

Gathmann, Christina; Welisch, Marijke

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THE GORBACHEV ANTI-ALCOHOL CAMPAIGN AND RUSSIA'S MORTALITY CRISIS

CHRISTINA GATHMANN* AND
MARIJKE WELISCH*

Introduction

Following the demise of the Soviet Union, Russia experienced a 40 percent surge in deaths between 1990 and 1994. The average life expectancy for men declined by 6.6 years from 64.2 years to 57.6 years as a result. The magnitude of this surge in deaths – coupled with the Soviet Union's international prominence – has prompted observers to term this demographic catastrophe as the “Russian Mortality Crisis.”

What caused this dramatic rise in mortality? Many people attribute the Russian mortality crisis to the political and economic turmoil that followed the breakup of the Soviet Union and the economic and political reforms that began in 1991. In Bhattacharya, Gathmann and Miller (2012), we propose an alternative explanation for the observed pattern, namely the demise of the supposedly successful 1985–1988 Gorbachev Anti-Alcohol Campaign.

The campaign efficiently implemented a broad set of measures to reduce alcohol supply and fight excessive alcohol consumption. Although the campaign officially ended in late 1988, it took some time for production to adjust accordingly; and prices remained above pre-campaign levels even after the campaign's official end. Some researchers (Nemtsov 2000, for example) suggest that the campaign's *de facto* end was as late as 1991 and thus coincided with the breakup of the Soviet Union and the beginning of Russia's economic and political transition.

* Heidelberg University.

We find that alcohol consumption declined substantially during the campaign years and resulted in fewer alcohol-related deaths between 1985 and 1988. Our findings also show that a significant share of deaths during the mortality crisis were due to the campaign coming to an end, suggesting that Russia's transition to capitalism and democracy was not as deadly as often suggested.

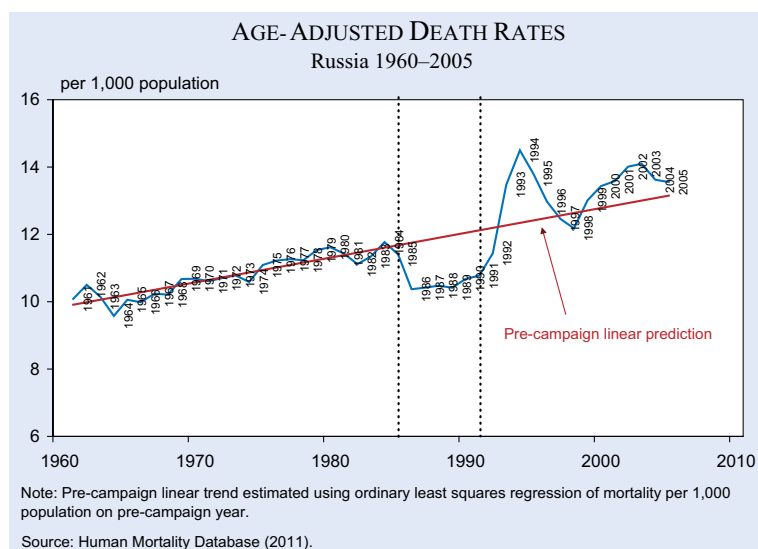
The mortality crisis in Russia

Between 1990 and 1994, crude death rates in Russia soared by 40 percent, rising from 11 to nearly 15.5 per thousand. By 2009 standards, the decline in male life expectancy at birth to only 57.6 years puts Russian men on a par with their counterparts in Bangladesh, and means that male longevity in Russia is even lower than in less-developed countries such as Haiti or North Korea.

Most explanations for this development are more or less directly linked to economic and political transition in Russia during that period. Specific transition-related explanations include the decline in economic output and employment (Cornia and Panizza 2000; Brainerd 2001), rapid privatization (Stuckler, King and McKee 2009; Stuckler, King and McKee 2012), physiological and psychological stress (Shapiro 1995; Bobak and Marmot 1996; Kennedy, Kawachi and Brainerd 1998; Leon and Shkolnikov 1998; Gavrilova et al. 2001), reductions in the relative price of vodka (Treisman 2010), and the deterioration of the medical care system (Ellman 1994).

Between 1990 and 1993 alcohol consumption increased dramatically, accompanied by a high number of alcohol-related deaths (with the causes of death linked both directly (alcohol poisoning and violent deaths) or indirectly (heart attacks and strokes) to alcohol consumption). Working class men, the demographic group that drinks the most in Russia, saw a particularly sharp increase in their mortality rate. Recent estimates suggest that alcohol abuse is responsible for over half of all deaths in Russian cities among the 15–54 year old age group (Leon et al. 2007; Zaridze et al. 2009).

Figure 1



Our research explores a different explanation for the mortality crisis, namely the demise of the supposedly successful Anti-Alcohol Campaign launched by Mikhail Gorbachev in 1985. The basic logic of our approach is shown in Figure 1. Russian death rates, which increased linearly between 1960 and 1984, plummeted abruptly with the start of the campaign in 1985, remained below the campaign trend throughout the latter 1980s, rose again rapidly during the early 1990s to a temporary peak in 1994, and then largely reverted back to Russia's long-run trend.

The crisis could therefore be the combined result of a lagged 'catch-up' mortality (with relatively weak marginal survivors saved by the campaign dying at higher rates) and a reversion to the long-run trend. The lagged effect of alcohol consumption on mortality is consistent with findings in medical literature on the delayed effects of alcoholism on both liver cirrhosis and heart disease (see, for instance, Holder and Parker 1992 and Laonigro et al. 2009).

Alcohol consumption in Russia and the Gorbachev Anti-Alcohol Campaign

The Soviet Union – and Russia in particular – historically ranks among the world's heaviest drinking countries. Immediately prior to the anti-alcohol campaign, annual consumption of pure alcohol in the Soviet Union exceeded 14 liters per capita – compared to 8 liters in the United States and 13 liters in Germany (Nemtsov 2000; World Health Organization 2011). This figure is roughly equivalent to

adult males consuming about half a liter of vodka every two days (Ryan 1995). In addition to the quantity consumed, the type of alcoholic beverages consumed and drinking patterns also have a large impact on mortality. A disproportionate amount of consumption in Russia is hard liquor and can be characterized as 'binge drinking' (defined as three or more alcoholic drinks within 1 to 2 hours). Alcohol abuse and binge drinking are linked not only to accidents and violent deaths, but more importantly in quantitative terms, they repre-

sent key risk factors for heart attacks and cardiovascular disease (McKee and Britton 1998; McKee, Shkolnikov and Leon 2001; Rehm et al. 2009; Tolstrup et al. 2006).

By the early 1980s, alcohol abuse was widely recognized as a major cause of death, absenteeism and low labor productivity in the Soviet Union. Although difficult to estimate, observers suggest that alcohol's cost to the Soviet economy during the 1980s totaled about 10 percent of national income (Tremblay 1987; Segal 1990; Tarschys 1993; White 1996). In response, the Politburo and the Central Committee led by Secretary General Mikhail Gorbachev passed a resolution entitled "Measures to Overcome Drunkenness and Alcoholism" in May of 1985. The directives passed by the Central Committee and the Presidium of the Supreme Soviet as a result of the resolution ushered in the country's most stringent anti-alcohol policies since the 1919–1925 prohibition. Consisting of seven broad measures, the main goal of the Gorbachev Anti-Alcohol Campaign was to raise the effective price of drinking whilst subsidizing substitute activities.

State production of alcohol was drastically reduced (the government was the sole legal producer and distributor of alcohol in the Soviet Union at that time), prices for alcoholic beverages were increased and restrictions were placed on alcohol sales. Between June 1985 and May 1986 alone, state production of vodka and hard liquor declined by 30–40 percent (Segal 1990) and cognac production fell by 44 percent (White 1996). In 1985, the price of vodka, liqueurs, and cognac rose by 25 percent (McKee

1999), and prices were increased by another 25 percent in 1986 (White 1996).

Liquor stores were not allowed to sell vodka or wine before two pm on business days, restaurants were no longer permitted to sell hard liquor, and the official drinking age rose from 18 to 21. Sales near factories, educational institutions, hospitals, and airports were prohibited, and many stores selling alcohol were shut down. In addition, high fines were introduced for public drunkenness and other alcohol-related offenses. Fines for workplace intoxication, for instance, were one to two times the mean weekly wage, and home production of alcohol, as well as the possession of homebrew equipment, was punishable by large fines or imprisonment.

Action was also taken to reduce demand for alcohol – leisure facilities (such as sports clubs and parks) were heavily subsidized and promoted, media campaigns and health education programs were launched together with bans on glamorous media depictions of drinking. To encourage sober lifestyles, a national temperance society was launched and 428,000 branches with a total of 14 million members were created within three years. Lastly, treatment of alcoholism was also improved substantially.

Overall, these campaign measures led to a decline in state alcohol sales of over 50 percent between 1984

and 1988 (White 1996). Official figures overstate the decline in alcohol consumption, however, because they do not capture the home-brewing response to the campaign. Russians have a long-standing tradition of producing *samogon* (literally, “distillate made by oneself,” a generic term for illegal alcoholic beverages made from sugar, corn, beets, potatoes, and other ingredients) – and did so more vigorously during the campaign when access to legal alcohol was restricted.

As comprehensive estimates of oblast-year *samogon* production are not available, we extend the work of Nemtsov (2000) to generate estimates of this figure for the 1980s and early 1990s. Nemtsov (2000) used an indirect technique to infer total alcohol consumption based on forensic records from oblast forensic bureaus. Since these autopsy records were not made public during the Soviet era, manipulation for external political purposes is unlikely to be of concern. Both the Soviet Union and the Russian Federation mandate autopsies for all violent and accidental deaths, as well as deaths with unclear causes. These mandatory autopsies systematically document blood alcohol content (albeit in a non-random sample of Russians). Nemtsov (2000) used these records to estimate the association between blood alcohol concentrations and total alcohol consumption, and to recover implied *samogon* consumption (see Bhattacharya et al. 2012 for details).

Figure 2

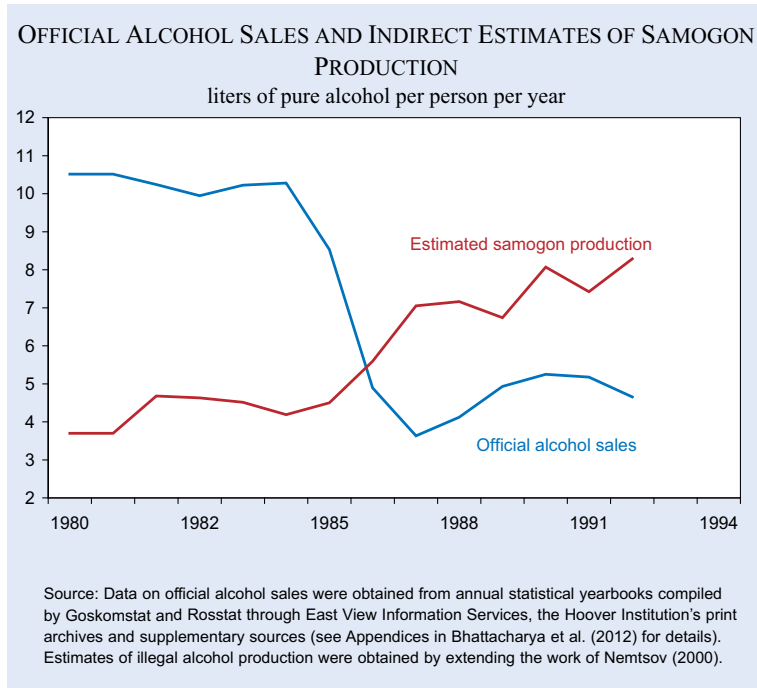


Figure 2 shows that the campaign had exerted a considerable influence on alcohol consumption during campaign years and the effects still lingered even after the Soviet Central Committee officially ended the campaign in October 1988 (in part because it was very unpopular, but also because the loss of revenue from alcohol sales was substantial). Alcohol prices remained above pre-campaign levels, alcohol production took time to adjust and several restrictions on alcohol sales remained in place (White 1996). Overall, total alcohol consumption rates did not return to pre-campaign levels until the early 1990s.

Impact of the campaign

We begin by establishing the association between the Gorbachev Anti-Alcohol Campaign and Russian mortality during the latter 1980s. Due to the absence of any previous adequate sub-national records, compiling such data means digitizing and harmonizing archival Russian data sources to create a new panel data set of Russian oblasts, administrative regions in Russia, spanning the years 1970–2000. Crucial variables for the estimation are crude death rates and alcohol poisoning death rates by gender, as well as sales of pure alcohol (in liters) and the estimated production of *samogon* (as described above).

Our estimation approach then flexibly traces out oblast-level changes in alcohol consumption and mortality during campaign years and the lagged effects of the campaign's end on Russian mortality. Because the campaign was highly multifaceted and adequate data on its individual components are largely unavailable, we use pre-campaign alcohol consumption interacted with year dummies as a summary measure of campaign intensity (assuming areas with greater pre-campaign alcohol consumption to be disproportionately affected – following Bleakley (2007), Qian (2008), Miller and Urdinola (2010), and Nunn and Qian (2011), for example).

We find that one additional liter consumed per person per year prior to the campaign is associated with a 28–69 percent decline in per-capita alcohol consumption during campaign years. We also show that harder-drinking oblasts experienced disproportionately larger declines in mortality during the late 1980s. Overall, our estimates suggest that the campaign is associated with about 400,000 fewer deaths per year, a reduction of 24 percent relative to the pre-campaign crude death rate.

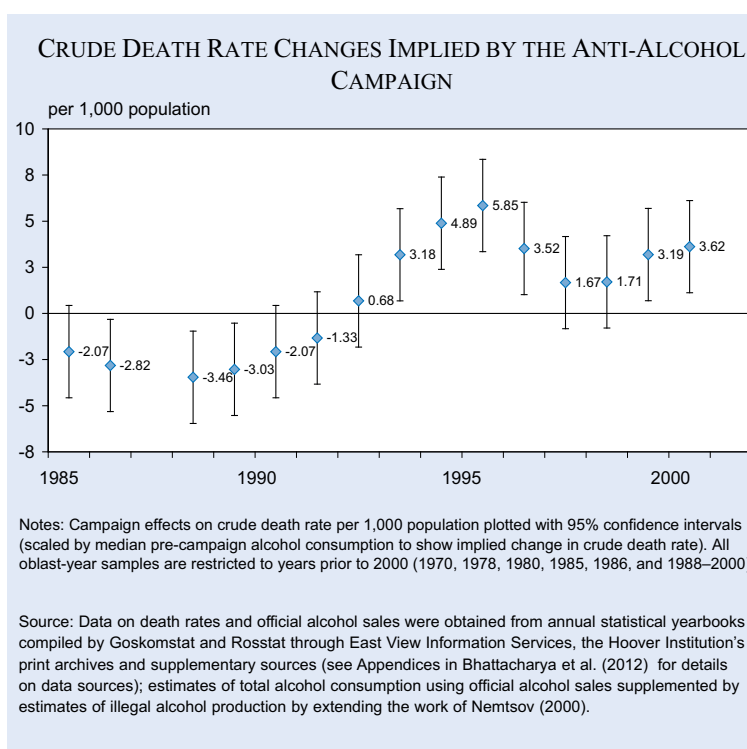
We then extend our framework to study the link between the end of the Anti-Alcohol Campaign and Russia's transition-era mortality crisis. As people resumed their pre-campaign drinking behavior, the ensuing

rise in death rates was due to a combination of a reversion to the long-run mortality trend and catch-up mortality as relatively weak marginal survivors saved by the campaign died at higher rates in later years. Figure 3 shows that harder-drinking oblasts prior to the campaign not only experienced larger mortality declines during the late 1980s, but also saw disproportionate increases in deaths during the 1990s.

We also examine changes in three groups of cause-specific death rates with differential relatedness to alcohol consumption. Those most closely related to alcohol are alcohol poisonings and accidents/violent deaths. A large body of medical literature also suggests that alcohol consumption is a leading risk factor for cardiovascular diseases like heart attacks and strokes (Chenet et. al. 1998; Britton and McKee 2000; Corrao et. al. 2000; McKee et al. 2001; Ramstedt 2009). Causes more indirectly linked to alcohol are respiratory diseases and digestive diseases. Finally, cancer deaths are most weakly related to alcohol (and occur only after a long period of time).

We find that causes of death more closely related to alcohol consumption (circulatory disease, accidents and violence, and alcohol poisoning) increased to a

Figure 3



relatively greater extent in harder-drinking oblasts during the 1990s and in proportion to intensity of the Gorbachev Anti-Alcohol Campaign. Consistent with known gender differences in alcohol consumption, the number of deaths from alcohol poisonings rises much more for men than for women. The most quantitatively important increases occur among cardiovascular disease deaths and accidents/violence. Predicted respiratory and digestive disease death rates rise to lower levels (consistent with their weaker relationship to alcohol consumption), and the trajectory of predicted cancer deaths is essentially flat throughout the 1990s.

Importantly, these relationships are robust to – and in some cases are effectively strengthened by – controlling for local economic conditions during the transition period (GDP per capita, the employment rate, and employment in private manufacturing – a measure of privatization). All in all, our estimates explain a large share of the Russian mortality crisis.

Other former Soviet states also experienced the campaign, and the campaign’s impact should vary systematically with ethnic/religious composition (with larger campaign-year reductions and larger transition-year increases in countries with lower concentrations of Muslims). Given Islam’s prohibition of intoxicants, we exploit variation in the concentration of Muslims across the former Soviet Union. The underlying logic is that former Soviet states with relatively more Muslims should experience smaller absolute declines in deaths during the campaign and smaller increases in mortality during transition years. Non-Soviet Eastern European countries, on the other hand, had no anti-alcohol campaign – and therefore should display different temporal patterns of mortality despite experiencing similar political and economic transitions.

Figure 4

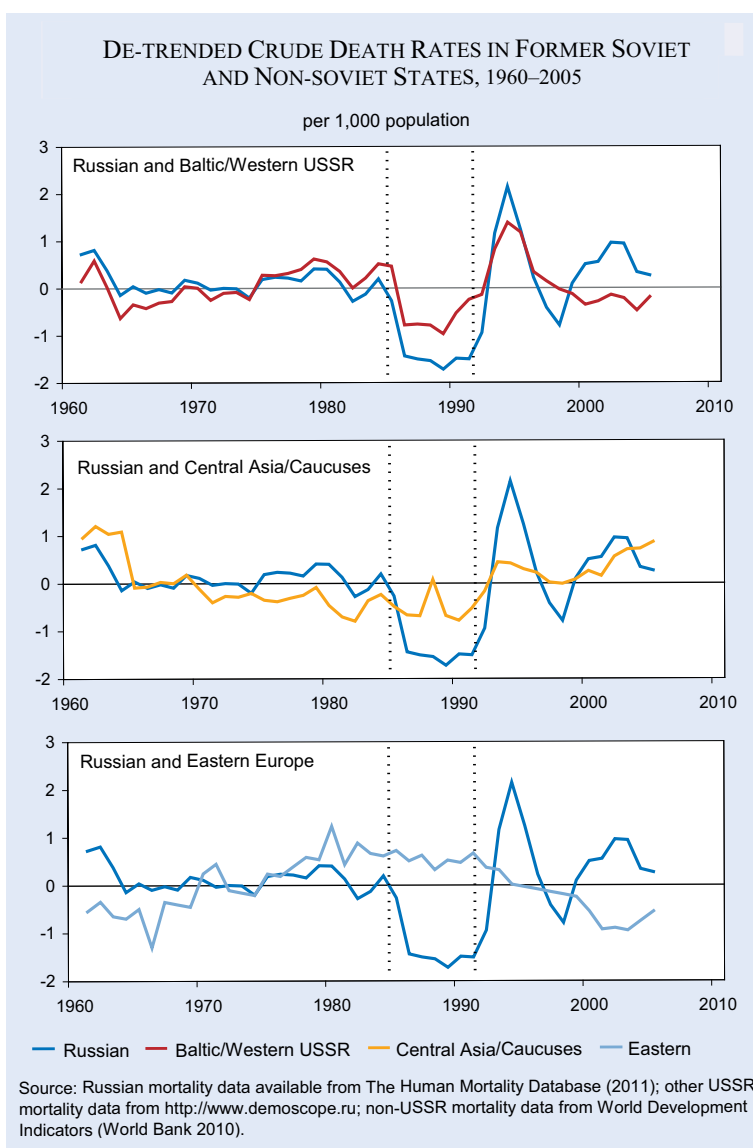


Figure 4 shows crude death rate comparisons between Russia and three groups of countries: former Soviet states with a small share of Muslims (Latvia, Lithuania, Estonia, Ukraine, Belarus, and Moldova), former Soviet states with a larger share of Muslims (Armenia, Azerbaijan, Georgia, Uzbekistan, Kazakhstan, Kyrgyzstan, and Turkmenistan), and non-Soviet Eastern European countries (the Czech Republic, the Slovak Republic, Hungary, and Poland). Each panel shows de-trended crude death rate means for one of these country groups (and Russia for comparison), plotting residuals obtained by regressing country-year crude death rates on a linear year variable (Demoscope Weekly 2009; World Bank 2010). Former Soviet states with low Muslim concentrations (top panel) exhibit both crude death rate decreases during the latter 1980s

and death rate increases during the early 1990s that are similar to those in Russia. Former Soviet states with higher Muslim concentrations (middle panel), by contrast, experienced significantly lower campaign year reductions and transition year-increases. Finally, death rates over time in non-Soviet Eastern European countries (lower panel) appear unrelated to those in Russia. These patterns of mortality during the 1980s and 1990s across former Soviet States and Eastern European countries are consistent with our oblast-level findings for Russia.

Conclusion

The evidence shows an important, but under-recognized link between the Gorbachev Anti-Alcohol Campaign and Russia's mortality crisis. Intervening on a variety of margins, the campaign simultaneously raised the cost of drinking and subsidized substitute activities. Alcohol consumption declined markedly, and Russia's crude death rate fell by an average of 24 percent per year, implying roughly 1.61 million fewer deaths during the latter 1980s. However, the campaign's unpopularity and public finance impact led to its repeal shortly before the collapse of the Soviet Union. The Russian death rate subsequently climbed rapidly – and the increase associated with the campaign's end explains a large share of Russia's Mortality Crisis (roughly 2.15 million deaths). Former Soviet States and the rest of Eastern Europe also experienced similar temporal patterns of mortality commensurate with their exposure to the Anti-Alcohol Campaign.

A key implication of these findings is that Russia's transition to capitalism and democracy was not as lethal as commonly suggested (Stuckler et al. 2009). However, our findings also do not necessarily imply that alcohol prohibition raises welfare (in Russia or elsewhere), even if it saves lives. Health is only one component of welfare, so health-improving restrictions on individual choices can cause harm as well as do good.

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