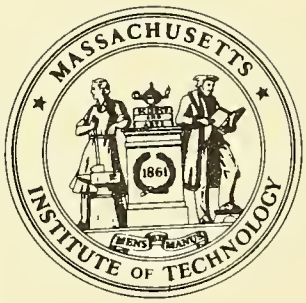

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TRADE-DIVERTING CUSTOMS UNIONS AND WELFARE IMPROVEMENT: A CLARIFICATION

by

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Number 56 July 1970

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Trade-Diverting Customs Unions and Welfare Improvement: A Clarification

Jagdish N. Bhagwati*

In his classic paper on trade-diverting customs unions (1957), and his later Survey in this Journal (1960), Lipsey showed how a country forming a trade-diverting customs union (i.e. one where imports shift from a lower-cost to a higher-cost source of supply *à la* Viner) could nonetheless register welfare improvement if substitution in consumption was allowed. He then proceeded to argue geometrically how the phenomenon of welfare-improvement had been overlooked by Viner (1950) and that this was allegedly because Viner had (implicitly) assumed consumption to be of a fixed-coefficients variety.**

But, as is clear now, the absence of substitution in consumption is *not* a sufficient condition for a trade-diverting customs union (as defined by Viner) to be welfare-reducing. For, while this rules out consumption gain to offset the terms-of-trade loss implicit in the trade-diversion, variability in *production* can also be a source of gain. Hence, the Lipsey analysis, while excellent in highlighting the consumption gain, is insufficient in its treatment of the question as to why Viner overlooked the possibility that a trade-diverting customs union may nonetheless be welfare-improving.

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*Thanks are due to Harry Johnson for comments. Research support by the National Science Foundation is acknowledged.

**The reference here, and throughout the analysis in this paper, is to the three-country, two-good model of Lipsey's. Lipsey used a general-equilibrium exchange model for his analysis of trade diversion.

In fact, as soon as we translate Lipsey's analysis into a general-equilibrium model which allows for variability in production, it is easy to see that a sufficient condition for a trade-diverting customs union to be welfare-reducing is that the level of imports is fixed, and not that the level of consumption is fixed. Indeed, an examination of Viner's own treatment of trade-diversion indicates that there is probably as much support for the interpretation that Viner was assuming the level of imports to be fixed as for the Lipsey-interpretation that he was assuming the level of consumption to be fixed.

I

Viner is somewhat difficult to pin down on this question, although it is clear that the assumption of fixity in the level of imports is as consonant with his actual analysis as Lipsey's assumption of fixity of the consumption pattern. This is seen by reference to Viner's relevant passages (1950, pp. 42-43):

> The analysis will be directed toward finding answers to the following questions: in so far as the establishment of the customs union results in change in the national locus of production of goods purchased, is the net change one of diversion of purchases to lower or higher money-cost sources of supply, abstracting from duty-elements in money costs: (a) for each of the customs union countries taken separately; (b) for the two combined; (c) for the outside world; (d) for the world as a whole? If the customs union is a movement in the direction of free trade, it must be predominantly a movement in the direction of goods being supplied from lower money-cost sources than before. If the customs union has the effect of diverting purchases to higher money-cost sources, it is then a device for making tariff protection more effective....
>
> There will be other commodities which one of the members of the customs union will now newly import from the other whereas before the customs union it imported them from a

> third country, because that was the cheapest possible source of supply even after payment of duty. The shift in the locus of production is now not as between the two member countries but as between a low-cost third country and the other, high-cost, member country. This is a shift of the type which the protectionist approves, but it is not one which the free-trader who understands the logic of his own doctrine can properly approve.

It is clear that Viner was referring somewhat ambiguously to the "locus of production" being transferred from the external, non-member country to the higher-cost partner country. Thus he may well be interpreted as thinking of a given level of production being thus shifted to the partner country and hence of the level of imports into the "home" country remaining constant.*

II

Let us now examine Lipsey's analysis via Figures 1(a) and 1(b). Assuming specialization of the home country on commodity 'y', at A, he took the given, external terms of trade with the partner country as AP and with the (cheapest-cost-supplier-of-commodity x) outside country as AE.

Before customs union, with a uniform tariff applicable to import of x from both the partner and the outside countries, equilibrium consumption in Figure 1(a) would be at C_1 at tariff-inclusive price-ratio DP_E, implying import of OQ amount of commodity x. With the customs union the tariff would be eliminated on the partner country and imports would then shift to the partner country at internal and external price-ratio AP.

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*This, of course, implies that Viner implicitly was thinking of a negative income elasticity of demand for one good and this is difficult to accept. However, it is equally difficult to imagine that, as Lipsey interprets, Viner was alternatively thinking of consumption being fixed along a ray from the origin! The only plausible conclusion seems to be that Viner had not thought through this question very clearly, so that either interpretation may be considered to be compatible with his actual analysis.

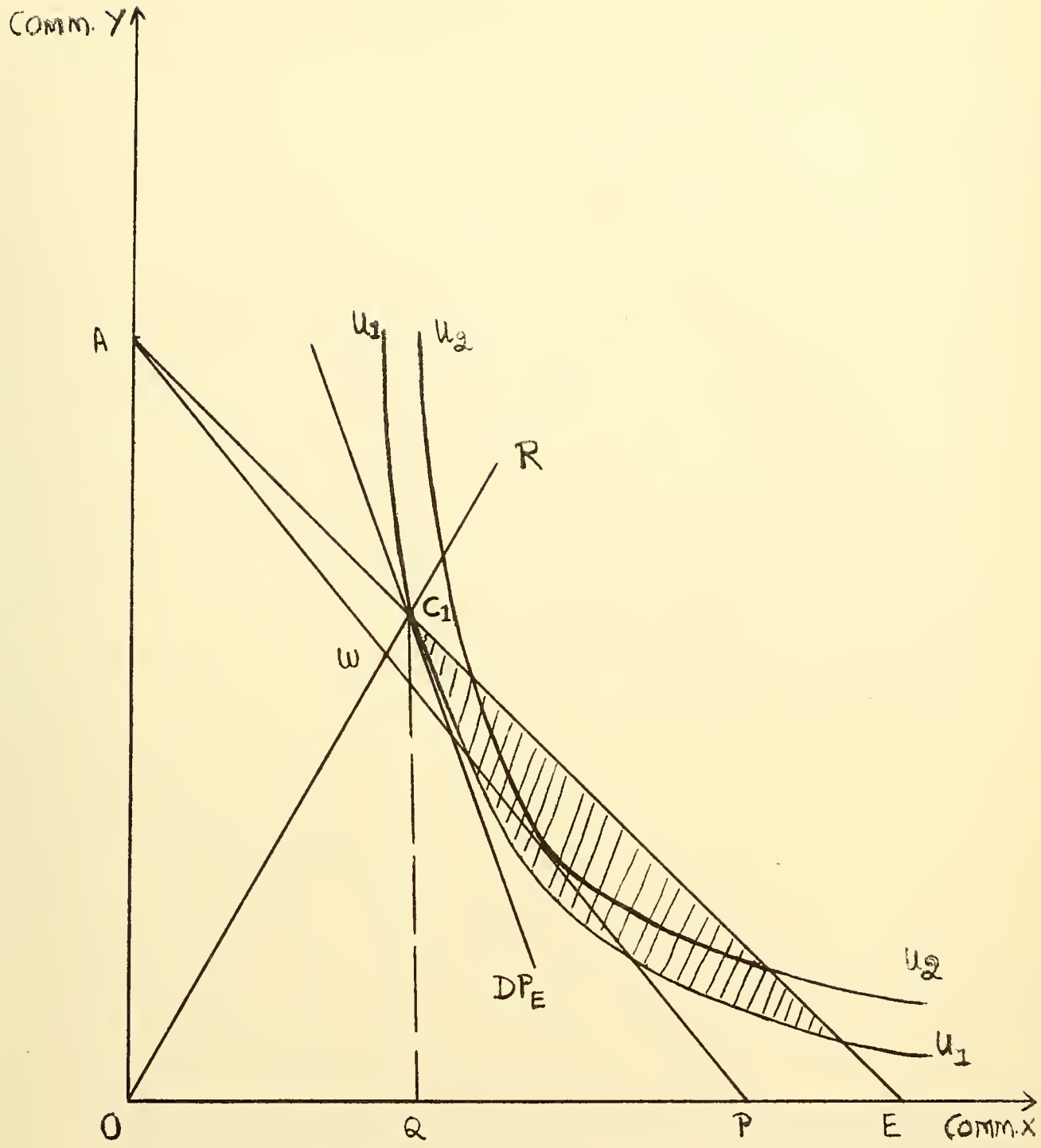

Figure 1(a)

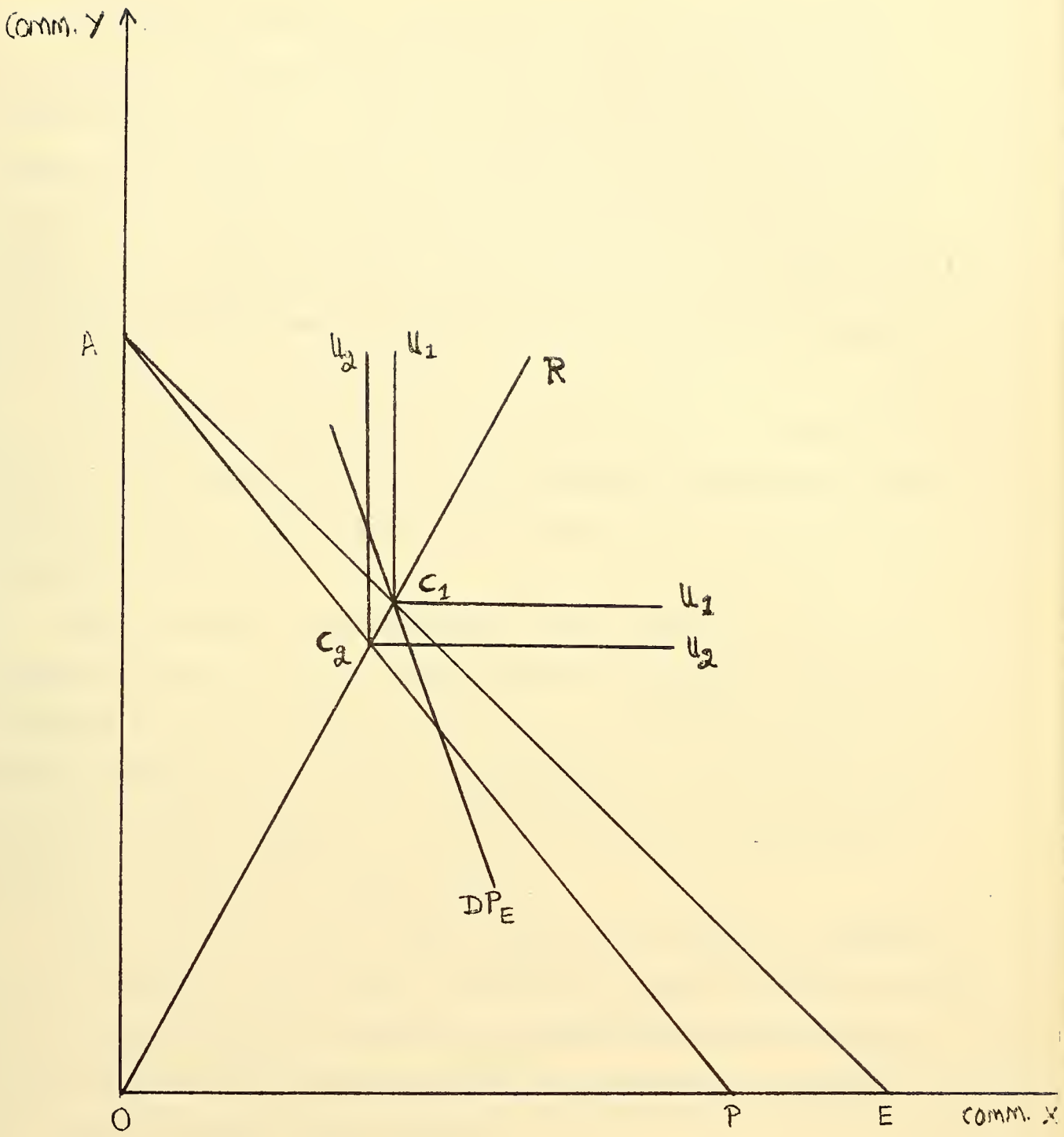

Figure 1 (b)

Lipsey thus showed that, if AP passed through the striped area as in Figure 1(a), the customs union would raise welfare even though it was trade-diverting ($U_2 > U_1$). Lipsey then argued that Viner ruled this out by assuming that consumption would be characterised by fixed-coefficients and hence would lie along the ray OC_1R before and after the formation of the customs union, as in Figure 1(b). If so, it is clear that consumption after the customs union would be at C_2 and welfare would necessarily be reduced ($U_1 > U_2$).

However, this interpretation of Viner implies that the level of imports is reduced (see Figure 1(b)). Our alternative interpretation of Viner is that the level of imports (M) should be constant ($dM = 0$), and we illustrate this in Figure 2.

There, the post-customs union equilibrium is shown at C_2, with a reduced welfare level ($U_2 < U_1$): a result which is inevitable if the level of imports is to be held constant at OQ. Thus, the restriction that $dM = 0$ when the customs union is formed is sufficient to make trade-diverting customs unions welfare-reducing: it rules out the class of trade-diverting customs unions that could increase welfare.

Hence, while in Lipsey's complete-specialization model, the assumption of fixed consumption coefficients is sufficient to ensure that trade diversion will be welfare-reducing, we also have an alternative sufficient condition, equally consonant with Viner's own analysis as we have seen, namely that: $dM = 0$ when the customs union is formed.

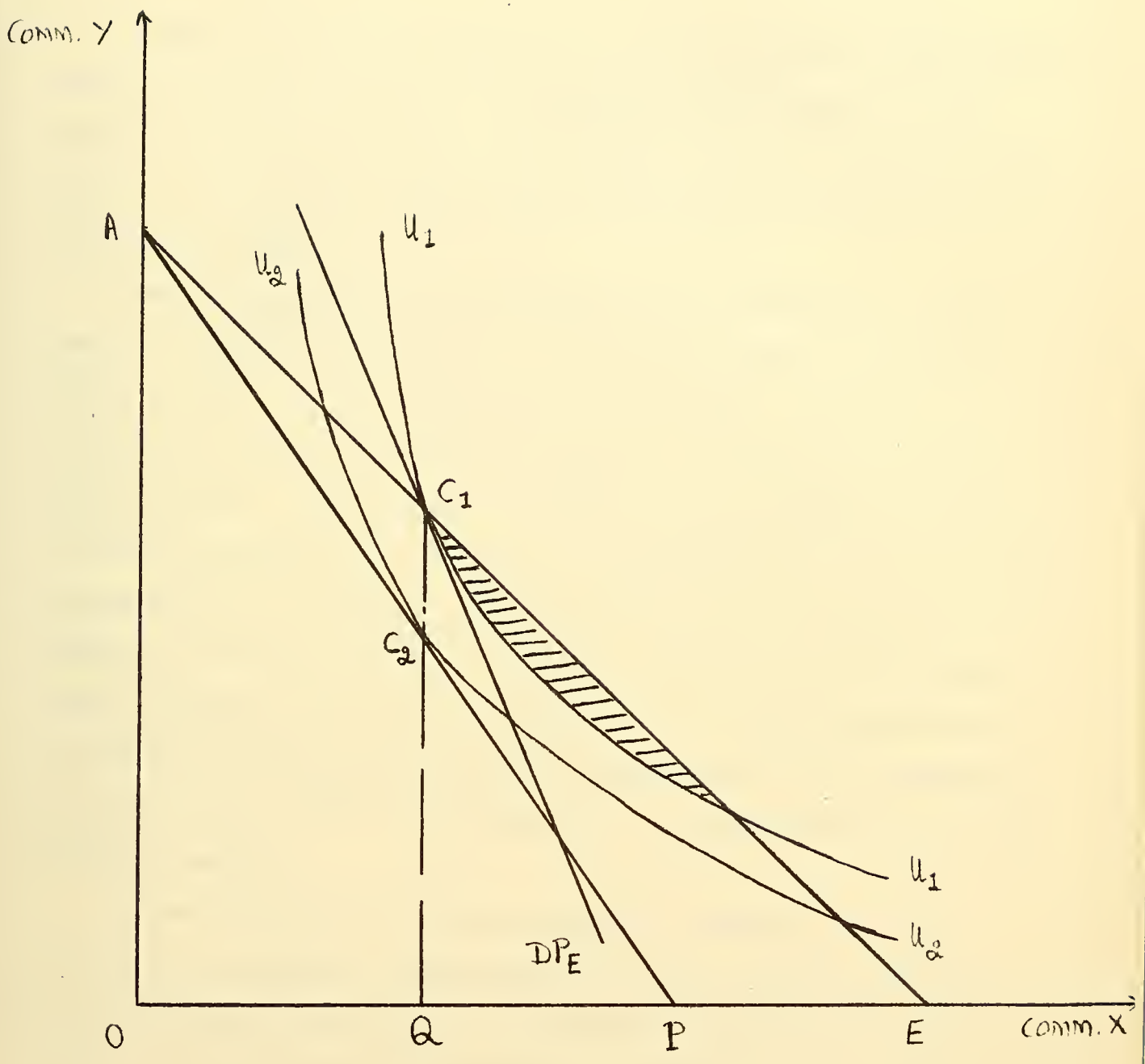

Figure (2)

III

However, we can readily show that the Lipsey restriction is insufficient, whereas the restriction that dM = 0 continues to be sufficient, for trade diversion to be welfare reducing if production is variable in the (home) country: thus providing yet another reason for discarding the Lipsey version of the Viner restriction.

The insufficiency of the Lipsey restriction on consumption, in this regard, is demonstrated in Figure 3. AB is the home country's production possibility curve. With a uniform tariff on the import of commodity 'y' from both the external and the partner country's, the home country imports from the former at international price-ratio H_1C_1E, the consumption point is C_1 (along the ray OWC_1C_2R, since fixity of the consumption pattern is assumed) and production is at the tariff-inclusive price-ratio DP_E at point H_1. On formation of the customs union, the tariff is eliminated on partner-country imports, production shifts to H_2 at tangency of the production possibility curve AB to the partner-country price-ratio H_2C_2P. Equilibrium consumption is then at C_2; and welfare has increased ($U_2 > U_1$) despite the fixity of the consumption pattern.

In the general case of variable production, therefore, the Lipsey restriction on consumption is insufficient to rule out welfare-improvement in a trade-diverting customs union. The reason is clear enough when the sources of gains and losses in transition to a customs union are analysed. The trade diversion, in the sense of a shift of imports to a higher-cost source of supply, implies a terms-of-trade loss. On the other hand, the price-ratio facing domestic consumers and producers moves closer to the "true" (least-cost) international price-ratio so that there is a consumption gain

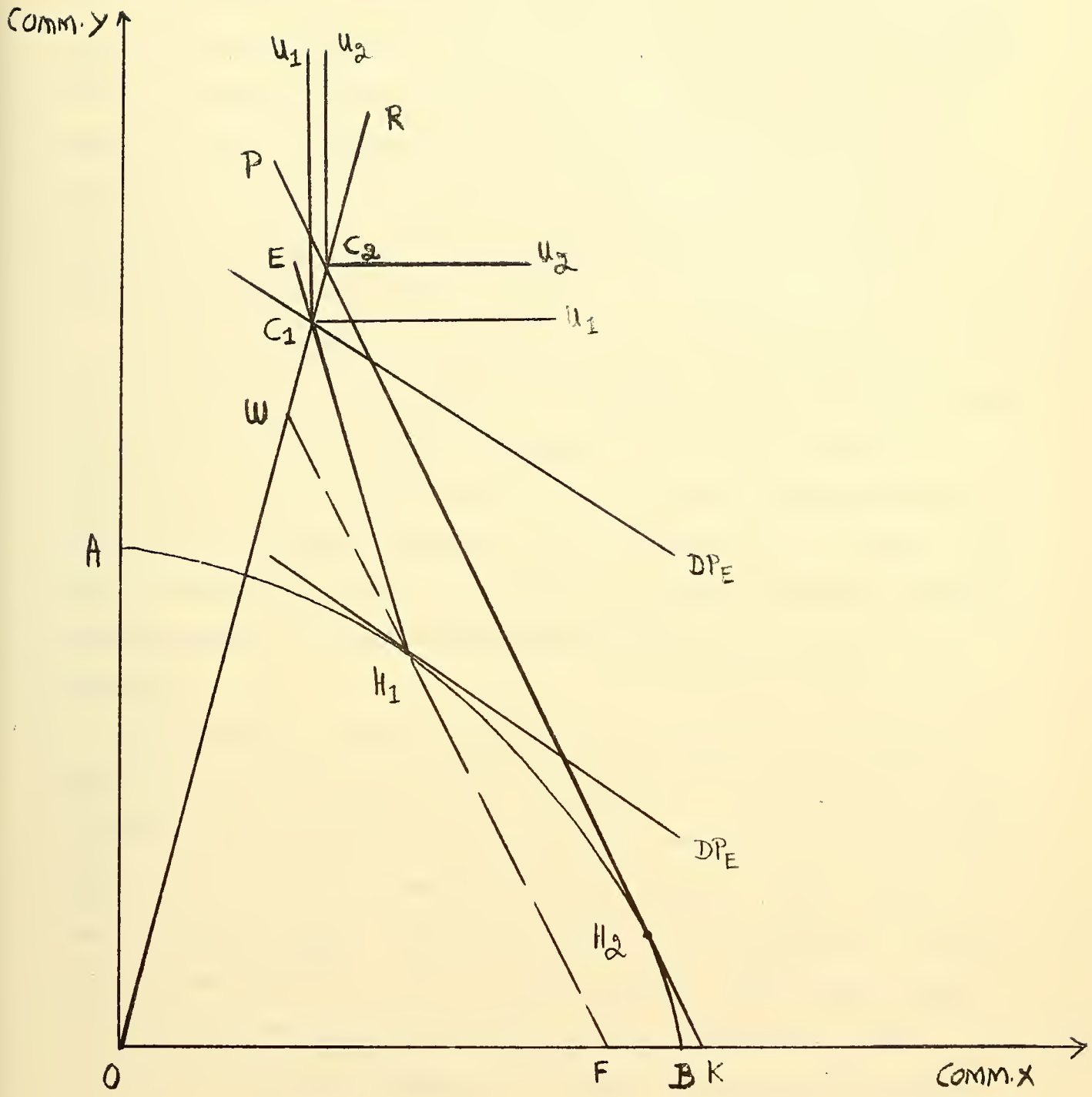

Figure (3)

and a production gain respectively. Insofar as the aggregate of these gains outweighs the terms-of-trade loss, a trade-diverting customs union will show welfare-improvement. Lipsey's assumption of a fixed consumption pattern merely rules out the consumption gain while leaving open the accrual of a production gain which could outweigh the terms of trade loss: a possibility illustrated in Figure 3, where the production gain, measured in x-units at the partner-country price-ratio, is FK.*

Figure 4 illustrates how the ruling out of substitution possibilities in both production and in consumption ensures that a trade-diverting customs union will be welfare-reducing. The production possibility curve here is AHB, with a kink at H denoting immobility of resources therefrom (Haberler, 1950); and the consumption pattern is fixed along the ray OR. In this case, the post-customs-union consumption at C_2 is necessarily below the pre-customs-union consumption at C_1 for a trade-diverting customs union; and $U_1 > U_2$ necessarily.

An alternative sufficient condition, which ensures that the trade-diverting union will worsen welfare, is that dM = 0. As Figure 5 illustrates, a trade-diverting union would shift production from H_1 to H_2 and thus decrease domestic production of the importable good 'y' by Q_1Q_2: hence increasing imports, ceteris paribus. Therefore, to hold dM = 0, consumption of the importable good would have to fall by the same amount. This, however, would prevent the partner-country price-ratio H_2P from crossing over to the northeast of C_1 and being tangential to a social indifference curve higher

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*The importance of production-variation has also been noted earlier by Melvin (1969); and it is clearly implicit in the cardinal analysis of James Meade (1955).

than U_1: hence welfare-improvement would be ruled out.*

On the same line of argument, it is immediately clear that a still weaker sufficient condition for ruling out welfare-improvement in a trade-diverting customs-union is that $dM \leq 0$.

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*The only exception to this argument could arise if the importable good was strongly inferior in the home country's social consumption.

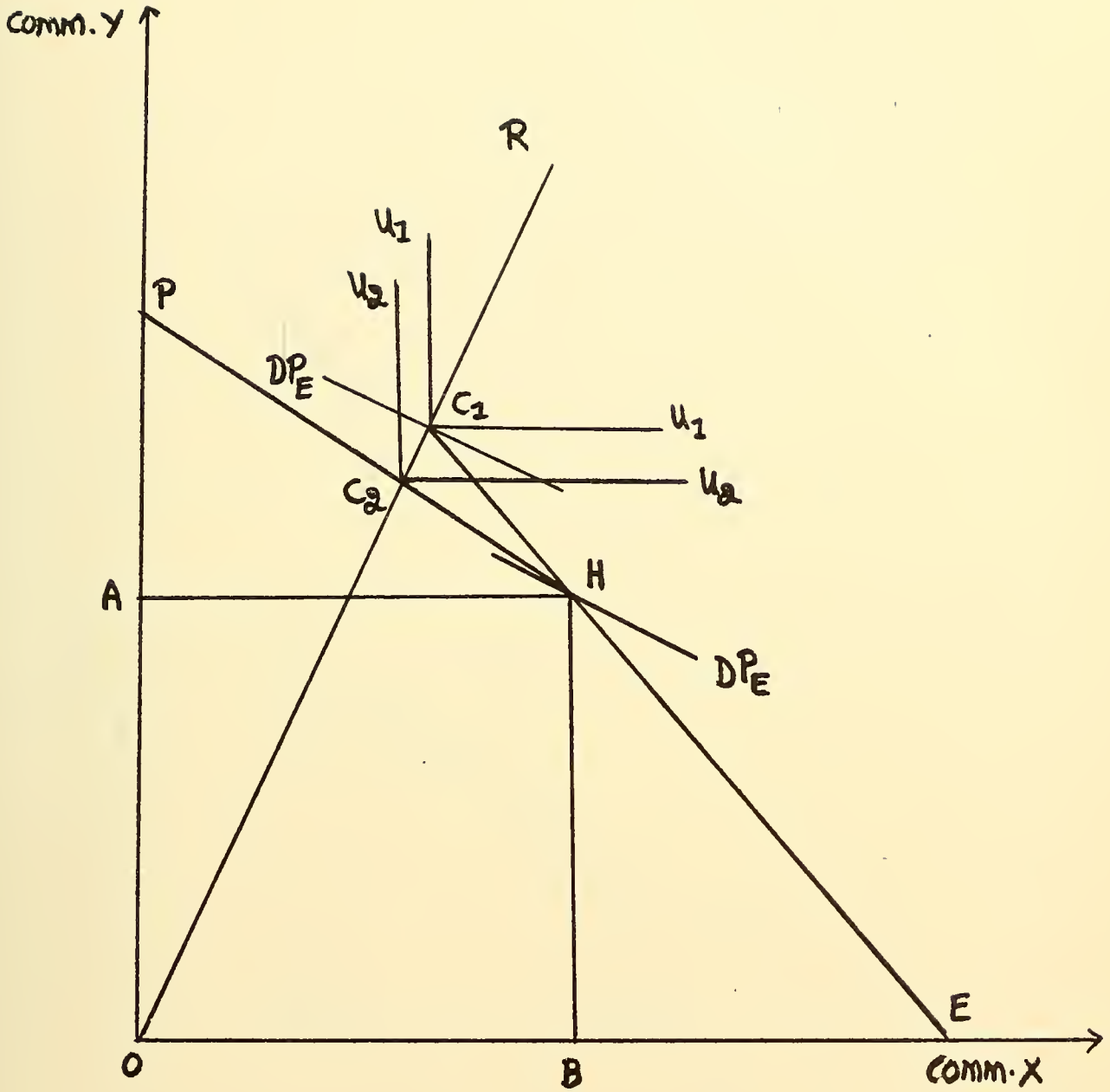

Figure (4)

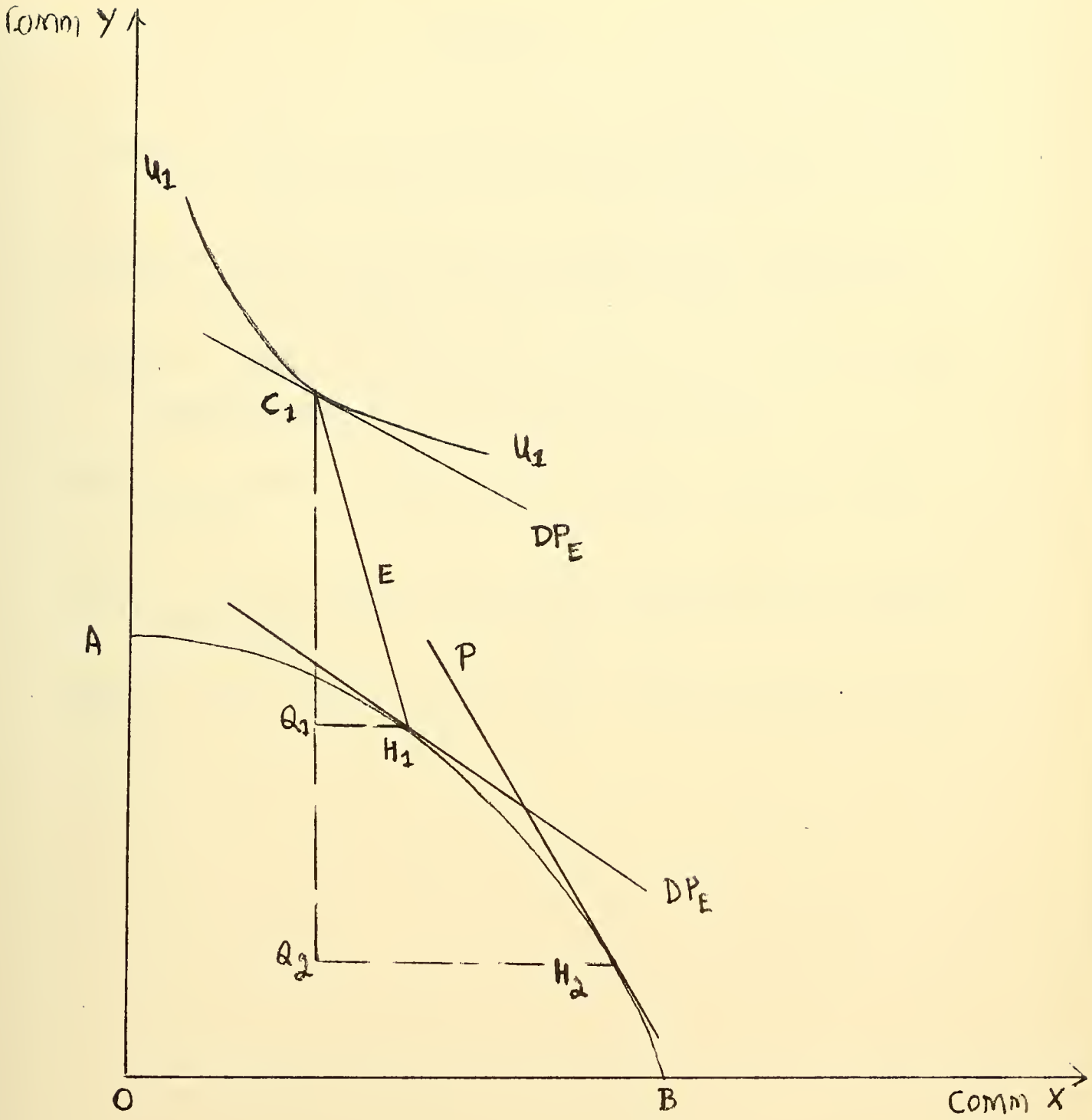

Figure (5)

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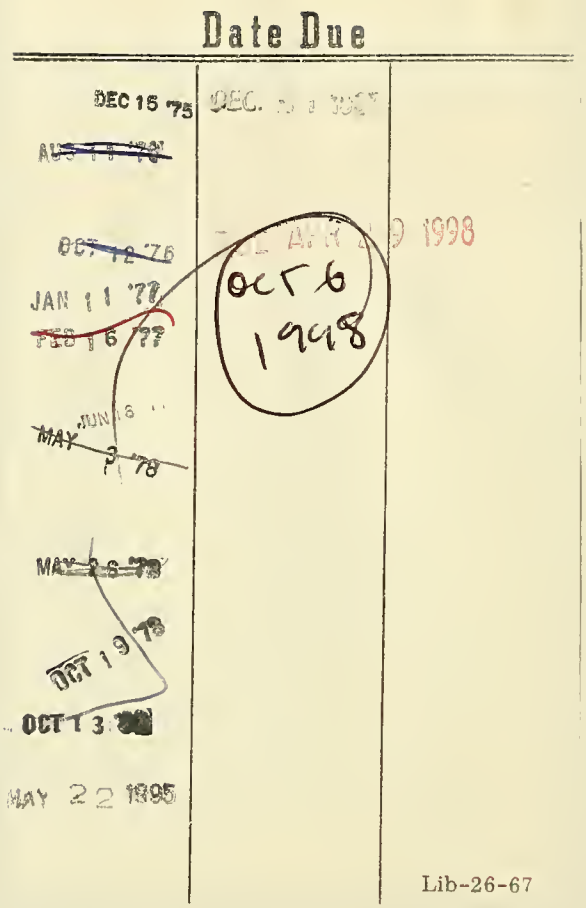
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