ECONOMIC ASSISTANCE THROUGH A TRANSFER OF GAINS FROM TRADE: A NOTE

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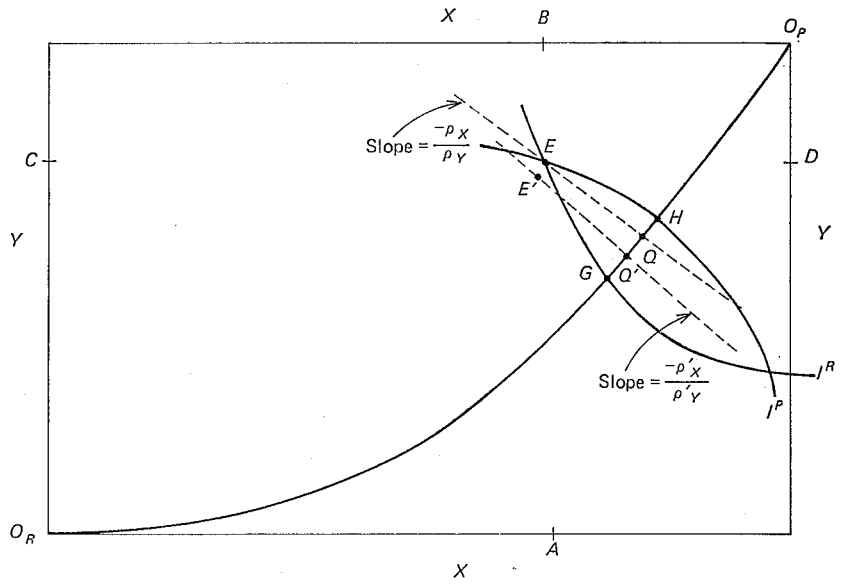
TO BEGIN with, it is important to agree on what is meant by foreign aid or economic assistance. The short answer is that it consists of explicit transfers of real resources to less developed countries on concessional terms. Unless the resource transfer involves to some degree more favourable terms than those available commercially there is no "gift" element involved. "Fair exchange is no loss" but neither is it a gain beyond what is involved in a private business transaction. [1, p. 7]

It is more a matter of ignorance—a failure to comprehend the inhuman conditions that characterize the lives of hundreds of millions of people in the developing countries, a failure to grasp how severe the maldistribution of income actually is between rich nations and poor nations, and a failure to understand how modest are the amounts of the wealthy nations' incremental income which, if made available to the developing countries, would make so great a difference in their ability to meet minimal growth objectives. [2, p. 76]

The quotations given above emphasize three aspects of foreign aid programs. First, aid is concessional. It is not related to the gains from trade available at the prevailing terms of trade. Second, any real effort to improve the well-being of humanity should include the transfer of resources from rich countries to poor countries. Third, perhaps a rule to determine the amount of assistance to be given to the less developed countries would assist in combating the ignorance surrounding the tradeoff between transferring resources and alleviating the misery of millions. McNamara himself suggests a rule based on the idea that the annual amount of foreign aid should equal some percentage of the average annual change in the income of wealthy nations. The object of this note is to offer a framework for determining the amount of resources that "could" be transferred from the rich to the poor countries.

This note is divided into two parts. First, we analyze an exchange economy consisting of rich and poor individuals. For this model we describe a procedure for transferring resources from the rich to the poor. This procedure is then applied in a two-country, two-commodity model of international trade to determine the magnitude of resources that might be *reasonably* transferred from the rich to the poor countries.

Fig. 1.



I. A RULE FOR TRANSFERRING RESOURCES FROM THE RICH TO THE POOR IN AN EXCHANGE ECONOMY

Consider an exchange economy consisting of two classes of equal size: a rich class and a poor class. Within each class, all members are identical with respect to endowment and preferences. Let R be the representative of the rich class and P be the representative from the poor class. There are two commodities, X and Y. As Figure 1 illustrates, R inherits O_RA units of X and O_RC units of Y, while P inherits O_PB units of X and O_PD units of Y. The endowment vector of R is strictly greater than that of P. E represents the initial endowment point in Figure 1.

Assume that both R and P have strictly convex indifference curves as represented by I^R and I^P in Figure 1. These curves are drawn through the initial endowment point E. The rich man and poor man will trade into the lens-shaped area which is the intersection of the set of bundles that R either prefers or is indifferent toward relative to his initial bundle and the analogous set for P. The set of Pareto optima is shown by the contract locus O_RO_P and the core by the locus GH.

Given E, the multilateral exchange of all members of society results in the relative price ρ_X/ρ_Y and the competitive equilibrium Q (see Figure 1). At point Q, both individuals are better off than at the endowment point E.

Assume that the government decides to alter the "competitive results" because it believes that the distribution of commodities after competitive exchange is unfair, largely due to the initial endowment point.[1] In this example, the govern-

[1] This endowment point may be regarded as unfair in terms of the following definition of

ment's belief concerning the unfairness of point Q may seem reasonable to the reader because at Q, R's consumption of X and Y is strictly greater than P's consumption of X and Y. Our analysis is not restricted to such situations, and depends only on the government's decision to intervene due to the unfairness of the consumption allocation of commodities.

If the government's objective is to increase the welfare of the poor class subject to the constraint that each rich individual must maintain at least the welfare associated with his initial endowment, then the government may offer R the option of either remaining at E with the government price control or paying a lump-sum tax for the right to free trade. As long as the lump-sum tax is not associated with a new endowment point which leads to a competitive equilibrium between O_R and G (see Figure 1), then R would choose to pay the lump-sum tax. In Figure 1, the lump-sum tax moves the endowment from E to E', and the competitive equilibrium shifts from Q to Q'. At Q', R is better off than at E and P is better off than at E or Q. Movement from one competitive equilibrium, Q, to another, Q', is generally possible only via lump-sum transfers. Moreover, only at competitive equilibria does R's ratio of marginal utilities equal P's ratio of marginal utilities and equal the price ratio.

Given the above procedure we can answer the question: what is the best that can be done for the poor man, given the assumption that the initial welfare level of the rich cannot be changed. Our answer is that this is represented by point G in Figure 1. In other words we wish to obtain a solution at point G rather than at point Q. This implies that we transfer the gains from trade of the rich man to the poor man. Note that this point lies on the contract curve and is the best position that can be attained for the poor man under our constraints. As pointed out by Bhagwati point G will not *necessarily* be attained by operation of market forces, hence the need for aid and market intervention [1].

Many governments do intervene in markets for essential commodities in order to assist the poor. Such intervention often takes the form of selling a commodity at a "fair price" and in a fixed quantity. For example in India, commodities such as wheat, sugar, and rice are sold at fair price shops in rationed quantities. This type of intervention reflects an attempt by the government to correct the underlying distribution of income which partly results in a competitive price for essential goods and services that is exceedingly high for the poor. At competitive prices, the poor may not be able to buy the essential commodities in adequate quantities. Despite the widespread existence of fair price shops in less developed countries, we have not come across any theoretical papers in development economics which deal with the welfare rationale for fair prices. This note provides some rationale for intervention given the constraint that income distribution cannot be altered in a significant way.

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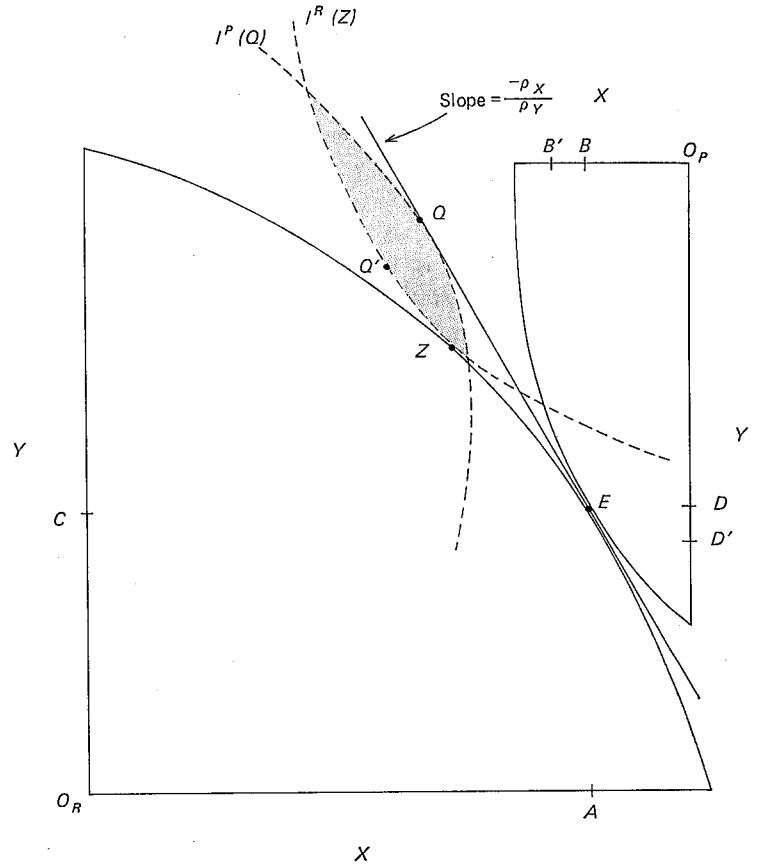
an *equitable allocation*: the poor man prefers the endowment of the rich man to his own, but the rich man prefers his endowment to that of the poor man. This definition is needed to rule out cases of trivial dominance of one vector over the other. The above definition is from Varian [3].

Fig. 2.



II. AN APPLICATION TO INTERNATIONAL TRADE

In this section, we apply the rationale developed in Section I to a model of international trade that includes production. For this purpose we use the standard, Heckscher-Ohlin two-country, two-factor, two-commodity model of international trade. Country R, the rich country, is assumed to be capital abundant and country P, the poor country, labor abundant. The rich country is defined to be one which has the capacity to produce more of both commodities, namely, X and Y at all commodity and factor prices. Commodity X is assumed to be capital-intensive.

In Figure 2, the world market price ratio is represented by the line with slope $-p_X/p_Y$. Production in both countries occurs at the point of tangency between the production possibility frontier and the relative world market prices (see point E). R produces O_RA units of X and O_RC units of Y, while P produces O_PB units of X and O_PD units of Y. Consumption levels are calculated relative to the free trade equilibrium point Q, the point at which the slope of the social indiffer-

ence curves equal $-p_X/p_Y$. The rich country exports X, its capital-intensive commodity and imports Y, its labor-intensive commodity.

Suppose the government of R to P agree to the following framework for a lump-sum transfer from R to P: the population of R is given the choice of either not trading with P or transferring a lump-sum amount to P and having the opportunity to trade with P. Under what conditions will the population of R (assuming that its welfare is based solely on its own consumption) choose to make the lump-sum transfer to P?

Returning to Figure 2, note that Z is the autarky point and $I^R(Z)$ is the rich country's indifference curve which is tangential to Z. If the population of R chooses to make a lump-sum transfer to P, then R's welfare at the "lump-sum adjusted" free-trade equilibrium must be on or above $I^R(Z)$. Any lump-sum transfer to P would increase P's welfare, so that "lump-sum adjusted" free-trade equilibrium must also lie below $I^P(Q)$, P's indifference curve which intersects Q (the original free-trade equilibrium). Thus, the shaded area in Figure 2 represents the area within which a "lump-sum adjusted" equilibrium would appear. The best that can be done for the poor country is to move it to point Q' through an appropriate aid scheme.

In conclusion, the idea that economic assistance could be based on transferring some portion of gains from trade from the rich to the poor has been applied to an exchange economy and to a model of international trade that includes production. Both cases rely on a difference in preferences and authority—either between the government and the rich class or between the rich country's government and the rich country's population—to reach the situation in which the rich are forced to face the issue of transferring part of their gains from trade to the poor.

REFERENCES

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3. VARIAN, H. R. *Microeconomic Analysis* (New York: Norton, 1978).