A NOTE ON SECOND-BEST TRADE POLICY WHEN DOMESTIC DISTORTIONS EXIST

BY

G. T. RENSHAW

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Appropriate trade policies for a country in which the optimum production conditions do not prevail domestically have been considered by Habeler {1}, Hagen {2}, Bhagwati and Ramaswami {3}, and Johnson {4} but the conclusions are still sufficiently obscure to be worth clarifying.

The discussion here is confined to a two-commodity economy in which, for reasons fully discussed by these authors, the domestic market price ratio differs, by a constant proportion at every level of output, from the marginal rate of transformation. The "first-best " optimum policy is of course the elimination of this divergence between price and marginal cost, by taxing the production of one good and subsidising the production of the other. Here we assume this policy to be ruled out and ask what is the "second-best" optimum policy. The terms of trade are taken as given.

Habeler, Bhagwati and Ramaswami, and Johnson distinguish two subsets of possibilities, according to whether or not the "right" good is exported. The "right" good for export is identified by comparing the marginal rate of transportation under autarchy with the given terms of trade. In figure 1 the autarchy point is P, C with market price ratio MM and marginal rate of transformation RR. Because RR is steeper than the given terms of trade TT, the country's "true" comparative advantage may be said to lie in commodity y; but since MM is less steep than TT, the country in fact exports x under free trade, producing at P' and consuming at C'. The "wrong" good is exported.

Figure 1 is drawn so that C' lies on a lower indifference curve

than C, but could just have easily lain on a higher indifference curve. Thus, when the "wrong" good is exported, free trade may either raise or lower welfare, compared with autarchy; if free trade lowers welfare, a prohibitive tariff which eliminates all trade will restore welfare to its autarchy level.(1)

However, this does not furnish a valid argument for protection, despite the fact that a prohibitive tariff raises welfare (compared with free trade). Regardless of whether or not C' is inferior to C, the second best optimum policy is an export subsidy on y financed from general taxation, reversing the direction of trade and inducing production at some point such as P''', and consumption at some point such as C'''.(2) Welfare at C''' is higher than any feasible alternative other than C'', which would be reached under free trade (with production at P'') in the absence of the domestic distortion.

It may not be immediately obvious how points P''' and C''' are located. The terms of trade line TT acts as a budget constraint for the country, and both the production and consumption points must lie on it. The position of TT however can be varied by moving the production point along the transformation frontier, this being achieved by a tariff-subsidy policy which causes domestic market prices to differ from the terms of trade. An appropriate export subsidy on y will raise the domestic market price of y to the level given by the slope of M'M'. Production will

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(1) Habeler states that C' is necessarily inferior to C, and therefore that a prohibitive tariff will necessarily raise welfare above its free trade level. Bhagwati and Ramaswami point out this error, which arises from Habeler's refusal to make use of community indifference curves. See also Johnson, footnote 6.

(2) This possibility is referred to by Johnson (Footnote of page 203 in Bhagwati (ed.) "International Trade").

then take place at P'''. The country then trades from P''' along TT until it reaches C''', where the domestic market price line M''M'' is tangent to a community indifference curve. The vertical distance from P''' to C''' gives the cost of the subsidy in terms of y. The rate of subsidy is given by the ratio of slopes of M'M' and TT. If the subsidy rate were increased, P''' would move up the transformation curve, so that the country's budget constraint would shift outwards. But the higher subsidy rate would mean that M'M' (and therefore M''M'') would have a flatter slope. Consequently the new position of C''' might entail either a higher or a lower level of welfare than before; depending on the curvature of the indifference curves around C''' relative to the curvature of the transformation curve around P'''. In other words, the optimum second-best rate of subsidy is found by trading off the gains in productive efficiency which result from moving the production point towards the first-best optimum P'' against the consumption losses which result from the increased divergence between home and foreign prices which is necessary to produce this move.

Next, consider the subset of possibilities which arise when the "right" good is exported.(3) In figure 2 both the autarchy market price line MM and the autarchy MRT RR are steeper than TT so that the "right" good is exported and there is necessarily a welfare gain from free trade: C' necessarily lies on a higher indifference curve than C. But the distortion results in some loss of welfare since production is insufficiently specialised. Free trade without distortions would lead production to P'' and consumption to C''.

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(3) These cases are discussed by Habeler, footnote 23, (see especially footnote addendum in Caves & Johnson, op. cit) Bhagwati and Ramaswami, paragraph headed "Case II", and Johnson Section VI.

The second best optimum policy as advocated by Habeler, is an export (or import) subsidy giving production at P''' and consumption at C'''.(4) Bhagwati and Ramaswami criticise this conclusion of Habeler's, stating that "his conclusion than an export (or import) subsidy is indicated and would be preferable to a tariff is erroneous in every rigorous sense in which it may be understaood." Without proof, but merely by appeal to the general characteristics of a second best optimum situation, they argue instead that the second best optimum policy in this case may be either a subsidy, a tariff, or free trade.

Habeler took the opportunity to reply to this criticism by means of an addendum to footnote 23 when his article was reprinted in Caves and Johnson (eds.). He suggests there that Bhagwati and Ramaswami have confused this case with another situation (discussed below) and that his conclusion is therefore correct. With the aid of figure 2 we can come down on Habeler's side. Since a subsidy leads to production somewhere between P' and P'' (such as P''') and consumption to some point such as C''', a subsidy must be better than free trade which in turn is better than any tariff, the latter leading to production and consumption at points such as P* and C* respectively.

However, it does not follow that a subsidy is necessarily the optimum second best policy whenever the "right" good is exported in the presence of distortion of the market price ratio from the MRT. This is illustrated in figure 3 where y, the "right" good is exported since MM and

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(4) Habeler does not say so, but the optimum rate of subsidy would be obtained in the way described above. The difference between this case and the one considered above lies in the fact that in this case the direction of trade is not reversed. We know from Lerner's "symmetry" theorem ([5]) that it is immaterial whether exports or imports are subsidised.

and RR are both steeper than TT. Free trade leads production to P' and consumption to C'. As drawn, C' is on a higher indifference curve than C, but this is clearly not necessary. Compared with the undistorted free trade solution P'', C'', specialisation has gone too far and the second-best optimum policy is therefore a tariff leading to production at some point such as P''' and consumption at some point such as C'''. This situation is clearly the one Bhagwati and Ramaswami had in mind, as is suggested by Habeler in his supplementary footnote.

Summarizing the discussion so far, if the "wrong" good is exported free trade may involve a welfare loss or gain compared with autarchy. If there is a welfare loss, a prohibitive tariff will certainly raise welfare. But regardless of whether there is a welfare loss or gain compared with autarchy, the second-best optimum policy is a trade subsidy to produce the "right" pattern of trade. If the "right" good is exported, there are two cases according to whether specialisation in production proceeds too far or not far enough.(5) In the former case the second-best optimum policy is a tariff; in the latter, a trade subsidy. This latter case is the only situation in which we may be sure that free trade increases welfare compared with autarchy.

The criterion used so far to establish which is the "right" good to export follows that used by Habeler, Bhagwati and Ramaswami, and Johnson. (We shall call this the Habeler criterion). The criterion has the slightly odd consequence that a country may export the "wrong" good even after the

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(5) In Habeler's phrase, whether the country "overtrades" or "undertrades".

the domestic distortion is eliminated or neutralised by a domestic tax-cum-subsidy policy. This possibility results from defining the country's "true" comparative advantage by reference to its actual autarchy MRT rather than the autarchy MRT which would prevail in the absence of distortions. The distinction between these two criteria is illustrated in figure 4, where the Habeler criterion involves comparing RR with the terms of trade TT and thus shows a "true" comparative advantage in x, while the alternative criterion would involve comparing R'R' with TT ($\hat{P}$ $\hat{C}$ being the undistorted autarchy equilibrium) and shows a "true" comparative advantage in the export of y.

Undistorted free trade would result in production moving from $\hat{P}$ to P'', and consumption moving from $\hat{C}$ to C'', with y exported. Free trade subject to the distortion results in production moving from P to P', and consumption from C to C', again with y exported. The country thus exports the "wrong" good according to the Habeler criterion, but the "right" good according to the alternative criterion. A consequence is that the country continues to export the "wrong" good, according to the Habeler criterion, even after the distortion is eliminated. An example of this occurs in Bahagwati and Ramaswami's figure 1(c). Careful reading of the accompanying text reveals that the country's "true" comparative advantage is defined to lie in the export of manufactures. Yet in figure 1(c) because F' has been placed below P', the country continues to export agricultural products even after the domestic distortion has been neutralised. If instead F' had been placed above P', then with no other changes in the diagram or text, elimination of the distortion would have reversed the pattern of trade. Diligent study of footnotes 7 and 8 suggests that the authors are not entirely unaware of these two alternative and potentially confusing outcomes, but there is no evidence that they are aware that the source of ambiguity lies in their criterion of comparative advantage.

It may be asked whether the converse situation might arise, in which the country exported the "right" good according to the Habeler criterion, but the "wrong" good according to the alternative criterion. Such a situation is shown in figure 5. Undistorted autarchy is at $\hat{P}$, $\hat{C}$, with undistorted free trade at P'', C'', with x exported. Under the distortion, however, the economy settles at P, C in isolation, and at P', C' with free trade, exporting y. Commodity y is thus the "right" good to export according to the Habeler criterion (which compares the gradient of the transformation curve at P, C with the terms of trade line TT), but the "wrong" good according to the alternative criterion (which compares the gradient of the transformation curve at $\hat{P}$, $\hat{C}$, with TT).

However it is evident from the relative positions of C' and C'' in figure 5 that x is an inferior good, since national income (evaluated at world prices) is higher at C'' than at C', yet consumption of x is lower. The reader will be able to verify for himself that a situation of this kind can only arise if either x or y is an inferior good in the eyes of domestic citizens. If this is so it may transpire that elimination of the distortion would reverse the pattern of trade, despite the fact that the initial pattern was "right" according to the Habeler criterion.

Which of the two alternative criteria is more appropriate? If the domestic distortion is taken as given, so that only second best solutions are available, then the Habeler criterion seems preferable, since the pattern of trade which would emerge in the absence of the distortion is clearly immaterial. In any policy making context in which the distortions themselves are considered a variable, however, the alternative criterion, involving reference to the undistorted trade pattern, seems more appropriate. In any

event it is important to distinguish the two criteria (which the existing literature fails to do) since they may well conflict.

Finally, it should be emphasised that the existing literature fails to distinguish between ameliorative and optimal policies. For example, Habeler's contribution was to establish that free trade might sometimes lower welfare, and he correctly concluded that a prohibitive tariff would therefore raise welfare. As we have shown, however, (figure 1) the second-best optimum policy is a trade subsidy, rather than a tariff.

References:

{1} Habeler, "Some Problems in the Pure Theory of International Trade", E.J. 1950 (reprinted in Caves & Johnson (eds.)) "Readings in International Economics".

{2} Hagen, "An Economic Justification for Protectionism", Q.J.E. 1958.

{3} Bhagwati and Ramaswami, "Domestic Distortions, Tariffs, and the Theory of Optimum Subsidy", J.P.E. 1963 (reprinted in Caves & Johnson (eds.)).

{4} Johnson, "Optimal Trade Intervention in the Presence of Domestic Distortions", in Caves, Kenen and Johnson (eds.), "Trade, Growth and the Balance of Payments" ,(reprinted in Bhagwati (ed.))"International Trade".

{5} Lerner, "The Symmetry between export and import taxes", Economica 1936. (reprinted in Caves & Johnson (eds.)).

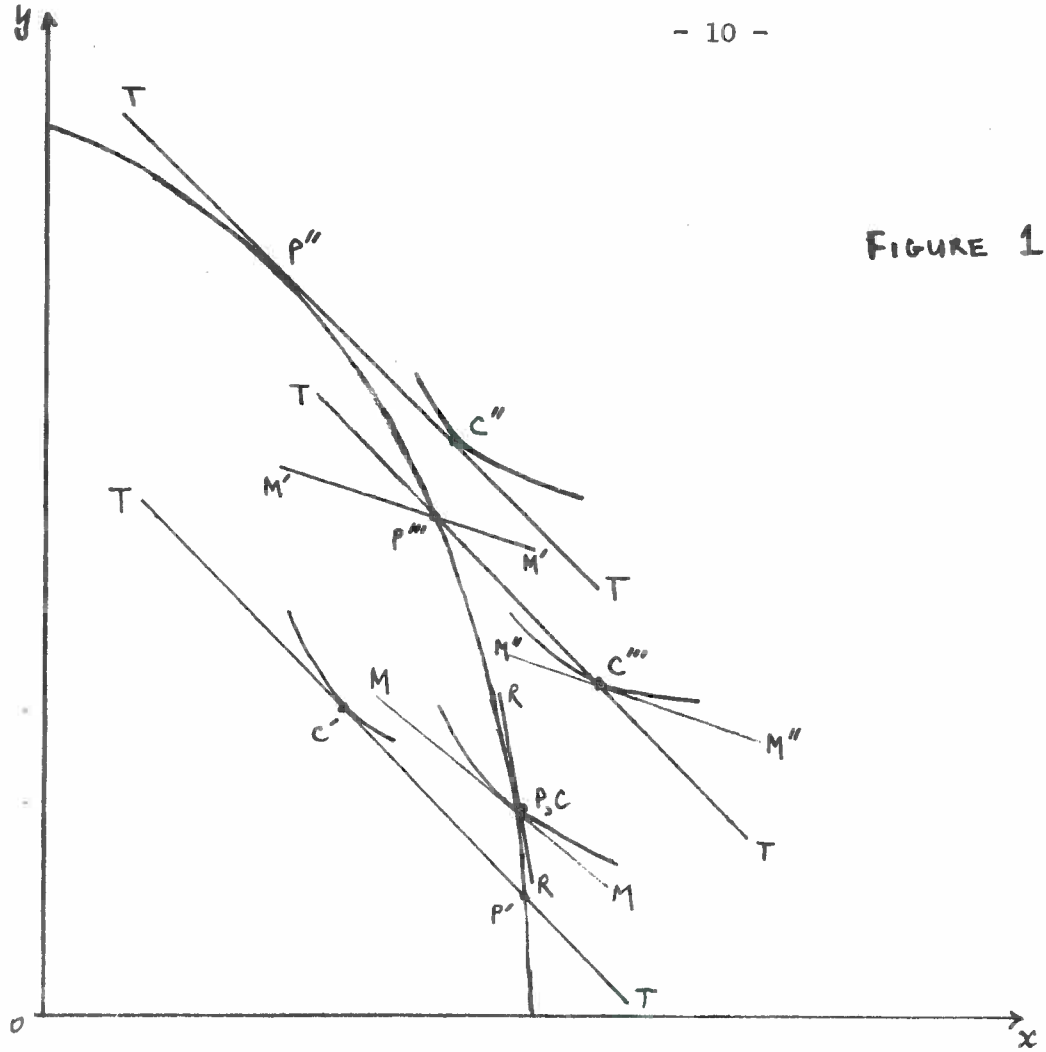

FIGURE 1

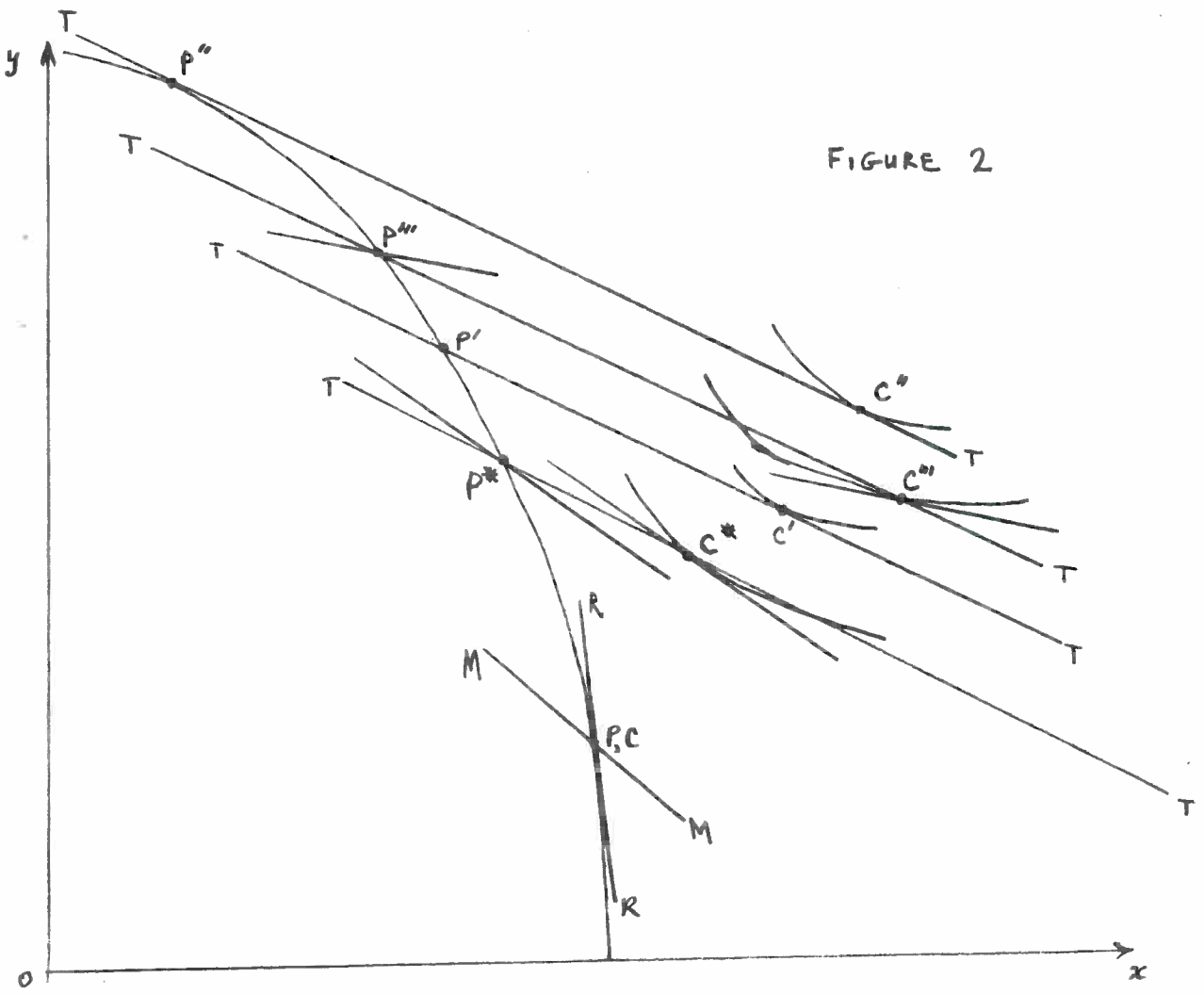

FIGURE 2

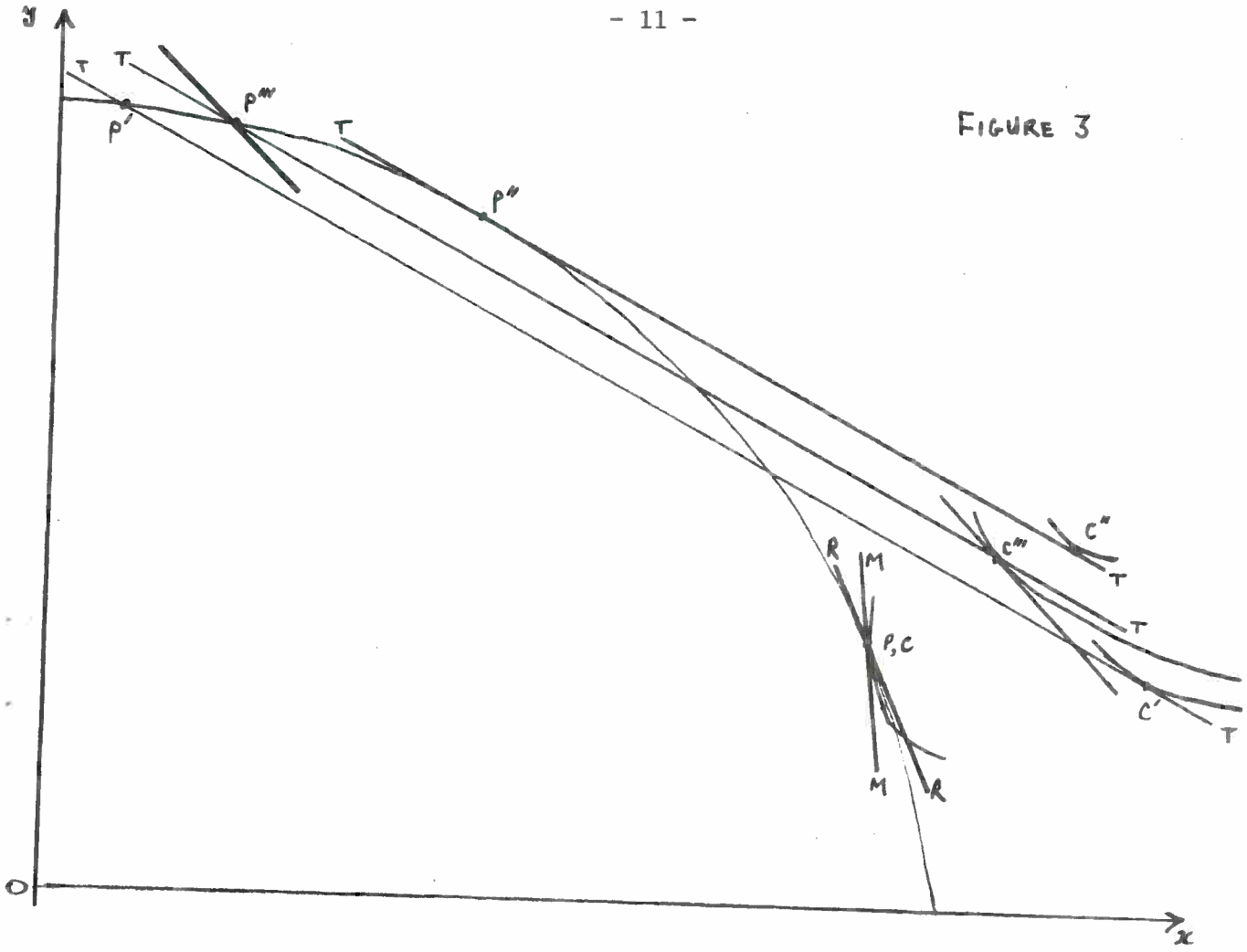

FIGURE 3

FIGURE 4

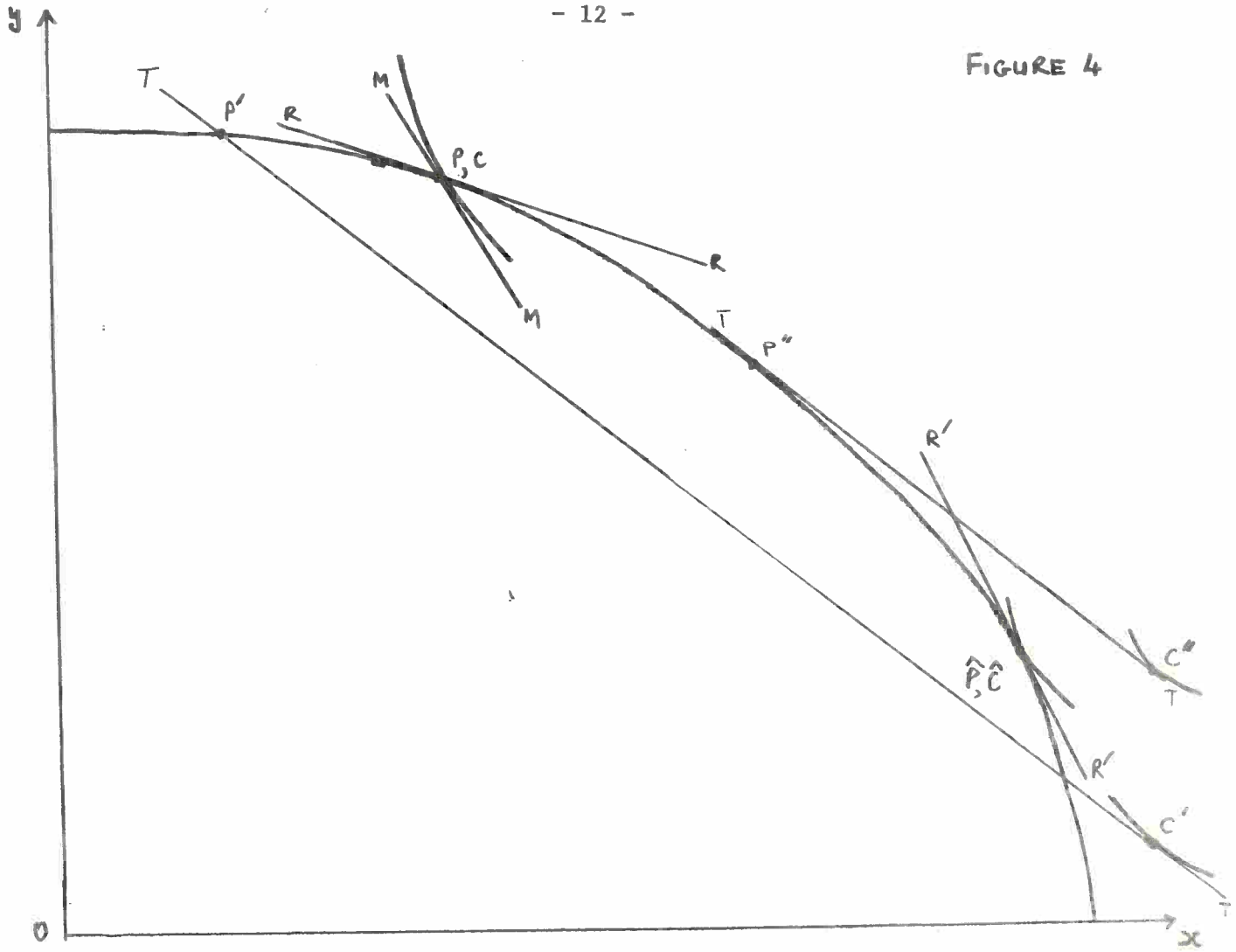

FIGURE 5