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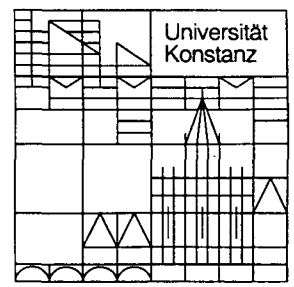
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Murray C. Kemp

**Two Notes on Trade Gains**

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# Two Notes on Trade Gains

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# QUALITY STANDARDS IN THE THEORY OF CUSTOMS UNIONS

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## 1. *Introduction*

The welfare economics of international trade contains two comparative statical propositions which are global in scope and valid for countries of any size.

The first of these propositions is well known. Indeed it goes back to the beginnings of economic analysis in the debates of the English mercantilists with each other and with Adam Smith. It states that, for a single country, free international trade is preferable to no trade.

The second proposition, which will be the focus of our attention, is of more recent origin. It concerns the possibility of forming customs unions which are Pareto non-deteriorating.

**PROPOSITION** (The Existence and Implementation of Gainful Customs Unions): If an arbitrary world trading equilibrium is disturbed by the formation of a customs union comprising any subset of the trading countries then there exists a common external tariff vector, a scheme of lumpsum compensation, restricted to individuals in the union, and an associated world trading equilibrium in which (a) no individual, whether a member of the

union or not, is worse off than before the union, and (b) the net tariff revenue of the union is at least as large as the net compensation accruing to individual members of the union. Moreover implementation of the scheme of compensation requires as background information only the pre-union net trades of member households; it does not require knowledge of the preferences and production sets of any households or firms.

The Proposition is a notable exception to the general rule of the “second best”: before and after the formation of a customs union the world economy may be disfigured by multiple distortions, yet the union gives rise to a Pareto improvement.

The Proposition is remarkable also for its robustness to respecification of the economy. Originally demonstrated for a world of Arrow-Debreu economies [Kemp (1964), Kemp and Wan (1976; 1986)], it is now known to be valid for economies with incomplete markets, for at least some types of monetary economies, and for economies with overlapping generations and infinite horizons [Kemp and Wong (1995 a, b, c) and Kemp and Wolik (1995)].

Finally, the Proposition is remarkable for the absence of restrictions on the list of tradeable goods. Thus the latter may include both produced and primary factors of production (among the latter, labour), as well as pure consumption goods (among the latter, leisure). It follows that the common tariff vector may include taxes on the movement of capital and labour services between member and non-member countries.

In 1992 the dismantling of tariffs and quotas on trade and factor movements between members of the European Community was completed. Moreover, it was agreed in principle that the quality standards of the country of origin shall apply to all trade within the Community. Thus it is now possible, in principle, for a Dane to choose from the complete range of Italian cheeses, for a dentist licensed in Madrid to practise in Berlin, and for a solicitor licensed in London to practise in Amsterdam. However, in the theory of customs unions there is as yet no place for quality standards imposed by governments or other agents<sup>9</sup>. This is a serious deficiency.

In the following section, therefore, we briefly indicate how the above Proposition can be extended to accommodate changes in quality standards imposed on consumption and/or production.

In Sec. 2 attention is restricted to those quality standards by means of which a country or group of countries exercises its market power. We neglect quality standards which are imposed for the sake of public health or safety, or to harmonize systems of weights and measures. The former presuppose the presence of public goods and/or externalities, both of which take us far beyond the conventional context of the theory of customs unions, and the latter involve the elimination of commodities which are perfect substitutes in production and/or consumption.

Henceforth we shall mean by a "customs union" a customs union with associated changes in the imposed quality standards of member countries<sup>9</sup>.

## 2. *Quality standards*

Let  $G$  be the universal set of goods which might be produced and/or consumed in at least one of two or more trading countries, with different qualities of a commodity appearing as distinct members of  $G$ . Initially, before the formation of a “customs union”, each country may have in place imposed quality controls on production and/or consumption. Let  $G_i^p \subset G$  denote the subset of goods which fail to satisfy the imposed production standards of country  $i$  and therefore cannot be produced in that country; and let  $G_i^c \subset G$  denote the subset of goods which fail to satisfy the imposed consumption standards of country  $i$  and therefore cannot be consumed in that country. Possibly, but not necessarily,  $G_i^p = G_i^c$ ; possibly, but not necessarily,  $G_i^p$  and/or  $G_i^c$  is the null set.

Suppose now that a subset of countries  $I$  forms a “customs union”, with a common tariff vector but not necessarily uniform quality standards.

If  $G_i^p$  and  $G_i^c, i \in I$ , are unchanged by the formation of the “customs union”, the above Proposition remains unchanged. The quality standards merely define for each member country the unchanging sets of goods which can be produced and consumed. It is as though, in member country  $i$ , households place no value on the excluded goods in  $G_i^c$  and firms are unable to employ or produce the excluded goods in  $G_i^p$ . Thus we arrive at a

substantial generalization of the Proposition, the latter emerging from the special case in which  $G_i^p = G_i^c = \emptyset, i \in I$ .

If, on the other hand, the formation of the “customs union” is accompanied by the replacement of each  $G_i^p$  by, say,  $\hat{G}_i^p$  and each  $G_i^c$  by, say,  $\hat{G}_i^c$ , with  $\hat{G}_i^p$  and  $\hat{G}_i^c$  chosen quite arbitrarily, then the conclusions of the Proposition survive only in special cases. In the most obvious of such cases, each member country adopts unambiguously less restrictive quality standards for both production and consumption, so that  $\hat{G}_i^p \subset G_i^p$  and  $G_i^c \subset \hat{G}_i^c, i \in I$ . For, in that case, there is in effect an unambiguous expansion in the production set of each member country and an increase in the set of tradeable commodities of each member country. In a special sub-case, member countries adopt common standards, so that  $\hat{G}_i^p = \hat{G}^p \subset G_i^p$  and  $\hat{G}_i^c = \hat{G}^c \subset G_i^c, i \in I$ . In another special case, suggestive of Europe 1992, member countries adopt common consumption standards and unchanged production standards.

Each of the above special cases is subsumed in the requirement that

$$\hat{G}_i^p \subseteq G_i^p \text{ and } \hat{G}_i^c \subseteq G_i^c, \text{ all } i \in I \quad (1)$$

Thus we arrive at the

**GENERALIZED PROPOSITION** (The Existence of Gainful “Customs Unions”): If an arbitrary world trading equilibrium, encumbered with any pattern of taxes on trade, consumption and production, and with quality standards applied to consumption and/or production in each country, is disturbed by the formation of a “customs union” comprising



any subset of the trading countries and satisfying condition (1) then there exists a common external tariff vector, a scheme of lumpsum compensation, restricted to individuals in the “customs union”, and an associated world trading equilibrium in which (a) no individual, whether a member of the “customs union” or not, is worse off than before the “union”, and (b) the net tariff revenue of the “customs union” is at least as large as the net compensation accruing to individual members of the “union”.

In the Generalized Proposition, the initial or pre-"union" quality standards are arbitrarily given. The proposition therefore covers the special case, of considerable practical significance, in which some or all of the initial quality standards are chosen, by associations of otherwise competitive producers and/or consumers, as a device for the exploitation of sectional market power. In particular, it covers the highly visible sub-case in which regional associations of wine or cheese producers impose quality standards so tight that, as a practical matter, only producers from a particular region can satisfy them. The final or post-"union" quality standards, on the other hand, are one facet of a political compromise entered into by the member countries. Condition (1), imposed as a constraint, ensures that the compromise is potentially Pareto-improving.

In fact (1) can be considerably weakened. It suffices that goods produced by country  $i$ ,  $i \in I$ , in the pre-union equilibrium remain producible after union and that goods consumed by country  $i$  in the pre-union equilibrium remain consumable after union. Of course, even this weakened condition is, in general, only sufficient, not necessary.

## FOOTNOTES

- (\*) I am grateful to Henry Wan for his many useful suggestions.
- (1) Quality standards chosen by individual firms and households are, of course, already accommodated in the Proposition.
- (2) In a customs union, strictly defined, only one policy instrument is admitted, *viz.* the common tariff vector. However no tariff can simultaneously exclude both the production and consumption of a good. Our discussion of quality standards inevitably takes us beyond the realm of customs unions, strictly defined, into the realm of “customs unions”.

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## A FURTHER NOTE ON THE GAINS FROM TRADE WHEN MARKETS ARE POSSIBLY INCOMPLETE

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It is now known that, even when markets are incomplete, the substitution of free trade for autarky is potentially beneficial for a country, in the sense that there exist schemes of lumpsum compensation which, if implemented, would make all households better off under free trade. Moreover it is known that among such schemes of compensation there is one which, for its implementation, requires less information than any scheme of non-lumpsum compensation.

However, in existing proofs of those propositions [Kemp and Wong (1995) and Kemp and Wan (1995)] it is assumed that all goods which are *internationally* tradeable *after* the abolition of trade barriers are *internally* tradeable *before* the abolition of barriers. (The world allocation *after* the abolition of barriers is the same whether or not goods are internally tradeable.) This leaves as an open question the validity of the proposition in the absence of the assumption, that is, when allowance is made for the possibility that some goods which are internationally tradeable after the abolition of trade barriers are internally non-tradeable before the abolition of barriers. It will be shown that, when allowance is made for that possibility, both propositions remain valid.

Let  $G$  be the universal set of goods, let  $G^i (G^i \subset G)$  be the set of goods which are untraded in country  $i$  when that country is autarkic, and let  $G^t (G^t \subset G, G^t \cap G^i \neq \emptyset)$  be the set of goods tradeable by country  $i$  on world markets after the removal of its barriers to trade. Then the opening of trade can be viewed as occurring in two steps. In the first step, new internal markets are created for all goods in the set  $G^t \cap G^i$ . In the second step, free international trade becomes possible in goods in  $G^t$ . Now it is known that, in a closed economy, the replacement of some but not all of the missing markets might harm all households [see Hart (1975)]; that is, it is known that the first step might be harmful. This suggests the possibility that, under some circumstances, the change in welfare associated with the first step might dominate that associated with the second step, so that, on a balance of considerations, international trade is harmful.

However, reflection reveals that this possibility can be ruled out. For, while the addition of markets might harm all households, there can always be found a scheme of lumpsum compensation such that, after the addition of markets, all households are better off. Thus the *first* step is potentially beneficial. Moreover, for implementation of the scheme of compensation, the authorities need only the initial net-purchase vector of each agent; they need no information about preferences or technologies. It is already known from the cited references that the *second* step is potentially beneficial and that there is associated with it an efficacious and informationally parsimonious scheme of compensation. Thus we may conclude that, taken together, the two steps have the same properties.

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