—say foreign aid—could conceivably improve the donor's terms of trade so much that it leaves the donor better off and the recipient worse off. In this case it is definitely better to give than to receive! Some theoretical work has shown that this paradox, like the case of immiserizing growth, is possible in a rigorously specified model. The conditions are, however, even more stringent than those for immiserizing growth, and this possibility is almost surely purely theoretical.²

This analysis shows that the terms of trade effects of reparations and foreign aid can go either way. Thus Ohlin was right about the general principle. Many would still argue, however, that Keynes was right in suggesting that there is a presumption that transfers cause terms of trade effects that reinforce their effects on the incomes of donors and recipients.

Presumptions About the Terms of Trade Effects of Transfers

A transfer will worsen the donor's terms of trade if the donor has a higher marginal propensity to spend on its export good than the recipient. If differences in marginal propensities to spend were simply a matter of differences in taste, there would be no presumption either way: Which good a country exports depends for the most part on differences in technology or resources, which need have nothing to do with tastes. When we look at actual spending patterns, however, each country seems to have a relative preference for its own goods. The United States, for example, produces only about 25 percent of the value of output of the world's market economies, so that total sales of U.S. goods are 25 percent of world sales. If spending patterns were the same everywhere, the United States would spend only 25 percent of its income on U.S. products. In fact, imports are only 15 percent of national income; that is, the United States spends 85 percent of its income domestically. On the other hand, the rest of the world spends only about 9 percent of its income on U.S. products. This difference in spending patterns certainly suggests that if the United States were to transfer some of its income to foreigners, the relative demand for U.S. goods would fall and the U.S. terms of trade would decline, just as Keynes argued.

The United States spends so much of its income at home because of barriers to trade, both natural and artificial. Transportation costs, tariffs (taxes on imports), and import quotas (government regulations that limit the quantity of imports) cause residents of each country to buy a variety of goods and services at home rather than import them from abroad. As we noted in Chapter 3 of *International Economics and International Trade*, the effect of such barriers to trade is to create a set of nontraded goods. Even if every country were to divide its income among different goods in the

²For examples of how an immiserizing transfer might occur, see Graciela Chichilnisky, "Basic Goods, the Effects of Commodity Transfers and the International Economic Order," *Journal of Development Economics* 7 (1980), pp. 505–519; and Jagdish Bhagwati, Richard Brecher, and Talsuo Hatta, "The Generalized Theory of Transfers and Welfare," *American Economic Review* 73 (1983), pp. 606–618.

same proportions, local purchases of nontraded goods would ensure that spending has a national bias.

Consider the following example. Suppose that there are not two but *three* goods: cloth, food, and haircuts. Only Home produces cloth; only Foreign produces food. Haircuts, however, are a nontraded good that each country produces for itself. Each country spends one-third of its income on each good. Even though these countries have the same tastes, each of them spends two-thirds of its income domestically and only one-third on imports.

Nontraded goods can give rise to what looks like a national preference for all goods produced domestically. But to analyze the effects of a transfer on the terms of trade, we need to know what happens to the supply and demand for *exports*. Here the crucial point is that a country's nontraded goods compete with exports for resources. A transfer of income from the United States to the rest of the world lowers the demand for nontraded goods in the United States, releasing resources that can be used to produce U.S. exports. As a result, the supply of U.S. exports rises. At the same time, the transfer of income from the United States to the rest of the world increases the rest of the world's demand for nontraded goods because some of that income is spent on haircuts and other nontradables. The increase in the demand for nontraded goods in the rest of the world draws foreign resources away from exports and reduces the supply of foreign exports (which are U.S. imports). The result is that a transfer by the United States to other countries may lower the price of U.S. exports relative to foreign, worsening U.S. terms of trade.

Demand shifts also cause resources to move between the nontraded and import-competing sectors. As a practical matter, however, most international economists believe that the effect of barriers to trade *is* to validate the presumption that an international transfer of income worsens the donor's terms of trade. Thus, Keynes was right in practice.