

TRADE LIBERALIZATION IN EASTERN EUROPEAN COUNTRIES
AND THE PROSPECTS OF THEIR INTEGRATION INTO THE
WORLD TRADING SYSTEM*

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Introduction

A challenging task facing the Eastern European countries is the integration (or the "reentry" as some would like to call it) of their economies into the world trading system. Credible liberalization of trade and payments regimes in Eastern Europe, as part of overall economic reforms, is a precondition for their fuller participation in trade with the rest-of-world. By the same token, the speed and the "quality" of domestic reforms would themselves depend crucially on how fast and on what terms these economies can be drawn into the mainstream of the multilateral trading system. The lack of progress in this important task may slow down the speed of economic reform in Eastern Europe.

The purpose of this paper is to explore the short and the long run prospects of integrating the transitional economies of Eastern Europe into the mainstream of world trade. This is attempted in a quantitative framework which considers the relative merits of three possible options, viz., the revitalization of intra-CMEA trade (following its collapse in 1992); entry into an enlarged European Union (EU), and a more active pursuit of multilateral trade through non-conditional membership in

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the World Trade Organization (WTO). These options, of course, are not mutually exclusive.

The plan of the paper is as follows. Section I briefly discusses the progress of economic reforms in Eastern Europe in so far as they relate to openness of the economy to trade with the rest-of-the-world. Section II analyzes the future prospects of a fuller participation in world trade in the context of the three broad and non-competing alternatives that are feasible. Section III presents a quantitative assessment of these options based on an econometric estimation of long-term trends. Some conclusions are offered in Section IV.

I. Trade-Related Reforms

While the extent and the speed of economic reforms has varied considerably across individual countries, all countries in the region have substantially liberalized their trade and payments regimes since 1990. In most countries, state monopoly of foreign trade has been virtually eliminated. This is accompanied by a significant reduction in quota restrictions (QRs) on imports, as well as in exports subsidies and export licensing arrangements. An indication of the depth of these reforms is a steady rise in the share of liberalized imports in the total to an average of between 75 and 80 percent. These reforms are most advanced in three of the countries, viz., Hungary, Poland, and the Czech Republic, but are being pursued in all transition economies.

The overall picture of trade that emerges from these reforms is, however, a paradoxical one. While trade with the West has expanded rapidly, trade with other Eastern European countries and with the Commonwealth of Independent States (CIS) has all but collapsed due to the demise of earlier CMEA arrangements. Rodrik (1992) estimates that the collapse of CMEA has contributed to a loss of real income to the tune of 3.5 per cent of GDP in Poland and 7.8 per cent of GDP each in Hungary and the Czech Republic.

The dramatic changes in trade policy, nonetheless, underestimate the task of realigning the transition economies into the world trading system. Historically, the levels of tariffs and QRs in Eastern Europe have been relatively low. The principal means of protection there has been the central planning mechanism which in its wake has created widespread distortions in relative prices and has contributed to an inefficient functioning of labor and capital markets. Factor subsidies in one form or another, particularly to the state-owned enterprises, are still common. The practice of trading at domestic prices and absorbing the difference between domestic and world prices in fiscal budgets has largely disappeared. But it has left a legacy of non-diversified and over-extended production structures that inhibit trade with the rest-of-the-world. The dissonance between production structures and underlying resource endowments caused by central planning was further aggravated by payments mechanism in the former Ruble Zone. As a result, the more difficult tasks of integration into the world trading system still lie ahead. The prospects of success in this more difficult task depend crucially on the evolution of future trading arrangements with the West. This is because closer ties with world markets help to establish a rational set of relative prices and promote a more efficient allocation of resources.

II. Feasible Trade Options

Following the collapse of the CMEA, individual countries in Eastern Europe have devised various ad hoc schemes for maintaining some minimum level of trade with former CMEA partners, particularly with those that are now part of the CIS. But, by and large, such arrangements are confined to trade in a limited number of products (the "indicative list") and involve barter and other counter-trade arrangements. By their very nature, these arrangements are bilateral rather than multilateral. In the chaotic conditions of the early 1990s these patchwork arrangements were

considered necessary to maintain some level of trade to prevent further disorganization of the economic system, even though barter deals create their own distortions. More importantly, some trade outside of a country's borders was deemed necessary to prevent closure of state enterprises, since much of the barter trade was, in fact, inter-enterprise trade. There is some indication that intra-CMEA trade in the 1980s was larger than predicted on the basis of economic variables, since it was determined by political considerations (Havrylyshyn and Pritchett 1991).

The combined external trade of Eastern Europe and of the former USSR was estimated to be about 10 per cent of world trade in 1988. While the combined market size of the transition economies is relatively small, it is not unreasonable to visualize a modest free trade area or a customs union between them on lines that are radically different from the earlier CMEA. Such an arrangement is feasible, at least temporarily, between the Eastern European countries and as many CIS countries as are interested in negotiating modest tariff preferences. It will permit individual countries, particularly those in the CIS, to gradually adjust to their long-run comparative advantage. The more comprehensive the arrangement in terms of countries and coverage of commodities the more likely it is to reduce transition costs in the short and the medium runs. There may be some reluctance on the part of some countries to join preferential trading arrangements because they may regard trade diversion costs as excessive. However, a cursory examination of commodity composition of trade and its direction (e.g., in Rodrik 1992) leads one to believe that intra-trade in the ex-CMEA countries does not overlap with their trade with the West. An indirect evidence of this is the fact that East European exporters have had little success in finding Western markets for exports they have lost in the Eastern markets.

In visualizing a possible arrangement for revitalizing intra-trade between individual countries of Eastern Europe and the CIS, certain considerations should be kept in mind. First, any revival of intra-trade should be structured on the lines of a preferential trading area (with or without a common external tariff) in the neoclassical sense, with transparent rules-of-the-game and without regard to non-economic considerations. Second, any enlargement of the intra-Eastern trade beyond the meager current magnitudes would not be feasible without cumbersome clearing and payments arrangements. Third, any emerging free trade arrangement should be designed in a way that it represents a coherent and unified approach to an eventual joining the larger European market.

Even if workable intra-Eastern preferential trading arrangements can be devised in the foreseeable future, it is clear that any significant expansion of Eastern Europe's trade without an accommodation by major Western industrial countries would not be possible. In this regard, the role of the EU is likely to be crucial. Beginning in 1988, the then European Community (EEC) entered into separate "cooperation agreements" with individual Eastern countries, most notably Czechoslovakia, Hungary, and Poland, for phasing out all selective QRs against their exports. In 1990, much earlier than the original timetable, the EEC abolished the application of all selective QRs against Eastern Europe, except in "sensitive" sectors, such as agriculture, textiles, apparel, coal, and steel products. It also granted generalized preferences (GSP) treatment to all Eastern countries. More recently, the EU has concluded "association" agreements with the Czech Republic, Hungary, and Poland as the basis for a move toward full membership. However, separate "protocols" have been devised for agriculture, textiles and apparel, and steel products. The protocols are expected to contain provisions on safeguards, rules of origin, anti-dumping, subsidies, intellectual property rights and adherence to EU competition policy, all of which will restrict trade with Eastern Europe.

Of all the products included in the separate protocols, agriculture appears to be the most troublesome. The main problem is that any attempt to cover free trade in agriculture without a reform of the Common Agricultural Policy (CAP) would almost certainly result in surplus in the enlarged EU production and increase the budgetary cost of the CAP. The steel protocol stipulates free trade in steel products only if the Eastern countries abide by the EU rules on prices and subsidies. It also stipulates capacity reduction in order to achieve a subsidy-free steel industry in Europe. For textiles and apparel, the EU markets will continue to be protected by extensive product-specific and country-specific VERs under the Multi Fiber Arrangement (MFA).

Despite some market-opening, Eastern European economies face formidable barriers to their exports in the EU, as they do in all other industrial country markets. These barriers are in precisely those products which are potentially important Eastern products for exports to the West. Nevertheless, all recent empirical estimates suggest that Eastern Europe and the EU are "natural" trading partners.¹ Therefore, the urgency of market opening in the EU cannot be minimized.

All Eastern European countries joined GATT (now the WTO) at different times and, as a result, conditions of membership differ significantly. All of Eastern Europe now enjoys MFN treatment in all OECD countries. Major OECD countries have also extended GSP coverage to

¹Wang and Winter (1992), using a gravity model, find the potential trade between Eastern Europe and the EU (based on 1985 data) is in all cases substantially higher than the actual. The gap ranges from about 30 percent for Hungary to almost 650 percent for Bulgaria. Collins and Rodrick (1991), using a markedly different econometric procedure, arrive at a broadly similar conclusion.

Eastern European countries, but restrictions remain. In the case of Poland, Hungary, and Romania, "discriminating safeguards" were instituted which allow the Contracting Parties to restrict imports from these countries if they cause "injury" or threaten domestic producers. In addition, Romania and Poland were required to increase their imports from the Contracting Parties at an annual rate not lower than the minimum stipulated. Only Romania and Hungary were able to negotiate progressive elimination of QRs against their exports, if deemed inconsistent with GATT Article XIII. These restrictions are hopefully transitional. Membership in the WTO on normal terms is essential to provide Eastern Europe with assured access to industrial country markets. Without this assurance, the transitional economies of Eastern Europe may find it difficult to lock in economic reforms in their own countries.

III. Quantitative Analysis

The quantitative analyses of the Eastern European countries' trade to date have been based on some variant of the "gravity" model for estimating the gap between potential and actual trade. These gaps are almost always estimated only for trade with the West (Van Bergeik and Oldersma 1990; Biessen 1991; Collins and Rodrik 1991; and Wang and Winters 1991). The present paper departs from this tradition in two respects. First, it undertakes an analysis of time series fluctuations in trade data to estimate long-run trends in exports and imports of Eastern Europe. Second, it does so with respect to Eastern Europe's trade, both exports and imports, with four bilateral "addresses" viz., Eastern Europe itself, the former USSR, the European Community, and the rest-of-the-world. Without investigating the trend properties of Eastern Europe's trade in all direction, it is not possible to evaluate the hierarchy of options and their relative importance.

The analysis contained in this section has undertaken three econometric tasks.² First, it

employs trend stationary and difference stationary statistical approaches to estimate long-run trends from time series data. Second, with a view to identify the appropriate class of series, an Augmented Dickey-Fuller (ADF) test for unit roots is applied. The ADF tests the null hypothesis as to whether the series are trend stationary or difference stationary. Identifying the appropriate class of series has important implications for determining long-term trends. Third, we employ Box-Jenkins methodology to estimate an ARIMA (p, d, q) model for forecasting of trade volumes under the options identified in section II.

The backdrop for our econometric analysis is provided by the plots of raw data on Eastern European countries' trade with other Eastern countries, with the former USSR, with the EU, and with the rest-of-the-world. This initial data analysis reveals that total exports of Eastern Europe have suffered a significant decline since 1988. This decline is most dramatic for exports to the former USSR, as well as to other Eastern countries. Within this overall decline, however, Eastern Europe's exports to European Community have increased steadily. This pattern is duplicated in the behavior of imports of Eastern Europe. They decline both from the former USSR as well as from other Eastern countries, but have expanded greatly from the EC.

The estimation of time trends is based on a consistent data set for the years 1973 through 1993. Tables 1 and 2 give estimates of trend stationary and difference stationary representations estimated from equations (1) and (2), shown below.

$$\begin{aligned}
 LY_t &= C + T + u_t \\
 \Phi(B)u_t &= \psi(B) a_t \\
 a_t &\sim \text{iid}(0, \sigma^2)
 \end{aligned}
 \tag{1}$$

$$DLY_t = LY_t - LY_{t-1} = C + v_t$$

$$\Phi(B) v_t = \psi(B)e_t \quad (2)$$

$$e_t \sim \text{iid}(0, \sigma^2)$$

In the trend stationary approach, the log of Y (denoted by LY) is regressed on the constant and the time trend. In the difference stationary approach, the first difference of L (denoted by DLY) is regressed on the constant. The residuals from both regressions are then interpreted as the cyclical component. Table 3 presents the results of the ADF test for unit roots. An examination of p-values at significance levels of 0.05 per cent reveals that the null hypothesis that these series have unit roots cannot be rejected. The difference stationary representations are, therefore, the appropriate class of series for further analysis.

The next step was to identify the best ARMA (p,q) model for estimation. The three variables to be estimated are:

Y1: total trade between Eastern Europe and the EEC/EU

Y2: total trade between Eastern Europe and the former USSR

Y3: total trade between the Eastern European countries themselves.

We use the Box-Jenkins methodology to select the appropriate values of p and q by examining the pattern of autocorrelations (ACF) and partial autocorrelations (PACF). They suggest that Y1, Y2 and Y3 are all ARIMA (1,1,0), since ACFs are declining in sine wave while PACFs are significant at first lag.

We also did the diagnostic test on two overfitting models with are ARIMA (0,1,1) and ARIMA (1,1,1), using Likelihood Ratio (LR):

$$LR = N^* \ln (\sigma^2/\hat{\sigma}^2)$$

H0: Y1, Y2, Y3 are ARIMA (1,1,0)

H1: Y1, Y2, Y3 are ARIMA (0,1,1) or ARIMA (1,1,1)

The results of the LR test are shown below.

H1:	ARIMA(0,1,1)		ARIMA(1,1,1)	
	LR-statistics	P-value	LR-statistics	P-value
Y1	1.2693	0.2598	3.0607	0.0802
Y2	0.9782	0.3226	0.5595	0.4544
Y3	0.2323	0.6298	0.1671	0.6826

On the basis of these results, we accept the null hypothesis that Y1, Y2 and Y3 are ARIMA (1,1,0) in all cases since none of the LR-statistics are significant at 5% level.

Using Box-Jenkins estimation, we flush out the following model for each of the variables, (the t-statistic values are shown in the parenthesis):

$$\Delta Y1_t = 0.65 \Delta Y1_{t-1} + u_t \quad \text{EEC/EU}$$

(3.453)

$$\Delta Y2_t = 0.91 \Delta Y2_{t-1} + e_t \quad \text{Former USSR}$$

(3.823)

$$\Delta Y3_t = 0.567 \Delta Y3_{t-1} + a_t \quad \text{Intra-Eastern Europe}$$

(2.051)

For forecasting with the ARIMA (1,1,0) model we started from the general presentation as:

$$\Phi(B) (1-B)Y_t = a_t$$

$$(1-\phi_1 B) (1-B) Y_t = a_t$$

$$[1-(\phi_1+1)B + \phi_1 B^2]Y_t = a_t$$

$$Y_t = (\phi_1+1)B Y_t - \phi_1 B^2 Y_t + a_t$$

$$Y_t = (1-\phi_1) Y_{t-1} - \phi_1 Y_{t-2} + a_t \quad (3)$$

where B is the lag operator and ϕ_1 is the autocorrelation coefficient. Using equation (3) we can do n-step forecasting. The results of 10-step forecasting are summarized below. (Forecasting beyond a 10-year period was not deemed necessary since the trends became quite clear on this set of observations).

	Starting Period:1990	Ending Period:2000
Y1	35912	40217
Y2	55656	25501
Y3	18648	1366

A comparison of the forecast value of the variables Y1, Y2 and Y3 shows that while in the starting period Eastern Europe's trade with the former USSR has the highest proportion of its total trade the trade with the EU assumed the highest proportion in the end period.

As seen in Tables 1-3, the only unmistakable long-run trend (on the basis of difference stationarity) is with respect to Eastern Europe's trade with the European Union.³ Trends for both

exports to and imports from the EU are significant at 5 per cent level. Other significant trends are with respect to Eastern Europe's exports to the rest-of-the-world, and of their imports from the former USSR. But Eastern Europe's trade with former USSR seems "unbalanced", since USSR imports from Eastern Europe are on a continuous decline. Surprisingly, one cannot detect any long-run trend with respect to intra-trade between the Eastern European countries. This confirms the long-held suspicion that CMEA arrangements were biased toward trade of individual East European countries with the Soviet Union and against trade with each other.

The Box-Jenkins estimation and the forecasting for the ten-year period (1990-2000) confirms these trends. If these forecasts are any guide to the future, Eastern Europe's trade with the EU appears to be the most promising.

IV. Conclusions

The data on Eastern Europe are notoriously scanty and unreliable, so the room for generalization is limited. Moreover, our analysis can discover only regular patterns of movement and does not include the effect of any policy initiatives that may be taken in the future. Nevertheless, it provides some insights that may be useful for future policy initiatives. The major insights that emerge from the analysis in this paper can be summarized as follows. First, the most promising option for Eastern European countries is to strengthen their trade ties with the EU, possibly through a full membership. Second, the multilateral trading option, particularly with industrial countries of the OECD, needs to be pursued for a freer access to their markets. Third, the prospects for intra-trade in Eastern Europe or trade with the CIS, with or without preferences, do not seem promising in the short and the intermediate runs. It should be stressed, however, that the trade options for Eastern Europe considered in this paper are not either-or propositions. They can be pursued simultaneously.

Our analysis based on long-run trends merely suggests that some options may have a higher payoff than others.

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Table 1. The TS and DS Representation
Exports and Imports of the USSR

Exports of USSR

TS

DS

(1)total exports	$LY_t=10.365 + 0.071t + u_t$ (66.95) (5.259)	$DLY_t=0.04268 + v_t$ (0.783)
(2)exports to EEC	$LY_t=8.345 + 0.106t + u_t$ (52.97) (7.129)	$DLY_t=0.1044 + v_t$ (2.6749)
(3)exports to EE	$LY_t=9.454 + 0.08t + u_t$ (88.14) (8.96)	$DLY_t=0.076 + v_t$ (2.103)
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Imports of USSR	TS	DS
(1)total imports	$LY_t=10.316 + 0.056t + u_t$ (91.22) (5.678)	$DLY_t=0.0534 + v_t$ (1.7826)
(2)imports from EEC	$LY_t=8.339 + 0.071t + u_t$ (88.3) (8.534)	$DLY_t=0.094 + v_t$ (2.7425)
(3)imports from EE	$LY_t=9.690 + 0.033t + u_t$ (50.55) (1.990)	$DLY_t=0.010 + v_t$ (-0.1738)

Notes: the number in the parenthesis is t-statistic value.

Table 2. The TS and DS Representation
Exports and Imports of Eastern Europe

Exports of EE	TS	DS
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(1)total exports	$LY_t=10.7 + 0.038t + u_t$ (84.21) (3.45)	$DLY_t=0.028 + v_t$ (0.591)
(2)exports to EEC	$LY_t=8.55 + 0.086t + u_t$ (139.09) (12.05)	$DLY_t=0.084 + v_t$ (3.093)
(3)exports to USSR	$LY_t=9.96 + 0.033t + u_t$ (50.50) (1.99)	$DLY_t=-0.010 + v_t$ (-0.174)
(4)exports to EE	$LY_t=9.454 + 0.022t + u_t$ (75.42) (1.94)	$DLY_t=0.219 + v_t$ (0.048)
(5)exports to ROW	$LY_t=9.14 + 0.060t + u_t$ (82.57) (5.86)	$DLY_t=0.065 + v_t$ (2.155)

Imports of EE	TS	DS
(1)total imports	$LY_t=10.688 + 0.045t + u_t$ (94.03) (4.55)	$DLY_t=0.0351 + v_t$ (1.020)
(2)imports from EEC	$LY_t=8.785 + 0.042t + u_t$ (79.16) (4.332)	$DLY_t=0.0775 + v_t$ (2.177)
(3)imports from EE	$LY_t=9.454 + 0.022t + u_t$ (75.43) (1.940)	$DLY_t=0.00219 + v_t$ (0.048)
(4)imports from USSR	$LY_t=9.450 + 0.089t + u_t$ (88.14) (8.967)	$DLY_t=0.0757 + v_t$ (2.102)
(5)from ROW	$LY_t=9.105 + 0.044t + u_t$ (91.0) (4.80)	$DLY_t=0.057 + v_t$ (1.570)

Notes: the number is in the parenthesis is t-statistic value.

Table 3. Statistical output of ADF test for unit root

	statistic value	p-value critical	value (5%)
Exports of USSR:			
1.total exports	1.488	0.997	-3.711
2.to EEC	-1.537	0.712	-3.734
3.to EE	-0.762	0.906	-3.734

Imports of USSR:			
1.total imports -0.617		0.932	-3.711
2.from EEC	-3.346	0.092	-3.711
3.from EE	2.882	0.998	-3.711

Exports of EE:			
1.total exports 1.624		0.998	-3.711
2.to EEC	-1.573	0.699	-3.734
3.to USSR	2.882	0.999	-3.711
4.to EE	0.082	0.977	-3.734
5.to ROW	1.745	0.998	-3.711

Imports of EE:			
1.total imports 0.422		0.988	-3.711
2.from EEC	-1.313	0.797	-3.711
3.from EE	0.082	0.977	-3.734
4.from USSR	0.182	0.980	-3.734
5.from ROW	-2.065	0.495	-3.734

Note: For ADF test, we regressed DLY on the constant, trend, LY(-1) and DLY(-1).