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# Transition, Recession and Mortality Crisis in the Former Soviet Bloc: an update to the year 2014

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**TRANSITION, RECESSION AND MORTALITY CRISIS  
IN THE FORMER SOVIET BLOC:  
AN UPDATE TO THE YEAR 2014**

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**1. INTRODUCTION**

The transition to the market economy and liberal democracy of the former communist countries of Europe represents the most vivid example of how potentially favourable economic and political reforms may lead to massive mortality crises. The transition of these countries was universally greeted as a key step towards world peace and economic progress. The months preceding the beginning of this historic watershed were characterised by widespread hopes for improvements in political freedoms, economic growth, living standards, and life expectancy which, during the prior 20 years had improved more slowly than in capitalist OECD countries, or had deteriorated. Despite these hopes, the years after 1989 were characterised by a severe transformational recession, a fall in output and incomes, the rapid impoverishment of large sections of the population, rising income and assets concentration, widespread social dislocations and an acute mortality crisis.<sup>1</sup>

Despite its magnitude and a growing number of studies, the transition mortality crisis has attracted limited political attention by national authorities and international agencies. When it was acknowledged, it was attributed to past shocks or irrelevant factors, retarding in this way the introduction of appropriate policy responses. In a way, the recent European mortality crisis is a telling example of how potentially favourable reforms may lead to large health and social costs.

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<sup>1</sup> Over 1989 and 1996 alone, the number of poor and unemployed in the region rose respectively by 100 million and 10 million while the crime rate tripled (UNICEF, 2000).

## 2. MORTALITY AND LIFE EXPECTANCY TRENDS

With the exception of Slovenia, during the first reform years, male life expectancy at birth fell and the Crude Death Rate rose in all European economies in transition. For instance, over 1990–91, Poland recorded about 30,000 excess deaths in relation to 1989, while Hungary registered about 7,000 excess deaths over 1992–93 (Table 4.1 and Annex Table 4A.1). Thus, in Central Europe too, the loss of human life was sizeable from a welfare perspective, though not in terms of demographic trends. In this sub-region, the economy, living standards, and life expectancy at birth (LEB) already started to recover in 1992–94 while mortality rates and the number of deaths declined. As a result, over 1989–2014, the five Central European countries taken together recorded about 730,000 fewer deaths than would have been the case had the 1989 number of yearly deaths remained constant throughout this period (Table 4.1 and Annex Table 4A.1). While country-specific factors played a role, the steady fall in death rates in these countries after 1991–92 appears to have also been due to some common factors. All of them began the transition with much smaller economic and social distortions than the CIS countries, they all experienced less acute and short-lived recessions and inflationary spikes, and only moderate surges in income and asset inequality.<sup>2</sup> All of them introduced extensive labour market programmes to soak up transitional unemployment, while public expenditure on health increased, and alcohol consumption either stagnated or increased modestly. Family instability and distress migration during this period were also modest. Moreover, none of these countries experienced the massive weakening of state institutions in the area of law-and-order and personal security that was observed in several CIS countries. Finally, their faster political democratisation and the active role played by intermediate social bodies (such as cooperatives, churches, trade unions, cultural and sports associations, and so on) contributed to keeping up the pressure on incumbent governments to tackle the social dislocations inevitably entailed by the transition.

The mortality crisis was much sharper in South Eastern Europe, the Baltic States, and especially the members of the former Soviet Union mainly inhabited by Slavic populations, that is Belarus, Kazakhstan, Moldova, the Russian Federation (henceforth Russia), Ukraine, and Lithuania. In these

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<sup>2</sup> Popov (2000) and Cornia and Popov (2001) developed a cumulative measure of ‘initial distortions’ as a percentage of GDP for all economies in transition. This measure is the sum of defence spending exceeding 3% of GDP (a level regarded as normal), deviations from normal level of the industrial structure (particularly the over-representation of the inefficient heavy industry) and heavily distorted trade among the former Soviet republics and lightly distorted trade within the other socialist countries. While Hungary and Slovenia had an index of initial distortions equal to around 4% of GDP, in the Baltics the index ranged between 67 and 71 and in Russia it reached 41.

Regression analysis showed that this measure of initial distortions retarded growth in a statistically significant way. Other initial distortions included very different degrees of money overhang, i.e., the excess amount of cash in circulation as a share of GDP that, with a rapid price liberalisation, caused very different rises in the rate of inflation and macro instability, from moderate in the Czech Republic to hyperinflation in Russia. This problem, and the inability to develop rapidly a new tax system contributed to the Ruble crisis, and to the default on the public debt of 1998–99, which were years when LEB fell again.

countries, the initial recovery in economic activity and male LEB recorded over 1995–98 was interrupted in 1998–2003 by the 1998 Rouble crisis and subsequent devaluation, default on the public debt, and capital flight, and a sluggish economic performance over 2000–2002 that were quickly transmitted to neighbouring countries. LEB started recovering steadily in 2003 in Russia and in 2005 in Belarus and Ukraine. In Russia, male LEB rose by 6.7 years between 2003 and 2014, suggesting that the country had exited the mortality crisis of the prior 15 years. Yet the 1989 level of male LEB was only reached again in 2012. In Belarus and Ukraine, the 1989 level of male LEB was reached again only in 2013.

**Table 4.1. Number of excess deaths, over 1990-2014 in relation to 1989, by country groups\***

	Numb gr. of deaths (1989)	Excess deaths over 1989 in worst year	Cumulated change in number of excess deaths 1989-2000	Cumulated change in the number of excess deaths 1989-2014	Age dependency ratio 65+ / 15-64			
					1989	2000	2014	Δ 2014- 1989
Czech Rep	127.734	1.791 (1990)	-123.253	-412.535	18.9	19.8	25.7	+ 6.
Hungary	146.171	4.182 (1993)	-22.603	-230.920	19.9	22.0	25.8	+ 5.
Poland	382.298	22.749 (1991)	37.632	-79.779	15.1	17.8	21.2	+ 6.
Slovakia	53.782	919 (1990)	-11.089	-28.607	15.8	16.6	19.0	+ 3.
Slovenia*	18.669	1.367 (1993)	4.287	5.204	15.9	19.8	25.7	+ 10.
<b>Total</b>	<b>728.654</b>	<b>19.267 (1991)</b>	<b>-115.025</b>	<b>-746.637</b>				
Estonia	18.507	3.924 (1994)	15.247	-8.628	17.2	22.1	27.9	+ 10.
Latvia	32.570	9.521 (1994)	35.980	17.156	17.6	22.1	28.8	+ 11.
Lithuania	38.052	8.614 (1994)	46.504	107.279	15.9	20.8	27.5	+ 11.
<b>Total</b>	<b>89.129</b>	<b>22.060 (1994)</b>	<b>97.730</b>	<b>115.807</b>				
Albania	17.876	2.791 (2014)	-711	-626	8.6	9.0	17.5	+ 8.
Bulgaria	108.223	14.062 (1997)	60.675	98.833	18.7	23.8	29.3	+ 10.
Romania	246.773	39.855 (1996)	209.425	365.668	15.2	19.3	24.3	+ 9.
<b>Total</b>	<b>372.872</b>	<b>48.566 (1996)</b>	<b>269.389</b>	<b>463.876</b>				
Belarus	103.290	43.883 (2002)	282.915	738.392	16.6	19.7	19.8	+3.
Moldova	40.002	13.051 (1995)	62.985	85.054	12.7	14.0	13.6	+ 0.
Russian Federat.	1.580.286	792.049 (2003)	4.873.075	12.284.636	14.3	17.8	18.6	+ 4.
Ukraine	599.822	195.812 (1995)	1.465.142	3.221.594	17.5	20.2	21.9	+ 4.
<b>Total</b>	<b>2.323.400</b>	<b>1.003.957 (2003)</b>	<b>6.684.116</b>	<b>16.329.676</b>				
Armenia	20.635	8.401 (2011)	40.459	127.531	8.8	13.9	15.1	+ 6.
Azerbaijan	43.650	11.660 (2014)	48.512	158.904	7.6	8.3	8.1	+ 0.
Georgia	49.574	10.294 (1993)	12.134	-31.824	13.3	18.7	20.3	+ 7.
<b>Total</b>	<b>113.859</b>	<b>25.763 (1993)</b>	<b>101.106</b>	<b>254.612</b>				
Kazakhstan	125.947	44.437 (1995)	289.467	589.105	8.7	10.3	9.9	+1.
Kyrgyzstan	30.781	7.570 (2006)	32.167	102.998	8.7	9.1	6.6	-2.
Uzbekistan	125.788	22.684 (2014)	12.5071	297.454	7.4	7.3	5.9	-1.
<b>Total</b>	<b>282.516</b>	<b>68.510 (1995)</b>	<b>446.706</b>	<b>989.558</b>				

Source: own compilation based on Transmonee (2017).

What were the factors behind this rebound? Grigoriev et al. (2014) show that the main causes of death that triggered the increase in mortality over 1989–94 (that is, cardiovascular and external causes) were the same that explained its decline over 2004–10 and beyond (see later). The possible explanations put forward to explain such an important rebound in Russia include a declining consumption per capita of spirits, accompanied by an increase in wine and beer drinking. It also includes a decline in alcohol poisoning; diet improvement (but no changes in smoking); a rise in health expenditure per capita from \$PPP 300 in 1995 to \$PPP 998 in 2010; an increase in cardiac surgeries per 100,000 people of over 35 years of age from 21.7 in 1995 to 97.5 in 2010. The sources of social stress also became less threatening, with a return to a more stable life. With the recovery of the Russian economy over 2003–10, there was a fall in the unemployment rate from 9.8% to 7.5%, a drop in the poverty rate from 29% to 12.6% and a modest fall in the crime rate. Similar gains were recorded in Belarus and the Baltic countries, while in Poland, Czech Republic, and other Central European countries these kind of improvements had occurred just after the initial crisis of 1989–1992. In turn, the marriage rate recovered after the 1999–2005 while the total divorce rate declined, starting in 1993 in Ukraine, in 2000 in Estonia, and in 2002 in Belarus and other countries (Transmonee, 2017). Income inequality seems also to have stabilised since the early 2000s, although in the CIS countries the available data are not very reliable because of the under-reporting of top incomes.

While these trends are a source of hope, it is equally true that except for the Central European countries besides Hungary, male LEB in the region only returned to its 1989 level in the early 2000s or over 2011–2013 (Table 4.2). This has entailed a large loss of male life expectancy that continued in some cases until 2011–2013. The trend in female LEB is similar if more attenuated (Table 4.3).

How large was the human cost of the transition? Calculating the number of ‘excess deaths’ during the transition requires the availability of the Standardised Death Rate (SDR) for each of the 21 countries in Table 4.1 and the years 1989 to 2014 – using 1989 as the base year for which the age structure of the population is assumed to remain constant over 1989–2014. This would enable a separation of the increase in the number of deaths due to higher age-specific mortality rates from those due to population ageing. However, at the moment, the SDR for all these countries and years is not available to this author. To give the reader an idea of the impact of ageing on the total number of deaths, the last four columns of Table 4.1 list the changes over 1989–2014 in the age dependency ratio (65+/15-24). These data indicate that with the exception of Slovenia, the Baltics, Romania, and Bulgaria, population ageing seem to have been a moderate entity in most regions, especially in the Slavic and Central Asian countries. This seems to suggest that, at least in these countries, a good part of the ‘transition mortality crisis’ was due to an increase in age-specific death rates, rather than to population ageing. In any case, the last four

columns of Table 4.1 give an initial idea of the bias introduced by the use of the CDR instead of the SDR. Except for the countries marked in yellow, this bias seems limited.

Overall, the European transition crisis caused some 18 million cumulative excess deaths over 1989–2014, of which a rough estimate (taking into account the 1989–2014 changes in the age dependency ratio 65+/15-64) suggests that at least 80% were due to a rise in age-specific death rates. The most shocking increase in excess mortality was observed in the Slavic countries of Russia, Ukraine, and Belarus (Table 4.1). At the same time, the Central European countries recorded 746,000 fewer deaths due a steady decline in the number of yearly deaths. Analysis of the mortality dynamics over 1989–2014 shows that because of the sharp fall of LEB over 1993–94 and again over 1999–2005, the number of yearly excess deaths in relation to 1989 in Russia exceeded 700,000 units (Table 4.1 and Annex Table A.1). While over 2002–05, part of this excess mortality was due to population ageing (*ibid*), the second dip in health conditions of 1999–2005 generated 3.2 million excess deaths, as opposed to roughly 1.6 million over 1989–1994. Overall, over 1989–2014 in Russia, the sum of yearly excess deaths in relation to the 1989 level reached a staggering level of 12. 2 million (Table 4.1). Also in this case, a modest part of this figure is explained by a (limited) ageing of the population, especially over 1989–2000 (last three columns of Table 4.1). Indeed, much of the excess mortality in these countries was due to a rapid rise in death rates for the male 15-59 age group, which peaked in the mid-to-late 1990s and again over 1998–2003/04 (TransMonEE, 2017).

Table 4.2. Changes in male LEB in 21 European transitional economies, 1989-2014

	Male life expectancy at birth					
	1989	1989-1991	Maximum LEB loss since 1989 and year	Year in which the 1989 LEB level was reached again	Change over 1989-1999	Change over 1999-2014
Czech Rep	68.1	- 0.5*	-0.5 (1990)	1991	3.3	4.4
Hungary	65.4	- 0.4	-0.9 (1993)	1996	0.9	5.8
Poland	66.7	- 0.6	-0.6 (1991)	1992	2.1	5.0
Slovakia	66.8	- 0.2*	-0.2 (1990)	1991	2.2	4.2
Slovenia	68.8	0.7	n.a.	1989	2.6	6.6
Albania	69.6	-0.3	-1.1(1996)	1999	2.1	4.7
Bulgaria	68.6	-0.6	-1.5(1996)	2004	-0.7	3.3
Romania	66.5	0.1	-1.3(1997)	2000	-0.4	5.1
Estonia	66.7	-1.3	-4.6(1994)	2003	-0.3	6.9
Latvia	65.3	-1.4	-4.6(1994)	2002	-0.4	4.4
Lithuania	66.9	- 1.7	-4.3(1994)	2009	-0.5	2.7
Belarus	66.8	-1.3	-4.6 (1999)	2013	-4.6	5.6
Moldova	65.5	-1.2	-3.7(1994)	2008	-1.8	3.8
Russian Fed.	64.2	-0.7	-6.6(1994)	2012	-4.2	5.3
Ukraine	66.0	0.0	-5.0(1996)	2011-13	-3.0	3.3
Armenia	66.0	-0.1	-1.1(1994)	1996	1.7	1.1
Azerbaijan	66.6	-0.3	-1.4(1995)	1997	1.5	3.0
Georgia	67.3	-0.2	-2.9(1993)	1994	0.2	1.1
Kazakhstan	63.9	-1.3	-5.9(1994)	2011	-3.3	6.5
Kyrgyzstan	64.3	0.3	-2.9(1995)	1999	0.6	1.6
Uzbekistan	67.3***	n.a.	-1.2(1995)	1997	1.3**	2.4

Source: Author's elaboration on TransMonEE Database 2017 <http://www.transmonee.org>.

Notes: \*1989-90; \*\*1991-1999; \*\*\* refers to 1991. n.a. means 'not applicable' as the country recorded improvements throughout the transition; n.a. means not available. Two central Asian countries and all countries of the former Yugoslavia except Slovenia were dropped because of missing data, lack of comparability, border changes and war.

Large increases in the number of deaths relative to 1989 and the population of that year were also observed in Ukraine and Belarus. In the latter country, male LEB fell for 11 years in a row from 1989, stagnated for another five years, then only returned to its 1989 level in 2012–13. In Estonia and Latvia, male LEB returned to its 1989 level in 2002 and in Lithuania in 2009 (Table 4.2). The crisis was also acute and long lasting in the countries of Southeast Europe.

**Table 4.3. Changes in female LEB in 21 European transitional economies, 1989--2014**

	Changes in female LEB					
	1989	1989-1991	Maximum LEB loss since 1989	Year in which the 1989 LEB level was reached again	1989-1999	1999-2014
<b>Czech Rep</b>	75.4	0.3	n.a.	n.a.	2.7	3.6
<b>Hungary</b>	73.8	-0.1*	-0.1 (1990)	1991	1.3	3.8
<b>Poland</b>	75.5	-0.2	-0.2 (1991)	1992	2.0	4.1
<b>Slovakia</b>	75.2	0.0	n.a.	n.a.	1.8	3.0
<b>Slovenia</b>	76.7	0.7	n.a.	n.a.	2.1	4.7
<b>Albania</b>	75.5	-0.1	-1.2(1993)	1999	0.9	3.9
<b>Bulgaria</b>	75.1	-0.4	-0.7(1997)	2000	-0.3	3.5
<b>Romania</b>	72.4	0.7	n.a.	n.a.	1.3	5.2
<b>Estonia</b>	74.7	0.1	-1.6(1994)	1996	1.4	5.4
<b>Latvia</b>	75.6	-0.4	-2.3(1994)	1996	1.0	3.3
<b>Lithuania</b>	76.2	-0.4	-1.4(1994)	1997	0.7	2.9
<b>Belarus</b>	76.4	-0.9	-2.5(1999)	2008/9	-2.5	4.5
<b>Moldova</b>	72.3	-1.3	-2.6(1995)	2007	-1.3	4.6
<b>Russian Fed.</b>	74.5	-0.2	-3.3(1995)	2009	-2.0	4.0
<b>Ukraine</b>	75.1	0.0	-2.3(1995)	2010	-1.3	2.7
<b>Armenia</b>	74.7	0.9	-0.3(1993)	1994	0.8	2.6
<b>Azerbaijan</b>	74.2	0.3	-1.3(1995)	1997	0.9	1.7
<b>Georgia</b>	75.0	0.0	-1.8(1993)	2003	0.1	2.1
<b>Kazakhstan</b>	73.1	-0.7	-3.7(1995)	2009	-2.2	5.0
<b>Kyrgyzstan</b>	72.4	0.3	-2.0(1995)	2008	0.2	1.9
<b>Uzbekistan</b>	75.3*	n.d.	-2.1(1994)	2001	0.2**	2.3

Notes: \* 1989-95. \*\* 1991-92. indicates that the maximum loss was realised over the first two reform years. a. means that the country recorded steady improvements throughout the transition.

To put things into perspective, it must be noted that by 1994, the LEB of Russian males had already fallen to 57.6 years, that is, 6.6 years less than in 1989 and three years less than that of India, which was then a poor agrarian economy. Likewise, over 1998–2003, male LEB fell by 2.7 years. This crisis was unprecedented in the 20th century for countries at peace and unaffected by famines or major epidemics. To underscore the dramatic nature of these figures, it suffices to mention that World War Two caused 3.3–4.6 million civilian casualties in Poland and 7 million in the USSR (Alderson, 1981). Likewise, the 1929–33 famine caused by the collectivisation of the Kulaks' land in Russia, Ukraine, and Belarus caused an estimated additional 9 million deaths.

The transition mortality crisis resulted from the overlay of a long-term pre-1989 stagnation in health conditions (not the focus of this chapter) and of an acute adjustment crisis. As a result, the mortality gap



with the Western European countries and between Russia and its former satellites rose sharply. For instance, the male LEB gap between Poland and Russia rose from 4.5 to 8.5 years over 1989–2014 and that for female LEB from 1.0 to 5.1 years (Tables 4.2 and 4.3). In turn, the male and female LEB gap in relation to Italy respectively rose from 6.9 to 14.7 years and from 5.1 to 8.2 years. It is thus important to understand why in an era of growing opportunities associated with the market economy, the health status of many CIS countries fell further behind those of their former satellites of Central Europe and of Western Europe. The rapid reduction in cardiovascular mortality that began in Russia during the last decade, however, has started closing this health gap.

### **3. IMMEDIATE CAUSES OF DEATH**

What were the disease-specific causes of the fall of LEB during the transition? Overall, the surge in death rates resulted from diverging trends for different groups of diseases.

#### **3.1. Diseases Exhibiting a Stable or Declining Trend in Death Rates**

Mortality due to respiratory ailments mainly followed a declining trend, possibly because of the fall in the emission of pollutants into the atmosphere due to the sharp industrial recession experienced during the initial years. From the mid-1990s, the trend became less stable, but in no country did it lead to a sizeable rise in deaths. Also of limited importance were the increases in cancer mortality, which showed a stable, slow, upward trend that played a greater role in countries with smaller shifts in overall mortality.

#### **3.2. Diseases Showing a Fast Increase in Death Rates**

Close to 40% of the increase in standardised male mortality and a smaller but non-negligible share of female mortality was caused by an epidemic of heart diseases, such as ischaemic heart diseases, sudden deaths due to circulatory problems, and strokes. Interestingly, the fall in deaths due to these diseases and to external causes accounted for most of the decline in mortality recorded in the Central European countries after 1991, and in the Baltic States after 1995–96. In Russia, mortality due to these causes started dropping from the mid-2000s due to the ‘preventative cardiovascular revolution’ that took place following a rise in the implantation of stents and bypasses (Grigoriev et al., 2014). Indeed, the number

of cardiac interventions per 100,000 people of over 35 years of age quadrupled between 2000 and 2010 (ibid). In the countries of the former Soviet Union, the external causes of death (poisoning, suicide, homicide, and all sorts of accidents) also explain an important share of the overall increase in mortality among young people, especially men. For instance, in the Russian Federation the murder rate among 35-39 year-old males increased by 223% between 1989 and 1993 alone (UNICEF, 1994). The transition was also characterised by an increase in deaths due to motor, train, and plane accidents, alcohol and other types of poisoning, accidental drowning, fires, and work accidents, that is, deaths related to the weakening of the state's regulatory capacity and the erosion of safety at work.

The escalation in mortality was also in part explained by an upswing in deaths due to cerebrovascular and digestive diseases, including stress-related diseases such as ulcers and cirrhosis of the liver. Finally, there was also a sharp percentage increase from very low levels in mortality due to diseases of poverty (that is, infectious, nutritionally-related, parasitic, and sexually transmitted diseases) such as diphtheria, tuberculosis, and – later on – HIV-AIDS. While very pronounced in relative terms, this rise was almost negligible in absolute terms and was possibly related to the emergence of an underclass of 'marginal' people (vagrants, intravenous drug users, and commercial sex workers) unreached by the public health system. Yet because this rise took place from a very low level, it explains little of the aggregate mortality rise.

## **4. POPULATION GROUPS AFFECTED**

A priori, one might have plausibly surmised that the health dislocations caused by the transition would have most affected the biologically more vulnerable groups: children, pregnant women, the elderly, and the disabled. In reality, the mortality crisis affected other social groups.

### **4.1 Gender**

In most countries and for all age groups, men were far more affected than women. Indeed, where death rates soared, the transition exacerbated an already high gender gap. In Russia, for instance, the female-male LEB gap rose between 1989 and 2014 from 10.3 to 11.2 years (Transmonee, 2017). In contrast, in countries where death rates fell, the gender mortality gap narrowed: in the Czech Republic, the female-male LEB gap dropped over 1989–2014 from 7.3 to 5.9 years (ibid). The production of specific

hormones, testosterone in particular, seems to provide women with greater protection against stress-related mortality. In addition, women generally depend on a more diversified portfolio of activities and social relations. Such diversification shelters them from the anxiety and dejection experienced by men during periods of rising unemployment, loss of social status, inability to provide for one's own dependents, and deteriorating family life.

#### **4.2 Age Groups**

The fastest relative upswing in mortality rates over 1989–1994 and 1998–2005, and its drop since 2005, was recorded for 20–39 year-olds (who were affected mostly by a sharp rise in external causes of death), while the most rapid absolute increase was observed for 40–59 year olds (who were mainly hit by a rise in cardiovascular deaths). For people above 60 years of age, and even more so for those above 70, there was only a small increase or even a decline in mortality (Cornia and Paniccìa, 2000). Likewise, infant and child mortality rates declined everywhere (Transmonee, 2017).

#### **4.3 Level of Education**

Previous studies have documented the steep mortality gap existing among people with different levels of education. Higher education allows individuals to acquire and process new types of information more easily than people with 'low' education, an essential advantage during periods of rapid transformation. Higher education also favours greater employment mobility, better management of limited financial resources, and a prudent screening of the risks connected with smoking, taking drugs, and excessive drinking. *Ceteris paribus*, a rise in overall mortality was therefore expected to disproportionately affect people with low education. But the reality has been grimmer than such predictions. Indeed, mortality differentials by level of education widened during the transition. Shkolnikov et al. (1998), for instance, showed that in Russia, the temporary life expectancy gap between the best and least educated men and women in the 20–69 age group rose from 1.63 and 1.44 in 1988–89 to 1.89 and 1.75 in 1993–94. And Shkolnikov et al. (2006) show that the life expectancy differentials at age 40 between people with high and low education hardly changed over 1988 and 1998 in the Czech Republic, while rising in Russia and Estonia from 5.14 to 10.21 years and from 3.30 to 8.97 years.

#### **4.4 Marital Status**

The rise in death rates disproportionately hit a growing number of people living alone. A drop in the marriage rate and – in the Slavic countries of the former Soviet Union – a rise in the divorce rate, raised the number of adults living alone. This phenomenon was exacerbated by the surge in the number of

widows and widowers due to the initial (1989–95) and subsequent (1998–2003) surge in adult male mortality, and to a lesser extent female mortality, that raised the number of widows and widowers.

#### **4.5 Migrant Populations and Place of Residence**

Migrants, especially distress migrants, normally face a higher risk of mortality than people who remain in their communities. The impact on aggregate mortality of this phenomenon rose in intensity, as domestic and international migration skyrocketed in the region following the breakdown of states, the return of troops posted abroad, the inflow of refugees fleeing ethnic strife, industrial restructuring, and unemployment.

In most of the region, mortality rates have historically been higher in rural than urban areas. Since 1990–92, however, this tendency started to be reversed, because of the greater unemployment, stress, and crime levels of cities, particularly in mono-industrial cities affected by the collapse of dominant state factories (Milanovic, 1996). Urban mortality also increased because of a surge in the number of deaths among vagrant rural residents who moved to towns after the abolition of residence permits and the liberalisation of internal migration. In Russia, for instance, the rural-urban LEB difference decreased from 2.4 to 0.8 years between 1992 and 1994 due to a faster rise in urban mortality rates linked to violent causes and cardiovascular problems (Shkolnikov and Cornia, 2000).

#### **4.6 Ethnic Origin and Employment Status**

Mortality appears to have risen more rapidly among certain ethnic groups. For instance, Krumins and Usackis (2000) showed that before the transition, the standardised death rate in Latvia was 10% higher among ethnic Russian males than among ethnic Latvians. This differential rose to 17% by the mid-1990s. Similarly, in the Czech Republic, Džúrová (1996) found a high correlation among cross-district mortality, ethnic heterogeneity, and the proportion of the population of Romany origin. Jozan (1997) reported similar results for Romania and Hungary. It is unclear, however, whether these differentials would still be valid after controlling for levels of education and skills, unemployment, and so on. Finally, Shkolnikov and Cerviakov (2000) found that in Udmurtia (Russia), the mortality among 20-59 year-old males was higher among the Udmurt population than among people of Slavic and Tatar origins, but were unable to conclude whether this depended on genetic or socio-economic factors. Finally, mortality grew faster among the unemployed, people with part-time jobs, handicapped pensioners, and people affected by fast labour turnover. This point is discussed further in the next section.

In conclusion, the evidence suggests that the transitional mortality crisis mainly affected an underclass of young and middle-aged men and – to a lesser degree – women with low-level education and skills and unfavourable labour market conditions. These people often lived in poverty (which affected their psychological status and alcohol consumption), inhabited in or migrated to urban areas, lived alone, had been detained in the past by the police for more than three days, and were of migrant or ethnic-minority backgrounds. The retrospective case-control study conducted in 1999 on 500 men of 20-55 years of age in the Udmurt republic of Russia confirms that the victims of the transition had this kind of social profile (Shkolnikov and Chervyakov, 2000; Shkolnikov et al., 2004).

## **5. UNDERLYING CAUSES OF THE MORTALITY INCREASE<sup>3</sup>**

Several hypotheses have been put forward to explain the increase in transitional mortality. Some have shown their limited relevance and are no longer the object of discussion. They are briefly mentioned hereafter for completeness. Others emphasised factors that do not require a policy response, either because the problem does not exist anymore, or because it stems from past problems, the influence of which can no longer be offset.

### **5.1. Explanations of No or Limited Relevance**

#### *Glasnost in Statistics*

According to this explanation, a large part of the mortality rise was due to changes in statistical conventions and greater transparency. It is well known that the former communist authorities deliberately misclassified the number of deaths due to alcoholism and violent causes. Yet the removal of this distortion barely affected the global mortality picture. Second, the pattern of mortality changes observed in the 1990s throughout the region was uniform, a fact it is hard to attribute to coordinated data falsification by many independent statistical agencies. Third, detailed investigations of death statistics indicate that for several decades, their quality and coverage were – with few exceptions – of standards similar to those of Western countries (Anderson and Silver, 1990). The new mortality data could also have been affected by changes in statistical conventions, disease classifications, and

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<sup>3</sup> Schiering et al. (2018) reviewed 39 cross-national, multi-variable, peer-reviewed studies on the causes of the transition mortality crisis in Eastern Europe and the former Soviet Union. They found that inequality, unemployment, social subsidies, a lack of democracy, poor economic performance, and religious composition were the leading factors explaining the observed mortality outcomes. At the same time, the reviewed studies failed to establish a connection between mortality and diet, drinking patterns, liberalisation, trust, health expenditure, and war. Such results coincide to a great extent with those reported below.

geographical boundaries. However, an examination of the data showed that these changes explained only small variations in mortality for narrow subpopulations.

### *Ecocide*

According to this argument, the mortality crisis was largely due to the current and lagged impact of past environmental neglect. During the socialist era, acute environmental problems led to a high incidence of deaths due to bronchitis, pneumonia, influenza, neoplasms, and genetic disorders. Yet ecocide cannot explain the transitional mortality crisis because during the initial phase of the reforms, emissions of harmful substances declined sharply in line with a contraction of industrial production and the adoption of more efficient and less polluting technologies. In Russia, for instance, the emission of harmful substances into the air dropped from 34 million tons in 1990 to 21 million tons in 1995–96 (Goskomstat, various years). The irrelevance of this explanation is confirmed by the steady decline of mortality due to respiratory diseases.

### *Cohort Effects*

The mortality crisis in Russia and Ukraine also cannot be explained by the delayed consequences of the debilitation experienced by people born during the 1929–34 famine and World War Two. Indeed, an analysis of cohort mortality in Ukraine over 1965–94 concluded that the male war birth cohort experienced higher mortality in the 1990s than the adjacent cohorts, but also that this was not enough to explain the overall increase in mortality after 1989 (Godek, 1997). A similar analysis for Russia (Blum, Avdeev, and Zakharov, 1997) shows that in the 1990s, the three-year cohort born during the difficult years of 1942–44 experienced an increase of 16% in the risk of dying in relation to the adjacent cohorts. Similarly, the cohorts born between 1933 and 1934 experienced a 9% higher risk of dying in relation to the cohorts born in 1931–32. However, the share of deaths explained by this ‘debilitation hypothesis’ is not too important, as the overall increase in death rates over 1991–94 among males aged 40–50 and 50–60 years exceeded 75%. Second, the percentage increase in death rates during the transition was much higher among 20–40 year-olds, that is, cohorts born during a period of relative prosperity. Also, women born during World War Two and 1929–33 should have also suffered higher risks of death later in life, a fact only partially borne out by the data for the 1990s. Fourth, during the transition, the rise in mortality also affected areas of the former Soviet Union that had not been hit by the demographic catastrophes of the 20th century. Likewise, in Poland the mortality rates of cohorts born during World War Two fell more quickly than those of the preceding cohorts. Finally, the ‘postponed death hypothesis’ (which suggests that the liberalisation of alcohol sales of 1989 led to an increase in consumption that proved lethal for socially weak groups whose life was saved by Gorbachev’s anti-alcohol campaign) does not

stand up to scrutiny. A comparison of LEB gains during the anti-alcohol campaign, with its rises over 1989–1994 suggests that this hypothesis may explain only a modest part of the surge in deaths over 1989–94 and none of the 2.6-year decline in male LEB that took place over 1998–2003 in the aftermath of the Ruble crisis and devaluation.

*Recession, Impoverishment, and Malnutrition*

To be sure, the belt-tightening imposed by the transitional recession entailed a sizeable drop in food expenditure. Yet in view of the high food intake prevailing in the region before the transition and of the considerable scope for substituting cheap sources of nutrients for expensive ones, even large drops in consumption expenditures did not seriously exacerbate the risk of death due to undernutrition (Cornia, 1994). The increase in deaths due to infectious and nutrition-related diseases among male adults was caused by reduced access to shelter, poor hygiene, and inadequate healthcare among a class of ‘marginals,’ vagrants, and homeless people. Thus, impoverishment and malnutrition may have been relevant only in very few poor and isolated parts of Romania, Russia, and Ukraine. Adamets (1997) reports that in Ukraine, only 25 deaths due to starvation were recorded in 1995 out of a total of almost 800,000 deaths that year.

*Unhealthy Lifestyles (Poor Diet, Smoking, and Drinking)*

This explanation focuses on causes of death and population groups similar to those observed during the transitional crisis. However, accepting this explanation entails that mortality should have risen slowly and should have done so after an extended exposure to risky behaviours. In addition, the risk factors mentioned above should have worsened, a fact not always borne out by the evidence. Furthermore, changes in relative prices and improvements in trading raised the consumption of vitamins and minerals from fruits and vegetables. Similarly, a rise in the relative prices of meat, milk, and dairy products reduced the intake of saturated fats, thus lowering the risk of cholesterol-induced mortality. Mielecka-Kubien and Zatonski (1997) claim that the drop in cardiovascular mortality among Polish men after 1992 was largely driven by respective falls of 25% and 60% in the consumption of animal fat and butter. Likewise, over 1989–95, tobacco consumption appears to have slightly declined or stabilised at a high level throughout the region, as incomes dropped, the prices of imported cigarettes soared, and educational efforts started producing an effect. In any case, as noted, death rates due to lung and other types of cancer rose along a slow stable trend and seem to be little related to recent changes in smoking prevalence. They cannot explain the rapid surge in circulatory and violent deaths.

## 5.2. Relevant But Incomplete Explanations

### *Weakening Healthcare Systems*

Since the onset of the transition, most Central European countries increased public health expenditure per capita and made greater use of modern drugs such as beta-blockers, which reduced the incidence of cardiovascular deaths. For instance, in the Czech Republic, the decline in cardiovascular mortality among middle-aged and old-aged people coincided with a surge in public health expenditure from 5% to 7.4% of GDP between 1990 and 2004 (Rychtarikova, 2004). These higher allocations fostered an increase in the number of heart interventions and improved the overall quality of public health. In contrast, countries such as Russia, Ukraine, Latvia, and Lithuania experienced a fall in health expenditures per capita of between 15 and 30% during the initial phase of the transition and stagnation since then. This gap has partly been reduced over time, and World Bank-WDI data for 2015 show that the Public Health Expenditure/GDP ratio ranged between 4.5% and 6% in Central Europe versus 2.9% in Ukraine and 3.4% in Russia.

In Russia and other CIS countries, the rise in the number of deaths for curable diseases among hospitalised patients and the temporary breakdown of vaccination systems in the early 1990s (Shkolnikov and Cornia, 2000) suggests that cuts in public expenditure played a role in the early years of the crisis. According to some estimates, one-fifth to one-quarter of the LEB gap between Russia and Western Europe could be attributed to deaths from amenable diseases.

Yet the reduced access to and declining quality of health services and their subsequent slower increase in quality cannot explain why mortality rose faster among men than women and why it surged only for a few diseases but not for others such as cancer, respiratory diseases, and neonatal and perinatal problems. Finally, it cannot explain the jump in the number of non-amenable causes of death such as strokes and violent deaths, that is, deaths that accounted for an important share of the total increase in mortality. Indeed, the relation between health spending per capita (and indirectly health spending/GDP) and LEB is concave.

While an initial growth in health spending per capita generates a rapid increase in LEB, beyond a threshold of around 2,000 international 2010 dollars, the gains in LEB are modest and likely to depend mainly on other factors discussed later on such as unemployment, the distribution of income, family arrangements, social cohesion, and so on.



### 3. Relevant Explanations

#### *Mounting Alcohol Consumption*

Official past data suggested that national sales statistics covered less than 50% of real consumption (Trembl, 1997). Alcohol intake during the transition was thus estimated indirectly based on increases in alcohol-related deaths. This and other indirect methods suggest that alcohol consumption rose perceptibly in several economies in transition (see Shkolnikov and Nemtsov, 1997). In Russia, indirect estimates by Shkolnikov and Nemtsov (1997) showed that average alcohol intake jumped from 11.8 litres per capita in 1989 to 14.5 litres in 1993 and that this increase contributed to a rise in accidental deaths. Likewise, in Poland, per capita consumption rose from 8 to 11 litres between 1988 and 1991, and fluctuated around that level over the subsequent five years. These estimates allowed Moskalewicz et al. (2000) to conclude that 32% of the overall surge in male mortality in Russia over 1990–94 can be tentatively attributed to greater alcohol consumption and that the equivalent figures for Lithuania (1990–94) and Poland (1989–91) were 40% and 27%. Given the fragility of the alcohol consumption estimate, these conclusions have to be taken with a pinch of salt. Indeed, a key issue in this debate concerns the causes of the increase in alcohol consumption (Paniccià, 1997). Possible explanations include: trend inertia reflecting deeply rooted consumption habits; changes in incomes and the relative prices of alcohol;<sup>4</sup> a relaxation of the anti-alcohol policy during the transition; and psychosocial stress.

However, the ‘alcohol hypothesis’ does not explain why alcohol related-mortality fell during the successful transition of the Czech Republic and why alcohol consumption remained constant in Poland after 1992. Similarly, in the 2000s, the number of alcohol-related deaths fell in Russia and the Baltics, where there is no evidence of a drop in total alcohol intake, though this was accompanied by a drop in the consumption of hard liquors and a rise in that of beer and wine. Moreover, it cannot explain the huge rise – and subsequent fall – in cardiovascular and other deaths that, while related to stress, are not

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<sup>4</sup> In Russia, for instance, the alcohol purchasing power of wages rose by 48% between 1989 and 1993 because of a drop in the price of alcohol greater than that in the average wage. However, a study by Denisova (2010), based on twelve rounds of the Russian Longitudinal Monitoring Survey covering the years 1994–2007 found that while social status, labour market behaviour, sectoral and occupational mobility, and smoking and alcohol consumption had a strong effect on longevity, there was no evidence that the low relative price of vodka led to greater alcohol consumption. Likewise, the meta-analysis of 39 studies on the determinants of the transition mortality crisis Schiering et al., (2018) found no evidence that alcohol consumption and drinking patterns were consistently associated with higher death rates, while Popov (2018) presents several other reasons why an increase in alcohol intake fails to provide a consistent explanation of the surge in transition mortality. Finally, Razvodovsky (2016) analyzed trends in sex-specific suicide rates and alcohol sales per capita from 1980 to 2010 in Russia, Belarus and Ukraine by means of a Spearman’s rank-order correlation analysis. The estimates based on the Soviet period suggest a strong association between alcohol sales and suicide rates in Russia, Belarus, and Ukraine. At the same time, the relationship between alcohol sales and suicide rates was negative in the post-Soviet period. The author concludes also that alcohol cannot fully explain the fluctuations in the suicide mortality observed in these countries during the Soviet period. The similar regional pattern of suicide trends does not support the hypothesis that alcohol policy was responsible for the decline in Russian suicide mortality during the recent decade.

mediated by alcohol intake. Moreover, in Russia, per capita alcohol consumption and alcohol-related deaths (from external causes, including murders, suicides, and poisoning) moved in opposite directions over 2002–07.

Subsequent analyses have focused on the way alcohol is consumed. While in Mediterranean countries, important amounts of alcohol are consumed every day, mainly with meals, in Russia, Belarus, Ukraine, and the Baltics, the same weekly amount is likely to be consumed on a single occasion, a drinking pattern termed binge drinking. Research suggests that the latter is causally associated with cardiovascular death. However, a study of 25,000 autopsies carried out in Barnaul (Siberia) over 1990–2004 suggests that 21% of adult male deaths attributed to circulatory diseases induced by alcohol consumption were caused by alcohol poisoning, i.e., lethal or near-lethal levels of ethanol concentration in the blood (Brainheard and Cutler, 2005).

Overall, alcohol has likely been an associated factor in 27–40% of the rise in male mortality and in a smaller proportion of female mortality, but fails to explain two-thirds of the rise in male mortality and over nine-tenths of that in female mortality. The main cause of this epochal disaster must therefore still be sought elsewhere.

#### *Acute Psychosocial Stress*

Acute psychosocial stress has been increasingly recognised as a key factor in sudden deaths, that is, deaths due to heart problems and hypertension, alcohol psychosis, neurosis, homicide, suicide, accidental deaths, ulcers, and cirrhosis of the liver, that is, the very causes of death that rose in importance during the transition. According to Serafino (1994, cited in Shapiro, 1994),

*“Stress is the condition that results when person/environment transactions lead the individual to perceive a discrepancy – whether real or not – between the demands of the situation and resources of the person’s biological, psychological or social systems.”*

Deaths due to acute psychosocial stress thus entail growing strain and pressures to adapt to unexpected situations for which established individual responses are no longer effective, appropriate coping behaviours are unknown, and the public policy response is inadequate.

Epidemiological research has shown that, in the absence of mitigating factors, acute stress leads to physiological and psychological arousal that affects health status via direct and indirect pathways. Marmot and Bobak (2000) have reviewed the direct effects of stress. They found that stressful situations

cause a higher secretion of cortisol, endorphins, platelets, fibrinogens, and fibrinolysis, that is, substances that affect the level of plasma lipids, blood coagulability, blood pressure, cardiovascular reactivity, the development of central obesity, responses to inflammation or infection, and the risk of depression. Chronic exposure to stress has also been found to cause coronary artery atherogenesis and to affect the immune system through a significant suppression of T-cell immune response. Finally, psychosocial stress has been shown to provoke an indirect effect on health via the increased use of stress-relievers such as alcohol, tobacco, and drugs, which influence health and social behaviours, as well as the ability to maintain emotional balance and coherent comportment.<sup>5</sup>

What were the main socio-economic sources of stress during the transition? The first was an unexpected rise in unemployment, employment instability, and rapid labour turnover. Mortality rose most in countries, districts, and years that recorded adverse labour market changes starting with a rise in ‘unexpected unattended unemployment’ and in other adverse labour market changes (Cornia and Paniccià, 2000). This confirms the results of controlled studies carried out in Western countries on factory closures and significant lay-offs and follow-up studies on unemployment; that is, studies that replicate quasi-experimental conditions. These have shown that the sudden loss of employment and similar events are a major cause of stress, cardiovascular and mental problems, and death (Beale and Nethercott, 1985; Warr, 1987; Martikainen and Valkonen, 1996). These studies have provided evidence of higher mortality for accidents and violence, alcohol-related diseases, traffic accidents, and circulatory diseases among the unemployed (Smith, 1992). Grouped data for the economies in transition (Cornia and Paniccià, 2000) confirm the existence of a strong correlation between the rise in unemployment and other adverse labour market changes and mortality changes in Czech Republic, Russia, Latvia, the former GDR, and Poland.

A specific pathway through which adverse labour market changes emerged in the transition economies concerns the approach followed to the privatisation of state-owned enterprises. A study based on Russian micro-level data by Azarova et al. (2017) uses enterprise and settlement-level data to enable a comprehensive analysis of both underlying and proximate causes of mortality in mono-industrial towns. This retrospective cohort study compares mortality in 10 fast-privatised factories with that in 10 slow-privatised ones. It found that fast privatisation – which is often associated with factory closures and asset stripping – raised workers’ mortality by between 13% and 21% (depending on the model specification used) in relation to slow-privatisation, after controlling for alcoholism, smoking, age, marital status, and financial deprivation. While in Soviet times, SOEs hoarded labour, resisting massive layoffs in slow-

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<sup>5</sup> The health impact of stress varies considerably, however, from one person to another due to genetic differences and differences in individual abilities to adjust to new situations.

privatising SOEs possibly reduced the stress related to sudden unemployment. Being employed, even nominally, provided people with minimal security and gave them the feeling of being in control of their lives. Likewise, before being privatised, SOEs offered a wide range of social benefits to employees and their families in the form of housing, healthcare, day care, and holiday recreation. When these enterprises were privatised, such benefits ended abruptly in the case of fast privatisation, but more gradually in the case of slow privatisation, giving workers the time to adjust to the new circumstances. Municipal authorities were often charged with taking responsibilities for these services but, due to serious financing problems, were unable to adequately fulfil such new obligations.

Through which pathways does unemployment affect health? The most obvious effect is that mediated by the loss of income. Unemployment, however, also affects people in other ways. Indeed, unemployment generates a loss of skills, cognitive abilities, motivation, and the sense of confidence and control (Sen, 1997). Unemployment can also be a source of psychological harm because of the loss of self-respect, feelings of being unwanted, unproductive, dependent, and without a social role, and due to rising anxiety about the future. Unemployment may also erode social norms and cause an increase in crime rates among the jobless. While material deprivation plays a role in the increase in crime, so does the greater sense of exclusion felt by the jobless. Finally, the loss of employment disrupts family and social relations and is associated with mounting alcohol consumption and family violence (ibid). There is also evidence that the impact of joblessness is related to the lack of expectations of becoming unemployed. Indeed, the impact seems to be greater among workers who were permanently employed and had no expectation of being laid off, as happened in many transition countries. It is moderate among workers whose fixed-term contracts are expiring and minimal among those who had never been employed and continue to be unemployed (Björklund and Eriksson, 1995).

#### *Growing Undeserved Income and Asset Inequality*

Growing undeserved income and asset inequality, i.e., inequality unrelated to differences in talent, effort, and human capital. Previous analyses of market economies have emphasised the negative correlation between income concentration and health outcomes (Wilkinson, 1996; Kawachi et al., 1999; Pickett and Wilkinson, 2010). Unequal societies are also afflicted by a high incidence of cardiovascular problems caused by low involvement in community life. Rising income and asset inequality may erode social cohesion, that is, the relations of interpersonal trust, mutual insurance, collective action, and redistribution at the local level. Social cohesion enhances health status by promoting the diffusion of health information, exerting control over deviant health behaviour and criminal activity and providing interpersonal help among community members. Finally, health status in an unequal society is also

influenced through psychosocial pathways. Strongly hierarchical societies appear to be subject to a high incidence of cardiovascular problems, less social integration, less involvement in community life, and greater personal isolation, which is an important cause of morbidity and mortality.

Several of these effects have occurred in the countries in transition exhibiting rapid rises in social stratification. On one hand, the economies of Central Europe experienced moderate initial increases (4-6 Gini points) in income inequality (Cornia, 2004). These countries contained the fall in the tax/GDP ratio and were thus able to continue financing the social services and benefits inherited from the socialist era and to introduce new provisions (for unemployment compensation and social assistance) that are needed in a market economy. On the other hand, in the former Soviet Union and South-eastern Europe, the Gini coefficients rose by an astounding 10-20 points, that of the asset distribution by even more, social transfers collapsed, and the targeting of transfers deteriorated (Cornia, 2001). As a result, in 2014, the Gini coefficient of the distribution of gross income was 25-27 in Central Europe – apart from Poland – and 35-41.6 in South-eastern Europe, the Baltics, and Russia (WIDER, 2018).

Third, these distributive changes placed a heavy psychological burden on the losers, namely, middle-aged, unemployed, semi-skilled industrial workers, collective farmers, and party cadres. As the new elites often reached their positions through ascription, capture of state assets, and corruption, the losers experienced rage, hostility, humiliation, lack of recognition, and unwontedness. Disorientation was also acute among the elderly and middle-aged adults who saw the values, norms, and savings of their lifetimes vanish.

#### *Growing Numbers of People Living Alone*

At all ages, stress-related mortality is higher among people (men in particular) who are widowed, divorced, separated, or who never married than among those who live in a stable partnership (Martikainen, 1995). The latter presumably lead healthier lifestyles, are less exposed to stress, and have greater access to support networks than people living alone. This regularity was confirmed during the transition, as the percentage of widows and widowers in the adult population rose, the crude marriage rate fell by between 16 and 54%, and the divorce rate edged up until the early 2000s by 10-15% in Russia, Ukraine, Belarus, and Moldova. These are the countries which experienced the most pronounced mortality rises. While even large annual shifts in these rates modestly affect the percentage of people living alone in the total, a continuation of this trend for a decade perceptibly raised the number of single adults who faced higher health risks. In addition, the unmarried-married mortality differential widened further during the transition, contributing in this way to a rise in aggregate mortality. For instance, even

in the Czech Republic – which experienced a fall in death rates after 1991 – the risk of death of divorced men relative to married men rose from 2.03 in 1990–91 to 2.27 in 1995 (Dzurova, 2001).

The number of people living alone also rose because the number of divorces rose over 1989–96 and 2000–2003 (Transmonee, 2017). In Russia, the general divorce rate rose from 42.1 to 73.2 per 100 marriages in 2003, the year that recorded the highest number of excess deaths (Annex Table 4A.1). Moreover, Pridemore and Shkolnikov (2004) found that in Russia, homicide mortality was 2.86 times higher among divorced people than among married people, and 9.3 times higher among divorced people with low education versus married people with high education.

### *Distress Migration*

Previous analyses have shown that migrants face greater mortality risks than people who remain in their communities (Eyer and Sterling, 1977). This finding was confirmed during the transition as, after 1989, at least nine million people moved within or between the countries of the CIS alone, seeking work, fleeing conflicts, as political refugees, or returning from abroad. For many of them, migration entailed considerable material hardship, disorientation, and a loss of control due to the difficulties encountered in new environments, the breakdown in social relationships, the redefinition of survival strategies, housing problems and, as a result of all this, greater stress and, at times, homelessness.

## **6. IMPACT OF POLITICAL DEMOCRATISATION**

A limitation of the above analysis concerns the puzzling differences in national policy responses to the mortality crisis. There is a need therefore to develop an accepted theory of why such responses differed so much among countries. For instance, despite its magnitude, the mortality crisis of CIS countries during the early years of the transition generated a limited response by several incumbent governments, a fact that may raise questions about the degree of democratisation and social concern that prevailed therein. The fact that the crisis hit most marginal groups with no ‘political voice’ may explain why this response was so limited. But other hypotheses may also be explored. Thus, the 16 million excess deaths recorded in Russia, Ukraine, Moldova, and Belarus between 1990 and 2014 still lack a comprehensive political theorisation.

Plotting the trends of LEB and the Freedom House Index of democracy for Russia and Belarus shows that there is a fairly close correlation (at least between 1992 and 2005) between the worsening of the

Freedom House Index (FHI) and male LEB.<sup>6</sup> These two countries experienced a fall in LEB until 2005 in parallel with a worsening in the FHI. In contrast, a similar scatterplot for Poland and the Czech Republic (Figure 4.1, bottom panel) confirms the close statistical association between the trend in LEB and the FHI. Indeed, in both these countries, these two variables improved, hand in hand, throughout the period analysed.

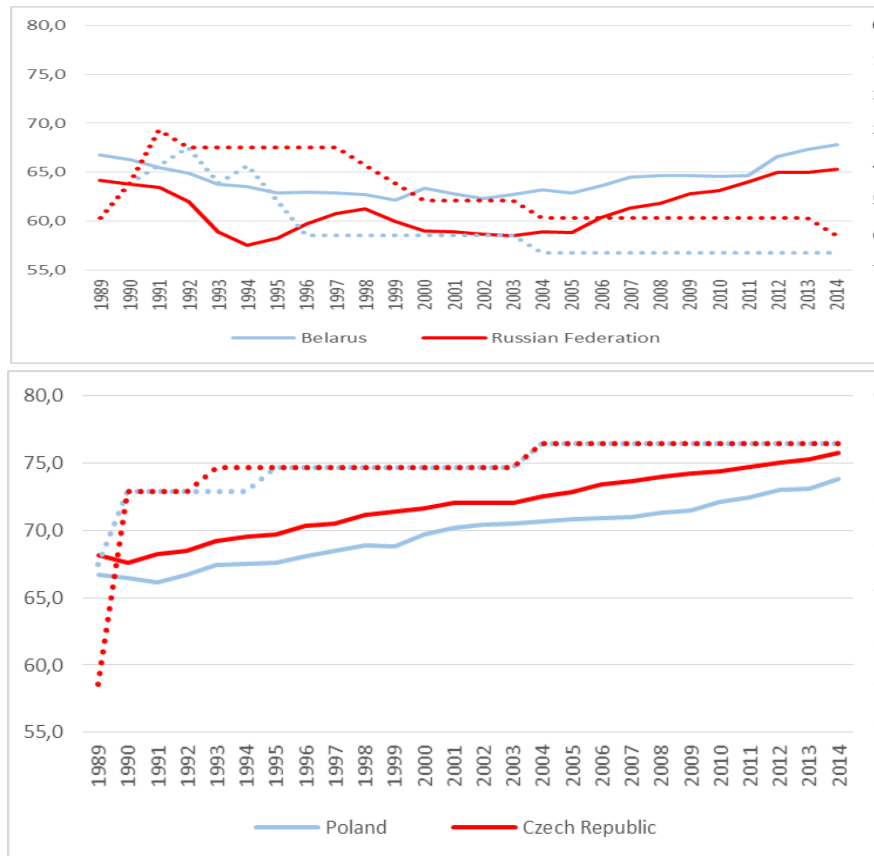
The same relation was also plotted for all European economies in transition over 1989 and 2014 (Figure 4.2). Also in this case, it appears that the two variables correlate closely. On the basis of Figure 4.2 – and pending a more detailed investigation taking care of the problems of endogeneity and variable specification – it appears that countries that introduced truly democratic institutions (scores 1 and 2) enjoy a male LEB of 7-8 years higher than those with a low score.

Public choice theory suggests that when income inequality is high, governments (as well as a self-interested bureaucracies) are likely to implement suboptimal policies that retard the provision of essential pro-growth public services. Rising divergence of interests and types of public services demanded by the rich and the poor leads to an overall drop in the supply of basic public services essential for growth, such as personal security, contracts enforcement, security of property rights, and human capital formation. Indeed, the rich resist taxation as they perceive that the supply of public services funded by an increase in revenue will bring little benefit to them. In extreme cases, the high income groups support policies that preserve their privileges even at the cost of slow or stagnant aggregate growth. The problem is particularly severe when the concentration of income in the upper deciles is accompanied by widespread poverty at the bottom of the distribution, without a middle class capable of challenging politically inefficient government decisions. The Guatemala of the early 2000s, where the tax/GDP ratio was 8% and the coverage of public services minimal, is a good example of this state of affairs (since 2003 taxation has risen and inequality declined, if modestly).

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<sup>6</sup>The yearly scores of the Freedom House Index of democracy summarize the subjective values assigned by experts to 10 political rights areas grouped into three subgroups. These cover the electoral process, political participation and pluralism, and the functioning of the government) and 15 civil liberties covering the freedom of expression and belief; associational rights, rule of law, and personal autonomy and individual rights. Such different aspects of democracy are then summarized by means of the arithmetic mean, that ranges between 0 (perfect overall democracy) and 7 (total absence of it).

**Figure 4.1.** Evolution of male LEB (left scale, solid line) and the Freedom House democracy index (right scale, dotted line) in Belarus and Russia (top figure) and Poland and the Czech Republic (bottom figure).



Source: own elaboration on Transmonee 2017 and the Freedom House Index database.

Because of the criticism that is often addressed to the FHI, and of the problems posed by equating democracy with ‘electoral democracy,’ the relation between ‘political democratisation’ and male LEB was also tested using an alternative indicator that emphasises ‘participatory democracy,’ such as the ‘vdem partidem’ indicator. This index is extracted from the ‘Varieties of democracy V-Dem’ website and is the average of three components: the first is a ‘participatory component index’ that emphasises the active participation by citizens in all political processes, electoral and non-electoral. This index takes

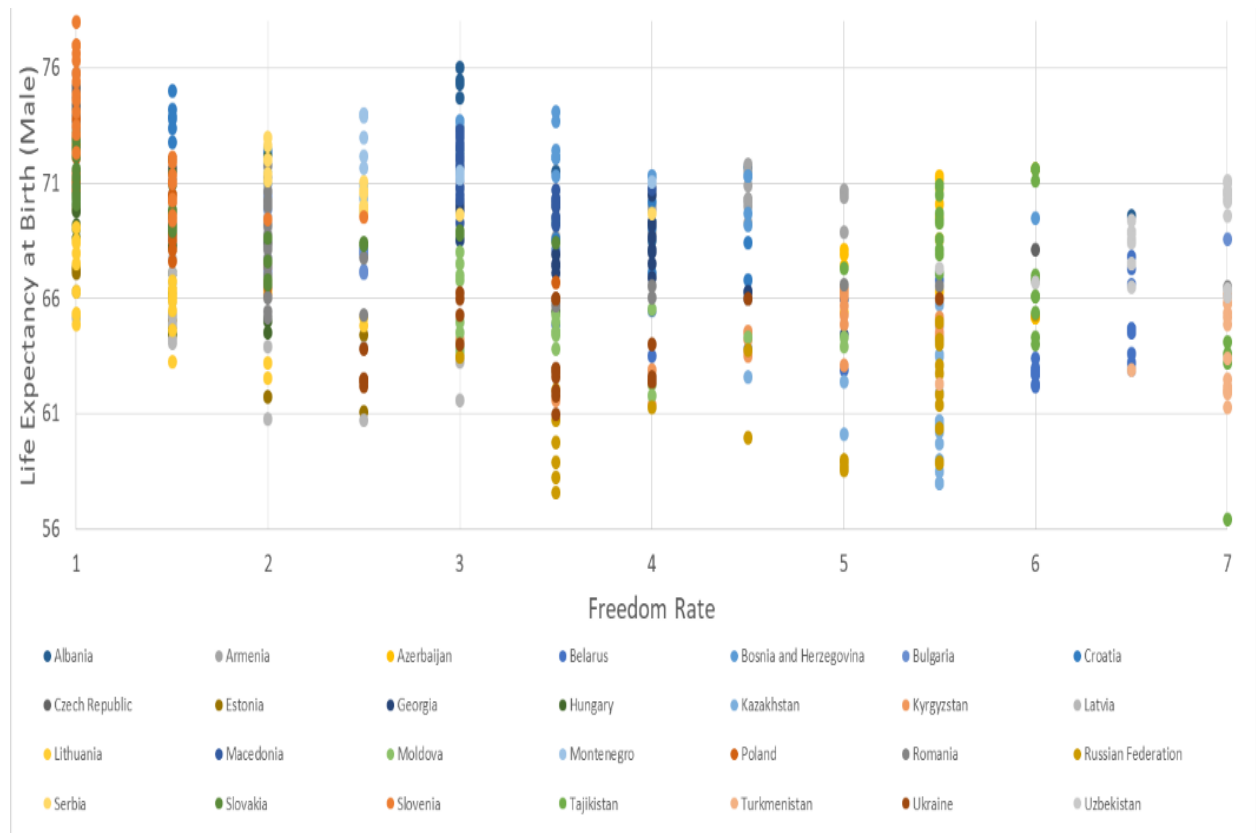


suffrage for granted, but emphasises also the engagement in civil society organisations, direct democracy, and the election of subnational bodies. 'vdem partidem' includes also a (fairly similar) 'Participatory democracy components' indicator that emphasises active participation by citizens in all political processes. The index also includes the level of electoral democracy. And, third, the index includes a 'Political Participation Rights' component that measures the extent a country enacts political participation rights by law and respects them in practice. The overall index varies between 0 (no participatory democracy) and 1 (when participatory democracy and participatory rights are fully realised).

As shown in Figure 4.2, this index identifies very different situations of 'participatory democracy.' Some countries (such as Uzbekistan, Turkmenistan, and Belarus) have very low scores of 0.1-0.2; others (especially in Central Europe) have scores of up to 0.65. Russia's score ranges between 0.27 and 0.32, Ukraine's between 0.48 and 0.52, and the Baltics between 0.55 and 0.59. Also, in this case, the male LEB difference between the best and worst performers is about 6-7 years, while a considerable amount of variance remains – as expected – unexplained.

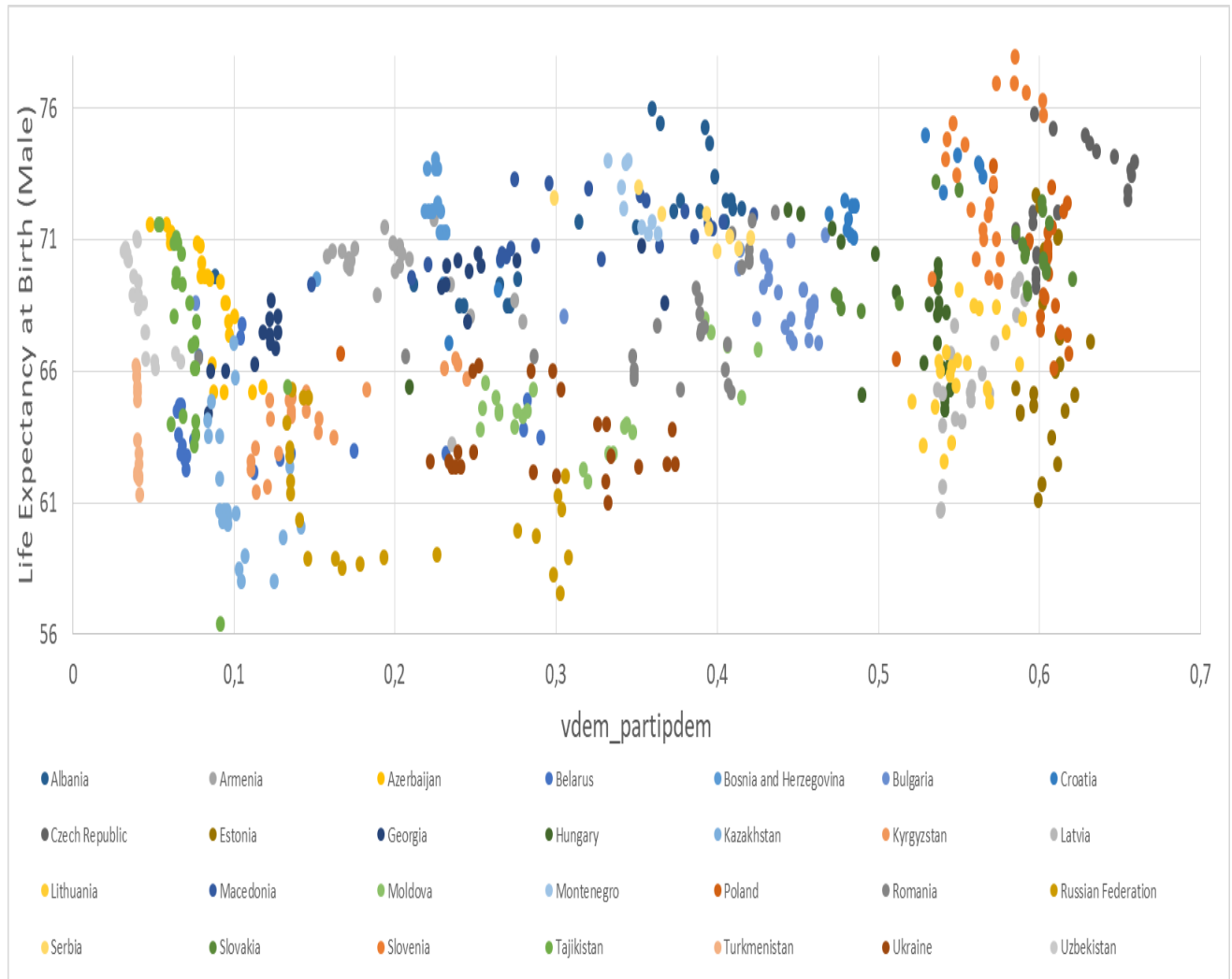
There seems, therefore, to be a fairly solid empirical association between electoral democracy, participatory democracy, and civil rights on one side, and male LEB on the other. Beyond differences in the 'initial distortions' mentioned in the first part of the chapter, the depth and nature of democracy thus helps explain the different national policy responses to the transitional mortality crisis and – in the end – the losses/gains in male LEB.

**Figure 4.2.** Relation between the Participatory Democracy Index (horizontal axis) and male life expectancy at birth (vertical axis) for all transition countries and years with data, 1989-2014.



Source: own elaboration on data from Freedom House (2018) and Transmonee (2017).

**Figure 4.3.** Scatterplot of the relation between the Freedom House Index (x axis) and male life expectancy at birth for all transition countries with data, all years 1989–2014.



Source: Own elaboration using the index of participatory democracy 'partidem' and Transmonees (2017).

**Table 4.4.** Regression Results: OLS with country dummies., 1989-2014

	Male LEB
Partidem	2.097** [1.035]
Gdp/c	0.038*** [0.005]
Gdp/c <sup>2</sup>	-0.000*** [0.000]
Period dummy 1990-2002	-1.340*** [0.192]
Constant	71.146*** [0.491]
Country dummies	Yes
Observations	584
R-squared	0.90

Robust standard errorism in brackets. \*\*\* p < 0.01, \*\*p < 0.05, \*p < 0.1.

The relation between participatory democracy and male LEB is also tested econometrically hereafter over the years 1990–2014 and for the 21 countries included in Table 4.1 after introducing the yearly GDP/capita in a quadratic form as a control. Indeed, the impact of GDP per capita on male LEB is highly concave, as its effect is strong at the beginning, to decline after about 6,400 1990 international dollars. This relation – known as ‘the Preston Curve’ from the name of the demographer Samuel Preston who first described it in 1975 – suggests that GDP/capita should be introduced in a nonlinear form among the determinants of LEB. Furthermore, an analysis of the scatterplot suggests that the impact of GDP/capita on male LEB was particularly pronounced over the years 1989–2002, and for this reason we introduced a 1990–2002 ‘dislocation dummy’ that turns out to be highly significant in regression. The results of this econometric test are reported in Table 4.4. They show that, after introducing as controls the GDP/capita (that has the right sign and is statistically significant at the 1% level) and the ‘dislocation dummy’ 1990–2002 (that is equally statistically significant and with the expected sign), the variable v-partidem is statistically significant at the 5% probability level, while the overall R<sup>2</sup> is high (0.9). An increase of v-partidem by 0.1 points would raise – ceteris paribus – life expectancy by about 0.2 years. For instance, if Russia’s current v-partidem score (about 0.3) rose to that of the Czech Republic (0.65), its male LEB would improve by about 0.7 years. If the analysis were conducted for years prior to 2002, the favourable effect on male LEB would have exceeded 2 years. The level of

participatory democracy therefore influenced the level and trend of male LEB in a non-negligible way, especially for the initial transition years. Of course, the other variables discussed above concur in explaining the large cross-country male LEB gap observed among the European transition economies. How can one support this conclusion theoretically? An initial argument has to do with asset and income inequality. To start with, in the 1990s, all European countries in transition (apart from the Central Asian countries and Belarus) shifted from a uniform model of authoritarian centralism to different shades of 'Western-type democracy.' Yet, in itself, greater 'electoral democracy' did not help to improve human wellbeing and health status, unless 'participatory democracy' and 'economic democracy' improved in parallel and unless the economic base of the disenfranchised populations did not deteriorate. 'Economic democracy,' in turn, depends on historical path-dependent factors affecting the current asset and income distribution. In this regard, the very different models of privatisation of state assets followed in the region after the collapse of communism influenced to a large extent the degree of asset concentration in the region, the distribution of political power, and the current level of income inequality. As noted earlier, the current Gini coefficient of income inequality in Central Europe is 40% lower than in Russia.

In this regard, public choice theory suggests that the high-income polarisation observed in the several CIS countries led to a divergence in the types of public expenditure demanded by different income groups. In countries with rising asset concentration, the new elites increased their political ability to resist taxation and influence the allocation of public expenditure towards activities (including prestige items and national defence) that were perceived to benefit them the most, while neglecting public expenditure on health, education, housing, and income support. Greater public expenditure on these items would have substantially benefited the marginal groups hit by the mortality crisis. Yet, the elites perceived such expenditures would have brought little gains to them. Indeed, where asset and income polarisation rose, the state provision of educational and health services declined, or was privatised, while residential segregation increased. Elite-friendly governments neglected the health needs of the masses when deciding resource allocation, reducing in this way the prospects of the poor and of the middle-class for achieving adequate income levels and effective access to public healthcare. What is observed in the region may therefore confirm the conclusions of the literature that suggests that when asset and income inequality are high, governments and self-interested bureaucracies are likely to implement suboptimal policies that retard or reduce the provision of essential pro-poor and pro-growth public services. Rising divergence about the types of public services demanded by the rich and the poor often lead to an overall drop in the supply of basic public services that are essential for growth, such as personal security, contracts enforcement, and human capital formation.

A second way through which high inequality may affect health status is that the ‘procedural democracy’ and formal political freedom typical of polarised societies may not guarantee ‘political stability’ and health-enhancing social cohesion. During the communist period in much of the former Soviet Union, official organisations affiliated to the Communist Party, such as the Pioneers and sport and leisure associations, took the place of civil society organisations that had developed spontaneously in the West, or that had not disappeared during the communist era. This is the case of trade unions and church organisations in Poland, cooperatives in Hungary, or pre-communist institutions (such as neighbourhood associations like the Mahallas in Uzbekistan and similar groups in Armenia).

The preponderant role of the Communist Party and the limited scope for independent self-organisation generated a deep-rooted apathy among individuals and led, after the political liberalisation and subsequent collapse of the Communist Party, to the creation of a ‘shallow democracy.’ This lacked a well-developed network of civil society organisations (associations, NGOs, and churches working in the social sphere, trade unions, producers’ associations, and self-governing bodies). These organisations help the formation and channelling of political consensus, democracy at the local level, defence of the interest of marginalised populations, and active political participation, i.e., all institutions and organisations that would have likely helped to contain the increase in mortality. For instance, a study on Russia (Stuckler et al., 2009) found that every one increase in the share of the population who were members of at least one social organisation decreased the associated risk of mortality by 0.27%. When more than 45% of the population surveyed was socially organised, the mortality differential with privatisation was no longer there.

## CONCLUSIONS

The acute mortality increase that followed the introduction of market reforms, that were expected *ex-ante* to generate positive economic, social, and health effects confirms that poorly managed societal transformations may generate acute deteriorations in the economic and health spheres. The 35% increase in male suicides over 2007–2011 recorded in Greece during the recent years of austerity (that in the view of the EU and IMF was to lead to a rapid economic turnaround) provides another example of the need to adopt measures to control the rise of instability, unexpected job losses, inequality, and personal insecurity. Swift policy responses in these areas are needed both for the specific benefits they produce (e.g., better labour market outcomes) as well as because of their positive health impact.

Acceptance of the psychosocial stress explanation has important policy implications. Supporters of ‘big bang policy reforms’ tend to ignore the social and health impact of such reforms, to ascribe them to problems inherited from the past or to the unavoidable chaos brought about by profound political transformations, and to suggest that there are no quick fixes for such problems. Meanwhile, conservative forces (like the unreformed neo-Soviet parties) argue that the mortality crisis has been caused by the sheer impoverishment brought about by the introduction of capitalist institutions, and that most liberal reforms (including privatisation) should thus be reversed or drastically amended.

The implications of the analyses presented in this chapter are substantially different from either of these two views. Vigorous market reforms are necessary. But – as shown by the case of the Czech Republic and Poland or by the gradual two-track price liberalisation followed in China over 1978–84 – they need to be characterised by a realistic pace of restructuring and privatisation, strong labour market and social sector policies, maintenance of law and order, and the strengthening of healthcare. To finance all this in a non-inflationary manner it is necessary to generate adequate revenue.

A solution to the mortality crisis that has affected the countries of the former Soviet bloc will require vigorous measures to prevent or control transition-related psychosocial stress. Measures needed under such circumstances include properly paced macroeconomic adjustment and industrial restructuring, adequate credit and technical assistance policies for small firms, job re-training, public works, unemployment compensation, wage subsidies, and measures to contain surges in inequality, social exclusion, family breakdowns, and distress migration. Deaths due to violent causes and infectious diseases can also be avoided by strengthening the police and social assistance services dealing with people marginalised by the crisis. A stricter regulation of alcohol consumption and other stress relievers is also needed to reduce violent and cardiovascular deaths. Reversing the negative long-term trend in health status will also require efforts at improving lifestyles, educating people about the risk of smoking, poor diets, and excessive drinking, and a strengthening of preventative and curative healthcare, especially in the case of heart problems. Initiatives in this area would have the double advantage of reducing the rise in violent deaths (thanks to better policing, efficient deterrence by the courts, and active assistance for and control of marginalised groups) and of containing overall stress by improving security. Greater regulation of alcohol consumption will also be needed to reduce violent deaths, cirrhosis, and throat cancer. This can be accomplished through higher alcohol prices, a reduction in the number of outlets, reduced opening hours and reduced sales to minors (key measures which require strong government commitment), and educational campaigns aiming at modifying drinking behaviour.

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**Annex Table 1. Number of yearly excess deaths by country in relation to 1989**

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Czech.	0	1791	-3492	-7474	-9597	-10356	-9754	-14886	-14935	-18157	-17905	-18488	-18844	-19474	-16491	-20605	-18957	-23477	-23574	-23221	-20514	-20788	-20982	-19600	-18555	-22199
Hungary	0	-499	-1361	2672	4182	813	-631	-2902	-6591	-5120	-2738	-10428	-13823	-13125	-10176	-13553	-10298	-14500	-13095	-16050	-16648	-15528	-17028	-16580	-19191	-19723
Poland	0	7303	22749	1871	9519	3719	3642	3048	-2199	-6978	-817	-14225	-19022	-22701	-16935	-18696	-19932	-12459	-5024	-3000	3213	-4018	-6803	2496	5241	-5771
Slovakia	0	919	711	-451	-1186	-2491	-1153	-2599	-1700	-655	-1406	-1077	-1688	-2251	-1557	-1953	-329	-503	37	-674	-931	-177	-1936	-1377	-1718	-2462
Slovenia	0	-130	660	688	1367	690	295	-33	269	402	171	-92	-179	28	775	-151	129	-521	-166	-390	14	-74	6	573	655	209
Tot	0	9385	19267	7305	4286	-7625	-7600	-17372	-25166	-30508	-22695	-44311	-54557	-57524	-44383	-54959	-44387	-51459	-41812	-43335	-33867	-40586	-46742	-34488	-33568	-49946
Estonia	0	1042	1289	1905	3024	3924	2487	642	151	1035	-206	-48	71	-96	-296	-774	-1139	-1141	-1069	-815	-2411	-2695	-3237	-3027	-3238	-3008
Latvia	0	2308	2279	3239	6970	9521	6605	1922	1130	1783	395	-172	650	80	30	-356	367	670	600	-1357	-2377	-2201	-3823	-3395	-3719	-3994
Lithuania	0	1663	2937	3472	8197	8614	7427	5006	3239	2853	2089	1006	2413	3097	3037	3839	6178	7034	7836	5977	4258	4676	3317	3103	3658	2352
Tot	0	5013	6505	8616	18190	22060	16518	7570	4520	5672	2278	787	3134	3081	2771	2709	5407	6564	7367	2805	-530	-220	-3744	-3319	-3298	-4649
Albania	0	392	59	194	-69	314	51	-428	279	323	-1224	-602	-2784	-1676	43	208	-382	-865	-3279	-1653	-2138	2322	2288	2633	2576	2791
Bulgaria	0	996	2672	475	1480	3778	6739	9140	14062	10345	3832	7156	5955	4718	4023	2172	5461	5906	5069	2545	151	3376	346	1378	-3598	1057
Romania	0	415	7072	17272	16727	19537	25236	39855	32888	22617	18617	9190	13055	26672	20171	14101	16099	12092	8179	6205	9690	11357	3476	7423	644	7081
Tot	0	1803	9803	17941	18138	23630	32026	48566	47229	33285	21225	15744	16226	29714	24238	16481	21178	16732	9969	7096	7702	17055	6110	11434	-378	10929
Belarus	0	6288	11312	13177	25898	26923	30702	30364	33693	34331	39039	31887	37406	43883	40406	37244	39060	35902	29961	30792	31903	33978	31914	23250	22007	18170
Moldova	0	2402	5885	4578	6608	11540	13051	9828	6550	-77	1346	1273	113	1905	3142	1706	4752	3188	3098	1976	2169	3649	-748	-442	-1932	-496
Russia	0	72301	108998	228869	550529	720273	624775	503811	437036	410227	568759	649497	679623	757489	792049	718042	728180	589248	500998	495743	429579	448003	344148	324114	289437	314909
Ukraine	0	29134	69412	96029	142766	167704	195812	180260	157271	122977	142287	161489	152231	158655	168361	164190	189066	160576	165306	156512	108310	99822	61352	62262	63473	50337
Tot	0	110125	195606	340652	725102	926440	864341	724263	634551	567459	751431	844146	869374	961932	1003957	921183	957057	788514	699363	685023	571951	585452	436665	409183	372985	382920
Armenia	0	1173	2573	4930	6696	3962	4163	4256	3310	2548	3433	3416	3394	4929	5371	5029	5730	6551	6165	6743	6876	7229	8401	6939	6605	7109
Azerb.	0	-1089	685	7206	8773	10932	6905	4364	3082	2437	2403	2816	1420	2652	5116	5628	7989	8255	9655	8711	8569	9594	9749	11008	10385	11660
Georgia	0	1012	2774	6121	10294	1454	119	-1010	-1718	-2068	-2207	-2640	-3198	-2974	-3373	-816	-9225	-7287	-8337	-6579	-3218	-1886	87	-150	-1057	4058
Tot	0	1096	6032	18257	25763	16348	11168	7610	4674	2917	3629	3591	1616	4608	7114	9841	4494	7519	7483	8675	12227	14937	18237	17797	15933	22826
Kazak.	0	2602	8241	11863	30807	36524	44437	43996	35718	29534	21733	24012	22001	23355	28890	25676	30424	30351	31457	24940	16309	19360	17977	15326	9001	3970
Kyrgyz.	0	-435	-189	1290	3821	6247	5847	3539	3499	3546	1837	3166	1744	4295	4947	4065	6021	7570	7249	6720	4884	5196	4918	5046	3754	4422
Uzbek.	0	-2411	2949	12678	17878	21403	18225	17657	10309	13673	3796	8915	5951	10394	9402	3778	14015	12909	10598	11832	6696	9905	16411	19126	18682	22684
Tot	0	-244	11001	25831	52506	64174	68510	65191	49525	46753	27366	36093	29696	38044	43239	33519	50460	50830	49304	43492	27889	34461	39306	40098	31437	31076
Tot	0	127177	248214	418602	843985	1045026	984983	835829	715343	625578	783234	856051	865490	979853	1038935	928774	994209	818700	731675	703957	585372	611099	449833	440706	383109	393157