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Economic Shocks, Impoverishment and Poverty-Related Mortality during the Eastern European Transition

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This study has been prepared within the UNU/WIDER project on Economic Shocks, Social Stress and the Demographic Impact, which is co-directed by Professor Giovanni Andrea Cornia and Dr Renato Paniccià.

CONTENTS

LIST OF ABBREVIATIONS

CDR	crude death rate
CEE	Central and Eastern Europe
CVD	cardio-vascular disease
ELES	extended linear expenditure system
FBS	food balance sheet
FSU	Former Soviet Union
HBS	household budget survey
HCR	poverty head count ratio
IPD	infectious and parasitic disease
LBW	low birth weight
RLS	Russian Longitudinal Monitoring Study
SDR	standardized death rate
SEE	South-eastern Europe
TBC	tuberculosis

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ACKNOWLEDGEMENTS

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ABSTRACT

This paper aims to assess the impact that the impoverishment process has had on IPD health dynamics and micronutrient-related morbidity via the changes which have occurred in food consumption in terms of average intake, its distribution and the quality of diets.

The paper offers a description of the impoverishment process, the determinants of poverty (mainly income distribution) and the groups most affected (children, the unemployed and single-parent families).

The paper then provides an analysis of the impact of the impoverishment process on the consumption of food and of nutrients like K-calories and protein. The analysis indicates that the process has been characterized by low food-income elasticity on average. Nonetheless, the process has provoked sharp variations in the distribution of food consumption amongst income classes that have increased gaps in intake and worsened the situation of the poorest people in countries which have experienced a profound and severe poverty crisis (mainly the former Soviet Union and Romania). Among these people, the problem of malnutrition is gradually becoming one of undernutrition. For micronutrient intake, the pattern is the same. The (scattered) evidence points to persistent and increasing micronutrient deficiencies among populations in Central and Eastern Europe.

The consequences for health dynamics are quite clear. Although IPD-related mortality accounts for only around 2 per cent of the overall surge in mortality in the region, it is steadily rising in those countries which have been most affected by the impoverishment process, thereby reversing a 20-year-long declining trend. Particularly worrisome is the sudden and sharp climb in morbidity linked to tuberculosis and diphtheria, which were thought to be nearly eradicated. The morbidity related to micronutrient deficiency has also mounted. The effects of micronutrient deficiency in terms of cognitive performance, physical capacity, mental disease, cretinism and premature death are well documented. This must be considered one of the worst aspects of the crisis in nutrition.

The widening polarization in health status shows that the decline in the health stock below a critical minimum among the poorest segment of the population is continuing. Nutrient deficiency leads to a rise in problems in

immuno-competence that is reinforced by the deterioration in hygiene, housing conditions and the general environment. The initial positive condition of the health stock has acted as a damper on the negative effects of impoverishment, but, if the severity of poverty persists, this protective barrier will disappear. There is strong evidence that extreme and expanding poverty in terms both of the HCR and of the poverty gap in some countries (especially the former Soviet Union and South-eastern Europe) may explain a significant portion of the variance in the rising IPD mortality.

Decisive offset variables (like health care services) have not halted the negative trend in the health stock. The possibility of reducing disease exposure among populations has been undermined because of substantial cuts in public health care budgets, while the accessibility of health care services is being affected by a regressive policy in medical service fees. This latter phenomenon has had a particularly noxious impact on personal disease control, which is steadily declining among the poor. As a result, the inherited health assets, even though they have often proved ineffective, are gradually being dismantled.

These facts support the use of the Mosley-Chen/Cornia-Jolly-Stewart model as a good analytical framework for the explanation of the deterioration in health status that is mostly related to the process of impoverishment such as IPD mortality and morbidity. However, in Central and Eastern Europe concurrent mortality/morbidity models are operating that are affecting the different parts of the population as viewed according to socio-economic situation and degree of vulnerability. Thus, if a model based on psychosocial stress is able to explain the mortality due to CVD among middle-aged men, the recession model could provide a good analytical framework for the description of the deterioration in health status among the poor strata of populations mainly caused by the severity of the process of impoverishment and the effect of this process on nutrition.

1. INTRODUCTION

This paper may be considered an attempt to assess the impact of the impoverishment process in Central and Eastern Europe (CEE) via the drastic and significant change in the quantity and quality of food intake and its effect on the health status of the population and particularly on the incidence of the diseases mostly related to this phenomenon, that is, Infectious and Parasitic Diseases (IPD), and of micronutrient related pathologies. In accomplishing this, the so-called 'recession model' proposed by Mosley-Chen (1984) and Cornia-Jolly-Stewart (1988) and more recently respecified by Anand-Chen (1996) will be utilized as an analytical framework.

Following a description of the analytical framework, the analysis focuses on the situation in CEE, starting with an examination of the process of impoverishment. The evolution of food-nutrient-micronutrient intake during the transition is the subject of the third part of the paper. Health status in terms of relevant diseases and pathologies is analysed in the fourth part of the paper with a view to establishing a causal relationship.

2. THE ANALYTICAL FRAMEWORK

What we call the 'recession model' was formulated for the first time by Mosley-Chen (1984, henceforth 'MC'). In an attempt to identify a model explaining child survival in developing countries, MC proposed a combination of the socio-economic approach with an epidemiological analysis. The causality established by MC is the following.

> Socio-economic determinants must operate through more basic proximate determinants that in turn influence the risk of disease and the outcome of the disease process.... Specific diseases and nutrient deficiencies observed in a surviving population may be viewed as biological indicators of the operation of the proximate determinants.... Growth faltering and ultimately mortality in children are the cumulative consequences of multiple disease processes.

The exogenous (explanatory) variables of the model are socio-economic, and they refer mostly to income-based indicators, plus health system variables like disease control and accessibility to health care. But what distinguishes the MC model is the introduction of the concept of proximate determinants of the dependent variable as defined above.

'A novel aspect of this conceptual framework is its definition of a specific disease status in an individual as an indicator of the operation of the proximate determinants (intermediate variables) rather than as a cause of illness and death' (Mosley-Chen, 1984). The intermediate variables defined by MC are: the maternal risk factor, environmental contamination, nutrient deficiencies, injury, and personal illness control. These intermediate variables are a function of the exogenous variables and can affect population 'health dynamics', defined as 'the rate of shift of healthy individuals towards sickness', which is a transitory process that can nonetheless lead to the ultimate consequence, death. The first four proximate causes are onset proximate determinants, since personal illness control acts as the offset instrumental variable for the pace of the deterioration of health dynamics.

Murray-Chen (1992) and Anand-Chen (1996) expanded the MC model by introducing into it the concept of health stock. At aggregate level, health dynamics, the dependent variable in the MC model, could be considered as the flow of a particular stock variable, that is, health. The proximate determinants of the MC model affect the health stock of a population by depreciating/appreciating it. A high level of income means a rich nutritional status and so an appreciation of the health stock. Likewise, an investment in health promotive assets like medical infrastructure or an investment in the improvement of the quality of medical personnel could constitute an increase in the health stock. Morbidity and, above all, mortality are in turn a function of the health stock. The hazard rates linked with these two phenomena are of course different and are a function of a threshold (critical minimum).

> ...a net reduction of the health stock in response to economic deterioration may lead to increased morbidity, but will not necessarily lead to mortality. Only the depletion of the health stock below a critical minimum will lead to death.

And so 'the likelihood of mortality as a consequence of the economic crisis will depend on (1) the duration and steepness and hence cumulative extent of the decline (2) the level of the initial health stock.'

It is important to note to what extent the new specification of the model implies the introduction of a temporal dimension (lag structure) in the analytical framework.

The MC model was inserted into a more systemic socio-economic analytical framework by Cornia-Jolly-Stewart (1988, henceforth CJS). Their purpose was to build a consistent structural model able to asses the impact of adjustment policies on the welfare of a population, especially children. In doing this, they identified and tested five crucial relationships generated by a change in the underlying causes (socio-economic factors in MC) and affecting the immediate causes (proximate causes) of deaths. The crucial relationships identified and supported by some empirical evidence were the following.

i) Food price, household food availability, nutrient intake, nutritional status, mortality;

ii) Household income, household food availability, nutrient intake, nutritional status, mortality;

iii) Food subsidies, food intake, nutrition;

iv) Availability of health services, personal illness control, morbidity, infant mortality;

v) Unemployment, income, food and prenatal care availability, prenatal mortality.

These 'causal chains' identify more effectively the socio-economic explanatory variables and can be easily inserted into the MC structure. In analysing the situation in CEE, this paper will extract causal relationships numbers 2 and 4 as crucial chains which can explain the way the process of impoverishment may affect health status via nutrition and so provoke the shift in 'health dynamics' caused by IPD/micronutrient morbidity/mortality.

Now, all the elements for the formulation of the model of causation in which the analysis will be conducted have been identified.

To explain the IPD and micronutrient crisis during the transition in CEE, the model at aggregate level can be expressed in nine equations which encompass the flows included in the CJS and MC models, plus the concept of health status described in Anand-Chen.

1) $FOOD[q,\mu;\sigma]_{(t)} = \phi_1(\sigma_{(t)}, Y_{(t)}, P_{(t)})$

2) $NUTR[q,\mu;\sigma]_{(t)} = \phi_2(FOOD[q,\mu;\sigma]_{(t)})$

3) $NUTRDEF[q,\mu;\sigma]_{(t)} = \phi_3(NUTR[q,\mu;\sigma]_{(t)};[\gamma(POPs_{(t)}, EXT_{(t)}])$

4) $MRF_{(t)} = \phi_4(NUTRDEF[\mu;\sigma]_{(t)}, EXT_{(t)}, HASS_{(t)})$

5) $IPD[\mu;\sigma]mrb_{(t)} = \phi_5(HEALTH[\mu;\sigma]_{(1989)}, NUTRDEF[\mu;\sigma]_{(t)}, PDC_{(t)}, PIC_{(t)})$

6) $IPDdr[\mu;\sigma]_{(t)} = \phi_6(IPDmrb_{(t-1)}, ..., IPDmrb_{(t-n)}\ HEALTH[\mu;\sigma]_{(1989)}, PDC_{(t)}, PIC_{(t)})$

7) $MICRO[\mu;\sigma]mrb_{(t)} = \phi_7(MRF_{(t)}, ..., MRF_{(t-n)}, NUTRDEF[\mu;\sigma]_{(t)}, ..., NUTRDEF[\mu;\sigma]_{(t-n)})$

8) $PDC_{(t)} = \phi_8(HASS_{(t)}, Budget_{(t)})$

9) $PIC_{(t)} = \phi_9(Pdrug_{(t)}, Adrug_{(t)}, \sigma_{(t)}, Y_{(t)})$

Key:

Underlying endogenous variables

$FOOD[q,\mu;\sigma]_{(t)}$ = Food consumption by quality, average and distribution

$NUTR[q,\mu;\sigma]_{(t)}$ = Nutrient intake by source, average and distribution

Proximate endogenous variables

$NUTRDEF[q,\mu;\sigma]_{(t)}$ = Nutrient deficiency by quality, average and distribution

$MRF_{(t)}$ = Risk of maternal mortality

Health status and health dynamics variables

$MICRO[\mu;\sigma]_{(t-1)}$ = Micronutrient morbidity
$IPDmrb_{(t)}$ = Risk of IPD morbidity by level and distribution
$IPDdr[\mu;\sigma]_{(t)}$ = Risk of IPD mortality

Offset endogenous variables

$PDC_{(t)}$ = Public disease control and treatment
$PIC_{(t)}$ = Personal illness control

Exogenous variables

$Y_{(t)}$ = Average income
$\sigma_{(t)}$ = Income distribution
$POPs_{(t)}$ = Population age structure
$EXT_{(t)}$) = External factors
$HEALTH_{(1989)}$ = Health stock at the pre-transition levels
$HASS_{(t)}$ = Health assets
$BUD_{(t)}$ = Real financial resources allotted to public health
Pdrug = Relative price of drugs and public health services
Adrug = Drug and public health services availability
P = Relative prices of food

The first equation defines the relationships among food consumption in its three dimensions (q: quality, m: average, s: distribution), income level and distribution (determinants of poverty), and relative price structure.

The second equation describes the way in which the three dimensions of food consumption affect the related three dimensions of nutrient intake. Through a comparison of this variable with a threshold provided by the function γ and explained by population age structure, plus external factors like environment, it is possible to assess the degree of nutrient deficiency, which is also becoming a determinant of the degree of the maternal risk factor.

The risk of morbidity due to IPD is determined by the pre-transition level of the health stock, the level of public disease control and the nutrient deficiency, along with health service effectiveness. In turn, the past duration and intensity of morbidity risk and the level and quality of disease treatment affect the risk of death by IPD. The offset variable provided by the level of public disease control and treatment is a function of the stock

of health assets at a given time (t-1), plus the creation of new assets by means of real public health expenditure. Personal illness control is determined by the level of health access, which in turn is a function of the price and availability of drugs and health services, as well as average income and income distribution.

3. THE IMPOVERISHMENT PROCESS DURING THE TRANSITION

The impoverishment process has been one of the most the most dramatic features of the transition. In any analysis of the application of the model, it is important to study the main characteristics of this phenomenon and assess its causal profile.

3.1 Incidence and depth

The transition process led to a massive increase in the HCR throughout the region. Both UNICEF ICDC (Table 1, Statistical Annex) and World Bank estimates (Milanovic 1996) for all transition countries put the number of persons living below the poverty line at around 20 or 25 per cent of the total population.

The most situation in the FSU is the most dramatic. Since the explosion of the HCR in 1992 (from about 2 to 30), no signs of recovery have been recorded. Indeed, there has been a slight worsening. The poverty figures in Ukraine, Moldova and Belarus also appear to have deteriorated during the period. According to a World Bank survey source, almost 37.4 per cent of the families in Ukraine (around 23 million people) were living below the subsistence minimum in 1995. In Moldova the situation is similar, with around 40 per cent of the population living in poverty by 1994 following the sharp increase in 1992 (UNICEF 1997). The only data available for Azerbaijan show that four million people are living in poverty there. In the Baltic States, the incidence of poverty stabilized after the 1992-3 shock, but at very high levels: 2.5 million people (nearly one third of the population) are now living below the poverty line in the subregion, and two million of these are 'new poor' who have emerged since the beginning of the transition.

In South-eastern Europe, the HCR increase has been only a little less pronounced. In Romania, six million people, of whom two million were children, were impoverished in 1994 after two years of the constant spread of poverty. The incidence of poverty was more than eight percentage points higher among children than it was among the overall population. In Bulgaria 2.5 million people fell into poverty between 1991 and 1994.

In Central Europe the probability of becoming poor was definitely less pronounced than it was in the rest of CEE. Nevertheless, with the exception of the Czech Republic, the risk among all poor persons had not diminished after the first year of transition, and the most vulnerable groups, like children, are still running a higher risk of falling into poverty than are any other population groups. As a result, throughout the region, an increase in the poverty rate affects children more than it does the rest of the population (with the exception of the Czech Republic and Slovenia).

Poverty is also becoming deeper in South-eastern Europe, as measured by the average 'distance' of the poor below the poverty line (see Table 2, Statistical Annex). As a result, households are finding it increasingly difficult to emerge from poverty, thus exposing the population for longer periods to all the risk factors which accompany the condition of extreme poverty. In the same region, the cost of the alleviation of poverty, despite the economic recovery, began to rise after 1992. In Romania, for instance, despite steady GDP growth in 1993 and 1994, the poverty gap as a percentage of GDP rose during those two years (as in Bulgaria) to a level of nearly three times what it had been at the beginning of the transition. In Hungary and Slovakia the gap is still very low. Furthermore, poverty became substantially more severe, reaching high levels in Romania, Bulgaria and Lithuania.

Estimates for other FSU countries, although based on different methodologies (see Annex 2), show that the total poverty deficit as a percentage of GDP reached South-American levels (see Milanovic 1996), from 1.7 per cent in Belarus (though it is likely to increase in the most recent HBS) to 6 per cent in Ukraine.

3.2 Who are the poor?

Among all vulnerable groups, the elderly are at the lowest risk of falling into deep poverty in most countries. In general, pensions have retained or

improved their position compared to other benefits. Only in a few countries, such as the Baltic States, has the situation of pensioners worsened in relative terms. In Central Europe pensions started at a rather high level, and their position improved until 1993. In the FSU and South-eastern European countries, the improvement has either been much less, from about 35 per cent to 45 per cent of the average wage, or pensions have maintained their real 1989 value. In these countries, pensioners risk deeper poverty whenever there is more than one unemployed/dependant person in the household.

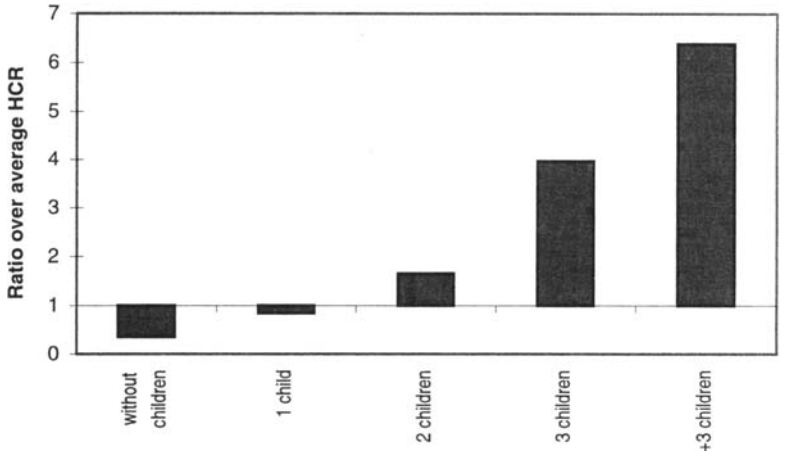
Single parents (especially single mothers) and children with unemployed parents are at the greatest risk of falling into poverty and, if unemployment persists, even deep poverty. In Central and South-eastern Europe, unemployment is therefore generally seen as the principle cause of child poverty. The lose of a job translates into a 75 per cent probability of becoming poor in Romania and a 54 per cent probability in Hungary (UNICEF 1995a).

During the initial stages of unemployment, the poverty of an individual in CEE tends to be shallow, since unemployment benefits, although currently too low to alleviate poverty, are sufficient to maintain beneficiaries near the poverty line. However, the reduction of benefits during the transition has meant a dramatic increase in the risk of poverty (UNICEF 1995a). The risk of falling into deep poverty worsens as unemployment persists. The risk of poverty is quite high among adults who are in the category of long-term unemployed workers. Many of these families hover close to the poverty line, although increasingly they are dropping well below it. The 'working poor' are a phenomenon which particularly characterizes the FSU and to a lesser extent South-eastern Europe, where the fall in real wages, combined with other kinds of 'hidden unemployment', places a great many workers in difficult conditions. In Romania one fourth of all heads-of-household are working poor, while in the FSU the situation of the working poor is aggravated by the large amount of wage arrears in state enterprises (about 25 per cent of the wage bill in 1994).

Families with children have been enormously affected by the transition. Children represent the group with the highest probability of being poor, and each extra child in a family increases the household's probability of falling below the poverty line. There is a clear correlation between the number of children in a household and the probability of living in poverty.

While the cost of bringing up children has increased substantially, income support has declined in both real values and relative terms.

FIGURE 1
RISK OF POVERTY AND NUMBER OF CHILDREN PER HOUSEHOLD IN RUSSIA, 1994



Source: Author's calculations based on Goskomstat (1996).

The incidence of poverty among households increases steadily with each additional child and soars after the second child. This is well summarized in Figure 1, which refers to the extreme poverty profile by family size in Russia.

Income inequality is playing an increasingly important role in the deepening of poverty in the region. The recovery in personal income (net per-capita available income) registered in the majority of countries has been more than counterbalanced by the expansion of income disparity. By updating and extending the analysis performed in the 1995 UNICEF Monitoring Report (UNICEF 1995a), it is possible to estimate the relative importance of income inequality in the determination of poverty.

The contribution of income inequality[1] to the increase in HCR (Table 1) indicates the way in which income distribution has contributed to raising

[1] The elasticities were calculated by simulating different distributions, alternatively keeping constant the average income per capita and per capita income distribution. This was made possible through the use of the parameters of an estimated Dagum functional form in 1989, 1991, 1992 and 1994.

and maintaining poverty levels during the second part of the transition.

TABLE 1
PERCENTAGE CONTRIBUTION OF INCOME INEQUALITY TO THE INCREASE IN THE POVERTY HEAD COUNT RATIO, 1989-94

Country	1989-91	1992-94
Bulgaria	26.3	81.2
Hungary	-25.2	16.7
Poland	-13.3	71.4
Romania	37.5	69.2
Russia	-1.3	58.1

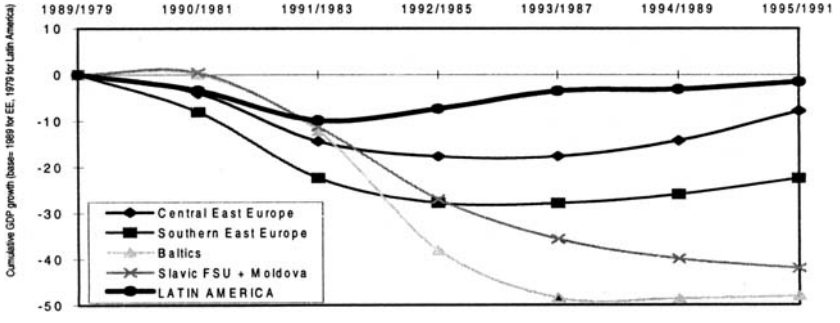
Source: Author's calculations based on the TransMONEE database.

The way in which this causal profile may have affected the consumption of food and nutrient intake will become clear in the following sections.

4. AN UNPRECEDENTED CRISIS

The poverty crisis which has affected Eastern Europe can only be compared, among the middle-income economies, with the lost decade in Latin America. During the 1980s most Latin American countries experienced prolonged drops in GDP and high levels of inflation, especially during the first half of the decade. There is a broad literature offering analysis of that period and its causes and implications in terms of poverty and welfare deterioration. As shown in Figure 2, the crisis started about the beginning of the decade and reached a peak around 1983-85.

FIGURE 2
CUMULATIVE GDP GROWTH IN EASTERN EUROPE (1989-95) AND SELECTED LATIN AMERICAN COUNTRIES (1979-91)



Source: Author's calculations based on World Bank world tables, TransMONEE database.

The crisis did not reach the levels of the CEE recession. Nonetheless, both welfare and the poverty crisis were extremely acute. The recession appeared in countries which already exhibited a very high income inequality,[2] and the economic crisis provoked a further increase in income dispersion. In Brazil at the end of the decade the Gini coefficient was about 62.3, almost 22 points higher than it had been at the beginning of the 1980s. In Argentina the Gini coefficient rose by eight points, while in Chile and Mexico the increase was five points. As in CEE the recession was accompanied by a deterioration in income distribution and therefore an increase in poverty, especially extreme poverty. During the same period in Argentina, the HCR reached a peak of 21.1 (from 3.3 in the early 1980s), just a little bit higher (about 18.0 per cent) than the figure in Chile and Colombia. The only available figures from Brazil tell us that poverty and the related HCR stood at 40.0 in the late 1980s. The increase in poverty was worsened by cuts in social expenditure, especially health expenditure, which in 1990 was between 43 and 70 per cent with respect to the 1980 value.

TABLE 2
ECONOMIC AND DEMOGRAPHIC INDICATORS IN SELECTED COUNTRIES IN LATIN AMERICA AND EASTERN EUROPE

	Latin America			Eastern Europe		
	Argentina	Chile	Costa Rica	Bulgaria	Hungary	Russia
GDP	79.8	96.6	94.2	75.5	84.3	63.5
Per capita real health exp.	43.1	70.1	53.3	75.1	96.0	48.9
Life expectancy at birth	102.6	102.8	104.2	95.0	99.7	91.0
Infant mortality rate	76.3	57.6	80.1	125.1	75.3	108.0

Sources: UNICEF (1994), Dornbusch and Edwards (1991).

Despite this deep recession, health dynamics, on average, did not deteriorate. Life expectancy and other health indicators continued to improve. Surprisingly, the bad situation did not appear to provoke a worsening in overall health status. Except in the case of Costa Rica, the mortality rate continued to decline, as did deaths related to the pathology most linked to poverty, that is, IPD (Tables 3a and 3b).

[2] The following selection of Gini coefficients offer an idea of the magnitude of inequality at the beginning of the 1980s. Argentina (40.81), Brazil (40.50), Chile (53.1), Mexico (50.0), Costa Rica (42.37) and Uruguay (42.4).

TABLE 3A
STANDARDIZED DEATH RATES IN SELECTED LATIN AMERICAN COUNTRIES

	1960-64	1965-69	1970-74	1975-79	1980-84	1985-89
Argentina			976	883.4	804	781
Chile	1361	1270	1149	980	857	770
Costa Rica	892	890	792	680	603	681
Uruguay	896	961	968	889	834	787

TABLE 3B
IPD DEATH RATES IN SELECTED LATIN AMERICAN COUNTRIES

	1960-64	1965-69	1970-74	1975-79	1980-84	1985-89
Argentina	-	-	15.1	8.4	6.3	5.0
Chile	74.0	58.0	38.0	29.0	15.1	9.4
Costa-Rica	16.4	15.1	10.4	8.9	6.6	7.1
Uruguay	19.1	13.1	9.2	6.7	3.5	2.8
Memo items:						
Cuba	-	-	6.5	2.9	1.1	0.6
Singapore	-	74.1	54.8	37.5	17.7	11

Source: WHO (1994).

From the above table it appears that during the decade (apart from the case of Costa Rica) there was an improvement in IPD mortality.

What happened in Latin America seems to suggest that the MC model does not work properly, but several considerations may help clarify the problem.

a) Despite the contraction in public health expenditure, the type of epidemiological pattern (IPD) permitted a reallocation of a relatively modest share of public budgets towards the expansion of low-cost, high-efficiency interventions like child immunization and the supply of potable water. Evidence from Mexico (Cruz, Lozano and Querol 1991) tells us that the public health system responded to budget cuts by increasing productivity, although on the basis of declining quality standards.

b) The role of civil society as a provider of health care was particularly strong. This permitted the weaker public health services to be (partially) replaced.

c) The figures (the averages) do not tell us much about the dramatic rise in health inequality (polarization) that occurred during these years across regions and social strata, increasing the gap in capabilities between the least well-off and the more well-off.

d) There was a slowdown in the improvement in the decrease in both the IMR and IPD mortality. Furthermore, as is well documented in Cruz, Lozano and Querol (1991) for Mexico and Possas for Brazil, there was a jump in the infant mortality due to malnutrition, anaemia and dysentery. Moreover, in both countries the pre-school age group (1 to 5) was the most affected group. This is the same group which is the most exposed to IPD and malnutrition.

e) The result of the crisis was a drastic change in the epidemiological profile of the population due to the exposure of the most vulnerable to a greater risk of IPDs.

A look beyond the averages leads one to suspect that the MC model actually works.

There are several possible explanations for the difference in the behaviour of CEE and Latin America. The first one revolves around the extent of the crisis, which was massive and sudden in Eastern Europe, but definitely more smooth and less pronounced in Latin America. Furthermore, there were no profound structural changes in Latin America, unlike the case in CEE, implying that the process of restructuring not only the economic system, but also all of society, has been much more significant in CEE than in Latin America. Likewise, the epidemiological model behind the health crisis in Eastern Europe is completely different from that in Latin America.

5. THE IMPACT OF IMPOVERISHMENT ON CONSUMPTION: FOOD, MACRONUTRIENTS AND MICRONUTRIENTS

As in the model described at the beginning of this paper, the nutritional and nutrition-related impact of impoverishment in CEE can be analysed in three different dimensions. First, in terms of the average level of nutrition: the decline in income associated with the transition and the related increase in poverty provoked a fall in average food, k-calorie and protein intake. The drop in intake was definitely more moderate than was the fall in

income. This was mainly due to the role played by low elasticities (as Engel's theory states), the greater self-production of food, and the significant qualitative change in daily diets led by the relative-price effect.

Second, the main impact occurred in the distribution of intake. As revealed by the HBS data, the impact of impoverishment was definitely greater in terms of the distribution of food, k-calorie, protein and micronutrient intake, with a drastic reduction in these various sorts of intake among the poorest. Of course, this was true because growing income inequality was the main factor in impoverishment.

Third, the change in both level and distribution and the substitution effect mostly led to a drastic change in the quality of nutrients, the intake of energy (from proteins, carbohydrates and fat), and last but not least the quantity of micronutrients (vitamins and minerals).

A brief analysis of the nutritional situation of CEE during the pre-transition period will help render the situation more clear.

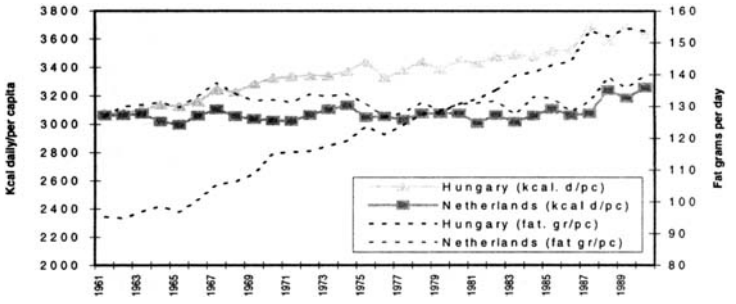
5.1 Initial conditions

Unfortunately, pre-transition nutritional data are based on FBSs which only reflect the food supply available for consumption. They have been adjusted, as described in the methodological remarks (Annex 2), so as to take into account waste and other factors affecting distribution. Nonetheless, these data clearly overstate the level of nutrient intake. However, even by adjusting the FBS data by 10-15 per cent, it seems that the food supply was definitely satisfactory. Furthermore, low inequality, stable income per capita and subsidized prices ensured adequate food consumption even among the poorest part of the population. The pre-transition problem was one of undernutrition, but rather one of highly unbalanced diets.

From the 1970s onwards, diets became considerably imbalanced towards rich protein foods like meat that were also highly energetic in terms of k-calories[3], most of which were derived from fat (Figure 3). In fact, one of the features of the pre-transition diet was the high-cholesterol component, given the preference for animal food, especially fatty meats.

[3] It should be noted that the dietary norms in CEE exceeded by about 20 per cent the levels recommended by WHO.

FIGURE 3
THE INTAKE OF K-CALORIES AND FAT IN HUNGARY AND THE NETHERLANDS, 1961-90



Source: FAOSTAT database 1997.

Evidence from pre-transition *ad hoc* surveys on diet composition by income class in Russia and in Hungary indicates that the main difference between poor and middle-income people was not in the amount of food consumed, but in the structure of food intake. The diet of poor people was lacking in micronutrients derived from milk, fruit and vegetables and richer in terms of energy coming from fat and carbohydrates.

5.2 Food consumption during the transition

In the analysis of the impact of impoverishment on food consumption, a system of demand based on the ELES (Lluch 1973) has been utilized for countries with available HBSs. Given the nature of 'grouped data', the parameters of the system have been estimated by using the concentration analysis as developed by Kakwani (1980). Table 4 summarizes the two different effects (income and price compensated).

As expected, the food-income elasticities bear witness to the relatively high rigidities of food consumption to changes in income. The elasticity of total consumption indicates the extent to which the impact was absolutely relevant in Romania (quite close to unity) and less pronounced in Poland, Slovakia and Hungary. Nevertheless, food consumption showed elasticities which were less pronounced than expected. This may be explained by relying on the usual Engel theory, as well as three other factors, as follows.

TABLE 4
INCOME AND PRICE ELASTICITIES FOR FOOD, 1989-94 AVERAGE

	Income consumption	Income food	Consumption food	Food	Alcohol + tobacco	Clothing	Rent + heating	Health/ education	Other durables
Poland	0.760	0.372	0.489	-0.144	-0.012	0.029	-0.069	0.016	0.050
Romania	0.926	0.586	0.645	-0.222	-0.016	0.037	-0.018	0.010	0.023
Slovakia	0.857	0.470	0.548	-0.104	-0.090	0.015	-0.035	0.001	0.014
Hungary	0.810	0.415	0.499	-0.150	-0.12	0.025	-0.01	0.005	0.03

Source: Author's calculations, based on TransMONEE database.

First, the substitution effect of food and non-basic needs that in turn was boosted by both the less-than-sustained dynamics of food prices and the strong rigidity of demand for foods in terms of food prices. The effect of the rising prices of other basic items (such as heating and rent) in the reduction of food consumption should also be noted, especially for Poland and Romania.

TABLE 5
PERCENTAGE OF SELF-PRODUCED FOOD IN TOTAL FOOD CONSUMPTION

	1989	1990	1991	1992	1993	1994
Czech	-	-	-	2.5	2.8	2.7
Hungary	8.6	-	9.3	-	9.0	8.7
Poland	8.3	8.1	6.6	6.6	6.6	6.0
Romania	17.8	16.5	20.3	25.1	25.8	28.3
Slovakia	5.8	5.7	7.1	6.7	4.6	4.6
Slovenia	7.3	6.6	6.2	7.5	7.8	-

Source: TransMONEE database.

Second, the decisive role played by self-produced food (Table 5) as part of coping strategies for the maintenance of food consumption.[4] Especially in Romania, which was hit particularly hard by the impoverishment process, self-produced food accounted for almost one half the total consumption of food among the first population decile in 1994.[5] The corresponding proportion has been almost stable in Hungary and Slovakia, while it

[4] Proof that self-produced food was one of the instruments for sustaining food consumption is offered by both the income elasticities and the price elasticities derived from the concentration curves: they were both higher than overall income and food price elasticities, which were respectively 0.673 and 0.572.

[5] The table hereafter shows the proportion of self-produced food consumed among the first income decile:

1989	1990	1991	1992	1993	1994
40.5	27.8	37.3	41.8	40.7	48.09

reached dramatic proportions in Georgia. The growing consumption of self-produced food is quite common in the region, even among urban populations with access to small plots of land near cities (Sniutskene 1994, Pop 1994, Bordian 1994, Gantcheva 1995). A 1991 survey in Bulgaria (the year of the first economic shock) showed that 69 per cent of interviewed households were engaged in the self-production of food.

Third, the substitution effect of different kinds of food due to both different income elasticities and different price elasticities. In the majority of countries there was a shift of food expenditure from meat and milk to bread and fats. The only exceptions were Poland (Okhoski 1994) and Hungary (Lakatos 1994), where the price of bread and milk increased much more rapidly due to the delayed removal of subsidies. Unfortunately, the available breakdown does not permit the direction of the substitution to be captured properly, and it is definitely more likely that the infra-food-group substitution was more pronounced. The evidence from scattered nutritional surveys indicates that the shift was towards less rich food products such as pork meat rather than beef or veal. Table 6 shows how the first year of economic shock drastically changed the pattern of meat intake in Bulgaria.

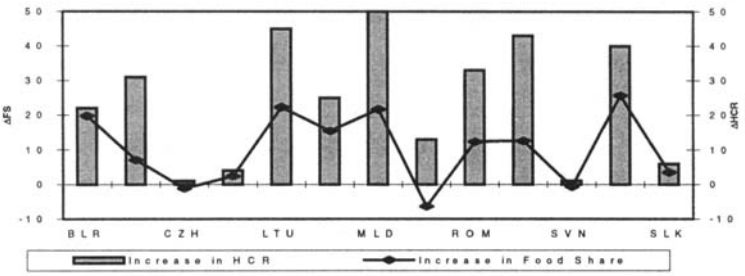
TABLE 6
PROPORTION OF MEAT INTAKE BY ORIGIN IN BULGARIA, 1980 AND 1991

	1980	1991
Pork	32.4	45.7
Beef and veal	25.2	13.0
Poultry	12.1	8.2
Others	29.3	23.1

Source: National Centre of Hygiene, Ecological Medicine and Nutrition, Sofia.

Food share may be considered as another indicator of nutritional stress (Lipton 1983). Quite significantly, the average evolution of this indicator reflects the various degrees of average nutritional stress which was exhibited among the CEE countries in response to the impoverishment process. Moldova, Russia and Lithuania recorded the most impressive increase, which was led by the drop in incomes and the rising inequality. Surprisingly, a similar situation did not take place in Poland, where, as witnessed by the price elasticity between food and heating, there was a significant process of substitution among basic needs (Figure 4).

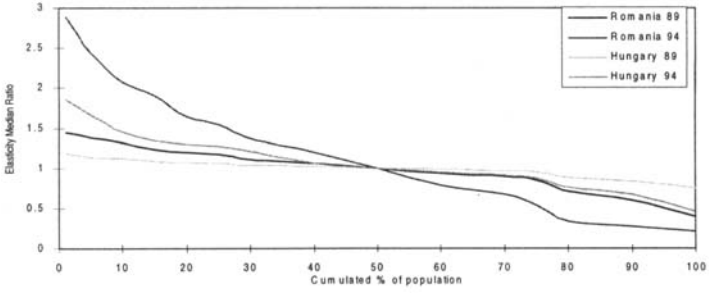
FIGURE 4
HCR AND FOOD SHARE IN SELECTED COUNTRIES, 1989 AND 1994



Source: TransMONEE database.

Another effect of impoverishment was the change in the distribution of food intake among populations. From the HBSs it is quite clear that the impoverishment process provoked a rapid change in the structure of income elasticities for food consumption. The food-income elasticity is a good indicator of the extent to which the consumption of a group of individuals is affected by income variations, and, despite the coping strategies implemented (self-produced food; changes in daily diets), the elasticity gap among different groups within populations increased as the process of impoverishment continued.

FIGURE 5
THE FOOD-ELASTICITY MEDIAN RATIO FOR ROMANIA AND HUNGARY



Source: Author's calculations based on TransMONEE database.

Countries particularly affected by this process (like Romania) showed a huge increase in this differential, while countries in Central Europe (like

Hungary) contained the impoverishment process (especially the poverty gap), and so the differential was definitely less pronounced there. As expected, the distribution of food intake changed significantly for foods with higher elasticities, such as milk and meat (Table 7), and wherever the cutoff in subsidies (especially those for milk) were more pronounced in the region.

TABLE 7
CONCENTRATION RATIOS AND INTERDECILE RATIOS BY TYPE OF FOOD IN SELECTED COUNTRIES, 1989 AND 1993/4

	Romania		Hungary		Slovakia		Poland		Bulgaria	
	1989	1994	1989	1994	1989	1994	1989	1994	1989	1994
Inter-decile ratio										
Bread	1.13	1.29	1 17	1.20	1.23	1.28	1.24	1.34	0.75	0.78
Meat	1.73	2.66	1.77	1.90	1.52	1.95	1.85	2.04	1.56	2.42
Milk	1.58	2.44	1.36	1.61	1.32	1.52	1.45	2.21	0.94	1.77
Oils + fat	1.47	1.69	-	1.59	1.19	1.44	1.37	1.47	0.79	1.28
Sugar	1.35	1.75	-	1.53	1.50	1.83	1.34	1.32	1.29	1.94
Concentration ratio										
Bread	0.03	0.04	0.03	0.04	0.05	0.07	0.09	0.11	0.05	0.07
Meat	0.12	0.16	0.12	0.13	0.11	0.15	0.15	0.16	0.14	0.22
Milk	0.09	0.18	0.08	0.10	0.07	0.10	0.09	0.14	0.08	0.14
Oils + fat	0.08	0.13	0.09	0.09	0.05	0.09	0.12	0.15	0.04	0.07
Sugar	0.07	0.12	0.05	0.09	0.10	0.12	0.11	0.18	0.14	0.16

Source: Author's calculations based on TransMONEE database.

Even in this case, greater impoverishment meant increasing inequality in food distribution. One may take the food share as an indicator of nutritional stress among income groups. It can be readily shown that, in terms of the quantity of physical intake, with few exceptions the food share declined at considerably more rapid pace among the extremely poor segment of populations than it did among the segment with *per capita* income equal to the average. Scattered evidence from HBSs and ad hoc surveys shows that the extent of the decline in food intake among the poor seems to be strictly linked to the severity and depth of poverty, which in turn are related to the deterioration in income inequality.

The sharpest decline in food consumption among the lowest population strata took place in milk, meat and fruit and vegetables. The consumption of two food items, milk and meat (especially fresh meat), dropped dramatically among the poor. The monthly consumption of fresh meat fell

TABLE 8
FOOD CONSUMPTION BY SELECTED DECILES IN RUSSIA (MONTHLY KG.), 1995

	Households in the lowest income decile	Households in the ninth income decile	Ratio ninth/lowest decile
Bread/bread products	7.3	9.5	1.30
Potatoes	8.4	10.4	1.24
Vegetables	4.8	8.6	1.79
Sugar/sugar products	1.6	2.8	1.75
Meat/meat products	2.6	5.7	2.19
Milk/milk products	14.3	25.6	1.79
Eggs (units)	11.1	20.0	1.80

Source: Goskomstat (1996).

significantly, and the Moldovan figures are quite striking, showing that the proportion of households consuming less than 1 kilogramme of fresh meat increased from 9.3 to 24.2. Especially milk suffered because of the elimination of subsidies that in turn affected more poor people. In Bulgaria, the consumption of milk dropped from 11 to 7 litres *per capita* among the first and second decile from 1989 to 1993. The most striking situation occurred in some of FSU countries where the proportion of households consuming less then 3.0 litres of milk per capita per month jumped from 44 per cent to 60 per cent in Moldova from 1989 to 1995, while in Russia over the same years the corresponding rise was from 2.5 per cent to 32 per cent (Kuddo n.d.). For vegetables and fresh fruit, the pattern of consumption was affected by the amount of self-produced food, which is mainly concentrated in the production of these food items. A better comparison among income groups is provided in Table 8, which outlines the high degree of differentiation in food consumption in Russia in 1995. Again, vegetables, fruit, milk and meat are the basic foods showing the greatest polarization.

5.3 Macronutrient intake

The decline in food consumption had less of an impact on the average amount of energy and protein intake. According to the figures in Table 9 the drop in k-calories *per capita* was particularly pronounced in South-eastern Europe (Romania, Bulgaria) and in the FSU, especially in Ukraine and Moldova. Nevertheless, the k-calorie-income elasticities were definitely lower than the food-income elasticities and ranged from 0.11 in Slovakia to 0.359 in Bulgaria. This was an expected range and was also

due to substitution processes involving food intake as a supplier of k-calories. According to the figures derived from the HBSs there was no dramatic decrease in k-calories related to the impoverishment process.

For proteins the data are even more sparse, but still the evidence from the HBSs suggests that the impact was lower than that relative to k-calories except in the case of Russia, where the level of protein intake fell much more than did that of k-calorie intake.

TABLE 9
AVERAGE NUTRIENT INTAKE IN SELECTED COUNTRIES, 1989 AND 1993

	% Decline in k-calories 1989-93	1993 k-calories	% Decline in proteins 1989-93	1993 proteins	Income-k calorie elasticity	Income protein elasticity
Bulgaria	-17.9	2682	-6.1	69	0.35	0.12
Hungary	-3.4	3126	-1.6	98	0.16	0.08
Latvia	-13.5	2375	-	-	0.13	-
Moldova	-13.0	2566	-	-	0.21	-
Poland	-1.1	2667	-2.6	75	0.11	0.13
Romania	-11.7	2759	-3.5	79	0.29	0.10
Russia	-6.8	2552	-7.9	92	0.22	0.23
Ukraine	-20.5	2860	-12.0	-	-	-
Slovakia	-2.8	3143	-	-	0.12	-

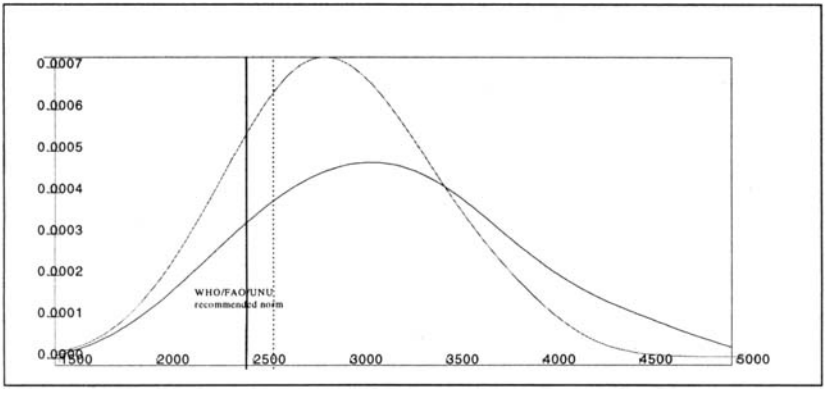
Source: Author's calculations based on TransMONEE database.

Given the pre-transition nutritional pattern described above, the falling level of nutrient intake does not necessarily suggest that, on average, there was an incumbent problem of mass undernutrition, even if various sources point that the current levels of nutrient intake are not adequate according to the national recommended daily allowance. This is the case in Russia, where both in 1992 and 1993 the average energy intake was below the RDA, while the percentage of protein intake over the RDA dropped dramatically from 114 per cent in 1992 to 101 per cent in 1993, but more worrying is the fact that persons below 18 years of age still show a deficit of about 20 per cent over the RDA.

In the analysis of nutrient intake, an important factor is the quality of energy intake. As discussed above, the quality of energy intake during the pre-transition period was completely unbalanced towards fats and carbohydrates, with a low proportion of energy from proteins. The transformation in foods and diets that occurred during the transition

involved an increase in the energy intake from carbohydrates and decreases in that from the other two sources. Nevertheless, as the contribution from fat declined slowly, the contribution from protein fell significantly. The RLMS shows that in Russia in 1992-3 the percentage of energy from proteins fell from 14.5 to 12.5 (-14 per cent), while the share of energy from fats dropped from 36.2 to 34 (-6.6 per cent). The latest available WHO/HFA data (1995) record similar patterns for practically all the FSU, with remarkable drops in Ukraine and Belarus.

FIGURE 6
K-CALORIE DISTRIBUTION IN BULGARIA, 1989 AND 1993



Source: Author's calculations based on TransMONEE database.

Note: adult equivalent population.

The distribution of macronutrients followed the same pattern as that of food intake. Both k-calories and protein distribution exhibited a more skewed distribution, as in Bulgaria from 1989 to 1993 (Figure 6).

The drop in k-calorie and protein intake among the poorest strata of populations affected the region to an extent which was not in line with the depth of impoverishment. In some cases, such as Bulgaria and Romania (Table 10), the quantity of both k-calorie and protein intake in the first decile went well below the average recommended WHO/FAO/UNU (2400-2580) k-calorie intake and the safe level of protein intake (58-63).

TABLE 10
K-CALORIE AND PROTEIN INTAKE IN THE FIRST TWO DECILES OF THE POPULATION IN SELECTED COUNTRIES, 1989 AND 1993

	Proteins			K-calories		
	1989	1993	% Variation	1989	1993	% Variation
Bulgaria						
First decile	60	51	-14.6	2750	2145	-12.7
Second & third deciles	66	59	-10.6	3100	2442	-11.9
Hungary						
First decile	75	64	-9.4	2475	2330	-6.7
Second & third deciles	88	85	-3.1	2507	2404	-4.1
Poland						
First decile	74	66	-11.1	2611	2245	-14.0
Second & third deciles	78	71	-9.0	2695	2528	-6.2
Romania						
First decile	65	56	-14.2	2558	2303	-11.1
Second & third deciles	76	73	-4.7	2596	2420	-7.2

Source: Author's calculations based on TransMONEE database.

5.4 Micronutrients

The importance of micronutrients in the development and functioning of the human body is due mainly to the crucial role played by vitamins and minerals in the construction and action of essential enzymes. Unfortunately, no systematic data are available on the intake of such nutrients in CEE. Only scattered nutritional surveys exist confirming that during the transition period there was a deterioration in micronutrient intake. The extent of the deterioration is recorded in different ways by different surveys, but it is significant and growing, and, most crucial, it is affecting school-age children, women of child-bearing age and pregnant women. It should be noted that the severity of micronutrient deficiency is strictly correlated with the quality of food intake; high-quality meat, vegetables, fresh fruit, milk and fish are the main suppliers of vitamins and minerals, and an impoverishment of the diet leads to an imbalance in the status of micronutrients. In Russia the decrease in energy from proteins was accompanied by rising deficiencies in the intake of all micronutrients. The only available nationwide information on the intake of minerals shows a persistent decline beginning in 1989 that became particularly pronounced in 1992 (Table 11).

TABLE 11
THE INTAKE OF SELECTED MICRONUTRIENTS IN RUSSIA

	1989	1991	1992
Vitamin A	0.6	0.6	0.5
Vitamin B2	1.4	1.3	1.2
Vitamin C	41	39	38
Calcium	769	722	617

Source: WHO (1993a).

An *ad hoc* survey conducted in April-June 1992 in the cities of Bryansk, Tula and Kaluga found that 50 per cent of the population were deficient in vitamin C, and important deficits were also discovered for other vitamins (A, E, B1, B2, B6) (UNICEF 1994). In Bulgaria a survey among children 6 to 10 years old in 1993 found that the intake of just three micronutrients was above the RDA (Table 12).

TABLE 12
MICRONUTRIENT INTAKE AS A PROPORTION OF THE RDA, BULGARIA 1993

	Percentage over the recommended daily allowance
Calcium	75
Iron	101
Zinc	85
Magnesium	110
Vitamin A	138
Vitamin B1	82
Vitamin B2	85
Vitamin PP	60
Vitamin C	140
Vitamin B6	95
Folacin	62

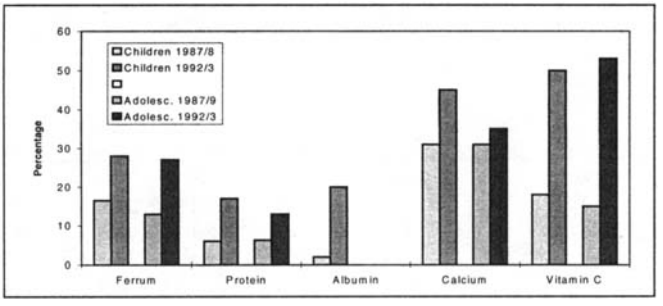
Source: National Centre of Hygiene and Nutrition (1994).

Another *ad hoc* survey conducted in Slovakia (Figure 7) indicates that the prevalence of nutrient deficiencies in children and adolescents steadily increased.

Another worrying aspect is the fact that iodine deficiency is spreading throughout the region. This fact is not strictly related to the process of household impoverishment, but rather to the lack of public resources devoted to improving iodine intake. In Albania, Romania and Bulgaria the

production and distribution of iodized salt practically ended (UNICEF 1994). In Albania just 5 per cent of salt was factory iodized, despite regulations. In the FSU just 30 per cent of salt was iodized in 1992, even though salt iodization programmes had become required. The impact of such shortcomings were a factor in the spread of diseases linked to iodine deficiency (see later).

FIGURE 7
PREVALENCE OF MICRONUTRIENT DEFICIENCY, SLOVAKIA 1987 AND 1993



Source: Slovak Institute of Research on Nutrition.

6. THE CONSEQUENCES ON IPD DYNAMICS IN CEE

The changes in nutrient intake affected health status in two principal ways. First, the resistance of disease hosts is lowered. Even mild and moderate malnourishment can lead both to increasing immuno-deficiencies and thereby a greater exposure to infectious and parasitic diseases (frequency) and to a greater duration and severity of a disease once the host is infected (Martorell-Ho, 1984).

The second way is related to the deficiency in some micronutrients and to a pathology related to the enzymatic process. In this case the main targets are individuals with a high proportion of metabolism dedicated to growth; children, and pregnant and lactating women (Martorell-Ho 1984, Brown 1984, Huffman-Lampere 1984).

The linkage between health dynamics and nutrient intake can be monitored through the use of both morbidity and mortality indicators; like IPD mortality and incidence and pathologies related to micronutrient deficiency.

6.1 IPD cause-specific mortality

Despite the collapse in food consumption and nutrient intake, the relative contribution to overall mortality of infectious and parasitic diseases was extremely low. UNICEF (1995a), Cornia-Paniccià (1996) and Table 13 show that, in all countries, the main contribution to the increase in mortality was CVD and violent causes (around 45 per cent), while IPD contributed just 3 per cent.

TABLE 13
CONTRIBUTION OF CAUSES OF DEATH TO CDR CHANGES, 1989-93

	Absolute change in CDR	Infectious diseases	Cancer	Heart and circ. diseases	Respiratory diseases	Digestive diseases	External causes	Other causes
Belarus	2.5	1.5	6.1	25.4	-5.6	1.2	16.7	56.3
Bulgaria	1.2	4.2	16.7	54.5	-32.3	2.6	7.6	46.8
Hungary	0.9	-1.1	38.8	30.4	2.4	26.3	2.3	0.9
Lithuania	2.2	2.7	10.0	29.2	0.2	2.1	28.2	27.5
Romania	1.0	1.0	15.5	66.8	-34.3	10.7	-3.8	45.1
Russia	3.8	1.0	4.4	45.1	4.0	2.9	35.7	7.0
Slovakia	-0.6	-3.7	-32.3	-25.5	52.7	27.8	10.9	70.1
Ukraine	2.6	1.1	3.2	47.2		15.0	1.0	32.5

Source: Cornia-Paniccià (1996).

In turn, the differentials in mortality can be explained as the effects of increasing psychosocial stress, given the age concentration of deaths (middle-aged men) and the concentration of causes (CVD and violent causes). The contribution of the shift towards more fat-based diets is still not precisely known. This would be a typical medium-term effect and cannot fully explain the sudden and massive increase in mortality experienced in FSU.

In terms of dynamics, the mortality due to IPD sharply increased beginning in 1992 and by 1994 had reached the highest rates of change among all causes of death (UNICEF 1994) in all countries except those in Central Europe, where the SDR had stabilized at the pre-transition level. Three patterns emerged in IPD mortality in Eastern Europe (see Table 3. Statistical Annex). First, in a pattern quiet common in the FSU, after a decade of steady decline IPD mortality reached a turning point around 1990-91, after which it soared at a high rate of growth. A second pattern was noticed in Romania and Moldova, where, after a steady increase

during the 1980s, IPD mortality started to rise at higher rates after 1991. Third was the pattern which was common in CEE (Hungary, Czech Republic, Slovakia and Poland), whereby IPD mortality maintained the pre-transition trend towards much lower rates.

In countries where IPD mortality rose, men were more affected than were women in Russia, Moldova, Romania and the Baltic States.

Middle-aged men recorded the highest rates among age groups. Table 4 in the Statistical Annex shows the age structure of IPD mortality for males in the Czech Republic and Russia, the two countries with the two most extreme patterns. In the first country, IPD death rates increased slightly during the first part of the transition. After 1991 the mortality rates decreased, returning to the 1989 levels in 1993. In the second country, there was a slight rise during the first part of the transition that disappeared during the second part. The contribution of TBC to IPD mortality climbed in 1991, but then stabilized at a lower level by 1993.

In Russia, men between 35 and 49 years of age recorded the highest increase in IPD mortality over the two subperiods, 1989-91 and 1991-93.[6] From the WHO statistics it is quite clear that almost 80-85 per cent of this mortality was due to TBC. Mortality among children rose only during the second subperiod, but then at a significant pace, ending the positive declining trend of the 1980s. More detailed records reveal that this was mainly due to pathologies related to maternal immuno-deficiency, such as intestinal infection and septicaemia, and poor hygienic conditions like meningococcoal infection.[7]

This mortality pattern is common in all FSU countries and to a lesser extent in South-eastern Europe.

6.2 IPD morbidity: incidence and distribution

After 1989/1990 the incidence of some IPDs started to expand after a decade of decline. The incidence of infectious diseases, such as diphtheria and tuberculosis, grew particularly in the FSU and Romania after a decade

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[6] It should be noted that the turning point in IPD mortality in Russia occurred in 1991.

[7] In the FSU the mortality due to intestinal infectious disease accounted for almost 50 per cent of all deaths in 1993, while meningococcoal infection (almost non-existent in Western countries) was responsible for 18 per cent of the deaths due to IPD, with the highest rate of increase occurring between 1991 and 1993. The deaths due to septicaemia represented 30 per cent of the total.

of either steady decline (TBC) or almost null incidence (diphtheria). More worrying, within Russia there were signs of the increasing incidence of diphtheria, which was reaching considerable proportions (6,000 cases in 1992, 18,000 cases in 1993 and 43,000 cases in 1994), while the projections for 1995 indicate almost 60,000 new cases, doubling the number of deaths due to diphtheria between 1993 and 1994 (WHO 1996). Children were particularly affected in Armenia, Azerbaijan and Moldova, while in Russia, Ukraine and Belarus, the middle-aged seemed mainly affected (Martin and Scott, forthcoming).

The incidence of tuberculosis started to rise significantly in 1992 in Romania, Russia, Lithuania and Latvia, and by 1994 it had gone up by 50-60 per cent over the level of 1989. The dynamics of TBC incidence, substantially stable in all countries up to 1991, increasing sharply in the FSU and in Romania beginning in 1992 and reaching epidemic proportions in these countries thereafter, is quite striking.

TABLE 14
TBC INCIDENCE PER 100,000 POPULATION

	1989	1990	1991	1992	1993	1994	94/89	91/89	94/91
Armenia	89.6	85.9	86.2	86.9	82.4	89.6	99.9	96.2	103.9
Belarus	31.1	29.8	30.9	33.7	37.1	42.1	135.4	99.4	136.2
Czech	15.1	15.9	16.5	16.1	18.0	19.0	126.0	109.3	115.2
Estonia*			21.0	21.3	29.1	34.6			164.2
Hungary	35.6	34.6	35.4	38.4	40.9	40.6	113.9	99.4	114.7
Latvia	26.8	27.4	28.8	29.3	33.6	44.4	165.5	107.5	154.2
Lithuania	32.3	33.8	34.4	36.8	43.6	54.3	168.1	106.5	157.8
Moldova	40.6	39.6	43.8	43.1	44.6	50.8	125.1	107.9	116.0
Poland**	42.6	42.3	43.1	43.1	43.8			101.2	101.6
Romania	63.4	70.0	61.6	73.4	92.7	98.7	155.7	97.2	160.2
Russia	36.7	34.3	34.0	35.8	42.9	47.9	130.2	92.6	140.9
Ukraine		32.0	32.3	35.0	38.3	39.7			122.9

Source: TransMONEE database.

Note: *1992/1994 ratio. **1989/1993 ratio.

As Mosley-Chen (1993) and Anand-Chen (1996) have pointed out, there was a relationship between mortality and morbidity, particularly for IPD. This suggests that IPD mortality rates are also a function of the duration and intensity of morbidity.

Certainly this may have been the case in the FSU and SEE, where the sudden and significant surge in mortality during more recent years (1993, 1994 and probably 1995) after a turning point in 1991-2 was proceeded by two years of increasing and rooted growth especially in TBC (Table 14).

No systematic surveys are available for determining the profile of TBC patients. Scattered pieces of information from ad hoc and media reports indicate that men between 35-49 were the main group affected by the disease, and most of these were marginalized people (and households) pushed into a situation of marginalization because of the ongoing process of impoverishment.

7. THE CONSEQUENCES ON MICRONUTRIENT-RELATED-MORBIDITY DYNAMICS

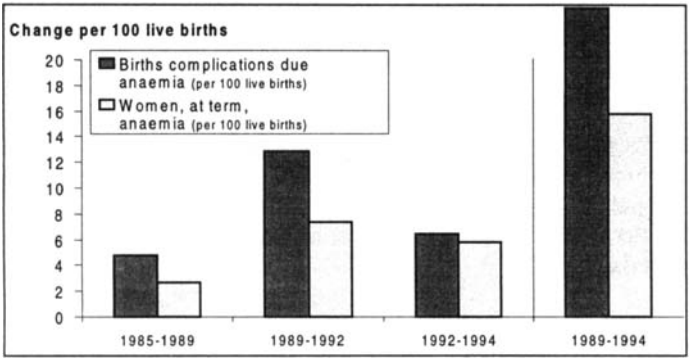
Another important type of morbidity is that related to the increases in maternal risk factors as a consequence of nutrient and, especially, micronutrient imbalances and of a deterioration in general living conditions during the transition.

Conditions like anaemia or iron deficiency, which traditionally bear witness to the presence of micronutrient disorders, were growing. From UNICEF 1997 it is possible to note that in Russia in 1994 the number of women suffering from anaemia at term had more than tripled since 1985 (Figure 8), and anaemia was now affecting almost 33 per cent of mothers. During the same year anaemia was the cause of complications in almost 20 per cent of births.[8] In the Sofia region of Bulgaria, the incidence of anaemia increased by 18.6 per cent among pregnant women from 1989 to 1992. The impact of micronutrient imbalances was mostly felt among vulnerable groups with a high share of their metabolisms devoted to growth (such as children and pregnant/lactating mothers).[9]

[8] In Western countries the proportion is about 15 per cent.

[9] Growth faltering was one of the components of the dependent variables in the original MC model.

FIGURE 8
BIRTHS COMPLICATIONS DUE TO ANAEMIA, RUSSIA



Source: UNICEF (1997).

The number of foetal deaths and of children born with weight below 2,500 grammes indicate that maternal nutrition is becoming both quantitatively and qualitatively poorer. A good proxy for maternal malnutrition is provided by low birth weight (Table 15) because of the high level of dependence between maternal nutritional status and the weight of a child.

The incidence of LBW increased across the region, mostly at the beginning of the transition. In Romania, there was a steady increase during the period 1989-94, reaching a peak in 1993, when almost 11 per cent of new-borns were LBW. In the FSU (apart from Belarus) there were no signs of improvement. On the contrary, the rate of change was definitely higher in 1993-94. Completely opposite was the situation in CEE, where after two years of increase the incidence of LBW steadily declined to below the pre-transition values. In SEE only in 1994 were signs of recovery recorded. The situation appears even more dramatic if one takes into consideration that:

> In Russia the overall share of sickly new-borns has also increased, affecting more than 25 per cent of births in 1994. While the increasing share is also the result of the steep drop in births, the absolute number of ill children born... increased by 27 per cent over the period. (UNICEF 1997)

However, while the few and scattered available data do not show signs of severe malnutrition in terms of the physical growth of children (usually

measured by wasting and low weight for height), stunted growth (which is more related to micronutrient deficiency) became more prevalent. The Russian LMS does not indicate a significant increase in malnutrition. Nevertheless, the same survey found that the prevalence of stunting among children under two years old rose from 9.4 per cent in September 1992 to 15.2 per cent in December 1994. A similar pattern emerges from a nutritional survey conducted in Romania in 1992.

TABLE 15
THE INCIDENCE OF LOW BIRTH WEIGHT IN CENTRAL AND EASTERN EUROPE, 1989-94

	1989	1990	1991	1992	1993	1994
Azerbaijan	5.63	5.25	4.87	5.19	5.42	5.50
Belarus	4.23	4.26	4.27	4.33	4.61	4.10
Bulgaria	6.21	6.38	7.43	7.67	8.30	7.48
Estonia				4.90	4.32	5.01
Hungary	9.16	9.27	9.28	9.01	8.60	8.70
Latvia					5.07	5.00
Lithuania	3.82	3.71	4.07	4.38	4.40	4.26
Moldova		5.88	5.93	5.74	5.80	6.09
Poland	7.60	8.05	8.02	7.86	7.90	7.20
Romania	7.32	7.14	7.86	8.21	10.90	9.00
Russia	5.70	5.70	5.70	5.90	6.00	6.30
Slovakia	5.63	5.77	6.10	6.50	6.40	6.70
Slovenia	5.94	4.99	5.31	5.36	5.19	

Source: TransMONEE database.

What is nagging in the nutritional situation of children is the micronutrient deficiency, the effects of which are extremely serious for future physical and mental growth. In Russia the number of cases of anaemia among children below 14 skyrocketed by 48 per cent from 1989 to 1992. In Romania and Slovakia, ad hoc nutritional surveys found that the incidence of hyposiderinemy (the pre-clinical stage of iron deficiency) had jumped by 20-37 per cent during the period 1992-93. Again, in Slovakia, large deficits in calcium and vitamin C were found among children in the poorest areas of the country.

8. THE OFFSET VARIABLE: HEALTH PROVISION AND ACCESSIBILITY

The CEE countries, despite inefficiencies (see Preker and Feachem 1995), inherited a sufficient level of physical health assets, which, in turn, produced a sufficient output in terms of disease prevention and control and personal illness control. Though quality did not attain Western standards, the system guaranteed essential health services (services with a low content of embedded technology) at a very broad level, permitting, for instance, a sufficient quantity, quality and easy accessibility of measures, like mass screenings and vaccinations, to minimize disease exposure.

The transition brought cuts in intermediary inputs (fuel, food and drugs) and a drastic reduction in investment (medical equipment) and wages. The first impact of this was in the area of public disease control. There was a significant drop in vaccinations during the first two or three years of the transition, and vaccinations reached the pre-transition period levels anew around 1992-3. Martin and Scott (forthcoming) have pointed out that one of the many causes of the diphtheria outbreak may be imputed to the three years (1989-92) when there was a huge drop in vaccination rates that affected mainly young cohorts, but may have affected the overall level of immunization among the population. It is no coincidence that the outbreak of diphtheria in Russia was preceded by a huge drop in vaccinations in 1990-91.[10] Such measures to reduce disease exposure require very basic and very low-cost technology. Nonetheless, the experience in developing countries shows that immunization campaigns are a crucial factor in the control of disease (see Macedo, 1988). The medical treatment of disease suffered even more. In Lithuania (this example could easily be extended to all the FSU countries), despite the low cost of the daily TBC treatments (WHO estimates US$13), the annual budget allotted only US$2.5 per day, which is absolutely insufficient for fighting the disease.

Furthermore, mass screenings and vaccination campaigns are becoming more and more urgent as the population movements affecting the region are well recognized as one of the most important factors in the spread of IPD. Thus, in Lithuania, for instance, the TBC examinations for children that used to be carried out once a year are now taking place on average only three times per life-time.

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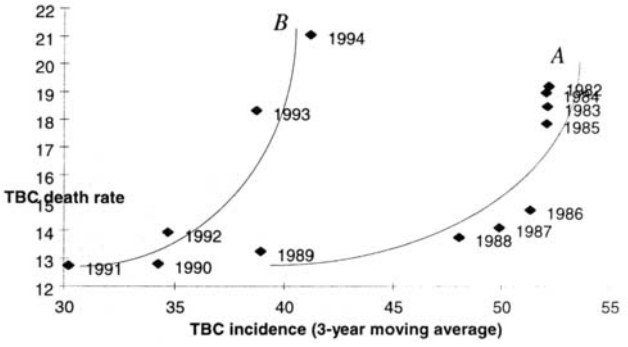
[10] The young cohorts, particularly children 2 to 6 years of age, were the age group most exposed.

Another important aspect of the transition in public health has been the progressive erosion in personal illness control, which, in contrast with the institutionalized measures for disease prevention, occurs on a voluntary basis. The main variable affecting this proximate determinant has been the increase in the relative prices for medical services and drugs. This phenomenon was evident throughout the CEE countries, reaching the most serious levels in Moldova, Bulgaria and Latvia, where the relative price almost doubled between 1989 and 1994. Of course, the impact of this affected families at an already high risk of poverty (especially families with children) in a particularly severe way, thereby weakening their ability to use public medical services.

Unfortunately, this component of health assets and output tends to be lost, especially in the FSU and SEE. In the FSU the cuts in public health budgets increased the pace of deterioration in health care. Health services are now operating well below productive capacity, and drugs are becoming very scarce.

FIGURE 9
THE INCIDENCE OF TBC VS. THE STANDARDIZED SPECIFIC DEATH RATE FOR TBC IN RUSSIA



Sources: WHO-HFA database, TransMONEE database.

Figure 9 provides evidence about the ways in which the weakness of disease control affected the capacity of the health system at least to prevent deaths. Before 1989 (line a), IPD mortality had a 'critical death minimum' of about 53 in terms of the incidence of TBC in Russia. After 1989 this

deteriorated sharply (curve b) and became definitely lower. This is partly explained by the lose in the effectiveness of disease control programmes.

9. ASSESSING CAUSALITY

The lack of degrees of freedom due to the scarcity of data, especially on poverty, means that the MC model cannot be assessed quantitatively. However, it is possible to identify a causal relationship that is supported by empirical evidence. The stylized facts emerging from the analysis are as follows.

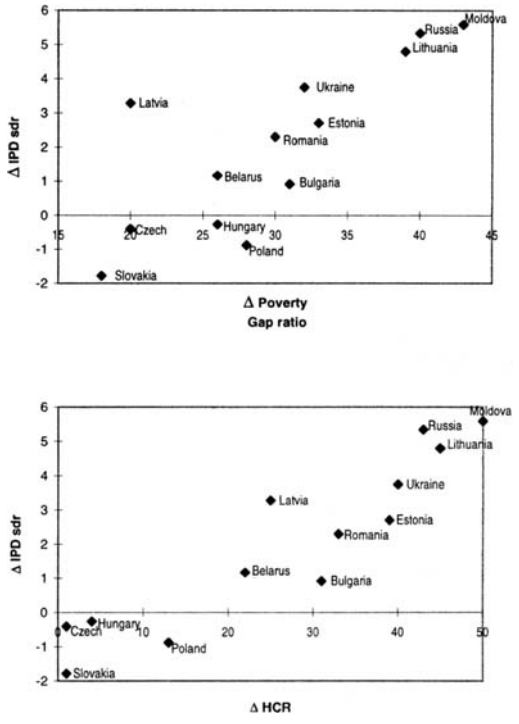
First, the process of impoverishment is becoming a persistent phenomenon in the FSU and SEE, where it is mostly linked to increasing income inequality and thus produces an increasing depth of poverty. Households depending on social benefits, monoparental households and households with children are the most affected.

Second, in the FSU and SEE the level of undernutrition may be considered mild, and the limited extent of income-nutrient elasticity and the previous levels of income/consumption (the threshold effect) and health stock have cushioned, on average, the effect of the impoverishment process. The main impact has been felt in the distribution of intake, with a widening nutritional gap among people in various income classes. This has led to a situation in which people living in conditions of poverty are suffering from a persistent and in some cases increasing level of undernutrition, both quantitatively and, above all, qualitatively, that is definitely below internationally recommended standards. This is quite clear in the FSU and SEE, where the poverty gap is growing because of increasing inequality.

Third, there is evidence that children and pregnant and lactating mothers are the groups most exposed to poverty and so to a series of effects linked with under/malnutrition. In particular, the consequences of micronutrient deficiency are well established in terms of cognitive performance, physical work capacity, mental diseases, cretinism and premature death. This is one of the worst aspects of the nutrition crisis.

Fourth, in terms of the MC model, this means that two proximate factors -- nutrient deficiency and maternal risk factors – have been significantly affected by the impoverishment process.

FIGURE 10
THE CHANGE IN THE POVERTY GAP RATIO (A) AND HCR (B) VS. THE CHANGE IN THE IPD SDR IN SELECTED COUNTRIES, 1989-94



Sources: WHO-HFA database, Milanovic (1996).

Fifth, the two proximate causes provoked an increase, first, in morbidity and, then, in IPD mortality. The steepness of the increase of the latter and the increasing polarization in health status indicate that the decline in the health stock below the critical minimum among the poorest part of the population is continuing. Nutrient deficiency leads to an increase in immuno-competence, and this is reinforced by the deterioration in hygiene, housing conditions and the general environment.[11] The initial condition of the health stock delayed the impact of impoverishment, but, if the duration

[11] In Romania in 1992 the proportion of the population with access to hygienic sewerage was 44.3, in Moldova in 1995 the figure was 49.7.

and the severity of poverty persist, this counter-effect will disappear. This phenomenon affects the FSU and SEE countries in a particular way. Undoubtedly, there is evidence that increasingly extreme poverty in terms both of the HCR and of the poverty gap in some countries (the FSU and SEE especially) may explain a significant portion of the variance in the rising IPD mortality, as shown in Figure 10 (see also UNICEF 1995a).

Sixth, decisive offset variables (like health services) did not make a significant contribution in tackling the negative evolution of the health stock. The task of reducing disease exposure has been undermined by significant cuts in public health budgets, while accessibility is being affected by a regressive policy of medical service fees. Especially, the later phenomenon has a particular impact on personal illness control, which is steadily declining among poor people. As a result, the inherited health assets, even though they were often ineffective in the past, have been gradually dismantled.

These stylized facts support the use of the MC-CJS model as a good analytical framework for explaining the deterioration in health status that is mostly related to the process of impoverishment. However, in CEE concurrent mortality/morbidity models are operating that are affecting the different parts of the population as viewed according to socio-economic situation and degree of vulnerability. Thus, if the model based on psycho-social stress (Cornia and Paniccià 1996) is able to explain the mortality due to CVD among middle-aged men, the recession model could provide a good analytical framework for the description of the deterioration in health status among the poor strata of populations that in turn increases the severity of the process of impoverishment and its effect on nutrition.

10. IN LIEU OF A CONCLUSION: SOME POLICY RECOMMENDATIONS

Even if the level of mortality provoked by IPD seems relatively low in comparison to that of other causes of death affecting CEE, the worsening in health dynamics nonetheless seems to be significantly prolonged and tightly linked with the onset of a proximate determinant (impoverishment) and the deterioration in the offset variable of public health disease control. Moreover, while CVD mortality reverted in some sense towards a negative trend, the pace of deterioration in IPD mortality and especially morbidity do not seem to have halted. Furthermore, micronutrient deficiency is

placing the future generations which will be affected by such a pathology in a cumulatively dangerous health situation.

What is to be done? Of course, the first thing to do is to stop the process of impoverishment mainly by stopping the sharp rise in income inequality.

The experience of the transition has shown that, if inequality becomes the main cause of poverty, the cost of relief grows, despite a strong recovery, because of the increasing poverty gap and the rise in the severity of poverty. Thus, greater efforts should be make to equalize final distribution. If an increase in the factor of income distribution is fairly unavoidable, a good system of social protection would allow the final inequality to be kept within socially acceptable bounds.

The main limitation on the design of effective social policies in CEE is the tight budget constraint which undermines policy sustainability. There are two ways to offset this limitation:

i) An improvement in the tax system so as to raise revenue and avoid massive cuts in social expenditures.
ii) A improvement in the targeting/design of all social transfers that will permit more equability and an improvement in cost-effectiveness and so release resources to sustain average benefits through a combination of a wider income base and categorical targeting (targeting grounded on objective criteria).

The second instrument must be the increase in the effectiveness of public disease control. To combat IPD over the short run means the utilization of low-tech and relatively cheap tools like vaccination and some preventive care methods. Despite cuts in health budgets, this is feasible, as the Latin American experience has partly demonstrated. Then, the accessibility to health care must be improved. The Czech experience (Hiršl, Rusnok and Fassmann 1995) has shown that the effective decentralization of some basic health services can raise accessibility substantially, thereby keeping costs and therefore fees down.

ANNEX 1: STATISTICAL ANNEX

ANNEX TABLE 1
THE INCIDENCE OF POVERTY AND LOW INCOME AMONG HOUSEHOLDS, CHILDREN, ADULTS AND THE ELDERLY IN SELECTED COUNTRIES, 1989-94

		Population	Adults	Elderly	Children	Households
Czech	1989	0.2	0.2	0.4	0.3	0.3
	1992	1.4	1.8	0.5	1.2	1.8
Bulgaria	1990	2.0	1.3	3.8	2.0	2.1
	1994	31.7	32.1	27.5	42.5	32.1
Hungary	1989	1.1	9.6	0.01	3.1	1.04
	1994	4.3	23.5	0.22	7.2	1.18
Romania	1989	7.0	5.3	11.9	8.9	6.2
	1994	29.0	30.2	24.3	40.1	23.4
Slovakia	1989	0.1	0.1	0.1	0.1	0.1
	1994	6.0	4.2	0.6	9.4	3.4
Lithuania	1989	1.5				
	1994	39.1	29.4	6.52	16.8	1.28
Estonia	1989	1.0				
	1994	27.0	23.0	37.9	34.2	26.3
Latvia	1989	1.3				
	1994	33.5	31.4	14.9	50.7	27.1
Moldova	1989	2.4				
	1993	42.3				
Russia	1989	2.2				
	1993	29.4				

Source: UNICEF (1995a).

ANNEX TABLE 2
THE POVERTY GAP AND INEQUALITY AMONG THE POOR IN SELECTED COUNTRIES

		Headcount ratio	Poverty gap ratio	Poverty gap over GDP	Inequality among poor		
					Gini	P90	P10
Bulgaria	1990	2.0	21.4	0.05	7.1	1.10	0.87
	1991	11.7	22.1	0.75	9.5	1.14	0.72
	1992	21.8	23.2	1.48	12.5	1.19	0.63
	1993	25.3	26.4	2.09	13.1	1.2	0.63
	1994	31.7	26.8	3.44	13.9	1.22	0.61
Hungary	1989	1.1	9.6	0.01	3.1	1.04	0.93
	1991	2.3	19.9	0.10	4.1	1.07	0.88
	1993	4.0	23.9	0.25	7.6	1.12	0.74
	1994	4.3	23.5	0.22	7.2	1.18	0.73
Romania	1989	7.0	20.0	0.40	6.1		
	1990	3.5	19.5	0.14	5.7	1.14	0.77
	1991	8.6	23.4	0.54	7.5	1.14	0.73
	1992	16.4	24.8	1.17	11.6	1.17	0.66
	1993	25.3	25.2	2.18	11.6	1.18	0.67
	1994	29.0	26.2	2.49	12.9	1.21	0.62
Slovakia	1989	0.1	0.1	0.01	1.9	1.01	0.98
	1990	0.1	0.2	0.01	2.4	1.01	0.98
	1991	3.1	11.3	0.08	5.1	1.08	0.84
	1992	3.0	10.7	0.90	4.8	1.08	0.87
	1993	5.1	13.9	0.16	6.7	1.09	0.8
	1994	6.0	14.7	0.19	7.2	1.11	0.78
Lithuania	1994	39.1	29.4	6.52	16.8	1.28	0.55

Source: Author's calculations based on TransMONEE database.

ANNEX TABLE 3
STANDARDIZED IPD DEATH RATES IN SELECTED COUNTRIES, 1985-94

		1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1989/1985	1991/1989	1994/1991
Estonia	Total	10.5	7.9	7.5	8.0	8.2	8.2	9.0	9.0	11.0	11.5	-21.90	9.76	27.78
	Male	18.3	15	10.9	12.6	14.3	14.9	15.5	16.5	20.4	20.3	-21.86	8.39	30.97
	Female	5.4	3.5	5.3	4.5	3.9	3.2	4.2	3.3	4.2	5.5	-27.78	7.69	30.95
Hungary	Total	9.7	9.0	9.9	9.2	10.0	8.5	8.3	8.3	8.5	7.6	3.09	-17.00	-8.43
	Male	15.4	14.2	15.9	14.1	15.7	13.7	13.1	13.3	13.9	12.3	1.95	-16.56	-6.11
	Female	5.5	5.1	5.5	5.6	5.7	4.7	4.6	4.5	4.3	3.8	3.64	-19.30	-17.39
Lithuania	Total	12.6	8.1	9.2	9.8	9.3	9.6	10.6	10.9	13.9	15.3	-26.19	13.98	44.34
	Male	20.6	13.8	15.6	16.1	14.9	17.2	18.1	18.1	24.4	26.7	-27.67	21.48	47.51
	Female	6.8	3.8	4.6	5.1	4.8	3.7	4.8	5.4	5.7	6.3	-29.41	0.00	31.25
Latvia	Total	18.1	15.8	13.2	11.2	12.5	11.1	11.1	10.8	11.7	17.7	-30.94	-11.20	59.46
	Male	25.4	21.7	17.3	16.1	17.8	17.3	17.8	17.1	18.8	27.9	-29.92	0.00	56.74
	Female	12.1	11.1	9.9	7.1	8.3	6.1	5.6	5.5	5.6	9.2	-31.40	-32.53	64.29
Moldova	Total	11.1	10.6	10.1	11.7	12.7	11.4	11.6	13.9	15.5	20.4	14.41	-8.66	75.86
	Male	16.9	16.1	15.4	18.2	20.6	17.9	18.9	22.5	26.3	35.4	21.89	-8.25	87.30
	Female	6.8	6.7	6.6	7.2	7.2	6.6	6.0	7.4	7.3	9.0	5.88	-16.67	50.00
Romania	Total	10	10.9	12.3	11.4	12.1	12.5	12.1	13.5	15.1	17.9	21.00	0.00	47.93
	Male	14.2	15.3	17.3	16.3	17.4	19.1	18.4	21.3	24.3	30.3	22.54	5.75	64.67
	Female	6.1	6.7	7.6	6.8	7.1	6.4	6.1	6.2	6.4	9.0	16.39	-14.08	47.54
Russia	Total		14.8	14.1	13.8	13.3	12.8	12.7	13.9	18.3	21.1	-10.14	-4.51	66.14
	Male		24.7	23.7	22.9	22.8	22	21.8	24.5	32.2	36.8	-7.69	-4.39	68.81
	Female		7.7	7.2	7.0	6.1	5.8	5.7	5.6	7.1	8.1	-20.78	-6.56	42.11

Source: WHO (1995).

ANNEX TABLE 4
IPD MORTALITY RATES FOR MALES BY AGE GROUP IN RUSSIA AND THE CZECH REPUBLIC

		1989			1991			1993			Total		TBC	
			of which			of which			of which					
	Age	Total	TBC	%	Total	TBC	%	Total	TBC	%	1993/1991	1993/1989	1993/1991	1993/1989
Russia	0	172.0	0.4	0.2	139.0	0.6	0.4	167.0	1.3	0.8	1.20	0.97	2.17	3.25
	1-4	10.9	0.1	0.9	7.5	0.1	1.3	8.4	0.2	2.4	1.12	0.77	2.00	2.00
	5-14	1.0	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	1.00	1.00	1.00	1.00
	15-25	2.9	1.5	51.7	2.7	1.4	51.9	4.2	2.5	59.5	1.56	1.45	1.79	1.67
	25-35	10.9	9.4	86.2	11.9	10.3	86.6	18.6	16.2	87.1	1.56	1.71	1.57	1.72
	35-44	23.2	20.7	89.2	25.5	23.1	90.6	41.4	37.1	89.6	1.62	1.78	1.61	1.79
	45-54	35.9	31.5	87.7	38.2	33.8	88.5	61.0	53.3	87.4	1.60	1.70	1.58	1.69
	55-65'	42.1	35.1	83.4	40.9	35.1	85.8	60.8	53.2	87.5	1.49	1.44	1.52	1.52
	65-74	39.0	30.0	76.9	36.9	29.5	79.9	49.5	39.1	79.0	1.34	1.27	1.33	1.30
	74+	41.5	31.1	74.9	30.4	22.0	72.4	39.5	27.2	68.9	1.30	0.95	1.24	0.87
Czech Republic														
	0	6.1			9			4.8			0.53	0.79		
	1-4	0.7			0.4			1.5			3.75	2.14		
	5-14	0.1			0.1			0.1			1.00	1.00		
	15-25	0.5	0.1	20.0	0.4			0.5	0.1	20.0	1.25	1.00		1.00
	25-35	0.4			0.9	0.3	33.3	0.9	0.6	66.7	1.00	2.25	2.00	
	35-44	2.0	0.5	25.0	2.5	1.6	64.0	1.9	0.6	31.6	0.76	0.95	0.38	1.20
	45-54	1.9	0.9	47.4	3.0	2.3	76.7	2.5	1.3	52.0	0.83	1.32	0.57	1.44
	55-65'	12.6	4.6	36.5	9.9	5.6	56.6	5.3	1.9	35.8	0.54	0.42	0.34	0.41
	65-74	15.9	5.9	37.1	13.7	6.5	47.4	13.1	4.8	36.6	0.96	0.82	0.74	0.81
	74+	38.6	10.5	27.2	32.1	14.0	43.6	30.9	11.8	38.2	0.96	0.80	0.84	1.12

Source: WHO (1995).

ANNEX 2: REMARKS ON METHODOLOGY

The study of food consumption and nutrient intake involved in this analysis is grounded mainly on two different sources. The first one is provided by the FAO FBS, which assesses the amount of food and nutrient intake available on the basis of both the production of and the trade in food, adjusted by wastage, cleaning and cooking losses. It is well known that this tends to overestimate the level of food intake, even if, lacking other sources, it may capture the overall pattern of consumption.

The second source is provided by the HBSs, which gather data on expenditure and, in some cases, on the physical quantity of food consumed by destination, regardless of the origin (except for self-produced food). These types of data are extensively collected in the TransMONEE database (UNICEF 1995b), where they are provided according to population decile starting from 1989 and continuing up to the most recent year available (usually 1994). Unfortunately, only a few Eastern European countries are well covered, namely, Bulgaria, Slovakia, Poland, Hungary and Romania. Data on food consumption for the FSU countries (Russia and to some extent Belarus) have been provided by the respective CSOs only for a few years. The quality of these surveys changes substantially in moving from Central Europe (Hungary and Poland) to the FSU and SEE. Atkinson-Micklewright (1993) analysed these surveys and concluded that the quality of the data on Central Europe was comparable to Western European standards, while in the FSU the similar surveys were considerably weaker. However, the degree of representation of these surveys deteriorated during the transition as the result of growing underreporting and the underestimation of other types of income emerging from the process of marketization and privatization, thereby producing an increasing bias in the sample design. However, more recently new sampling and reporting techniques have been introduced, allowing in some cases the past surveys to be recalculated and corrected. Nonetheless, the general tendency in the HBS data on consumption is towards an underestimation of quantity intake.

A third type of source is constituted by the nutritional/health surveys which have been carried out by different institutions in CEE. They are probably the most reliable, even if costly and therefore rare.

In this analysis, these three source are utilized to extract as much information as possible, with the caveat that these three different sources reflect different concepts, and in some cases their comparability is very weak.[12]

REFERENCES

Anand, Sudhir, and Lincoln C. Chen 1996, Health Implications of Economic Policies: A Framework for Analysis. *Discussion Paper Series.* United Nations Development Programme, Office of Development Studies. Mimeo, New York.

Atkinson, A., and John Micklewright 1992, *Economic Transformation in Eastern Europe and the Distribution of Income*, Cambridge University Press, Cambridge.

Bordian, A. 1994, Report Prepared for the MONEE Project, UNICEF International Child Development Centre, Florence.

Brown, Kenneth H. 1984, Measurement of Dietary Intake. *Population and Development Review*, No. 10, Supplement, pp. 69-91.

Cornia, G.A. 1994, Poverty Food Consumption and Nutrition during the Transition to Market Economy, *AEA Papers and Proceedings*, vol 84. No. 2 (May).

Cornia, G.A., Richard Jolly and Frances Stewart (eds.) 1988, *Adjustment with a Human Face*, vol. I, Clarendon Press, Oxford.

Cornia, G.A., and Renato Paniccià 1996, The Transition Population Crisis: An Econometric Investigation of Nuptiality, Fertility and Mortality in Severely Distressed Economies. *MOCT-MOST* , No. 6, pp. 95-129.

Cruz Rivero, Carlos, Rafael Lozano Ascencio and Julio Qerol Vinagre 1991, The Impact of Economic Crisis and Adjustment on Health Care in Mexico, *Innocenti Occasional Papers*, EPG No. 13, UNICEF International Child Development Centre, Florence.

Dornbusch, R., and S. Edwards (eds.) 1991, *The Microeconomics of Population in Latin America*, University of Chicago Press, Chicago.

[12] An example of how these three sources can diverge on average is provided by the following table which refers to Hungary in 1985:

	FBS	HBS	Nutritional survey
K-cal per capita	3,520	3,110	2,185

FAO/WHO/UNU 1985, *Energy and Protein Requirements*, Technical Report Series 724, World Health Organization, Geneva.

Gantcheva, T. 1995, Report Prepared for the MONEE Project, UNICEF International Child Development Centre, Florence.

Goskomstat 1996, Household Income Survey 1994, Goskomstat, Moscow.

Hiršl, M., J. Rusnok and M. Fassmann 1995, Market Reforms and Social Welfare in the Czech Republic: A True Success Story?, *Innocenti Occasional Papers*, EPG No. 50, UNICEF International Child Development Centre, Florence.

Huffman, S.L., and Barbara B. Lamphere 1984, Breastfeeding Performance and Child Survival. *Population and Development Review*, No. 10, Supplement, pp. 93-118.

Intriligator, M., Ronald G. Bodkin and Cheng Hsiao 1996, *Econometric Models, Techniques, and Applications* (second edition). Prentice Hall, Upper Saddle River.

Kakwani, N. 1980, *Income Inequality and Poverty.* Oxford University Press, Oxford.

Kakwani, N., and N. Podder 1973, On the Estimation of Lorenz Curves from Grouped Observations, *International Economic Review*, vol 14, pp. 278-291.

Kuddo, Arvo (n.d.) *Social Transition in the Former Soviet Union States* (forthcoming).

Lakatos, J. 1994, Report Prepared for the MONEE Project, UNICEF International Child Development Centre, Florence.

Lipton, M. 1983, Poverty, Undernutrition and Hunger, *World Bank Staff Working Papers*, World Bank, Washington, DC.

Lluch, C. 1973, The Extended Linear Expenditure System. *European Economic Review*, vol. 4, pp. 21-32.

Macedo, R. 1988, Brazilian Children and the Economic Crisis: The Evidence from the State of Sao Paulo, in Cornia, G.A., Richard Jolly and Frances Stewart (eds.) 1988, *Adjustment with a Human Face*, vol II, Clarendon Press, Oxford.

Martin, B.J., and Wolf Scott (forthcoming), Child Health Trends in Central and Eastern Europe, in Zouev A. (forthcoming), *Free Fall to Poverty*, UNICEF, New York.

Martorell, R., and Teresa J. Ho 1984, Malnutrition, Morbidity and Mortality. *Population and Development Review*, No. 10, Supplement, pp. 49-68.

Milanovic, B. 1996, Income, Inequality and Poverty during the Transition, *Research Papers*, No. 11, World Bank, Washington, DC.

Mosley, W.H., and Lincoln C. Chen 1984, An Analytical Framework for the Study of Child Survival in Developing Countries. *Population and Development Review*, No. 10, Supplement, pp. 25-45.

Murray, C.J.L., and Lincoln C. Chen 1992, Understanding Morbidity Change, *Population and Development Review*, No. 18, pp. 481-503.

Murray, C.J.L., and Lincoln C. Chen 1993, In Search of a Contemporary Theory for Understanding Mortality Change, *Social Science and Medicine*, No. 36, pp. 143-155.

National Centre of Hygiene and Nutrition 1994, *Nutrition Report*, National Centre of Hygiene and Nutrition, Sofia.

Okhoski, M. 1994, Report Prepared for the MONEE Project, UNICEF International Child Development Centre, Florence.

Pop, M.A. 1994, Report Prepared for the MONEE Project, UNICEF International Child Development Centre, Florence.

Popkin, B., Namvar Zohoori, Lenore Kolhmeier and Alexander Baturin 1995, Russia: Monitoring Nutritional Change during the Reform Period, paper presented at *Adult Health Priorities in the NIS*, National Academy of Science, Washington, DC.

Popkin, B., Namvar Zohoori, Lenore Kolhmeier, Alexander Baturin and Arseni Martinchik 1994, Nutritional Risk Factors in the Former Soviet Union, paper presented at *Adult Health Priorities in the NIS*, National Academy of Science, Washington, DC.

Preker, S.A., and Richard G. A. Feachem 1995, Health and Health Care, in Barr N. (ed.), *Labour Markets and Social Policy in Central and Eastern Europe*, Oxford University Press, Oxford.

Sniutskene, Z. 1994, Report Prepared for the MONEE Project, UNICEF International Child Development Centre, Florence.

WHO 1993a, *Health Policy Report: Towards a Healthy Russia, Policy for Health Promotion and Disease Prevention, Focus on Noncommunicable Diseases*, Draft Report, World Health Organization, Regional Office for Europe, Copenhagen.

_____ 1993b, *World Health Statistics Annual 1992*, World Health Organization, Geneva.

_____ 1994, *World Health Statistics Annual 1993*, World Health Organization, Geneva.

_____ 1995, *World Health Statistics Annual 1994*, World Health Organization, Geneva.

_____ 1996, *Health for All Database*, World Health Organization, Regional Office for Europe, Copenhagen.

UNICEF 1993, Public Policy and Social Conditions. *Economies in Transition Studies*, No. 1. UNICEF International Child Development Centre, Florence.

_____ 1994, Crisis in Mortality, Health and Nutrition. *Economies in Transition Studies*, No. 2. UNICEF International Child Development Centre, Florence.

_____1995a, Poverty, Children and Policy: Responses for a Brighter Future. *Economies in Transition Studies*, No. 3. UNICEF International Child Development Centre, Florence.

_____1995b, *TransMONEE Database*. Mimeo. UNICEF International Child Development Centre, Florence.

_____1997, Children at Risk in Central and Eastern Europe: Perils and Promises. *Economies in Transition Studies*, No. 4. UNICEF International Child Development Centre, Florence.

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