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Trade Creation and Trade Diversion in the Council of Mutual Economic Assistance: 1954-1970

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Trade Creation and Trade Diversion in the Council of Mutual Economic Assistance: 1954–70

By Joseph Pelzman

The Council of Mutual Economic Assistance (CMEA) has been in existence since January 1, 1949. Despite the fact that its creation was attributed to the establishment of the Organization for European Economic Cooperation (OEEC), its declared ultimate goal was the promotion of a process of integration among the East European countries.

For the Soviet Union, economic integration is primarily a means of increasing its political and economic control over the other CMEA member states. On the other hand, for the more developed members of CMEA, economic integration is a natural outgrowth of their desire to industrialize and maximize the economic gains from trade and cooperation.

Beginning in the early 1960's, the shift from an extensive to an intensive growth policy in response to the decline in growth rates created a drive towards economic integration within CMEA. The desire to increase the static gains from international trade was further prompted by its expected contribution to rapid industrialization and efficiency. This shift to intensive growth combined with the desire for rapid industrialization has also meant greater decentralization of economic decision making and the use of limited market mechanisms.

The CMEA as it exists today differs from the EEC customs union in one major respect. It does not rely on a clearly defined common external tariff. A proxy of such a tariff, however, originates in the annual bilateral negotiations between the CMEA member states. Consequently, it is quite possible to find the existence of trade creation and/or diversion as effects of economic integration within CMEA.

The analysis of trade creation and/or diversion in this study is of an ex post type. The model utilized to determine these effects is a cross-sectional trade-flow model of the type developed by Jan Tinbergen, Pentti Poyhonen, Kyosti Pulliaimen, and Hans Linne mann. Using this cross-sectional trade-flow equation to empirically test the integration effects of CMEA we initially pool the cross-sectional and time-series data for both aggregate and disaggregate trade flows. In the case of disaggregate commodities, because we cannot rule out the possibility that the regression disturbances in different equations are mutually correlated, we use the estimating procedure de-
veloped by Arnold Zellner (1962, pp. 350–52). We then begin to test our hypothesis that the linear regression system obeys two separate regimes. The use of Quandt’s maximum likelihood technique (1958) and likelihood ratio test proves to be a superior statistical procedure than the use of dummy variables in determining the first year in which integration effects occurred.6

After the existence of a structural break has been shown, we proceed to reestimate the trade-flow equation for a stable pre-integration period. In order to make a proper projection of the trade creation and/or diversion effects, this equation is recalculated, leaving out the trade preference variable.

1. The Model and Procedure

The commonly defined integration effects are trade creation (TC), trade diversion (TD), and gross trade creation (GTC).7 The TC effects refer to the emergence of new flows of trade among the partner countries replacing domestic production; TD refers to the replacement of nonpartner imports (low-cost products) by partner country imports (more costly products). The TD and TC effects combined result in GTC, which signifies a growth in trade among the member countries, regardless of the reason for this growth.

A large number of empirical models dealing with these ex post measures of integration are available. One such model focuses on the market shares of imports in apparent consumption (see Edwin Truman, pp. 206–12). Another is based on import demand equations with one single national variable (see Balassa, 1967, pp 5–11). A third model reconstructs the no-integration or normal level of trade based on demand equations using multiple regressions (see Mordechai Kreinin, 1969, pp 274–76).

While statistically and logically sound procedures, none of these approaches could be used to measure the integration effects of CMEA. In general, the requirement in terms of the amount and quality of data necessary for all these models could not be met from the data available.8 To measure the effects of the CMEA on the trade flows of its member countries would require the use of a modified gravity trade-flow model, which does not directly incorporate prices.

The trade-flow equation is:

\[
\log X_{ij} = g_0 + g_1 \log Y_i^n + g_2 \log Y_j^n + g_3 \log N_i + g_4 \log N_j
\]

\[
+ g_5 \log D_{ij} + g_6 \log P_{ij} + \log e_{ij}
\]

where \(X_{ij}\) is the dollar value of \(i\)'s exports to \(j\)

\(Y_i^n, Y_j^n\) = the nominal GNP of country \(i\) and \(j\) in U.S. dollars

\(N_i, N_j\) = the populations of country \(i\) and \(j\)

\(D_{ij}\) = the distance between the commercial centers of the two countries (geographic distance)

\(P_{ij}\) = a dummy preference variable reflecting membership in the CMEA. The value 2 is assigned to intra-CMEA trade while the value 1 is assigned to inter-CMEA trade flows

\(\log\) refers to natural logs

This general equilibrium reduced-form model specifies that trade between country \(i\) and \(j\) is determined by the relative size of their foreign sectors. In turn, country \(i\)'s potential foreign supply depends on its national product \(Y\), and on the ratio between production for the domestic market and production for foreign demand explained by differences in population. Given economies of scale, the larger \(N\) is, the larger will be the domestic market to foreign market ratio, and the smaller the potential export supply of the country. The variables \(Y_i\) and \(N_i\) together determine the potential import demand for country \(j\) for

6The use of dummy variables to measure the EEC effects was presented by Norman Aitken. The procedure used here is considered superior to that used by Aitken because it not only identifies the shift in structure but also allows one to create a confidence interval around that switching point. Moreover, this statistical procedure associates the structural shifts with our a priori hypotheses of the political events within CMEA.

7See Bela Balassa (1967, p. 5).

8For a discussion of the data limitations and sources see the author (1976a, pp. 99–102, and Appendix A).
a similar argument. The $D_{ij}$ is a proxy variable for natural trade resistance. Consequently, $D_{ij}$ along with $N_i$ and $N_j$ is hypothesized to have a negative effect on $X_{ij}$. The dummy variable $P_{ij}$ is used to reflect membership in the CMEA group. The estimated coefficient on the dummy variable measures to what extent intra-CMEA trade flows were augmented.

A. Aggregate Trade Flows

The aggregate trade flow sample consists of 350 trade flows per year for the 17-year period, 1954–70. The trade-flow matrix will therefore consist of 5950 observations on 8 variables (1 dependent variable and 7 independent variables including the constant term).9

This matrix can be written as a system of 17 equations, where the $\mu$th equation can be represented as:

$$
\log X_{ij,\mu} = \log Y_{ij} g_{\mu} + \log e_{\mu}
$$

where $\log X_{ij,\mu}$ is a 350 x 1 vector of observations on the $\mu$th dependent variable, $Y_{ij}$ is a 350 x 7 matrix of observations on 7 independent variables, $g_{\mu}$ is a 7 x 1 vector of regression coefficients and $\log e_{\mu}$ is a 350 x 1 vector of lognormally distributed error terms, with $E(\log e_{\mu}) = 0$. The system of which (2) is an equation is:

$$
\begin{bmatrix}
\log X_{0,1} \\
\vdots \\
\log X_{0,T}
\end{bmatrix} =
\begin{bmatrix}
\log Y_{0,0} & \ldots & 0 \\
\vdots & \ddots & \vdots \\
0 & \ldots & \log Y_{0,T}
\end{bmatrix}
\begin{bmatrix}
g_1 \\
\vdots \\
g_T
\end{bmatrix}
+ \begin{bmatrix}
\log e_1 \\
\vdots \\
\log e_T
\end{bmatrix}
$$

where $T = 17$.

Running a pooled regression over all time periods and all $X_{ij}$ we begin to test our hypothesis that the linear regression system obeys two separate regimes.10 I believe that a major break in the system should have occurred after the signing of the “Basic Principles” in June 1962. Furthermore, there is some information with respect to joint planning in 1958, 195911 which leads one to believe that another break may have occurred at that period as well. Each of these breaks is understood to represent structural changes leading to an increased state of integration within CMEA.

The actual procedure to test for the location of this unknown breaking point involves the use of Quandt’s maximum likelihood technique and likelihood ratio test.12

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9Our sample includes the following CMEA countries: Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, and the USSR. The Western countries considered are the following: Austria, Belgium-Luxembourg, Canada, Denmark, Finland, France, West Germany, Greece, Iceland, Ireland, Italy, Japan, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States, and Yugoslavia. There are 308 inter-CMEA trade flows and 42 intra-CMEA trade flows.

10A number of factors compelled me to choose this technique. First, the exclusion of the price variable in this trade-flow model implies that the market clearing quantity depends on demand and supply factors but not on the price variable. Linneman, therefore used data averaged over a 3-year period to reflect this equilibrium characteristic. However, Helen Junz and Rudolf Rhomberg, p. 452, have found that data over a longer time period should be used to eliminate the influence of short-run price changes. Secondly, the cross-section equation alone is static, thus paying no attention to the development of trade over time (Tinbergen, p. 263). However, we are interested in capturing structural shifts which might develop in the long run because of integration.

11In December 1958, a session meeting in Prague implemented specialization agreements in the production of chemicals and joint construction of an oil pipeline. Later in 1959, agreements were reached with respect to specialization in rolled products, mining machinery, civil engineering, oil refining bearings, and rolling mill equipment. After the “Basic Principles” in 1962 CMEA made a very important decision to endorse greater specialization in production and international trade. See Kaser (pp. 153–74) and the author (1976a, ch. 3) for a further discussion of intra-CMEA cooperation.

12To find the best estimate of this break $t^*$ we choose the value of $t$ for which $L(t)$ reaches the highest maximum.

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

$$
- (T - t^*) \log \hat{\sigma}_2 - T/2
$$

where $\hat{\sigma}_1$ and $\hat{\sigma}_2$ are the standard errors of the estimates of the left-hand and right-hand regressions,
After the existence of a structural break has been shown, we proceed to reestimate the trade-flow equation for a stable period prior to the break (which we attribute to integration). In order to make a proper projection, this equation is recalculated, leaving out the trade preference variable. Projection estimates which are based on this equation are made on the basis of the usual assumption that the effect of changes in competitive position and trade liberalization on trade has been small relative to the effects of integration.

The difference between the actual intra-CMEA trade flows and the hypothetical intra-CMEA trade flows of CMEA’s pre-integration structure is taken to be indicative of the GTC effects. The difference between the actual inter-CMEA trade flows and the preintegration inter-CMEA trade flows will indicate the TD effects. The resulting difference between the GTC and TD effects will be indicative of the TC effects.

B. Disaggregate Trade Flows

The disaggregate trade-flow sample consists of 37 commodity classifications for the years 1958 to 1970. The total number of trade flows per year and commodity will be 330. The trade-flow matrix will therefore consist of 4290 observations on 8 variables per commodity.\(^{13}\)

As in the case of aggregate trade flows, we expect each of the equations to satisfy the assumptions of the classical normal linear regression model. However, since we are dealing with disaggregate commodities we cannot rule out the possibility that the regression disturbances in different equations are mutually correlated. Specifically, we contend it is possible that there may exist some common factors that affect the trade decision of countries for a specific commodity in a given period.\(^{14}\) Thus there may exist a link between the \(m\)th and the \(p\)th equation and that link is represented only in the covariance of the disturbances of the \(m\)th and the \(p\)th equation. Because this link is so subtle, we can call this system of \(T\) equations (3) a system of “seemingly unrelated regression equations.”

Our assumption of correlation between equations, therefore, suggests that an efficient estimation of our model of reduced-form equations, where each endogenous variable is a function of a set of exogenous variables and the only link between the \(m\)th and \(p\)th equation is \(\sigma_{mp}\), is the procedure developed by Zellner (1962, pp. 350–52). Essentially, this procedure regards (3) as a single equation regression model and applies Aitken’s generalized least squares.

The procedure involved in testing for the location of the unknown breaking point and reestimation of the trade-flow equation is identical to that used for aggregate trade

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\(^{13}\)The intra-CMEA disaggregate foreign trade data which we possess is limited to Soviet trade data by three-digit Uniform CMEA Foreign Trade Commodity Nomenclature (CTN) for 1954-1970. Czech foreign trade data by three-digit CTN from 1958 to 1968 and by Standard International Trade Classification-Revised (SITC) from 1968 to 1970. Our Polish data in three-digit CTN detail is, however, limited to the years 1964–67. We are thus faced with the problem that the Soviet Union and Czechoslovakia are the only CMEA countries which publish a full set of disaggregate trade flows for the years 1958–70. The solution to this data availability problem is to employ the mirror statistics of Czechoslovakia and the Soviet Union. For a more detailed discussion of the problems involved see the author (1976a, Appendix A).

\(^{14}\)Such as a bad harvest or oil price rises.
flows. Projection estimates of $GTC$, $TD$, and $TC$ are made on the basis of the usual assumptions presented above.

II. Empirical Results

A. Aggregate Trade Flows

The estimated parameter values for the pooled regression for 1954–70 is:

(4) \[ \log X_{ij} = 6.72 + .788 \log Y^n_j \]
\[ + .954 \log Y^n_i - .177 \log N_j \]
\[ - .283 \log N_i - 1.229 \log D_{ij} + 2.788 \log P_{ij} \]
\[ R^2 = .58; \text{ standard errors are shown in parentheses. All coefficients are statistically significant at the 0.01 level.} \]

The coefficients of the trade-flow equation for the 17-year period confirm the expected theoretical pattern. In fact, our regression results and in particular an $R^2$ of .58 show that we have a respectable fit. Based on Quandt's maximum likelihood technique and likelihood ratio test, I conclude that two breaks, and not one, occurred. A maximum maximorum is reached in 1964 and another local maximum in 1958.6

The earlier break in 1958 points out that the break with the Stalinist period after 1954 and the attempts made during joint planning did in fact create a new structure. Yet this new structure cannot be viewed as representing a state of integration. In fact, it represents a period where a policy of autarky was abandoned in favor of a policy where international trade would play a greater role. The structural break in 1964 can, however, be attributed to the beginning of integration.13

Given the above results, I decided to re-calculate the trade-flow equation for a stable period between the two breaks. The years chosen for this period were 1960–64. This recalculated equation, when the dummy variable for CMEA membership is removed, should represent a stable preintegration structure. Based on this equation we estimate inter- and intra-CMEA trade for the years 1965–70.

The pooled equation for 1960–64 is:

(5) \[ \log X_{ij} = 8.574 + .580 \log Y^n_j \]
\[ + .910 \log Y^n_i + .111 \log N_j \]
\[ - .178 \log N_i - 1.509 \log D_{ij} \]
\[ R^2 = .52; \text{ standard errors are shown in parentheses. All coefficients except for } N_j \text{ are significant at the 0.01 level. The population elasticity for } N_j \text{ is not significantly different from zero.} \]

In Table 1 the $GTC$, $TD$, and $TC$ effects of CMEA integration as well as the total trade figures for CMEA are presented. Note that since economic integration is presumed to be a cumulative process, one should find estimates of trade creation increasing from year to year with no reversals. In fact, our results in the case of CMEA as a whole confirm these expectations. Yet despite the increase in total trade and the existence of trade creation, an examination of the $TD$ figures points out that with the exception of 1970, the CMEA member

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13The $R^2$ in our regression is as high as the one found by Linnemann. The best $R^2$ achieved by Linnemann in a worldwide sample for 1958–60 was 0.64. A further comparison of these results with those of Linnemann, Giesler, and Pulliainen confirms both the direction and magnitude of the income and population elasticities.

14See the author (1976a, pp. 106–08).
countries continued to trade outside their customs union. An evaluation of the individual country results\(^{19}\) confirms both our a priori expectations and the results shown in Table 1. Moreover, these individual country estimates demonstrate that the only CMEA member countries which are effectively diverting trade from nonpartner to partner countries are Czechoslovakia and East Germany.

**B. Disaggregate Trade Flows**

The empirical analysis of the disaggregate trade flows was in general hampered by the lack of consistent reporting of disaggregate foreign trade flows by the CMEA countries. In fact, the Soviet Union, Czechoslovakia, and to a lesser extent, Poland, are the only members of CMEA which report a more or less consistent set of foreign trade statistics by commodity composition and partner. While 37 disaggregated commodity groups were tested, the results for 34 of these commodity groups showed that only the preference variable was significantly different from zero. A number of reasons may have accounted for these results. First, in a large number of these 34 commodities, the influence of Soviet CMEA member bilateral trade flows was very strong. This was confirmed when an eighth independent variable, the total Soviet trade in each commodity group, was found to be significantly different from zero. Secondly, extra-CMEA transactions in some groups, i.e., beverages and tobacco, mineral fuels, lubricants and related materials, are so small compared to the intra-CMEA flows that they may be considered inconsequential.

The empirical results for the remaining three commodities, basic chemicals, iron and steel, and machinery other than electric were in fact consistent with the expected theoretical pattern and the aggregate results presented above. In the case of basic chemicals, these empirical results illustrate a structural break occurring in 1964. Using the recalculated trade-flow equation (6) for the last preintegration year, we obtain estimates of \(GTC\), \(TD\), and \(TC\) effects of CMEA.

The recalculated equation for 1964 is:\(^{20}\)

\[
\text{log } X_{ij} = - .84 - .083 \log Y_i^N + .01 \log Y_i^D + .323 \log N_i + .15 \log N_i - .323 \log D_j
\]

Standard errors are shown in parentheses.

\(^{20}\)\(R^2\) coefficients for equations (6), (7), and (8) are not reported because an interpretable \(R^2\) when using generalized least squares (GLS) estimation does not exist. Zellner's estimation used in the analysis of disaggregate trade flows is simply the application of GLS estimation to a group of seemingly unrelated equations. Furthermore, as Fisher points out "the orthogonality properties of least squares which makes \(R^2\) easy to interpret in terms of fraction of variance are not preserved" (p. 34) in the above case. In order to appraise our results the standard errors of the coefficients are provided.

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### Table 1 – Net Effect of CMEA Integration on CMEA (Millions of U.S. Dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>(GTC)</th>
<th>(TD)</th>
<th>(TC)</th>
<th>Total Trade*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>9202.87</td>
<td>-769.41</td>
<td>9972.28</td>
<td>16496.98</td>
</tr>
<tr>
<td>1966</td>
<td>9235.08</td>
<td>-856.85</td>
<td>10091.93</td>
<td>17292.62</td>
</tr>
<tr>
<td>1967</td>
<td>10299.95</td>
<td>-904.39</td>
<td>11204.34</td>
<td>18986.17</td>
</tr>
<tr>
<td>1968</td>
<td>11263.27</td>
<td>-813.18</td>
<td>12076.41</td>
<td>20607.39</td>
</tr>
<tr>
<td>1969</td>
<td>12071.51</td>
<td>-429.95</td>
<td>12501.46</td>
<td>22481.53</td>
</tr>
<tr>
<td>1970</td>
<td>13221.59</td>
<td>122.34</td>
<td>13099.25</td>
<td>24853.69</td>
</tr>
</tbody>
</table>

**Source:** Trade flows between CMEA partners were provided by the Indiana University IDRC and ITIMS data bank. For a list of other sources, see the author (1976a, pp. 99–102).

*Total exports of the CMEA member countries to the countries in the sample.
In Table 2 the GTC, TD, and TC effects of CMEA integration on the trade flows of basic chemicals are presented. Note that the estimates of trade creation are increasing from year to year despite the existence of inter-CMEA trade in basic chemicals.

An evaluation of the individual country estimates for this commodity group confirms the results presented in Table 2, as well as the aggregate results. While the CMEA members did experience trade creation for this commodity during 1965-70, inter-CMEA trade flows were still in existence.

The results for iron and steel, like those for basic chemicals, were significant. The empirical results again support the hypothesis of a structural break occurring in 1964. In this case the recalculated 1964 equation is:

\[
\begin{align*}
\log X_{ij} &= -1.221 - 0.183 \log Y_i^n + 0.013 \log Y_i^n + 0.418 \log N_j \\
&\quad + 0.311 \log N_j - 0.373 \log D_{ij}
\end{align*}
\]

Standard errors are shown in parentheses.

The projected trade flows based on this recalculated equation with the dummy variable for CMEA membership removed are used to determine the estimates of the GTC, TD and TC effects of CMEA. The results presented in Table 3 again confirm our expectations of positive trade creation. However, despite the existence of trade creation, the growth of inter-CMEA trade flows should be noted. In fact, an examination of the individual country estimates illustrates that in both Hungary and East Germany, inter-CMEA trade in iron and steel is larger than intra-CMEA trade in the same commodity.

In the case of machinery other than electric, the results of Quandt’s maximum likelihood technique point to a structural break in 1962. Because this break comes so soon after the signing of the “Basic Principles” it suggests that this commodity group may be of greater importance to the CMEA members’ industrialization drive.

Using the recalculated trade flow equation for 1962, we estimate inter- and intra-CMEA trade for years 1963–70. The re-

### Table 2—Net Effect of CMEA Integration on CMEA in Basic Chemicals
(Millions of U.S. Dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>GTC</th>
<th>TD</th>
<th>TC</th>
<th>Total Trade*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>167.39</td>
<td>-118.50</td>
<td>285.89</td>
<td>306.02</td>
</tr>
<tr>
<td>1966</td>
<td>163.65</td>
<td>-147.71</td>
<td>311.36</td>
<td>325.42</td>
</tr>
<tr>
<td>1967</td>
<td>180.23</td>
<td>-155.79</td>
<td>336.02</td>
<td>354.73</td>
</tr>
<tr>
<td>1968</td>
<td>203.63</td>
<td>-159.68</td>
<td>363.31</td>
<td>421.79</td>
</tr>
<tr>
<td>1969</td>
<td>206.41</td>
<td>-185.03</td>
<td>391.44</td>
<td>409.92</td>
</tr>
<tr>
<td>1970</td>
<td>227.75</td>
<td>-223.16</td>
<td>450.91</td>
<td>469.29</td>
</tr>
</tbody>
</table>

*See Table 1.

### Table 3—Net Effect of CMEA Integration on CMEA in Iron and Steel
(Millions of U.S. Dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>GTC</th>
<th>TD</th>
<th>TC</th>
<th>Total Trade*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1965</td>
<td>881.33</td>
<td>-287.96</td>
<td>1169.29</td>
<td>1190.35</td>
</tr>
<tr>
<td>1966</td>
<td>821.41</td>
<td>-339.49</td>
<td>1160.22</td>
<td>1182.00</td>
</tr>
<tr>
<td>1967</td>
<td>883.02</td>
<td>-315.67</td>
<td>1198.69</td>
<td>1219.98</td>
</tr>
<tr>
<td>1968</td>
<td>900.88</td>
<td>-339.23</td>
<td>1240.11</td>
<td>1260.80</td>
</tr>
<tr>
<td>1969</td>
<td>1134.35</td>
<td>-410.35</td>
<td>1545.22</td>
<td>1565.77</td>
</tr>
<tr>
<td>1970</td>
<td>1260.31</td>
<td>-495.36</td>
<td>1755.67</td>
<td>1776.33</td>
</tr>
</tbody>
</table>

*See Table 1.
calculated equation for 1962 is:

\[
\begin{align*}
\log X_{ij} &= - .114 + .228 \log Y_j^N \\
&\quad + .1 \log Y_j^N + .131 \log N_j \\
&\quad + .002 \log N_j - .447 \log D_{ij} \\
&\quad (1.1) \quad (1.1) \quad (1.3) \quad (1.3) \quad (0.09)
\end{align*}
\]

Standard errors are shown in parentheses.

The projected \(GTC\), \(TD\), and \(TC\) effects are presented in Table 4. The results here again confirm our a priori assumption of trade creation increasing from year to year with no reversals. In fact, compared with the total trade figures the dollar value of trade creation is quite large. With the exception of East Germany and Czechoslovakia, the other \(CMEA\) member countries have in fact diverted trade in this commodity from nonpartner sources to partner countries.

### III. Concluding Remarks

The empirical results are found to be consistent with my expectations and those presented by the theory. The results with respect to aggregate trade flows showed that the \(CMEA\) countries have in fact experienced a cumulative growth in \(GTC\) and \(TC\) over the integration period 1965-70. The projected estimates of the size of the \(GTC\) effect ranged from $9.2 billion in 1965 to $13.2 billion in 1970. The estimates of \(TC\) ranged from $9.9 billion in 1965 to $13.1 billion in 1970.

In the case of disaggregate trade flows, our results were not generally consistent with the aggregate results. The greatest discrepancy arises when comparing the size of \(GTC\) and \(TC\) between the aggregate and disaggregate results. A reasonable explanation for this may be found in the lack and suitability of disaggregated \(CMEA\) trade flows. In fact, in those commodity groups where the data were both available and consistent with the \(SITC\) nomenclature, the results were somewhat consistent with the aggregate results.

In basic chemicals the size of \(GTC\) grew from $167 million in 1965 to $228 million in 1970. The value of \(TC\) grew from $285 million in 1965 to $450 million in 1970. The size of \(GTC\) and \(TC\) effects in iron and steel also expanded from $881 million and $1169 million in 1965 to $1260 million and $1755 million in 1970, respectively. Finally, the projected estimates of the size of the \(GTC\) and \(TC\) effects in machinery other than electric ranged from $1.6 billion and $1.7 billion in 1963 to $2.6 billion and $2.9 billion in 1970, respectively.

My empirical findings yielded the additionally important conclusion that integration did, in fact, occur after the signing of the “Basic Principles.” Moreover, these results demonstrate that 1964 can be considered the last preintegration year in \(CMEA\).

### REFERENCES


______, *European Economic Integration*, Amsterdam 1975.


University of Indiana, International Development Research Center (IDRC), International Trade Information Management Systems (ITIMS), data bank, various years.