Mortality and life expectancy in post-communist countries

What are the lessons for other countries? A concept note for a new DOC research project.

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Topics: Mortality, Policies, Institutions, and Progress for Global Inclusive Development, The Economics of Post-Modernity: When Conventional Models Fail

Durres, Albania. (Credit: Zach Korb, 'Communist Era Housing'/Flickr licensed under CC BY-NC 2.0) (via: bit.ly)

The transition to the market economy and democracy in Eastern Europe and former Soviet Union countries in the 1990s caused a

dramatic increase in mortality, shortened life expectancy, and led to depopulation. In Eastern European countries (including East Germany), in most cases life expectancy fell by 2-3 years at the beginning of the 1990s; the most pronounced decline was observed for men in their 40s and 50s. In Russia, the steep upsurge in mortality and the decline in life expectancy were the biggest ever recorded anywhere in peacetime and in the absence of physical catastrophes, such as wars, plague, or famine. This type of natural experiment provides rich material for understanding the impact that different types of social upheavals and stresses have on mortality and life expectancy.

There have been numerous studies and explanations of the increase in mortality (e.g., stress associated with the transition to the market economy and privatisation; alcoholism, economic hardship, and the 'demographic echo'), but there is still no agreement among scholars as to the most important drivers of the mortality crisis in post-communist countries during transition.

The goal of the project is to compare different explanations and to summarise 'state of the art' research on the mortality crisis in post-communist countries. This crisis is also compared with other major cases of known decline in life expectancy due to social, 'non-material' reasons (e.g., the transition from the Palaeolithic to the Neolithic age; the enclosure movement and the industrial revolution in Britain over the course of the 16th and 18th Centuries; the aftermath of the abolition of slavery and the civil war in the US; and the recent rise in mortality among the non-Hispanic white population in the US since

1999, to name but a few) in order to draw out lessons about the type of stress shocks that can lead to an increase in mortality. We also aim to analyse the rapid recovery of life expectancy after the crisis in Eastern Europe and Russia and other former Soviet states in the 2000s.

Mortality and life expectancy in post-communist countries: What are the lessons for other countries?

Stylised facts

Dramatic increases in mortality rates and a shortening of life expectancy were a truly unprecedented, unexpected, and still little-discussed phenomenon, leading to depopulation throughout the entire region of Eastern Europe (EE) and the former Soviet Union (FSU) during the transition to the market economy and democracy in the 1990s. In fact, the steep upsurge in mortality and decline in life expectancy in the FSU and EE states were the greatest ever recorded anywhere in peacetime and in the absence of catastrophes like wars, epidemics, natural disasters, or famine.

This unique part of the transition story, which does not have analogues in other countries, was associated with comprehensive market-type reforms which added an additional shock to the shock of democratisation. Deregulation of prices and ensuing changes in relative prices led to mass reallocation of capital and labour, and hence greatly contributed to stress factors like increased unemployment, migration, labour turnover, divorce, and income inequalities. However,

generally, countries with stronger institutions, either democratic (like EE), or authoritarian (like China and Vietnam), managed to cope with stress factors better than others. Furthermore, only authoritarian regimes (China is the primary example) were able to choose and implement a strategy of gradual transition which allowed a stretching out of the required restructuring – the reallocation of capital and labour – over a considerable period of time and thus mitigated the stress associated with unemployment, migration, and labour turnover (Popov, 2007).

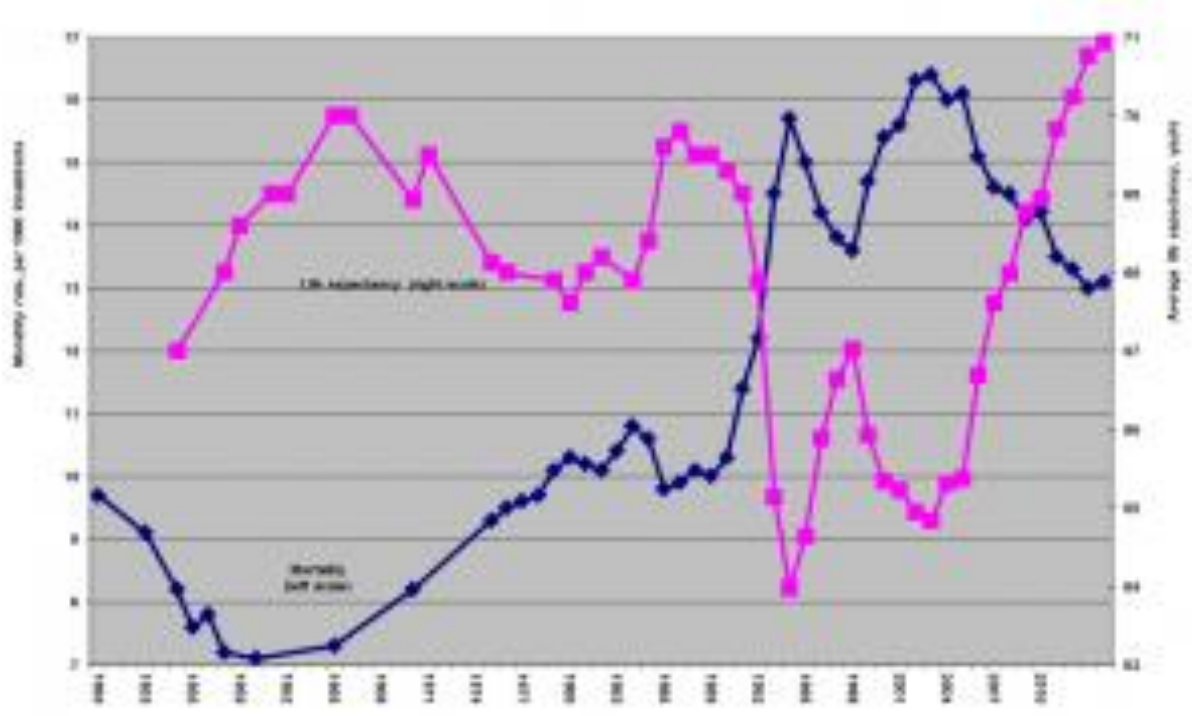
Generally, countries which proceeded with more gradual reforms (e.g., China Uzbekistan, and Belarus) also managed to preserve institutional capacity and either to avoid completely, or at least to mitigate, a collapse of output and the increase in mortality (Popov, 2000; Popov, 2007). The decline in life expectancy in Belarus, for example, from 72 years to 68 compared favourably against a decline from nearly 70 years to 64 in Russia (fig. 1).

China and Vietnam did not experience a transformational recession during transition and life expectancy in these countries grew steadily – although in China this occurred very slowly in comparison with the rise in life expectancy during Mao's rule (life expectancy increased from 35 to 65 years between 1949 and 1976) and in comparison with other countries with similar levels of GDP per capita and similar expectations for life expectancy. Besides, in countries with strong institutions, there was at least one case (Cuba), where the reduction of output (about 40% across the 1989-94 period) did not translate into a mortality

crisis. Life expectancy in Cuba increased from 75 years in the late 1980s to 78 years in 2007.

In Russia, the increase in mortality was especially pronounced. The mortality rate increased by 60%, from 1.0% to 1.6%, whereas life expectancy fell from 70 in 1987 to 64 in 1994 (fig. 1). In fact, mortality increased to levels never observed from the 1950s to the 1980s, i.e., for a period of at least 40 years. One has to go as far back as 1940 to find mortality rates higher than in the 1995-2005 period (data for the 1941-49 period –representing World War Two and post-war reconstruction – are missing).

Figure 1: Mortality Rate (per 1000, left scale) and Average Life Expectancy (years, right scale)



Source: Goskomstat.

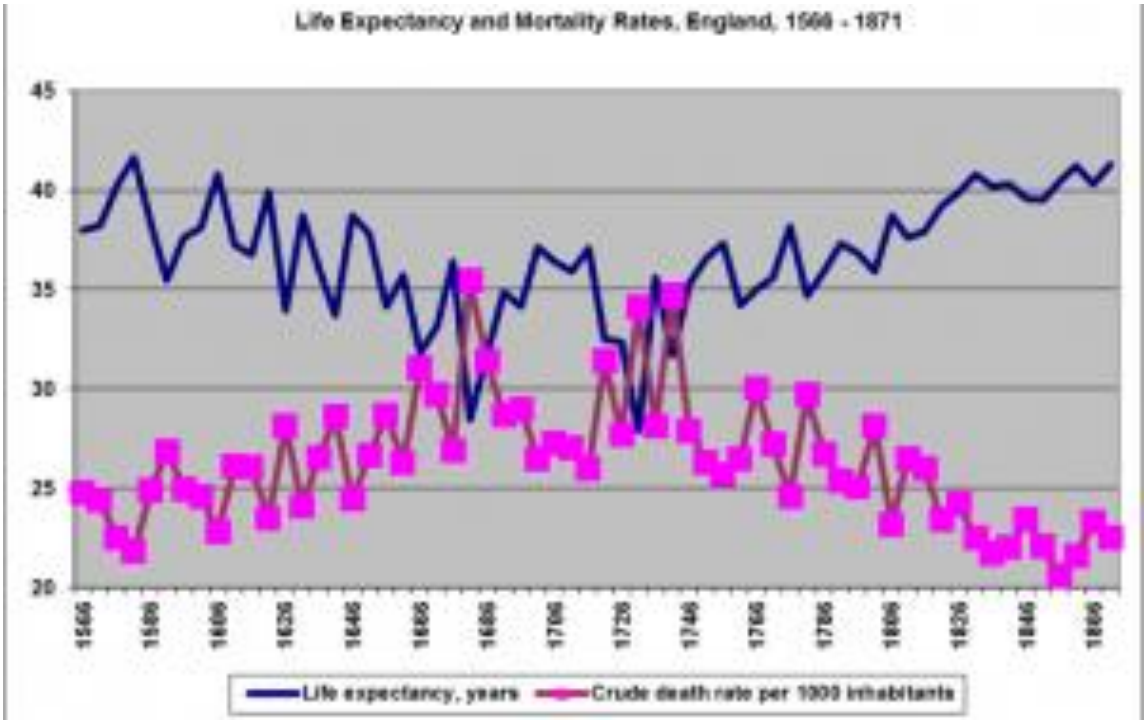
The increase in mortality in Russia occurred across two periods: an initial mortality hike with a peak in 1994, with a subsequent decline, and a later increase in mortality after the 1998 financial crisis up until 2003 (see fig.1). The rise in mortality after the August 1998 crisis (1998-2003) went hand in hand with growing output, but with fluctuating (i.e., growing and declining) unemployment rates, so at least one of the stress factors was not contributing to the new upsurge in mortality. However, the sharp decline in real incomes that occurred after the August 1998 crisis could have become a major stress factor in itself, even though its direct impact (via a deterioration of nutrition) on mortality could have been limited. Besides, income inequalities, labour turnover, migration indicators, and the divorce rate did not show any signs of decline after the 1998 crisis and before 2002-03. After 2002-03, unemployment continued to decline and the divorce rate also began to fall.

It is also noteworthy that there was no decline in life expectancy during the 2008-09 recession in Russia (Belarus and Poland were the only two European economies which avoided the 'great recession'), although the reduction of output and real incomes was significant – over 10% from a peak to a trough, from the highest month to the lowest month, and the unemployment rate increased from 5.4% in May 2008 to 9.4% in February 2009. Perhaps, over the last two decades of transition, people have already adjusted to stress (and those who have failed to adjust have died out), such that economic downturns are no longer associated with an increase in mortality.

There is, therefore, an even more compelling reason to consider the 1990-2003 fall in life expectancy as an exceptional development.

The increase in mortality rates in post-communist states has a few parallels in history. One is the transition from the Palaeolithic to the Neolithic age from about 7,000 to 3,000 BC, when life expectancy fell by several years – possibly due to changes in diet and lifestyle (i.e., the transition from hunting and gathering to horticulture and husbandry). Another comparable case is the increase in mortality during the time of Britain's Enclosure Acts and Industrial Revolution from the 16th the 18th Century, when life expectancy fell by approximately 10 years (from about 40 years to slightly over 30 years) because of changes in lifestyle, increases in income inequalities, and the impoverishment of the masses (fig. 2). Cases of reduced life expectancy due to social changes are rare and do not involve a fall in life expectancy by six years for the entire population of a large state (Cornia, 2004).

Figure 2: Mortality Rates and Life Expectancy (at birth) in the course of early urbanisation in England, 1540-1870



Source: Data from Wringley and Schofield (1981); figure *by the present author.*

A recent stagnation (and even decline in 2015-16) in life expectancy has occurred in the US: a fall of 0.1 years from 2014 to 2015, and then of another 0.1 years from 2015 to 2016. Among OECD countries, the US experienced the second smallest overall increase in Health-Adjusted Life Expectancy (HALE) between 2000 and 2015, just 1.9 years, whereas more than half of the other OECD countries enjoyed an increase of more than 3 years (Sachs, 2018).

Moreover, there has been a rise in age-adjusted mortality for the white non-Hispanic working age population – a very rare phenomenon in a high-income country (Squires and Blumenthal, 2017). Case and Deaton (2015) document a marked increase in the mortality of middle-

aged white non-Hispanics in the US after 1998 in all 5-year age groups from 30 to 55. The leading immediate causes for increased mortality were poisoning, suicide, chronic liver disease, and cirrhosis. Increasing mortality for the middle-aged white population was matched by increasing morbidity. When seen side by side with the mortality increase, declines in self-reported health and mental health, increased reports of pain, and greater difficulties with daily living show increasing distress among the white midlife population after the late 1990s.

Sachs (2018) points out three major reasons: obesity, drug use, and depression. The latter can be caused by stress due to a loss of social status, social dynamism, and life perspective. The relative position of the non-Hispanic white population in recent decades declined more than any other segment of the population.

"Although the epidemic of pain, suicide, and drug overdoses preceded the financial crisis, ties to economic insecurity are possible. After the productivity slowdown in the early 1970s, and with widening income inequality, many of the baby-boom generation are the first to find, in midlife, that they will not be better off than were their parents. Growth in real median earnings has been slow for this group, especially those with only a high school education. However, the productivity slowdown is common to many rich countries, some of which have seen even slower growth in median earnings than the United States, yet none have had the same mortality experience…. The United States has moved primarily to defined-contribution pension plans with associated stock market risk, whereas, in Europe, defined-benefit pensions are

still the norm. Future financial insecurity may weigh more heavily on US workers, if they perceive stock market risk harder to manage than earnings risk, or if they have contributed inadequately to defined-contribution plans" (Case and Deaton, 2015).

Literature review

What caused an increase in mortality during transition? Of course, there was a transformational recession in the 1990s; crime, murder, and suicide rates sharply increased as well. However, the staggering increase in mortality that occurred during transition (most pronounced for middle-aged men and mostly caused by cardiovascular diseases) cannot be fully explained by 'material' factors like falls in real incomes leading to poor nutrition, deterioration in the quality of the environment and health care system, alcoholism, and smoking (Shapiro, 1995; Leon, Chenet, Shkolnikov, Zakharov, Shapiro, Rakhmanova, Vassin, and McKee, 1997). It has been pointed out that a change in diet (from meat and milk products to bread and potatoes) would not have been able to cause an increase in cardio-vascular diseases. Furthermore, emissions of pollutants actually decreased with the collapse of industrial output, and a major impact in terms of deteriorating health care, smoking, and alcoholism (as well as changes in diet) should only result in increased mortality with a lag of several years, but this was evidently not the case (Cornia, 1997; Cornia and Paniccia, 2000).

The upsurge in mortality also cannot be explained by the 'demographic echo' theory – that the increase in mortality in 1989-94 was merely an

echo of the decrease that occurred during Gorbachev's anti-alcohol campaign in 1985-87 (Avdeev, Blum, Zakharov, and Andreev, 1998). The echo, in this case, seems to be several times larger than the initial shock.

Whereas most experts would agree that the deterioration of the diet and the deterioration of the health care system, as well as increases in deaths from external causes (accidents, murders, suicides), contributed to the general increase in mortality in Russia and many other post-communist countries, they would not, for the most part, regard them as primary factors. Today, there seem to be two major competing theories: One states that the transition mortality crisis is generated by stress factors; another attributes the rise in mortality to alcohol consumption.

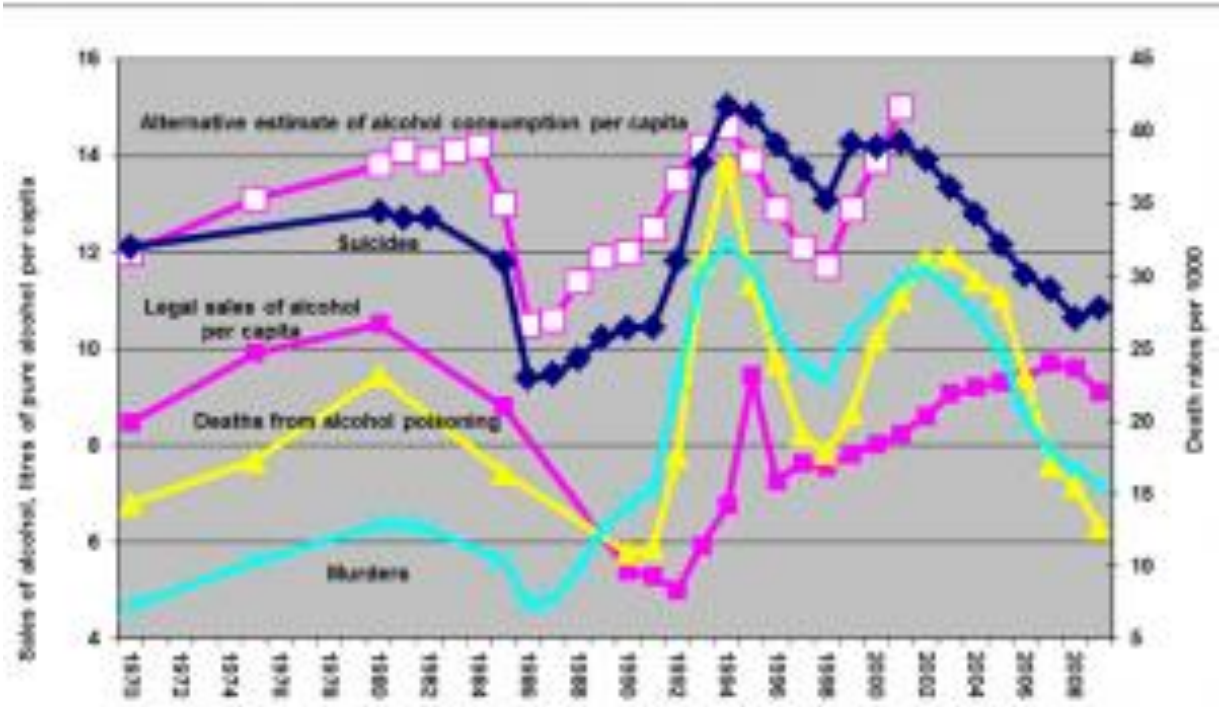
Stress factors are associated with the transition to the market economy, driven by rises in unemployment, labour mobility, migration, divorce, and income inequalities (Cornia, 1997; Cornia and Paniccia, 2000). It has been found that a stress index constructed out of the aforementioned variables serves as a good predictor of changes in life expectancy in post-communist economies. Men in their 40s and 50s who either lost their jobs (or had to move to another job or another region); or whose country or region encountered increased inequality; or who divorced their wives, were the first candidates to die prematurely in the 1990s (Cornia and Paniccia, 2000). The mortality crisis has revealed, like nothing before, the role of social stress on life expectancy. In a sense, this was a natural experiment of a kind that happens only once every thousand years, and it has shown how much

stress a society can take without dying out. Accordingly, King, Stuckler, and Hamm (2006) argued that mass privatisation programmes created psychological stress which directly resulted in higher mortality.

The major theory that competes today with the stress-related explanation of the upsurge in mortality is the increase in alcoholism (Leon, Chenet, Shkolnikov, Zakharov, Shapiro, Rakhmanova, Vassin, and McKee, 1997; Vishnevsky and Shkol'nykov, 1999; Pridemore, 2008). An increase in alcohol consumption only occurred in the early 1990s (see fig. 3). At first glance, it does appear that alcohol consumption is closely related to deaths from external causes (murders, suicides, and accidents) as well as to the general mortality rate (Squires and Blumenthal, 2017). Death rates per 100,000 inhabitants due to alcohol poisoning increased from 10 in 1990-91 to nearly 40 in 1994, exceeding the number of deaths due to suicide and murder (fig. 3).

Stress, of course, is related to alcoholism and may, in fact, be the major cause of it (see, for example, Dawson, Grant, and Ruan, 2005; Childs, O'Connor, and de Wit 2011), so it is difficult to separate these two hypotheses. But stress can cause increased mortality even without an increase in alcoholism, whereas an increase in the consumption of alcoholic beverages can occur without stress. In the Russian case, an increased intake of alcohol can be attributed to a decline in the relative prices of spirits in the early 1990s.

Figure 3: Sales of alcohol, litres of pure alcohol per capita (left scale); death rates per 100,000 from alcohol poisoning, murders, and suicides (right scale)



Source: For death rates, WHO database and Goskomstat; for legal sales of alcohol, Goskomstat; for alternative estimates of alcohol consumption, Demoscope, No. 263-264, Oct. 30–Nov. 12, 2006.

Treisman (2010) argues that the surge in alcohol-related deaths – and premature deaths in general – was fuelled by a dramatic fall in the real price of vodka, which dropped 77% between December 1990 and December 1994. Variation in vodka prices – both over time and across Russia's regions – closely matches variation in mortality. Although market competition and weak excise collection help explain the fall in prices, the main reason appears to be populist price regulation during

inflationary periods. Bhattacharya, Gathmann and Miller (2013) use an oblast-year[1] dataset spanning 1978–2000 and find a variety of evidence suggesting that the end of Gorbachev's anti-alcohol campaign explains the mortality crisis to a significant extent, whereas Russia's transition to capitalism and democracy was not as lethal as sometimes suggested.

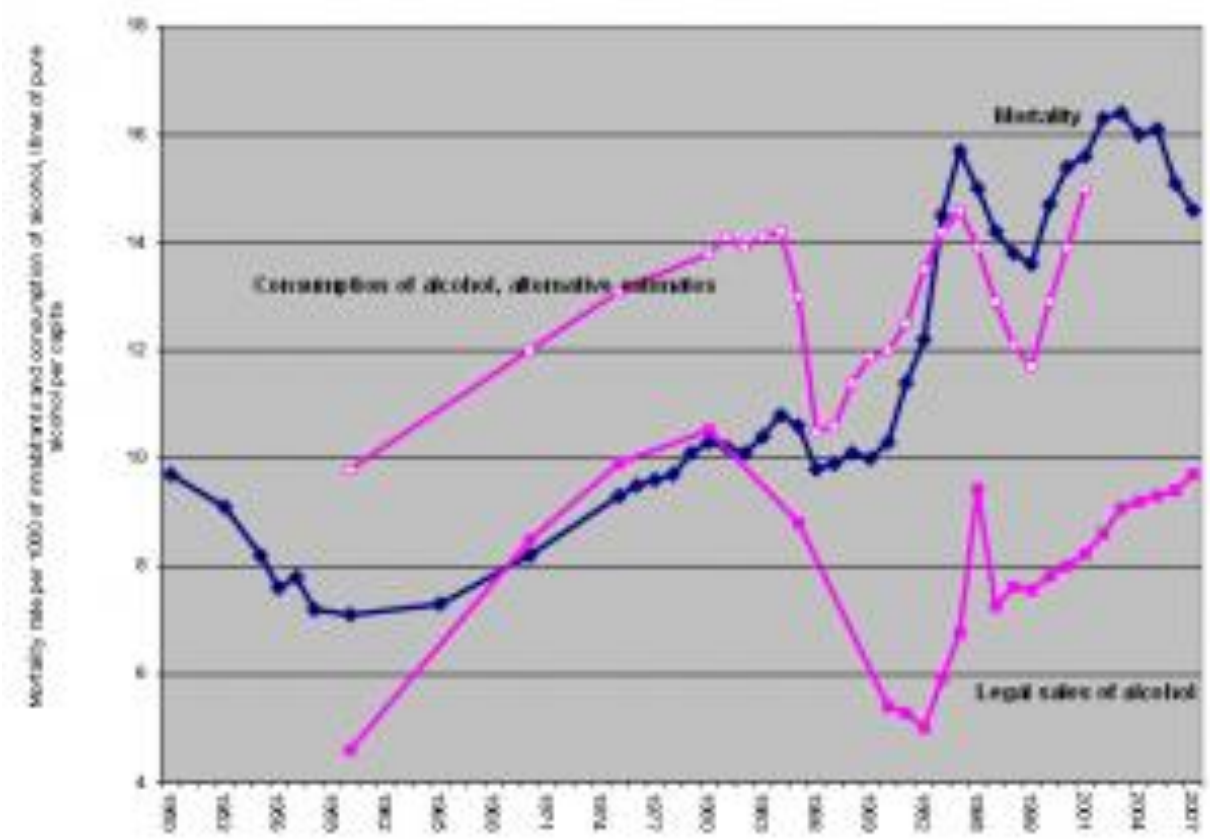
The increase in consumption of alcohol really occurred in the early 1990s, according to official data, and even in the late 1980s – during the anti-alcohol campaign – according to unofficial estimates (fig. 4). Deaths from alcohol poisoning are often regarded as better indicators of alcohol consumption (because some alcohol is produced illegally and smuggled). Deaths per 100,000 inhabitants increased from 10 in 1990-91 to nearly 40 in 1994 and exceeded the number of deaths due to suicide and murders (fig. 3). Later, however, by 2007, the rate of these alcohol-related deaths fell to late Soviet levels, even though total mortality rate remained considerably above late/Soviet levels (figs. 1, 4). The increase in the intake of alcohol, in turn, is attributed to the decline in relative prices of spirits in the early 1990s. It has been shown that the demand for alcohol, like the demand for other goods, is negatively affected by price and positively affected by personal income (Andrienko and Nemtsov, 2006).

Nemtsov (2002) attributes as much as one-third of total deaths in Russia to alcohol-related causes (including indirect causes), which is much higher than official estimates (less than 4% deaths from causes directly related to alcohol consumption), a view widely held by Western experts: "Despite the improving situation, one-third of all

deaths in Russia are directly or indirectly related to alcohol, requiring intervention at a variety of levels" (Pridemore, 2008). Many experts consider these estimates exaggerated. Official statistics report that only 3% of all deaths are caused by alcohol (alcohol poisoning, liver cirrhosis, alcoholism, and alcoholic psychosis). Anatoly Vishnevsky (in personal communications) attributes about 12% of all deaths to alcohol-related causes.[2]

It seems obvious that increased alcohol consumption contributed to the rise of deaths due to external causes – accidents, murders, suicides (fig. 4). In 2002, the death rates from external causes in Russia was not *among* the highest, but were *the* highest in the world. There is also an apparent correlation between alcohol consumption and deaths from all causes, but this does not necessarily imply causation.

Figure 4: Mortality and alcohol consumption



Source: Goskomstat.

Firstly, there is controversy over the impact of increases in the intake of alcohol on cardio-vascular diseases. A recent (Arriola et all., 2009) 10-year survey of 41,000 people aged 29-69 found that, compared with male non-drinkers, those that drank before but later quit drinking have a 10%-lower chance of heart problems; those that drink small amounts (less than 0.5 grams per day) have a 35%-lower chance; those that drink moderately (5-30 grams per day) have a 54%-lower chance; and big drinkers (30-90 grams per day) and alcoholics (more than 90 grams per day) have a 50%-lower chance of heart problems.

Secondly, there are some periods when per capita alcohol consumption and death rates moved in opposite directions – in 2002-07, deaths from external causes, including murders, suicides, and poisoning, fell alongside rising alcohol consumption (fig. 5). Similar inconsistencies exist for the 1960s: From 1960 to 1970, alcohol consumption increased from 4.6 to 8.5 litres per capita, according to official statistics, (and from 9.8 to 12 litres according to alternative estimates), whereas life expectancy did not change much: 69 years in 1960; 70 in 1965; 69 in 1970.

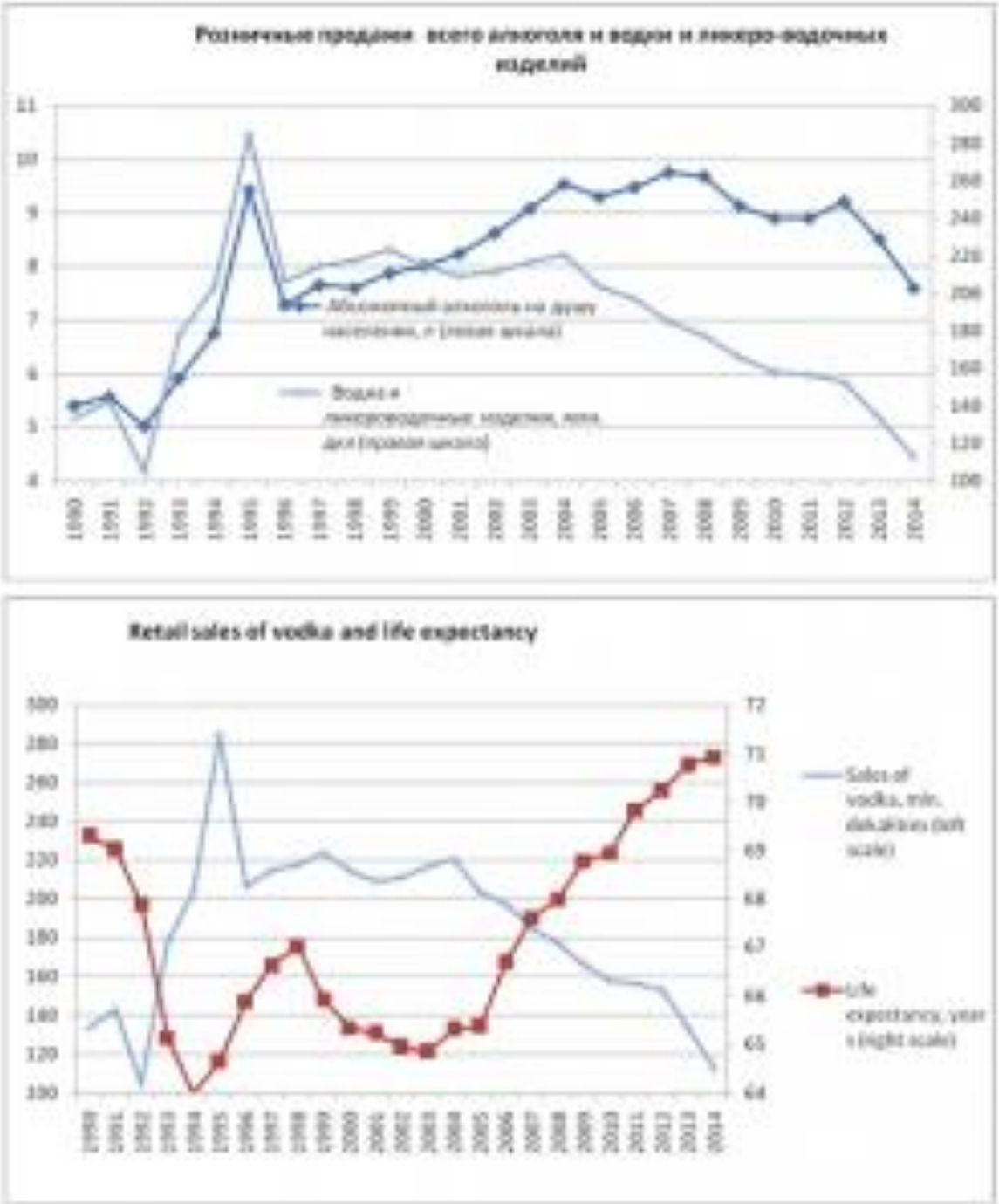
And thirdly, levels of per capita alcohol consumption in the 1990s, according to both official statistics and alternative estimates, were equal to or lower than in the early 1980s, whereas deaths from external causes doubled and the total death rate increased by 50% (compare figs. 1 and 3). It appears, therefore, that we can observe a simultaneous increase in variables (total death rate and deaths from external causes, as well as alcohol consumption) that are all driven by another factor, which is very likely stress.

Grigoriev and Andreev (2015) show that in the 1980–2013 period only a limited number of causes of death for the male population can be attributed to alcohol-related reasons: accidental poisoning by alcohol; liver cirrhosis; ischemic heart diseases; stroke; transportation accidents; and other external causes. They argue that a continuous reduction in adult male mortality seen in Belarus and Russia cannot be fully explained by the anti-alcohol policies implemented in these countries, although these policies likely contributed to the large mortality reductions observed in Russia in 2005–2006 and in Belarus

in 2012. Anti-alcohol measures implemented in Belarus and Russia simply coincided with fluctuations in alcohol-related mortality, which had their origins in the past. If these trends had not been underway already, these huge mortality effects would not have occurred.

The counterargument is that it is not the consumption of all alcohol, but of hard spirits, vodka, in particular, that should be blamed for the increase in mortality. It is noteworthy that the consumption of vodka in Russia has fallen sharply in recent years (from over 200 million dekalitres in the early 1980s and in the 1990s to about 100 million in 2015), whereas the share of wine and beer in total alcohol consumption increased markedly (fig. 5).

Figure 5: Retail sales of vodka and all alcohol alongside life expectancy



Source: Goskomstat.

Finally, there is a view that the stress of the transition to the market economy causes both a rise in mortality and an increase in alcohol

consumption, such that both phenomena go hand in hand, but do not necessarily cause one another. Popov (2010) shows that vodka consumption itself was strongly correlated with stress factors in Russian regions. The most successfully performing regions, such as resource-rich regions, were relatively worse off in terms of stress factors, leading to greater increases in mortality, greater increases in vodka consumption, and greater reductions in life expectancy (Popov, 2010; Walberg, 1998).

Cross-country and cross-regional regressions of changes in life expectancy and mortality in relation to stress factors and alcoholism do not shed light on the true impact of these variables, due to the high level of multicollinearity between them; so it is necessary to examine individual life histories in order to understand what the contribution of various factors is. One such study, by Denisova (2010), is based on twelve rounds of the Russian Longitudinal Monitoring Survey of households spanning the 14-year period from 1994 to 2007. 1,245 adults (5% of the adults in the sample) died, with 546 deaths in the 18-65 age group (3% of the adults of the age group). It was found that relative status measured in non-income terms, labour market behaviour, sectoral and occupational mobility, and smoking and alcohol consumption have a strong effect on longevity, but there is no evidence that the low relative price of vodka led to greater alcohol consumption.

A recent project on the impact of privatisation on mortality and life expectancy (Irdam, 2016; Azarova, 2017; PRIVMORT, 2017) used micro-level data with enterprise and settlement-level data to enable a

comprehensive analysis of both distal and proximal causes of mortality. It was based on an extensive survey of households in Belarus, Hungary, and Russia[3] and found that privatisation, and especially fast privatisation, even after controlling for alcoholism, smoking, age, marital status, and financial deprivation, increase mortality significantly (Irdam et al., 2016; Azarova et al., 2017).

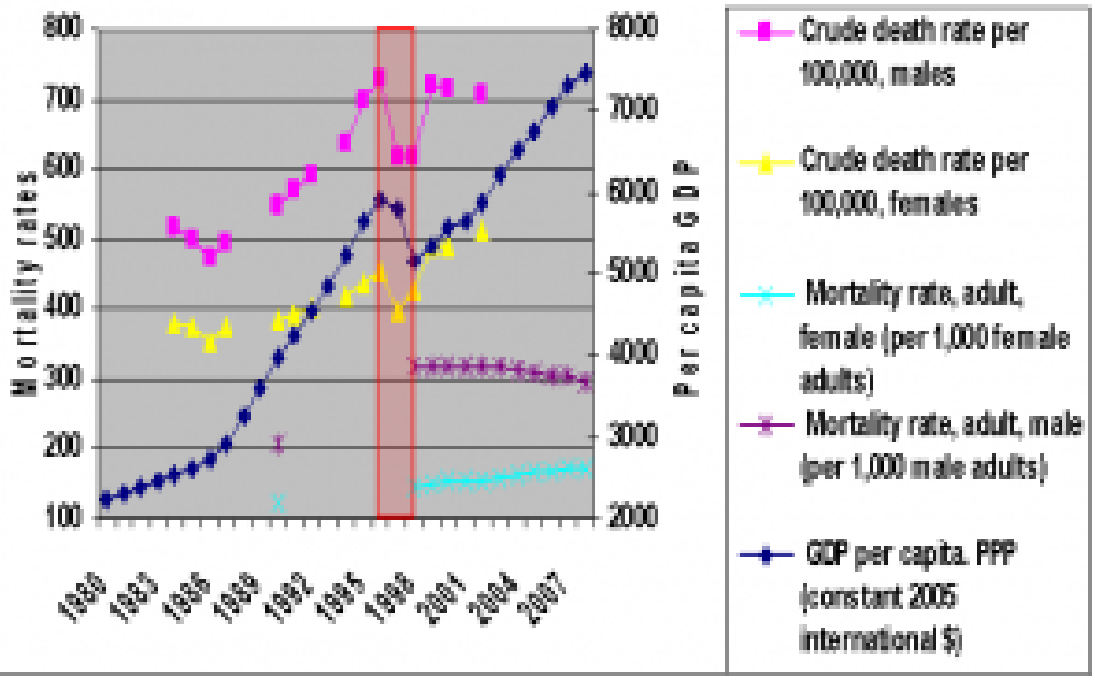
Puzzles and hypotheses

How do changes in living standards affect life expectancy? The impact is often counterintuitive – that is, the fall in material wellbeing leads to a rise in life expectancy. It is well known, for example, that during the Great Depression in the US life expectancy rose considerably (faster than the previous trend suggested) – from 57.1 years in 1929 to 63.3 years in 1932; the increase occurred for both men and women, and for both the white and non-white populations; mortality rates from all causes of death, except for suicides, fell (Granados, Roux, 2009).

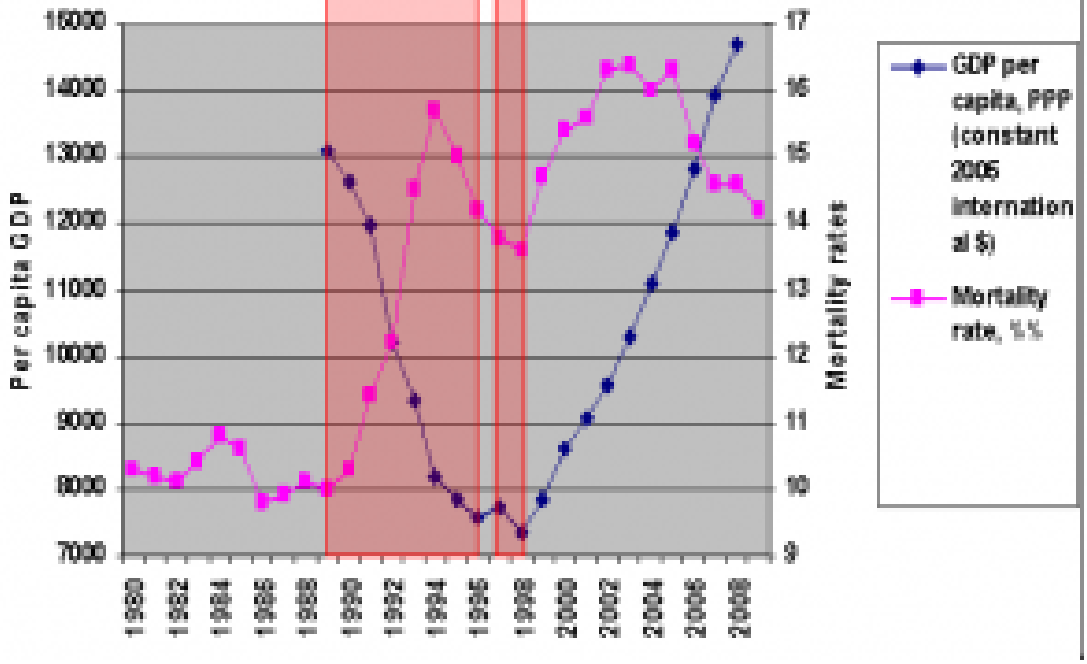
During the 1998 Asian currency crisis, the fall in GDP in many countries was accompanied by a fall in mortality (fig. 6); but in Russia, Belarus, Ukraine, and other economies in transition, transformational recession has resulted in an increase in mortality rates.

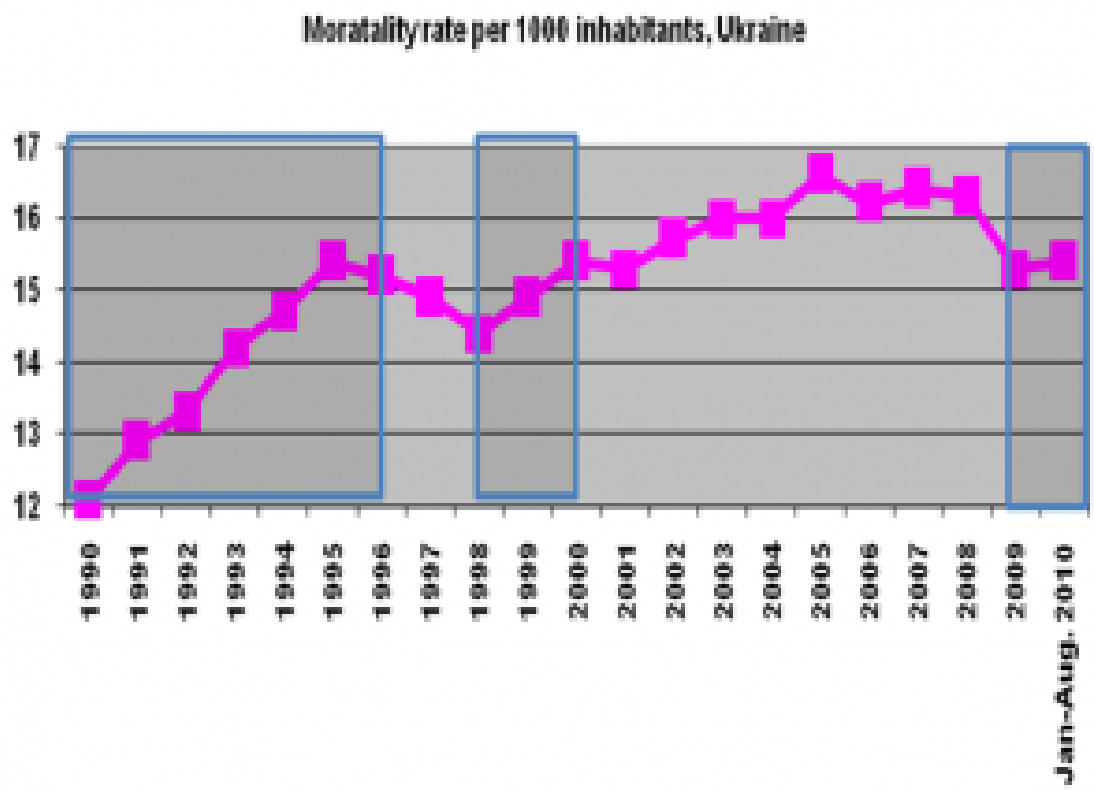
Figure 6: Mortality rates in Thailand, Russia, and Ukraine

THAILAND: Mortality rates (left scale) and per capita GDP, PPP, constant 2005 international $ (right scale)



RUSSIA: Mortality rates (right scale) and per capita GDP, PPP 2005 international 2005 $ (left scale)





Source: WDI database.

Recent research on the link between mortality rates and economic conditions has identified a pro-cyclical relationship. Ruhm (2000), who uses state-level data for the US and a fixed-effect model, shows that a fall in the unemployment rate leads to a sustained rise in the mortality rate. Except for suicides and deaths from cancer, this pro-cyclicality between unemployment and the mortality rate is robust for ten other causes of mortality, especially for motor-vehicle accidents and heart diseases. Gerdtham and Ruhm, (2006) find similar evidence for OECD countries.

Other researchers, however, have found a negative impact of recessions on mortality in developing countries and even in developed

countries too, for particular groups. For example, Reichmuth and Sarferaz (2008) show that young adults in France, Japan, and the US exhibit increased mortality in a recession, whereas most of the other age cohorts between childhood and old age react to increased unemployment or decreased GDP growth with lower mortality rates. Using individual data records from Dutch registers for birth, marriage, and death certificates, covering the period 1815-2000, Van den Berg, Lindeboom and López (2006) demonstrate that recessions have an adverse impact on mortality, although not immediately, but rather later in life, due to lower levels of nutrition in early life. Being born in a recession increases mortality rates later in life for most of the population and especially for poorer social classes. Based on social security data for the US, Sullivan and von Wachter (2009) estimate that a higher mortality rate due to unemployment persists up to 20 years after the job loss and leads to an average loss of life expectancy of 1-1.5 years.

There is also evidence that in developing countries, unlike developed countries, recessions have a strong adverse effect on social indicators, including life expectancy and infant mortality. Conceição and Kim (2009) find that life expectancy for a sample of over 200 countries falls by an average of over four years during episodes of growth deceleration (defined roughly as three or more years of falling output) as compared to periods of rapid growth, whereas infant mortality and mortality for the under-5 age group nearly doubles.

Among all causes of death, only one – suicide – always seems to be correlated with economic conditions (unemployment). During the

Great Depression, for example, the suicide rate in the US increased by about 20% from 14 to 17 suicides per 100,000 people. The Asian economic crisis in 1997 led to an estimated 10,400 additional suicides in Japan, Hong Kong, and South Korea, with suicides spiking more than 40% among some demographic groups. The unemployed commit suicide at a rate two or three times the national average, researchers estimate. And in many cases, the longer the spell of unemployment, the higher the likelihood of suicide. Suicide prevention hotlines also showed signs of stress in the recent 'great recession'. In January 2007, as the recession began, there were 13,423 calls to the National Suicide Prevention Lifeline, a toll-free nationwide hotline. A year later, there were 39,467. In August 2009, the call volume peaked at 57,625 (Huffington Post, 2017).

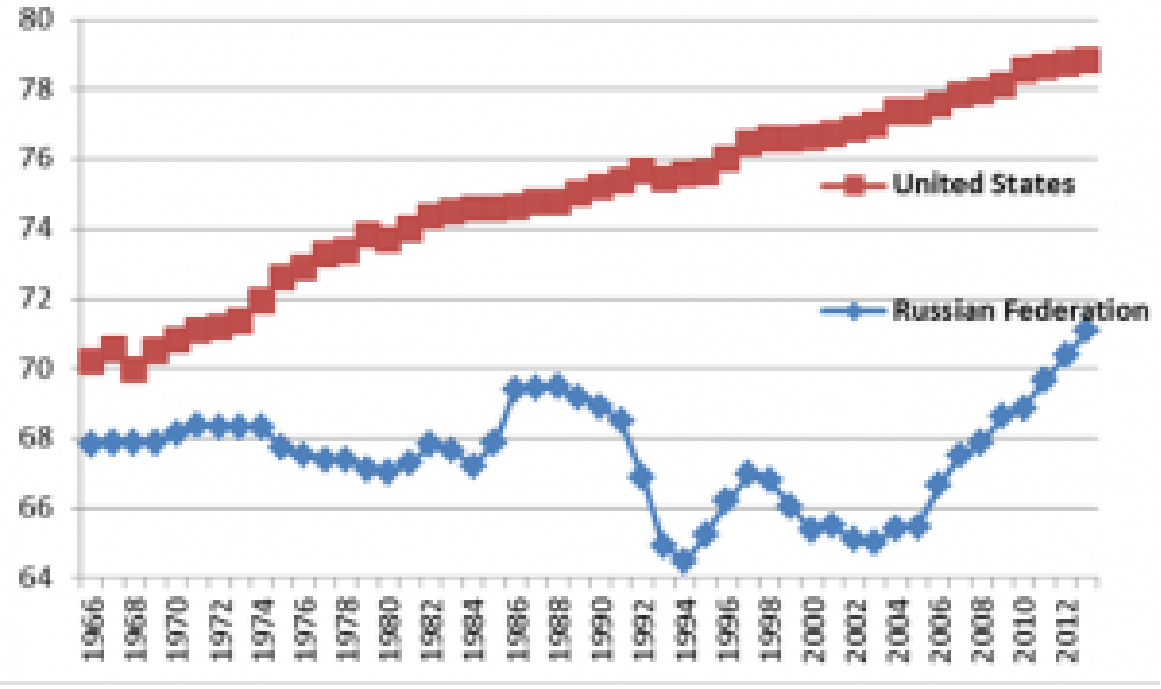
What remains to be figured out is why recessions in some instances (when output falls and unemployment rises) do not lead to a general increase in mortality, whereas in other cases recessions cause a marked increase in mortality.

Another puzzle is the stagnation of life expectancy in Russia for the 20 years between 1965 and 1985 and the rapid recovery of life expectancy after the transition's mortality crisis. In Russia, after diverging with developed countries in the period of social stagnation (1970-80s) and decline (1990s), life expectancy is rapidly rising again (fig. 7). In 2016, it reached 72 years – the highest level ever.

It remains to be seen whether this growth of life expectancy will continue. Former communist countries with free healthcare, good

levels of social protection, and even income distribution always had higher life expectancy compared with non-communist countries at the same level of development. Even in 2000, after the decline of the early 1990s, life expectancy in transition economies was five years higher than per capita GDP would suggest.[4] And the scores of communist and former communist countries in the Human Development Index (which includes life expectancy and the level of education in addition to per capita income) were always higher than GDP per capita scores. Will former communist countries be able to retain this advantage in the future?

Figure 7: Life expectancy at birth in Russia and the US, 1966-2013, total (years)



Source: WDI database.

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[1] Oblasts are Russian administrative units.

[2] There is a belief that many doctors in Russia under the pressure from relatives of the deceased do not indicate the true reason of death (alcoholic poisoning) putting cardio-vascular diseases (the #1 cause of deaths) as the cause of death into the death certificate. But the true scale of such a misreporting is hardly known.

[3] Data were collected through survey interviews in 20 mono-industrial towns in Russia and 10 mono-industrial towns in Belarus in 2014-2015. By May 2016, 63,073 respondents had provided information on themselves and 205,607 relatives, of whom 102,971 had died. The settlement-level dataset contained information on 539 settlements and 12,082 enterprises in these settlements in Russia, 96 settlements and 271 enterprises in Belarus, and 52 settlements and 148 enterprises in Hungary.

[4] Cross-country regression for life expectancy in 2000 is:

$$\boldsymbol{LE2000} = -8.5 + 19.8 log\boldsymbol{Ycap} + 5.1\boldsymbol{TRANS}$$

(-2.8) (25.3) (4.9)

(N=147, R^2 = 0.72, robust estimates, T-statistics in brackets)

LE – life expectancy in 2000, years

Ycap– PPP GDP per capita in 1999,

TRANS – dummy, equal to 1 if a country was communist in the past.

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