

Michael Beenstock

*The Reintegration of
Eastern Europe Into
the World Economy*

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ABSTRACT

The economic effects of the rolling back of communism are investigated both on the countries directly concerned as well as on the rest of the world economy. A historical methodology is proposed in which most of the Eastern-bloc countries are classified as being on the periphery of the European economic tradition. This study therefore looks to the postwar economic history of the capitalist members of the periphery for clues regarding the likely behavior of latterday communist countries.

SUMMARY

The Soviet Union and Eastern Europe have been cut off from the rest of the world economy since their communist revolutions in 1917 and the late 1940s. With the breakdown of communism in 1989-1990, there is a prospect that these countries will once more assume their place in the world economic community. This study will consider the implications of the reemergence of the Eastern bloc both for the countries directly concerned as well as for the rest of the world economy.

I shall begin by taking stock of the degree to which the Eastern bloc has been cut off from the rest of the world economy. Thereafter, a theoretical model will be described that analyzes various aspects of Eastern-bloc reintegration into the world economy. This model assumes that erstwhile communist countries converge, economically speaking, on their capitalist counterparts.

In the absence of an erstwhile communist country that has embraced capitalism, there is no role model for investigating the convergence hypothesis or for projecting the likely effects of the rolling back of communism. I shall therefore seek a substitute for such a role model. One suggestion that will be investigated is that lessons may be learned by comparing the economic performance of what I call the "hard communist" countries with that of their "soft communist" counterparts. Do the more economically liberal communist countries constitute a methodological basis for projecting the economic effects of economic liberalism and capitalism? The suggestion is rejected.

I wish to thank Michael Revivo for research assistance and the Leonard Davis Institute for International Relations for generous financial support.

Instead, a historicist methodology is proposed. It is argued that insights can be obtained by studying the comparative economic performance of the Eastern-bloc countries before they became communist. To do so, we must look back to the eve of World War II. The conclusion is reached that the Eastern-bloc countries formed part of the mainstream of European economic development. Most of them formed part of the periphery alongside countries such as Greece, Spain, and Portugal. Others, such as Czechoslovakia, were more advanced. Therefore, to infer economic development in the erstwhile communist countries we might reasonably look to the development of their capitalist counterparts, for example, Greece, Spain, and Portugal. But for communism, Poland (etc.) would have been broadly similar to Spain (etc.).

In conclusion, the question is posed whether indeed economic development in the capitalist periphery in Europe in the postwar period was consistent with the convergence theory. I shall show that convergence forces are present but that they operate weakly and slowly. Most probably, the same will apply to the erstwhile communist countries; as fledgling capitalist countries they are likely to converge on their Western counterparts, but only slowly and imperfectly. The economic scars of communism will fade surely but slowly.

I. INTRODUCTION

For over 40 years in the case of Eastern Europe and for 70 years in the case of the Soviet Union, the socialist economies were more or less cut off from the the rest of the world economy. In this paper, I shall consider several related aspects of the reintegration of these countries into the world economy. It is, of course, too early to judge whether this reintegration will be successful or not. This begs political, social, and economic questions that lie beyond our present, more modest, terms of reference. Political and social instability would most probably harm the prospects of internal economic prosperity and a successful reintegration. Moreover, the various countries concerned are unlikely to be homogeneous; some will no doubt handle the transition better than others.

In what follows, three aspects of reintegration are considered.

1. The Socialist Bloc, 1950-1989

Let us begin by recalling the degree to which the (European) socialist bloc was delinked from the rest of the world economy both in terms of trade and capital movements. I shall show that until the mid-1980s, there was a trend for Eastern-bloc trade with the rest of the world to rise as a proportion of Eastern-bloc GDP. However, this did not prevent the Eastern bloc's share of world trade from remaining at a very low level (about 3% to 4% of world trade). This occurred despite a tendency for intra-Eastern-bloc trade to decline in relative importance. In the 1950s and 1960s, intra-Eastern-bloc trade accounted for about 65% of total trade; during the 1970s this proportion fell to about 50%.

During the 1970s, the net internal indebtedness of the Eastern bloc grew from about 20% of export earnings to 50%. This reflected a trend of greater openness in capital transactions. During the 1980s, this trend was temporarily checked before further intensifying.

Apart from examining the economic linkages of the Eastern bloc as a whole with the rest of the world, I shall also consider developments within the Eastern bloc itself. In particular, it needs to be asked what lessons might be learned from the disparate experience of the countries concerned regarding the advantages and disadvantages of economic liberalism vs. centralism. Is it the case, for example, that more liberal countries (such as Hungary and Yugoslavia) performed better than their more centralist counterparts (such as East Germany and Romania)?

The data, such as they are, suggest that the centralists outperformed the liberalists. However, the data are unreliable. It is now known (what was always suspected) that data fabrication was a vital industry in the Eastern bloc, so that serious study of growth and development in these countries is virtually impossible. In any case, the practical differences between the so-called liberalists and centralists were not very large, so that any substantive results would not enable us to forecast how these economies might behave under Western conditions.

2. Reintegration Theory

A theoretical framework will be presented for investigating the mutual effects of the reintegration of the Eastern bloc into the world economy. Since the Eastern bloc accounts for about 8% of the population in the world and about 7% of world GDP, reintegration into the world economy is unlikely to have neutral effects on the rest of the world. To investigate the theoretical effects of reintegration, I shall use the standard 2 country/2 good/2 sector model of international economic relations. I suggest that reintegration involves several stages:

1. In the initial situation, waste, inefficiency, and shortage prevail in the Eastern bloc.
2. The demise of communism leads to the removal of waste, inefficiency, and shortage.
3. Capital is exported from the West to the East and world real interest rates tend to rise.
4. World relative prices are likely to change too; however, these effects are ambiguous.
5. World GDP rises; however, Western GDP falls. On the other hand, GNP in the West tends to rise. The main beneficiary of reintegration is, of course, the Eastern bloc.

3. Economic Convergence

The "reintegration theory" implies that the East eventually becomes economically similar to the West. This ideal solution may, however, differ sharply from reality. Unfortunately, there are no direct historical precedents; no nation has abandoned communism for capitalism, and therefore we cannot determine whether convergence is likely to occur.

To shed some light on the matter, a twofold procedure may be helpful. First, I shall compare the Eastern-bloc countries in the late 1930s with their Western counterparts. This choice of date reflects the last precommunist period that was not distorted by World War II. If, for example, Eastern Europe (excluding the USSR) was broadly similar to Western Europe on the eve of World War II, we might reasonably claim that the present economic disparity between East and West reflects the damage wrought by commu-

nism. It may then be reasonable to conclude that the removal of communism will eventually correct the divergence that has accumulated.

The picture that will emerge with the help of the available data is that on the eve of World War II, the East European countries were far from homogeneous (as indeed were the West European economies) vis-à-vis their West European counterparts. Nevertheless, certain countries, for example Czechoslovakia, were part of the mainstream of European economic development, with other countries not far behind, for example Hungary and Poland. On the whole, I shall argue that but for communism, Bulgaria and Romania today would most probably not have been greatly different from other countries on the economic periphery of Europe such as Spain and Greece. Likewise, more advanced countries such as Czechoslovakia and the Baltic states (Estonia, Latvia, and Lithuania) would, but for communism, most probably have been broadly similar to present-day Austria.

Apart from assessing the relative economic development of countries on the eve of World War II, I shall also consider the postwar experience of economic convergence in Europe. I shall focus on laggard countries such as Greece, Spain, and Italy to evaluate their rate of convergence vis-à-vis Sweden as the representation of European economic leadership. To some extent, the fall of fascism in Spain and Portugal in the 1970s may serve as an economic precursor to the fall of communism in 1989-1990. In particular, did these countries experience a spurt of economic growth with their new-found freedom? Israel is also included in the sample because to a large extent Israel is an "Altneuland" in the Middle East and its economic development since 1948 may contain information on the convergence hypothesis.

The main conclusion is that convergence exists but it tends to be slow. In the case of the Eastern bloc, therefore, we cannot reasonably expect rapid convergence even if the political preconditions for Western-style economic development were fulfilled. Nevertheless, these countries are likely to grow rapidly as they rejoin the mainstream of European economic development. In the process they will exert considerable pressure on Western capital markets. World interest rates, which have already risen since mid-1989, are likely to remain high until the reintegration process is completed. Just as economic growth in the Third World was an impetus for world economic growth in the 1970s, so economic growth in the Second World may well play a parallel role in the 1990s.

II. TRENDS IN THE POSTWAR PERIOD

1. Introduction

This section will review two main aspects of economic development in the Eastern bloc during the postwar period up to 1989. First, the economic linkages between the Eastern bloc and the rest of the world will be reviewed both with respect to linkages in terms of international trade and with respect to linkages in terms of international capital movements. The objective of this review is to take stock of the degree to which the Eastern bloc has been cut off from the rest of the world economy both absolutely and in terms of changes over time. It will emerge that while, on the whole, the Eastern bloc has been cut off from the rest of the world economy there were signs of greater openness especially during the 1970s; however, during the 1980s this trend was arrested to some degree.

For purposes of comparison, where possible data are brought on indicators of economic openness for the Eastern-bloc countries on the eve of World War II. This comparison serves to indicate the degree to which the spread of communism after World War II succeeded in isolating the Eastern-bloc countries from the rest of the world economy. It may also serve to indicate the sort of reinvolvement that we might reasonably expect when, and if, the countries concerned rejoin the international economic community.

The second aspect of Eastern-bloc economic development that will be addressed is internal rather external. Although communism has been the common economic and social denominator of the Eastern-bloc countries during the postwar period, their economic organization was not entirely homogeneous. Some regimes operated a more rigid form of central planning than others. We may distinguish, broadly speaking, between the "hard communist" regimes and their "soft communist" counterparts. In the former, central planning was more rigidly enforced and the role of the market and consumer preferences more heavily repressed. In the latter, there were limited elements of economic liberalism in terms of decentralization and limited forms of free enterprise.

Was economic progress more marked under soft communism than under hard communism? If, indeed, the soft-communist regimes developed in a different way from their hard-communist counterparts, this information might serve as a methodological basis for projecting the economic development that we might see once communism is rolled back and replaced by capitalism.

There is probably too large a difference between soft communism and full-blooded capitalism to be able to project from the latter to the former. The methodology I shall seek to apply may well be infeasible even in principle. However, in the absence of examples of countries that have succeeded in rejecting communism and adopting capitalism, there is no prototype or role model that might serve as a basis for projecting developments in postcommunist economies. For this reason we are forced back into learning what we can by comparing soft and hard communism as perhaps a poor second best to the unobtainable comparison between communism and capitalism. Later, in section IV, we propose a different approach for dealing with this problem.

Comparing soft and hard communism is doubly difficult. First, the classification is not unambiguous; there are difficulties in assigning countries and some countries such as Hungary changed their status (from hard to soft and back to hard). Second, the data on the countries concerned are fraught with problems. Since the breakdown of communism in 1989, what was long suspected has been confirmed: the statistical authorities involved have confessed to widespread and systematic fabrication of statistics, and the task of reconstructing valid economic statistics for the postwar period is most probably unfeasible. Indeed, the data, such as they are, suggest that economic progress was greater in the hard-communist countries. This most probably reflects the greater propensity to fabricate statistics in the hard-communist countries rather than any genuine superior achievement.

In short, it is most probably impossible to learn from the comparison we seek to make, largely because the data are insufficiently reliable.

As for the remainder of this section, part 2 will consider the external aspect of this inquiry, i.e., the economic linkages between the Eastern bloc and the rest of the world; part 3 focuses on the internal aspects, i.e., the comparison between hard and soft communism.

2. Linkages With the Rest of the World

This discussion will naturally be divided into trade and capital linkages. In doing so, the Eastern bloc will be considered as a whole rather than the individual countries in the groups.

The disadvantages of aggregation are obvious; the individual countries are unlikely to be homogeneous, even if they have a lot in common. However, the objective here is to take a bird's-eye view of a broad sweep of economic history; to consider the forest rather than its individual trees. I

shall begin by considering trade data of which there is a relative abundance; thereafter, I shall consider capital flows and external indebtedness for which data are less abundant.

2.1 Trade

My analysis of Eastern-bloc trade relationships is based on the UN data base. The OECD also manages a data base, but this is limited to trade between Eastern-bloc and OECD members. However, the OECD system, unlike the UN system, is double-checked in that it compares reports of, for example, Soviet exports to France with reports of French imports from the USSR. This "mirror image" approach is bound to enhance the accuracy of the data. However, the advantage of the UN system is that its geographical coverage is more comprehensive and that time series extend over many years.

I shall aggregate not only over countries, but also over merchandise trade. Since the various SITC categories are not of concern here, openness and dependence in international trade is measured by total merchandise trade. The objective in this context is to measure the strength of Eastern-bloc trade dependence on the rest of the world as well as its orientation toward the rest of the world. The former is measured by the Eastern bloc's net share of world trade, i.e., excluding intratrade within the bloc. Orientation will be measured by the rates of Eastern-bloc net external trade to its total trade. When the Eastern-bloc net trade share (i.e., net exports as a percentage of total world exports) increases, it reflects a greater importance of the Eastern bloc in the world economy. When its net trade (i.e., net of intratrade) rises relative to its total trade (i.e., industry intratrade), we may infer that there is a greater orientation within the Eastern bloc toward the rest of the world.

Clearly, there are other indicators of openness, dependence, and orientation. For example, trade may be expanding as a ratio of GDP or some other indicator of economic activity. However, in the case of the Eastern-bloc countries there are major problems with the measurement of GDP. Nevertheless, an attempt will be made to construct an index of Eastern-bloc GDP and analyze Eastern-bloc trade developments with respect to it.

Trade Shares:

Fig. II.1 plots the ratio of Eastern-bloc net (of intratrade) trade to total world trade over the period 1955-1989. This is done separately for exports and imports. As is well known, Eastern-bloc trade dependence with the rest of the world is not large, reflecting the inward-looking nature of centrally planned economic development. In the case of exports it has averaged about 4% of world exports, and in the case of imports it is slightly lower than this. However, the import share displays a greater increase than the export share.

My main concern here is to discern any trends in the data that might be relevant for the future. In particular, is it the case that Eastern-bloc trade has become more important? In the case of exports, its trade share grew by slightly more than half a percentage point between the mid-1950s and late 1960s. This may not sound like much, but it was achieved against a background of unprecedented world trade growth. The Eastern bloc, then, more than held its own in world exports. During the 1970s the export share stabilized, before it became relatively unstable in the 1980s.

In the case of imports, the trade share grew very rapidly in the late 1950s before stabilizing in the 1960s. The 1970s witnessed a sharp increase in the import share, which most probably reflected the agricultural crisis in the early 1970s and the energy crisis in the middle of the decade. Since the mid-1970s the import share has been on a downward trend, and the latest indications are that the import share is reverting to its level of over 30 years ago.

Taken together this picture suggests that the export share has maintained itself reasonably well whereas the import share has been in retreat. The latter may be due to the Eastern-bloc debt crisis that emerged during the 1980s, as discussed further below.

The data used in figs. II.1, II.2, and II.3 are based on nominal magnitudes in US dollars. They therefore embody terms-of-trade effects. However, purging these effects from the data is problematic since reliable price indexes for Eastern-bloc trade are not available. If indeed there are significant trends in Eastern-bloc terms of trade, the impression made by fig. II.1 would be correspondingly distorted.

Table II.1 presents data on Eastern-bloc trade on the eve of World War II, i.e., before these countries became communist (except of course for the USSR). In 1937 the Eastern bloc accounted for about 6.8% of world exports and 5.6% of world imports. However, this figure includes intra-Eastern-bloc trade and is therefore not strictly comparable with the data in fig. II.1. Since

intra-Eastern-bloc trade was most probably less than 10% of total trade (see column 3 of table II.1), the implication is that the share of net Eastern-bloc trade in total world trade before these countries became communist was only some 1% to 2% higher than was the case after they became communist.

Trade Orientation:

Fig. II.2 plots net trade as a percentage of total Eastern-bloc trade. For example, in 1955 40% of exports went to the rest of the world. In the case of imports, 35% went to the rest of the world. Unlike fig. II.1, fig. II.2 suggests a clear trend: the Eastern bloc has tended to orientate more of its trade toward the rest of the world. However, most of this achievement occurred between the mid-1960s and the mid-1970s in the case of both exports and imports. During the 1980s both imports and exports became more inward-oriented, although in the latter half of the 1980s this development was reversed.

If we compare the postwar direction of trade with what information is available on the prewar direction of trade (i.e., column 3 in table II.1), we may see that having become communist the Eastern bloc became more inward-looking. However, the data suggest that this reflected trade creation within the Eastern bloc rather than trade diversion, because even before the war the Eastern bloc only accounted for a small proportion of total world trade.

Fig. II.3 plots the share of net trade in Eastern-bloc GDP. The latter is based on data provided by Alton et al. (1990) for Eastern Europe and by Ofer (1987) for the Soviet Union. The weight of the Soviet Union in Eastern-bloc GDP is assumed to be 0.66 following UN estimates. The data in the chart indicate that external trade has been extremely small relative to GDP, rising from about 1.6% in 1965 to about 2.7% in 1988. Eastern-bloc trade has grown relative to its GDP from a very low base. However, the 1980s witnessed a marked contraction in the ratio of trade to GDP especially during the recent past.

2.2 Capital

In contrast to trade linkages with the West, the Eastern bloc's capital linkages have grown substantially. However, data are only available from

1970. In 1970 the net debt of the Eastern bloc to the West amounted to some \$4.6 billion or 15% of its exports to the West. By 1989 this figure had grown to \$101.7 billion or 60% of exports. The comparable figures for gross indebtedness are \$6.7b and \$133.4b, respectively. The difference reflects assets held with BIS-reporting banks and international reserves.

As is indicated in fig. II.4, the (net) debt export ratio rose sharply until the late 1970s. During the first part of the 1980s the ratio fell before rising once more in the second half of the 1980s. The growth of indebtedness has reflected the Eastern bloc's current account position with the West, which was in deficit until the early 1980s (fig. II.5). However, for most of the 1980s the Eastern bloc has ran a current account surplus.

The overall picture obtained is one of a growing capital dependence on the West such that by the 1980s this had reached the sort of dimensions of many oil-importing developing countries. Much of this growth occurred during the second half of the 1970s, whereas the 1980s were quite different. This pattern has much in common with the growth of LDC indebtedness and most probably for similar reasons. During the 1970s real interest rates on external indebtedness were negative and the oil crisis initiated foreign borrowing. During the 1980s real interest rates rose sharply and many debtor countries experienced financing difficulties. This included the Eastern-bloc countries, and the risk premiums they paid ran rose sharply (table II.2) although not as sharply as in the developing countries. This forced the Eastern bloc to borrow less at the same time that Western banks sought to reduce their exposure. By 1986, however, the risk premium had fallen by about 100 basis points from its peak in 1983 and foreign borrowing resumed.

Although the Eastern bloc has shown a growing orientation toward Western capital markets, its importance in these markets should not be overstated. The external indebtedness of the Eastern bloc is currently approximately 10% of LDC indebtedness. In 1970 this proportion was only about 6%.

3. Lessons From Liberal Communism?

The members of the Eastern bloc are not homogeneous. Some of them consistently operated hard-line central planning with virtually no freedom at all for private initiative. Russia falls into this category. Others, such as Yugoslavia, were consistently comparatively liberal. Yet another group, e.g., Hungary, wavered in its ardor for central planning. During 1968-1972 it was

relatively liberal, from 1973-1980 it was less liberal, and since about 1981 it has grown more liberal again.

This heterogeneity and experimentation might yield some clues regarding possible trends if, in the future, economic liberalism is embraced more fully in some or all of the countries under review. If it can be established that liberalism triggered specific economic tendencies—for example, faster economic growth, greater openness in international economic relations, and improved socioeconomic conditions—these patterns might form a basis, however tenuous, for projecting future economic developments.

Unfortunately, there is no unambiguous measure of “liberal communism.” However, the concept is intended to reflect a greater emphasis on decentralization, private initiative, the price mechanism, and related features of Western capitalism. It is arguable that Yugoslavia has, comparatively speaking, avoided the worst excesses of Stalinist centralism and that Hungary and perhaps to a lesser extent Czechoslovakia have been relatively liberal as well. At the other end of the spectrum stand the GDR, Bulgaria, Romania, and the Soviet Union, which have made almost no concessions at all to decentralization and private initiative.

If the measurement of “liberal communism” is problematic, so is the measurement of socioeconomic progress, the yardstick for the purported benefits of “liberal communism.” However, tables II.3 and II.4 report a number of indicators for the East European countries based on the data analysis of Alton et al. (1990) in particular. Let us begin by considering the rate of growth of GNP per capita and its level. In these terms, East Germany was by far the richest in 1989 (at \$9718) and Poland the poorest (at \$4564), just eclipsing Romania (at \$4568). Hungary and Czechoslovakia perform relatively well in these terms.

The cumulative growth rates of GNP per capita over the period 1965-1989 range between 47.1% in the case of Poland and 87.7% in the case of East Germany, i.e., between an average of 1.6% per year in the former case and 2.7% in the latter. With the possible exceptions of Poland and East Germany, the growth rates of per capita GNP in the rest of Eastern Europe were broadly similar. Despite its growth record, Romania remained virtually at the bottom of the league table of GNP per capita in 1989; however, it drew much closer to the East European average. By contrast, East Germany consolidated its lead at the other end of the league table. Its high per capita GNP in 1989 reflected both a higher rate of growth and advantageous initial conditions.

These data on per capita GNP do not indicate any clear pattern, unless one is prepared to claim that illiberal East Germany achieved the highest rates of growth. Indeed, East Germany maintained its growth rate after 1975 when other countries, particularly Poland and Bulgaria, marked time. It should be stressed that the data are not official estimates; they have been carefully constructed and account has been taken of an "international comparison" treatment of the respective exchange rates.

Despite the care invested in the construction of these GNP data, it is arguable that GNP is a poor yardstick of economic progress since it reflects public expenditure and investment, which, in the countries covered, may have contained an unusually large component of waste. Thus, table II.4 presents measures of consumption. The rankings of personal consumption per capita and GNP per capita are broadly similar because the shares of personal consumption in GNP are broadly the same (about 58% in 1987), with the exceptions of Romania and Yugoslavia (about 50%). This meant that in terms of consumption per capita, Yugoslavia replaces Romania at the bottom of the league table.

Table II.4 also contains other, physical, indicators of consumption but these too do not suggest any support for the thesis that liberal communism promoted economic progress. Therefore, we must reluctantly abandon the notion that contemporary experience in Eastern Europe can tell us anything about the effects of the abolition of central planning on the future economic development of the countries covered. And even had we succeeded in observing patterns of this type, it is arguable that they would not have provided a reasonable basis for projecting future developments. The impending economic changes in the Eastern bloc do not consist of the embrace of liberal communism but rather the adoption of capitalism. In this context, the experience with liberal communism is unlikely to be of any great relevance. Moreover, it is becoming increasingly clear that the fabrication and distortion of data was a major industry in the Eastern-bloc countries. Therefore, the indicators that feature in tables II.2 and II.4 may well be illusory.

fig II. 1: comecon's share of world trade

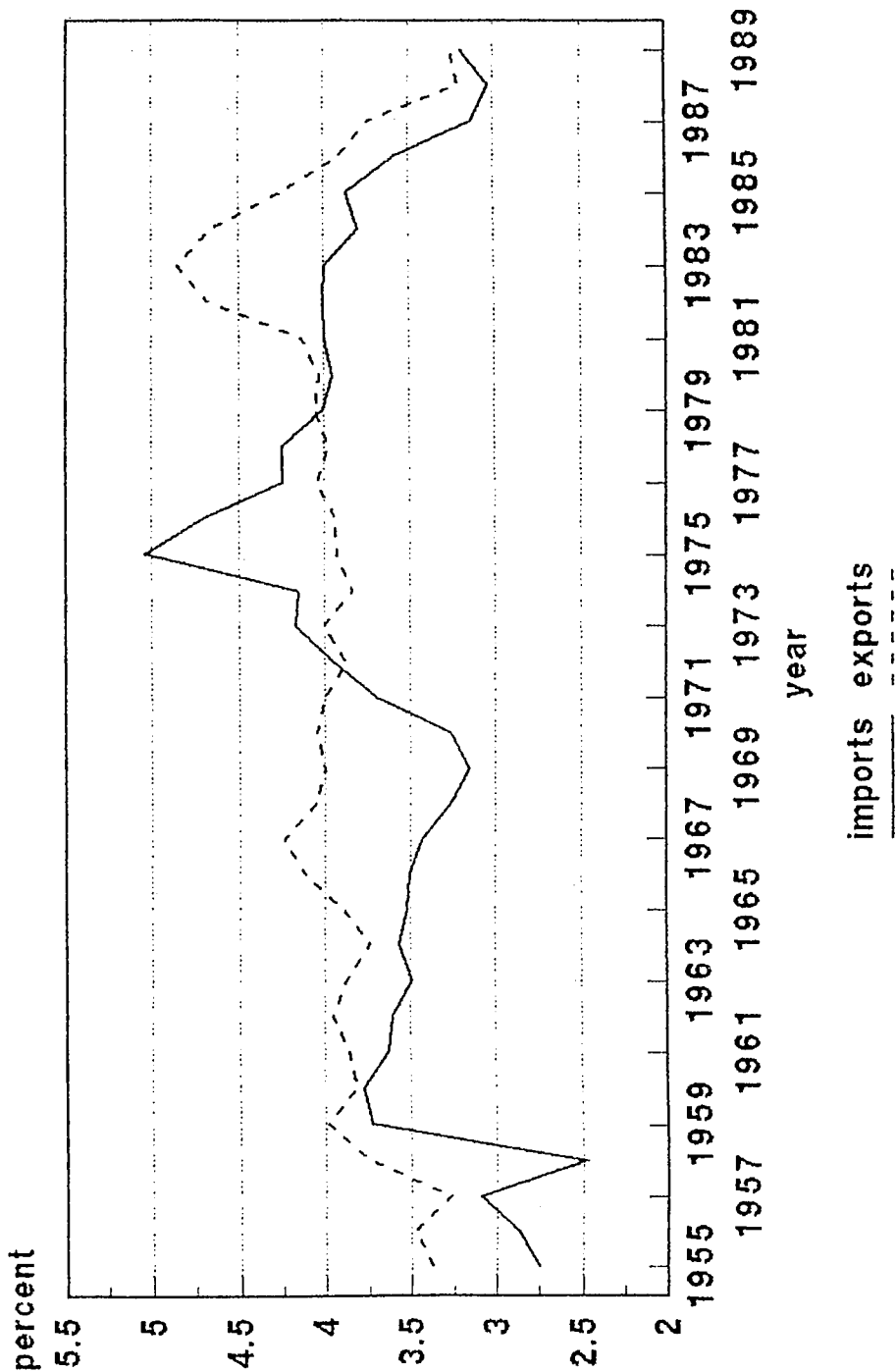


fig II.2: proportion of eastern bloc trade outside eastern bloc

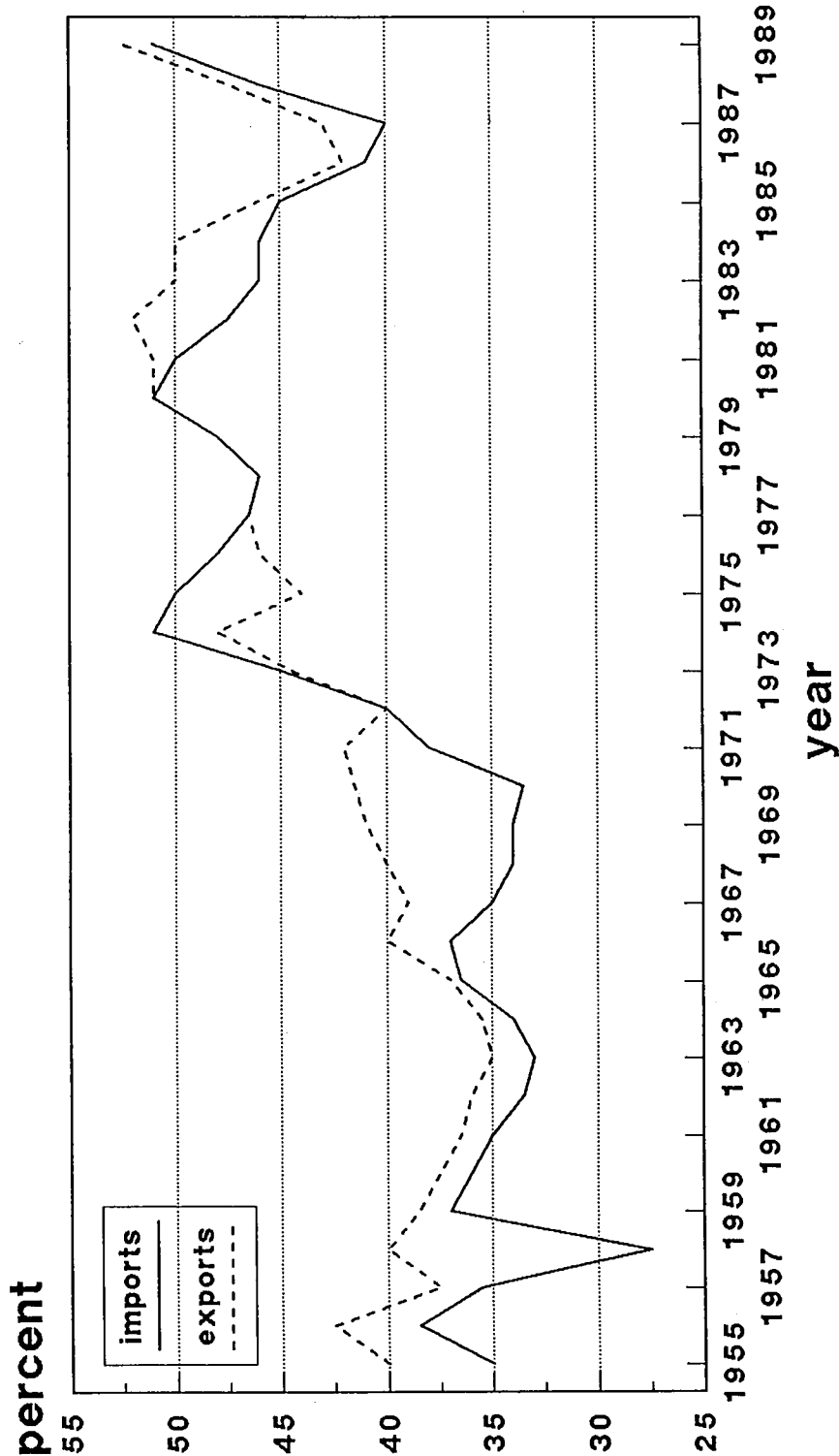


fig II.3: eastern bloc trade relative to gdp

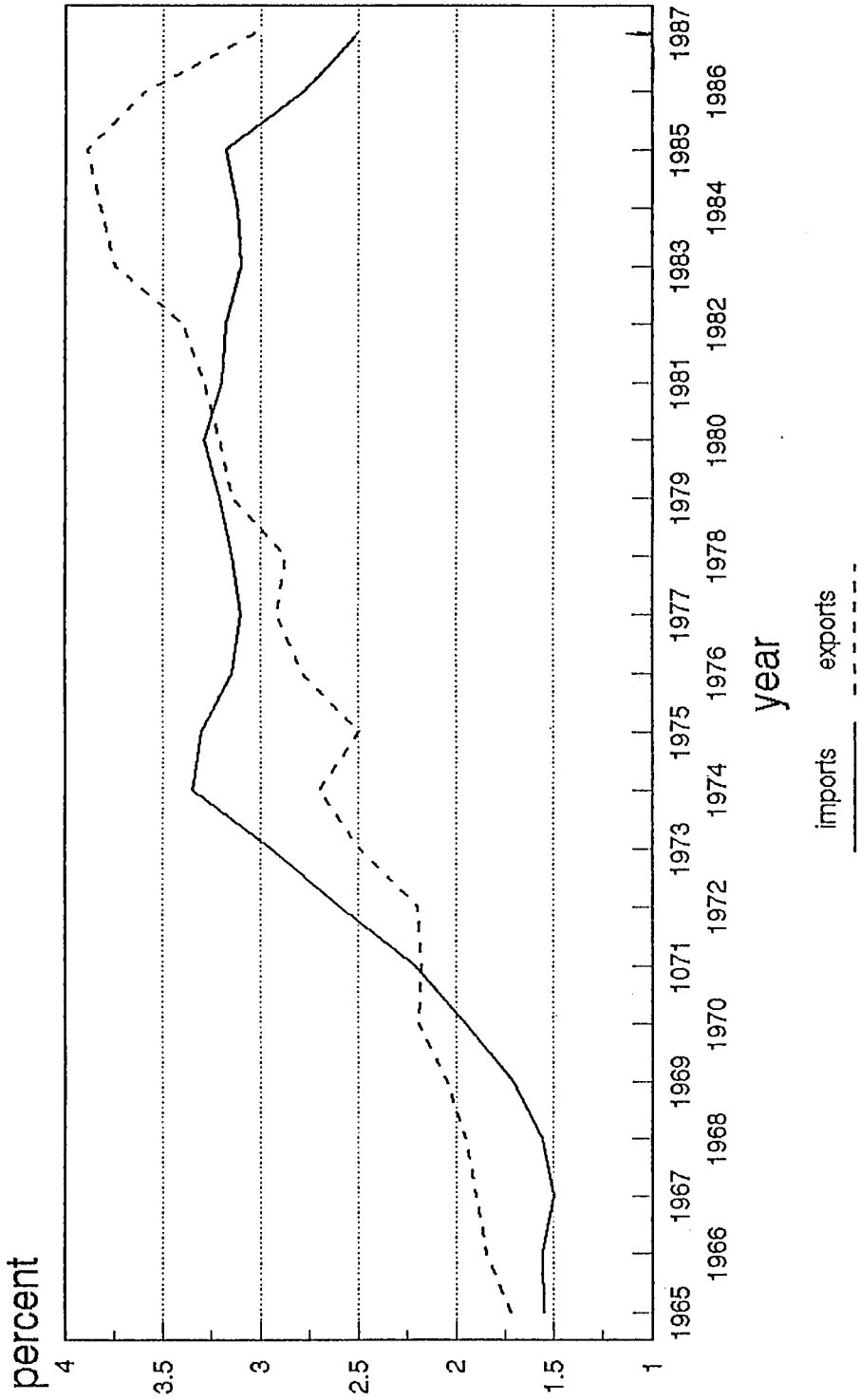


fig II. 4: net external indebtedness as percent of exports

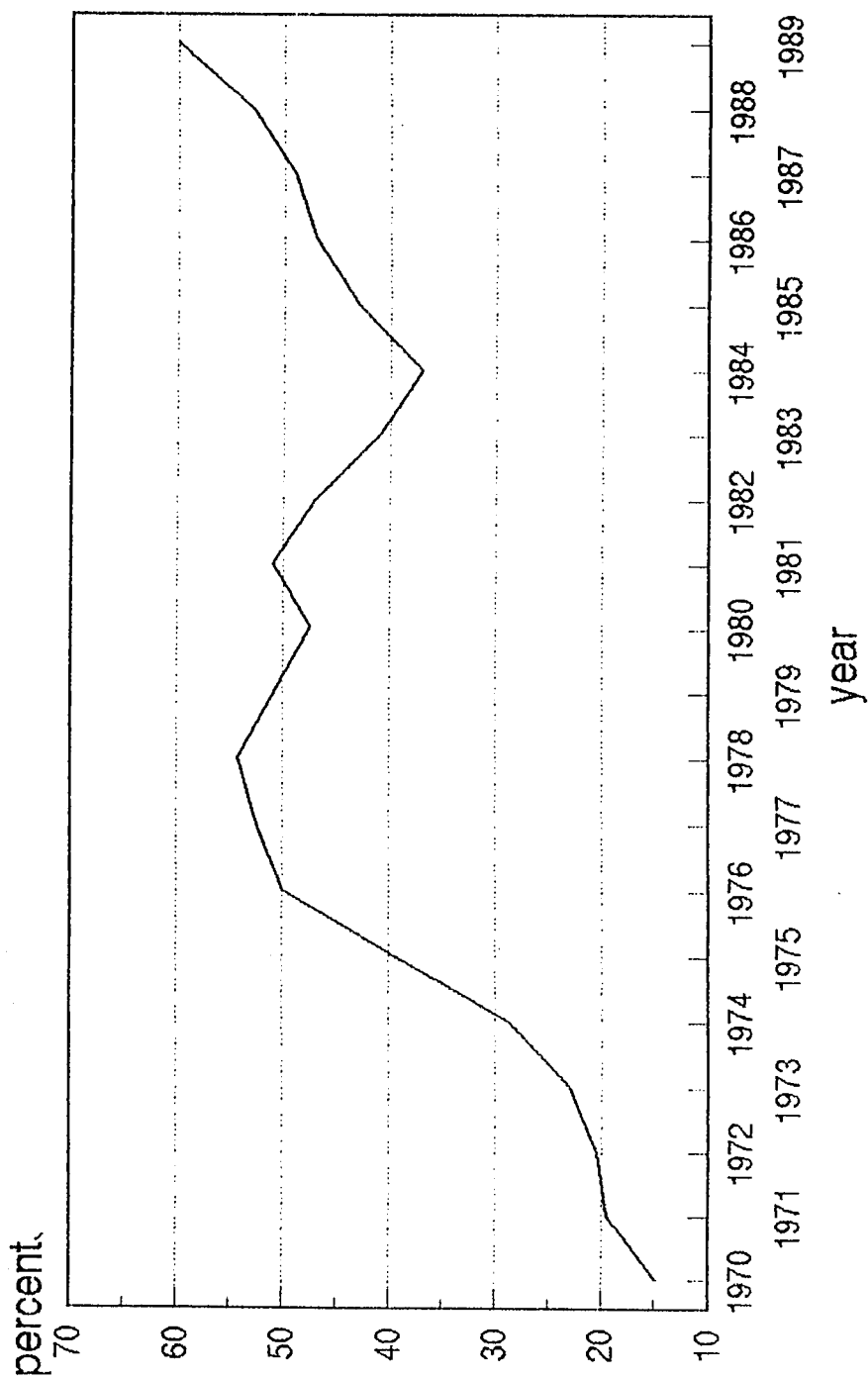


fig II.5: eastern bloc current account

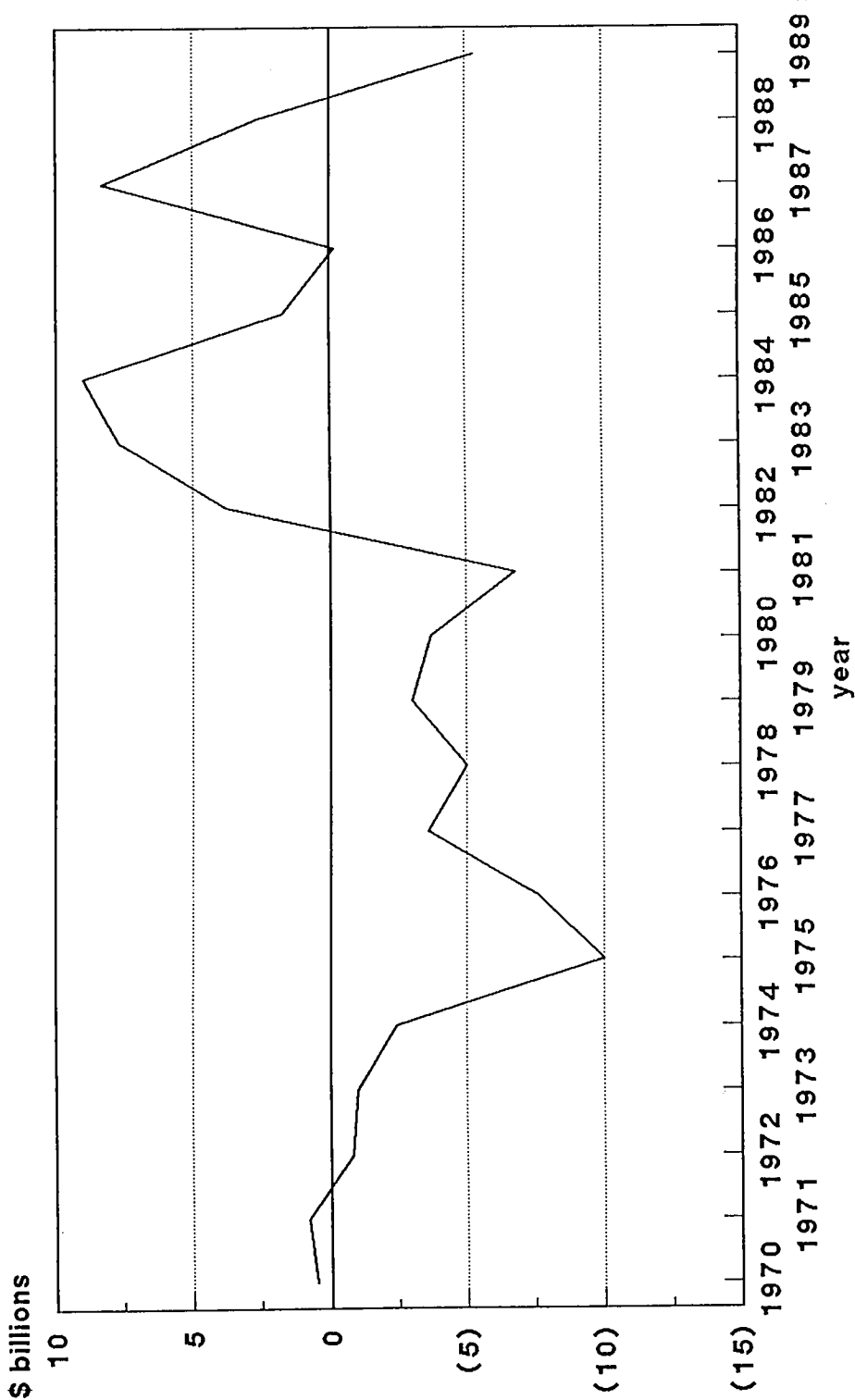


TABLE II.1
Exports and Imports of the Eastern Bloc, 1937
(Old US gold dollars, millions)

| | Exports | Imports | Intra-Eastern- bloc trade % ^a |
|----------------|---------|---------|---|
| Bulgaria | 3.02 | 3.0 | 7.3 |
| Czechoslovakia | 20.59 | 18.86 | 10.4 |
| Estonia | 1.43 | 1.5 | |
| Hungary | 8.58 | 6.93 | 12.5 |
| Latvia | 2.52 | 2.23 | |
| Lithuania | 1.74 | 1.77 | |
| Poland | 11.3 | 11.73 | 4.7 |
| Romania | 11.34 | 7.29 | 11.5 |
| USSR | 16.18 | 12.62 | 1.5 |
| Yugoslavia | 7.12 | 5.94 | 10.8 |
| Total | 83.82 | 71.87 | |
| World | 1229.33 | 1290.04 | |

Source: *Monthly Bulletin of Statistics*, August 1939, League of Nations, table 7.

a. B. R. Mitchell, *European Historical Statistics 1750-1970*, Columbia University Press, New York, 1975, tables F1 and F2.

TABLE II.2
 Spreads on International Bank Loans, 1982-1988
 (Basis points)^a

| | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 ^b |
|--|------|------|------|------|------|------|-------------------|
| OECD area | 56 | 65 | 55 | 41 | 36 | 34 | 27 |
| Eastern Europe and the Soviet Union | 103 | 118 | 88 | 55 | 26 | 24 | — |
| OPEC | 94 | 85 | 76 | 72 | 46 | 72 | 72 |
| Other Developing Countries | 115 | 170 | 144 | 99 | 67 | 69 | 54 |
| General Average | 77 | 115 | 93 | 60 | 40 | 44 | 30 |
| Memorandum item: Average maturity ^c | | | | | | | |
| Eastern Europe | 4/5 | 4/5 | 5/11 | 7/5 | 7/9 | 8/1 | — |

Source: OECD, *Financial Market Trends*, May 1988, p. 85.

Note: Weighted average of spreads applied to loans of \$30 million and over, with a maturity of more than three years completed or signed during the period.

a. Hundredths of a percentage point.

b. January-March.

c. Average maturity of recorded Eurocredits in years/months.

TABLE II.3
 Eastern Europe:
 Average Annual Rates of Growth of GNP per Capita, 1965-1989
 (At constant prices; percent)

| Years | Bulgaria | Czecho- slovakia | GDR | Hungary | Poland | Romania | Yugo- slavia | USSR ^a |
|---------------------|----------|---------------------|------|---------|--------|---------|-----------------|-------------------|
| 1965-70 | 4.0 | 3.2 | 3.2 | 2.7 | 3.0 | 3.2 | N.A. | 3.9 ^b |
| 1970-75 | 3.9 | 2.7 | 3.8 | 3.0 | 5.7 | 5.2 | 5.6 | 2.7 |
| 1975-80 | 0.9 | 1.5 | 2.5 | 1.9 | 0.0 | 3.0 | 4.9 | 1.8 |
| 1980-85 | 0.7 | 1.1 | 1.9 | 1.0 | 0.3 | 1.6 | 0.6 | 1.1 |
| 1985-89 | 0.9 | 1.3 | 1.8 | 1.0 | -0.2 | 5.3 | -0.1 | |
| Level in 1989 \$ | 5655 | 7872 | 9718 | 6098 | 4564 | 4568 | 5460 | |

Source: Alton et al. (1990), p. 26.

a. G. Ofer, "Soviet Economic Growth: 1928-1985," *Journal of Economic Literature*, December 1987, p. 1778.

b. 1960-70.

TABLE II.4
Indicators of Annual Personal Consumption per Capita, 1987

| | Bulgaria | Czecho- slovakia | GDR | Hungary | Poland | Yugo- slavia | Romania |
|------------------------------------|----------|---------------------|------|---------|--------|-----------------|---------|
| Electricity (kwh) | 1053 | 766 | 1054 | 729 | 453 | 866 | |
| Shoes (pairs) | 2.5 | 4.8 | 2.9 | 3.3 | 3.5 | 2.1 | |
| Meat (kg) | 74 | 89 | 99 | 80 | 67 | 58 | |
| Washing Machine (per household) | .91 | 1.47 | 1.05 | .35a | 1.28 | | |
| Fridge (per household) | .94 | 1.18 | 1.52 | .35a | 1.12 | | |
| TV (per household) | .97 | 1.2 | 1.21 | .28a | .83 | .17a | |
| Car | .39 | .51 | .53 | .15 | .3 | .13a | |
| Consumption \$ 1988 | 4504 | 5621 | 6994 | 4863 | 4218 | 3194 | 3259 |
| Consumption growth (%1965-88) | 66.8 | 58 | 84.2 | 60.2 | 55 | 66 | 98.9 |

Sources: Alton et al. (1989, papers 108, 105, and 107).

a. Per capita, 1986.

III. REINTEGRATION THEORY

1. Introduction

By dividing the world into East and West, we produce two traded goods A and B. We abstract from nontradables, because this complication does not affect the underlying nature of this analysis. In the initial position (pre-1989) there is no East-West trade, the East has no external debt, the East is economically inefficient whereas the opposite applies in the West.

Fig. III.1 portrays the initial situation in the East. The transformation frontier is EE but production takes place at a, i.e., inefficiency implies that production is well within the transformation frontier. In addition, the price mechanism does not operate. Relative prices are represented by PP so that consumers prefer to be at b. There is therefore a shortage ($D_A - S_A$) of A and unwanted production of B ($S_B - D_B$). The initial level of Eastern welfare is therefore U_0 .

If relative prices do not change, the removal of communism would raise production from a to c and the welfare gain would be $U_2 - U_0$. However, liberating the price mechanism implies that production would be at d so that the welfare gain would be $U_3 - U_0$. At d the relative price of A is higher under capitalism than it was at a under communism. Clearly, the opposite might have occurred, e.g., if U_3 formed a tangent with EE at, say, e.

Fig. III.2 depicts the initial situation in the West where WW denotes the efficiency frontier. In the capitalist West efficiency prevails, in which case f denotes the equilibrium level of output and consumption because there is no East-West trade in the initial situation.

2. Capital Transfer

We assume that good A is relatively labor-intensive and that both goods are produced by labor (L) and capital (K). We also assume that the opening up of the East is regarded as a new investment target by Western capitalists because the return on capital in the East (a capital-scarce bloc when measured in effective terms) is presumed to be higher than in the West. The East contains a well-educated labor force that has been deprived of effective capital. Moreover, in addition to suppressed inflation there has also been suppressed productivity, i.e., factors of production could have been more

productive had resources been better managed and husbanded. In fig. III.1, suppressed output is represented by the transition from a to c or d.

The Western box diagram is represented by fig. III.3. The transformation frontier WW in fig. III.2 is derived from the efficiency locus AB in fig. III.3. The points f correspond with each other. Z of capital is transferred to the East so that the new efficiency locus is AB' and the new transformation frontier is WW'. Because good A is labor-intensive, the transfer of capital implies that WW' on the A axis in fig. III.2 is smaller than its counterpart on the B axis.

In the West the new equilibrium point of production is represented by g, i.e., less of both goods are produced. Rybczynski's Theorem implies that at g in fig. III.3, the marginal product of capital has risen when expressed in terms of wage goods. The transfer of capital from the West to the East has raised the equilibrium real rate of interest and lowered real wages in the West.

The new transformation frontier in the East is represented by E'E', i.e., EE' on the B axis is greater than its counterpart on the A axis. The new autarchy point of production in the East is represented by h, i.e., more of both goods are produced relative to d. The Rybczynski Theorem implies that the transfer of capital lowers the cost of capital and raises real wages in the East relative to what prevailed at d.

3. East-West Trade

Thus far East-West trade has been prohibited, so that at h and g there was no trade. On the other hand, transactions on capital account were permitted and Z of Western capital was exported to the East. In all probability, at h and g the relative prices of A and B in East and West will differ.

In fig. III.4 we have assumed that in the West the relative price of A is greater at g than it is at h in the East.

Free trade between East and West implies that relative prices will converge, so that production in the West will be at i rather than g and production in the East will be at j rather than h. Consumption in the West takes place at m, which yields more welfare than at g. Consumption in the East takes place at n, which yields more welfare than at h.

The East exports $jl = km$ of A to the West and imports $ln = ki$ of B from the West. If R denotes the world real rate of interest, then in equilibrium:

$$jIP_A = lnP_B + ZR$$

i.e., Eastern-bloc exports cover imports plus the interest payments on its external debt.

4. Eastern Gains

The previous discussion indicates that several benefits accrue to the East, as follows:

(1) *Repressed productivity*: the transition from a to c in fig. III.1 represents the removal of communist inefficiency. Existing factors of production produce more.

(2) *The price mechanism*: The transition from c to d in fig. III.1 further adds to Eastern welfare because of greater reliance on the price mechanism.

(3) *Capital transfer*: The transition from d to h occurs because capital is transferred to the East. However, factor payments to the West are equal to ZR.

(4) *Free trade*: The final benefit of the reintegration of the East into the world economy arises from free trade. In fig. III.4, this was represented by the transition from h to n.

5. The Purge of Waste

As the Eastern bloc undergoes its economic renaissance, its demand for most goods and services can be expected to rise in world markets. However, there may be exceptions to this rule especially in areas where communism was particularly wasteful. In these instances the demand for commodities may fall as the Eastern bloc cuts out waste in its drive toward economic efficiency. World relative prices may subsequently change, therefore, as erstwhile wasteful countries become more efficient.

Despite the numerous examples of waste (e.g., *The Economist's* report on the two factories in the USSR where one produced tractors while the other broke up the completed tractors for spare parts), there are no aggregate measures of waste. Nevertheless, table III.1 taken from Bernstam (1991) contrasts energy and steel consumption in the market and socialist economies. In 1986 the market economies used an average of 520 kilograms of coal

equivalent to produce \$1000 of GNP, whereas the socialist countries used 1430 kilograms. Indeed, the most economical socialist country, Hungary, used barely less energy than the most energy-intensive market economy (South Korea). Indeed, the contrast between North and South Korea is dramatic. In 1985 the market economies used an average of 41 metric tons of steel to produce \$1000 of GNP, whereas the socialist countries used an average of 142 metric tons.

The data suggest that the socialist countries expend about three times the quantity of raw materials to produce a given unit of output than their Western counterparts. This in turn suggests that if by adopting capitalism the erstwhile communist countries manage to, say, double their GNP, their demand for raw materials may fall if indeed unit raw materials costs fall to anywhere near Western levels. Thus the spread of capitalism to Eastern Europe is likely to depress the demand for raw materials in world markets.

Fig. III-1. Initial Situation in East

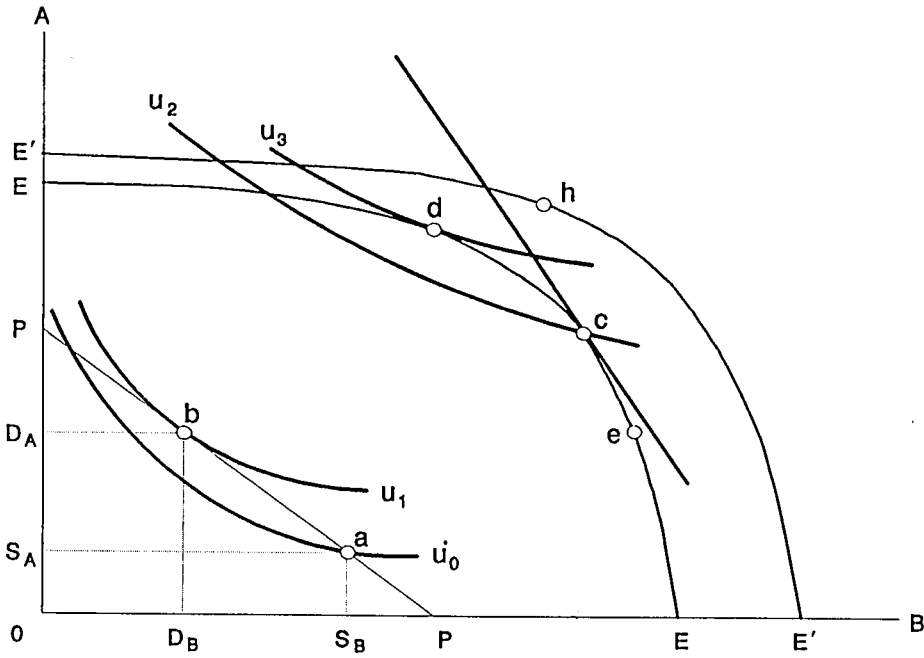


Fig. III-2. The West

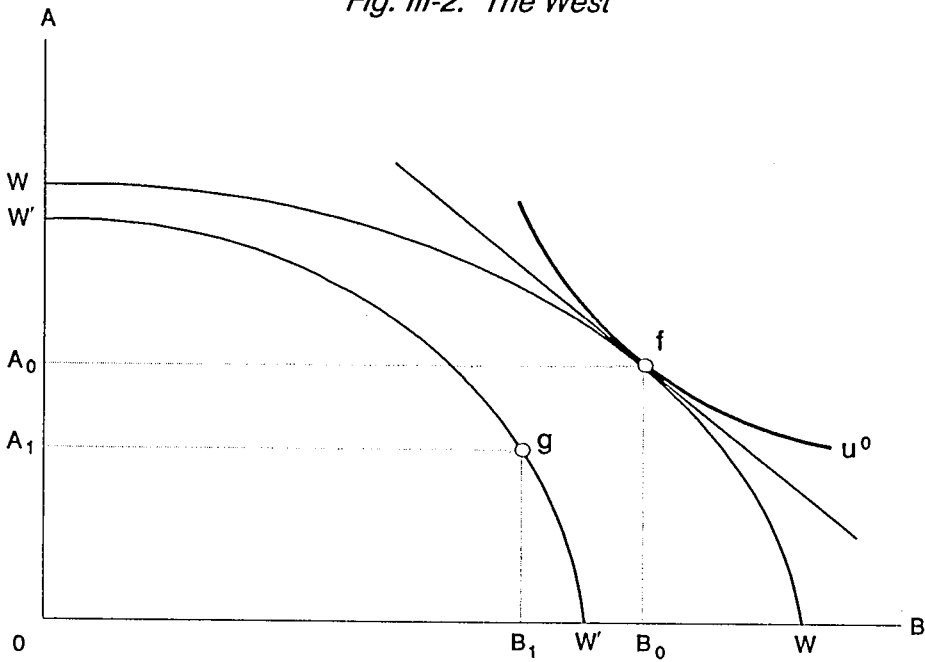


Fig. III-3. Western Box Diagram

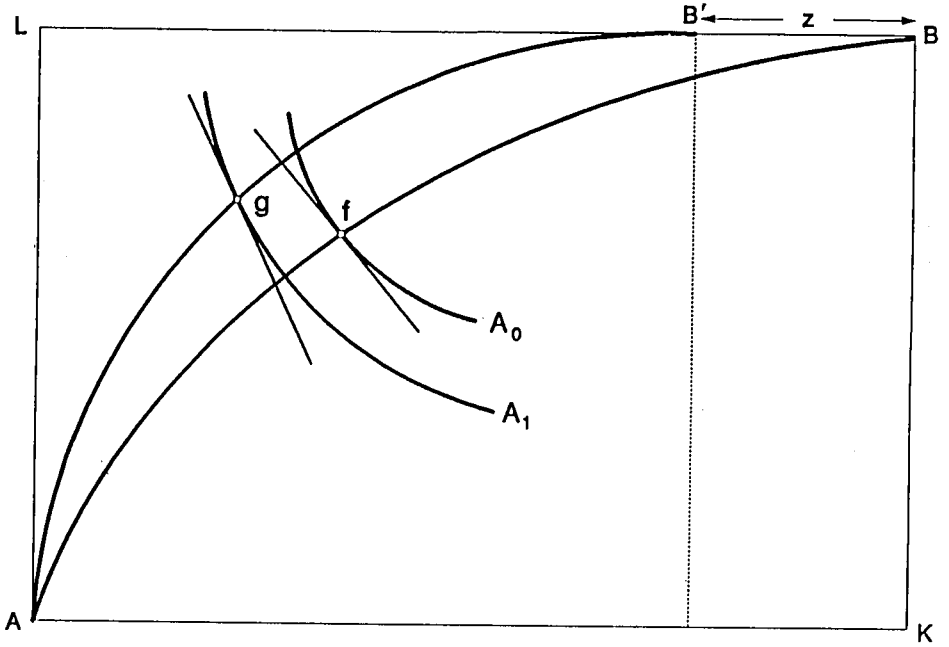


Fig. III-4. East-West Trade

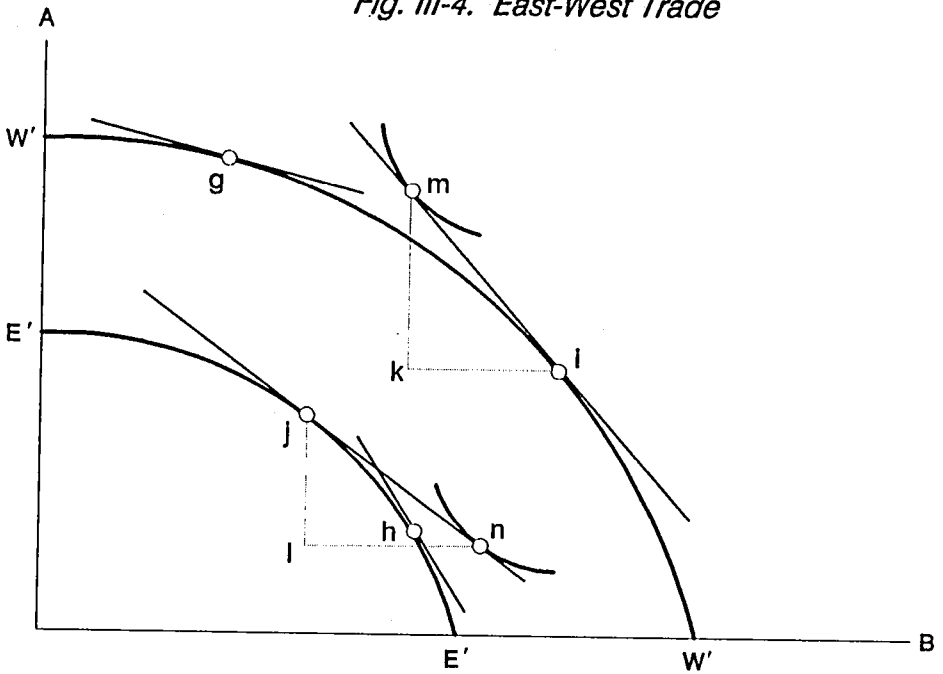


TABLE III.1
Consumption of Energy and Steel per Capita and per \$1,000 of GNP:
Selected Countries, 1975, 1980, and 1985-86

| | Energy (in kilograms of coal equivalent) | | | | Steel (in metric tons) | | | |
|----------------------------|--|-------|---------------------------------|-------|------------------------|------------------|---------------------------------|-----------------|
| | Per Capita | | Per \$1,000 of GNP ^a | | Per Capita | | Per \$1,000 of GNP ^a | |
| | 1980 | 1986 | 1980 | 1986 | 1975 | 1985 | 1975 | 1985 |
| <i>Market Economies</i> | | | | | | | | |
| USA | 10,386 | 9,489 | 690 | 590 | 541 | 448 | 40 | 28 |
| Canada | 10,547 | 9,694 | 840 | 740 | 581 | 471 | 51 | 35 |
| Japan | 3,726 | 3,625 | 410 | 330 | 580 | 553 | 78 | 51 |
| UK | 4,850 | 5,363 | 670 | 680 | 376 | 254 | 56 | 32 |
| West | | | | | | | | |
| Germany | 5,829 | 5,672 | 600 | 550 | 489 | 481 | 60 | 47 |
| France | 4,409 | 3,881 | 500 | 430 | 365 | 258 | 48 | 29 |
| Belgium | 5,997 | 5,577 | 780 | 710 | 314 | 275 | 48 | 36 |
| Switzerland | 3,636 | 3,990 | 250 | 260 | n.a. | n.a. | n.a. | n.a. |
| Austria | 4,058 | 4,024 | 500 | 460 | 284 | 235 | 44 | 27 |
| Denmark | 5,254 | 5,331 | 340 | 290 | n.a. | n.a. | n.a. | n.a. |
| Sweden | 5,376 | 4,893 | 500 | 430 | 773 | 384 | 75 | 34 |
| South Korea | 1,373 | 1,625 | 870 | 790 | 52 | 198 ^b | 42 | 93 ^b |
| Unweighted average | | | | | | | | |
| | 5,450 | 5,260 | 580 | 520 | 436 | 356 | 54 | 41 |
| <i>Socialist Economies</i> | | | | | | | | |
| USSR | 5,549 | 6,389 | 1,130 | 1,250 | 554 | 557 | 124 | 121 |
| Bulgaria | 5,254 | 5,780 | 1,310 | 1,590 | 252 | 336 | 64 | 80 |
| Czecho- | | | | | | | | |
| slovakia | 6,364 | 6,258 | 1,160 | 1,100 | 731 | 709 | 144 | 124 |
| East | | | | | | | | |
| Germany | 7,276 | 7,944 | 1,150 | 1,920 | 566 | 574 | 101 | 82 |
| Hungary | 3,787 | 3,735 | 800 | 760 | n.a. | n.a. | n.a. | n.a. |
| Poland | 4,935 | 4,700 | 1,150 | 1,100 | 524 | 409 | 120 | 95 |
| Romania | 4,505 | 4,483 | 1,340 | 1,260 | 463 | 480 | 159 | 133 |
| North Korea | 2,713 | 2,771 | 2,490 | 2,450 | 186 | 413 | 177 | 356 |
| Unweighted average | | | | | | | | |
| | 5,048 | 5,260 | 1,320 | 1,430 | 468 | 497 | 127 | 142 |

a. In constant 1984 dollars. Estimates per \$1,000 of GNP in socialist countries are corrected assuming the average GNP per capita in these countries equal to 40% of that in Western market economies (for recent semi-official Soviet estimates, see A. Illarionov, "Paradoksy Statistiki," *Argumenty i Fakty*, No. 3, 1990, pp. 6-7). No corrections were made for North Korea due to lack of data.

b. 1984.

n.a.: not available.

IV. EASTERN EUROPE ON THE EVE OF WORLD WAR II

1. Introduction

In section III it was assumed that but for communism the East would have developed along lines similar to the West and that the rolling back of communism in favor of capitalism would induce economic convergence between East and West.

Clearly, the model that was proposed was intended as an ideal, theoretical abstraction that may be useful in shedding light on the main trends that are likely to emerge if, indeed, the Eastern bloc reintegrates into the world economy. The gap between theory and reality is likely to be manifold. First, economic development within the West has been far from uniform. Even within the community of industrial nations there is extensive diversity, and convergence within the West has been present but on the whole weak.¹ If various Western countries have not converged even after many decades of economic development, why should it be expected that Eastern-bloc countries will converge?

Second, the Eastern bloc is not homogeneous politically or economically. It may be the case that certain countries, for example East Germany, stand a better political and economic chance at handling the transition from communism to capitalism than, say, the Soviet Union or Romania. It may well be the case that some of the Eastern-bloc countries will founder politically so that the political infrastructure to promote economic reform will fail to emerge.

This section maintains that before communism closed in on Eastern Europe, the countries concerned were part of the mainstream of European economic development. This implies that but for communism these countries would most probably have developed along lines broadly similar to their capitalist European neighbors. As we shall see, before the onset of communism the economies of Europe were far from homogeneous. Indeed, we will try to classify them into a crude league table of economic development. However, to do so we need to look back to the eve of World War II rather than, say, 1947 in view of the damage wrought by the war on the European economies in particular.

The implication of the analysis will be that if indeed Eastern Europe once formed an integral part of the European development tradition, the removal of communism should eventually lead to an economic rapprochement between Eastern and Western Europe. Eastern Europe should not be

regarded in the same way as, say, Africa or India, which have not formed part of the mainstream of Western economic development. Indeed, by the year 2030 those unfamiliar with the history of the twentieth century might be surprised to learn that the countries of Eastern Europe were once communist. The 40 or so years following World War II may well be eventually regarded as a temporary setback, an unfortunate episode in the history of European economic development.

In what follows, the data that have been assembled are classified into several broad categories: demography, national income, industry, and agriculture. In each case the purpose is to determine the juxtaposition between Eastern and Western Europe on the eve of World War II.

2. Demography

Economic and social development are clearly related. Generally speaking, economic development is associated with (even preceded by) falls in birth and death rates.² The first column of table IV.1 indicates that infant mortality in the East European countries was relatively high, excepting the cases of Latvia and Estonia where infant mortality was similar to that of Germany and France. Romania experienced the highest rate and Sweden the lowest.

In terms of infant mortality the East European countries belonged to what I shall term the "periphery" of Europe, which includes Greece, Spain, and Portugal. The distinction between the periphery and the center was quite marked.³ In the periphery the infant mortality rate typically exceeded 120; in the center it was typically less than 75. There were few intermediate countries, although Italy is a candidate.

The data on infant mortality are more or less mirrored by the data on life expectancy (males at birth). With the exception of Czechoslovakia, life expectancy in the East was less than 50 years. Once again Latvia and Estonia are exceptions. Absence of data for countries such as Spain and Portugal prevents us from painting a fuller picture for the peripheral countries. However, it is probably not circumstantial that life expectancy in Greece (a putative member of the periphery) was only 49.09 years. Broadly similar rates of life expectancy most probably applied in other countries in the periphery for which data are not available.

Columns 3 and 4 in table IV.I report crude birth and death rates. However, a more telling use of the data is presented in fig. IV.I. The "vital revolution" appears to be an integral feature of economic development.

Typically the death rate tends to fall with socioeconomic progress, after which the birth rate also falls. In the interval, population growth tends to accelerate. Backward countries experience high birth and death rates; the opposite applies for advanced countries.

Fig. IV.I attempts to establish the timing of the vital revolution in various European countries. Note that in some countries, e.g., France, the birth rate fell (below 30) before the death rate (below 20). A clear pattern emerges from fig. IV.I: the vital revolution in Eastern Europe occurred after similar revolutions in Western Europe. By 1910 the West European countries (except for Spain and Italy) had completed their vital revolutions, whereas none of the East European countries that are featured had even begun theirs. Czechoslovakia was the first (about 1916) and Romania the last. The East European countries achieved their vital revolutions during the interwar years; their West European counterparts on the whole achieved theirs before World War I. The exceptions were Spain, Italy, and Portugal, but these are countries that arguably belong to the periphery.

Literacy may also be regarded as an indicator of socioeconomic development. Table IV.I (column 5) indicates that among the East European countries rates of illiteracy were quite diverse. In Bulgaria, Poland, Romania, and Yugoslavia illiteracy was widespread. However, in Hungary and Czechoslovakia it was very limited, at a similar level to that of France but at a higher level than in leading countries such as Sweden.

The data appear to suggest four groups. The backward group consists of Bulgaria, Greece, Portugal, and Romania; a less backward group consists of Spain, Italy, and Poland; a forward group consists of Belgium, France, Hungary, and Czechoslovakia; finally, literacy-saturated countries include Sweden and most probably Britain and Germany.

3. National Income

Table IV.2 presents data on income per head and GDP growth rates. The former come from two independent sources and are reported in columns 1 and 2. The data in column 1 are a fairly straightforward calculation of income per head measured in US dollars. On this basis Britain was the richest country in Europe (in the US income per head was \$521), whereas Bulgaria was the poorest reported country.

In contrast to table IV.1, the data are more graduated. There is a clearly defined center (Germany, Sweden, Britain, and Switzerland). How-

ever, there are also intermediate countries such as Austria and Czechoslovakia, and France, Belgium, Ireland, and Norway perhaps belong to yet another group.

The data in column 2 are taken from Clark (1957), who tried to calculate income per head adjusted for purchasing power parities. Clearly, the measurements in column 1 do not take account of cost of living differences between the countries covered and the exchange rate in 1938 may have been artificially high or low. Therefore, the choice of 1938 as a basis for comparison (or indeed any other year) may distort the comparison we seek to make. Clark anticipated later efforts at international economic comparison by defining an international unit of account, "International Units" (IU), and by calculating purchasing power adjusted exchange rates between the various currencies and the IU. For example, in 1929 a US dollar was worth 0.924 IUs and 1 pound sterling was worth 5.27 IUs. This implies that the adjusted rate of exchange between the pound and the dollar was £1 = \$5.7035, in contrast to the official exchange rate of 4.86. By 1938 the pound was worth 5.4 IUs.

Therefore, the data in column 2 of table IV.2 are intended to provide a more accurate picture of relative income per head in the various countries. Not surprisingly, the correlation between the data in columns 1 and 2 is high if not perfect ($r=0.926$). In the case of Austria \$179 turns out to be an overestimate of the relative standard of living; in Greece \$80 turns out to be an underestimate.

Clark's data continue to suggest that the UK remains the richest of the countries featured in column 1; however, the gap over Sweden is now larger. On the other hand, Bulgaria ceases to be the poorest, its place being taken by Hungary.

The East European countries' income per head are fairly homogeneous and fall in the range of 159-209 IUs. Other countries that originally belong to this group are Greece, Italy, and Austria. Portugal is a backward outlier. The remaining countries starting from Belgium belong to the "first division," with Spain falling between the two broad classifications.

The final two columns of table IV.2 report the economic growth rates for most of the countries. The data are taken from Maddison (1976); however, as indicated, certain data were taken from Mitchell (1975). It should be pointed out that there are minor differences between Maddison's and Mitchell's data for common countries, but these most probably reflect base year differences and related technical problems. The interwar period has been subdivided because the international recession distorts the underlying picture in

the 1930s. Some countries (Belgium, Germany, Greece, Norway, Sweden, and USSR) managed to buck the trend; other countries (Austria, Czechoslovakia, France, and Spain) suffered badly.

During the 1920s the reported East European countries all grew rapidly and topped the league table of economic growth. Note that the data for Bulgaria refer to 1924-1929. This suggests that although income per head in these countries was relatively low, economic growth was relatively high and they constituted what was arguably a European development zone.

4. Sectoral Allocation of Resources

Scholars of economic development⁴ have attached importance to the sectoral allocation of resources as an indicator of economic progress. On the whole, developed countries have small primary sectors and large secondary sectors; the opposite tends to apply in underdeveloped countries. The most developed countries tend to have expanding tertiary sectors.

Table IV.3 presents the available data on the sectoral allocation of resources in various European countries. The table distinguishes the sectoral allocations of output and employment. In the latter case the data refer to different years, as indicated. In the former case all the data refer to 1938 except for Bulgaria, where the reference year is 1939.

Among the East European countries, only Czechoslovakia had less than 30% of its labor force in agriculture; all the other East European countries had more than 48.1% (Hungary). Some (Bulgaria and Yugoslavia) had about 70% of their labor force in agriculture. These proportions are broadly reflected (inversely) in the industrial shares of employment.

These data suggest that with the possible exception of Czechoslovakia all the East European countries formed part of the periphery, which included Greece, Italy, Portugal, and Ireland. The countries in the center included Britain, Germany, and Belgium. However, the fact that Sweden and France had relatively large agricultural sectors serves to remind us that this is an imperfect indicator of economic development.

The picture for GDP is less complete. On the whole, the proportion of agricultural output reflects the proportion of the labor force in agriculture. However, the correlation is far from perfect. For example, in Sweden only 12% of product was agricultural yet 27% of the labor force worked in agriculture. Generally speaking, the proportion of agricultural output is less

than the proportion of agricultural employment, indicating that labor productivity in agriculture tends to be relatively low.

This generalization applies to Hungary, so that the difference between Hungary and Czechoslovakia is less pronounced (31-24 instead of 48.1-27.3). Nevertheless, Czechoslovakia was arguably closer to the center than to the periphery.

5. Industrial Perspective

Figs. IV.2-IV.7 present a series of data charts that serve to indicate the relative industrial position of the countries of Europe on the eve of World War II. All of these charts are taken directly from Svernilson's (1954) comprehensive work on the interwar period. In what follows, the numbers in parentheses reference the page number in Svernilson's book.

We begin, in Fig. IV.2 (204), by comparing industrial output per head with total commodity output per head. Not surprisingly, there is a strong positive correlation between the two series. It is noteworthy that there appears to be a kink in the relationship when commodity output per head exceeded \$120. More important for our present figures is the ranking of the East European countries: Poland, Hungary, Bulgaria, and Romania occupied the bottom four places; only Czechoslovakia (close to Austria, Finland, and Ireland) is clear of this category.

This ranking is endorsed by Fig IV.3 (212), which relates investment per capita and manufacturing output per capita. The graph shows, not surprisingly, that there was a positive if imperfect relationship between the two variables. However, for a group of countries (France, Norway, Netherlands, Denmark, Germany, Sweden, and UK) the relationships are quite weak. The graph clearly indicates that Romania, Poland, and Hungary were low investors and did not produce much manufacturing output per capita. However, Czechoslovakia was grouped with Austria and Italy.

Some direct data on productivity (as opposed to output per head) are shown in the final column of table IV.2. Productivity is measured as output per man-hour in "International Units" of account. These data have some surprising features. In Poland, productivity was only slightly lower than in Britain. Ireland was ranked third in terms of productivity. Although these data create perhaps more problems than they solve, the reported East European countries (Poland excepted) experienced low productivity. Moreover, Italian and East European productivity were fairly similar.

Fig. IV.4 (211) ranks countries by consumption per capita of steel and cement during the 1920s and 1930s. East European countries occupy five out of the eight bottom places. Greece, Spain, and Portugal feature in the bottom group; Czechoslovakia is grouped with Italy, Ireland, and Austria.

Fig. IV.5 (215) ranks the various countries by electricity production over time. In 1939 East European countries occupied five out of the nine bottom places together with Greece, Ireland, Spain, and Portugal. Czechoslovakia is once more clear of the bottom group together with Italy, Denmark, Finland, Netherlands, and France. However, in the bottom group there was a large difference between Bulgaria and Poland.

Other indicators of the relative position of the East European countries are presented in Figs. IV.6 and IV.7 (146). In terms of vehicle penetration in 1938 the lowest four places are occupied by Romania, Poland, Yugoslavia, and Hungary. In contrast, the relative position of Czechoslovakia improved rapidly during 1922-1938 such that by the eve of World War II, Czechoslovakia had advanced from the bottom to the intermediate division. In the case of cars and communal vehicles it was broadly similar to Portugal, Italy, and Sweden (although it should be borne in mind that the vertical axis is a log scale).

Finally, table IV.4 reports Clark's estimates of capital per worker in manufacturing. Because of the lack of representation of European countries, the table includes non-European countries. The estimate for India is surprisingly high. Hungary and Romania occupy the two lowest places; in view of previous observations this comes as no surprise. Unfortunately, no data are available for Czechoslovakia to check whether that country is not grouped with Hungary and Romania.

6. Agricultural Perspective

Students of economic development such as Rostow (1960), Gerschenkron (1962), and Lewis (1962) all attach importance to a strong agricultural sector as a vital ingredient, even precondition of economic growth. This section attempts to survey the relative position of East European countries in terms of agricultural productivity on the eve of World War II. Various indicators are presented in table IV.5.

The table suggests that with the definite exception of Czechoslovakia and the possible exception of Hungary, the East European countries had relatively backward agricultural sectors. Indeed, they formed a group to-

gether with Greece, Portugal, and possibly Spain. Hungarian agriculture was relatively modernized (829 hectares per tractor), yet arable yields were low. On the other hand, dairy yields were higher.

In contrast, in all the advanced countries of Europe arable and dairy yields were generally high and agricultural production was highly modernized. However, the correlation between wheat yields and hectares per tractor is only -0.54, which, nevertheless, is statistically significant. The correlation between potato yields and hectares per tractor, however, is only -0.12, which is not statistically significant.

7. Overview

The foregoing statistical survey suggests that the East European countries formed part of the mainstream of European economic development until communism disrupted this process. Our socioeconomic indicators, on the whole, suggest that for the most part the East European countries were among the most backward in Europe; however, they were not alone in this respect. It is arguable that they formed a group that may be regarded as the periphery of European economic development. The peripheral countries included the Iberian peninsula and Greece. The most backward peripheral countries included Romania, Bulgaria, Greece, Yugoslavia, and Portugal; Poland, Hungary and Spain were arguably more advanced members of this group.

Czechoslovakia was the only East European country that clearly did not belong to the periphery. Indeed, it belonged to a group that formed what might be thought of as a central division. This included Italy and possibly Austria and Ireland. The top division included Germany, Britain, France, Sweden, and Belgium.

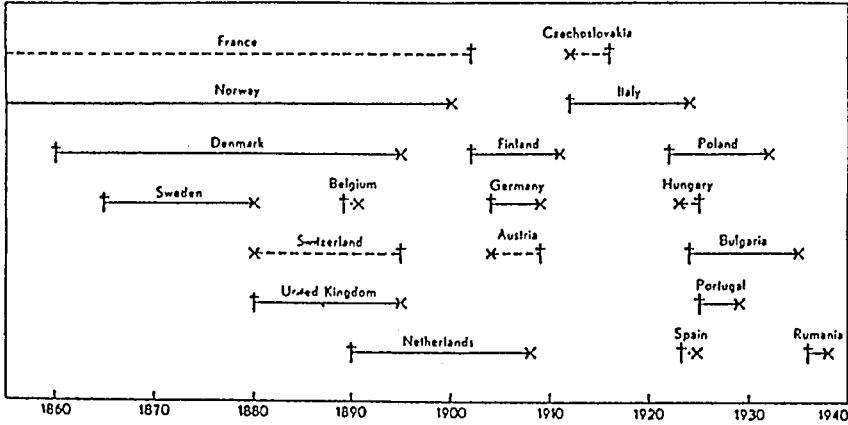
Data on the Baltic states are scarce; where possible they have been included. The demographic data suggest that Estonia and Latvia belonged to the first division. However, other data, e.g., tables IV.3 and IV.5, do not suggest this. Therefore, the Baltic states remain something of an enigma. Nevertheless, table IV.6 reports some data that examine the relative position between the Baltic states and the rest of the USSR several decades after they were overrun. Industrial productivity was higher than in the rest of the USSR, both in terms of labor productivity and capital productivity (except in the case of Estonia). Moreover, this was achieved despite the fact that in Latvia and Lithuania capital per employee was lower than in the rest of the

USSR. On the other hand, the final row in table IV.6 suggests that the Soviet authorities were attempting to channel investment toward the Baltic states, perhaps because the return on capital was apparently higher there.

Although the Baltic countries were more prosperous than the rest of the USSR in the 1970s, we cannot infer from this that they were advanced relative to the rest of Europe in the 1930s. Most probably, however, a detailed investigation of these countries in the 1930s would reveal that these states did not belong to the periphery.

fig iv.1

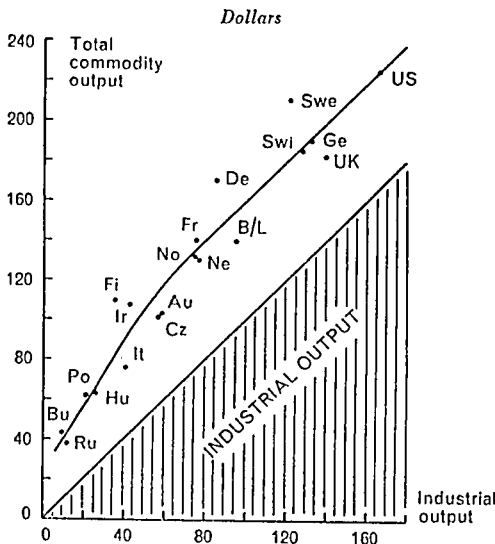
TIMING OF VITAL REVOLUTION
IN EUROPEAN COUNTRIES



- † Death rate falls below 20 per thousand
- × Birth rate falls below 30 per thousand
- Fall of death rate prior to fall of birth rate
- - - - Fall of birth rate prior to fall of death rate

fig iv.2

OUTPUT PER CAPITA OF INDUSTRIAL GOODS AND
OF ALL COMMODITIES IN EUROPEAN COUNTRIES
AND THE UNITED STATES IN 1938



NOTE.—Data for Austria, Czechoslovakia and the United States refer to 1937 but are expressed in 1938 prices. For list of country names, see Appendix B, page 317.

fig iv.3

COMPARISON OF INVESTMENT IN 1922-29 AND 1930-38 WITH MANUFACTURING OUTPUT IN 1936-38 IN SOME EUROPEAN COUNTRIES AND THE UNITED STATES

Per capita figures

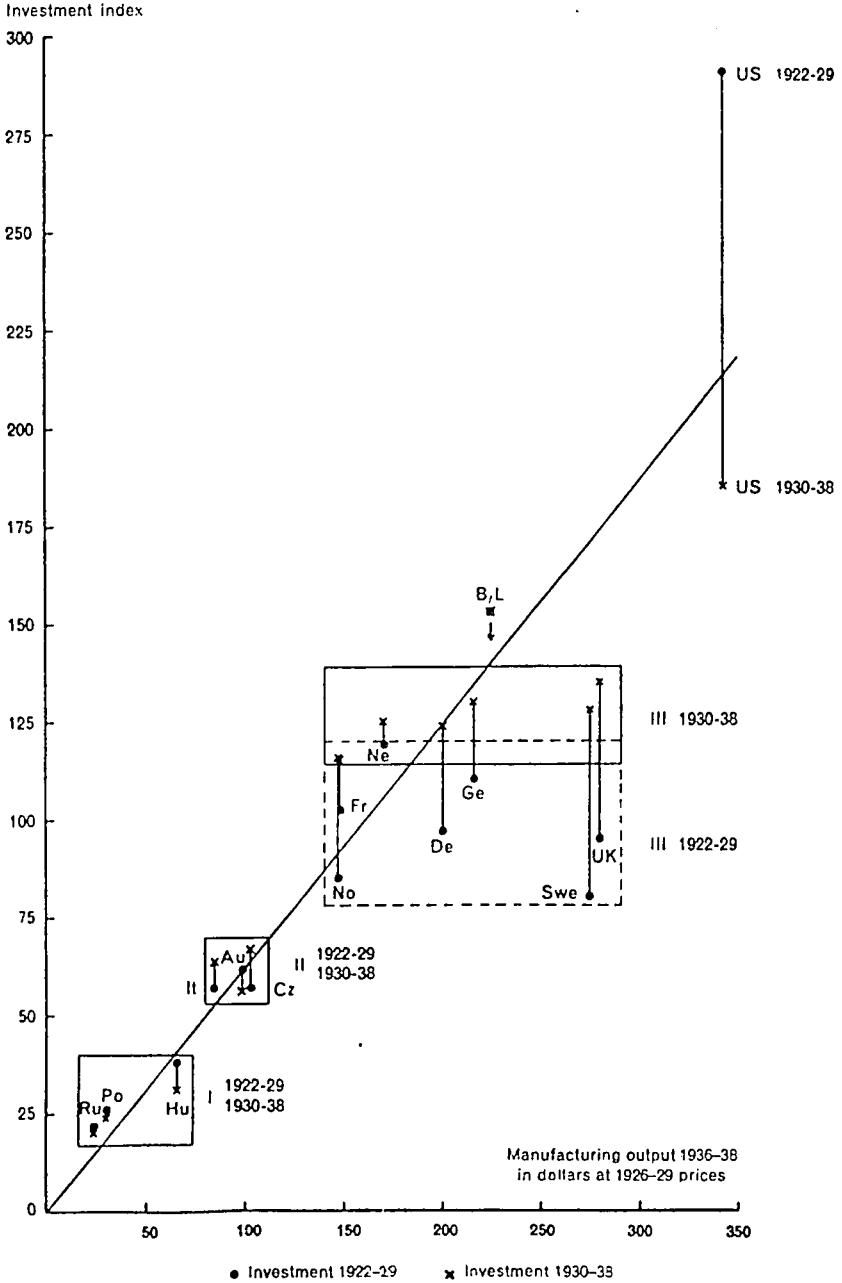
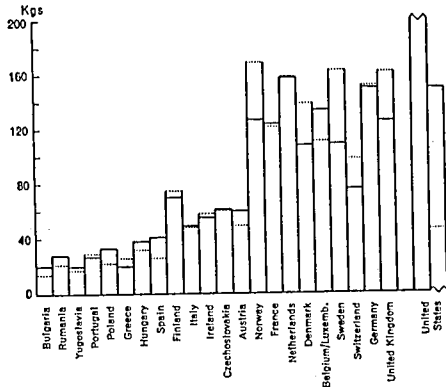


fig iv.4

STEEL AND CEMENT CONSUMPTION PER CAPITA IN EUROPEAN COUNTRIES AND THE UNITED STATES, 1922-29 AND 1930-38

Steel (corrected for indirect trade)



Cement

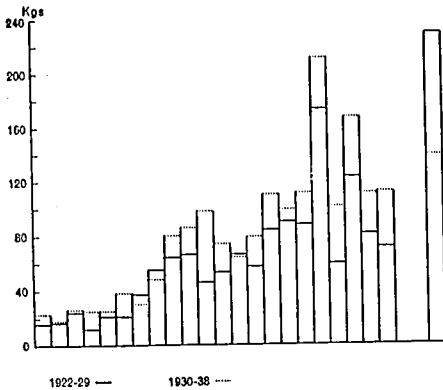
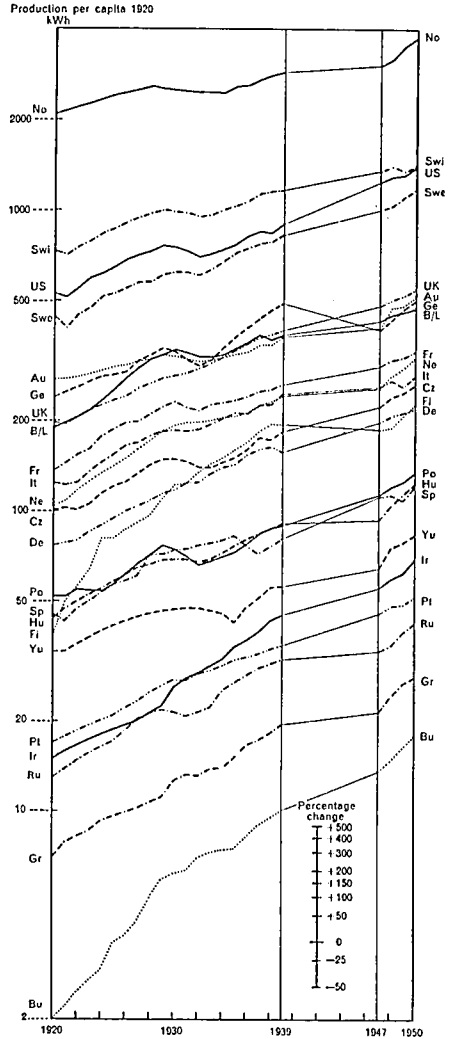


fig iv.5

ELECTRICITY PRODUCTION IN EUROPEAN COUNTRIES AND THE UNITED STATES, 1920 TO 1950

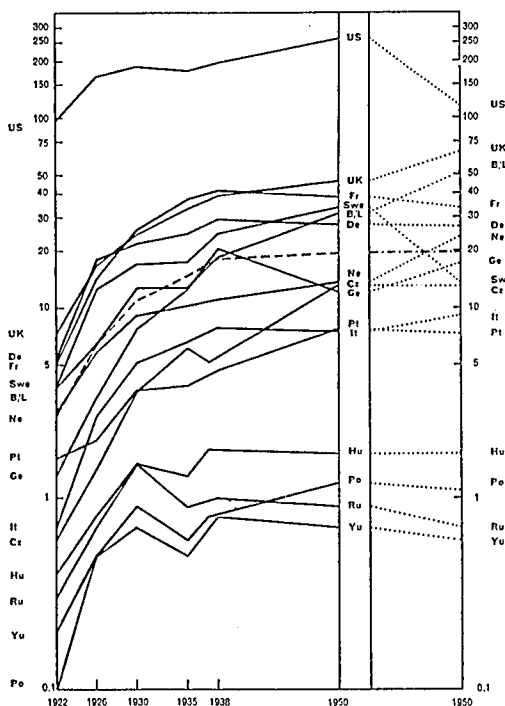
The curves represent changes in total production. They are arranged according to per capita production in each country in 1920.



NOTE.—For list of country names, see Appendix II, page 317.

fig iv.6

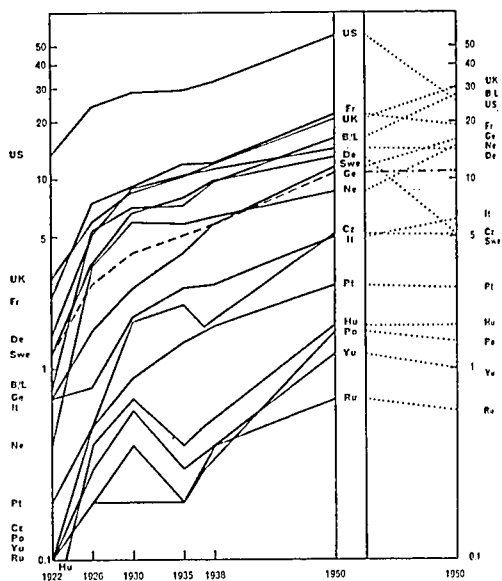
PASSENGER CARS PER THOUSAND INHABITANTS IN EUROPEAN COUNTRIES AND THE UNITED STATES, 1922 TO 1950, AND MOTORIZATION INDICATOR 1950



NOTE.—The broken line represents the average of European countries listed. For list of country names see Appendix B, page 317. For explanation of term 'Motorization indicator' see Appendix B, page 313.

fig iv.7

COMMERCIAL VEHICLES PER THOUSAND INHABITANTS IN EUROPEAN COUNTRIES AND THE UNITED STATES, 1922 TO 1950, AND MOTORIZATION INDICATOR 1950



NOTE.—The broken line represents the average of European countries listed. For list of country names see Appendix B, page 317. For explanation of term 'motorization indicator' see Appendix B, page 313.

TABLE IV.1
Demographic Data

| | Infant ^a Mortality (per 1000) 1938 | Life ^b Expectancy (years) Males 1930s | Crude ^c Death Rate (per 1,000) 1938 | Crude ^d Birth Rate (per 1,000) 1938 | Rate of ^d Illiteracy (percent) (year) |
|----------------|--|---|---|---|---|
| Austria | 83 | 54.47 | 14.0 | 13.9 | |
| Belgium | 72 | 56.02 | 12.5 | 15.5 | 5.9 (1930) |
| Bulgaria | 144 | 45.92 | 13.7 | 22.8 | 35.1 (1934) |
| Spain | 119 | | 19.2 | 20.0 | 23.6 (1940) |
| Estonia | 77 | 53.12 | | | |
| France | 66 | 54.30 | 15.4 | 14.6 | 3.8 (1936) |
| Greece | 122 | 49.09 | 13.2 | 25.9 | 43.9 (1928) |
| Hungary | 131 | 48.27 | 14.3 | 19.9 | 6.5 (1941) |
| Italy | 106 | 53.76 | 13.7 | 23.8 | 23.1 (1931) |
| Lithuania | 113 | | | | |
| Poland | 140 | 48.2 | 13.7 | 24.3 | 25.3 (1931) |
| Germany | 60 | 59.86 | 12.3 | 20.4 | |
| Portugal | 139 | | 15.4 | 26.6 | 50.5 (1940) |
| Romania | 183 | | 19.22 | 29.6 | 45.5 (1930) |
| UK | 55 | 60.18 | 11.6 | 15.1 | |
| Sweden | 41 | 63.22 | 11.5 | 14.9 | 0.1 (1930) |
| Czechoslovakia | 121 | 51.92 | 13.3 | 18.6 | 4.1 (1930) |
| Yugoslavia | 144 | | 15.6 | 26.7 | 45.6 (1931) |
| Latvia | 68 | 55.39 | | | |
| USSR | | 41.93 | 17.5 | 37.5 | |

a. *Statistical Yearbook, 1939-40*, table 7, League of Nations.

b. *Ibid.*, table 13.

c. B.R. Mitchell, *European Historical Statistics 1750-1970*, Columbia University Press, New York, 1975, table 86.

d. *Demographic Yearbook, 1960*, table 11, UN.

TABLE IV.2
Income per Head and GDP Growth

| | Income per head 1938 \$ ^a 1960\$ ^b | | Real ^c Income per head 1937-9 | Output 1920-9 | Growth 1929-38 | Manufacturing ^f Productivity IU, 1935-8 |
|----------------|---|------|---|------------------|-------------------|--|
| Austria | 179 | 640 | 220 | 5.2 | -0.5 | |
| Belgium | 275 | 1015 | 352 | 3.5 ^d | 0 | .406 |
| Bulgaria | 68 | 420 | 194 | 3.6 ^d | 4.7 ^e | |
| Czechoslovakia | 176 | 548 | 209 | 6.0 | -0.2 | |
| France | 236 | 936 | 366 | 4.9 | -0.5 | .305 |
| Germany | 337 | 1126 | 485 | 4.5 | 3.9 | .413 |
| Greece | 80 | 590 | 200 | | 2.8 ^e | |
| Hungary | 112 | 451 | 159 | 5.2 | 1.1 | .256 |
| Italy | 127 | 551 | 177 | 3.0 | 1.4 | .209 |
| Norway | 255 | 1248 | 387 | 2.7 | 2.9 | .509 |
| Poland | 104 | 372 | 167 | | | .317 |
| Portugal | | 351 | 127 | | | |
| Spain | 115 ^d | 337 | 278 | 1.6 | -3.0 | |
| Sweden | 367 | 1097 | 446 | 2.6 | 2.6 | .675 |
| UK | 378 | 1181 | 624 | 1.9 | 1.9 | .344 |
| USSR | | 458 | 207 | 9.4 | 6.1 | .207 |
| Ireland | 252 | 649 | 356 | | | .482 |
| Switzerland | 367 | 1204 | 453 | 3.7 | 0.6 | |
| Yugoslavia | 80 | 339 | | 4.5 | 1.3 | .173 |
| Estonia | 46 | 501 | | | | |
| Romania | 81 | 343 | | | | .233 |

a. *Economic Survey of Europe 1948*, UN, table E.

b. P. Bairoch, "Europe's Gross National Product: 1800-1975," *Journal of European Economic History*, vol. 5, no. 2, 1976, p. 297. 1960 dollars.

c. C. Clark, *The Conditions of Economic Progress*, 3rd Edition, Macmillan, London, 1957. Tables VIII-XL, chap. 3, table XXIII, chap. 4, measured in "International Units."

d. A. Maddison, "Economic Policy and Performance in Europe 1913-70," in C. M. Cipolla (ed.), *The Fontana Economic History of Europe*, Vol. 5, part 2, Collins, Fontana Books, Great Britain, 1976. Table 3.

e. Mitchell, *ibid.*, table K1.

f. Clark, *ibid.*, p. 336, per man hour.

TABLE IV.3
Sectoral Allocation of Resources (%)

| | GDP ^b | | Labor Force ^c | |
|----------------|---------------------|------------------|--------------------------|--------------------------|
| | Agriculture 1938 | Industry 1938 | Agriculture | (year) Industry |
| Austria | | | 23.5 | (1934) 37.8 |
| Belgium | | | 13.6 | (1930) 43.0 ^d |
| Bulgaria | 42 | 17 ^a | 69.1 | (1934) 13.6 ^d |
| Czechoslovakia | 24 | 32 | 27.3 | (1930) 41.4 ^d |
| Estonia | | | 51.7 | (1934) 23.6 ^d |
| France | 22 | 36 ^a | 24.7 | (1936) 34.1 |
| Germany | 15 | 52 | 14.0 | (1939) 44.8 |
| Greece | 40 | 21 ^a | 51.8 | (1928) 22.0 |
| Hungary | 31 | 32 ^a | 48.1 | (1930) 27.4 |
| Ireland | | | 49.6 | (1936) 16.2 ^d |
| Italy | 30 | 29 | 40.3 | (1936) 31.7 |
| Latvia | | | 50.5 | (1935) 27.7 ^d |
| Lithuania | | | 62.4 | (1923) 11.1 |
| Norway | 14 | 28 | 34.0 | (1930) 27.0 |
| Poland | | | 51.3 | (1931) 22.3 |
| Portugal | | | 47.5 | (1940) 23.9 |
| Romania | | | 68.5 | (1930) 12.8 ^d |
| USSR | 28 | | | |
| Spain | | | 50.6 | (1940) 23.6 |
| Sweden | 12 | 35 | 27.1 | (1940) 35.9 |
| UK | 4 | 32 | 6.7 | (1921) 42.8 |
| Yugoslavia | | | 70.8 | (1931) 13.8 |

a. Industry construction.

b. Mitchell, *ibid.*, table K2.

c. Clark, *ibid.*, chap. IX, table III.

d. Includes construction and mining.

TABLE IV.4
Capital per Occupied Person in Manufacturing, £

| | Year | £ |
|-----------|--------|------|
| Austria | 1936-7 | 330 |
| Canada | 1936 | 1107 |
| Denmark | 1928 | 703 |
| Germany | 1936 | 513 |
| Hungary | 1937 | 193 |
| India | 1938-9 | 507 |
| Palestine | 1936 | 293 |
| Romania | 1937 | 248 |
| USA | 1939 | 1250 |
| Venezuela | 1936 | 330 |

Source: Clark, *ibid.*, pp. 582-3.

TABLE IV.5
Agricultural Productivity 1934-8
(Yields in Quintals per Hectare)

| | Wheat | Sugar | Potatoes | Milk ^a per cow | Hectares ^b per tractor |
|----------------|-------|-------|----------|------------------------------|--------------------------------------|
| Austria | 16.7 | 43.4 | 137 | 21 | 900 |
| Belgium | 27.3 | 47.5 | 201 | 31.8 | 714 |
| Bulgaria | 12.5 | 25.6 | 61 | 7.5 | 1433 |
| Czechoslovakia | 17.1 | 38.8 | 135 | 18.0 | 920 |
| France | 15.6 | 30.5 | 113 | 17.8 | 700 |
| Germany | 23.1 | 42.5 | 170 | 24.8 | 227 |
| Greece | 9.0 | | 69 | 7.5 | 2200 |
| Hungary | 14.0 | 26.9 | 73 | 18.0 | 829 |
| Ireland | 22.9 | 38.5 | 192 | 20.3 | 375 |
| Italy | 14.4 | 30.1 | 66 | 19.0 | 395 |
| Norway | 20.1 | | 175 | 16.7 | 267 |
| Poland | 14.6 | 42.3 | 138 | 16.0 | 8400 |
| Portugal | 9.5 | | 175 | 11.0 | 5800 |
| Romania | 10.3 | 25.4 | 89 | 13.0 | 4650 |
| Spain | 9.2 | 35.6 | 112 | 10.0 | 1920 |
| Sweden | 24.0 | 57.6 | 140 | 23.8 | 135 |
| UK | 23.1 | 33.8 | 169 | 25.3 | 135 |
| Yugoslavia | 11.4 | 27.9 | 57 | 13.0 | 3435 |
| Estonia | | | | 20.0 | |
| USSR | | | | 10.4 | |

Source: Clark, *ibid.*, pp. 296-9. Quintal=100 kg.

a. Clark, *ibid.*, p. 291, quintals per year.

b. Sventnilson, *ibid.*, p. 250. Arable land, 1939.

TABLE IV.6
The Relative Position of the Baltic States in the USSR

| | USSR | Baltic | Estonia | Latvia | Lithuania |
|--|-------|--------|---------|--------|-----------|
| Industrial output per head, 1975 (USSR=100) ^a | 100 | 120 | 133 | 134 | 111 |
| Productivity of capital in industry, 1972 (rubles per unit) ^b | 1.63 | 1.99 | 1.4 | 2.61 | 1.87 |
| Capital per employee, 1975 (1955 rubles) ^c | 10084 | | 10616 | 7553 | 8209 |
| Per capita investment, 1971-5 (USSR=100) ^d | 100 | 108 | 115 | 111 | 104 |

Source: Dienes (1985).

a. table 8.1.

b. table 8.2.

c. table 8.3.

d. table 8.4.

V. THE GROWTH CONVERGENCE IN EUROPE, 1950-1988

1. Introduction

In section IV it was argued that until the onset of communism Eastern Europe formed part of the mainstream of European economic development. Eastern Europe cannot historically be regarded as part of the developing world, as a region like Africa or Asia that has a separate economic tradition vis-à-vis the community of economically developed nations. Indeed, for the most part the East European countries were on the periphery of European development alongside Spain, Portugal, and Greece. Czechoslovakia, on the other hand, was more developed and could be roughly classified with countries such as Italy.

The theoretical analysis in section III assumed economic convergence in the world economy. This section considers whether such convergence can reasonably be expected in the Eastern-bloc countries assuming that they adopt capitalism instead of communism. To answer this question, in the absence of a prototype of a country liberated from communism, it is pertinent to ask whether other peripheral countries satisfied the convergence hypothesis. If, say, Portugal and Greece converged in the postwar period on the advanced European economies, it may be reasonable to surmise that the same would have happened to the communism-bound East European economies had they been economically free. Thus if, say, Portugal and Poland were broadly similar in 1938, it may be reasonable to suppose that but for communism they would have been broadly similar in 1988. And if this the case, we might reasonably expect Poland to rejoin the mainstream of European economic development in the decades ahead.

In short, we must look to the growth experience of the European periphery over the last 40 years to evaluate the likely development of Eastern Europe over the next 40 years. Portugal, Greece, and Spain must serve as the crystal ball for Poland, Hungary, and Bulgaria. As far as Czechoslovakia is concerned, it may be more sensible to look to Italy as an appropriate precedent or prototype.

2. Convergence Theory

One of the earliest proponents of the convergence theory was Cornwall (1977), who argued that the rate of growth of manufacturing output varied

directly with the ratio of GDP per capita in the US to GDP per capita in the country considered. This ratio reflects the amount of catching up that remains to be done—poorer countries grow faster and thus narrow the gap vis-à-vis their richer counterparts.

If x denotes the logarithm of GDP per capita in a given laggard country and x^* denotes its counterpart in the leading country (e.g., US), the catch-up hypothesis may be written as:

$$\dot{x} = \alpha (x^* - x) + \lambda x^*$$

in which case

$$x_t = Ae^{-\alpha t} + x_t^* - \mu (1-\lambda) / \alpha$$

if, say,

$$x_t^* = x_0^* + \mu t$$

The first equation states that the rate of growth of GDP per capita varies directly with the percentage gap vis-à-vis the US. The last equation hypothesizes a constant rate of growth (μ) of GDP per capita in the US. t denotes time. The middle equation is the solution for the level of GDP per capita where $A = x_0 - x_0^* + \mu (1-\lambda) / \alpha < 0$ is an arbitrary constant that reflects the initial conditions. Income per capita converges on $x_t^* - \mu (1-\lambda) / \alpha$ from below. If $\mu > 0$, the catch-up is never complete unless $\lambda = 1$.

During the 1980s, Baumol (1986) has been the principal supporter of the catch-up theory. His argument is that the countries with the lowest per capita GDP in 1870 grew fastest over the subsequent century. De Long (1988) has shown that Baumol's results reflect sample selection bias, but Baumol and Wolff (1988) have subsequently counterargued that his hypothesis still stands if the observation period is appropriately altered. Perhaps more relevant for our present purposes is his investigation of convergence over the postwar period (1950-1980). Here too he argues that on the whole the poorest countries grew fastest. This conclusion is reached by examining the growth rates of groups of countries that had similar initial conditions in terms of GDP per head. This conclusion is further endorsed by Barro (1991), but only when allowance is made for human capital differences in the countries in the sample. Indeed, the convergence hypothesis is not supported in its simple, bivariate, form.

In Baumol's methodology, each country (or group of countries) is treated as a single observation in a cross-section test of the convergence hypothesis. If indeed the hypothesis is corroborated, specific countries may not necessarily comply with the hypothesis. In contrast to Baumol, the focus here is on individual European countries in order to determine whether from time series observations the convergence hypothesis is valid. The test is much stricter than Baumol's because it requires that the convergence theory not only be satisfied across countries but also over time. If convergence did not occur consistently over time the hypothesis would stand refuted.

In looking at time series rather than cross-sections, my approach has something in common with the efforts of Bernard and Durlauf (1991), who reject the convergence hypothesis. However, their sample consisted of the leading industrialized countries rather than the peripheral countries on which I focus.

3. Convergence in Europe

The present concern is with convergence within Europe rather than convergence at a global level. In what follows, time series observations on specific countries are used to examine the following hypothesis:

$$\Delta x_t = \alpha (x^* - x)_{t-1} + \lambda \Delta x_t + \beta + U_t$$

where u denotes a random disturbance term. If β is statistically significant, it implies that initial conditions affect long-term growth prospects. If $\beta < 0$, x never converges on x^* even when $\lambda = 1$. The leader country within Europe is represented by Sweden, hence x^* denotes the GDP per capita in Sweden.

The data (taken from *International Financial Statistics*) are converted into US dollars at 1980 prices and are plotted on fig. V.1. Sweden has consistently topped the chart; Portugal has consistently occupied bottom place. Indeed, there was virtually no change in the relative positions of the countries covered. The exception is Italy, which overtook Ireland in the late 1950s and has surged more than any other country in our sample.

On the whole, each country succeeded in improving its position relative to Sweden. This may be seen perhaps more easily in fig. V.2, where the data on GNP per capita are expressed as a percentage of Swedish GNP per head. The terminal observation tends to be above its starting point. For example, in 1950 Italian GNP per head was 35% of Sweden's; by 1987 the proportion has reached 65%. In short, all the schedules in fig. V.2 are

positively trended, which is quite consistent with the convergence hypothesis. However, in some cases (e.g., Israel) ground was lost in the 1970s. The same applies to Spain in the 1980s.

If, indeed, the observations appear to lend some support to the convergence hypothesis, they also serve to emphasize that convergence forces are weak. Moreover, they further suggest that complete convergence will never be achieved. Table V.1 reports some econometric estimates of the equation mentioned earlier in this section. Various convergence processes were experimented with, before settling on the "percentage gap model" whose results are reported.

The parameter of central interest, α , is significant and positive in every case considered in table V.1. So in this sense the convergence hypothesis is corroborated. However, the negative β estimates imply that the gap relative to Sweden will persist forever. For example, Ireland will never achieve more than 50% of Sweden's GNP per head, and Portugal will never achieve more than 23% even after convergence forces have fully spent themselves. In none of the countries was λ found to be significant. The two closest cases are reported (Greece and Israel). These results suggest that if, indeed, the Eastern-bloc countries rejoin the European economic tradition as members of the periphery, convergence is unlikely to be rapid. In the early stages growth is likely to be relatively rapid, reflecting the large initial gap between the East and West European countries. However, thereafter it is a long, uphill struggle that never seems to end. The scars of history never fade entirely.

fig v. 1: convergence in the europe periphery
ln (gnp per capita)

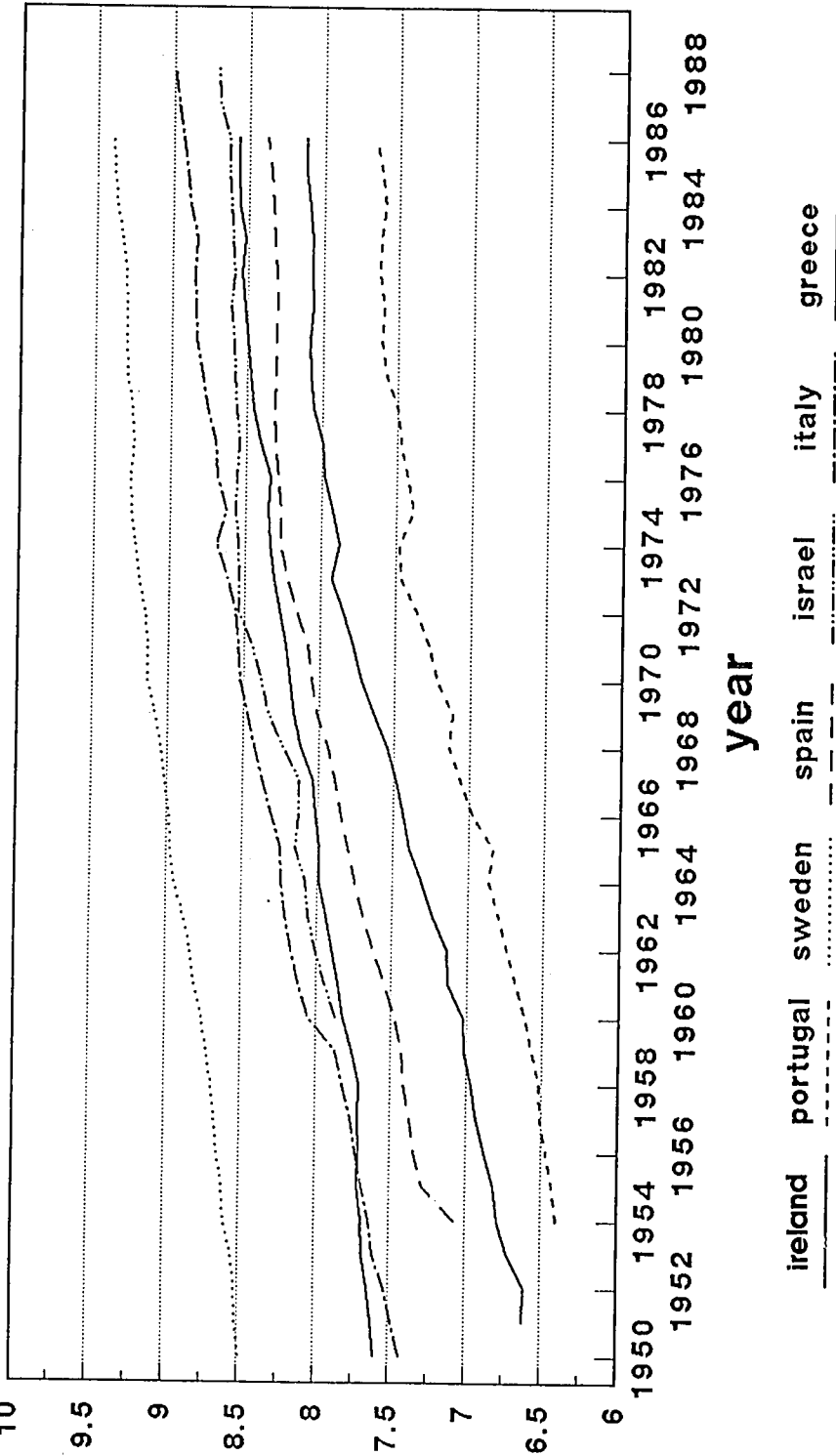


fig v.2: gnp per capita relative to sweden

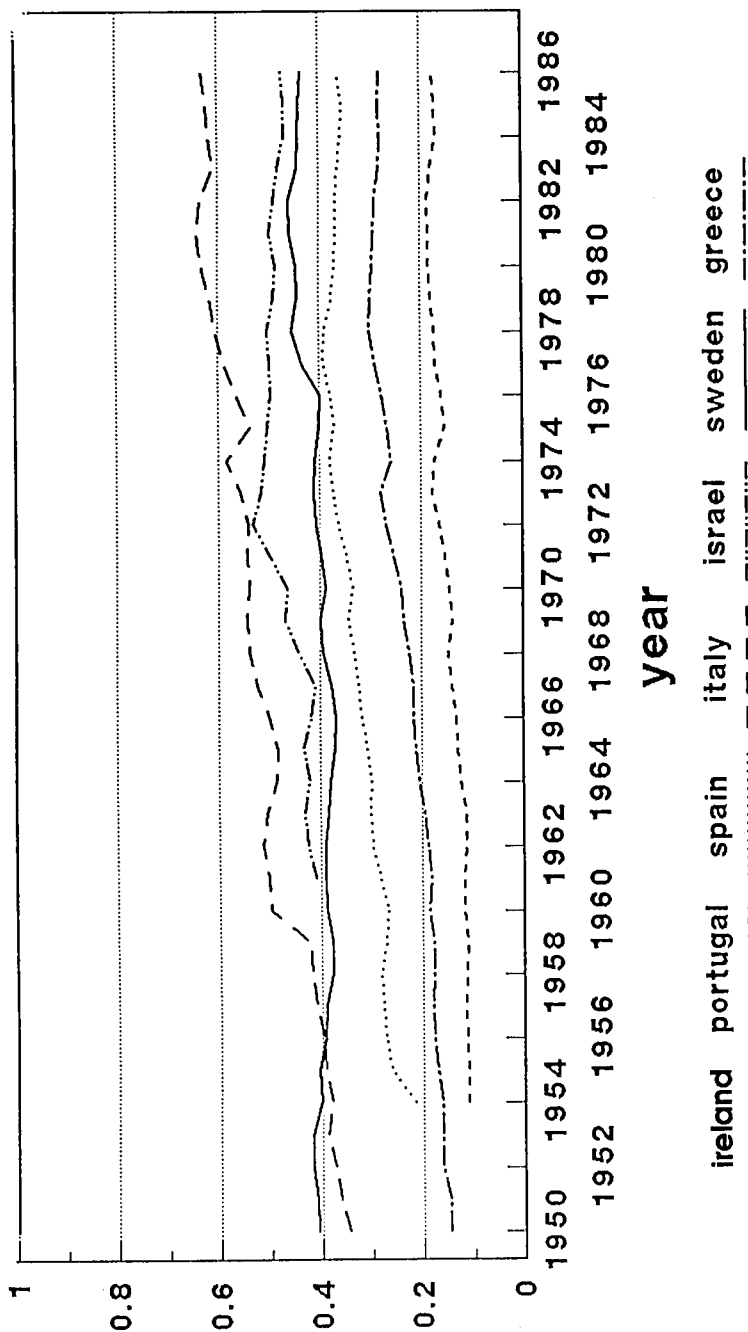


TABLE V.1
Convergence Models for the European Periphery

| | β | α | λ | GAP% ^a | $\overline{R^2}$ | DW |
|---------------------|------------------------------|-----------------|----------------|-------------------|------------------|------|
| Ireland 1950-86 | -0.091 (1.7) ^b | 0.132 (2.21) | | 50 | 0.111 | 1.44 |
| Portugal 1954-86 | -0.119 (1.61) | 0.082 (2.16) | | 23 | 0.106 | 1.74 |
| Greece 1952-87 | -0.053 (1.37) | 0.055 (1.96) | 0.57 (1.64) | | 0.228 | 1.66 |
| | -0.067 (1.74) | 0.074 (2.84) | | 40 | 0.185 | 1.66 |
| Spain 1955-87 | -0.18 (4.3) | 0.2 (5.3) | | 41 | 0.466 | 1.04 |
| Israel 1960-88 | -0.127 (2.1) | 0.192 (2.32) | 0.45 (1.29) | | 0.264 | 1.38 |
| | -0.146 (2.49) | 0.232 (3.01) | | 53 | 0.244 | 1.18 |
| Italy 1960-88 | -0.052 (1.41) | 0.147 (2.37) | | 70 | 0.156 | 2.25 |

a. GAP% = $\exp(\alpha/\beta)$

b. 't' values in parenthesis.

NOTES

1. See, e.g., Cornwall (1977) and Baumol and Wolff (1988).
2. This, for example, is the thesis of Chenery and Syrquin (1975), which has influenced other aspects of the present discussion.
3. The paradigm of center-periphery was first suggested by Lewis (1978).
4. Such as Chenery and Syrquin (1975), and Rostow (1960) and Gerschenkron (1962).

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