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OPTIMAL POLICIES AND IMMISERIZING GROWTH

by

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Number 34

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The views expressed in this paper are the author's sole responsibility, and do not reflect those of the Department of Economics, nor of the Massachusetts Institute of Technology.

## OPTIMAL POLICIES AND IMMISERIZING GROWTH

In 1958 [2], I analysed the paradoxical case of "immiserizing growth" where a country, with monopoly power in trade, found that the growth-induced deterioration in its terms of trade implied a sufficiently large loss of welfare to outweigh the primary gain from growth.<sup>1</sup> An obvious corollary of this proposition was that, if the country imposed an optimum tariff (either in both the pre-growth and the post-growth situations, or in the latter situation alone), this paradox would be eliminated.

James Melvin, in an interesting note [4], has now produced yet another analysis of immiserizing growth, where demand differences of the factor-intensity-reversals type are combined with international identity of production possibilities and growth therein to yield immiserization (for one of the two countries) which cannot be eliminated by the imposition of an optimum tariff (by the country experiencing immiserizing growth).<sup>2</sup>

This paradox, in a world of paradoxes, is, however, readily resolved. It can be easily shown that the Bhagwati and Melvin examples of immiserizing growth belong to two quite different generic types; and that each, in turn, can be generalized to a different family of immiserizing-growth possibilities. The former type can be eliminated by the introduction of optimal policies; the latter cannot.

## I: Distortions and Immiserizing Growth

The original Bhagwati immiserizing growth phenomenon belongs to the class of cases where a welfare-reducing distortion in the economy is the cause of the immiseration. The essential point involved is that the "gain which would accrue from growth, if optimal policies were followed, is outweighed by the incremental loss of real income which the distortion imposes in the post-growth situation vis-a-vis the pre-growth situation"[2].

In the original Bhagwati example, the gains from growth are outweighed by the loss from worsened terms of trade: here the welfare-reducing distortion is endogenous and foreign: the foreign prices are not equal to the marginal rate of transformation through trade. Harry Johnson [3] has recently produced another example, where the country has no monopoly power in trade but imposes a (welfare-reducing) tariff. In this case, the possibility of immiserizing growth arises if growth is ultra-biased in favour of producing the importable: here the distortion which involves immiseration is policy-imposed.<sup>3</sup> I have subsequently produced two more examples of immiserizing growth [2], to underline and illustrate the general proposition that immiserizing growth can arise under any kind of distortion, whether endogenous or policy-imposed: (1) first, where the endogenous distortion involves an imperfect factor market, taking the shape of a distortionary wage differential; and (2) second, where the endogenous distortion is foreign, involving monopoly power in trade, and where the country has an optimal tariff in the pre-growth situation but this (unchanged) tariff becomes sub-optimal in the post-growth situation.

From the general theory of immiserizing growth, arising from distortions,

it is furthermore clear that the removal of a policy-imposed distortion (e.g. removal of the tariff in Johnson's case), or optimal policy intervention to eliminate the welfare-reducing effects of the distortion (e.g. the adoption of a suitable, optimal tariff policy in the original Bhagwati case, or the adoption of a suitable factor-use tax-cum-subsidy policy in the case involving a distortionary wage differential) will eliminate the possibility of immiserizing growth altogether: immiserizing growth can occur only insofar as there is a loss involved in departing from full optimality and insofar as such loss increases in the post-growth situation.

## II: Exogenous Reduction in Gains from Trade and Immiserizing Growth

Consider, however, the case where growth in one country is simultaneously accompanied by growth elsewhere (i.e. the rest-of-the-world). As soon as we change the scenario thus, we are landed with the distinct, and quite unparadoxical, possibility that the primary gain from growth, defined at an unchanged foreign offer curve facing one country, and assuming that optimal policies are followed in the pre-growth and post-growth situations, would be outweighed by the reduction in gain from trade brought about by the shift in the foreign offer curve facing the country (resulting from growth abroad). It is clear in such an eventuality that the resulting immiseration accrues really from the fact of an exogenous reduction in the gains from trade, obtaining despite the pursuit of optimal policies.

Such a possibility is illustrated most simply with respect to a country with neither monopoly power in trade nor domestic distortions. Remember that,



for such a country, free trade is clearly the optimal policy. In Figure (1), the pre-growth situation is depicted by the production possibility curve  $A_1B_1$ , the free-trade production and consumption levels by  $P_1$  and  $C_1$  respectively, the given foreign price by  $F_1$  and the welfare level by  $U_1$ . If growth were to take place at a constant foreign offer (i.e. at constant  $F_1$ ), then the optimal free-trade policy will imply improvement in welfare at hypothetical level  $U_H$ , the post-growth production possibility curve being  $A_2B_2$ . However, if we now also assume that the foreign offer curve shifts from  $F_1$  to  $F_2$ , production and consumption in the post-growth equilibrium will shift to  $P_2$  and  $C_2$  respectively and the welfare level will reduce to  $U_1$ .<sup>4</sup> The gains from trade will have reduced to wipe out the primary gain from growth (at an unchanged foreign offer curve). This is the borderline case. If the foreign offer had deteriorated any further, the post-growth equilibrium would have shown immiseration.

This analysis could be readily extended to the case where a country has monopoly power in trade in both the pre-growth and post-growth situations. Immiserizing growth for a country would occur, in this instance, if the primary gain in growth, at unchanged foreign offer curve and assuming optimal policies before and after growth, were outweighed by the reduction in the gains from trade resulting from a shift in the foreign offer curve.<sup>5</sup> This could be illustrated simply by the use of the Baldwin-envelope technique.

The following observations may then be made about this class of immiserizing growth possibilities.

(1) Since the primary cause of the immiseration is the reduction in the gains from trade resulting from shifts in the foreign offer curve facing the country, even though optimal policies are being followed before and after

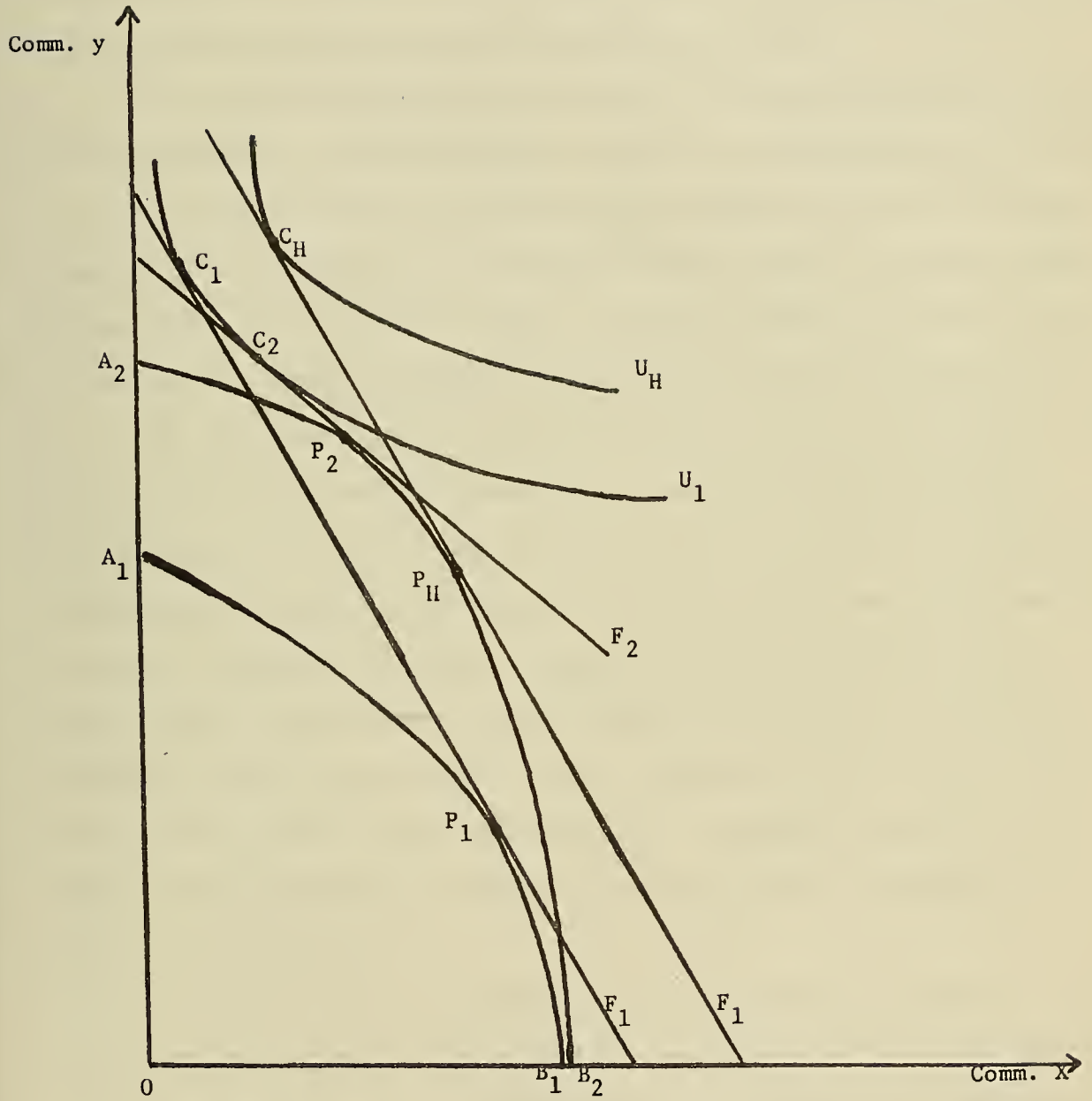


Figure (1)

growth, there is no possibility of devising policies to escape such immiseration. By contrast, the earlier class of immiserizing growth possibilities (Section I) arose precisely from the failure to pursue optimal policies and hence optimal policies could eliminate the immiserizing-growth paradox.

(2) It also follows that any number of such immiseration possibilities could be devised: aside from Melvin's example, we have another case in Figure (1). The required shift in the foreign offer curve may further be brought about by shifts in demand or in production abroad. While, therefore, demand differences play a key role in Melvin's specific example, they are not central to the argument leading to immiserizing growth in this general class of cases.

(3) The possibility of immiseration would obtain, in this class, even if we were to assume that the pre-growth situation was characterised by sub-optimality. In such a case, the reduction in the gains from trade, required to produce immiseration, would merely have to be larger than in the case where the initial pre-growth situation is optimal and hence characterised by a higher welfare level. Melvin's example relates to this kind of comparison: free trade, which is sub-optimal in view of monopoly power in trade, before growth; and an optimal policy after growth. In principle, one could also compare sub-optimal policies both before and after growth and equally well emerge with immiseration.

(4) Finally, note that growth can be immiserizing only insofar as the primary gain from growth is outweighed by the (exogenously) reduced gains from trade. Two corollaries follow immediately. (i) A shift in the foreign offer curve, which increases the gains from trade, cannot lead to immiseration. (ii) The primary gain from growth itself may be large enough to exceed and dominate the maximum feasible (exogenous) reduction in the gains from trade,

thus ruling out immiseration altogether. This is illustrated, for a country with monopoly power in trade, in Figure (2). Before trade, the production possibility curve is  $A_1B_1$ . The foreign offer curve facing the country is  $P_1C_1F$  and is superimposed on  $A_1B_1$  using Baldwin's technique. Figure (2) portrays an optimum tariff policy, with consumption at tariff-inclusive prices at  $C_1$ . The resulting welfare level is marked  $U_1$ . If then growth were to shift the production possibility curve out to  $A_2B_2$ , making it tangential at  $Q$  to the pre-growth utility curve, it would be impossible for the country to become worse off than before growth. Indeed, unless gains from trade were to be reduced to zero, the country would become better off than before growth. The possibility of immiserizing growth therefore will arise only insofar as growth is less than that defined by the shift of the production possibility curve to  $A_2B_2$ : this is the growth level which implies a primary gain from growth equal to the gains from trade before growth.

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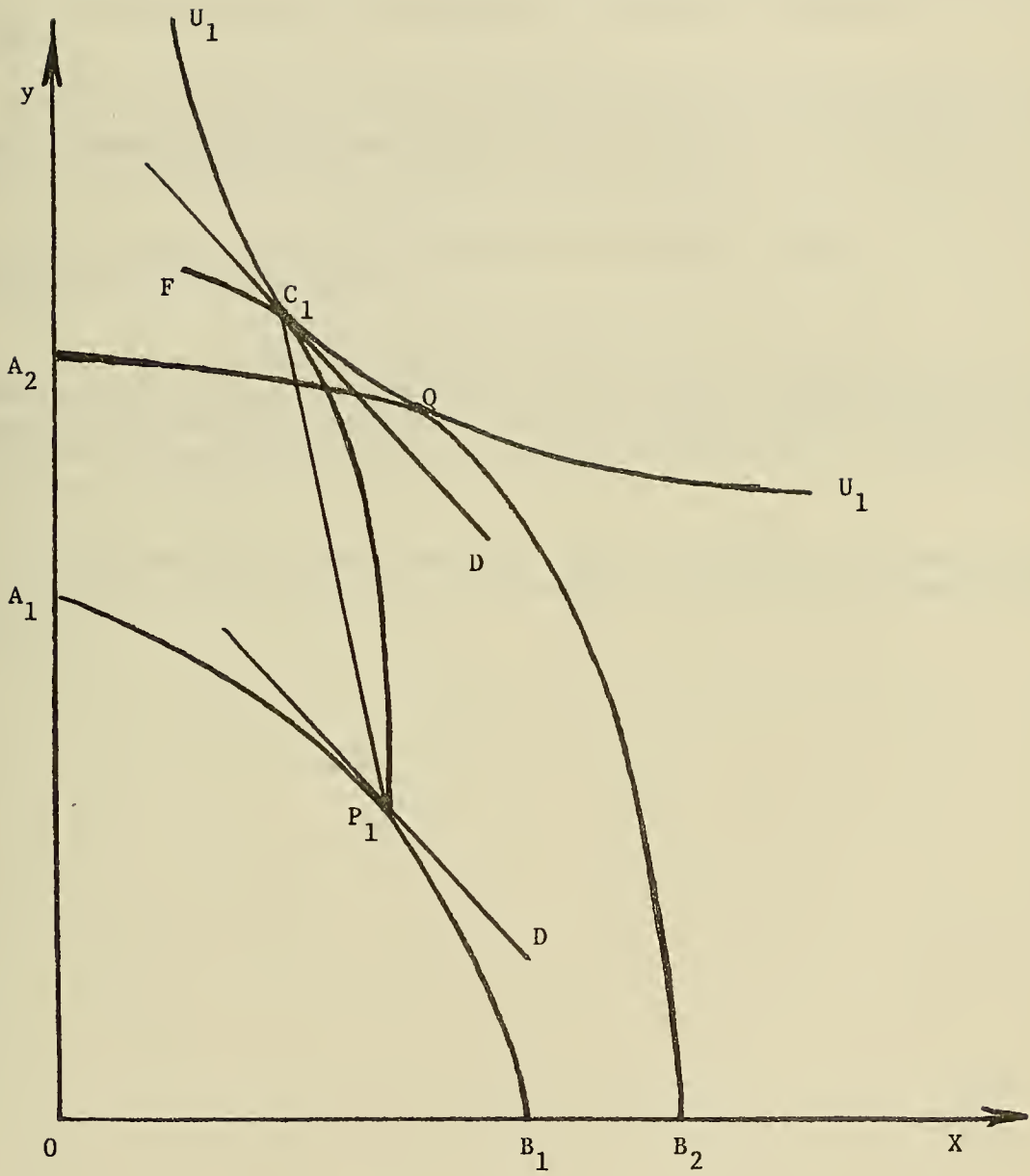


Figure (2)

## FOOTNOTES

<sup>1</sup>This possibility was also noted and analysed independently by Harry Johnson.

<sup>2</sup>Melvin's geometric analysis uses a case where each country's offer curve, if drawn, would be less than infinitely elastic, thus implying monopoly power in trade for the other country.

<sup>3</sup>Augustine Tan [5] has produced an alternative analysis of this case, subsequent to Johnson's paper.

<sup>4</sup>This example would be relevant if the rest-of-the-world was a Ricardian economy and its production possibility curve shifted outwards with bias in favour of the importable commodity. We would further have to assume that our country was operating on the straight-line segment of the foreign offer curve from the rest-of-the-world.

<sup>5</sup>The reduction in the gains from trade would have to be measured after the imposition of an optimal tariff relevant to the shifted, foreign offer curve.

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