A New Way of Understanding Customs Unions

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Abstract

Traditional economic integration theory justifies the formation of preferential trading arrangements on political and economic grounds; but the real importance of economic interdependence has yet to be considered. This is precisely what this paper sets out to achieve: a new way of understanding customs unions which traditional theory overlooks.

Specifically, this paper justifies the formation of a customs union made up of two countries as the best way of achieving those countries' economic objectives. Customs unions may be understood from this perspective alone, without having to consider them as constituting strategic commercial policies. Regionalism and multilateralism therefore, can be considered as complementary processes. (JEL: F15, F02, F13)

I. Introduction

It has been evident for some time now that the evolution of international economic relations has been influenced by two fundamental trends: Firstly, there has been a growing economic interdependence among countries. This economic interdependence, due mainly to the trade liberalization of interna-

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tional trade, has given rise to a macroeconomic interdependence. Cooper [1985] explains the reasons for the existence of economic and macroeconomic interdependence. This macroeconomic interdependence can be formalized as follows: let $T^i = (T^i_1, T^i_2, , ... , T^i_n)$ represents the economic targets of a country i (*i.e.* its balance of payments, output level, rate of inflation, etc.) and $C^i = (C^i_1, C^i_2, , ... , C^i_m)$ its policy variables (those being; monetary policy, fiscal policy, commercial policies, etc.). Country i's objective will be to maximize its utility function. This will depend on the level of the economic targets in the following way: $U^i = U^i(T^i)$. Macroeconomic interdependence is highlighted by the fact that the targets of a country depend not only on its own policies but on those of other countries. The relationship can be expressed as follows: $T^i = F^i (C^1, ... , C^i, ... , C^n)$.

Secondly, a growing economic integration. This economic integration involves free trade arrangements among a small number of countries which maintain commercial barriers with the rest of the world.

We set out to relate these two trends, namely, increasing interdependence and regional liberalization by proving that the formation of preferential trade arrangements might be the best way to achieve the countries' economic objectives.

Traditional theory on economic integration justifies the formation of commercial arrangements on political and economic grounds; but the importance of economic interdependence has yet to be considered. What this paper focuses on therefore, is a new way of understanding preferential trading arrangements which traditional theory overlooks.

Before proceeding with the analysis, it is important to examine certain basic concepts related to economic integration. As we know, regional integration processes are progressive and that the first thing countries do is to integrate those aspects of their economies which are necessary to achieve a further integration.

Specifically, the following phases can be distinguished: two or more countries form a preferential trading club, when they reduce their respective duties on imports of all goods from each other and each of them retain their original tariffs against the outside world. When countries join together trading with one another without restrictions whilst each retains its own original tariffs against the outside world, they form a free trade area (or association).

When the zone adopts a common external tariff, it is called a customs union. Later, when free movement of all factors of production becomes an added feature, the customs union becomes a common market. Finally, when countries decide they want to go a stage further and complete economic integration, they form a monetary and economic union. In order to do so, countries coordinate their economic policy and adopt a common currency. This process may become a political union, that is to say, member countries act as a big country.

This paper analyzes a new way of understanding customs unions, although the analysis might be applied to any preferential trade arrangement whose member countries adopt a common external tariff.

As we know from Viner's study [1950], we cannot affirm that the formation of a customs union will be profitable for the member countries or for the rest of the world, this is because the formation of a customs union has both trade liberalizing effects; trade creation, and protectionist effects; trade diversion.

Under the influence of Viner, early writers mainly studied the economic effects of such customs unions. The question of the rationale or motivation for customs unions was ignored in formal literature until the Cooper-Massell analysis [1965]. This study argued that since it could be established that a non-preferential tariff policy is necessarily superior as a trade liberalizing device, than customs unions, a more efficient allocation of resources could not be the reason why customs unions are formed. From the above, it follows that customs unions should be considered as being protectionist rather than liberalizing mechanisms. See Kraus [1973].

On the other hand, the new theory of international trade, promoted by Dixit and Norman [1980], Krugman [1979] and Lancaster [1980], with the use of models of imperfect competition, shows that interventionist trade policies can improve national welfare at the expense of the rest of the world. Sapir [1993] calls this kind of commercial policy "strategic trade policy."

Taking into account the above comments, the formation of a customs union can be considered as a strategic trade policy for two reasons:

– First, in terms of international trade theory, a customs union can be considered as a large country which, taking into account the optimal tariff theory, initiated by Bikerdike [1906] and developed and refined by Sci-

tovsky [1942] and Kahn [1948-49] among others, implies that the union can use its commercial policy to redistribute world welfare in favor of the union.

– Second, the effect of trade diversion is to improve the union's terms of trade, by reducing its imports and depressing world prices. This effect was studied by several writers, Johnson [1965], Kemp [1969] and Lipsey [1970] being three of the most prominent. This is the view made explicit by Pearce [1970] and was empirically studied within the context of the European Community by Petith [1977]. Petith's main conclusion is that the improvement in the terms of trade, as well as being the main economic effect, was also one of the major goals of the European Community.

This argument does not go all the way to justifying the formation of customs unions, since any gain for the union implies a loss for the rest of the world. Bhagwati [1993] pointed out that if this was indeed the case, it would give rise to strategic integration, which could lead to trade wars among the commercial blocks and the general liberalization of the world economy would thus be difficult.

The purpose of this paper is to prove that two countries might have incentives to form a customs union when their utility level is reduced due to external factors. Specifically, it is proved that countries' economic targets are more attainable when they belong to a customs union than when they act individually in a non-cooperative way. Moreover, the formation of such customs unions would not necessarily prejudice the rest of the world and should not be considered as a strategic commercial policy.

The paper's format is as follows. Section II presents the international trade model used in the development of the analysis. Sections III and IV study the effects of non-cooperative and cooperative performance respectively. Section V concludes.

II. The Model

Let us take as a reference a model made up of two countries and the rest of the world. We assume that the two countries are large, a fact which gives rise to a macroeconomic interdependence. This interdependence is one of the most important features of our model. Furthermore we assume that they are symmetrical in order to simplify the analysis.

Taking as a reference the said model, it is assumed that both countries, at once, suffer a disequilibrium in their balance of payments which adversely affects their terms of trade. It is supposed that this disequilibrium is caused by an external effect such as: a rise in the price of some common imports such as petroleum; a fall in the price of some common exports; a loss in the competitiveness of their products in world markets, etc. We know from the theory of international trade that such a change in the terms of trade influences the welfare of countries in the sense that a deterioration in the terms of trade will provoke a reduction in the welfare level of the countries.

Let us suppose that both countries decide to use their commercial policy to counter this effect. As we are assuming that they are large countries, we know from the optimal tariff theory that each country can improve its terms of trade by imposing a certain positive tariff. The optimal tariff theory states that a tariff gives rise to two conflicting effects on the welfare of a large country: 1) the terms of trade improve, which increase welfare; and 2) the volume of trade falls, which reduces welfare. Welfare is maximized when the tariff rate is such that the marginal terms of trade benefit just balances the marginal volume of trade cost.

Taking as a reference the said optimal tariff theory, we shall assume that both countries carry out their commercial policy to maximize their gains from international trade. These gains will depend on variations in both the volume of trade and the terms of trade in the following way:

$$U^a(dt^a, dt^b) = \left(TOT^a(dt^a, dt^b)\right)\left(X^a(dt^a, dt^b)\right)$$
$$U^b(dt^a, dt^b) = \left(TOT^b(dt^a, dt^b)\right)\left(X^b(dt^a, dt^b)\right). \tag{1}$$

Where dt^a and dt^b represent each country commercial policy, TOT represents the terms of trade and X is the volume of international trade.

Obviously, the higher the objective variables' value, the greater the gains from trade. So when we take as a reference an autarky situation, the utility function value will be zero so there will be no any gains from trade. On the other hand, in a free trade situation, which would be the optimal situation from a world viewpoint, the utility function will take a certain positive value.

We shall take as a reference a situation in which the utility function takes the following value:

$$U^a(dt^a, dt^b) = (TOT_0^a)(X_0^a)$$

$$U^b(dt^a, dt^b) = (TOT_0^b)(X_0^b) \tag{2}$$

Where the deterioration in the terms of trade caused by the said external effect, is already included in TOT_0.

As we are mainly interested in knowing how both countries should carry out their commercial policy to counter this effect, an analysis of the effects of tariffs on objective variables must first be carried out. As we already know, the actions of the first country will affect the objectives of the second and vice versa, This is due to commercial policy interdependence.

We shall begin by studying the effects of tariffs on the terms of trade. When a large country imposes a tariff on its imports, the prices of such goods rise and consequently the volume of imports falls. This will tend to reduce world prices of imports. In this way, the terms of trade of the country imposing tariffs will change for the better and those of the other country will deteriorate. Of course, the second country's terms of trade will be affected to a lower extent because both countries are also trading with the rest of the world. So we can formalize the above relation in the following way:

$$TOT_1 = TOT_0 + dTOT. \tag{3}$$

Being

$$dTOT^a(dt^a, dt^b) = p_1^a(dt^a - \alpha^b dt^b).$$

$$dTOT^b(dt^a, dt^b) = p_1^b(dt^b - \alpha^a dt^a). \tag{4}$$

Where again a and b refer to both countries. Furthermore it must be the case that

$$p_1^a = p_1^b = p_1 \tag{5}$$

because of the assumed symmetry of the two countries. We know that p represents the effect of a country's commercial policy on its terms of trade and it must be positive. On the other hand α is also positive and lower than one and because of the symmetry it is verified that:

$$\alpha^a = \alpha^b = \alpha. \tag{6}$$

In the same way, we can state the existing relationship between the volume of foreign trade and the two countries' tariffs:

$$X_1(dt^a, dt^b) = X_0 + dX. \tag{7}$$

Where:

$$dX^a(dt^a, dt^b) = -q_1^a(dt^a + \beta^b dt^b)$$

$$dX^b(dt^a, dt^b) = -q_1^b(dt^b + \beta^a dt^a). \tag{8}$$

Once again, a and b refer to the two countries and the parameters will again be equal for both, due to the supposed symmetry. Furthermore, we know that the higher the tariffs on imports the lower the volume of foreign trade, so q_1 will be positive. β will be positive and lower than one which means that tariffs imposed by one country on its imports will reduce another's volume of foreign trade less than its own.

In reality α and β represent the relative importance of commercial partners, so the greater the values of α and β, the greater the relative volume of trade between the two countries.

We can therefore represent the utility functions of both countries in the reference situation as follows:

$$U^a(dt^a, dt^b) = \left(TOT_0 + p_1(dt^a - \alpha dt^b)\right)\left(X_0 - q_1(dt^a + \beta dt^b)\right)$$

$$U^b(dt^a, dt^b) = \left(TOT_0 + p_1(dt^b - \alpha dt^a)\right)\left(X_0 - q_1(dt^b + \beta dt^a)\right) \tag{9}$$

Now we will analyze two different possibilities: To act individually, that is in a non-cooperative way, or to cooperate by forming a customs union. It will be shown that this cooperation will be profitable not only for both countries but possibly also for the rest of the world.

So we can understand why customs unions exist without considering them as a way of redistributing world welfare in favor of the member countries. It might be said therefore that customs unions are not strategic commercial policies and so, there is no reason to believe that regional liberalization will provoke tariff wars as Bhagwati [1993] believed.

III. The Effects of Non-Cooperative Performance

When the countries decide to act in a non-cooperative way, each of them employs its commercial policy to maximize its own welfare function. We know that because of economic interdependence the optimal policy of one country will depend on that of the other. The relationship between both policies can be derived from the Nash reaction functions which are also known as optimal reaction functions. These functions will be derived below.

First of all, it should be remembered that the utility functions of both countries have the following form:

$$U^a(dt^a, dt^b) = \left(TOT_0 + p_1(dt^a - \alpha dt^b)\right)\left(X_0 - q_1(dt^a + \beta dt^b)\right)$$

$$U^b(dt^a, dt^b) = \left(TOT_0 + p_1(dt^b - \alpha dt^a)\right)\left(X_0 - q_1(dt^b + \beta dt^a)\right). \tag{10}$$

Each of them will then use its commercial policy to maximize its utility function. So we obtain the Nash reaction function for each country and they take the form:

$$dt^a = \frac{\left(p_1 q_1(\alpha - \beta)\right)dt^b + \left(p_1 X_0 - q_1 TOT_0\right)}{2p_1 q_1}$$

$$dt^b = \frac{\left(p_1 q_1(\alpha - \beta)\right)dt^a + \left(p_1 X_0 - q_1 TOT_0\right)}{2p_1 q_1}. \tag{11}$$

From these reaction functions we can derive the commercial policy interdependence in the following way:

$$\frac{\partial dt^a}{\partial dt^b} = \frac{\alpha - \beta}{2} \quad \text{and} \quad \frac{\partial dt^b}{\partial dt^a} = \frac{\alpha - \beta}{2}. \tag{12}$$

As we see, when α (which represents the relative effect of one country's commercial policy on the other's terms of trade) is greater than β (which represents the relative effect on the volume of commerce) the relationship between both policies is positive. This relationship is always lower than one, which means that any changes in one country's commercial policy will suppose a change in the other's policy but of a lower magnitude.

Now we can derive the non-cooperative solution by substituting:

$$dt_N^a = dt_N^b = \frac{p_1 X_0 - q_1 TOT_0}{p_1 q_1 (2 + \beta - \alpha)}. \tag{13}$$

This is the equilibrium tariff for each country and can be positive or negative depending on the numerator because the denominator will always be positive. However we can prove that this tariff will always be positive. To do so, let us assume that TOT_0 and X_0 represent the terms of trade and the volume of commerce in a hypothetical free trade situation, we know from the optimal tariff theory that:[1]

$$\frac{\partial U^a}{\partial dt^a} > 0 \quad \text{and} \quad \frac{\partial U^b}{\partial dt^b} > 0. \tag{14}$$

solving either of the above inequalities we obtain the following relationship between the parameters:

$$p_1 X_0 - q_1 TOT_0 > 0 \tag{15}$$

which implies that the equilibrium tariffs will be positive.

The main objective now is to analyze the effects of non-cooperative performance on the welfare of both countries. We know from the optimal tariff theory that when a large country imposes its optimal tariff, its utility level increases, this happens when other countries do not respond. This is not the case in our model, and it is possible that both countries suffer a loss as a consequence of non-cooperative behavior. To solve this problem we can analyze the effects of the non-cooperative response on the non-member countries' utility and then compare this result with the utility level before the formation of the union. Let us write the utility level in the following way:

$$U_N^a = U_N^b = \left(TOT_0 + P_1 (1 - \alpha) dt_N \right) \left(X_0 - q_1 (1 + \beta) \, dt_N \right). \tag{16}$$

We can see that each country is adversely affected by the other's commercial policy because the profitable movement in its terms of trade decreases, and at the same time the negative effect on its volume of com-

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1. From here on $U(dt^a, dt^b)$ will be known as U.

merce is increased. These effects will cause uncertainty about the final effect on the utility level.

We have represented the utility level corresponding to the situation immediately after the creation of the union as U_0. Now both situations can be compared (before and after the non-cooperative response) by studying the following expression:

$$U_N - U_0 = dt_N \Big(p_1(1-\alpha)\big(X_0 - q_1(1+\beta)dt_N\big) - TOT_0 q_1(1+\beta) \Big). \quad (17)$$

As can be seen it is difficult to know whether the expression will be positive or negative. When it is positive the non-cooperative response will be profitable and when it is negative it will be unprofitable. It depends both on the dt_N sign and that of the expression between brackets which we shall call Z. We can prove that Z will be zero when

$$dt_N = \frac{p_1(1-\alpha)X_0 - q_1(1+\beta)TOT_0}{p_1 q_1(1+\beta)\,(1-\alpha)}. \quad (18)$$

Since the above expression is shown to be false, we can say that the non-cooperative response will affect the countries' utility. Further we can prove that:

$$\frac{\partial Z}{\partial dt_N} < 0. \quad (19)$$

Then there exist two possibilities:

a) $dt_N > 0$ and $\dfrac{p_1(1-\alpha)X_0 - q_1(1+\beta)TOT_0}{p_1 q_1(1+\beta)\,(1-\alpha)} < 0.$ \quad (20)

In this case it is obvious that both Z and $(U_N - U_0)$ will be negative, which means that the non-cooperative response will be harmful.

b) $dt_N > 0$ and $\dfrac{p_1(1-\alpha)X_0 - q_1(1+\beta)TOT_0}{p_1 q_1(1+\beta)\,(1-\alpha)} > 0.$ \quad (21)

Therefore, to obtain

$$dt_N < \frac{p_1(1-\alpha)X_0 - q_1(1+\beta)TOT_0}{p_1 q_1(1+\beta)\,(1-\alpha)} \quad (22)$$

it is necessary that:

$$p_1 X_0 (1-\alpha)^2 > q_1 TOT_0 (1+\beta)^2. \tag{23}$$

In this case Z has a positive value and the non-cooperative response will be profitable. Now we can affirm that the lower the α and β values, which is to say the lower the effects of each country's commercial policy on the other's variables, the greater the probability of benefiting from the non-cooperative response.

Just the opposite will occur when:

$$p_1 X_0 (1-\alpha)^2 > q_1 TOT_0 (1+\beta)^2. \tag{24}$$

and in this case the non-cooperative response will be harmful.

Specifically we can compare the non-cooperative response with the non-response by analyzing the following expression.

$$U_N - U_0 = \frac{\left(p_1 X_0 - q_1 TOT_0\right)\left(p_1 (1-\alpha)^2 X_0 - q_1 (1+\beta)^2 TOT_0\right)}{p_1 q_1 (2+\beta-\alpha)^2}. \tag{25}$$

We can summarize the above results as follows: the greater the volume of commerce between both countries, the greater the commercial policy inter-dependence (α and β values) and the greater the probability that non cooperation will be harmful. Therefore, the greater the bilateral commerce between countries, the greater their incentives to cooperate by forming a customs union. In the most extreme of cases when countries trade only with each other, $\alpha = \beta = 1$, the non-cooperative performance will always be harmful.

IV. Will Countries Benefit from the Formation of a Customs Union?

Faced with the above problem, let us suppose that countries decide to carry out their commercial policy in a cooperative way, thus forming a customs union. In this case, both countries will carry out their commercial policy acting in union and discriminating against foreign countries. This means that they trade with each other without any commercial restrictions but each of them imposes restrictions on the rest of the world adopting a common external tariff.

In order to properly develop the analysis, a distinction must be made; Country a must be able to differentiate between its bilateral commerce with country b and its commerce with the rest of the world and the same applies for country b.

$$X^a(dt^a, dt^b) = X^b(dt^a, dt^b) = X_w + X_c. \tag{26}$$

$$TOT^a(dt^a, dt^b) = TOT^b(dt^a, dt^b) = TOT_w + TOT_c. \tag{27}$$

X_w and TOT_w being the volume of commerce and the terms of trade with the rest of the world and X_c and TOT_c the same variables but between both countries.

We can represent the effects of both countries commercial policy on the objective variables, beginning with the effects on the volume of commerce which can be represented as follows:

$$dX^a(dt^a, dt^b) = -q_1 dt^a - \beta q_1 dt^b = -(q_{1w} + q_{1c}) dt^a - \beta q_1 dt^b. \tag{28}$$

Now, $-q_{1w} dt^a$ represents the effects of country a's commercial policy on its volume of commerce with the rest of the world, and $q_{1c} dt^a$ represents the same effects but with respect to country b, $\beta q_1 dt^b$ represents the effects 1 of country b's commercial policy on the volume of commerce of country a.

The same can be done with the terms of trade, these terms of trade can be represented as follows:

$$dTOT^a(dt^a, dt^b) = p_1 dt^a - \alpha p_1 dt^b = (p_{1w} + p_{1c}) dt^a - \alpha p_1 dt^b. \tag{29}$$

In this case, $p_{1w} dt^a$ and $p_{1c} dt^a$ represent the effects of country a's commercial policy on its terms of trade with the rest of the world and with country b respectively and $\alpha p_1 dt^b$ represents the effects of the country b's commercial policy on country a's terms of trade.

In the same way we can state country b's variables.

Now taking into account the supposed symmetry between the two countries, we can write:

$$\alpha p_1 = P_{1c} \tag{30}$$

$$\beta q_1 = q_{1c}. \tag{31}$$

Further, we know that:

$$p_1 = p_{1w} + p_{1c} \tag{32}$$

$$q_1 = q_{1w} + q_{1c}. \tag{33}$$

Therefore:

$$p_{1w} = p_1 - p_{1c} = p_1 - \alpha p_1 = p_1(1 - \alpha) \tag{34}$$

$$q_{1w} = q_1 - q_{1c} = q_1 - \beta q_1 = q_1(1 - \beta) \tag{35}$$

We can rewrite the welfare functions in the following way:

$$U^a(dt^a, \ dt^b) = \left(TOT_0 + \left(p_1(1-\alpha) + \alpha p_1 \right) dt^a - \alpha p_1 dt^b \right)$$
$$\left(X_0 - \left(q_1(1-\beta) + \beta q_1 \right) dt^a - \beta q_1 dt^b \right)$$

$$U^b(dt^a, \ dt^b) = \left(TOT_0 + \left(p_1(1-\alpha) + \alpha p_1 \right) dt^b - \alpha p_1 dt^a \right)$$
$$\left(X_0 - \left(q_1(1-\beta) + \beta q_1 \right) dt^b - \beta q_1 dt^a \right). \tag{36}$$

It will be supposed that both countries decide to respond to the external effects by forming a customs union, so they carry out their commercial policy in a discriminatory way trading freely between each other but imposing optimal tariffs on the rest of the world. We shall suppose that this optimal tariff is such that it maximizes the following utility function:

$$W = U^a + U^b = \left(TOT_0 + p_1(1-\alpha)dt^a \right)\left(X_0 - q_1(1-\beta)dt^a \right)$$
$$+ \left(TOT_0 + p_1(1-\alpha)dt^b \right)\left(X_0 - q_1(1-\beta)dt^b \right). \tag{37}$$

Both countries act as a unity against third countries and carry out a common external commercial policy, that is to say:

$$dt^a = dt^b = dt_U. \tag{38}$$

Therefore, the utility function takes the following form:

$$W = 2 \left(TOT_0 + p_1(1-\alpha)dt_U \right)\left(X_0 - q_1(1-\beta)dt_U \right). \tag{39}$$

Now, the union should be considered as a large country and taking as a reference a free trade situation, we know from the optimal tariff theory that the following relation is verified:

$$\frac{\partial W}{\partial dt_U} > 0 \quad \Rightarrow \quad p_1 > q_1 \left(\frac{1-\beta}{1-\alpha}\right)\left(\frac{TOT_0}{X_0}\right). \tag{40}$$

The optimal tariff can be derived in the following way:

$$\frac{\partial W}{\partial dt_U} = 0 \quad \Rightarrow \quad dt_U = \frac{p_1(1-\alpha)X_0 - q_1(1-\beta)TOT_0}{2p_1q_1(1-\alpha)\,(1-\beta)}. \tag{41}$$

It is clear that the optimal tariff of the union will have a positive value.

An analysis of the effects of the cooperative solution both on the customs union (which is made up of two countries) and on the rest of the world can now be carried out.

To begin with, let us study to what extent the formation of a customs union will be profitable for both countries with respect to non-cooperative performance. We can write the utility function (for either country) in each case as follows:

$$U_N = \left(TOT_0 + p_1(1-\alpha)dt_N\right)\left(X_0 - q_1(1+\beta)dt_N\right).$$

$$U_U = \left(TOT_0 + p_1(1-\alpha)dt_U\right)\left(X_0 - q_1(1-\beta)dt_U\right). \tag{42}$$

Where U_N and dt_N denote the utility level and the equilibrium tariff in the non-cooperative case and U_U and dt_U refer to the cooperative one.

It can be shown that U_U is greater than U_N: supposing that after forming the customs union countries first maintain their non cooperative tariffs against the rest of the world, the resulting performance will be better than non-cooperation, because the terms of trade do not change, but the volume of trade will increase. Obviously, both countries benefit, or at worst, are not adversely affected by substituting the non cooperative tariff by the optimal tariff.

Now let us analyze the effects of the formation of the customs union on the rest of the world. First of all, we have proved that when the two countries maintain their non cooperative tariff, their terms of trade do not

change and neither do those of the rest of the world. The rest of the world therefore will not be influenced by the formation of the union, and tariff wars are not justifiable. Quite the reverse in fact; when countries impose their optimal tariffs, the rest of the world might even be better off, this outcome will depend on the relative weight of the tariffs. We can analyze this weight or value as follows:

$$dt_U - dt_N = \frac{p_1(1-\alpha)X_0(1+2\beta-\alpha) - q_1(1-\beta)TOT_0(1+\beta)}{2p_1^2 q_1^2 (1-\alpha)(1-\beta)(2+\beta-\alpha)}. \tag{43}$$

Its sign is indeterminate and will be equal to that of the numerator. We know that

$$p_1(1-\alpha)X_0 - q_1(1-\beta)TOT_0 > 0 \tag{44}$$

which implies is that the difference expressed will have a positive sign if β is greater than α, and if so the rest of the world will be worse off as a consequence of the formation of the union and tariffs wars may emerge. On the other hand, when the difference is negative, the rest of the world will be better off, and there would be no reason for the emergence of tariff wars. This would in fact be possible and both processes (regionalism and multilateralism) would be complementary. The greater the value of α and the lower the value of β, the higher the likelihood that the two processes will be complementary.

V. Concluding Remarks

Employing the simple economic interdependence model herein expounded, we can draw two important conclusions regarding the effects of the economic integration process:

Firstly, we have proved that when an external effect acts upon two countries, these countries will be better off joining together and forming a customs union, because of economic interdependence. Furthermore, the greater the bilateral commerce between the countries, the greater their incentives to form a customs union. Traditional economic integration theory is therefore complemented, through an analysis of an aspect of the theory which has, until now, been largely unstudied.

Secondly, the formation of a customs union, may imply a reduction in external tariffs, if so we cannot consider it as a beggar-thy-neighbour policy and so there is no reason for the emergence of tariff wars . In this case, both processes, regionalism and multilateralism, would be complementary.

References

Bhagwati, J. [1993], "Regionalism vs. Multilateralism: An Overview," in J. de Melo and A. Panagarya (eds.), *New Dimensions in Regional Integration*, Cambridge University Press: Cambridge.

Bikerdike, C. F. [1906], "The Theory of Incipient Taxes," *Economic Journal*, 16; pp. 529-35.

Cooper, C. A. and Massell, B. F. [1965], "A New Look at Customs Union Theory," *Economic Journal*, 75; pp. 742-47.

Dixit, A. K. and Norman, V. [1980], *Theory of International Trade: A Dual, General Equilibrium Approach*, Cambridge University Press: Cambridge.

Johnson, H. G. [1972], "An Economic Theory of Protectionism, Tariff Bargaining and the Formation of Customs Unions," *Journal of Political Economy*, 73; pp. 256-83.

Kahn, R. F. [1948-49], "Tariffs and the Terms of Trade," *Review of Economic Studies*, 5; pp. 14-19.

Kemp, M. [1969], *A Contribution to the General Equilibrium Theory of Preferential Trading*, Amsterdam: North-Holland Publishing Co.

Krugman, P. R. [1979], "Increasing Returns, Monopolistic Competition and International Trade," *Journal of International Economics*, 9; pp. 469-479.

Lancaster, K. J. [1980], "Intra-industry Trade Under Perfect Monopolistic Competition," *Journal of International Economics*, 10; pp. 151-175.

Lipsey, R. G. [1970], *The Theory of Customs Unions: A General Equilibrium Analysis*, London: Weindenfel and Nicolson.

Pearce, I. F. [1970], *International Trade, Book 1*, London: Macmillan.

Petit, H. C. [1977], "European Integration and the Terms of Trade," *Economic Journal*, 87; pp. 262-72.

Sapir, A. [1993], "Regionalism and the New Theory of International Trade:

Do the Bells Toll for the GATT? A European Outlook," *The World Economy*, July; pp. 423-438.

Scitovsky, T. [1942], "A Reconsideration of the Theory of Tariffs," *Review of Economic Studies*, 9; pp. 89-110.

Viner, J. [1950], *The Customs Union Issue*, New York: Carnegie Endowment for International Peace.