

THE COST OF CMEA DISINTEGRATION¹

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N° 96-05
Septembre 1996

¹ This paper has been presented at the EEA Congress, Istanbul, 21-24 August 1996.

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1. INTRODUCTION.

The transition process in Central and European countries has been characterised by two major events: price liberalisation and stabilisation policies, on the one hand, implying a dramatic overall recession, and the CMEA collapse, on the other hand. Hence the estimation of the disintegration cost of the CMEA is complex, and has at least three components: the recession, which involves the reduction of export and import capacities, the CMEA regional trade collapse, and the “ true ” reorientation of trade flows towards the West. We are interested only in the true trade reorientation, that is in the capacity of CEEC’s to reach a normal pattern of trade with their western partners. The main indicator of trade reorientation, the ratio of trade with Western markets on total trade, is a poor indicator of trade reorientation, which essentially reflects the regional trade collapse and the implicitly greater share of trade flows with the West as a percentage of total trade. The indicator used in this paper takes into account the GNP reduction and the lower trade capacity. It answers the question of whether the gap between the effective trade flows and the potential trade flows has been caught-up.

What is the new geography of trade which emerged after the trade liberalisation and the regional trade collapse ? Two patterns of trade are possible. In the first one, the Central Eastern European countries’s (CEEC’s) are integrated into the European Union, which appears to be a very attracting Centre, maybe at the expense of the regional trade area. In the second one, CEEC’s are able to create a strong enough market, including Russia, and to escape from the “ Hub and Spoke ” bilateralism and from its trade diverting effects. What happened until 1993 confirms the first scenario. The increase in trade towards the West has been much stronger than the increase in regional trade. The European Agreements, by creating a privileged treatment for East-West trade flows, have diverted regional trade flows.

The main steps of trade liberalisation are described in the section 2. In section 3 we propose an estimation of the gravity equations on a data panel of 14 years, from 1980 to 1993. After briefly presenting the model of Custom Union Theory, and its application to former centrally planned economies, we compute the cost of CMEA disintegration in Central and Eastern Europe, and finally summarise the main results.

2. TRADE POLICY IN TRANSITION

2.1 THE OLD SYSTEM

The Central Planned Economies were, as concerns trade policy (as well as in other fields), a highly centralised and controlled system. Firms could not export or import without

authorisation of the so-called State Foreign Trade Agencies organised by industry. Firms sold their outputs valued at domestic prices to the Export State Agencies which traded with foreign partners at world prices. A symmetric system applied for imports. These State Foreign Trade Agencies were not profit maximizers, but they had to reach the targets, for exports and imports, established by central planning. Moreover, since the internal price system had no relationship to domestic costs, and since the Rouble was inconvertible, the existence of these agencies was justified.

2.2 THE NEW SYSTEM

As the Communist Regime failed in Central and Eastern Europe, a new political and economic background emerged. Indeed, the transition process was characterised by two great shocks which dramatically reduced output. The first one concerns the liberalisation as well as the stabilisation policies. The second one is the break-up of the CMEA⁴, confirmed in June 1991⁵, and the collapse of trade within the area. The collapse of trade within the socialist area has been accompanied by a full scale geographical reorientation of international trade from East to West. The liberalisation of foreign trade has been radical both in scope and in speed⁶. As the State Foreign Trade Agencies broke up, quotas have been considerably reduced in all countries, and have been eliminated in the Czech Republic and Romania. Hence, the transition process has put new trade policy instruments in place among the CEECs, in compliance with their international obligations as GATT members. Instead of quantitative restrictions, the main trade policy instrument has been tariff policy.

Despite a signal of political and commercial opening from the European Union, the new tariff policy may be short. Whereas the CEECs have eliminated quotas and reduced tariffs on imports by more than 50%, the EU has been less enterprising. As a result the increase in exports toward the EU has been less than the increase of import from the EU. But what is less satisfactory is that the increase in trade flows has been accompanied by little change in the structure of trade. One explanation is that, by protecting a list of products belonging to "sensitive sectors", such as agriculture, industry or textile, the EU has prevented the restructuring of trade in CEECs and the improvement of their comparative advantage. Nevertheless, this argument has to be moderated. Jacques le Cacheux (1996) shows particularly that despite a similar structure of specialisation of agriculture in the EU and in

⁴ Council of Mutual Economic Assistance, which included the following European countries: Albania (until 1961), Bulgaria, Czechoslovakia, GDR (until 1990), Hungary, Poland, Romania and the Soviet Union, but also Asia, Mongolia, Cuba and Vietnam.

⁵ Although the official break-up of CMEA goes back to June 1991, it was in operation from the moment of the 45 th. CMEA session in January 1990. The member countries decided to trade with each other at world prices with convertible currencies from January 1991. This decision accelerated the process of disintegration. Trade flows between the CEECs and the Soviet Union had decreased by 30% in 1990, (see Bayou (1995)).

⁶ See de M n il, G., (1995).

the CEECs, the production infrastructure in CEECs is in arrears. Hence European Union has trade surplus in agriculture for example with CEECs.

The Copenhagen European Council (June 1993) did agree that the associated countries in Central and Eastern Europe that so desire shall become members of the European Union as soon as they are able to assume the obligations of membership. Will the E.U find the appropriate incentives to implement this agreement? Most analyses of the impact of trade with CEECs come to the conclusion that the impact is likely to be either favourable or, in the worst scenario, quite small even in term of employment⁷.

Two sets of Agreements have been concluded. The first set includes the European Agreements. They have eliminated all tariffs, except in the so called "sensitive sectors". By creating a privileged treatment for the East-West trade flows, they have diverted regional trade flows. In order to minimise their trade diverting effects, on 21 December 1992, the Central European Free Trade Agreement (CEFTA⁸) linking the Czech Republic, Slovakia, Hungary and Poland has been signed. There were two aims: the first one is the elimination of trade barriers among the countries involved in the agreement and the second one is the elimination of discrimination against within-CEECs trade compared with the EU. Between 1988 and 1992, trade flows among Visegrad members decreased by one half.

3. QUANTITATIVE EVALUATION OF CMEA TRADE POLICY SINCE 1980

3.1 PROCEDURE

To evaluate the welfare aspects of CMEA disintegration, we use the gravity model. The gravity model offers a systematic framework for measuring what pattern of bilateral trade is "normal" around the world. The goal is to see how much of the level of trade within each region can be explained by simple economic factors common to bilateral trade throughout the world and how much is left over to be attributed to special regional effects. What we must specify and what is called "normal" are the economic factors. As in the Newtonian equation after which it is named, attraction (trade) depends upon mass (economic size) and distance (geographic or/and economic). Specifically, the volume of trade between two countries should increase with their real GDPs (the so-called gravity variables), which are proxies for the importer and exporter capacities, and with per capita income, since the larger are the countries, the greater is their capacity to produce for the domestic market or

⁷ See for example the MIMOSA evaluation, in Cazes, Coquet, and Lerais, (1996).

⁸ This agreement distinguishes among three types of commodities, each having a different pattern of liberalisation. List A concerns commodities subject to zero tariffs on the date the agreement comes into effect. The second list concerns commodities subject to progressive full liberalisation and the list called C is a list of sensitive products that will not be liberalised until January 2001. As in European Union agricultural trade will take place under a separate regime.

The cost of CMEA disintegration

to absorb the production of the domestic firms. Trade should diminish with geographical distance because proximity reduces transportation and information costs. The model has been criticised for a long time because of the lack of a theoretical basis. Nevertheless with the expensive literature on the new international trade policy, the gravity model is now well specified⁹. The basic equation gravity can be written as follows:

$$\text{IMP} = \sum_{k=1}^4 x_k X_k + d' \text{DIS} + kK + u \quad (0)$$

IMP is the logarithm of the total import of country i from country j , X_k are the mass variables, i.e. the GNP and the per capita GNP of both countries, DIS is the distance between their economic centres (generally their capital cities) and K is the constant of regression.

Inasmuch as those core variables left a large part of the total variance unexplained, we have to introduce dummy variables D_k , which correspond to systematic trade preferences or systematic trade barriers¹⁰. These qualitative variables are set equal to one if there is a systematic trade preferences or systematic trade barriers, and zero otherwise.

CMEA : is set equal to one when the trade occurs between two former CMEA countries.

CMEAI (CMEAE): is set equal to one when the importer (exporter) is a former CMEA country.

3.2 DESCRIPTION OF THE DATA

For an estimation of the gravity equation, we require a large set of temporal and cross-country data. Moreover a qualitative analysis of foreign trade of the former Central Planned Economies is a little bit difficult since the available data often lack reliability and coherence.

⁹The new international trade theory concentrates on transport costs, geography, increasing returns of scale. For a survey of recent theoretical developments see Maurel (1995-a).

¹⁰ We have the seven following dummies in our gravity equation:

EEC: the twelve members of the European Community.

LAIA: the Latino American Integrated Association, created in 1960 and widened in 1980, constitutes a free trade area between the following countries: Bolivia, Mexico, Uruguay, Paraguay, Brazil, Argentina, Chile, Columbia, Peru, Ecuador and Venezuela.

EFTA: sets the European Free Trade Association (Switzerland, Portugal, Island, Sweden, Finland, Austria, Norway, Liechtenstein).

COM: represents the Commonwealth which includes 48 members countries.

ASEAN: is set for the Association of Nations of Southern Asia which has been created in 1967, and constitutes a Free Trade Area.

APEC: is used for trade within the Asian Zone of Pacific Co-operation which associates some member countries of ASEAN with United States, Canada and Australia among others. This variable is very significant and is not correlated with ASEAN dummy.

3.2.1 The CHELEM Data Base

The CHELEM data base (Comptes Harmonisés sur les Echanges et l'Economie Mondiale) is built on the available data published by the international organisations (UNO, World Bank, IMF, OECD...). It concerns bilateral trade flows and national income from a multinational book-keeping point of view. The harmonisation process consists in arbitrating, with a pre-established hierarchy, the data collected from the country partners, when their matching shows incoherence (the imports of country A from country B, by definition, equal to the exports of country B to A, are often different). The hierarchy depends both on the reliability of data and the punctuality with which the countries report their foreign trade statistics. The process usually selects the import data.

From a geographical point of view, CHELEM encompasses all the world in 53 elementary areas and 46 countries, which represent 92% of world trade flows and 90% of the world production. The seven remaining area include the other countries. Data are expressed in current dollars.

CHELEM does not include bilateral trade flows for East-European countries. Then, we had to collect these data from the IMF's *Direction of Trade Statistics*. They are expressed in national currencies and converted into dollars with the exchange rate published by the IMF's *International Finance Statistics*. The trade data of GDR after reunification in 1990 have been provided by the *Deutsche Institut für Wirtschaftsforschung* (D.I.W.)¹¹.

3.2.2 The CEECs data

In any empirical analysis on the foreign trade of the Former Central Planned Economies, the search and the interpretation of the data must be careful. Two important biases should be taken into account. The first one concerns the domestic price system, which does not reflect the domestic costs, and the second one is linked to the rouble inconvertibility and to the use of an arbitrary exchange rate. As a result, there is no connection between internal and foreign trade prices¹².

Let us distinguish two types of trade flows. The first one, the trade flows between CEECs and the rest of the world, does not induce any critical problem, inasmuch as the harmonisation process of CHELEM selects mirror statistics¹³. But trade within the CEECs (*Direction of Trade Statistics*) is characterised by the two biases mentioned above.

¹¹ Data are expressed in Deutschmarks and turned into dollars, with the annual average exchange rate, given by this institute.

¹² See Wolf (1987).

¹³ Mirror statistics are the statistics provided by the CEEC's partners' declarations. For example, the French import from Poland recorded by French custom houses is preferred to the Poland export to France, declared by Poland.

The trade data depend on two potentially very distorted exchange rates: the conversion rate of transferable rouble¹⁴ into local currencies and then the conversion rate of local currencies into dollars according to the IMF's *International Financial Statistics*. The implied exchange rate between the transferable rouble and the dollar varies considerably according to the country. Hence, as Hamilton and Winters (1992) have noted, the twofold conversion involves large disparities, sometimes varying by a factor of one to three. Finally, note that the transition process from a planned exchange rate to a partially market determined exchange rate has introduced an artificial break in 1991, which involves an undervaluation of trade flows in 1991, with respect to the preceding years. We had to rely to official statistics, which is far from perfect, but there is no other solution.

3.2.3 GNP data

The GNP data in the CHELEM database (in current dollars) are taken from the official sources, except the GNP of the former centrally planned economies, for whom PPP (Purchasing Power Parity) data have been selected. Because of the price distortions, it is very difficult to compare in a rigorous way the CMEA countries GNP with the market economies GNP. D. Shumacher (1996) has collected several GNP estimations; they vary in a very large band.

The official statistics reflect the paradox of an economy which is almost totally isolated from world markets, whose trade with the outside world is restricted by planification. Therefore we stressed the evolution of the dummy variables coefficients¹⁵, and analysed the evolution of those dummy variables. All things being equal, has the opening of the eastern economies toward western markets increased (decreased) during the 80ies ?

3.3 RESULTS

Two gravity models have been estimated (see the Annex):

Model 1 is the following:

$$IMP = \sum_{k=1}^4 x_k X_k + d' DIS + \sum_{k=1}^7 d_k D_k + cCAEM + ciCAEMI + ceCAEME + kK + u \quad (1)$$

Model 2 contains the previous CMEA, CMEAI and CMEAE variables and the variable CAEM × DIS. Its coefficient d_p' reflects the gap between transportation cost characterising trade among CMEA members and the average transportation cost measured by the variable DIS.

$$IMP = \sum_{k=1}^4 x_k X_k + d' DIS + \sum_{k=1}^7 d_k D_k + d'_p (CAEM \times DIS) + cCAEM + ciCAEMI + ceCAEME + kK + u \quad (2)$$

¹⁴ The Transferable Rouble has been introduced in order to have a multilateral payment arrangement among CMEA members.

¹⁵ Ratio of the trade on the product of importer and exporter GNP, GNP per capita, distance, each variable being weighted by its estimated elasticity.

*Model 1*¹⁶;

1) Until 1990 East West trade is below the norm implied by the gravity model, while CMEA trade is well above the norm. The magnitude of the CMEA coefficient, much greater than the magnitude of the EEC coefficient, reflects the very depressed level of CMEA trade with the West : in 1988, the CMEA is equal to 3.14, which means that the CMEA trade flows are 23 times¹⁷ what they should be in the absence of a privileged trade zone, while the EEC coefficient is equal to 0.47, meaning that the EEC trade flows are only 1.59 times what they should be in the absence of a privileged trade zone.

The CMEA coefficient magnitude is biased inasmuch as it reflects the very depressed level of trade with the West; it testifies for the huge trade destruction mentioned by Holzman (1985). From 1990 onwards, the autarkic tendency of trade in the region seems to decrease (the CMEA decline starts from 1987/88).

2) The relative stability of CMEAI and CMEAE coefficients¹⁸ brings up the fact that despite the recession (decrease in the denominator), trade has been maintained. At the opposite the CMEA coefficient decrease highlights the more than proportional decrease in trade with respect to the GNP contraction.

Despite the regional collapse and the reorientation of trade, the within-CMEA trade is above the gravity norm, and the trade potential of East-West trade is not fully caught up¹⁹.

Table 1: CMEA estimated coefficient

Année	CMEA coefficient	ratio effective trade on potential trade
1980	2.48	11.94
1981	2.40	11.02
1982	2.61	13.60
1983	2.58	13.20
1984	2.56	12.94
1985	2.76	15.80
1986	2.96	19.30
1987	3.10	22.20
1988	3.14	23.10
1989	2.86	17.46
1990	2.53	12.55
1991	1.76	5.81
1992	1.64	5.16
1993	1.38	3.97

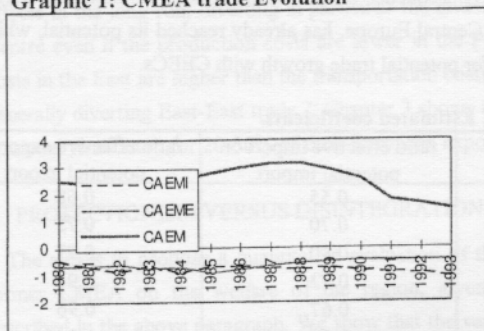
¹⁶ See Table 1 below.

¹⁷ This magnitude is similar to what Hewett (1976) has found.

¹⁸ Which are proportional to the ratio of the bilateral trade flows on the GNPs time the GNPs per capita time the distance, each variable being weighted by its elasticity.

¹⁹ The Austro-Hungarian disintegration in the twenties has the same characteristics of both the persistence of old ties and progressive trade reorientation toward third countries (see de Menil, and Maurel (1994), and Maurel (1995-b)).

Graphic 1: CMEA trade Evolution

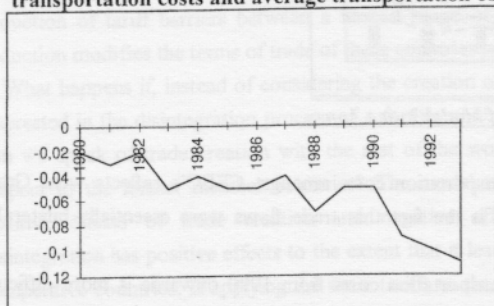


Source: Gravity Model 1 estimation ; see Annex.

*Model 2*²⁰ :

The gap between potential and effective trade disappears if we take into account with the aid of Model 2 the structural heterogeneity of the formerly planned economies countries. In particular, the negative sign of CMEAI and CMEAE dummy variables in Model 1 is the consequence of the omission of the CAEM \times DIS variable, which captures the fact that transportation costs are higher when trade occurs between two countries of the former CMEA²¹.

Graphic 2: Evolution of the gap d_p between within-CMEA transportation costs and average transportation costs.



Source: Gravity estimation of Model 2; see Annex

All things being equal, by controlling for those higher costs, the potential is exceeded as soon as 1990 for the CMEA exports (see Table 2). Shumacher (1996) brings up that this

²⁰ See Table 2 and Graphic 3.

²¹ We observe that transportation costs between CMEA countries are higher all over the period. This is a striking result, which emphasises in a quantitative way the trade aversion of the CMEA countries.

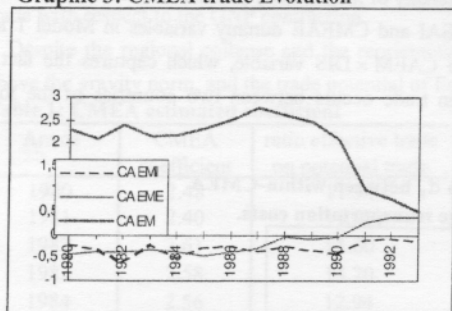
average catching-up may be the consequence of the German trade reorientation. Germany, the main partner of Eastern and Central Europe, has already reached its potential, while for France there is still much room for potential trade growth with CEECs.

Table 2: CMEAI and CMEAE Estimated coefficients.

	CMEAI	CMEAE	ratio effective import on potential import	ratio effective export on potential export
1982	-0.59	-0.39	0.55	0.68
1987	-0.36	-0.29	0.70	0.75
1988	-0.22	-0.03	0.80	0.97
1989	-0.33	-0.09	0.72	0.91
1990	-0.40	-0.04	0.67	0.96
1991	-0.10	0.29	0.90	1.34
1992	-0.06	0.38	0.94	1.46
1993	-0.16	0.39	0.85	1.48

Source: Gravity estimation of Model 2; see Annex.

Graphic 3: CMEA trade Evolution



Source: Gravity estimation of Model 2; see Annex.

The higher than average transportation costs amongst CEEC's reflects what Graziani (1981) called radial trade, that is the fact that trade flows were essentially bilateral and directed mainly towards USSR.

The increase in estimated transportation costs from 1990 onwards is more difficult to interpret. The restoration of normal trade conditions, the break-up of the planning and the dislocation of the bilateralism which characterised the former trade regime, should reduce transportation costs. On the contrary, cultural, linguistic impediments, distance in a broad sense, continue to depress the Eastern trade. We are maybe in front of what Baldwin calls the "Hub and Spoke bilateralism", meaning that the privileged trade agreements between France and Poland, for instance, may divert Eastern trade flows, which occur in a more restrictive framework. The creation of a trade network which originates from the centre diverts trade flows in the periphery, is responsible for the paradox of countries, which

although geographically close do not trade as much as expected. It could have perverse effects in the long run, diverting in particular the investment flows (more favourable in the Centre even if the production costs are lower in the Periphery, because the transportation costs in the East are higher than the transportation costs between East and West), and more generally diverting East-East trade. " Chapter 3 shows that trade among the CEECs has the potential to account for 20-30% of their European exports "²².

4. PROTECTIONISM VERSUS DISINTEGRATION

The aim is to propose a quantitative evaluation of the consequences of the break-up of former CMEA on the welfare of the region, given the historical background briefly described in the above paragraph. We show that the variation of the surplus is proportional to the difference between effective trade and what trade would have been if the CMEA had not collapsed. The empirical evaluation of this variation is based on two gravity equations. The first one corresponds to the period prior to the break-up, the second one corresponds to the period after the break-up.

4.1 TRADE CREATION AND TRADE DESTRUCTION

The reference concerning costs and/or benefits of modifying relative prices by the creation of a Customs Union is the pioneer work of Viner (1950): a union is beneficial if it does not imply a decrease of imports from countries where production costs are lower, to the benefit of member countries that offer, once tariffs have been suppressed, more competitive prices. Viner's analysis applies in fact to all kind of integration involving the reduction of tariff barriers between a limited range of countries, to the extent that this reduction modifies the terms of trade of these countries with the rest of the world.

What happens if, instead of considering the creation of a preferential trade zone, we are interested in the disintegration process of a former union? Are the effects symmetrical and can we speak of trade creation with the rest of the world, and of trade destruction with respect to the former member countries? The model we propose consists in comparing positive effects of trade creation and negative effects of trade destruction. The disintegration has positive effects to the extent that it leads to a trade reorientation to more competitive countries. If applying the same tariffs to the members of the former union and to the rest of the world renders exports of the former less competitive, this means that the Customs Union consequently generated trade destruction, since it privileged costly imports from the member countries. Negative effects of disintegration are linked to the decrease of imports \ exports between member countries of the ex-union. Symmetrically, a Custom Union contributes to increasing the total volume of internal trade in the region.

²² Baldwin, (1994), page 136.

The foregoing analysis makes sense if the preferential exchange zone is not "empty", that is to say that one of the two member countries of the Union is importing the good, while the other is exporting the good. Indeed if none of the two potential member countries exports the good on benefiting from the tariff reduction, the customs union does not change anything.

To analyse the net benefit of integration (of disintegration), we propose the following model: there are two countries, A and B, and W is the rest of the world. A is a net importer of a product which is exported either by B or by W.

$D_i(S_i)$, $i=A, B, A+B$, is the demand (supply) curve of country i . $A+B$ is the potential union constituted by A and B. World consumption is equal to world production, which means:

$$C_A + C_B + C_W = Q_A + Q_B + Q_W; \text{ where } C_i \text{ is the consumption of country } i, Q_i \text{ is the production of country } i, \text{ and } i=A, B, W.$$

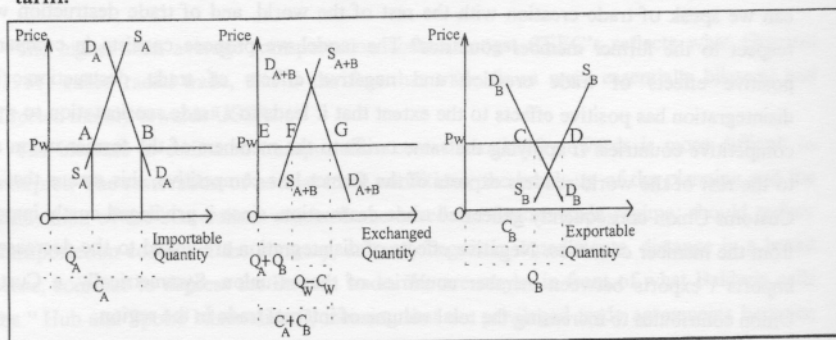
4.1.1 Free Trade

Diagram 1 summarises the graphic determination of export supply and import demand from relationships which reflect the excess of foreign production $EXP_B = Q_B - C_B = CD$ as compared to foreign demand as well as the deficit $IMP_A = C_A - Q_A = AB$ of domestic production as compared to domestic demand.

$$\text{As implied by the second graph, } C_A + C_B = Q_A + Q_B + Q_W - C_W; \\ \Leftrightarrow IMP_A = EXP_B + EXP_W;$$

That is, at world price P_W , a part (EF) of the $A+B$ demand is satisfied by the Union, and the other part (FG) is imported from the rest of the world.

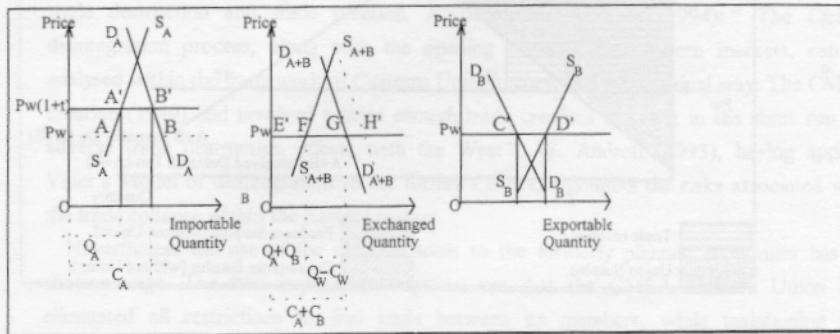
Diagram 1 : Determination of Export Supply and Import Demand in a world without tariff.



4.1.2 The introduction of a tariff

When A decides to implement a tariff t , its demand D_A as perceived by B and by the rest of the world, decreases ($A'B' < AB$). At world price, A's demand is less, as well as the aggregated demand of the Union D_{A+B} . In the diagram 2, the perceived demand is less than the demand which would prevail (in dots) in a world without tariff. $G'H'$ is the amount of A's imports from the rest of the world which is lost because of the tariff t .

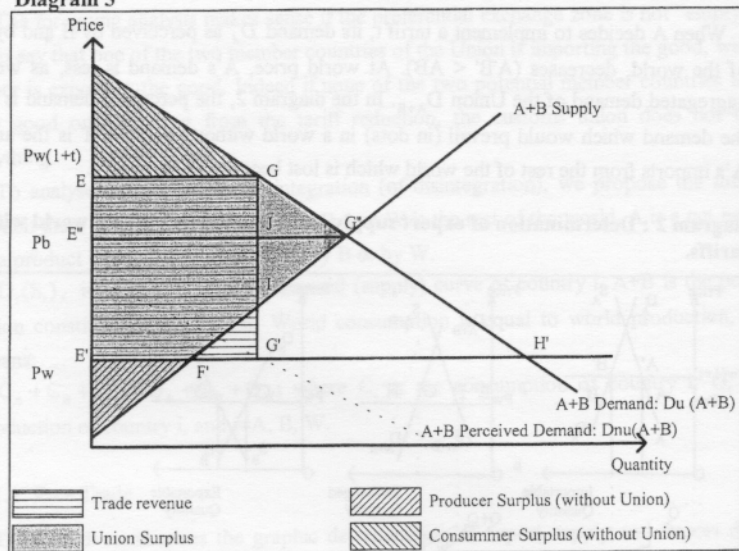
Diagram 2 : Determination of export supply and import demand in a world with tariffs.



4.1.3 Union

When A applies a tariff to imports of the rest of the world, but exempts B imports from such a tariff, so that $P_B < P_w(1+t)$, there is a "death" of imports from W. The consumption $E'G' > E'G$ in the Union increases, due to a greater demand at the price P_w than at the price $P_w(1+t)$. On the other hand, there is a cost of joining union with B, insofar as the customs revenues disappear.

Diagram 3



Notations:

$Du(A+B)$ is A+B's demand if the Union is created.

$Dnu(A+B)$ is the perceived demand in a world with a tariff t and without Union..

JGG'' is the consumer's net surplus.

IIG'' is the producer's net surplus.

IF'G' is the loss of trade revenue.

The higher the tariff t applied by A to the rest of the world, the higher is the disintegration cost: the perceived demand at $P_w(1+t)$ price does not give a large enough revenue to compensate for the reduced surplus. While t increases, area $IG'F'$ decreases and area $GG'I$ increases.

P_w is an increasing function of transportation costs. If transportation costs with the rest of the world are high, regionalism is preferable. A Customs Union is more desirable from an economic point of view when the potential members are geographically close, and "raises doubts about the desirability[...] of geographically dispersed preferential systems such as the old British Commonwealth, where intermember transportation costs were generally no lower than transportation costs with third countries"²³. Geography could therefore increase the a-priori cost of the disintegration process in such a geographically close area as the former CMEA, where the notion of geography includes not only the cost of shipment, but

²³ Wonnacott and Wonnacott, (1981), page 711.

also the geographical, cultural, and linguistic proximity. We have seen on the contrary that the CMEA, although its members are geographically close, was not at all an integrated area, and was characterised by higher internal transportation costs. Hence CMEA disintegration is less costly than a classical Customs Union disintegration.

4.2 CUSTOMS UNIONS WITH FORMER CENTRALLY PLANNED ECONOMIES: IS THE CLASSICAL ANALYSIS STILL RELEVANT?

The CEECs disintegration can be analysed within the framework of Viner's model of trade destruction and trade creation. According to Asselain (1994): "The CEECs disintegration process, along with the opening towards the western markets, can be analysed within the framework of Customs Union theory, in a symmetrical way. The CMEA creation (1949) had involved a large enough trade creation to offset in the short run the adverse trade destruction effects with the West". W. Andreff (1993), having applied Viner's Model of disintegration to the former CMEA, highlights the risks associated with the trade collapse within the Eastern market.

Nevertheless the use of the classical tools to the formerly planned economies has its shortcomings. The two implicit assumptions are that the CMEA Custom Union has eliminated all restrictions to free trade between its members, while maintaining the protectionist barriers against non-members countries. Note that the trade diversion is likely to be less if the initial trade flows within the area were important²⁴. But the initial trade flows within the CMEA countries were lower than the trade flows between East and West. As a result of the CMEA formation, Wilczinski²⁵ has estimated that the trade of Eastern economies with the Western economies has decreased from 73.8% of total trade in 1938 to 14% in 1953. This huge destruction of trade suggests again that the CMEA functioning was very different²⁶ from that of a classical Customs Union.

The low level of trade with market economies may be interpreted as the forced trade reorientation, based on quotas and quantitative barriers. Those quantitative barriers "destroy", in Holzman's terminology, the trade with non-member countries. "To sum up, the conditions outlined above, which make trade destruction possible, do not usually arise

²⁴ See Lipsey (1968).

²⁵ Wilczinski (1969), page 54.

²⁶ The policy of autarky followed by the CMEA countries allowed to isolate the former planned economies from the supply and demand disturbances on world markets, that were not compatible with their industrialisation goals. In a certain sense, trade within the former CMEA did not obey any economic rationality. This radical thesis is claimed by G. Duchêne (1994) for the former USSR: "Following the economic development, the central planning has succeeded in creating industrial places [...] without taking into account neither the factorial dotations, nor the transport costs, nor any other economic choice criteria. As a result a dramatic increase of interrepublican trade, as artificial as the economic growth, has followed" (page 586).

when Western customs unions are formed. Minor exceptions may occur for individual nations when members adopt a common average tariff against non members but these exceptions are not likely to amount so much. The formation and existence of CMEA, on the other hand, is a case that, in my opinion, may have resulted in considerable trade destruction especially for Eastern Europe and certainly resulted, in the very least, in much greater trade destruction than trade creation”²⁷.

Our gravity equations underline this planned trade characteristics. We stress two facts: 1) within-CMEA trade is above the “normal” pattern of trade, as determined by the structural coefficients of the gravity model, 2) the level of trade with non planned economies²⁸ is very low. We suggested that the CMEA coefficient is biased upward by the fact that it measures the intensity of within-CMEA trade in comparison with the very depressed trade of its members with Western economies. Then it reflects the trade destruction phenomena underlined by Holzman (by opposition to the simple trade diversion effect).

Going back to Diagram 4, the starting point of Asselain is to assume that within CMEA-price is below world price plus the tariff. A limit case occurs when this within-CMEA price is in fact equal to world price plus the tariff: there is no trade creation, but a deterioration of terms of trade which implies a loss of Customs revenues.

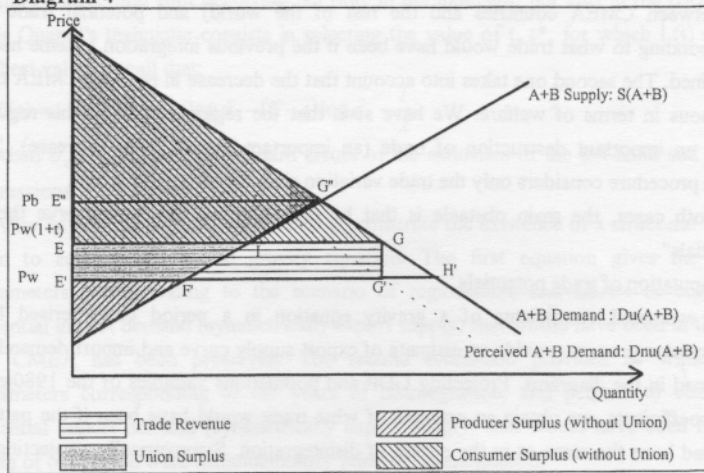
Suppose now that within-CMEA price P_b is above world price plus “normal” initial tariff level $P_w(1+t)$. At this normal initial tariff level, the suppression of tariffs between the members countries does not change anything. The CMEA is then effective only if the member countries institute quotas, which are equivalent to prohibitive tariffs t' on the products coming from the rest of the World, what Holzman (1985) called trade destruction. Paradoxically, the Customs Union creation is translated into overall trade reduction²⁹: overall trade flows decrease from EG to E'G'.

²⁷ Holzman, (1985), page 416.

²⁸ In 1988, the EEC coefficient is equal to 0.47, the CMEA coefficient is equal to 3.14, while the coefficients of CMEA-I and CMEA-E are respectively equal to -0.76 and -0.56 (see Table 1 and Graphic 1).

²⁹ If we apply this analysis to the imports of intermediate goods, machinery and equipment, the CMEA affects not only the terms of trade and consumption, but also the production possibility frontier and growth. Trade diversion implies that the countries import inferior quality goods characterised by an obsolete technology.

Diagram 4



GIG'' is the net consumer loss. At price P_b , the demand is less than at the price $P_w(1+t)$.

$IGG'F'$ is the net revenue loss.

There is no trade creation inasmuch as trade creation occurs only in the case when the internal price is below world price multiplied by normal tariff. The CMEA was not, as in the pure Viner theory, a Customs Union, inasmuch as the main commercial tools were quotas instead of tariffs. Those quotas prevented the normal development of East-West trade flows. Nevertheless the equivalence of quotas and tariffs is a simple way for analysing the disintegration stakes in the former CMEA. The trade reorientation, which corresponds to the removal of quantitative restrictions and to the restoration of "destroyed" trade flows, increases the welfare in the region, while the regional trade reduction is not necessarily welfare increasing.

5. EMPIRICAL ESTIMATION OF THE COST OF CMEA DISINTEGRATION

5.1 TWO MEASURES OF THE CMEA DISINTEGRATION COST

The variation of the surplus is proportional to the difference between trade corresponding to the scenario of regionalism (trade corresponding to the scenario of disintegration) and effective trade. The cost of disintegration is a decreasing function of the increase in trade with the rest of the world. It is an increasing function of the reduction in regional trade.

In order to estimate the cost involved in the CMEA disintegration, we propose two procedures. The first one is based on Viner's model, in which the disintegration cost is

proportional to the difference between the effective trade flows (within the former CMEA and between CMEA countries and the rest of the world) and potential trade flows, corresponding to what trade would have been if the previous integration scheme had been maintained. The second one takes into account that the decrease in regional CMEA trade is ambiguous in terms of welfare. We have seen that the regional trade in this region has caused an important destruction of trade (an important overall trade decrease). So the second procedure considers only the trade variation with the rest of the world.

In both cases, the main obstacle is that by definition, we do not observe the trade "potentials".

Computation of trade potentials.

The estimated coefficients of a gravity equation in a period characterised by the disintegration process provide an estimate of export supply curve and import demand curve mentioned in the diagrams. Projecting GDP and populations variables of the 1980ies with those coefficients, we obtain an estimate of what trade would have been if the pattern of trade had been the same as in the period of disintegration. Symmetrically, projecting GDP and populations of the 1990s with the aid of the coefficients estimated in a sample characterising the period of the CMEA, one obtains an estimation of what trade would have been if the CMEA had not collapsed.

First procedure for computing the trade disintegration cost.

$$y_{\text{intra}} - E(y_{\text{intra}}) + y_{\text{RDM}} - E(y_{\text{RDM}}).$$

Second procedure for computing the trade disintegration cost.

$$y_{\text{RDM}} - E(y_{\text{RDM}})$$

Notations;

$y_{\text{intra}} - E(y_{\text{intra}})$ measures within-CMEA trade variation, that is the difference between the effective regional trade and what this trade would have been if the CMEA had been maintained.

$y_{\text{RDM}} - E(y_{\text{RDM}})$ measures the trade variation with the rest of the world, that is the difference between the effective trade flows with the outside world and what this trade flows would have been if the CMEA had been maintained.

"intra" indicates the trade within the former CMEA; "RDM" means the rest of the world, E is the projection operator, which uses the parameters of both gravity equations in order to estimate potential trade.

In attempting to estimate the parameters of the gravity equations following two separate regimes (the regime of integration and the regime of disintegration), it is necessary first to determine the year at which the switch from one regime to the other occurred. As Pelzman (1977) pointed out, the use of Quandt's maximum likelihood technique (1972) proves to be a superior procedure than the simple dummy variables approach, because it allows to

identify a structural shift occurring not only in the intercept, but also in the core variables. This Quandt's technique consists in selecting the value of t , t^* , for which $L(t)$ reaches its highest value. Recall that:

$$L(t) = -T \log \sqrt{2\pi} - t \log \hat{\sigma}_1 - (T-t) \log \hat{\sigma}_2 - \frac{T}{2}$$

when $\hat{\sigma}_1$ and $\hat{\sigma}_2$ are the standard errors of the estimates of the left-hand and right-hand regressions.

After having selected t^* , we have to demonstrate the existence of a structural break, and then to estimate twice the gravity equation. The first equation gives the estimated parameters corresponding to the scenario of regionalism, and allows to construct the potential import demand (symmetrically export supply) that would have been in the 1990ies the CMEA has been preserved. The second estimation provides us with estimated parameters corresponding to the years of disintegration, and permits to construct the potential import demand (symmetrically export supply) that would have been if the early years of our period were instantaneously years of disintegration.

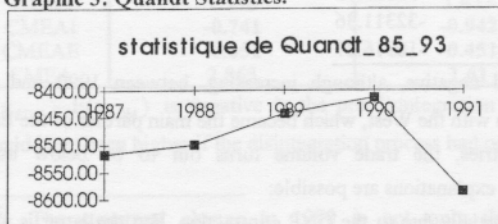
5.2 RESULTS

In the following Table 3, the Quandt statistics is computed. It shows, that the break year occurs in 1990³⁰, where the statistics is equal to -8413.

Table 3: Quandt Statistics.

Years	SCR1	SCR2	t	T-t	L(t)
1987	17855.84	29922.22	7219	14530	-8516.95
1988	23084.21	24599.10	9635	12114	-8499.74
1989	28247.69	19187.42	12056	9693	-8441.97
1990	33216.82	14079.34	14469	7280	-8413.08
1991	38597.87	9413.79	16888	4861	-8586.15

Graphic 3: Quandt Statistics.



The two following Tables (4 and 5) contain the two components of disintegration cost. Table 4 gives an estimate of the cost involved in the CMEA trade collapse: in the first years of the 1990s regional trade is below what it would have been if the former privileged trade

³⁰In 1990, the trade is conducted in convertible currencies. The break year occurs one year before the official CMEA break-up.

zone had been maintained.: $y_{\text{int ra}} - E(y_{\text{int ra}})$ is therefore negative. On the contrary, in the pre-disintegration period regional trade is above what it would have been in the absence of a privileged trade zone: $y_{\text{int ra}} - E(y_{\text{int ra}})$ is thus positive.

Table 4: Trade decrease (increase) in the former CMEA.

Years	$y_{\text{int ra}}$	$E(y_{\text{int ra}})$	$y_{\text{int ra}} - E(y_{\text{int ra}})$
1985	25845.50	8526.97	17318.53
1986	30507.30	11819.22	18688.08
1987	44476.10	14262.62	30213.48
1988	47040.80	15768.63	31272.17
1989	42521.80	16384.42	26137.38
1990	29475.00	15079.52	14395.48
1991	23069.62	40149.49	-17079.87
1992	15933.00	45661.37	-29728.37
1993	13367.05	47650.50	-34283.45

The regional trade variation, as reflected by the expression $y_{\text{int ra}} - E(y_{\text{int ra}})$, is decreasing, from US\$ millions 30 213 in 1989 to US\$ millions 26 137 in 1990. This evolution shows the CMEA early decline in the second half of the 1980s.

Table 5 reports the estimate of the benefit generated by the trade reorientation towards third countries: at the beginning of the 1990s effective trade is below what it would have been if the previous regime had been maintained.

Table 5: Trade decrease (increase) with the outside world.

Years	y_{RDM}	$E(y_{\text{RDM}})$	$y_{\text{RDM}} - E(y_{\text{RDM}})$
1985	88716.50	73320.27	15396.23
1986	87237.58	105545.8	-18308.24
1987	94251.55	133234.6	-38983.10
1988	103124.6	154290.6	-51166.02
1989	115179.5	158604.1	-43424.59
1990	121760.8	186020.2	-64259.48
1991	111151.6	149476.8	-38325.19
1992	125231.6	157542.9	-32311.36
1993	137788.8	148705.1	-10916.27

$y_{\text{RDM}} - E(y_{\text{RDM}})$ is indeed negative, although increasing, between 1990 and 1993. Despite the trade reorientation with the West, which became the main partner of the Eastern and Central European countries, the trade volume turns out to be below its pre-disintegration potential. Three explanations are possible:

1) The trade recession is partially due to the GNP contraction. But the latter is already taken into account in the gravity equation: the potential is computed "all things being equal", by putting into the pre-disintegration gravity equation the GNP of the 1990s. Therefore the GNP decline is not responsible for the sign of $y_{\text{RDM}} - E(y_{\text{RDM}})$.

2) The second explanation lies in the particular context³¹ of the countries in transition at the beginning of the 1990s. The inflationist pressures in those economies gave rise to trade restrictions by Western countries, aiming to protect themselves against the neighbour currencies depreciation. This is corroborated by the fact that $y_{RDM} - E(y_{RDM})$ is increasing, from -38 billions in 1991 to -32 billions in 1993.

3) As shown by the gravity equations estimate in Table 6, the former CMEA disintegration process is reflected by the decrease of the CMEA coefficient, while the trade opening with Western markets remains below the gravity model norm. The CMEAI and CMEAE coefficients are significant and negative all over the period, including the disintegration period. Further if the degree of openness with the West does not change significantly after the disintegration, we can expect that at the beginning of the 1990s, trade is below what it would have been if the previous zone had been maintained³².

The increase in $y_{RDM} - E(y_{RDM})$ is good news. If the level of trade with market economies was very depressed at the beginning of the period, it is increasing between 1990 and 1993.

Table 6: Gravity equations estimates in the two periods.

	Pre-disintegration	Disintegration
Intercept	-12.246	-9.684
GNPI	0.805	0.863
GPCI	0.235	0
GNPE	0.844	1.004
GPCE	0.349	0.041
DIS	-0.857	-0.929
EEC	0.504	0.495
LAIA	1.204	1.057
EFTA	0	0.555
AF	-4.477	-2.794
COM	0.969	0.943
ASEAN	1.109	0
APEC	1.338	1.452
CMEAI	-0.741	-0.942
CMEAE	-0.651	-0.451
CMEA	2.863	1.61

$y_{RDM} - E(y_{RDM})$ is negative in the pre-disintegration period, which means that trade would have been higher if the disintegration process had occurred before.

³¹ The structural change in 1990 is not only the consequence of the CMEA disintegration.

³² The Austro-Hungarian disintegration process in the twenties is similar: regional trade collapsed, there has been a mechanical trade reorientation with third countries. This mechanical trade reorientation means that Eastern exports to the West in percentage of total Eastern exports increase because of the regional trade collapse, while the degree of trade openness with the West, as determined by the gravity model (ratio of the exports on the importer and exporter GNPs and the Distance) does not significantly change.

Table 7 gives an estimate of the net cost of disintegration (and of the existence of the CMEA in the 1980ies). $y_{intra} - E(y_{intra}) + y_{RDM} - E(y_{RDM})$ is positive in 1986, becomes negative as soon as 1987. It is decreasing. The figures again reflect the CMEA decline, and the fact that the regional trade does not compensate for the trade destruction. From 1990 onwards, the net benefit created by the disintegration process is negative; the regional trade collapse is not compensated by the trade reorientation with the rest of the world. The situation seems to improve in 1993.

Table 7: Net cost (benefit) of disintegration.

	$y_{intra} - E(y_{intra}) + y_{RDM} - E(y_{RDM})$
1985	32714.77
1986	379.84
1987	-8769.62
1988	-19893.85
1989	-17287.21
1990	-49864.00
1991	-55405.05
1992	-62039.72
1993	-45199.73

This improvement is more obvious in the estimate, that does not take into account the regional trade variation (see Table 5). The net benefit is then continuously increasing from 1990 onwards.

6. CONCLUSION

Our analysis of the former CMEA disintegration underlines the rapid reorientation of trade towards the West as a consequence of the liberal trade policies followed in the region. But this reorientation has a pure mechanical component, which is due to the regional trade collapse. Looking at the dummy variables CMEAI and CMEAE coefficients, which measure the degree of openness towards market economies, they do not change in a significant way, except in the case where the transportation cost increase in the CMEA trade is taken into account. This latter effect illustrates what Baldwin calls " Hub and Spoke bilateralism ".

In general, the trade flows with the Western markets, while below their potential, are increasing, and highlight the increasing degree of openness with the West. The regional trade collapse is increasingly compensated by the trade reorientation. This is particularly true in the computation, that does not take into account the ambiguous former CMEA trade reduction, and shows a continuous improvement from 1990 onwards.

The interpretation of the fact that trade with the West is below its potential in the 1990s is not obvious. We could incriminate Western commercial policies in the sensitive sectors, where Eastern countries are likely to have their comparative advantages. The analysis by sector, which could support such an explanation, has not been carried out here. Some

works have attempted to test it. They are not really conclusive. In the agricultural sector, average tariffs have been reduced by 37% in the EEC. But the agricultural trade potential remains very limited, because of the macroeconomic difficulties of the economies involved and of the production archaism.

Our interpretation lies in the observation that the re-opening of trade is necessarily progressive, while the regional trade collapse is instantaneous. Here the historical comparison of the Austro-Hungarian disintegration in the twenties (see Maurel (1995-b)) and the actual disintegration of the former CMEA is very instructive. In the twenties, the integration to the rest of the world could not compensate for the losses of those very intense ties in a former cultural, geographical and economic Union. At the opposite, the relative liberalism (despite its shortcomings), which characterises the commercial policies followed by the European Agreements, makes the cost of disintegration of the former CMEA decreasing.

7. ANNEX: GRAVITY MODELS ESTIMATION

	MODEL1	MODEL2	MODEL1	MODEL2	MODEL1	MODEL2	MODEL1	MODEL2
	1980		1981		1982		1983	
C	-13,91 (-20,31)	-14,00 (-20,31)	-13,56 (-19,71)	-13,68 (-19,78)	-14,07 (-20,49)	-14,16 (-20,49)	-13,37 (-19,22)	-13,56 (-19,38)
GNPI	0,79 (26,33)	0,79 (26,31)	0,82 (27,36)	0,83 (27,40)	0,81 (27,05)	0,81 (27,04)	0,83 (27,05)	0,83 (27,17)
GPCI	0,34 (9,24)	0,33 (9,20)	0,26 (7,01)	0,26 (6,97)	0,28 (7,75)	0,28 (7,71)	0,27 (7,29)	0,27 (7,22)
GNPE	0,89 (29,50)	0,88 (29,52)	0,91 (30,07)	0,91 (30,11)	0,95 (31,78)	0,95 (31,80)	0,93 (30,26)	0,93 (30,34)
GPCE	0,46 (12,70)	0,46 (12,62)	0,51 (13,72)	0,50 (13,63)	0,50 (13,68)	0,49 (13,60)	0,47 (12,60)	0,46 (12,49)
DIS	-0,87 (-19,75)	-0,87 (-19,39)	-0,97 (-21,67)	-0,96 (-21,24)	-0,95 (-21,49)	-0,93 (-21,11)	-0,99 (-21,91)	-0,97 (-21,37)
DIS_Caem		-0,02 (-1,12)		-0,03 (-1,68)		-0,02 (-1,18)		-0,05 (-2,39)
EEC	0,18 (0,88)	0,19 (0,92)	0,20 (0,95)	0,21 (1,01)	0,29 (1,40)	0,30 (1,44)	0,36 (1,68)	0,38 (1,77)
LAIA	1,01 (4,30)	1,01 (4,31)	0,73 (3,12)	0,74 (3,14)	0,93 (4,01)	0,93 (4,02)	0,71 (2,96)	0,72 (3,01)
EFTA	0,24 (0,63)	0,25 (0,67)	0,14 (0,36)	0,16 (0,42)	0,13 (0,35)	0,15 (0,39)	0,15 (0,39)	0,18 (0,47)
AF	-6,88 (-4,17)	-6,89 (-4,17)	-1,93 (-1,64)	-1,93 (-1,64)	-4,47 (-5,46)	-4,47 (-5,45)	-5,72 (-6,77)	-5,73 (-6,77)
COM	1,13 (4,84)	1,13 (4,84)	1,08 (4,55)	1,07 (4,55)	1,07 (4,62)	1,07 (4,61)	0,97 (4,03)	0,96 (4,03)
ASEAN	1,07 (2,43)	1,08 (2,44)	0,95 (2,13)	0,96 (2,16)	1,04 (2,37)	1,05 (2,39)	1,08 (2,34)	1,10 (2,45)
APEC	1,68 (9,08)	1,68 (9,07)	1,51 (8,05)	1,50 (8,05)	1,40 (7,58)	1,39 (7,58)	1,36 (7,15)	1,36 (7,14)
CMEAI	-0,40 (-3,70)	-0,21 (-1,01)	-0,63 (-5,61)	-0,33 (-1,60)	-0,80 (-7,28)	-0,59 (-2,87)	-0,63 (-5,59)	-0,20 (-0,96)
CMEAE	-0,63 (-5,87)	-0,44 (-2,17)	-0,67 (-6,11)	-0,38 (-1,85)	-0,60 (-5,54)	-0,39 (-1,96)	-0,74 (-6,68)	-0,32 (-1,53)
CMEA	2,48 (6,42)	2,28 (5,35)	2,41 (6,71)	2,10 (5,23)	2,62 (7,73)	2,40 (6,28)	2,58 (7,39)	2,14 (5,42)

T Statistics are in parenthesis

	MODEL1	MODEL2	MODEL1	MODEL2	MODEL1	MODEL2	MODEL1	MODEL2
	1984		1985		1986		1987	
C	-12,96 (-19,22)	-13,12 (-19,34)	-12,74 (-18,89)	-12,94 (-19,06)	-13,21 (-20,75)	-13,40 (-20,93)	13,15 (-21,61)	-13,30 (-21,73)
GNPI	0,84 (28,14)	0,85 (28,23)	0,84 (28,29)	0,84 (28,41)	0,79 (28,34)	0,80 (28,48)	0,82 (30,37)	0,82 (30,46)
GPCI	0,27 (7,45)	0,27 (7,39)	0,28 (7,78)	0,28 (7,72)	0,28 (8,50)	0,27 (8,42)	0,25 (8,06)	0,24 (7,97)
GNPE	0,90 (29,86)	0,90 (29,92)	0,85 (28,66)	0,85 (28,74)	0,86 (30,70)	0,86 (30,79)	0,87 (32,00)	0,86 (32,08)
GPCE	0,49 (13,54)	0,49 (13,44)	0,49 (13,69)	0,49 (13,59)	0,39 (12,13)	0,39 (12,04)	0,36 (11,82)	0,35 (11,74)
DIS	-1,02 (-23,06)	-1,00 (-22,55)	-0,99 (-22,40)	-0,97 (-21,86)	-0,82 (-19,68)	-0,81 (-19,15)	-0,82 (-20,34)	-0,81 (-19,88)
DIS_Caem		-0,04 (-2,0,5)		-0,05 (-2,43)		-0,05 (-2,55)		-0,04 (-2,17)
EEC	0,36 (1,73)	0,38 (1,80)	0,38 (1,78)	0,39 (1,87)	0,50 (2,53)	0,52 (2,63)	0,50 (2,58)	0,51 (2,66)
LAIA	0,71 (3,03)	0,72 (3,06)	0,91 (3,86)	0,91 (3,91)	1,15 (5,18)	1,16 (5,23)	1,30 (6,07)	1,30 (6,11)
EFTA	0,01 (0,03)	0,04 (0,10)	-0,01 (-0,02)	0,02 (0,07)	0,20 (0,55)	0,23 (0,64)	0,19 (0,56)	0,22 (0,63)
AF	-4,34 (-4,54)	-4,34 (-4,54)	-6,11 (-7,39)	-6,11 (-7,39)	-4,08 (-5,84)	-4,08 (-5,85)	-3,95 (-5,27)	-3,94 (-5,27)
COM	0,92 (3,95)	0,92 (3,45)	1,02 (4,35)	1,01 (4,35)	1,01 (4,59)	1,01 (4,59)	0,94 (4,41)	0,93 (4,40)
ASEAN	0,87 (1,96)	0,88 (2,00)	1,08 (2,45)	1,10 (2,50)	1,25 (3,00)	1,27 (3,06)	1,38 (3,44)	1,39 (3,49)
APEC	1,24 (6,61)	1,23 (6,61)	1,16 (6,22)	1,16 (6,22)	1,28 (7,28)	1,27 (7,28)	1,35 (7,99)	1,34 (7,99)
CMEAI	-0,85 (-7,66)	-0,48 (-2,34)	-0,68 (-6,23)	-0,26 (-1,26)	-0,66 (-6,34)	-0,24 (-1,23)	-0,70 (-7,02)	-0,36 (-1,98)
CMEAE	-0,73 (0,11)	-0,37 (-1,82)	-0,89 (-8,17)	-0,47 (-2,32)	-0,79 (-7,70)	-0,37 (-1,95)	-0,63 (-6,37)	-0,29 (-1,61)
CMEA	2,56 (7,49)	2,19 (5,66)	2,76 (8,09)	2,32 (6,03)	2,97 (9,43)	2,53 (7,07)	3,11 (11,01)	2,76 (8,51)

T Statistics are in parenthesis

	MODEL1	MODEL2	MODEL1	MODEL2	MODEL1	MODEL2	MODEL1	MODEL2
	1988		1989		1990		1991	
C	-12.99 (-22.23)	-13.22 (-22.53)	-13.28 (-22.86)	-13.45 (-23.03)	-12.41 (-21.73)	-12.59 (-21.94)	9.69 (-18.03)	-10.13 (-18.70)
GNPI	0.80 (30.64)	0.81 (30.90)	0.83 (31.95)	0.83 (32.09)	0.81 (32.13)	0.82 (32.30)	0.86 (40.17)	0.87 (40.67)
GPCI	0.25 (8.55)	0.24 (8.42)	0.26 (8.72)	0.25 (8.62)	0.21 (7.31)	0.20 (7.18)	-0.00 (-0.17)	-0.00 (-0.11)
GNPE	0.87 (33.16)	0.87 (33.32)	0.86 (32.79)	0.86 (32.89)	0.84 (32.85)	0.84 (32.96)	0.98 (45.76)	0.98 (46.10)
GPCE	0.31 (10.83)	0.31 (10.72)	0.34 (11.79)	0.34 (11.70)	0.32 (11.34)	0.31 (11.24)	0.05 (2.71)	0.04 (2.67)
DIS	-0.81 (-20.55)	-0.78 (-19.89)	-0.82 (-21.05)	-0.80 (-20.49)	-0.81 (-21.31)	-0.80 (-20.74)	-0.90 (-24.51)	-0.87 (-23.48)
DIS_Caem		-0.07 (-3.46)		-0.05 (-2.58)		-0.05 (-2.85)		-0.09 (-4.99)
EEC	0.47 (2.51)	0.49 (2.65)	0.50 (2.67)	0.51 (2.76)	0.43 (2.33)	0.44 (2.44)	0.58 (3.24)	0.61 (3.42)
LAIA	1.35 (6.50)	1.36 (6.57)	1.46 (6.99)	1.46 (7.04)	1.33 (6.56)	1.34 (6.62)	1.00 (5.06)	1.03 (5.24)
EFTA	0.18 (0.53)	0.22 (0.65)	0.11 (0.33)	0.14 (0.43)	0.08 (0.25)	0.11 (0.35)	0.56 (1.75)	0.61 (1.90)
AF	-4.46 (-6.12)	-4.46 (-6.13)	-3.95 (-5.42)	-3.94 (-5.42)	-4.10 (-6.45)	-4.10 (-6.45)	-3.52 (-5.64)	-3.50 (-5.65)
COM	0.92 (0.46)	0.92 (4.46)	0.98 (4.74)	0.98 (4.74)	1.00 (4.98)	1.00 (4.98)	0.89 (4.54)	0.89 (4.57)
ASEAN	1.25 (3.20)	1.27 (3.27)	1.31 (3.36)	1.33 (3.42)	1.07 (2.82)	1.09 (2.88)	0.37 (0.99)	0.43 (1.16)
APEC	1.34 (8.14)	1.33 (8.15)	1.32 (8.02)	1.31 (8.01)	1.38 (8.67)	1.38 (8.68)	1.48 (9.41)	1.47 (9.41)
CMEAI	-0.76 (-7.83)	-0.22 (-1.23)	-0.73 (-7.55)	-0.33 (-1.84)	-0.83 (-8.73)	-0.40 (-2.28)	-0.86 (-9.19)	-0.10 (-0.60)
CMEAE	-0.56 (-5.82)	-0.03 (-0.19)	-0.49 (-5.02)	-0.09 (-0.51)	-0.46 (-4.90)	-0.04 (-0.26)	-0.43 (-4.73)	0.29 (1.70)
CMEA	3.14 (11.43)	2.59 (8.19)	2.86 (10.44)	2.45 (7.76)	2.53 (9.26)	2.09 (6.66)	1.76 (6.72)	1.00 (3.33)

T Statistics are in parenthesis

	MODEL1	MODEL2	MODEL1	MODEL2
	1992		1993	
C	-9.60 (-17.96)	-10.12 (-18.79)	-9.83 (-17.95)	-10.37 (-18.81)
GNPI	0.86 (40.21)	0.87 (40.87)	0.87 (39.26)	0.88 (39.96)
GPCI	-0.01 (-0.54)	-0.00 (-0.45)	-0.01 (-0.63)	-0.00 (-0.51)
GNPE	1.00 (46.61)	0.99 (47.06)	1.04 (46.70)	1.04 (47.15)
GPCE	0.04 (2.18)	0.03 (2.14)	0.04 (2.57)	0.04 (2.51)
DIS	-0.91 (-25.23)	-0.88 (-24.15)	-0.97 (-25.91)	-0.93 (-24.88)
DIS_Caem		-0.10 (-5.77)		-0.11 (-5.93)
EEC	0.51 (2.85)	0.53 (3.03)	0.40 (2.17)	0.42 (2.35)
LAIA	1.13 (5.79)	1.16 (6.00)	1.04 (5.20)	1.07 (5.40)
EFTA	0.57 (1.78)	0.62 (1.96)	0.54 (1.65)	0.59 (1.84)
AF	-2.61 (-4.23)	-2.59 (-4.22)	-2.25 (-3.54)	-2.22 (-3.53)
COM	0.96 (4.90)	0.96 (4.94)	0.97 (4.86)	0.98 (4.91)
ASEAN	0.27 (0.73)	0.34 (0.93)	0.36 (0.95)	0.42 (1.15)
APEC	1.49 (9.61)	1.48 (9.61)	1.38 (8.57)	1.36 (8.55)
CMEAI	-0.91 (-9.81)	-0.06 (-0.34)	-1.05 (-11.10)	-0.16 (-0.94)
CMEAE	-0.44 (-4.86)	0.38 (2.25)	-0.47 (-4.95)	0.40 (2.30)
CMEA	1.64 (6.46)	0.79 (2.71)	1.39 (5.04)	0.50 (1.60)

T Statistics are in parenthesis

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