

# MORTALITY IN RUSSIA IN LIGHT OF THE REDUCTION IN ALCOHOL CONSUMPTION\*

ALEXANDER NEMTSOV

*In the contemporary history of Russia, there have been three significant reductions in alcohol consumption associated with a decrease in mortality. The first, resulting from the anti-alcohol campaign of 1985, lasted 3 years, and the second, resulting from the impoverishment of the population and death of a large part of heavy drinkers, 4 years (1995-1998).*

*In 2004 began the third decrease in consumption, often inexplicably linked with the anti-alcohol laws of 2005. However, the history of this decline goes back to the year 2000. It started with the creation of Rosspirtprom (RSP) and the anti-beer campaign, with Rosalkogolregulirovanie (RAR) taking over in 2009. The main activities of RSP and RAR involved the bankruptcy of several hundred enterprises of the alcohol industry. This and many other actions of the RSP and the RAR resulted in the instability, sometimes disruption, of the alcohol market. This could be a significant cause of the decrease in consumption and mortality in 2004. In fact, in 2000 the second anti-alcohol campaign started. The object of the first one had been the consumer, of the second - the alcohol market. The aim of the first campaign was to decrease consumption and improve the economy. The aim of the second was to fill the budget by suppressing the illegal market and moving consumers into the legal market. The methods of the first campaign consisted of a reduction of production and trade restrictions; the methods of the second one changed in the course of the campaign. The main goal was to squeeze small and medium-sized players out of the market, on the assumption that they were the principal suppliers of illegal products. The methods of the second campaign included the introduction of a Unified State Automated System, the growth of excise taxes and a minimum price for alcohol, as well as tough, sometimes criminal competition. The tool of the first campaign was administrative pressure. The main instruments of the second one were RSP and then RAR.*

*As a result, there was neither an economic recovery in the first campaign, nor a filling of the budget thanks to alcohol in the second. The decrease in consumption and mortality in the first campaign was short-lived. The second campaign was in this regard more effective, due to the economic crisis and the growing budget deficit. Both campaigns led to increased consumption of illegal alcohol.*

**Key words:** alcohol consumption, mortality in Russia, anti-alcohol campaign, illegal alcohol.

## INTRODUCTION

In Russia, alcohol consumption plays a significant role in the lives of individuals and society as a whole. This role is multifaceted, as are the interests related to the production and consumption of alcohol, with private interests often intertwined with the interests of the state. In the complex conglomerate of relationships that have taken shape around alcohol, it is often difficult to identify cause and effect, and this concerns the question of alcohol's effect on mortality, too.

The complexity of the relationship generates myths around alcohol or primitive interpretations of the effects of consuming alcoholic beverages. One of these myths is the high toxicity of moonshine and other illegal alcohol. It has been repeatedly shown that the toxicity of moonshine differs little from that of legally produced alcoholic beverages [Nuzhny, Rozhanets, Savchuk 2011].

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ALEXANDER V. NEMTSOV (nemtsov33@gmail.com), MOSCOW RESEARCH INSTITUTE OF PSYCHIATRY, RUSSIA.

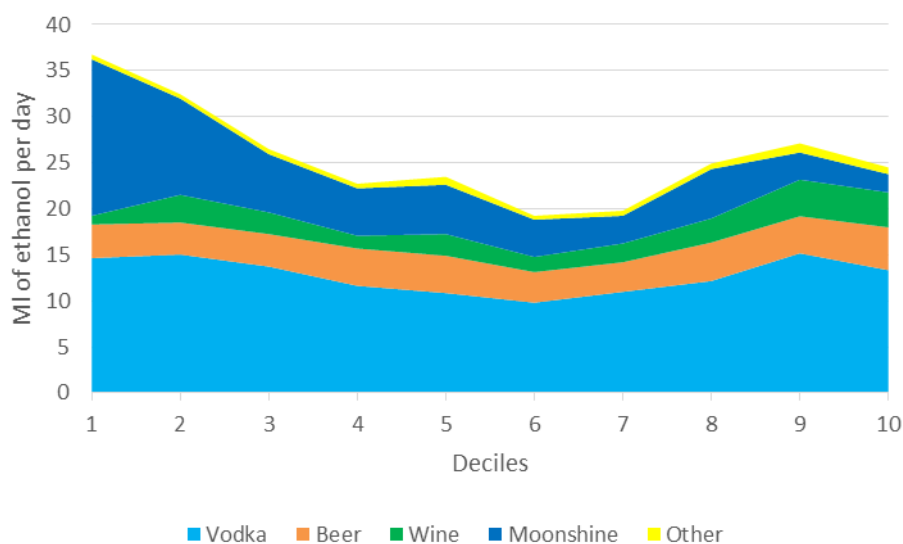
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In addition, over the past two decades, there has been a change in the composition of illegal consumption. In contrast to moonshine, which dominated until the mid-1990s and whose role has recently intensified, most illegal consumption consists of cheap, strong beverages which have avoided excise taxation and yet are of satisfactory quality and are produced by legal enterprises [Nemtsov 2009].

The main users in Russia of cheap alcohol from illegal sources are the poor (Figure 1). Accordingly, as long as there is a significant stratum of the poor in Russia, there will be both a demand for illegal alcohol and a high level of its consumption. The main alcohol problem of our country, both in the recent past and in the present, is not so much the quality of alcoholic beverages as their excessive quantity. This quantity determines the precise dependence of life expectancy on the magnitude of alcohol consumption (Figure 2). Without being too statistically rigorous, one can argue that an increase in consumption of 1 liter per person per year (1 / person / year) in the range of 10-18 liters "takes away" 1 year for men and 4.6 months for women. The linearity of the ratios of life expectancy or mortality with the level of alcohol consumption makes it possible to calculate the losses of the population of the country connected with alcohol. For the period 1980-2001 this comes to, on average, 426,000 people a year: 272,100 men and 153,900 women [Nemtsov, Terekhin 2007].

It should be emphasized that alcohol consumption fulfills many social functions [Nemtsov 2009], but the main one is personal, consisting of a temporary and, of course, imaginary escape from everyday misfortunes, both material and psychological. For a fleeting moment the pleasant effect of alcohol allows us to bear up against everyday difficulties of differing kinds and degree. It is difficult to imagine what would happen to our country if it were completely "dry".



**Figure 1. Structure of consumed drinks depending on income (RLMS, 11th round). The x-axis represents the ranking of consumers by income, with 1 being the smallest, and 10 the largest income**

Source: [Andrienko, Nemtsov 2006].

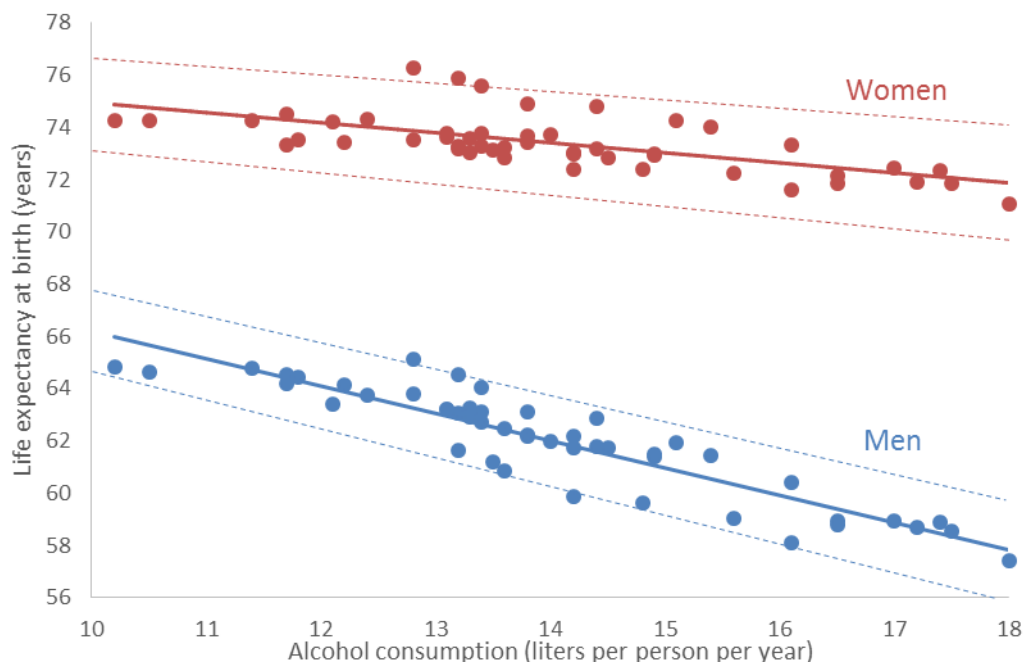
In this context, drunkenness can be an indicator of general unhappiness. Hence, in Russia as in the West, the highest consumption is among people with the lowest incomes (Figure 1).

Having made these introductory remarks, we can now demonstrate the correlation between alcohol consumption and mortality over the past 60 years.

## ALCOHOL CONSUMPTION AND MORTALITY IN RUSSIA, 1956-2003

Compared with the current level, alcohol consumption in the RSFSR at the time of the end of the Great Patriotic War was relatively low, but higher than the pre-war level. The 100-gram daily ration of vodka at the front and the bonus rations in the rear [Takala 2002] gave a push to alcohol consumption as well as to home distillation. In addition, alcohol remained a significant source of budget revenues, with its official production doubling from 1960 to 1984. Accordingly, there began a rapid increase in consumption and mortality and a rapid decrease in life expectancy (Figure 3). Repeated attempts by the Soviet leadership to reverse the situation (1948, 1958, 1960, 1961, 1967, 1972 and 1974) did not yield a significant result, mainly because alcohol policy was extremely inconsistent.

It is astonishing that in a large and heavily drinking country no one knows exactly the true scale of alcohol consumption, and state bodies do not even try to figure them out so as to build an alcohol policy on a scientific basis. Moreover, it can be said that in Russia there is no alcohol policy as a coherent chain of effective measures leading to a clearly defined goal. There was only one short episode when, in 1980, the State Statistics Committee of the USSR was instructed by the Government to develop a methodology and estimate the consumption of moonshine in the country and the republics.



**Figure 2. Dependence between life expectancy and alcohol consumption**

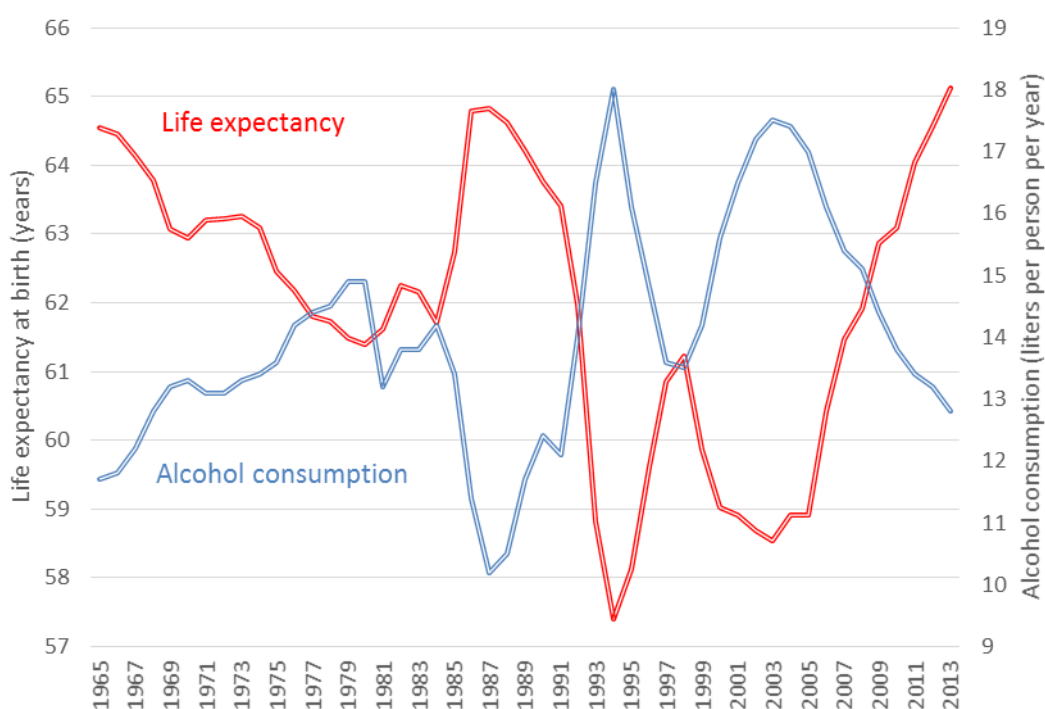
*Note: The solid straight line is the regression line, the dotted line is the boundary of the 95% confidence interval of the forecast.*

*Source: [Nemtsov, Shelygin 2014].*

Such a technique was indeed developed, and on its basis Goskomstat in 1980-1987 estimated the amount of illegal production, based on the unusually high quantities of sugar being purchased. This was Soviet Russia's first dynamic assessment of the real consumption of alcohol (moonshine + sales of state alcohol), albeit classified. In the USA (University of Duke), starting in 1960, calculations of consumption in the USSR and the RSFSR were conducted by the economist Vladimir Treml [Treml 1982], whose book on the subject was kept in a restricted-access repository in Moscow. In 1981, the author of the present article also undertook to make such calculations [Nemtsov 1998; 2002], without knowing anything about his predecessors' work.

During Perestroika, the state released certain classified materials, in particular data on alcohol consumption. In the years 1988-1989 it turned out that the three assessments made independently and on completely different grounds were very close: on the eve of the anti-alcohol campaign (1984), the total consumption in the RSFSR was 14.5 liters / person / year. A later estimate for 1984 was 14.2 liters / person / year [Nemtsov, Shelygin 2014]<sup>1</sup>.

In 1985, a very tough anti-alcohol campaign began, initiating significant fluctuations in alcohol consumption in direct opposition to fluctuations in life expectancy (Figure 3). This was the beginning of a new stage in the country's alcoholic and demographic history.



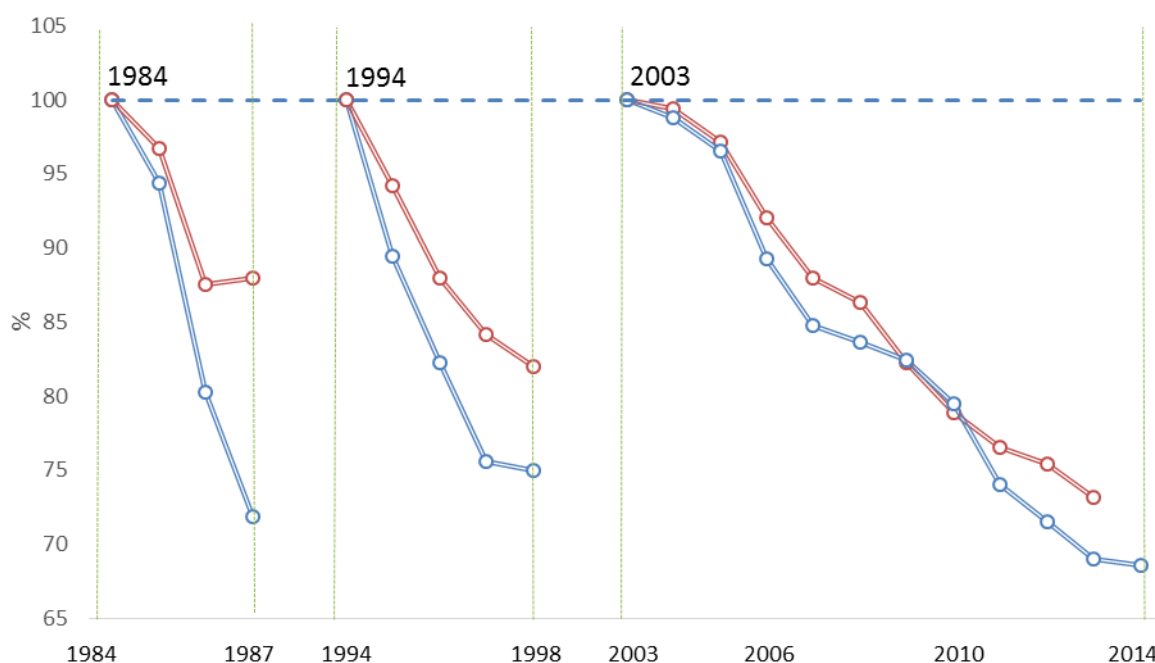
**Figure 3. Changes in alcohol consumption and the length of life in Russia in 1965-2013**

Sources: Rosstat data [Nemtsov, Shelygin 2014].

<sup>1</sup>The new estimate of alcohol consumption was calculated on the basis of an analysis of deaths from alcohol poisoning from 1956 to 2013. To the calculated values was added the alcohol in beer, which does not lead to fatal poisoning and therefore is not reflected in the calculations. The growth of its sales from 1998 to 2007 was, in terms of pure alcohol, almost fivefold.

World history has known significant falls and rises in alcohol consumption, for example, in the USA [Room 1991] and in the United Kingdom [Spring, Buss 1977]. But these and many other fluctuations in consumption lasted for decades (“long waves of alcohol consumption” [Holder, Edwards 1995]). In contrast, in Russia after 1984 a new consumption pattern emerged, which can be designated as cyclical (Figure 3), consisting of two and a half fluctuations (decrease + growth): 1) 1985-1994; 2) 1995-2003; 3) 2004-2013. The reason for the first sharp decrease in consumption is the 1985 anti-alcohol campaign. The assumptions and motives of the campaign as a whole are clear [Nemtsov 2009]. As for its results, it is important to emphasize that this campaign did not lead to a significant reduction in consumption by either size (up to 10.2 l / person / year in 1987) or duration (1985-1987, figure 4). The population responded to it with unprecedented unanimous resistance - the powerful production of moonshine - despite harsh judicial and administrative persecution. Already in 1987 a reflexive increase in mortality began (Figure 3), and in 1988, an increased consumption of alcohol resulting from home distilling and the expansion of state sales due to a significant budget deficit. In 1992, the initial (1984) consumption level was reached, and with the onset of market reforms and the vagaries of the new leadership of the country, alcohol consumption and mortality began to increase by leaps and bounds (Figure 3).

In 1994, Russia set an historical and, for the twentieth century, world record for alcohol consumption: 18 liters / person / year [Nemtsov, Shelygin 2014]. It had been higher only at the end of the 19th century in Germany, more precisely in Prussia (22 liters per person per year), and in France in the first half of the 20th century (19.8 liters per person per year) [Simpura 1995]. Along with the record for alcohol consumption in 1994, a record was also set for mortality in the post-war period.



**Figure 4. Changes in the standardised death rates of men (red lines) and alcohol consumption (blue lines) in 1984-1987, 1994-1998 and in 2003-2013**

*Note: Indicators for 1984, 1994 and 2003 are taken as 100%.*

*Sources: Rosstat data, [Nemtsov, Shelygin 2014].*

In 1995 began the second rapid decline in alcohol consumption and mortality, lasting until 1998, when, by the beginning of the default, consumption had fallen to 13.5 l / person / year, i.e. by 4.5 l / person / year over 3 years - exactly the same as during the anti-alcohol campaign. Most likely, two factors played a decisive role. The first is the dying off of a large cohort of major alcohol consumers in 1991-1994 (1995) as a result of easy access to alcoholic beverages. It is known that heavy drinkers and alcoholics absorb about half the alcohol from total consumption [Holder, Edwards 1995]. Perhaps in the mortality of 1995-1998 two cohorts of heavy alcohol consumers converged: one which, thanks to the campaign, had lived beyond it, but succumbed to the risk of alcohol-related death starting in 1991 (1992) as a result of free access to alcohol; and a second cohort consisting of new heavy drinkers formed during the anti-alcohol campaign due to a relatively high level of consumption (10.2-13.4 l / person / year).

Another circumstance which led to a decrease in alcohol consumption and mortality is a sharp impoverishment of the population as a result of market reforms that caused inflation and a tenfold increase in prices. To this were added unpaid wages, which became a widespread phenomenon. The incomes of the population were almost equal to their expenses, and purchasing power decreased dramatically [Nemtsov 2009]. Most likely this affected the consumption of alcohol, too. Due to financial difficulties and a budget deficit, significant efforts were also made by the state in the fight against illegal alcohol, which were especially evident on the border with North Ossetia. All this and some other circumstances [Nemtsov 2009] could explain the decline in consumption in 1995-1998. The last year in this period was marked by a default which, due to the depreciation of the ruble and the equilibrium of the balance of payments, the recovery of the economy, growth in output and GDP, caused an increase in the incomes of the population and, accordingly, of its purchasing power. Just a year after the crisis, the pre-crisis standard of living and level of alcohol consumption had been restored. Rapid growth in consumption continued until 2003. [Nemtsov, Shelygin 2014] (Figure 3). Unfortunately, the opportunities created by the default and devaluation were exhausted by 2003, when the authorities began learning to deal with business, and oil prices rose and began to replenish the budget. However, the budgetary problems were very far from being resolved.

### **ALCOHOL CONSUMPTION AND MORTALITY AFTER 2003**

In 2004, the third reduction in alcohol consumption and mortality began (Figure 4). However, the history of this decline began in 2000, together with the arrival of a new president and the beginning of a new alcohol policy.

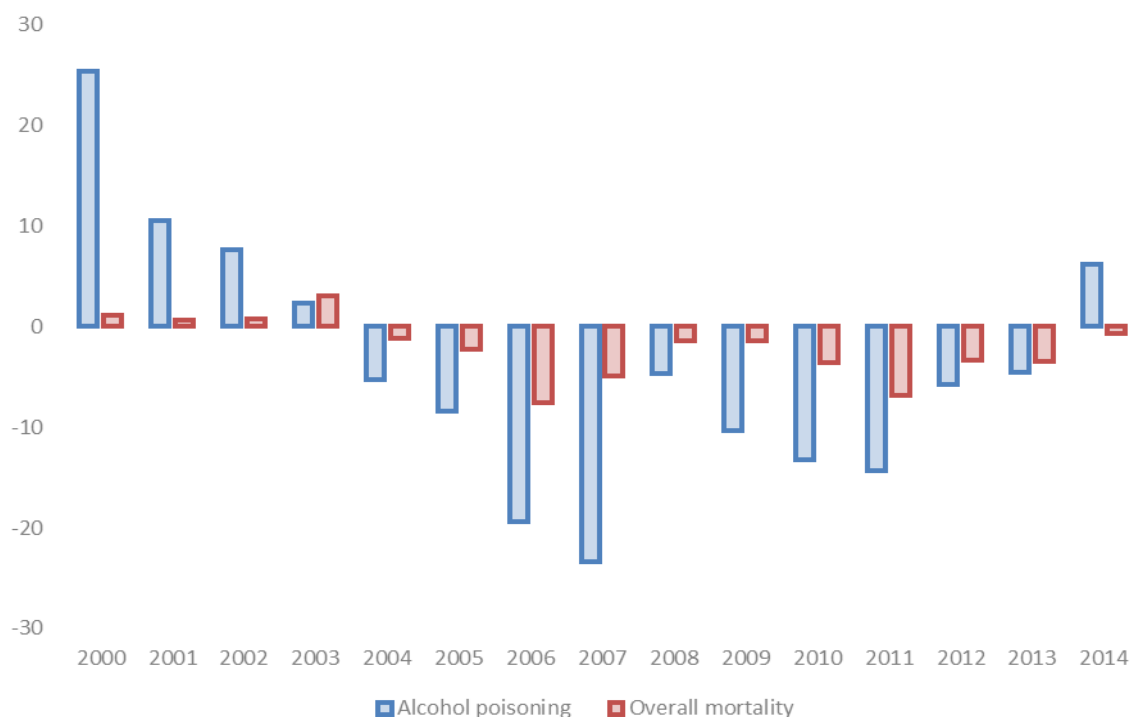
It should be said that, as a result of the mistaken alcohol policy of the 90s, the alcohol market came under the control of criminal structures. By 1997 the legal share of this market had decreased from 80% in 1992 to a mere 15%, while the share of alcohol excises as a part of GDP, already low, fell from 0.72 to 0.30% [Kosmarskaya 1998]. Naturally, this situation needed to be reversed.

The beginning of the new alcohol policy was marked by the creation of Rosspirtprom (RSP) in March 2000, and in December of the same year began the anti-beer campaign initiated by Russia's Chief Sanitary Doctor, G. Onischenko. The main activity of RSP was the bankruptcy

of several hundred enterprises of the alcohol and vodka industry, as well as the sale of these enterprises at a lower price to the owners of powerful oligopolies. It was assumed that small enterprises were the source of production and distribution of illegal alcohol, and that their elimination or concentration in the hands of a few monopolists would paralyze the flow of illegal products to the market, at the same time leading to an increase in sales of legal products and a replenishing of the budget. RSP existed until 2009, bringing huge losses to the state and, to the alcohol market, extreme instability due to the redistribution of assets and unreasonable rigidity of RSP measures in relation to the legal industry.

The bankruptcy of many enterprises, their liquidation or transfer to other owners upset production and product flows, thereby disorganizing the alcohol market and leading to a decrease in the availability of alcohol and its consumption, with all the ensuing consequences. As a result, the activity of RSP became, paradoxically, the cause of the beginning of a decrease in alcohol consumption in 2004, and after that, of a reduction in mortality related, primarily, directly to alcohol (Figure 5). These consequences were particularly pronounced in 2006-2007 (see below).

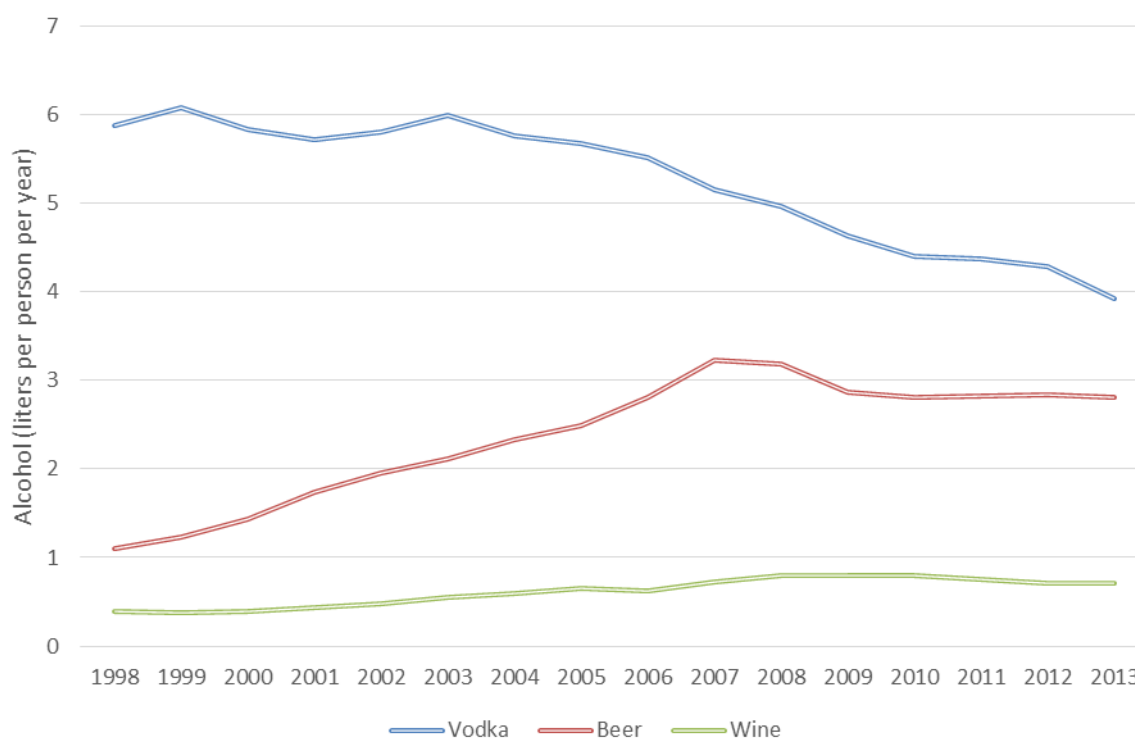
Such administrative activity preceded (!) the legislative initiatives of the country's leadership in the form of two laws in 2005. The first, among other things, prohibited as of January 1, 2006 the use of the previous excise stamps, which had to be replaced with new ones. However, new stamps were printed only in late January - early February 2006, and only on half-liter bottles of vodka. Stamps for other beverages and containers were printed during 2006. This became the first factor of additional disorganization of the alcohol market and, as a result, a decrease in alcohol consumption (Figure 4) and mortality (Figure 5).



**Figure 5. The annual increase of overall mortality (red bars) and mortality from alcohol poisoning (blue bars) in 2000-2014, by the previous year, per 100,000 persons**

*Source: Author's calculation based on Rosstat data.*

The second law sharply increased, as of July 1, 2006, the authorized capital of producers and sellers of alcoholic beverages. This measure was taken in order to remove small and medium participants from the market. A plausible pretext for this was the difficulty of controlling them in the fight against illegal alcohol. The real reason was most likely to further clear the way in the market for large producers, a process which had begun in 2000 and led to market disorganization as a result of inconsistent and sometimes criminal actions of RSP (raider actions, for example, against the Moscow plant Kristall [Boyarina 2010]). In 2006, to this was added the chaos resulting from the launching on January 1, 2006 of the United State Automated Information System (USAIS), which was intended to exercise state control over the volume of production and turnover of ethyl alcohol, as well as alcohol and alcohol-containing products. However, due to the complete unreadiness of both business and state, the USAIS did not start working. By 2008, the situation on the alcohol market had normalized and the decrease in consumption and mortality had slowed dramatically (Figure 5), returning to the same pace as in 2004-2005. [Nemtsov, Shelygin 2015]. But, most importantly, the laws of 2005 did not fulfill their purpose: sales of legal strong alcohol continued to decline (Figure 6), and budget revenues also decreased.



**Figure 6. Registered sales of vodka, beer and wine in terms of pure alcohol**

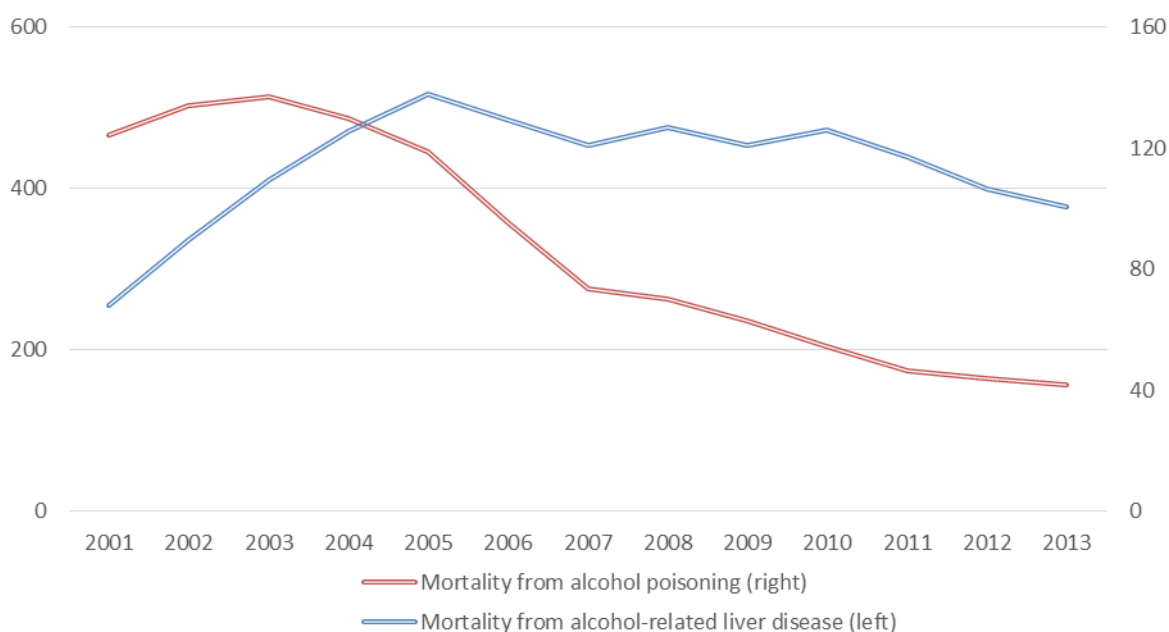
*Source: The author's calculation based on Rosstat data and indicators.*

The second law introduced, as of July 1, 2006, an important measure for our topic: new denaturing additives, more toxic and less organoleptically sensitive. The result was an "epidemic" of acute hepatitis with subsequent mortality from liver disease, which caused a 6-7-year decline in this indicator (Figure 7 [Nemtsov, Shelygin 2015]) with a decrease in consumption that began in 2004.

After 2008 the decrease in alcohol consumption and, as a result, mortality, was the result of increasing pressure on the alcohol market (see the table in the Appendix). One such mechanism



was the USAIS. Since 2006, there have been several attempts to implement the USAIS, each starting with a new project, a new executor, new budget allocations. The cost of each further development of the USAIS (2011) has been, according to various estimates, about 600 million rubles [ALCOHOL.RU]. It is important that each attempt at implementation has been accompanied by a destabilization of the market. The last and final date for the full implementation of the USAIS was January 1, 2016. In other words, the history of the implementation of the USAIS has been going on for 10 years - so far, to no avail. Meanwhile, some Western researchers have repeatedly written that the decrease in alcohol consumption, the increase in life expectancy and the reduction in mortality are partly due to the notorious USAIS, the world's only technical market regulation system.



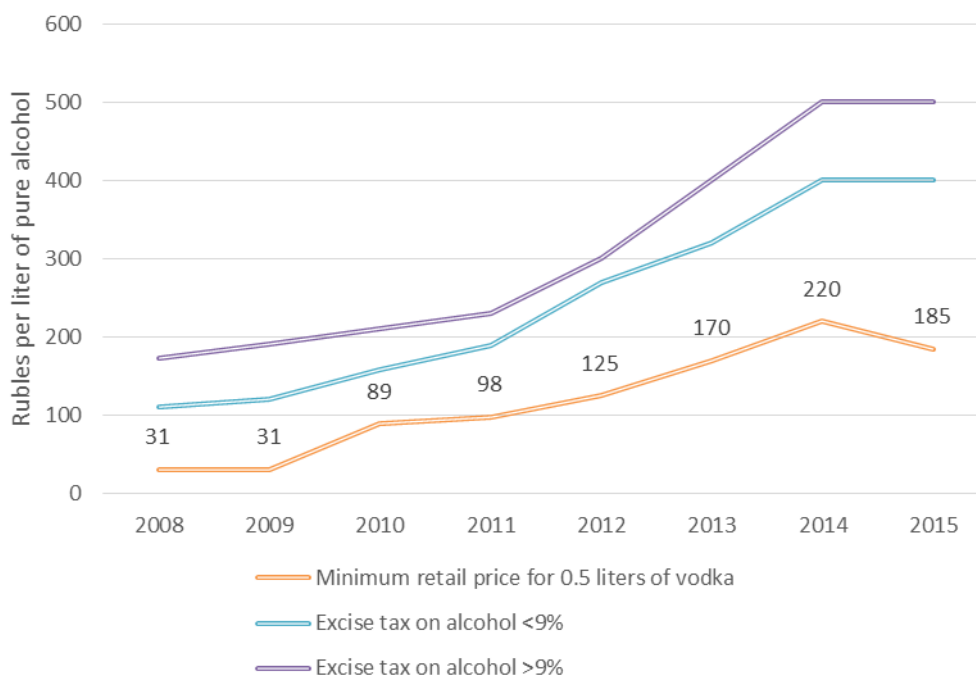
**Figure 7. Mortality from alcohol poisoning and liver disease in 2001-2013, per 1,000,000**

*Source: [Nemtsov, Shelygin 2015].*

Unlike the USAIS, more effective were a significant increase in excise taxes and an increase in the minimum price for a half-liter bottle of vodka (Figure 8). But this measure led to a further reduction in state sales and a sharp decline in revenues to the budget. All these measures hampered the availability of legal spirits and caused consumers to switch to illegal alcohol. For example, the rate of collection of excises on strong alcohol in 2007-2011 was 46.3-55.9%, whereas for beer it was 88.2-94.9% [Sokolov 2013]. On June 25, 2015 the Chairman of the Federation Council V.I. Matvienko said at a chamber meeting that "the budget loses about 290 billion rubles a year because of the production of illegal products" and called budget losses "catastrophic". On November 26, V.I. Matvienko returned to this topic and added that "the share of legally produced alcoholic products in the current year has fallen to a record 35% while maintaining the overall volume of consumption."

The illegal alcohol market over the last 6 years has increased from 40 to 64%, of which 30% is sold in a legal licensed retail network, and the remaining 34% in illegal outlets. The main illegal production is concentrated in Kabardino-Balkaria, North Ossetia, Dagestan and the

Moscow region [ALKOHOL.RU]. Most of the illegal production and sales outlets are bankrupt enterprises that are deprived of licenses, which is precisely why they are not controlled by the Russian Alcohol Regulation Agency (RARA).



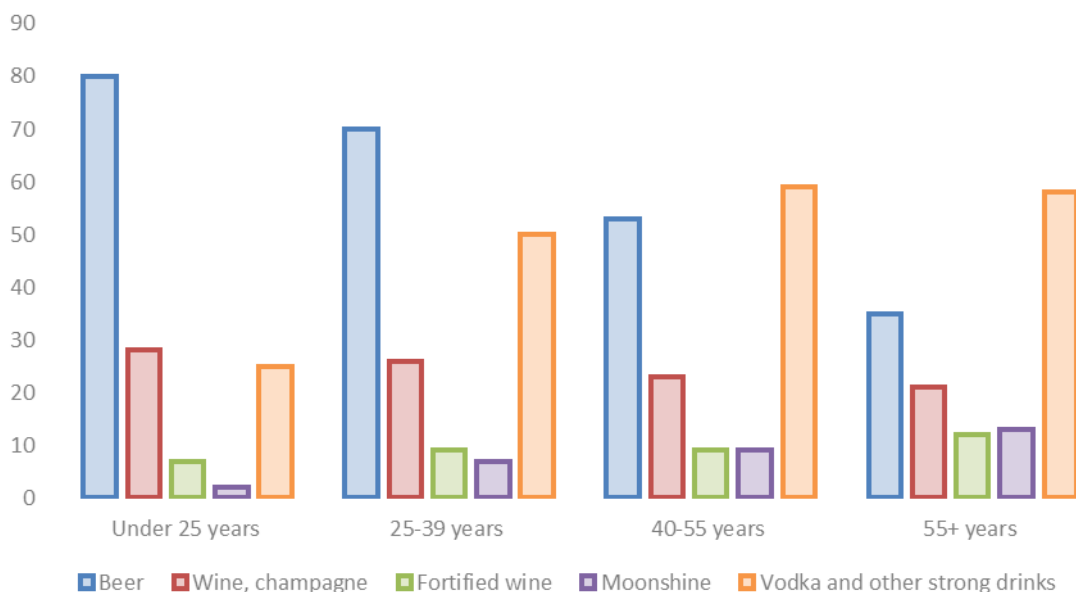
**Figure 8. Excise taxes on 1 liter of pure alcohol and the minimum price for 0.5 liters of vodka, rubles**

Source: Rosstat data.

Various sources testify to the growth of illegal production and estimate it at 60-64%. This means that an increasing number of consumers are moving from the official market to the illegal market. But this redirection of buyers and consumers requires a certain time to organize new production and new product flows. As a result, the restoration of the usual norms of alcohol consumption occurs with a lag, which probably contributed to a decrease in consumption lasting 10 years, until 2013. In 2012-2013, the decrease in alcohol consumption and related mortality indicators slowed down (Figure 5), and in 2014 there was a 6.2% increase in mortality of men from alcohol poisoning compared to 2013 (Figure 5). This type of mortality, as shown by the 1985 anti-alcohol campaign, responds most dynamically to changes in alcohol consumption [Shkolnikov, Nemtsov 1997; Nemtsov 1998; 2002; Shkolnikov et al. 2004]. It can be assumed – for now *only* assumed - that in 2014 there was a halt to the decrease in alcohol consumption and a return to its growth. From 2003 to 2013, the decrease in alcohol consumption was 4.7 liters / person / year [Nemtsov, Shelygin 2014]. This is close to the rate of decline during the anti-alcohol campaign - 4.0 liters / person / year from 1984 to 1987 - although in a shorter period (3 years against 10 years). In other words, the decline in recent years has been continuous, but 3 times slower: 0.47 liters / person / year versus 1.60 in 1985-1987. So, it is possible to estimate, very approximately, the difference in the effectiveness of anti-alcohol measures during the two periods of decreasing alcohol consumption. The decline of the standardized mortality rate in 2003-2013 was 31.0% for men and 29.4% for women, versus 12.1 and 7.0% in 1984-1987.

An important and encouraging trend of the past 10-15 years is a change in the composition of alcoholic beverages in official sales (Figure 6). This is due to the fact that in the mid-1990s large international beer companies started operating in Russia, and a powerful production of relatively good beer appeared. Starting in 1998, the growth of its consumption began: the population spontaneously began to choose the lesser of two evils (vodka or beer): beer, being a weaker drink, does less harm to health. By 2007, beer consumption had increased almost fivefold (81.3 liters/ person / year), although this is still far from the European leaders (Czech Republic - 156.9, Germany - 115.8 liters/ person / year [WHO 2014 ]).

Growth in beer consumption has occurred throughout the world. By the time when, in 1982, WHO urged governments to reorient the population of their countries to the weak alcoholic beverages wine and beer, the process of changing consumption patterns had already taken place in developed countries. The shift of alcohol consumption to beer also occurred in "wine" countries. In the post-war period, this was due to a change in the stereotype of life, a growth of mobility, and a growth of the value of health, all of which are hampered by strong drink. The emphasis on beer in Russia's increased consumption of weak alcoholic drinks comes from the fact that we have never had a wine tradition. We are making quite sensible attempts to develop and stimulate winemaking, but because of our climate, the production of wine will always be limited, and therefore it will remain expensive and inaccessible. If we don't include attempts to promote the consumption of energy drinks, against which an active battle has already begun, the only remaining weak alcoholic beverage is beer.



**Figure 9. The structure of consumption of alcoholic beverages depending on the age of consumers**

*Source: [Denisova, Kartseva 2012].*

The structure of alcohol consumption has changed dramatically among people under 40 [Denisova, Kartseva 2012], for whom beer has begun to dominate consumption (Figure 9), while vodka continues to dominate among those over this age. At the same time, it has been shown how, as consumers grow younger, the share of beer increases, and the share of vodka falls [Kueng,

Yakovlev 2014]. From a historical perspective, which can be expressed by the maxim, “They drank, drink and will drink”, this phenomenon should be considered good, as not a single fatal poisoning by beer has ever been recorded. In parallel with the increase in beer consumption, official sales of vodka are declining (Figure 6), and these two processes may be one of the reasons for the decrease in total alcohol consumption in 2004-2013.

Figure 6 shows that, since 2008, the growth in beer consumption has been suspended as a result of legislative actions and a number of administrative measures, some of which can be attributed to the activities mainly of the vodka lobby, but also of the glass manufacturers, fighting for the abolition of plastic bottles (PET) as a container for beer and their replacement with glass containers. The tough competitive activity of the vodka business against the beer industry can slow down the transition of consumers from vodka to beer and thus affect demographic processes.

### **CAUSES OF THE REDUCTION OF MORTALITY AFTER 2003**

First an important remark. From the point of view of demographic indicators, the main problem associated with alcohol abuse is not, as is often said and written, alcoholism, but frequent heavy drinking. Alcoholism or pathological dependence is a medical phenomenon. In terms of registered chronic alcohol-related disease, this affects 1.4% of the country's population [Key indicators ... 2012], and the total number of patients is presumably not more than 4-5% of the population [Nemtsov 2009]. As for alcohol abuse – that is, heavy drinking not clinically diagnosed as alcoholism - nobody knows its true dimension. Moreover, it is not always easy to draw a line between frequent alcohol consumption and alcohol abuse or to recognize a true drinking problem, due to the gradual nature of the increase in alcohol consumption. The distribution of alcohol problems in the consumer cohort is also unknown. However, a few studies show that about 40% of men of working age and 15% of women abuse alcohol [Bechtel 1986]. It is this part of the population that makes the main contribution to the alcoholic harm to the country: in studies of men up to age 55, the risk of death among those who drink 3 or more half-liter bottles of vodka per week is 35% [Zaridze 2014]. The Organization for Economic Cooperation and Development (OECD) estimates alcohol-related mortality in Russia at 30.5%, and considers our country the world's leader in this indicator [OECD 2015]. The author's estimates for 1980-2007 put the figures at 24% for men and 15% for women [Nemtsov, Terekhin 2007; Nemtsov 2009]. Razvodovsky estimates the losses to be higher - 41 and 28% respectively [Razvodovsky 2012] - while David Leon and co-authors associate dangerous alcohol consumption with 51% of deaths of men aged 25-54 years against 13% in the control group [Leon et al. 2007].

When comparing the indices of different authors, one should keep in mind that alcohol indicators tied to certain periods of time reflect the state of problems precisely in these periods, since the alcohol situation in Russia is very dynamic. This was reflected in the high speed and amplitude of the change in mortality: for men, 43.3% of the average over 30 years (for women - 37.2%). Mortality fluctuations after 1985 composed 2.5 cycles (1 cycle = decrease + increase), almost synchronous with consumption cycles (see above, Figure 3). The third cycle can be considered incomplete, because for 10 years (2004-2013), the decrease in mortality, as well as the increase in life expectancy, occurred at a variable rate. However, 2014 gave some grounds to

foresee the beginning of the completion of the third cycle, too, although one year is not decisive - we will wait for the next, or better yet even another one, to firmly judge what is happening.

The main feature of the third reduction in mortality is its duration: 11 years against 3-4 years for the two previous ones. This period is of particular interest precisely because of the reasons for its duration.

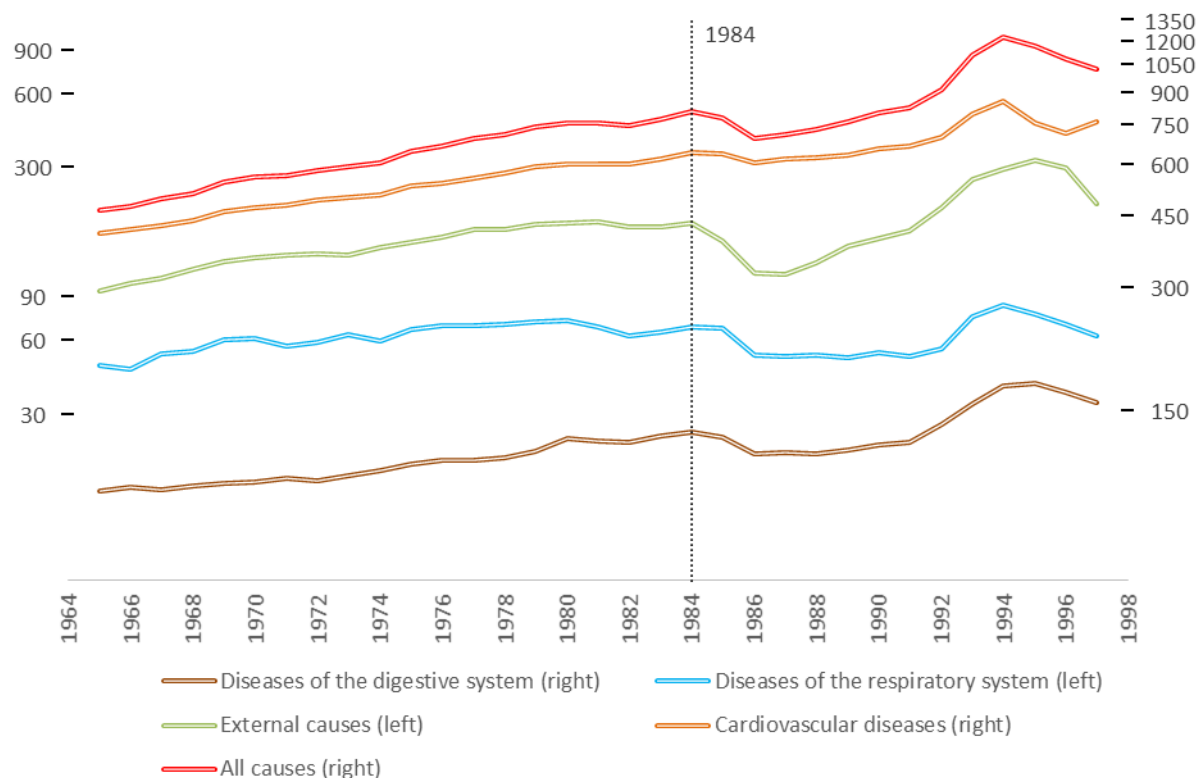
A major social phenomenon in a large country is difficult to ascribe to one cause. Rather, there were several. At the same time, one cannot help but recall that there was a state program for the development of health until 2020, for which 2.04 billion rubles had been allocated.

Grigoriev and Andreev [Grigoriev, Andreev 2015] believe that the contribution of policy measures to the reduction of mortality in Russia after 2003 was small, and link this decline to the fluctuations in mortality in previous years. They make an exception only for 2006-2007, as do other authors [Neufeld, Rehm 2013], who, however, noted an important fact: the new alcohol policy went into effect in 2000. Pridemore and co-authors [Pridemore et al. 2014] connect the effect of the laws of 2005 with the reduction of mortality all the way up until 2010 (the end of the period of research). Khalturina and Korotaev [Khalturina, Korotaev 2015] went even further. These authors took their analysis up to 2013, and found that the effect of the laws of 2005, introduced in 2006, continued in all subsequent years.

Analysis of the causes of death and life expectancy between 2003 and 2012 led Shkolnikov and co-authors [Shkolnikov et al., 2014] to the conclusion that the greatest contribution to the increase in life expectancy was made by the reduction in adult mortality from diseases of the circulatory system and external causes most closely associated with alcohol consumption. It should be recalled that a decrease in mortality from diseases of the circulatory system, especially coronary heart disease, was also observed during the 1985 alcohol campaign (Shkolnikov et al. 2004). Then the other main types of mortality also decreased (Figure 10, [Nemtsov 1999]). It is significant that at that time almost the only reason for the decrease in mortality was a reduction in alcohol consumption; the many claims about the contribution to this process of the spiritual growth and hopes caused by perestroika cannot be considered proven. According to Radaev, the decrease in alcohol consumption in the 2000s, even before the first political intervention in 2006-2007, is more realistically associated with GDP growth and real income of the population, and the pause in the decline in 2011-2013 - with the crisis of 2008-2009. [Radaev 2015]. Yet he rightly believes that it is difficult to determine the exact role of political intervention. The same should be said about subsequent calculations of this article.

The explanation offered by Grigoriev and Andreev [Grigoriev, Andreev 2015] seems tempting, especially when you look at Figure 3. One might think this a continuation of the inertia of the fluctuations instigated by the anti-alcohol campaign in 1985, but such an explanation needs to be supplemented with a discovery of the mechanism supporting these fluctuations after 2003. Hypothetically, such a mechanism could be the different rates both at which the main consumers of alcohol (problem-drinkers and alcoholics) die off and at which this cohort recovers. To put it another way, it is possible that, as consumption increases, such dying out takes place faster than the increase in the cohort of new heavy drinkers and alcoholics. Unfortunately, it is extremely difficult to test this hypothesis, due to the destruction in the 1990s of that part of the narcological service responsible for the monthly recording of registered alcoholics and problem-drinkers from

the risk group. In addition, the assumption of an oscillatory process is hampered by the 10-year decline in mortality after 2003.



**Figure 10. The number of men dead from certain classes of causes of death in 1965-1995, thousands**

*Note: Logarithmic scale.*

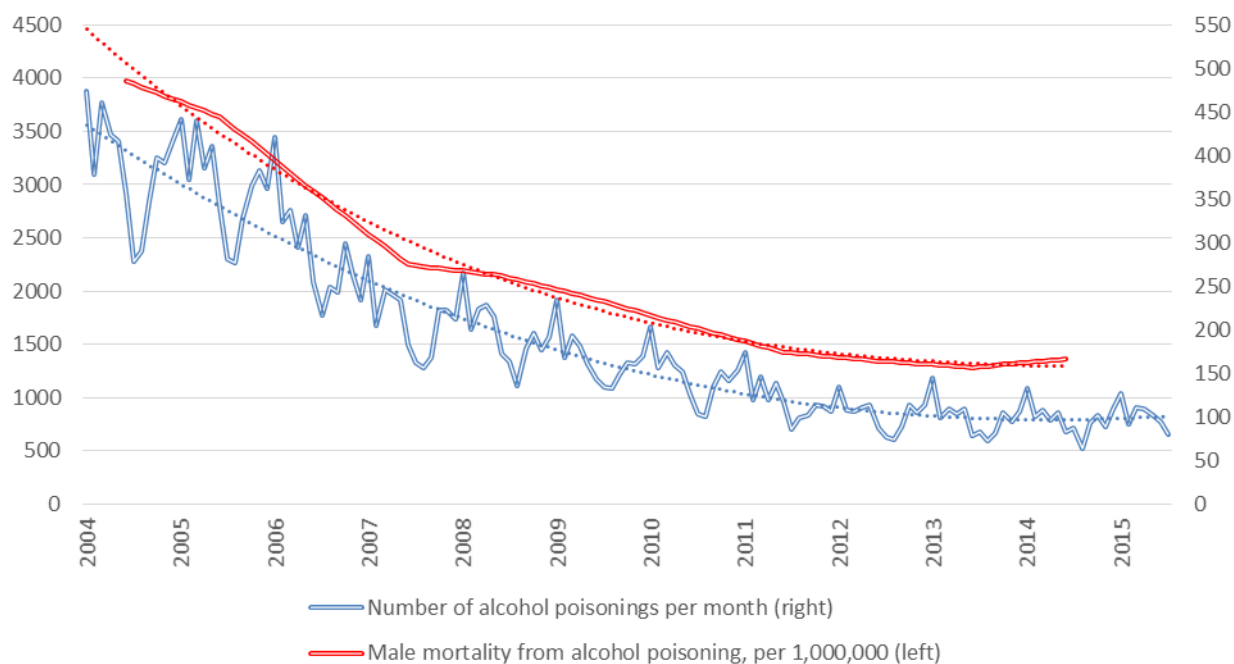
*Source: [Nemtsov 2002].*

It is difficult to agree with Pridemore and co-authors [Pridemore et al. 2014] that the effect of the laws of 2005 led to a prolonged decline in mortality and delayed the recovery period: the decrease in mortality in 2006 and later was preceded by a decline in 2004-2005. The introduction of the laws did indeed accelerate the decline, but it lasted 2 years [Nemtsov, Shelygin 2014], and later returned to the initial rates of 2004-2005, with a subsequent and gradual slowdown. This was particularly evident with regard to deaths from alcohol poisoning (Figure 11), the number of which, after a long decline, first increased in 2014 compared with 2013 (6.2% for men and 1.7% for women).

Nevertheless, the prolonged decline in mortality in 2004-2014 is an indisputable fact, and it requires an explanation.

It is surprising that the discussion of alcohol policy in connection with the reduction of mortality usually starts from 2006-2007, whereas RSP, often referred to as the *market regulator*, was created in 2000, and the mortality reduction began in 2004. In fact, in their explanations of the phenomenon of mortality after 2003, the authors mentioned above and some others rely on detailed demographic indicators and general considerations about their connection with a decrease in alcohol consumption, although this relationship is assessed in different ways. It is important to

note that alcohol consumption, or, to put it more simply, drinking, is a watershed between the multiple causes leading to drinking [Nemtsov 2009] and the consequences of this activity, the gravest and most visible of which is death. Therefore, most of the research was carried out on one side of the watershed - on studying the relationship between alcohol consumption and mortality. The other side of this watershed, the causes of alcohol abuse, often goes unstudied. As a result, the cause-effect chain is not closed, or, in the role of causes, random factors are put forth, as was the case with the laws of 2005.



**Figure 11. Male mortality from alcohol poisoning in 2004-2015**

*Note: The blue line represents monthly data (Rosstat); the red line - yearly indicators; and the dotted line is a polynomial of the third degree.*

I repeat once again that the decrease in mortality began 2 years before the introduction of these laws, which means that there were reasons for the change in growth to decline. Leaving aside subtle psychological or other factors leading to heavy drinking and its consequences, it seems that the causes of the decline in mortality that began in 2004 are reflected in the table (see Appendix). Never in the recent history of Russia [Nemtsov 2009], including the 1985 anti-alcohol campaign, has political pressure been so long-lasting, albeit inconsistent. This time, pressure was put on the alcohol market to suppress illegal production and replenish the budget.

One of the possible causes of the decrease in mortality due to a decrease in alcohol consumption in recent years is sometimes referred to as the change in the composition of alcoholic beverages consumed (see above). However, this is still unlikely, because the predominance of beer among some consumers began relatively recently, about 15 years ago (Figure 10), and concerned primarily young people, who are still a long time away from realizing their low risk of dying of alcohol in connection with the transition to beer.

Newspapers and speeches of officials name as another cause measures of direct action: restrictions on the sale of alcohol by age (18+), place (school, etc.) and time (nighttime

prohibition). The effectiveness of these measures has been investigated only once, in connection with the nighttime restriction [Kolosnitsina et al., 2015]. The authors found that limiting the time of sales led to their decrease. But this was shown only for one year (2010 versus 2009), not taking into account the fact that the decline in this period occurred against the backdrop of the decline that began in 2004 (Figure 6), and fig. 6 does not detect changes in the sales trend in 2010 and later. So the effectiveness of this measure cannot yet be considered proven.

## CONCLUSION

In 2000 began the *second* anti-alcohol campaign. Unlike the first, it was unannounced, and the actions associated with it were neither rational nor consistent. Moreover, alcohol policy in Russia has *no* scientific justification. Despite a significant reduction in alcohol consumption and mortality, this campaign cannot be recognized as being aimed at improving the health of the population.

The object of the first campaign was the consumer, of the second - the alcohol market, primarily the manufacturer.

The purpose of the first campaign was to reduce consumption, and, with the help of this, to reinvigorate an ailing economy, for which purpose other equally naive economic measures were implemented. The main goal of the second campaign was to fill the budget, which had seriously shrunk at the end of the Soviet regime and during the "Wild 90s", by suppressing the illegal market and shifting consumers along with their cash into the lap of the legal market.

The methods of the first campaign were a decrease in production and a restriction of trade. The methods of the second were more diverse, and changed during the course of the campaign. The main thing was still to force small and medium-sized producers of spirits, who were supposed to be the main suppliers of illegal products, out of the market. At the same time, there was an intensive redistribution of assets in favor of their large holders, who were supposed to be able to monopolize the market and restore order there. The methods of the second campaign include the USAIS, the creation of other difficulties for the participants of the alcohol market, the raising of excise taxes and a minimum price for alcohol. Among the methods was tough, sometimes criminal, competition, which occasionally influenced legislative decisions, as had happened with the legislative infringement of the beer industry, competing with the producers of vodka for the consumer.

The instrument of the first campaign was administrative pressure from the local bodies of the Communist Party. The main tools of the second were the RSP and the RAR, with their ever-expanding fiscal powers.

As a result, there was no recovery of the economy in the first campaign, or replenishment of the budget at the expense of alcohol in the second. The beneficial reduction in alcohol consumption and mortality in the first campaign was short-lived. The second campaign in this respect was more effective in connection with the coming economic crisis and budget deficit, while the reduction of alcohol consumption and mortality was a by-product of the search for budget



funds in the alcohol market. Both of these campaigns caused an increase in the consumption of illegal alcohol.

The causes of the failure of both the first and the second campaign were unskilled leadership, the lack of scientific development of alcohol policy, the poverty of the population, and the underestimation of the fact that alcohol is a part of the needs of much of the population. The second campaign differed from the first in its more powerful component of corruption. One can't bring order to a local sector of the economy when corruption has become a systemic factor in the country as a whole.

The failure of the first campaign was marked by the return of alcohol sales in 1988. The end of the second campaign, more precisely the end of its first stage, was marked "with an action plan ("a road map") for stabilizing the situation and promoting competition in the alcohol market," approved on November 26, 2015. The "map" revealed that the 15-year campaign had not produced the desired results, and that new efforts were needed to achieve the goals set in 2000. But it didn't stop there. On January 15, 2016, the President signed a decree subordinating the RAR to the Ministry of Finance and transferring to the ministry functions for the development and implementation of alcohol policy. Thereby, the true goals of the second anti-alcohol campaign were finally revealed and the beginning of its *second* stage was set.

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