5 Customs Union

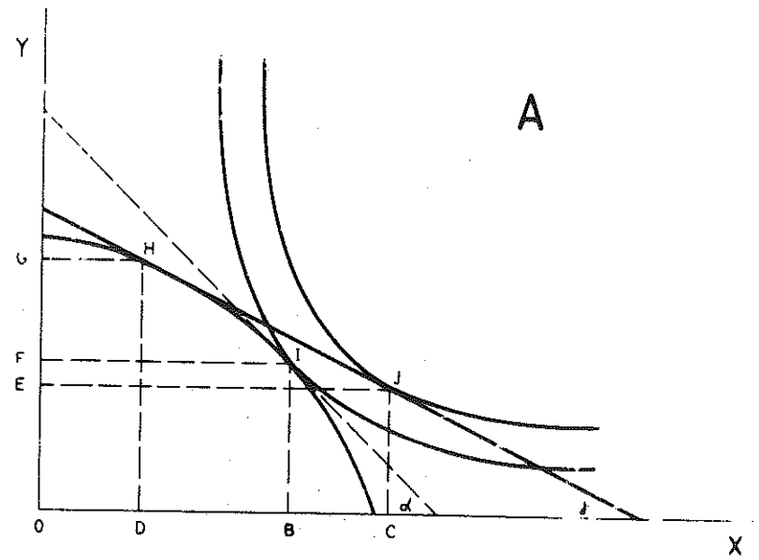
Introduction

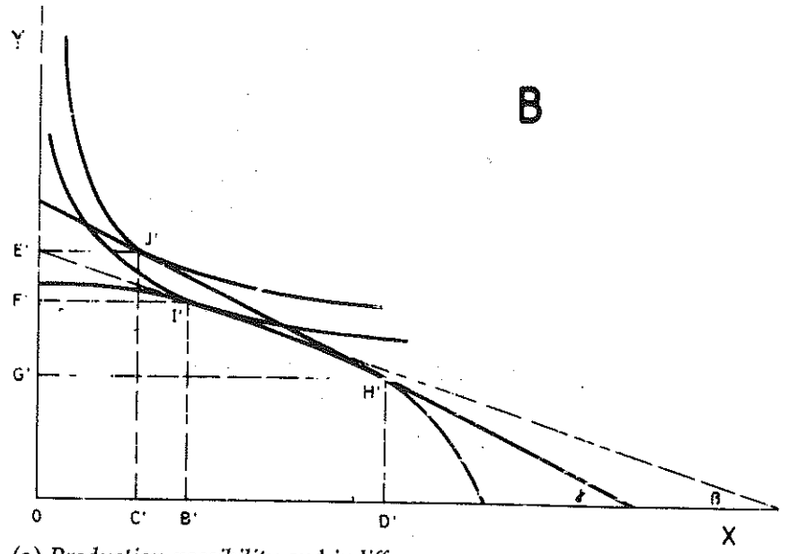
The theory of economic integration is relatively recent. It is based on international trade theory. Classical economists occupied themselves quite frequently with the problems of free trade (Ricardo) and also with preferential trade agreements, and the creation of the German Zollverein in the 19th century gave rise to a theoretical debate on the advantages and disadvantages of protection (List, 'infant industries'). Still, the subject of economic integration remained embedded in a more general economic analysis.

International economic integration actually did not become a separate object of economic thinking until after the Second World War.[1] Viner's book *The Customs Union Issue*(1950) pioneered its development into a separate part of economic science. Since then, the literature on the subject has accumulated, not least because the post-war integration processes greatly stimulated profound theoretical studies.

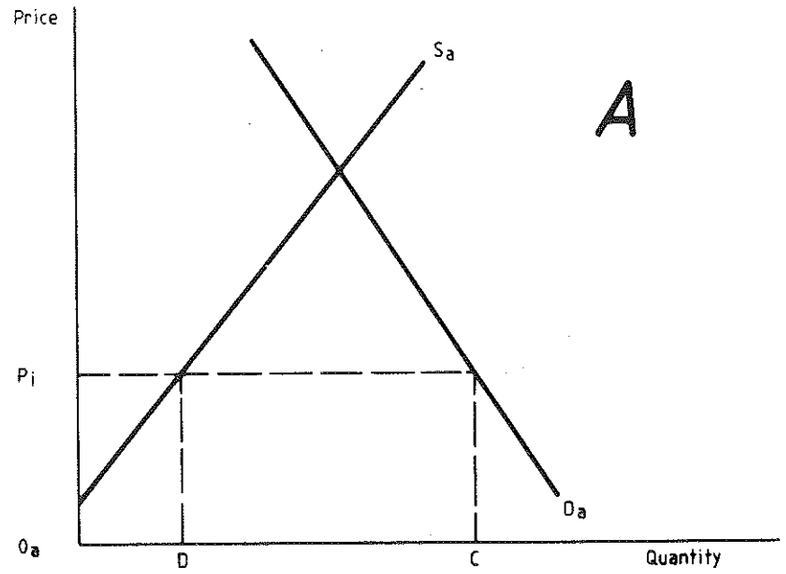
As the customs union (CU) represents a special case of (internal) free trade and (external) protection, this chapter sets out to *place the CU phenomenon in the perspective of international trade theory* (the neo-classical partial and general equilibrium models), explaining some of its major principles.

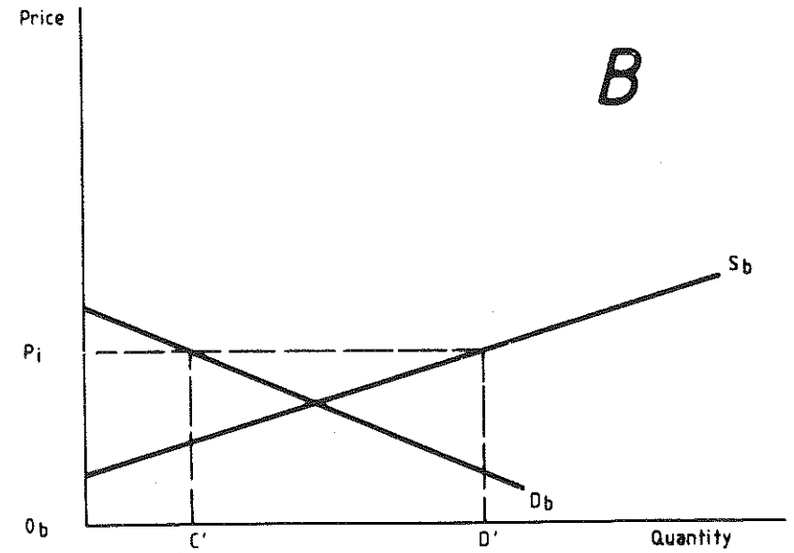
Next, we will go into the short-term effects that can be expected from the formation of a CU. In spite of the relevance, in terms of economic theory, of the distinction between free-trade area (FTA) and customs union we made earlier,[2] we will focus on the CU, the FTA stage not having, after all, counted for much in Europe. To explain in essence the static customs-union theory and identify some effects of the CU on welfare,[3] we will *compare the CU with a situation of free trade* and *with a situation of protection*. Moreover, we shall consider some refinements which in the abundant literature have been added to the basic theme. Finally, we will deal with the long-term effects of a CU (estimated in Chapter 8 to be much larger than the short-term ones), giving attention to aspects of competition and changed production, organisation, and marketing techniques.





(a) *Production-possibility and indifference curves*
Figure 5.1 Advantages of international trade





(b) *Supply and demand curves for commodity x*

Free trade versus protection

International trade

The theory of international trade has developed largely from the relatively simple *case of two countries* (A and B) *each producing two products* (*x* and *y*), *with two production factors*, namely labour (*l*) and capital (*c*). Initially, the countries are two *closed economies*. The availability of production factors is different in the two countries, which implies different production costs (comparative cost theory). The upper part of Figure 5.1 represents the situation for both country A (left-hand side) and country B (right-hand side). The concave curves – from the origin's point of view – are the so-called production-possibility or transformation curves, reproducing for either country the combined quantities of goods *x* and *y* that can be produced with the available quantities of production factors. The curves are different for the two countries owing to differences in availability of production factors and technology. The convex curves are the indifference curves of the collective consumers in either country; they represent the combinations of goods *x* and *y* that yield equal utility. We assume that the indifference curves of the two countries are dissimilar (on account of different climates, for instance). In either country, production and consumption will take place where the indifference and transformation curves touch. The price ratios of the goods, given by the tangents α and β, are evidently different for the two countries.

Now suppose the *two countries enter into trade relations*, each country specialising in the production of that commodity for which it needs the smallest relative input of production factors. Specialisation will continue until the price ratios in both countries have become identical (tangent γ). In country A, production will shift from point *I* to point *H* owing to more of *y* and less of *x* being produced, and in country B from *I'* to *H'* because production shifts from *y* to *x*. That such trade increases welfare follows from the indifference curves. Thanks to trade and the changed price ratios, the two curves no longer need to have a point of tangency (touching point) in both countries, and either country can reach a higher indifference curve touching the common price-ratio tangent γ.

We can now indicate *each country's production and trade* as follows. In country A, a quantity equal to O_aD of good *x* will be produced domestically, and a quantity equal to *DC* imported. Of good *y*, however, a quantity O_aG will be produced, of which *OE* will be consumed domestically and *EG* exported. In country B, the situation will be the reverse: once the frontiers have been opened, a quantity equal to O_bD' will be produced and only O_bC' consumed of good x, so that *C'D'* can

be exported (*C'D'* = *CD*), while of good *y*, *OG'* is produced and *OE'* consumed, so that *G'E'* must be imported (*E'G'* = *EG*).

The exercise can be done as well with the more familiar *supply and demand curves*. The indifference curves can also be combined with the production-possibility curve to plot demand curves for either product *x* or *y* (Lindert 1986). A demand curve for good *x* shows how the quantity demanded responds to the price of the good (generally downward sloping). In Figure 5.1(b) the demand curves for countries A and B have been drawn (D_a and D_b respectively). The equilibrium situation given in this figure occurs after integration, with a price p_i prevailing for both countries. At that price, demand is O_aC (equal to O_aC in Figure 5.1a) in country A, and O_bC' (equal to O_bC' in Figure 5.1a) in country B. In country A, the supply of good *x* by home producers is *OD*, which implies that *DC* has to be imported (equal to *DC* in Figure 5.1a). In country B producers are much more efficient (the S_b curve runs below the S_a curve), and at price p_1 they are prepared to supply O_bD' (equals O_bD' of Figure 5.1a). The quantity *C'D'* (equal to *CD*) is exported from country B to country A.

The trade effects of a tariff

As briefly indicated above, international trade theory contends (see, among others, Greenaway, 1983; Lindert, 1986) that countries may benefit mutually by specialising in the commodities at which they excel, and also exporting them, while importing those goods which they could produce only at relatively high costs, leaving their production to other nations. That implies that, theoretically, on certain assumptions, prosperity would be greatest if trade were free the world over. In practice, however, world economy is not based on general free trade. On the contrary, most countries have raised barriers in the shape of tariffs, quotas, etc. The *establishment of tariffs affects production patterns and trade flows;* a simple diagram (Figure 5.2), derived from partial-equilibrium analysis, may illustrate them. The diagram contains first of all the traditional supply and demand curves of a given product in country A. The demand curve D_a of the home country (A) is given by the following equation:

$$D_a = -3/2p + 13^1/_2 \qquad (5.1)$$

the home country's supply curve of importables S_a, that is, the supply curve of the domestic producers in country A, is given by:

$$S_a = p - 1^1/_2 \qquad (5.2)$$

We now assume, besides country A, a country W representing the free world market. We further assume a fully elastic supply on the world market, at a price of $p_w = 4$. The assumption of a fully elastic supply implies that this price is unaffected by changes in the supply or demand of country A. In Figure 5.2, S_w is the curve of world supply. For country A, we can envisage a situation of autarky, of free trade, or of protection. Let us consider the effects of each situation on price, demand, production and imports.

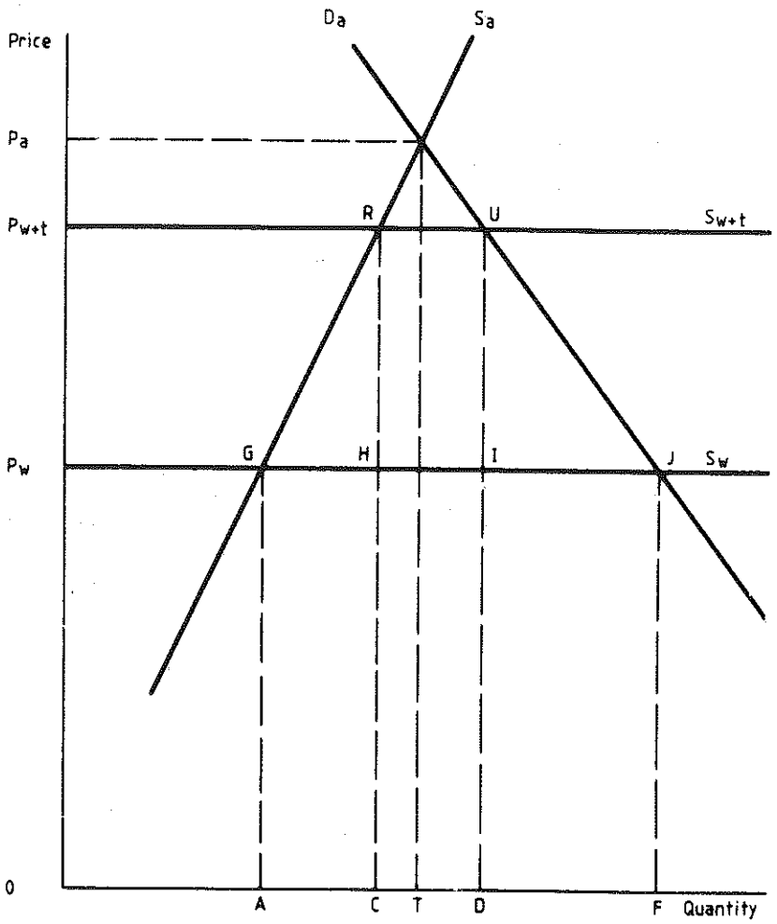


Figure 5.2 Trade effects of a tariff

In the situation of *autarky*, suppliers in A have a 100 per cent market share; they cover total demand in A. In that case, in which country A remains completely closed to the world market, the world-market price p_w is far below the equilibrium price p_a. To achieve isolation, country A needs to operate either a system of import bans or a prohibitive tariff of at least $t = 2.0$. This demonstrates that the country has no comparative advantage for the production of the good in question.

If, on the contrary, country A pursues a policy of *free trade*, the price in A is equal to the low world-market price p_w; the domestic supply is limited, but both demand (OF) and imports ($AF = GJ$) from the world are considerably higher than in the autarky case. In other words: the market has expanded (to OF); the share that A supplies has decreased to OA and the market share of imports has increased (from zero to AF).

Should country A conduct a *protectionist* policy, establishing a customs tariff t (of, for instance, 1.5 ECU), then national production in A (and hence the market share of A suppliers), national consumption, and imports (and hence the market share of 'world' suppliers) will stabilise somewhere between the two extremes of autarky and free trade. The effects are summarised in the next table.

Table 5.1 Effects of various forms of protection on trade and production of country A

	Autarky	Free trade	Protection
Domestic price (ECU)	$p_a = 6.00$	$p_w = 4.00$	$p_{w+t} = 5.50$
Domestic demand	$OT = 4.50$	$OF = 7.50$	$OD = 5.25$
Domestic production	$OT = 4.50$	$OA = 2.50$	$OC = 4.00$
Imports	$x = 0.00$	$AF = 5.00$	$CD = 1.25$

Welfare effects of the introduction of a tariff

In economic terms, free trade is preferable, the introduction of tariffs having two adverse effects. Figure 5.3 and the numerical examples given in the previous section on free trade and protection illustrate that.

First, the introduction of a tariff by country A, which had practised free trade before, causes a *loss on the producer side*. In the protected economy, goods are produced at a cost ($p_{w+t} = 5.5$ ECU) higher than would have been necessary with free trade ($p_w = 4.0$ ECU). The waste involved in the use of production factors (GH) which could be put to

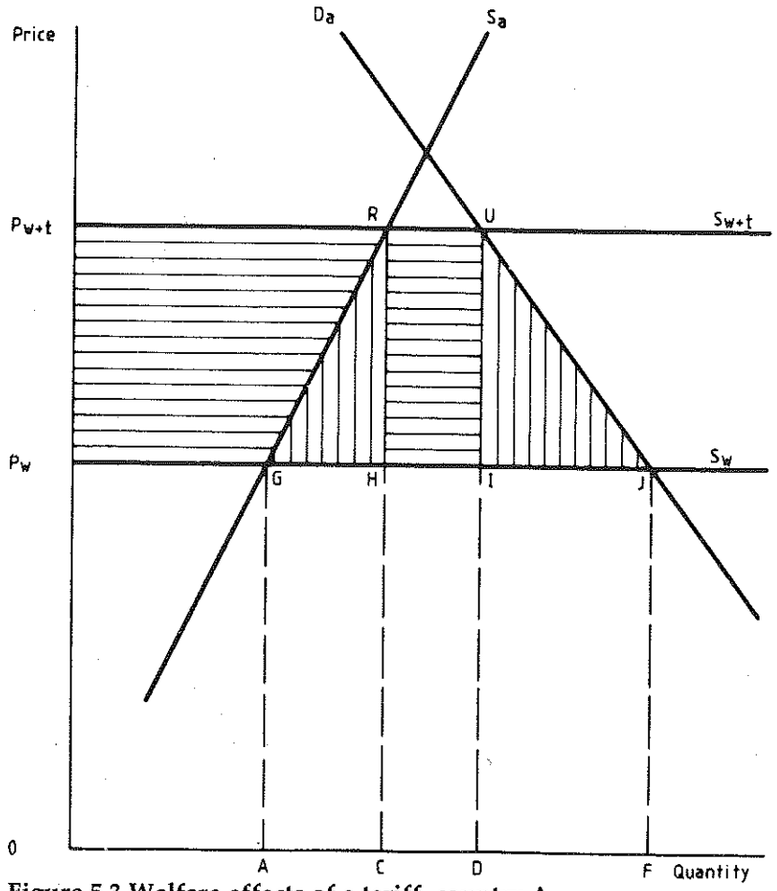


Figure 5.3 Welfare effects of a tariff, country A

better use (cost difference *HR*) elsewhere is represented by the vertically shaded triangle *GHR*. It can be calculated as:

$1/2(OC - OA)(p_{w+t} - p_w) = (4.00 - 2.50) \times 0.5 \times (5.50 - 4.00) = 1.125$ ECU

Contrary to a widely held belief, an increase in production can thus entail a loss in efficiency for the economy as a whole.

On the *consumer side*, too, there are additional costs: the consumer pays more (5.5 instead of 4.0 ECU) for the same goods, and the total quantity of goods at his disposal has diminished ($OD = 5.25$ instead of $OF = 7.50$). The resulting loss of welfare is measured by the change in consumer surplus, or the area below the demand curve above market prices. (Some consumers would indeed have been willing to pay more for the good.) The net (or deadweight) loss of welfare on the consumer side is calculated as the total effect of a lower quantity (*IJ*) times a gradually higher price (half of *IU*). This is represented by the vertically shaded triangle *UIJ* (amounting to 2.25 x 0.5 x 1.5 = 1.688 ECU. There is a redistribution of wealth from consumers to the government, as the latter gets the revenues from customs duties represented by the horizontally shaded square *HIUR* (amounting to 1.25 x 1.5 = 1.875 ECU), and from consumers to producers: the horizontally shaded area $p_{w+t}RGp_w$ (amounting to 1.5 x 4.00 = 6.00 - 1.125 = 4.875).

Obviously, the above analysis for one commodity and one country can be extended to several goods and several countries. Because the introduction of a tariff by one country is mostly followed by countermeasures of others, the negative welfare effects will be felt in many countries. That the introduction of a tariff works out negatively for overall welfare can also be illustrated with the help of Figure 5.1; indeed, as trade diminishes, countries A and B are forced back to lower indifference curves and thus to lower welfare.

Welfare effects of quantitative restrictions

A quantitative restriction (QR) has in many respects the same welfare effects as a tariff. Under a system of QR, importers are given licences to import a given quantity of goods. On the assumption of full competition, the effects of quantitative restriction can be explained from Figure 5.4.

With free trade, demand would have been *OF* at a price p_w and an imported quantity of *AF*. Restriction of the latter to $CD = RU$ will entail a diminished demand, and a market equilibrium in country A at a price of 5.5 ECU and a domestic production of *OC*. As after the introduction of a tariff, that domestic production increases from *OA* to *OC* and consumption drops from *OF* to *OD*. From the diagram, this QR is in that respect equivalent to a tariff of *t*, which is why a QR (*CD*) is expressed as tariff equivalent (*t*). There is, however, an important element *which makes a tariff in general preferable to a quota*, if protection is needed at all: in the case of a QR (to, say, *RU*) the government does not have the benefits which would accrue from a tariff (*HIUR*). At best, the amount involved flows to domestic companies (importers), but it may also accrue as profit to the foreign manufacturers. The only way open to the government to prevent the diversion of welfare from domestic con-

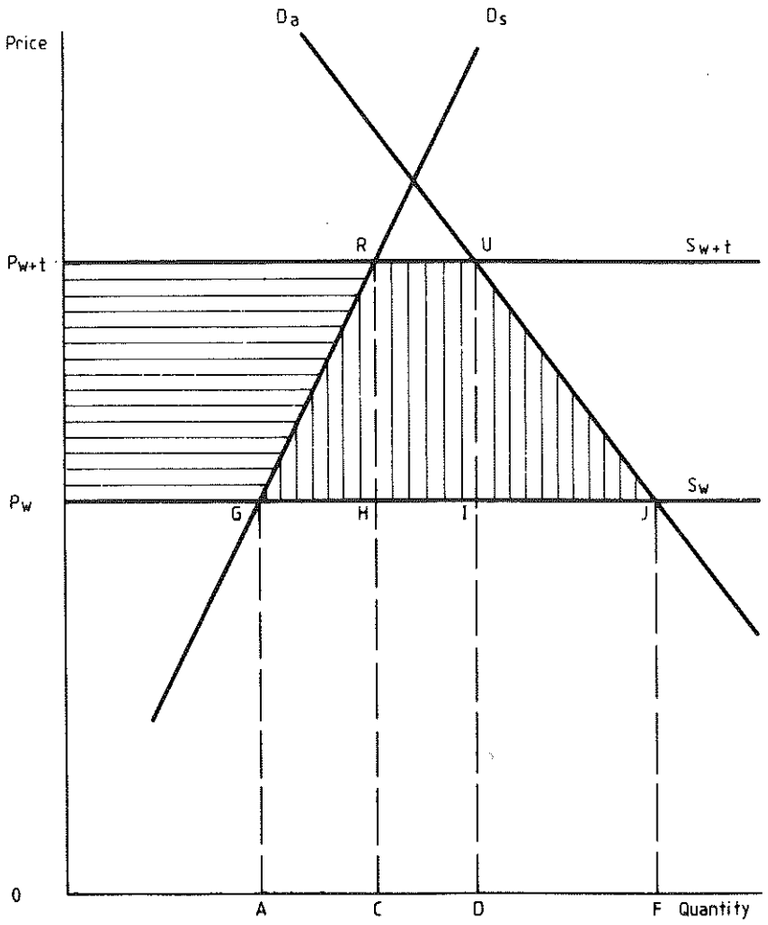


Figure 5.4 Welfare effects of quantitative restrictions, country A

sumers to foreign producers would be to sell the licences by auction. If not, the total welfare loss to country A from the QR are the two triangles *RGH* + *UIJ* and the square *HIUR*, together vertically shaded. There is again a redistribution effect of $p_{w+t} - p_w RG$ from domestic consumers to domestic producers.

Some exporting countries are now prepared to commit themselves, with respect to importing countries, to so-called VER, *voluntary export restraints*, because they expect to profit more from small sales at high unit prices than from large sales at lower unit prices. Again, there is no government revenue under VER. Why should importing countries resort to QR or VER rather than to tariffs, which have the advantage of additional revenue over the two former? As far as QR is concerned, the answer is that there is neither perfect competition nor a perfectly elastic supply. On agricultural markets in particular, the supply is so inelastic in the short run as to allow a sheer drop in prices; in that case a tariff would not be effective. The only way to protect the internal market at given minimum prices may then be to restrict imports to a certain maximum. The motive for recourse to VER is institutional: the GATT (see Chapter 19) does not allow the establishment of any new unilateral trade obstacles in the shape of tariffs; so, if protection is nevertheless wanted, the relatively costly VER are all that's left. . . .

Short-term static effects

The production and trade effects of altered tariffs after the establishment of a customs union

Classical international-trade theory teaches us that the best way to avoid the negative welfare effects of protection is for all countries of the world to adopt perfect free trade. However, countries, finding progress on that score too slow, try to adopt as a second-best strategy, a geographically limited form of free trade as represented by a customs union.[4] Recall that a customs union implies free trade among partners, but protection of the entire union against the rest of the world. So we move from a situation in which country A operates tariffs against all other countries, to a situation in which it applies tariffs to 'third countries' only.

The theory of customs unions relates to the gains and losses incurred by the establishment of such unions. These include first the static short-term gains from specialisation referred to in the preceding section. The preceding sections may have given the impression that the introduction of a CU maintaining a tariff wall lower than the average of the ones existing before, would be unambiguously advantageous to the members and the world as a whole. However, we will demonstrate that this is too simplistic a view and that both positive and negative effects occur. In economic terms the creation of the CU is warranted only if the former outweigh the latter. In political terms it is feasible only if the advantages and disadvantages are fairly distributed among partners.

Especially Viner's pioneering work (1950) shed light on the effects of a customs union between countries A and B, by making a distinction between trade creation and trade diversion. Later, Meade (1955) added

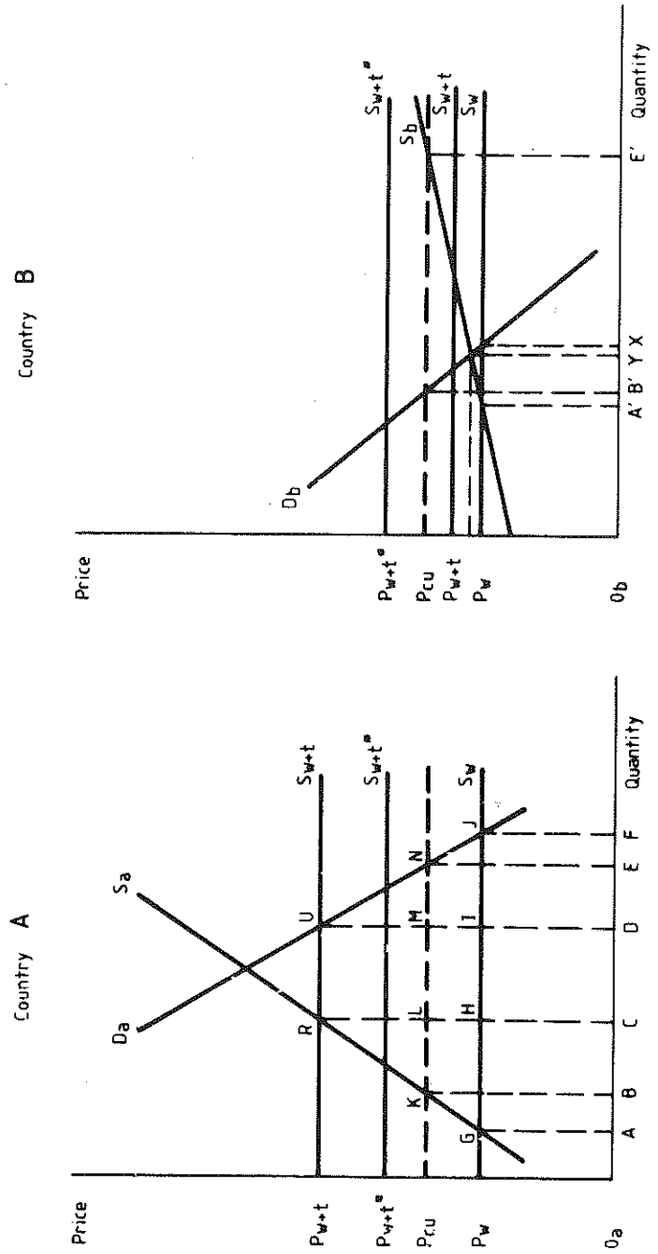


Figure 5.5 Trade and production effects of a customs union, countries A and B

the effect of trade expansion. We can explain these effects as follows.

Trade creation will occur when trade between partners A and B increases. In country A, demand will shift from the expensive protected domestic product to the cheaper product from the partner country, implying a shift from a less efficient to a more efficient producer.

Trade diversion will occur when imports from the efficient or cheap producer 'world market' are replaced with imports from a higher cost (or less efficient) producer, namely, the 'partner country'. That country's products can be sold cheaper in country A than world-market production, because the CU imposes a protective tariff on imports from W, while leaving imports from the partner country free.

Trade expansion will occur because the lower market price in A stimulates total domestic demand, which will be satisfied by foreign trade.

For a better understanding of the nature and volume of these three effects, let us take a close look at Figure 5.5, which gives the situation for country A on the left-hand side and for country B on the right. We assume that the supply from producers in the rest of the world is fully elastic at a price level p_w. The corresponding supply is represented in the diagrams by the horizontal line S_w. As a high-cost producer, country A enables its industry to capture part of the home market by introducing a fairly high tariff. Country B, on the contrary, produces at rather low costs, and needs only a low tariff to permit its producers to cover the entire internal demand. Assume now that countries A and B form a customs union which establishes a common outer tariff t^*, the average of the tariffs of countries A and B. Once the customs union is established, the equilibrium price of total demand and total supply in A+B will be p_{cu}. Country A will buy all its imports (BE) from the partner country, p_{cu} being lower than p_{w+t^*}. Production in country A will be O_aB. Country B, on its side, produces the quantity O_bE', of which $B'E'$ (equal to BE) in excess of its home demand (O_bB'); B can export this quantity to the partner country.

What, then, are the *trade effects of the creation of a customs union* which adopts a common external tariff of t^*? The effects differ according to the initial situation. Let us take the two cases of protection and free trade of the previous section as examples. If protection marks the initial situation of country A, a new trade flow (BE) occurs between partners, of which CD replaces the flow that used to come from other countries in the world. Trade creation is BC and expansion DE. On balance, trade has increased in our example (BC + DE being larger than CD), and international specialisation has intensified accordingly.

Starting from free trade for country A, a negative development occurs. Trade actually diminishes by AB on the producer side, and by EF on the consumer side. Moreover, BE is diverted from the lower-cost

world producer to the high-cost partner country. So, for country A this Customs Union has nothing but negative trade effects.

For country B, the situation is somewhat different. The introduction of a common tariff stops the trade that existed between B and W, which implies negative trade creation (-*A'Y*) and expansion (-*YX*) as less efficient home producers take over from more efficient world producers. In terms of production in B there are no trade effects (but for the exports *B'E'*), as there were no imports from the world anyway. The effects of the two cases for the two countries are summarised in the following table.

Table 5.2 Trade effects of a Customs Union, countries A and B

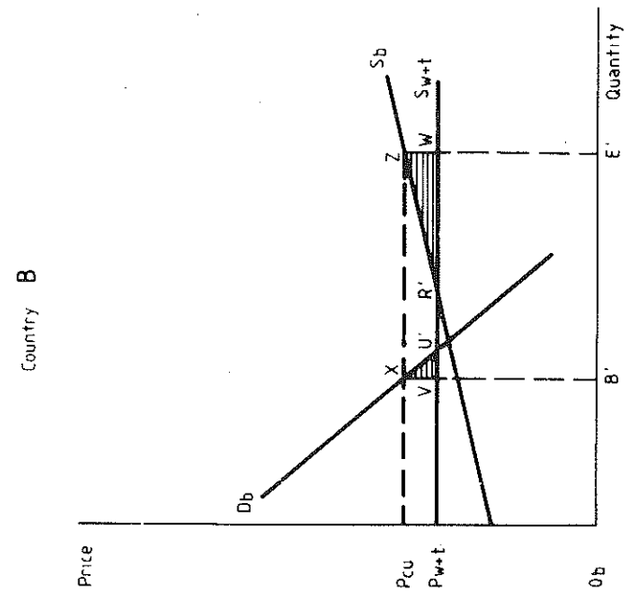
Effect	Starting situation: Free trade		Protection	
	A	B	A	B
Creation	-*AB*	-*A'Y*	*BC*	*
Expansion	-*EF*	-*YX*	*DE*	*
Diversion	*BE*	*	*CD*	*

* not applicable

Welfare effects of altered tariffs after establishment of a customs union

What are the advantages and disadvantages ensuing from the customs union and the tariff? On the one hand, trade diversion tends to make production less rational, which is a disadvantage. On the other hand, trade creation and trade expansion make production more efficient, which is advantageous. To get an idea of the magnitude of the effects, consider Figure 5.6 and the quantitative examples given earlier, starting from protectionism. We assume that the price for the Customs Union is 4.5 ECU.

For *country A* the advantages on the production side (trade creation *BC*) are represented by the triangle *KLR*. It indicates that the saving on production cost equals, on average, half the difference in costs between home production and that in country B (p_{w+t} - p_{cu}), leaving economic resources available for other purposes. In our example, this advantage can be quantified at (5.50 - 4.50) x 1.0 x 0.5 = 0.50 ECU. On the consumption side (trade expansion equal to DE) the advantages are represented by the triangle *MUN;* they amount to (6.75 - 5.25) x 1.0 x 0.5 = 0.75 ECU. Together 1.25 ECU. The disadvantages for country A are represented by the square *HLMI*. For the amount of trade equal to *CD*



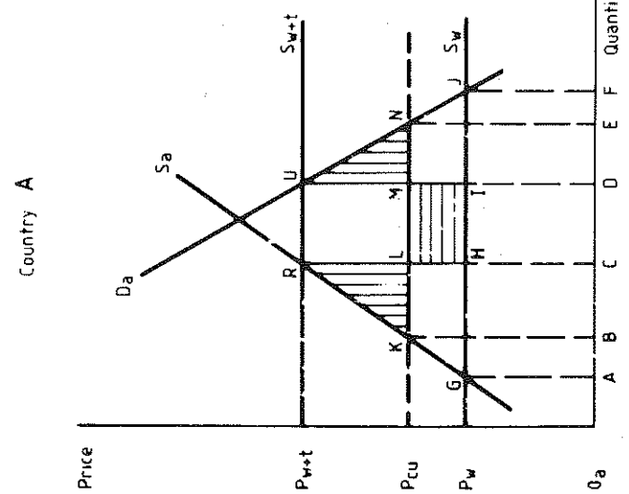


Figure 5.6 Welfare effects of a (trade-diverting) customs union, country A

which has been diverted, production inputs have been higher than necessary. We can compute this disadvantage, in our example, at (5.25 - 4.00) x (4.5 - 4.0) = 0.625 ECU. So, in our example the establishment of a customs union produces a net advantage of 0.625 ECU for country A.

For *country B* the case is quite different. The disadvantages are on the consumer as well as the producer side. The consumer gets less quantity for more money; his loss is indicated by the horizontally shaded little triangle *VXU'* in Figure 5.6. On the producer side, there is a production loss indicated by the horizontally shaded triangle *R'ZW*. The producers in B will of course enjoy a net gain.

Alternative cases can be imagined in which the profits or the losses are heavier. If, for instance, the only effect is trade expansion, there will be larger net advantages, as can be shown by a slight variation of the former example. Assume the supply curve of country B is equal to that of the world. The effects of a customs union between countries A and B will be positive, in fact the reverse of the negative ones found for country A passing from free trade to protectionism (Figure 5.5). By varying the differences between p_{cu} and p_w and the gradient of the supply and demand curves, the reader can work out other examples, to arrive finally at the point where the trade diversion exceeds trade expansion, so that the establishment of a Customs Union produces a net disadvantage to the world as a whole.

The present examples refer to only one product. To judge the economic desirability of a customs union by its static effects, the profits and losses for all products involved need to be calculated, under consideration of the specific circumstances obtaining for each.

Customs union and quantitative restrictions

While a customs union does away with all quantitative restrictions among member states, they can be maintained with respect to third countries. The effects of a customs union with quantitative restrictions are slightly different from those of a customs union with tariffs. Starting from the same example as before we will describe the developments for country A. Suppose in Figure 5.5 there is no question of a tariff equal to $p_{w+t} - p_w$, but of an equivalent quantitative restriction, equal to $CD = RU$. Two cases can be distinguished.

- *All licences had initially been granted for goods from country B.* The effect of a CU between A and B is then that country B crowds out country A, implying a trade creation of *BC* and a trade expansion of *DE*. *CD*, too, continues to be supplied by B (no trade diversion), but at lower prices.
- *All licences had initially been allotted for goods from country W.* Because after the establishment of a customs union there remains a price difference between country A and the world market, failing further agreements of a common policy of the Customs Union with respect to country W a quantity CD will continue to be imported into country A from the world market. The effect will again be a trade expansion and trade creation equal to *BC* + *DE* (no trade diversion *CD*).

Evidently, the welfare effects of abolishing quantitative restrictions differ from those caused by tariff elimination: the advantages *KLR* and *UMN* obtain in both cases, but the disadvantage *HLMI* does not accrue in the latter case.

The incidence of positive and negative effects

Various factors influence the occurrence of positive and negative effects of a customs union.

- *The production structure*: Two countries can be complementary or competitive. Viner (1950) pointed out already that with complementary production structures, most probably the two countries have already specialised to a high degree in one type of commodity; in that case the advantages of a customs union cannot be very important. If, on the contrary, the production of either country is a potential competitor of the other, specialisation in the products which either country can make best and cheapest is probable, and the advantages are likely to be relatively important.
- *The size of the union*: The more and the larger the countries participating in the CU, that is, the larger its share in total world trade, the better the prospects for division of employment and the smaller the risk of trade diversion (Viner, 1950; Meade, 1955; Tinbergen, 1959).
- *The level of the tariffs*: As the initial tariffs of the trade partners are higher, the attendant inefficiencies will be worse and the welfare effects of the abolition of tariffs greater (Viner, Meade, *op. cit.*). On the other hand, the introduction of high tariffs against third countries will reduce the positive effect.
- *Transportation and transaction costs*: The increased trade has to be realised physically, for which efficient transport is required. Failing that, the transportation costs will replace the tariffs as an obstacle to further specialisation. For that reason, CUs tend to be concluded between contiguous countries (Balassa, 1961). The remark about transportation costs applies to time-consuming clerical procedures at the frontier, and probably as well to the linguistic differences in Europe which tend to make transaction costs between linguistic areas higher than within such areas.

- *Flexibility*: The advantages are greater as both countries can respond more flexibly to new prospects. The reverse also applies: the advantages are smaller if production bottlenecks prevent the full accomplishment of advanced specialisation and the corresponding reallocation of production. We will come back to this point when discussing dynamic effects.

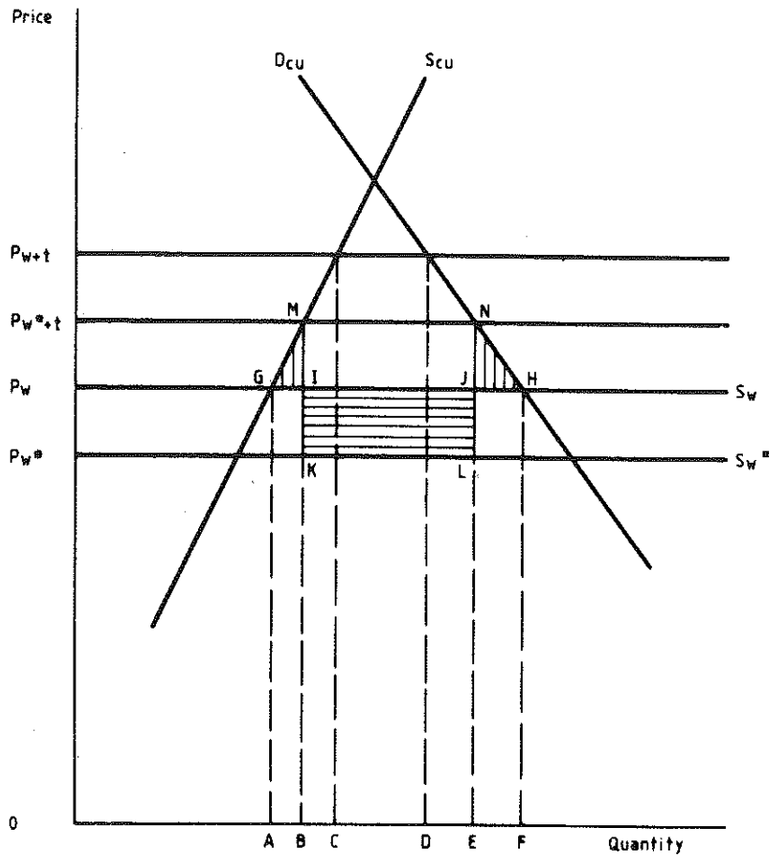


Figure 5.7 Terms-of-trade effect of a tariff for the CU

Terms of trade

So far we have assumed a fully elastic supply function in countries B and W. That may be realistic if a small country A forms a customs union with a large country B, leaving a still larger world market W, but makes no sense for a customs union of several large countries, confronting a small world market.[5]

On the other hand, importing countries united in a customs union can enforce lower supply prices on the world market (for instance by trade restrictions or bargaining power) and thus improve the terms of trade (defined here as export price divided by import price) for the CU. This is illustrated by Figure 5.7, where D_{cu} is the customs union's demand curve and S_{cu} its supply curve. The rest of the world supplies at price p_w any quantity demanded. The CU now introduces a tariff t. That takes the CU price to p_{w+t} and supply in the CU increases from OA to OC. As demand falls from OF to OD, foreign suppliers are confronted with a decrease of their export volume from AF to CD. To prevent such a considerable loss of exports, the third-country producers will cut their prices to p_w^*, which means they keep an export volume of BE. The customs union can import much cheaper than before; on the assumption of constant prices for CU exports, the CU lands a net gain; its welfare from improved terms of trade is the square $KLJI$; this has to be set against a loss of welfare of the two triangles MGI and JNH.

The example given above is not a realistic one. The supply curve of the world producers, for example, will in practice be upward sloping. For a realistic analysis, the present simple illustration does not suffice, and a wide range of differently shaped supply and demand curves have to be reviewed, which makes the analysis rather complicated. Moreover, substitution effects and income effects due to alterations in the differential prices of imported (tariff-burdened) and exported goods must also be taken into account. We will not go into the literature on the subject, extensive though it is, because the general conclusion must be that no satisfactory method has as yet been developed for a proper analysis of the problem (Wonnacott and Wonnacott, 1981), and that, therefore, *general statements on the effects of the CU on trade and price formation between CU countries and with third countries are out of the question.*

A few rules of thumb can be given, though. A tariff will probably induce producers/importers to lower their prices so as to keep their market share. That means that by introducing a tariff, a country will improve its terms of trade. Now suppose a customs union is concluded between countries A and B and that country B was the cheapest supplier, that is to say, cheaper than either W or A; in that case the customs union may deteriorate A's terms of trade. Finally, on politico-economic grounds a large customs union is arguably in a better

position to substantiate its trade policy towards the outer world and to improve its terms of trade than the individual countries. That might produce a net advantage to the entire CU.[6]

Evaluation

In the previous sections, the static effects of a customs union have been considered on the basis of a partial analysis. We found that sometimes the entire world profits from a reduction of tariffs among partners. However, for a number of nations to conclude a CU, a profit must accrue to each of the would-be partners, or, if not, compensation must be given to the country that stands to lose. But even in a country which on balance would benefit, to tip the scales towards a CU those who hope to profit from a CU policy must be politically stronger than those who fear to suffer from it.

We have seen that the static partial equilibrium model enables us in principle to compute some effects of a CU and to prove its partial advantages. However, the static approach has some major drawbacks, from the practical as well as the theoretical point of view, and also regarding its realism. The *practical drawback of the static approach* is that to draw a complete picture of the whole economy of all member states would necessitate the calculation and netting out of the various effects for a virtually infinite number of cases (goods with different elasticities of supply and demand, different tariffs, and hence different *ex-ante* production and imports).

A *more fundamental objection* against partial equilibrium analysis (Corden, 1972a) is that a tariff, and also its abolition, affects the structure of the economy and hence the demand for production factors; this in turn may change the amount producers are prepared to pay for employing them. This argument for a general-equilibrium model of discriminatory trade agreements can be illustrated as follows. Suppose the export sector of country A is labour-intensive and the import sector capital-intensive; the liberalisation of production factors will induce larger imports of capital-intensive goods, so that the scarce capital production factor will be set free in A. The supply of capital remaining equal, this means that capital becomes cheap and labour scarce and thus expensive. In the end, imports may thus cause a reversal of the relative cost of production factors, leading towards a new point of departure for international specialisation (see next chapter.) However, as general-equilibrium models appear to have many shortcomings, we will continue to work with partial-equilibrium analyses.

Finally, we must keep the *lack of realism* in mind: indeed the restrictive assumptions on which the static approach relies seldom hold in practice.[7] On goods markets, perfect competition is disturbed by cartels; adjustment processes are not without cost; factors are to some

extent mobile across national frontiers, and not completely mobile within them; unemployment will arise through imperfections, etc. In sum, a better, more dynamic analytic approach has to be looked for.

Long-term restructuring effects

Some distinctions

Besides the factors discussed in the previous section, there are others which are recurrent in the discussion of the advantages and disadvantages of a customs union; Balassa (1961) called them 'dynamic effects'. We prefer the term 'restructuring effects'. They occur because firms, workers and governments do not just sit back but react to the new situation and adapt the structure of production and the economy. On the one hand, firms faced with increased competition will try to lower their costs to stay in the market. On the other, the extended market allows large-scale production at lower average cost. These two effects are considered very important and will be analysed in some detail. Some other effects (internal to the company, such as size, or external to the company such as the industrial environment) are much less developed theoretically and empirically, and will be referred to only in passing. Still others, like the possible negative effects of regional concentration of production, or the (un)employment effects on certain groups of the labour force, will not be discussed here. We should keep in mind, however, that a CU may entail an important restructuring of the economies of the member countries, a process which cannot always be carried through without incurring significant adaptation costs. On the whole, however, the long-term benefits, to be described hereafter, are considered to outweigh by far the short-term costs. For that reason, the groups incurring these costs are given compensation (see Chapter 7, Redistribution) to facilitate the restructuring.

Increased competition and efficiency

In the 1950s, most people in Europe were convinced that the limited competition prevailing in some countries caused production to be less efficiently organised than it could be, or, to put it another way, that the input was higher than would be required for efficient production. The expectation was that the inefficiency would be overcome in a common market. It is the same argument which has lately been used to justify the entry of Spain and Portugal into the EC. Indeed, with the help of Figures 5.8 and 5.9 (suggested by Pelkmans, 1984), we can demonstrate how *improved technical efficiency due to increased competition can have a*

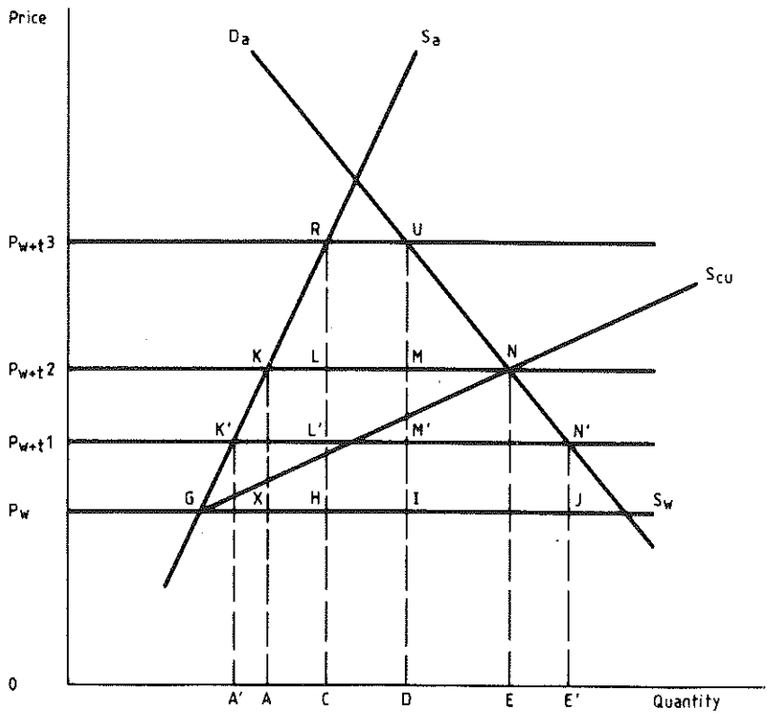


Figure 5.8 Effects of tariffs, account being taken of the customs union supply curve, country A

welfare effect, exceeding many times the limited static effect – two small triangles – we analysed in the previous section.

Figure 5.8 again reproduces the market for good x in country A. Curves S_a and D_a represent, as in Figure 5.5, supply and demand in country A itself. Supply from the world – fully elastic – is once more denoted by S_w. A change has occurred in the supply from country B; it is not indicated by a curve S_b but combined with supply S_a and incorporated in curve S_{cu}, which is valid for the entire customs union. The diagram has been drawn in such a way that the tariff t_2 is just sufficient to avoid any imports from the world market. Now suppose that before the CU was established, country A operated a tariff of t_3. After creation of the CU, the common external tariff will be set at t_2, and further lowering of this common outer tariff to t_1 is envisaged. Let us

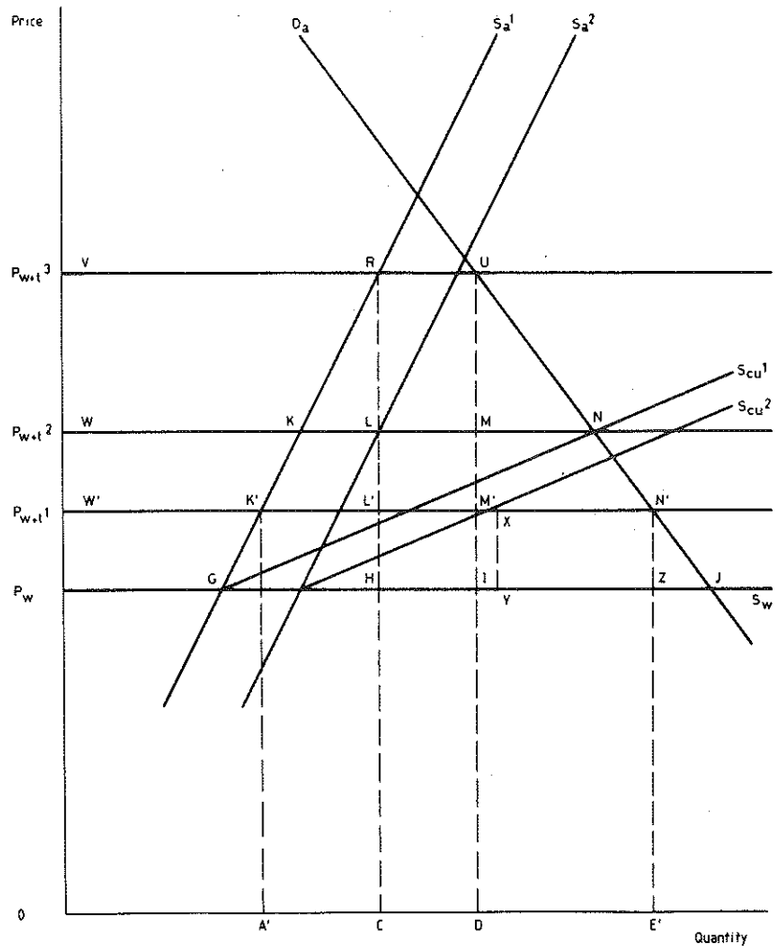


Figure 5.9 Advantages of improved technical efficiency, country A

consider the static welfare effects of this CU; according to the model given in Figure 5.6, the lowering of the initial tariff from t_3 to t_2 would mean a trade-creation effect of RKL and a trade-expansion effect of

UMN, against a trade-diversion effect of *HLMI*. As the area of the latter is about equal in size to the combined areas of *RKL* and UMN, this CU would be about welfare-neutral. Reducing the tariff further to t_1, triggering off an import quantity *A'C* from the partner country and *CE'* from the world market, would be highly welfare creating, as the combined areas *RK'L'* and *UM'N'* clearly outweigh the area *K'L'HX* (*A'C* being the trade diversion from W to B).

Now this is not the whole story. Manufacturers in A, finding themselves confronted with a great loss of sales markets (from *OC* with tariff t_3 to *OA'* with tariff t_1), rather than accept the loss will accomplish savings on production costs (Figure 5.9). As a result the supply curve of A will move down to S^2_a; the supply curve of the entire CU will drop accordingly (S^2_{cu} in Figure 5.9). The drop has been drawn in such a way that S^2_a cuts through point *L*.

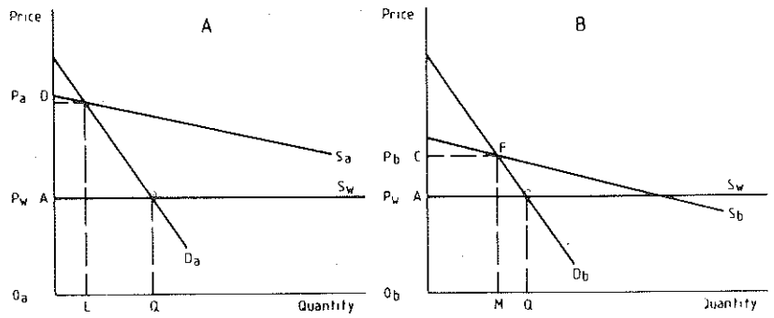
This effect of a CU on competition and hence on cost levels changes the situation profoundly. The quantity *OC* (the initial production of A) is now produced at a cost of *OW* (= *CL*) instead of *OV* (= *CR*). With tariff t_2, there are no imports from the world. *The cost-reduction*, equal to *VRLW*, is no longer a net welfare effect of *RKL* and a redistribution effect of *VRKW*, but becomes fully a welfare gain, and *renders the net effect of the CU highly positive* (*VRLW* + *UMN* - *HLMI*). With a lower customs tariff, t_1, the effects would be even better. Imports from the world market would then amount to *XN'*, giving a tariff revenue of *XN'ZY*, and more trade creation and expansion: *RL'K'* and *UM'N'* respectively, and far less trade diversion: *HL'M'I*.

Economies of scale

An establishment which can produce larger quantities cheaper than smaller ones, and is constrained in its outlets by a market of limited size, would profit from the extension of the market, for instance by a CU. Figure 5.10 can help us to analyse the effect of 'economies of scale' within one establishment. In this figure, D_a and D_b are the (identical) demand curves for countries A and B, and D_{cu} their common demand curve. S_w is the world supply curve; once more we assume a perfectly elastic supply. Contrary to the demand curves, the supply curves are not the same for countries A and B, country A producing, on average, at higher cost than country B. In both countries the cost decreases as the production increases in volume (definition of 'economy of scale').

We can again analyse *trade effects* for situations of free trade, protection and CU. Free trade appears to be the most advantageous option: at price p_w, countries A (Figure 10a) and B (Figure 10b) both import their total demand (*OQ* for either) from the world market. If, on the contrary, countries A and B both close their markets, in other words, adopt a policy of autarky, country A consumes *OL* at price p_a, country

B consumes *OM* at price p_b. Evidently, to prevent the national producer from making monopolist profits in this case, the tariffs must not be higher than $(p_a - p_w)$ for country A or higher than $(p_b - p_w)$ for country B (see the discussion of 'made-to-measure tariffs' in Corden, 1972a). The total demand in countries A and B would be *OL* + *OM*, appreciably less than the *OQ* + *OQ* in the case of free trade. Suppose a CU is concluded between countries A and B, and that this CU decides to close its own market to competitors from the rest of the world. Evidently in that case, represented in the left-hand bottom part (Figure 5.10c), demand in the



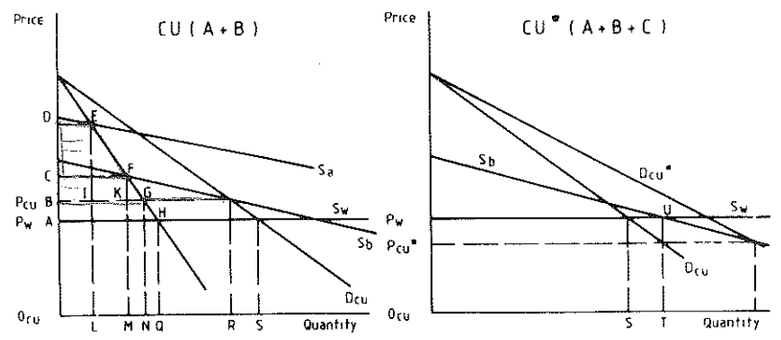


Figure 5.10 Economies of scale in production for individual countries A and B and for customs unions of A and B and of A, B and C

CU could be *OR* at a price of p_{cu} and a customs tariff of (p_{cu} - p_w). The implication is that country B would take care of the entire production, production in country A being discontinued. The effects of trade creation, diversion and expansion of this CU are in line with the definitions given earlier, albeit that account has to be taken of the slope of the supply curves.

Table 5.3 Trade and production effects of a CU under conditions of economies of scale (countries A and B)

	Initial situation			
Effect	Free trade		Autarky	
	A	B	A	B
Creation	*	*	$O_a L$	*
Expansion	-*NQ*	-*NQ*	*LN*	*MN*
Diversion	$O_{cu}N$	$O_{cu}N$	*	*

* not applicable

What are the *welfare effects* of the customs union of A and B in comparison with a state of complete protection and with one of free trade in a situation of economies of scale?

Compared to the case of autarky, consumption in country A becomes *ON* instead of *OL*, an advantage equal to *BDEG*. Part of it, namely *BDEI*, is the cost-cutting effect of the 'economies of scale', equalling trade creation; the other part, the triangle *EIG*, is trade expansion (*LN*). For country B, consumption becomes *ON* instead of *OM*; the advantage is *BCFG*, of which *BCFK* represents the cost-cutting effect, in this case on domestic production, and FKG the effect of trade expansion (*MN*).

For the customs union to be an advantageous alternative to overall free trade, the prices of the world producers must be equal to or higher than those of country B. That would be so if a third high-cost country C with a domestic market at least the size of *ST* joined the CU (the case depicted in Figure 5.10d). The considerable advantage of such a large market achieved by the customs union is that it enhances the international competitiveness of the CU. Indeed this enlarged CU enables the producer in country B to diminish his costs so as to deliver the good to the CU market at p_{cu}*. As this price is below p_w, he can start to export his product to the world market. This will permit the CU to abolish the tariff p_{cu} - p_w, which leads to a further trade expansion and creation in both countries A and B. (We will come back to these effects in Chapters 12, Manufacturing, and 16, Allocation Policies.)

Do *'economies of scale', as described above, justify the creation of a customs union*? That depends in the end on the net effects for the entire CU, and their division between the partners. In our example, a CU seems favourable on balance, but the losing partner A is likely to demand compensation in terms of money transfers from country B, or to try and achieve a better starting point than country B for other products, so that their manufacture can be concentrated in country A.

Advantages internal to the company

Next to the advantages of the CU discussed up till now, that are internal to the establishment there are three advantages that rather affect the whole company. These apply to the company's size, its growth rate and its learning curve. They are all rather difficult to grasp and quantify in empirical studies. Still, a brief description of them based on many micro-studies may suffice to make the point.

The average *size of companies* may increase after the establishment of a CU because the extension of the market will induce many firms to merge with others for a stronger collective market position. Production may become more efficient because large companies tend to be more efficient than smaller ones, for various reasons. For one thing, large companies are stronger negotiators than smaller ones, and therefore able to make better deals while purchasing their raw materials and intermediary products. They also have easier access to capital and pay relatively less interest. For another thing, they tend to need relatively less manpower because they can, more easily than small companies, shift their staff from one department to another. With respect to their environment and the public authorities (subsidies), large companies have a stronger position than small ones. Large companies are more often in a position to mobilise the resources required for innovation. Finally they are better able than small companies to build up stable market positions, also in export countries. However, these advantages are far from decisive. A small company is often able to respond more flexibly to new market needs, fewer overheads (no bureaucracy), is better equipped to motivate the staff, etc. Moreover, new needs tend to be recognised sooner by small rather than by large companies.

The *growth rate* of companies tends to have a positive effect on efficiency. On the one hand, growing companies tend to have the most up-to-date machinery; moreover, their work force performs better because in growing companies the adaptation of staff is smoother and the atmosphere tends to be more innovative than in companies with a more established pattern. On the other hand, growing companies tend to be unsure about the prospects on entirely new markets, and growth

is often paid for dearly. The growth effects of a CU may be enhanced if companies innovate in the manner described here.

Finally, there is the *learning curve*, indicating that companies learn to produce more efficiently by the actual production of greater numbers. Indeed, practice is thought to be the best teacher of how to make things, how to organise production, etc. Learning by doing is different from economies of scale in that the latter give the curve a downward slope, while the former tends to lower the entire curve in the course of time. The first company to produce great quantities will learn so much that it will outrace the others in cutting the costs, and thus gain a profit. To the extent that a CU creates a market in which a company is able to proceed fast along a learning curve, production can be made cheaper in the CU. The welfare implications are illustrated in Figure 5.11.

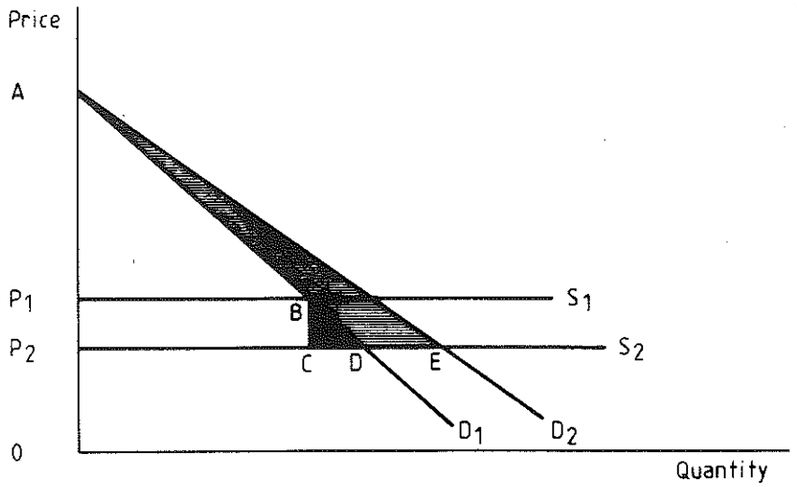


Figure 5.11 Welfare effects of learning

In the first instance, demand is at curve D_1, supply is fully elastic, S_1 (world-wide competition) at price p_1 including a (non-tariff) barrier of $p_1 - p_2$. The abolition of protectionism will bring the prices down to p_2 creating a static welfare gain of the triangle *BCD*. However, as this expansion permits producers to offer products of higher quality that are better adapted to specific consumer needs, the demand curve will shift to D_2. Evidently, the total welfare gain of removing the protectionist barrier is *ADE* + *BCD*, which is much greater than the mere static effect.

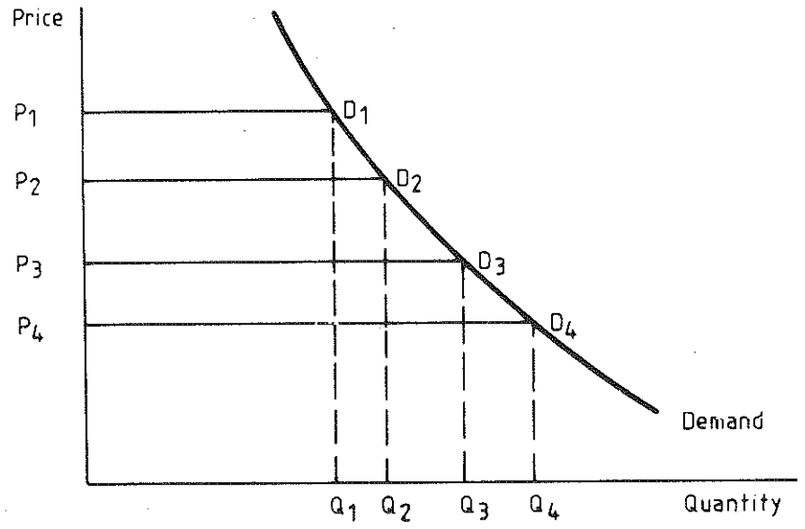


Figure 5.12 Effects of eliminating trade barriers in a customs union

Effects external to the company

It has been argued (among others by Balassa, 1961) that the *industrial interwovenness* of an economy can have a positive effect on total efficiency. When a CU puts a company in a better position, the positive influence is not confined to that company, but extends to all suppliers and buyers. For instance, a successful product innovation may stimulate the suppliers of machines to innovate their production processes, and the suppliers of intermediate products for machines to design better parts. Thus, starting from some key producers, the positive effect of the CU propagates through the whole economy. That effect will, of course, be the greater, the better the various parts of the economy are equipped to respond to the impulse.

Another argument, is that *technical progress* is consolidated by the integration of markets. Stimulated by increased competition, companies will be on the lookout for new producers and new production methods. The enlarged market will also foster the exchange of technical know-how. The ensuing enhanced dynamics will in the end stimulate economic growth.

Effects of the removal of barriers

The effects of the creation of a customs union through the removal of internal barriers to trade may be synoptically represented as in Figure 5.12. As barriers such as tariffs, quotas and other non-tariff barriers are eliminated, domestic producers have to reduce their price to the level of producers in partner countries. The first implication is for them to give up economic rents in the form of excess profits (price moves from p_1 to p_2). If the resulting cost level p_2 is not yet competitive, they will reduce such inefficiencies as overstaffing, excess overheads, etc. As the price goes down to p_3 the demand increases, which may induce new investment. The process of mergers and exit of firms will make room for economies of scale that bring prices down to p_4, permitting demand to increase from Q_1 to Q_4.

Consumers gain from these price reductions (area $p_1D_1p_4D_4$) as they obtain more goods at lower prices. Producers offset the loss by cost reductions. The total welfare gain to the economy is $p_2D_2p_4D_4$ as the excess profits $p_1D_1p_2D_2$ are transferred from producers to consumers. The final gain may be even greater if producers become so efficient (p_4) that they are able to export to third countries. That conclusion rests on the assumption that no country has a comparative advantage over others, and that redundant resources are re-employed.

Summary and conclusions

- The creation of a customs union has some positive and some negative (welfare) *effects*. The creation of a customs union is justified if the former exceed the latter.
- As regards the *short-term effects*, which may concern the consumer as well as the producer and the government, the analysis has shown that (on certain assumptions) the CU is the more positive as the production structures are more competitive, the CU is larger, the initial tariffs were higher, and the transaction costs lower.
- The *long-term restructuring effects* offer better reasons for creating a CU. Competition and economies of scale are the most important effects; among the others are larger companies, growth rates, learning curves, and industrial interwovenness. The latter effects are hard to define and even harder to quantify.

Notes

1 An interesting description of the history of economic thinking on integration is given in Machlup (1977).

2 See for the differences, among others, Robson (1988), Chapters 2 and 3. See this text also for issues of integration of developing countries.
3 Students unfamiliar with the type of analysis cited in these chapters are referred to Part II of Mishan (1982) for a succinct and clear introduction into concepts and methods.
4 World free trade is fostered by GATT; the creation of a customs union is explicitly allowed by the GATT rules (see Chapter 19).
5 EC world trade in agricultural produce (the subject of Chapter 11), for instance, has had an appreciable effect on prices on the world market.
6 For evidence in the EC on this point, see Petith *et al.* (1977).
7 Attempts have also been made to extend the 3 x 2 case (three countries, two commodities) to a 3 x 3 case (three commodities) with a high- and a low-tariff import good (Lloyd, 1982). The results of these exercises are very indeterminate and depend largely on specific sets of assumptions.