REPORT TO
NATIONAL COUNCIL FOR SOVIET AND EAST EUROPEAN RESEARCH

TITLE: INTERPRETING THE SOVIET SUBSIDIZATION OF EAST EUROPE

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INTRODUCTION

The Soviet Union subsidizes the East European members of the Council for Mutual Economic Assistance (CMEA) because the formula for setting prices in intra-CMEA trade creates a systematic divergence between them and world market prices (WMPs). Intra-CMEA prices are based on the average of past WMPs. As a result, those commodities whose prices on world markets are rising, such as fuels and raw materials during the 1970s, tend to be underpriced in intra-CMEA trade relative to contemporaneous WMPs. In contrast, manufactures, including machinery, tend to be overpriced in intra-CMEA trade. Such overpricing occurs in two ways. The first is that if the WMPs of manufactures grow more slowly than do those of raw materials, then, under the CMEA price-setting rule, the terms of trade between manufactures and raw materials will be more favorable for the former in intra-CMEA trade than they would be on the basis of contemporaneous WMPs. The second way in which manufactures become overvalued in intra-CMEA trade is through the process of documenting WMPs. WMPs for machinery and other manufactures are based on a quality standard that similar East European goods do not meet. Evidence of the lower quality of East European manufactures is provided by the often large discounts from WMPs at which East European exports of such goods have to be sold in the West. Thus, to the extent that WMPs of western manufactures are used to set
the intra-CMEA prices of lower-quality products, the latter are overpriced.

Since the Soviet Union is a net importer of manufactures and a net exporter of fuels and raw materials in its trade with the East European members of CMEA, it reaps smaller, and they larger, gains from trade than would be obtained by trading at WMPs. To the extent, then, that trading at WMPs is either a realistic alternative or an acceptable norm of desirable practice, the shifting of benefits away from the Soviet Union to its trade partners may be seen as a subsidy granted by the former to the latter.

The extent of these subsidies has been measured by Marrese and Vanous (1983, 1984) for the period 1960-84. Their findings are that in aggregate terms the Soviet subsidization grew from less than a quarter of a billion dollars per year in the early 1960s to over 10 billion dollars per year in the late 1970s and early 1980s. Perhaps more interesting than the aggregate amount of the subsidy is its distribution among the East European countries. Marrese and Vanous found that the German Democratic Republic and Czechoslovakia received the largest subsidies, followed by Bulgaria, Hungary and Poland. Romania's subsidies were much smaller than those of other CMEA countries.

Both Marrese and Vanous' estimates of the subsidies and their explanation of their volume and distribution among the members of CMEA have created considerable controversy. In
this paper, I briefly discuss some of the technical issues surrounding the concept of subsidization and then turn to examine at somewhat greater length the political and economic determinants of the size and distribution of subsidies among the countries of East Europe.

SUBSIDIZATION IN INTERNATIONAL ECONOMIC RELATIONS

One of the difficulties surrounding the discussion of Soviet subsidization of East Europe stems from the perception that such subsidies are unique to the Soviet-East European relationship, either because of the planned nature of the domestic and international economies of these countries or because of the political and economic hegemony of the Soviet Union. In this section we show that whenever a number of countries engage in preferential trade among themselves subsidies of the type measured by Marrese and Vanous will arise.

For our example we choose the European Community, a group of market economies where there is no hegemon. The EC has developed a common agricultural policy (CAP) that protects the Community's agricultural producers both by means of restrictions on imports of agricultural products and by means of subsidies that are paid by members into the EC budget and then redistributed. In 1981, these subsidies amounted to 12.34 billion ECUs (some $10 billion). The major net contributors to the subsidy scheme were the Federal Republic of Germany and the United Kingdom. The
major net recipients were countries producing more agricultural output than they consumed: the Netherlands, Ireland, Denmark and France.²

In addition to this explicit subsidization, there is also an implicit subsidization that occurs through intra-EC trade in agricultural products. The CAP has been estimated to have an effect on the EC's agricultural imports equivalent to a 52 percent ad valorem tariff. Thus when one EC member imports agricultural products from another, it pays more than the world price for them. Using the opportunity cost concept in exactly the same way that Marrese and Vanous do, it is possible to argue that to the extent that two EC members do not bilaterally balance their trade in agricultural products with each other, the net exporter receives a subsidy equivalent to 34 percent of the net imbalance since, if sold on world markets the goods would have fetched lower prices. The net importer at the same time pays a subsidy of an equal amount since it could have purchased the goods on the world market for less.

Bilateral net exports flows were calculated in intra-EC trade for SITC categories 0, food and live animals; 1, beverages and tobacco; and 2, raw materials excluding fuels. Since the last category includes non-agricultural products, net trade flows of this category were reduced by 50 percent. Table 1 represents the implicit subsidy flows among EC members resulting from agricultural trade. The subsidy flows are quite large for some countries, comparable, in
### TABLE 1

**SUBSIDIES PAID AND RECEIVED BY EUROPEAN COMMUNITY MEMBERS AS THE RESULT OF THE COMMON AGRICULTURAL POLICY IN 1982**

(Million $)

<table>
<thead>
<tr>
<th>From:</th>
<th>Belgium</th>
<th>Denmark</th>
<th>France</th>
<th>Germany</th>
<th>Greece</th>
<th>Ireland</th>
<th>Italy</th>
<th>Netherlands</th>
<th>U.K.</th>
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<tbody>
<tr>
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<td>---</td>
<td>25.44</td>
<td>110.12</td>
<td>-67.96</td>
<td>-3.31</td>
<td>12.16</td>
<td>44.13</td>
<td>-198.05</td>
<td>19.44</td>
</tr>
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<td>-25.44</td>
<td>---</td>
<td>-410.92</td>
<td>-256.08</td>
<td>-23.69</td>
<td>0.70</td>
<td>-177.66</td>
<td>4.36</td>
<td>-385.04</td>
</tr>
<tr>
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<td>410.92</td>
<td>---</td>
<td>-460.33</td>
<td>-23.27</td>
<td>35.42</td>
<td>545.27</td>
<td>140.74</td>
<td>-26.22</td>
</tr>
<tr>
<td>Germany</td>
<td>87.90</td>
<td>256.08</td>
<td>460.02</td>
<td>---</td>
<td>-13.75</td>
<td>38.99</td>
<td>-284.63</td>
<td>983.68</td>
<td>-3.74</td>
</tr>
<tr>
<td>Greece</td>
<td>3.31</td>
<td>23.59</td>
<td>23.27</td>
<td>13.75</td>
<td>---</td>
<td>4.21</td>
<td>11.96</td>
<td>122.90</td>
<td>-2.12</td>
</tr>
<tr>
<td>Ireland</td>
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<td>-0.73</td>
<td>-50.62</td>
<td>-33.96</td>
<td>-4.21</td>
<td>---</td>
<td>-2.41</td>
<td>-27.16</td>
<td>132.67</td>
</tr>
<tr>
<td>Italy</td>
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<td>177.25</td>
<td>-546.27</td>
<td>284.63</td>
<td>-11.96</td>
<td>2.41</td>
<td>---</td>
<td>347.92</td>
<td>-11.11</td>
</tr>
<tr>
<td>Netherlands</td>
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<td>-140.74</td>
<td>-530.69</td>
<td>-22.99</td>
<td>27.65</td>
<td>-347.32</td>
<td>---</td>
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</tr>
<tr>
<td>U.K.</td>
<td>-13.90</td>
<td>283.32</td>
<td>28.22</td>
<td>3.26</td>
<td>21.32</td>
<td>138.03</td>
<td>41.11</td>
<td>352.76</td>
<td>---</td>
</tr>
<tr>
<td>TOTAL</td>
<td>-40.65</td>
<td>1273.73</td>
<td>-326.70</td>
<td>-1662.47</td>
<td>-185.10</td>
<td>318.91</td>
<td>-257.58</td>
<td>2337.74</td>
<td>-906.27</td>
</tr>
<tr>
<td>Rank</td>
<td>4</td>
<td>2</td>
<td>7</td>
<td>9</td>
<td>5</td>
<td>3</td>
<td>6</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>$/person</td>
<td>-4.05</td>
<td>249.73</td>
<td>-9.79</td>
<td>-23.35</td>
<td>-19.03</td>
<td>53.83</td>
<td>-4.65</td>
<td>143.22</td>
<td>-16.10</td>
</tr>
</tbody>
</table>

4  1  6  8  3  5  2  7
fact, to the magnitude of the subsidization found by Marrese and Vanous for Soviet-East European trade, both in the aggregate and in per capita terms. Thus, the existence of "subsidies" among members of a customs union, even in the amount observed by Marrese and Vanous, should not be viewed as uncommon. Their existence is due to the fact that so long as intra-member prices of some commodities differ from world market prices some members will gain and others lose from trading these commodities with other bloc members. The existence of subsidies generated in intra-CMEA trade thus depends neither on the planned nature of socialist economic intercourse nor on Soviet hegemony over East Europe. Rather the subsidies owe their existence to the fact that intra-CMEA trade, like intra-EC trade, is not carried out at world market prices. Therefore to understand the politico-economic implications of the Soviet subsidization of East Europe, we need to understand why the CMEA exists and the source of the pattern of differences between intra-CMEA prices and world market prices that exists in the CMEA.

THE CMEA AS A GRANTS ECONOMY

The grants economy approach is to view subsidies or unequal exchanges among individuals or states as involving reciprocal but often unseen transfers of benefits from the subsidized to the donor. This is precisely the approach that Marrese and Vanous employ. The existence of subsidies in intra-CMEA trade reflects Soviet maximization of a
combination of economic and non-economic benefits. Economic benefits are measured by the resources available to the Soviet leadership. These are augmented by domestic economic growth and the gains from trade. Non-economic benefits include security as well as international status and influence. Because Soviet leaders are willing to substitute between economic and non-economic objectives and because there are alternative ways of achieving both economic and security objectives the subsidization of East Europe is a tool for achieving Soviet objectives at the lowest possible cost.

By providing subsidies to Eastern Europe through intra-CMEA trade, the Soviet Union substitutes economic benefits for non-economic ones because the East European countries provide what Marrese and Vanous call non-conventional gains from trade to the Soviet Union. These include political loyalty, which serves both Soviet security objectives and increases the Soviet Union's international standing as the leader of the Communist world; economic and political orthodoxy; and increased defense expenditures by East Europe. The economic cost of the subsidization of East Europe is thus more than offset by the gains in security and other non-economic benefits that the East European countries offer the Soviets in return.

Because the provision of non-economic benefits is unpopular with East European populations since, to them, it represents a loss of sovereignty, Marrese and Vanous argue
that the payment of subsidies must be hidden. At the same time, the subsidies lower the living standards of Soviet citizens and thus they, too, are best kept unaware of their existence. The CMEA pricing mechanism, then, was devised to permit the Soviet Union to pay and the East European countries to receive these subsidies without popular awareness of them. Thus the CMEA is, to use the apt title of Marrese's (1986) paper, a "cumbersome but effective political economy." Cumbersome because the magnitude of the subsidies is influenced not only by the size of the Soviet Union's net exports of raw materials to and net imports of manufactures from individual CMEA countries, which Marrese and Vanous believe to be determined by the Soviet Union, but also by WMPs, which, of course, are not. Effective because Soviet objectives are achieved without the awareness of potentially restive populations at home and abroad.

Marrese and Vanous view the distribution of subsidies among the East European members of CMEA as proof of this theory. The largest subsidies, in both total and per capita terms go to the GDR and Czechoslovakia. These are particularly loyal, stable and orthodox allies who also are of great strategic importance because of their borders with the West. Hungary and Bulgaria receive smaller subsidies because, although they are also loyal, their location and strategic capabilities make them less able to provide benefits. Poland, because of its political and socio-economic instability and its location receives even lower subsidies while Romania, because of its maverick
foreign policy receives by far the lowest subsidy.

There are some problems with this theory. The most critical is that it is unclear precisely who is to be influenced by the subsidies. If, as Marrese and Vanous argue, the CMEA pricing mechanism is meant to hide the subsidies from the East European populations, then the subsidies cannot reduce unrest and resentment over the loss of sovereignty suffered by these populations as their countries provide unconventional benefits to the Soviet Union. In fact, even if the subsidies were visible, their efficacy would appear to be doubtful since, on a per capita basis they did not exceed $5 in the 1960s and $27.60 in 1974-78. Intended rather than actual subsidies were even less.

If the populations of East Europe are not being compensated for their loss of sovereignty, then the only remaining group to be subsidized in East Europe is the leadership, which either uses the subsidies in such a way as to enhance their popular support or is motivated by the receipt of the subsidies to act in accord with Soviet desires. Neither of these possibilities bears close scrutiny. If the leadership uses the subsidies to increase its legitimacy, then we are again left with the problem that the low per capita level of subsidization mentioned above simply does not enable the leadership to undertake projects or campaigns of a magnitude likely to have any appreciable impact on mass attitudes toward the regime.
It is also unlikely that subsidization would be extensively utilized to bend the East European leaderships to the Soviet will. As Ellen Comisso (1985) argues in a wide-ranging and sophisticated analysis of the grants-theoretic approach to CMEA subsidies, the politico-economic relations between CMEA members are as much if not more appropriately viewed as relations between interdependent Communist parties as between states. Comisso argues that the Soviet and East European leaderships have important political and ideological objectives in common, and therefore that much of the politico-economic relationship between CMEA members is a positive-sum game. All parties are interested in maximizing their freedom to act and to control resources. Decisions are made largely with a view towards achieving these goals on a bloc-wide basis; thus members benefit not only from their own increases in power but also from the increased power of other CMEA states. Decision-making itself is a process carried on by mutually-dependent Communist parties that reflect not narrow national interests but rather bloc-wide interests and thus do not concern themselves exclusively with the issue of national gains and losses. To the East European leaders, increases in the strength and stability of the Soviet Union, in its economic progress and in its international standing as a super-power and leader of the communist movement are highly desirable objectives. To the extent that the Soviet Union can attain these goals it
strengthens the internal and external legitimacy of the East European regimes, provides for their internal stability and external security and promotes their own economic progress.

Thus, to the eyes of East European leaders, many of the intangible benefits provided to the Soviet Union also yield politico-economic benefits to their own nations and enhance, rather than reduce, the legitimacy of their own regimes. There are, of course, instances where national interests and sovereignty or the domestic popularity of the regime are compromised by actions in support of Soviet objectives. In these cases it is not at all evident that large and on-going subsidization by the Soviet Union is either a necessary or efficient mechanism for influencing East European leaders. Certainly political pressure, appeals to solidarity and more focussed and limited economic levers would be much better instruments for influencing East European leaderships in these circumstances.

Even if one were to accept the possibility of subsidization of either East European populations or leaders, other elements of the grant-theoretic approach require clarification. Marrese and Vanous first present the subsidies as the outcome of Soviet maximizing behavior. In essence the Soviets determine the size of the subsidy by choosing the quantity of fuels and raw materials exports and manufactured goods net imports from any CMEA country. These surpluses and deficits multiplied by the intra-CMEA-WMP price differential then determine that country’s subsidy. One problem with this approach is that it overstates the
Soviet Union's ability to control the size of the subsidy. Marrese and Vanous admit that during the 1970's actual subsidies for outstripped desired subsidies, largely as the result of the increase in world oil prices. This inability on the part of the Soviets to control total subsidies is quite surprising in light of Marrese and Vanous' belief that the distribution of the subsidies among the CMEA countries is amenable to a degree of fine tuning that enables the Soviets to make fine distinctions between subsidies to Czechoslovakia and the GDR or between those to Hungary and Bulgaria.

More important, Marrese and Vanous operationalize desired subsidies as determined by a 9.9 percent growth trend, normalized variations in Soviet grain imports from the West and an index of CMEA price rigidity. None of these variables, however, has anything to do with Soviet security or the relative value it places on unconventional benefits from Eastern Europe. For example, during the early 1970s, when detente was in full swing, the Soviet Union was achieving strategic parity with the United States, and the Soviet economy was benefitting from improving terms of trade, the demand for unconventional benefits should have decreased sharply. As it is, neither desired nor actual subsidies move in concert either with the Soviet demand for unconventional gains or with the costs to the Soviet economy of providing the requisite resources to East Europe.

A second gap in the grant-theoretic approach is that it
views the actions of the recipients of the subsidies as entirely passive. Some CMEA members are seen as providing unconventional benefits to the Soviet Union and receiving large subsidies in return, while other do not. How decisions on how much and what kind of unconventional benefits to supply are made by East European leaderships and how tradeoffs between them and the Soviet leadership over the supply of and demand for unconventional benefits and subsidies are decided is unclear. A more reasonable approach would be to posit that the distribution of the subsidies reflects the relative bargaining power of the Soviet Union and the individual East European countries. Indeed, Marrese and Vanous admit that such bargaining over benefits and subsidies takes place, but they hypothesize that bargaining strength either does not differ much among the East European countries or that it is distributed in such a way as to favor those countries, such as the GDR and Czechoslovakia, that would be highly subsidized even if they lacked bargaining power. Such a hypothesis implies a particularly simplistic view of the Soviet use of subsidies, namely that they are used only to pay for benefits obtained. Thus, for example, low Polish subsidies are explained by the relative instability and weakness of the Polish regime and its consequent inability to provide a trustworthy military establishment or a docile populace. The possibilities that the Soviets might wish to use subsidies to prop up the regime of a strategically located ally or that evident economic or political weakness of an East European regime
might in fact increase rather than decrease its ability to negotiate subsidies from the Soviets are thus dismissed.

Moreover, to identify the distribution of subsidies to Eastern European regimes with the volume of benefits each provides to the Soviet Union implicitly assumes that the cost of providing benefits is much the same for all countries. Again, this is inconsistent with East European reality. For example, the costs of permitting the stationing of Soviet troops on its territory may be quite differently perceived by the leadership of the GDR and of Romania. First the two regimes may differ in their general attitude toward the maximization of collective strength discussed by Comisso. Second, they may view the loss of sovereignty quite differently. In Berlin, Soviet troops may be seen as guarantors of the state's security and a tripwire against western incursions, much as United States troops stationed in the FGR are viewed in Bonn. In Bucharest, however, there is no western threat nearby, and thus the presence of Soviet troops would be much more likely to be viewed as a significant diminution in national sovereignty with no offsetting security gains for the local regime. Thus it is not evident that any two East European countries would be willing to provide the same bundle of benefits to the Soviets for the same volume of subsidies. Indeed, it is clear that loyal, "front-line" countries whose regimes have achieved a degree of domestic legitimacy can, and should, be
more willing to provide unconventional benefits than do other CMEA members.

A similar weakness marks the description of the Soviet decisionmaking process. While it is true that the Soviet leadership concerns itself with a complex objective function having economic, strategic, political and ideological arguments, how these have affected the Soviet demand for unconventional benefits and East Europe's ability to supply them is left unclear. That the distribution of subsidies has remained relatively stable over nearly 25 years and that the desired volume of subsidies has grown relatively steadily over that period is curious given the changes over time in the Soviet leadership's objectives, in the means used to influence East European behavior, in social, political and economic developments in East Europe, and particularly in the Soviet Union's political and strategic relationships with the West.

In sum, while the grants-theoretic approach proposed by Marrese and Vanous to explain the subsidization of East Europe has a surface appeal, it cannot stand close scrutiny. Neither the determinants of the magnitude of the subsidies nor the behavior of the donor and recipients are sufficiently well specified to enable us to derive testable hypotheses that could be used to confirm or reject this interpretation of the subsidies. Worse yet, Marrese-Vanous paint a picture of Soviet-East European relations that is unacceptable for its simplicity of motivation and behavior.
SUBSIDIES AS REPARATIONS

The Marrese-Vanous thesis has also been criticized on the grounds that while there is a flow of subsidies of the type described by Marrese and Vanous, these cannot be interpreted in isolation from the broader context of East European economic development, and in particular without taking into account the impact that the Soviet Union has had on this development. The clearest statements of this view is provided by Koves (1983) and Marer (1984) who argue that, even if the subsidies described above do exist, they are effectively cancelled out by dynamic losses imposed on the East European countries by the Soviet Union. In part these losses occur because the Soviets imposed both their economic system and their development strategies on East Europe. As a result, East European states are burdened by economic mechanisms that misallocate resources and impede technological progress. The rate of industrial expansion has been excessive and the allocation of investment distorted in favor of heavy industry. On the foreign trade front, the predominance of the Soviet Union as a trading partner for each of the smaller CMEA members also imposed losses by making East Europe overly reliant on the relatively backward and undemanding Soviet market for their exports of manufactures, thus hampering their economic development (Roman, 1978).

Proponents of the dynamic-losses approach argue that the Marrese-Vanous subsidies are effectively cancelled out by
the dynamic losses, and that Eastern Europe is no better, or even worse off, despite the Soviet subsidies because the subsidization occurs within the context of an arrangement that imposes offsetting economic losses on Eastern Europe. Once the existence of the dynamic losses is accepted, two possible conclusions follow. The first is that CMEA was consciously designed to provide Marrese-Vanous type subsidies, not to pay for unconventional benefits supplied by Eastern Europe, but rather as a form of compensation for the dynamic losses imposed upon the East European economies. The second possibility is to remain agnostic about the motivation behind the Marrese-Vanous subsidies but to argue that because the dynamic losses cancel out the benefits of the Marrese-Vanous subsidies, such subsidies can have little or no impact on East European willingness to supply unconventional benefits.

This argument raises two questions, one economic, the other political. The economic question is whether the dynamic losses described above actually exist. The political question is whether leaders in either East Europe or in the Soviet Union are likely to accept the existence of such dynamic losses and to attempt to redress them through the payments of subsidies within the context of intra-CMEA trade.

While it is true that until recently the Soviet market for manufactures has been a relatively non-demanding one, the explanation for the poor performance of East European
industry lies elsewhere. First, it must be recognized that the Soviet market merely accepts low quality and semi-obsolescent manufactures. It neither seeks them out nor does it reject up-to-date, quality products. Soviet emphasis on imports of western machinery and equipment as well as recent Soviet demands that the quality and modernity of East European exports be improved clearly indicate that had the East European countries been able to produce better manufactures these would have been welcome by the Soviet market. Rather, the difficulties with East European manufactures stem from the economic system. It is worth noting that poor quality, lack of technological progress and a failure to introduce new products exist as much, if not more, in those sectors that produce for the domestic market as they do in the export sector.

Nor is it evident that industrialization in Eastern Europe has been excessive, at least by the standards of other newly industrializing countries. At the end of World War II, the East European countries had surplus labor in agriculture and relatively underdeveloped potentials for the expansion of industry. Thus both labor productivity and its growth have been higher in industry than in agriculture. Consequently a strategy of promoting the movement of resources from the latter to the former was a rational means of maximizing economic growth and development. Such a development strategy was assisted by the existence of a Soviet market for manufactures and by Soviet exports of
fuels and raw materials. 4

This then leaves the system as the generator of inefficiencies, of slow rates of technological progress and of a lack of export competitiveness as the main source of dynamic losses. The political question is whether the Soviets and East Europeans are likely to currently view the economic system and the development policies implicit in it as a major source of economic loss that demands compensation. On the Soviet side, there is some understanding that East Europe was economically exploited in the early post-war period; this exploitation was acknowledged and partly compensated in the 1950s by Khruschev. Overall, however, the Soviets more likely believe that the planned economy, socialism and the economic and social developments that they generated in Eastern Europe are benefits for which the peoples of East Europe should be grateful, not costs to be expiated through the payment of subsidies. From the East European side, the matter is not much different. I do not deny that the imposition of communist regimes and central planning on East Europe at the conclusion of the war imposed social and political losses on elites and populations in those countries. However, it must be recognized that once communist regimes were installed, the alternative scenario of multi-party democracy and some form of decentralized economic system more open to the world ceased to be a standard against which actual economic policies and outcomes could be judged by the political leadership. As Comisso
(1986b) so aptly puts it "...opting for export led development and in particular, export-led development geared to capturing non-CMEA/Soviet markets - would have required not only a change in economic policies but a wholesale transformation of the state and economy as well." In short, that a western observer may believe that the imposition of the Soviet economic system caused and continues to this day to cause welfare losses among East European economies does not mean that the leaders of those countries are likely to share that view. They may observe economic problems, but it is unlikely that these would be perceived as unfavorable relative to outcomes generated by a capitalist mixed economy. In light of this, the idea that the Soviet Union would wish to pay or that the East European regimes would or could effectively demand payments for costs imposed on them by their economic systems, or that they would consciously view the Marrese-Vanous subsidies as compensation for such must can be dismissed.

CMEA AS A CUSTOMS UNION

An alternative explanation for the existence of the subsidies estimated by Marrese and Vanous can be developed by viewing CMEA as a customs union that promotes trade among its members not by means of a common external tariff but rather by means of administratively set national quotas on trade with non-members. In such a customs union prices at which trade takes place among members will differ systematically from WMPs. Specifically, those goods that require
large proportions of inputs that are relatively more abundant within the customs union than in the rest of the world will have intra-union prices that are lower than WMPs. Conversely, those goods that require large proportions of inputs that are scarcer within the union than in the rest of the world will be traded among members at above world market prices.

In the case of the EC discussed above, those EC countries with a relative abundance of agricultural land have a comparative advantage in agricultural production within the EC. Consequently, they receive subsidies through intra-EC trade. Similarly, within the CMEA natural resources were relatively abundant, though located mainly in the Soviet Union, while capital was relatively scarce, both relative to the world endowment and to the demand for capital-intensive products within CMEA. Thus the prices of capital-intensive goods (manufactures) should have been higher than WMPs and those of fuels and raw materials lower than WMPs in intra-CMEA trade. Moreover, those countries best endowed with capital, particularly Czechoslovakia and the GDR, should have received the largest "subsidies" while those best endowed to export fuels and raw materials, like the Soviet Union and Romania, should have appeared to be subsidizing their CMEA partners. In a test of the customs union approach, Keith Crane (1986) confirms that the subsidies received by individual CMEA members do depend positively on their capital endowments and negatively on
their endowments of natural resources and that, on a statistical basis, the ranking of CMEA subsidies produced by such a factor-endowments model is not different from the ranking based on unconventional benefits as estimated by Marrese and Vanous.

Thus the subsidies measured by Marrese and Vanous need not be viewed as the result of a conscious effort to create a mechanism that would manipulate intra-CMEA prices in such a way as to enable the Soviet Union to subsidise East Europe. Rather the volume of the subsidies as well as their distribution among the individual East European countries can be explained by the allocation of resources among the members of CMEA. This, however, is not the end of the story; once we accept an economic explanation for the existence and pattern of subsidization it becomes necessary to explain why the Soviet Union and the East European countries have chosen to belong to CMEA and why they have adopted a price-setting mechanism that results in the observed subsidies. Put another way, once it becomes evident that the subsidies are the outcome of an economic mechanism, we need to understand the politico-economic origins of that mechanism.

**CMEA AS A CLUB**

If we are to understand the significance of the intra-CMEA subsidies calculated by Marrese and Vanous, we require a more sophisticated and multi-faceted model of the Council for Mutual Economic Assistance and of the pricing mechanism...
that is the key to the subsidy issue. Such a model must encompass both the economic and systemic forces driving the trade behavior of CMEA members and the political and ideological forces that influence how the ruling parties choose to express and promote their economic interests and political aspirations. One model capable of such an integrated view is the theory of clubs.

The theory of clubs assumes that agents, in this case, the member countries of CMEA, pursue their own self-interest. However, in certain situations a group of such agents may discover that the existing environment supplies an insufficient quantity of public good. The agents have an incentive, then, to band together to supply themselves with a greater quantity of the public good. If the club is effective, all members will attain higher levels of welfare despite the fact that they have to contribute resources to the club and may have their freedom of action restricted by its existence. As with all schemes to provide public, or collective, goods, clubs are susceptible to difficulties arising from the "free rider" problem which reflects the incentives that members have for shirking either by undercontributing to the operation of the club or by overusing or abusing the public good that it provides. The creation of CMEA and its operation therefore cannot be explained solely by structural factors such as the distribution of power among its members or by their ideological cohesion. Rather CMEA must be viewed as a
regime that balances those elements of member self-interest that promote adherence to its practices against those elements of self-interest that incite members to shirk.\textsuperscript{8}

In the case of the CMEA the public good desired by the member countries was an international regime for promoting trade and economic integration among them. The international trade and payments system adopted by the rest of the world did not meet the needs of the planned economies. The stress on currency convertibility of the Bretton Woods system was inconsistent with the conception of central planning held then by all, and today by most, CMEA members. The GATT's emphasis on the systematic reduction of tariff barriers was simply irrelevant to nations whose foreign trade was a state monopoly. Moreover, the GATT's insistence on non-discriminatory treatment of trade partners was both at odds with socialist integration and solidarity and in any case not observed by the industrialized West in its trade policies vis a vis the planned economies.

In creating the CMEA, its members sought an alternative international regime that would facilitate decisionmaking among them on issues of trade and development. The desire for such an organization was based not only on the failure of the existing international trade and payments system to provide mechanisms appropriate to the needs of the planned economies. Perhaps more important was the fact that planned economies require an international regime to mediate trade among them more than do market economies. Among the latter,
trade takes place between private agents at market
determined prices. States need to interact with each other
only to set the rules for such transactions, to enforce
contracts and to promote the functioning of markets. Among
planned economies international trade is a state monopoly.
Therefore markets cannot function since each transaction
confronts a monopolist with a monopsonist. As a result, in
trade among the planned economies there is less information,
transactions are much costlier to negotiate, and states must
interact with each other directly as parties to each
transaction rather than merely as creators and guarantors of
the rules of the game. Similar differences between planned
and market economies exist over structural policies. In
market economies private agents seek out investment
opportunities on the basis of expected markets at home and
abroad and the anticipated behavior of competitors.
Governments are free to influence the general level of
economic activity and to engage in structural policies, but
the consequences of these policies are left to the market to
sort out. Among planned economies both macroeconomic and
structural development are the responsibility of the state.
Thus the macroeconomic and structural policies of one
planned economy are seen not as an environmental factor to
which firms in other countries must respond but rather as a
factor influencing the ability of other CMEA members to
develop their economies in the way that they desire.
Consequently, in comparison to market economies, among
planned economies there is less information on the conditions of, and a greater level of state-to-state interaction over, trade and integration, thus resulting in a greater need for a regime to mediate these interactions and to produce substitutes for market-generated information. Such a regime could not have as its objective the elimination of bargaining and negotiation among its members. Rather, the objective of CMEA would have to be the creation of an environment within which the future behavior of member states would be stable and predictable. In such an environment a network of mutual obligations and expectations regarding future behavior could be established, thus routinizing interactions among states, lowering transaction costs and creating substitutes for market-generated information.

The component of the CMEA mechanism most germane to this essay is the pricing system. The pricing formula, which fixes intra-CMEA prices for one or more years at a level determined by past WMPs, but, due to quality factors, skews the terms of trade relatively in favor of manufactured goods, is an important collective good for the members of CMEA. Its importance stems from the fact that the existence of stable prices reduces transaction costs and provides information that would otherwise not be available. In its absence, the planned economies would have to undertake the negotiation of trade agreements each year with no starting point for the prices at which trade would take place, and no
expectation that prices obtained in negotiations with one country would resemble those achieved with other countries. Thus trade negotiations would be much more costly and time consuming than they are under the existing regime, and little reliance could be placed on current prices and trade flows as indicators of future behavior. A second element of the public goods aspect of the CMEA pricing scheme is that it replicates the most important feature of the domestic pricing system of the member countries, stable prices. The fixing of prices for relatively long periods of time is viewed as being important for effective planning in physical terms and consequently the emergence of a parallel system of fixed prices in intra-CMEA trade is also seen as making planning more effective. A third aspect of the public goods nature of the CMEA pricing scheme lies in the relative overpricing of industrial goods. The development of many types of industrial products in East Europe is geared to the needs of the Soviet market. In view of the factor endowments of the East European countries, the existing trade pattern making them net exporters of manufactures to the Soviets is a sensible one both for them and for the Soviet Union. However, if they were to earn in intra-CMEA trade the same prices for their manufactures as these products earn on world markets, the East European countries' production of manufactures would clearly be uneconomic. By guaranteeing the East European countries world market prices for manufactures that may not be up to world standards, the
CMEA pricing system protects them against the uncertainty of attempting too much in their efforts to modernize and develop industries to serve the Soviet market, and, at the same time, it provides the Soviet Union with a greater supply of manufactures than would otherwise be available from East Europe.

As with any other club, the members of CMEA have to pay a price. In the case of the pricing system, that price is the gains that have to be foregone because members restrain themselves from taking advantage of differences between intra-CMEA and WMPs. When the CMEA pricing rule was established, it must have been evident to the participants that, by its very nature, the rule would create situations where differences between intra-CMEA and WMPs emerged. Thus the implicit cost of the collective goods the CMEA bestowed on its members would be borne by those members who could purchase more cheaply or sell more dearly on the world market than they could on the CMEA market but who refrained from doing so. The expectation was clearly not that each member would bear identical costs or reap identical benefits, but rather that all members would benefit to some extent from membership in CMEA.

A parallel between CMEA and the Bretton Woods System is helpful in understanding the importance of the pricing rule and its relation to the subsidy issue. The Bretton Woods system provided a collective good, stable exchange rates and open trade policies, to member countries (Ruggie, 1982). As
in CMEA, members undertook to bear certain costs. Deficit countries would not use commercial policy to deal with their balance of payments nor would they devalue without consultation with the IMF. The appropriate response, rather, was the use of restrictive monetary and fiscal policy to reduce domestic employment and incomes. For surplus countries, some measure of inflation was anticipated. Thus the costs to members were the foregone production or excessive inflation that resulted from having to follow suboptimal domestic monetary and fiscal policies. Such costs were at first viewed as being transitory and likely to be randomly distributed among members. When in the late 1960's, the United States perceived the costs to be borne largely by itself and to be permanent rather than transitory, the system collapsed. It can be argued that in the 1970s the Soviet Union also perceived that, given the trend in energy prices, the costs of not taking advantage of more favorable terms of trade outside of CMEA had become larger and permanent. Thus, the Soviets diverted trade from CMEA to the world market and forced a revision of the CMEA pricing rule in their favor. 10

The subsidies estimated by Marrese and Vanous are thus only one, albeit also the only easily measurable one, of the flows of benefits and costs that accrue to and are paid by the members of CMEA. The other collective goods provided by CMEA to its members are less amenable to quantification, but they are important in determining members' decisions on
trade and development. Given the increased volatility of western markets and the emergence of new competitors from the ranks of the developing countries, the stability of intra-CMEA prices and the certainty of the future pattern of intra-CMA trade flows strengthen the benefits derived by members. Since it is the nature of large members international regimes to have the greatest interest in and means for providing collective goods, the Soviet Union's share of the costs of CMEA may appear to be higher than that of other members. Nevertheless, both it and the other members appear to value the collective goods CMEA provides, and therefore adherence to CMEA need not be viewed either as an exchange of economic costs for political and security benefits or a a system imposed by a hegemonic Soviet Union upon a reluctant Eastern Europe. Rather CMEA is a regime wherein members attempt to promote both their own individual and the collective welfare, in part by voluntarily adhering to a regime whose benefits outweigh the costs of membership.
FOOTNOTES

* I am indebted to Ellen Comisso and an anonymous referee for helpful comments on an earlier draft of this paper and to the National Council for Soviet and East European Research for financial support.

1. For details of the price-setting procedure, see Hewett (1974).


3. On this point, it is worthwhile citing at length the Hungarian economist Nyiri (1982) who discusses the dependence of Hungarian telephone exchange production on the Soviet market.

"This steady demand for large quantities from the Soviet Union has made it 'impossible' for Hungary to stop manufacturing the so-called 'kolhoz exchanges' even though the Hungarian factory is already manufacturing electronic exchanges as well. Many Hungarian economists have...strongly criticized the Soviet market which provides too secure an outlet and freezes the product assortment, putting the blame primarily on the buyer. In the author's opinion, this kind of 'taking it easy' is never the buyer's fault. To come back to our example: for decades Hungarian telephone exchange manufacturers have complained about not being able to modernize their production, to manufacture goods marketable on alternative markets, because the greater part of their capacity must be used [for the Soviet market]. However, if the price of a traditional product with a secure outlet is good, it can easily carry the overhead expenses, and finance the expansion of capacity and modernization." (pp. 129-130).
4. Brada, King and Schlagenhauf (1982) argue, on the basis of optimization experiments with an econometric model of Czechoslovakia, that speeding industrialization, even industrialization that stressed heavy industry, was a desirable policy for promoting growth and that the main limitation on the implementation of such a policy was volume of raw material imports that could be obtained from the Soviet Union. It is also noteworthy that East European efforts at industrialization in the early post-war period did not differ much in sectoral emphasis from West European strategies. See, for example, the French economic recovery plan.

5. It is worth noting that once communist regimes were installed, they demonstrated an enthusiasm for over-industrialization that exceeded that of their Soviet tutors. For example Romania's conflict with CMEA stemmed from Soviet efforts to restrain the Romanians' break-neck efforts to expand their steel industry.

6. This approach is founded on the work of Holzman (1962), (1965). Desai (1985) employs the customs union approach and builds on the work of Bergson (1980) and Holzman (1985) to argue that the CMEA is a trade-diverting customs union where both the Soviet Union and the East European countries lose as the result of the existence
6. Con't.: of the CMEA despite the subsidization of the latter by the former. In this section, we follow the approach of Brada (1985).

7. Typical examples of public goods are defense and law enforcement. An example of a club in the sense used here is a group of families pooling resources to build a swimming pool that they can all use but from which outsiders are excluded.

8. The application of the theory of clubs to international regimes has a long literature including Keohane (1982), Olson (1965), Olson and Zeckhasuer (1966), Sandler and Cauley (1977) and Stein (1982) among others.

9. Romania, a persistent critic of CMEA, has never objected to the fixed nature of CMEA prices, only to the relative prices of manufactures and raw materials.

10. This is not a unique event in CMEA history. Romania in the 1960s was dissatisfied with the pattern of trade imposed on it by its resource endowment and with the relative prices that underpriced its agricultural and raw material exports and overpriced its machinery imports. Therefore Romania became a "shirker", and redirected its trade toward the West in order to take advantage of the more favorable terms of trade available.
10. Con't.: on world markets. In this way Romania was able to enjoy the collective benefits provided by CMEA while reducing costs of membership that its leadership may have viewed as excessive.

11. In comments on a previous draft the referee argued that I "...overstate the extent to which the interests of the Soviet...and...East European leadership coincide" and that I "overlook the extent to which the Soviets pressurize the East European leaderships to do things at home, within the bloc..., and internationally that are perceived to be at odds with national interests..." I would argue that the major element of coercion was the installation of communist regimes after the war. Once these regimes were installed, the degree of coercion could be sharply reduced. This is not to say that everything done by East European regimes is in their national interest, narrowly defined. However, like Comisso (1986 a), I believe that East European interests have to be interpreted more broadly. A failure to do so means that we would have to understand all Soviet-East European relations in a narrow hegemon-client framework that is based largely if not entirely on coercion and bribery. My view is that cooperation among communist parties ought not be eliminated a priori as a potential source of motivation in Soviet-East European relations.
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