Journal of International Economic
Integration 1(1), Spring 1986, 43–58.

An Alternative Approach to Customs Union Theory

A Balance of Payments Framework to Measure Integraton Effects

A.J. Margues Mendes*

I - Introduction

Customs union theory is a well-established field in economics and its assumptions and predictions have been extensively discussed. Major contributions to the theory were made by Viner (1950); Meade (1955); Lipsey (1960); Johnson (1965) and Corden (1972). Good surveys have been done by Lipsey (1960), Krauss (1972), Verdoorn-Bochove (1972), Mayes (1978) and Jones and El-Agraa (1981). However, there is a widespread discontent regarding its ability to provide an assessment of the gains to be expected from the formation of such unions. Elsewhere (Mendes 1985) we argued that, as it stands, the theory is in a deadlock. We can summarise here the main drawbacks. These derive from its general equilibrium core assumptions, namely that: there are no factor movements; there is an automatic adjustment of the balance of payments, and technology is fixed and constant returns to scale are assumed. Customs union theory then relies on the Vinerian-Meade concepts of trade creation and trade diversion which, although theoretically important, do not exhaust all integration effects. Further attempts to introduce terms of trade changes and economies of scale are mostly of a partial and very restrictive nature. Moreover, apart from contradictions in the trade creation/diversion concepts when related to welfare effects [Johnson (1974)], and the difficulties of empirical measurement [Tovias (1982)], the various attempts to provide alternative taxonomies of customs union effects [eg. Dayal (1976); Collier (1979)] have failed to provide a rationale for entering/forming a customs union. That is, one is still left with the superior Cooper and Massel's (1965) alternative policy of unilateral non-discriminatory tariff reduction; the question of relative gains is still left to empirical measurement, and the extended concepts of trade creation/diversion are still non-operational for empirical mea-

* University of Coimbra, Portugal. I would like to acknowledge that I benefited extensively from discussions with Prof. A. P. Thirlwall. Needless to say, any remaining errors or shortcomings are my own responsibility.

surement.

Our point of departure here is that trade creation/diversion concepts cannot appropriately be used to measure growth effects. Not only are static concepts ill-suited to dynamic measurement, but (i) the balance of payments does not automatically adjust; (ii) there are a few cases when trade creation and trade diversion cannot be empirically measured, and (iii) in some cases they would be incomplete due to the existence of Common Market policies. Here we take the view that it is simpler and more correct to consider the total trade effects when evaluating integration, regardless of whether these come about through trade creation/diversion, external trade creation, trade reorientation or trade suppression. If it is accepted that integration effects are mainly derived from trade then the most fruitful procedure for measurement is to use the foreign trade multiplier, with export growth as the major component of autonomous demand.

The advantage of using a multiplier is self-evident if one considers that the traditional customs union effects are of a static nature while most of the literature [Williamson (1971), Balassa (1975), Mayes (1978;1983) and many others] claims that the dynamic effects are likely to be at least of the same size or even greater. However, apart from the earlier work of Brown (1961), who first exemplified the effects of integration by means of the investment multiplier, no other work has been done using this approach. The foreign trade multiplier can be traced back to Harrod (1933). Here we shall use the dynamic version developed by Thirlwall in a series of recent papers (1979;1982) concerned with his balance of payments constrained growth model. This will be briefly outlined in the next section, after which we proceed with the derivation of a framework suitable to measure both the total growth effect and the impact of the various integration effects, namely: export growth; terms of trade; propensity to import, and factor mobility. We end with an illustration of the new framework using the results of estimates performed relatively to the European Economic Community, for the period 1974–81.

II - The Balance of Payments Constrained Growth Model Framework

Thirlwall's main contention is that the balance of payments position sets the limit to the growth of demand to which supply can adapt, and that therefore the long-run growth rate can be approximated by the so-called dynamic version of the foreign trade multiplier[1]:

$$y_B = \frac{x}{\pi}$$

[1] Harrod's foreign trade multiplier is $\Delta Y/\Delta X = 1/n$ where n is the marginal propensity to import (Harrod 1933).

where y_B is growth rate of output; x is growth rate of export volume and π is income elasticity of demand for imports. It has also been shown (McCombie 1985) that "Thirlwall's law" is identical to the Hicks super-multiplier if the growth of exports and other autonomous expenditures are the same. Thirlwall (1979;1982) has also provided statistical evidence in favour of his theory for both developed and developing economies and has examined the conditions of divergence from his law due to sustained capital outflows or inflows and relative price movements in international trade. A relation between the growth rate allowed by the trade multiplier, the growth rate with a disequilibrium balance of payments and the actual growth rate can then be derived.

We start from the basic national accounts ex-post identity:

$$P_d Y = P_d A + P_d X - P_f EM \tag{1}$$

where P_d is index of domestic prices; Y is national income; A is domestic absorption; P_f is index of foreign prices; E is the exchange rate measured as the domestic price of foreign currencies; M is the volume of imports, and X is the volume of exports. In real terms:

$$Y = A + X - \frac{P_f E}{P_d} M \tag{2}$$

Thus any excess of real expenditure over real income will have to be met by real capital inflows (C); that is:

$$X - \frac{P_f E}{P_d} M + C = 0 \tag{3}$$

Alternatively, we can write[2]:

$$P_d X + P_d C = P_f EM \tag{4}$$

and by taking rates of change we obtain,

$$\frac{X}{X + C} x + \frac{C}{X + C} c + p_d = p_f + m + e \tag{5}$$

where the lower case letters represent the growth rates.

Now specify the import and export functions as

[2] Thirlwall expresses it as $P_d X + C = P_f M$, where C represents capital flows in nominal terms, which leads to a more complicated expression for the disequilibrium balance of payments growth rate

$$\left[y_B^* = \frac{\frac{P_d X}{P_D X + C} + \frac{C}{P_D X + C} (c - p_d)}{\pi} \right]$$

This can be seen as collapsing to our derivation by simply substitution of C by $P_d C$ and some algebraic manipulation.

$$M = \left(\frac{P_f E}{P_d}\right)^{\phi} Y^{\pi} \tag{6}$$

and

$$X = \left(\frac{P_d}{P_f E}\right)^{\eta} Z^{\varepsilon} \tag{7}$$

where ϕ is price elasticity of demand for imports; π is income elasticity of demand for imports; η is price elasticity of demand for exports; Z is world income, and ε is income elasticity of demand for exports. Then taking rates of change, gives:

$$m = \phi(p_f + e - p_d) + \pi(y) \tag{8}$$

and

$$x = \eta(p_d - p_f - e) + \epsilon(z) \tag{9}$$

Substituting (8) and (9) in expression (5) above gives the growth rate consistent with initial disequilibrium in the balance of payments, that is,

$$y = \frac{\left(\frac{X}{X+C}\eta + \phi\right)(p_d - p_f - e) + (p_d - p_f - e) + \frac{X}{X+C}\epsilon(z) + \frac{C}{X+C}c}{\pi} \tag{10}$$

In the numerator we have now distinguished the volume effect of relative price changes (first term), the pure terms of trade effect $(p_d - p_f - e)$, the exogenously determined growth of exports and the effect of capital movements.

If we now assume that the terms of trade remain unchanged, that is, $p_d = e + p_f$, the identity reduces to a more manageable form:

$$y_B^* = \frac{\frac{X}{X+C}x + \frac{C}{X+C}c}{\pi} \tag{11}$$

However, this expression is not exempt from terms of trade and volume price effects and no matter how close the trade multiplier growth rate approaches the actual growth rate one cannot claim the validity of "Thirlwall's law" based on this relationship[3].

Alternatively (Mendes 1985b), we can rewrite 11) above, as:

$$y_B^* = y\left(1 + \frac{g}{m}\right) \tag{12}$$

[3] x will include the effect of price changes if they have occurred.

where g is the change in the terms of trade $[-(p_d - p_f - e)]$ and m is the growth rate of imports. This specification subtracts both export and import price volume effects plus an interdependence term between imports and the terms of trade. This allows an easier decomposition of the actual growth rate into the various components of growth: the trade

TABLE 1 **Sources of Growth in European Economies**

Countries	Actual Growth Rate [1 = 2+3−4−5] (1)	Sources of Growth: y_B Trade Multiplier (2)	$(y_B^* - y_B)$ Capital Flows (3)	$\frac{g}{\pi}$ Terms of Trade (4)	$\frac{g}{\pi}\psi\left(-\frac{g}{m}\right)$ Price Volume Effects (5)
Period 1960–72					
Germany	4.40	7.86	−4.89	−2.64	1.21
France	5.40	5.42	−1.12	−1.29	0.19
Italy	5.10	5.31	−1.75	−1.37	−0.17
Netherlands	5.10	5.47	−2.99	−2.80	0.19
Belgium-Lux.	4.60	5.22	−1.59	−1.03	0.06
Austria	4.70	4.98	−0.98	−0.75	0.05
Finland	4.40	4.60	−0.65	−0.45	0.00
Norway	4.10	4.62	−1.68	−1.49	0.29
Portugal	6.30	6.78	−1.06	−0.57	0.04
Sweden	4.00	4.49	−1.47	−1.06	0.03
Switzerland	4.20	3.39	−0.37	−0.99	−0.18
U.K.	2.80	3.00	−0.88	−0.64	0.00
Denmark	4.20	5.83	−3.42	−2.80	0.98
Period 1973–81					
Germany	2.40	2.17	0.67	0.50	−0.06
France	2.70	3.26	−0.18	0.39	−0.02
Italy	2.60	3.46	−0.55	0.30	0.01
Netherlands	2.10	1.91	0.27	0.06	0.01
Belgium-Lux.	2.10	2.17	0.56	0.62	0.01
U. Kingdom	1.10	1.56	−2.33	−1.31	−0.56
Ireland	3.80	3.45	1.58	0.86	0.37
Denmark	1.80	3.01	0.45	0.85	0.81
Austria	2.80	3.62	−0.87	0.00	0.00
Iceland	3.50	5.77	−2.26	−0.02	−0.01
Finland	2.60	3.92	2.09	1.49	1.90
Norway	4.40	3.01	2.67	0.27	1.04
Portugal	3.50	3.22	4.70	2.21	2.24
Sweden	1.40	1.37	0.60	0.46	0.11
Switzerland	4.90	2.01	1.84	−0.52	−0.56

Note: a negative sign in the terms of trade means an improvement.

multiplier, capital flows, terms of trade and price volume effects.

Further, it can be shown that the closeness of "Thirlwall's law" to the actual growth rate is dependent on the growth changes induced by capital flows and terms of trade changes offsetting each other and on aggregate import price elasticities being generally low. As empirical evidence[4] supports this last hypothesis one would expect very good predictions of the actual growth rate from this accounting framework.

In fact, we have found (Mendes 1985b) evidence for 12 industrialized economies which only presented an average absolute difference of .31% points and showed that in the period 1968–81 the trade multiplier could "explain", on average, 80% of the growth experienced by western developed economies. In table 1 below we present further evidence covering the 1960–72 and 1973–81 periods. In spite of invisibles and trade services not having been taken into account, the closeness between estimated and actual gorwth rates is very high (with a mean absolute difference of 1.16 and .38% points for the first and second periods respectively).

During both periods the trade multiplier growth rate was very close (around 80%) to the actual value although the contributions of capital flows and movements to the terms of trade were reversed. In the 1960's all countries experienced trade surpluses (capital outflows) and improved their terms of trade, while during the 1970's all (except the U.K.) experienced a worsening of the terms of trade. It can also be verified that in both periods the price volume effects were small.

We can now extend and modify this balance of payments framework to analyse integration effects.

III. The Measurement of Integration Effects within the Balance of Payments Framework

We start with the overall balance of payments identity in equation (3):

$$X - \left(\frac{P_f E}{P_d}\right) M + C = 0 \tag{12}$$

Now let $M = KY$ where K is the average propensity to import so that:

$$Y = \left(\frac{X + C}{K}\right)\left(\frac{P_d}{P_f E}\right) \tag{13}$$

Taking rates of growth gives:

[4] See Stem et al (1976) and Thursby (1984) for empirical evidence on price elasticities and Mendes (1985a) for our own estimates.

$$y = (X + C) - k + (p_d - p_f - e) \tag{14}$$

That is, the growth rate equals the rate of growth of exports and capital flows ($X \dot{+} C$) minus the growth of the propensity to import (k) plus the growth of the real terms of trade ($p_d - p_f - e$). The change in the growth rate induced by integration will be equal to the induced changes in these components, that is,

$$\Delta y = \Delta(X \dot{+} C) - \Delta k + \Delta(p_d - p_f - e) \tag{15}$$

Now rewriting 12) as,

$$X + C = GM \tag{16}$$

where $G = \frac{P_f E}{P_d}$ so that $g = (p_f + e - p_d) = -(p_d - p_f - e)$

and, taking rates of growth, we have,

$$(X \dot{+} C) = g + m \tag{17}$$

so that (14) and (15) above can be rewritten as

$$y = m - k \tag{18}$$

and

$$\Delta y = \Delta m - \Delta k \tag{19}$$

That is, the growth induced by integration will equal the change in the growth rate of imports minus the change in the growth of the propensity to import.

Given estimates of the annual volume of imports induced by integration, the change in import growth can be easily estimated.

Since

$$M = M' + 1 \tag{20}$$

where M is the import volume without integration and I is import volume generated by the integration[5], the change in the growth of imports can be represented as follows: we have that

$$m' = m\frac{M}{M - I} - i\frac{I}{M - I} \tag{21}$$

where i is the growth rate of I and since $\Delta m = m - m'$ we have:

$$\Delta m = m\left(1 - \frac{M}{M - I}\right) + i\frac{I}{M - I} \tag{22}$$

[5] Note that from here on' will refer to a without integration situation.

or

$$\Delta m = \frac{I}{M - I}(i - m) \tag{23}$$

Finally, the change in growth of the propensity to import (Δk) can be estimated as follows:

$$K = \frac{M}{Y} \tag{24}$$

so that

$$k = \frac{1}{M}\frac{dM}{dt} - \frac{1}{Y}\frac{dY}{dt} \tag{25}$$

and

$$k\frac{Mdt}{dM} = 1 - \frac{dY}{dM}\frac{M}{Y} \tag{26}$$

or

$$k = \left(1 - \frac{1}{\pi}\right)m \tag{27}$$

Therefore,

$$\Delta k = k - k' = m - \frac{m}{\pi} - m' + \frac{m'}{\pi'} \tag{28}$$

and

$$\Delta k = \Delta m + \frac{m\Delta\pi - \pi\Delta m}{\pi(\pi - \Delta\pi)} \tag{29}$$

To estimate Δk we need to measure the impact of the integration upon the income elasticity of demand for imports of its members ($\Delta\pi$). This will come about through changes in trade specialization and there are no clear "a priori" expectations regarding its magnitude and sign[6]. Therefore, its evaluation is an empirical matter.

Given reliable estimates of the integration effect on the growth rate of imports and in the income elasticity of demand for imports, we can have an estimate of the overall effect upon the growth rate, as:

$$\Delta y = \frac{\pi\Delta m - m\Delta\pi}{\pi(\pi - \Delta\pi)} \tag{30}$$

[6] Balassa's (1967) analysis in terms of changes in the income elasticities would probably tend to suggest an increase given the high level of intra-EEC trade

We can see, then, that the sign and magnitude of the integration effects will be dependent on the integration induced imports (I); on the differential between i and m rates of import growth ($i - m$), and on the induced change in the income elasticity of demand for imports ($\Delta\pi$).

It is important to note[7] that the total effect of integration upon imports is equal to the difference between total trade creation [($c_{21} + e_{31}$), i.e. trade creation with the partner plus trade creation with the rest of the world] and reorientation (r_{21}) minus trade suppres sion ($s_{21} + s_{31}$), i.e.,

$$I = [(c_{21} + e_{31}) + r_{21} - (s_{21} + s_{31})]. \tag{31}$$

From (23) and (30) above it can be seen that even if there is net trade creation, i.e. ($I > 0$), this condition is not sufficient to have a positive impact on growth as conventional customs union theory assumes. Furthermore, if we were also to adopt the traditional hypothesis of "once-for-all" effects (ie, i = 0), then a positive contribution to growth would require a reduction of the income elasticity of demand for imports $\left[\Delta\pi < -\pi\left(\frac{I}{M - I}\right)\right]$.

It should also be noted that our model shows that the occurrence of net trade creation for individual members is not either a necessary condition for a positive contribution to growth. In fact, there are several possibilities of obtaining a positive contribution depending on the values of i and $\Delta\pi$.

However, and perhaps more important, one of the possibilities of our model is that the effect on the growth rate can be split up into its component parts in order to assess the different transmission mechanisms and check the corresponding results against the theoretical and empirical evidence available. This will be done in the following way:

First, the effect on the terms of trade [$\Delta(p_d - p_f - e)$] can be derived from the balance of payments growth rate with a constant terms of trade [y_B^* – in previous section].

Rewriting (12) above as,

$$g = \frac{m}{y}(y_B^* - y) \tag{32}$$

and without integration,

$$g' = \frac{m'}{y'}(y_B^{*\prime} - y') \tag{33}$$

we have,

[7] See Mendes (1985a).

$$\Delta g = g - g' = \frac{m}{y}(y_B^* - y) - \frac{m'}{y'}(y_B^{*\prime} - y'). \tag{34}$$

And, as

$$m' = m - \Delta m$$
$$y_B^{*\prime} = y_B^* - \Delta y_B^*$$
$$y' = y - \Delta y$$

we can rewrite (34) above, as

$$\Delta g = \frac{m}{y} y_B^* - \frac{m}{y} y - \left(\frac{m - \Delta m}{y - \Delta y}\right)(y_B^* - \Delta y_B^* - y + \Delta y) \tag{35}$$

which, after transformation, becomes:

$$\Delta g = \frac{y\Delta m(y_B^* - \Delta y_B^*) + y\Delta m(\Delta y - y) + m(y\Delta y_B^* - y_B^*\Delta y)}{y(y - \Delta y)} \tag{36}$$

or

$$\Delta g = \frac{y\,\Delta m(y_B^* - \Delta y_B^* + \Delta y - y) + m(y\Delta y_B^* - y_B^*\,\Delta y)}{y(y - \Delta y)} \tag{37}$$

This will require an estimation of the change induced in the balance of payments growth rate (Δy_B^*) which can be estimated (under reasonable assumptions) once we know the integration effect on trade (exports) and on the income elasticity ($\Delta\pi$).

From (11) in the previous section we have,

$$y_B^* = \frac{\frac{X}{X + C}x + \frac{C}{X + C}c}{\pi} \tag{38}$$

so that

$$y_B^{*\prime} = \frac{\frac{(Xx + Cc) - (Ee + Ff)}{(X + C) - (E + F)}}{\pi - \Delta\pi} \tag{39}$$

where E is export volume induced by the integration; e is the export growth induced by the integration; F are the financial flows induced by integration, and f is the growth of financial flows induced by integration.

The export volume effect (E), is estimated through the share technique and the capital flows effect (F), is estimated from the equilibrium condition of expression (16) above.

Note, however, that

$$F = I(G - \Delta G) + M\Delta G - E \tag{40}$$

i.e., an interdependence problem arises from the inclusion of the change in the terms of trade in the estimation of the capital flows (F).

An alternative method to estimate the changes in the terms of trade is the use of expression (17) above, as

$$\Delta g = \Delta(X \dot{+} C) - \Delta m \tag{41}$$

in which case the capital flows would be split up into its components, that is: where F_1 is change in current balance due to trade flows and unaccounted effects; F_2 is labour remittances; F_3 is direct foreign investment, and F_4 is net budget payments.

Given that F_2, F_3 and F_4 can be independently estimated and assumed not to be influenced by changes in the terms of trade, we can estimate the change in the current balance position as,

$$F_1 = I(G - \Delta G) + M\Delta G - E - F_2 - F_3 - F_4 \tag{42}$$

but, we still are left with the interdependence problem.

Therefore, it follows that the estimation[8] of the change in the terms of trade growth rate will only imply the assumption that $y_B^{*\prime}$ will not be substantially affected by terms of trade effects on the induced growth of exports and capital flows.

Or alternatively one can take only the trade balance, say

$$F_1 = I - E \tag{43}$$

so that we are left with only an interdependence factor, which is:

$$\Delta G(I - M) = I(G - 1) - (F_2 + F_3 + F_4). \tag{44}$$

Now, given the estimation of the pure terms of trade effect of integration, we can estimate the change due to exports and capital flows [$\Delta(X + C)$], and split it up.

From (15) we have,

$$\Delta(X \dot{+} C) = \Delta y - \Delta(p_d - p_f - e) + \Delta k \tag{45}$$

which can be rewritten as,

$$\Delta(X \dot{+} C) = (X \dot{+} C) - (X \dot{+} C)' \tag{46}$$

and

$$\Delta(X \dot{+} C) = \frac{1}{X + C}(Xx + Cc) - \frac{1}{X' + C'}(X'x' + C'c'). \tag{47}$$

[8] Two alternative ways of estimating the change in the terms of trade would be: (1) - by assuming that the relation between the multiplier growth rate (y_B) and the growth rate allowed by the balance of payments position (y_B^*) would be the same with and without integration (that is, $y_B^* = \alpha y_B$ and $y_B^{*\prime} = \alpha y_B'$). (2) - restimation of the export function for the post-integration period using the residual technique. Both these methods can be used to check the reliability of the estimates.

Therefore, with $X' = X - E$ and $C' = C - F_1 - F_2 - \cdots - F_n$ where E is exports induced by integration and F is capital flows induced by integration (budget, labour remittances, private investment, etc.), we can transform expression (47) by substitution of the growth rates x' and c' so that,

$$\Delta(X \dot{+} C) = \frac{(Xx + Cc)}{X + C} - \frac{(Xx - Ee + Cc - F_1 f_1 - \cdots - F_n f_n}{(X + C) - (E + F_1 + \cdots + F_n)} \tag{48}$$

and

$$\Delta(X \dot{+} C) = \frac{(Ee + F_1 f_1 + \cdots + F_n f_n) - (Xx + Cc)\left[\frac{E + F_1 + \cdots + F_n}{X + C}\right]}{(X + C) - (E + F_1 + \cdots + F_n)} \tag{49}$$

Using (49) we can now estimate each contribution to $\Delta(X \dot{+} C)$ such as obtained from (45), by successive adding up of estimated capital flows attributable to integration.[9]

We can now provide country (or global) estimates of the growth effects of integration. Furthermore, these can be split up into components[10] that have been widely recognized in the literature as being the most important, that is, trade effects; terms of trade, and allocation of production factors and transfers.

In the next section empirical evidence disaggregated by transmission mechanism will be given for the effects of the European Economic Community upon individual members, including:

(e) –growth of export volume [estimated from expression 51]

(f_1) –change in the trade balance position [estimated from expression 51]

(Δk) –change in the propensity to import $\left[\Delta k = \Delta m + \frac{m\Delta\pi - \pi\Delta m}{\pi(\pi - \Delta\pi)}\right]$

(Δg) –terms of trade changes $\left[\Delta g = \frac{y\Delta m(y_B^* - \Delta y_B^* + \Delta y - y) + m(y\Delta y_B^* - y_B^*\Delta y)}{y(y - \Delta y)}\right]$

(f_2) –labour remittances [estimated from expression 51]

(f_3) –foreign investment [estimated from expression 51]

(f_4) –net budget payments [estimated from expression 51]

[9] Similarly to what was said above about expression 32, here the existence of creation effects, say investment creation, it is not a sufficient or necessary condition to obtain a positive effect on the growth rate. Indeed, we cannot even foresee the corresponding sign of a particular flow because this depends also on the relative magnitude of the numerator and denominator, that is, of the value of all the other effects.

[10] Obviously any residual difference between the total growth rate (Δy) estimated from expressions (45) and (30) will be a result of unaccounted capital flows also induced by integration [i.e. $F_5 + \cdots + F_n$] and measurement errors.

TABLE 2 Integration effects on the growth rate of member countries
– EEC8 1974–81 –

Contributions to growth	Germany	France	Italy	Nethl.	Belg-Lx.	U.K.	Irel.	D.k.
Actual growth rate	2.65	2.66	2.74	1.99	2.03	1.24	3.84	1.98
1-Growth due to EEC [1 = −2−3+4+5+11 +···+16]	0.91	1.57	0.42	0.53	0.71	0.37	0.31	0.64
Made up of								
2-Terms of trade changes	−0.01	−0.39	0.05	0.07	−0.22	−0.31	0.32	−1.51[1]
3-Change in propensity to import	0.88	0.79	0.40	0.29	0.57	0.32	3.28	0.21
4-Growth of exports of manufactures	0.02	0.30	0.07	2.33	0.27	0.79	2.38	−0.08
5-Change in the trade balance of manufactures	0.74	0.66	−0.83	−2.66	0.74	0.50	−1.72	−2.86
6-Growth of exports of food products	0.50	1.35	0.14	1.28	0.42	0.65	1.12	0.78
7-Change in the trade balance of food	−0.44	−1.20	−0.35	0.47	0.01	−1.98	−0.50	−0.46
8-Export gains due to increased prices of food	0.02	−0.07	−0.10	−0.63	−0.13	−0.03	−0.38	−0.17
9-Change in the balance of price effects	−0.24	0.08	0.09	0.07	−0.12	−0.04	0.36	0.12
10-Net CAP-budget payments	−0.05	0.08	0.06	0.26	0.06	−0.32	0.86	0.19
11-total CAP effects [11 = 6+7+8+9+10]	−0.21	0.23	−0.15	0.51	0.24	−1.72	1.47	0.45
12-Net non-CAP budget payments	0.06	0.02	0.20	0.03	0.09	0.08	0.54	−0.04
13-Labour remittances	—	—	.08	—	—	—	—	—
14-Direct foreign investment	0.35	0.03	−0.04	−2.53	−0.02	0.09	0.20	0.89
15-Interdependence effect	−0.25	0.01	0.47	1.71	0.19	−0.48	1.37	−0.73
16-Residual+errors [16 = (1+2+3) −(4+5+11+···+15)]	1.06	0.72	1.06	1.49	−0.45	1.14	−0.32	0[1]

Source: Mendes (1985a)

Notes: – As defined in the model a negative sign of the terms of trade means an improvement; – The total may differ from the sum of its components due to rounding; – Appropriately the CAP total should also include effects on the terms of trade and propensity to import. The total CAP effects are therefore likely to be upward/downward biased. – Trade estimates for the Netherlands are upward biased due to entrepot trade. 1) – Estimated jointly and without considering total capital flows in expression 42).

IV. The experience of economic integration in the European Economic Community

From table 2 below it can be observed that within the EEC context integration had a major positive impact on the growth rate of member economies. In fact, the global cumulative gain can be estimated as being equal to at least 5.9% of the Community's GDP in 1981. Moreover, if it was not for the operation of the Common Agricultural Policy (CAP), it could even have been 1.7% points higher. However, the gains were not equally shared and Denmark has even ended up an overall loss.

The results also highlight several important points, namely:

(1) export growth is still the major source of integration induced growth, in spite of the fact that the period under consideration has been characterized by an upsurge in protectionism; (2) the Common Agricultural Policy is shown to be very inefficient, but, three countries (Ireland, Denmark and the Netherlands) have their net outcome very much dependent on contributions received under this policy; (3) the results in what concerns the terms of trade gains raise serious reservations in relation to the recently widespread believe that they might constitute the major source of gain from integration, and (4) factor mobility has played a minor role in the growth rate induced by integration, regardless of the fact that, in what concerns foreign investment, the so-called tariff discrimination hypothesis has been verified.[11]

We can now summarise the main features of this new balance of payments framework as follows:

Firstly–since no country can grow at a faster rate than that rate consistent with balance of payments equilibrium on current account, unless it can finance deficits, and as every country will have a growth rate consistent with overall balance, the new framework relies on using the foreign trade multiplier in its dynamic version which is better-suited than the static approach used by customs union theory.

Secondly–the new framework, instead of the trade creation/diversion and welfare measures, uses total trade effects to estimate changes in output which are both simpler and more correct.

Thirdly–the new framework also takes into account the import side through changes in the income elasticity of demand for imports. This is particularly important because we cannot expect an automatic adjustment of the balance of payments.

Fourthly–it also shows that the occurrence of net positive trade creation effects is

[11] See Mendes (1985a) for empirical evidence.

neither a necessary nor a sufficient condition to obtain an increase in output.

Finally–the new framework accounts, in an integrated way, for the most important effects of integration, namely: trade effects; terms of trade changes, and factor mobility.

REFERENCES

Balassa, B., Trade creation and trade diversion in the European Common Market, *Economic Journal LXXVII*, (March, 1967), 1–21.

Balassa, B., *European Economic Integration*, North Holland Publishing Company, 1975.

Brown, A. J., Customs union versus economic separatism in developing countries, *Yorkshire Bulletin of Economic and Social Research 13 (2)*, (1961), 88–96.

Collier, Paul, The welfare effects of customs union: an anatomy, *Economic Journal*, March, 1979, 84–95.

Cooper, C. A. and Massel, B. F., A new look at Customs Union Theory, *Economic Jornal*, December, 1965, 742–747.

Corden, W. M., Economies of scale and customs union theory, *Journal of Political Economy*, 1972, 465–475.

Dayal, R. and Dayal, R., Trade creation and trade diversion: new concepts, new methods of measurement, *Weltwirstschaftliches Archives*, 1977, 125–168.

Harrod, Roy F., *International Economics*, Cambridge Economic Handbooks, VIII, Cambridge, 1933.

Johnson, H. G., An economic theory of protectionism, tariff bargaining and the formation of customs union, *Journal of Political Economy* 73, (1965), 256–283.

Johnson, H. G., Trade diverting customs unions: A comment, *Economic Journal*, 1974, 618–621.

Jones, A. J. and El-Agraa, A. M., *The theory of customs union*, Philip Allan, Oxford, 1981.

Krauss, M. B., Recent developments in customs union theory: An interpretive survey, *Journal of Economic Literature*, June, 1972, 413–436.

Lipsey, R. G., The theory of customs union: A general survey, *Economic Journal 60*, (1960), 496–513.

Mayes, D. G., The effects of Economic Integration on Trade, *Journal of Common Market Studies 17 (1)*, (1978), 1–25.

Mayes, D. G., *EC trade effects and factor mobility - in: El-Agraa (ed) - Britain within the European Community - The way forward*, Mac Millan, London, 1983.

McCombie, J. S. L., Economic growth, the Harrod foreign trade multiplier and the Hicks super-multiplier, *Applied Economics 17 (1)*, (February, 1985), 55–72.

Meade, James E., *The theory of customs union*, North Holland Publ. Co., Amsterdam, 1955.

Mendes, A. J. Marques, *Integration and Economic Growth in Europe*, Unpublished PhD Thesis - University of Kent, Canterbury - U.K., 1985a.

Mendes, A. J. Marques, A balance of payments explanation of growth differences in western economies, forthcoming, 1985b.

Stern, R. M. et al., *Price elasticities in international trade: an annotated bibliography*, Mac Millan, London, 1976.

Thirlwall, A. P., The Harrod trade multiplier and the importance of export-led growth, *Pakistan Journal of Applied Economics 1 (1)*, (1982).

Thirlwall, A. P. and Dixon, R. J., An exported-led growth model with a balance payments constraint, *- in: J. Bowers (ed) "Inflation, development and integration: Essays in honour of A. J. Brown"*, (1979), 173–192, Leeds University Press.

Thursby, J. and Thursby, M., How reliable are simple, single equation specifications of import demand?, *Review of Economic and Statistics 56 (1)*, (1984), 120–128.

Tovias, A., Ex-post studies of the effects of economic integration on trade: Problems in measuring trade flow and welfare effects, *Journal of European Integration 5 (2)*, (1982), 159–167.

Verdoorn, P. J. and Van Bochove, V. A., Measuring integration effects: a survey, *European Economic Review 3*, (1972), 337–349.

Viner, Jacob, *The customs union issue*, Carnegie Endowment for International Peace, New York, 1950.

Williamson, J., On estimating the income effects of British entry to the EEC, *Surrey papers in economics 5*, (1971).