

The Effects of Alcohol Taxation and Pricing Policies on Unrecorded Alcohol Consumption in Russia

Razvodovsky YE*

International Academy of Sobriety, Grodno 230009, Belarus, Russia

*Corresponding author: Razvodovsky YE, International Academy of Sobriety, 80 Gorky Street, Grodno 230009, Belarus, Russia, Tel: + 3750152701884; Fax: +3750152435341; E-mail: yury_razvodovsky@mail.ru

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Abstract

Background: In Russia, harmful drinking is significantly associated with consumption of unrecorded alcohol (homemade spirits and non-beverage alcohol surrogates) containing high levels of ethanol and other toxic substances.

Objectives: To estimate the effects of recent alcohol taxation and pricing policies on unrecorded alcohol consumption in Russia.

Methods: Trends in the affordability of vodka, excise tax rates on vodka, real disposable income, real price of vodka and unrecorded alcohol consumption per capita between 2010 and 2015, were compared.

Results: A Pearson's correlation analysis suggests an inverse relationship between unrecorded alcohol consumption and total alcohol sales per capita, as well as vodka sales per capita. The relationship between unrecorded alcohol consumption and the affordability of vodka was also negative, but statistically nonsignificant. The level of unrecorded alcohol consumption also positively related to the excise tax rates on vodka and the real price of vodka.

Conclusions: The results of this study suggest that several factors including rising price of legal alcohol and ongoing economic crisis underpin a switch to unrecorded alcohol consumption in Russia over the last years.

Keywords: Affordability; Tax; Price; Unrecorded alcohol; Consumption; Russia

Introduction

Excessive alcohol consumption constitutes the most important cause of the high premature mortality in Russia [1]. In this country, harmful drinking is significantly associated with consumption of unrecorded alcohol (homemade spirits and non-beverage alcohol surrogates) containing high levels of ethanol and other toxic substances [2]. Alcohol surrogates have been linked to most risky pattern of consumption associated with a high risk of premature death [3].

Through the centuries the scale of alcohol-related problems was underestimated by the Russian government [4]. Recently the government has become increasingly concerned about the public's health, as it has realized that population decline is a serious threat to the long-term development of the economy [5]. Anti-alcohol activity in Russia began with the adoption of two laws in 2005, which increased government control over the alcohol market [6]. However, negligent execution of these laws resulted in chaos on the alcohol market and shortages of legal alcohol [7].

An active phase of the alcohol reform was started in 2009, when the Federal Service for Alcohol Market Regulation (Rosalkogolregulirovanie) was established. In January 2010, the minimum price on vodka was introduced. Most importantly, excise tax

rates on vodka in Russia have been increased [8]. Further, new set of amendments to the 171 Federal Law were adopted in 2011 [9]. A wide range of new regulations was imposed on the manufacture and sale of alcoholic beverages in 2012 [10]. There is some evidence that a new policy initiative in Russia might have had a beneficial effect in terms of reduced alcohol-related mortality. It should be noted; however, that one of the objection to pricing policy as a public health strategy is that heavy drinkers are likely to switch to alcohol surrogates as a substitute for legal alcohol, which it can not afford.

Evidence from both the historical and more recent past suggest that government policies designed to raise prices and restrict availability of legal alcoholic beverages in Russia have driven black market growth [11]. Alcohol surrogates consumption increased markedly following the prohibition of vodka sales in 1914 as Russia mobilized for war. A similar rapid rise in consumption of homemade spirits (samogon) and alcohol surrogates has occurred during anti-alcohol campaign in the mid-1980s [12]. Drinking of alcohol surrogates remains a widespread problem in contemporary Russia. In particular, one of the consequences of the legal alcohol shortages in 2006 was the appearance of alcohol surrogates including household chemistry liquids with new denaturant additives [2]. The latter led to an increase in mortality rates from toxic hepatitis in the following years [6].

Several cases of mass poisoning by alcohol surrogates were recorded in the most recent years. The scale of this problem is well illustrated by the case of mass poisoning in Krasnoyarsk city (Siberia) in 2015, due to consumption of counterfeit whisky bought on the Internet,

which killed almost 30 people [7]. In 2016, almost 80 people died as a result of mass poisoning with methanol in Irkutsk, one of the largest cities in Siberia [9]. The fatalities in this city occurred after people turned into a bath lotion "Bouaryshnik" (hawthorn) as a cheap substitute for vodka. The product normally contains 93% ethanol, hawthorn extract and lemon oil, but this lotion also contains methanol, which can be lethal even in small amounts.

Against this background, it would be interesting to estimate the effects of recent alcohol taxation and pricing policies on unrecorded alcohol consumption in Russia. In relation to this, trends in the affordability of vodka, excise tax rates on vodka, real disposable income, real price of vodka and unrecorded alcohol consumption per capita between 2010 and 2015, were compared.

Methods

The data on total alcohol consumption, total alcohol and vodka sales (in liters per capita), excise tax rates on vodka, real disposable income and real retail price of vodka are taken from the Russian State Statistical Committee (Rosstat) reports (<http://www.gks.ru/>). The total level of alcohol consumption in Russia has been estimated using the indirect method based on alcohol poisonings mortality rate [11]. Here we specified the number of liters of vodka that an average monthly

salary could buy as the affordability of vodka. To examine the relation between dependent variable (unrecorded alcohol consumption) and independent variables (excise tax rates on vodka, real retail price of vodka, real disposable incomes, affordability of vodka, total alcohol consumption, total alcohol and vodka sales) a Pearson correlation analysis was performed using the statistical package "Statistica 12. StatSoft."

Results

The excise tax rates on vodka in Russia have increased 2.4 times (from 210 to 500 rubles per liter of pure alcohol) between 2010 and 2015 (Figure 1). The real price of vodka has increased 2.4 times (from 230 to 559 rubles per 0.5 liter) during this period. As a result, the affordability of vodka has decreased significantly (by 38.3%) between 2010 and 2015: the average salary in 2010 could buy 91.0 liters of vodka compared with 60.9 liters in 2015. During the same period per capita vodka sales has decreased by 38.3% (from 4.7 to 2.9 liters), total alcohol sales has decreased by 20.2% (from 8.9 to 7.1 liters), total alcohol consumption has decreased by 7.4% (from 12.1 to 11.2 liters), while unrecorded alcohol consumption has increased by 28.1% (from 3.2 to 4.1 liters).

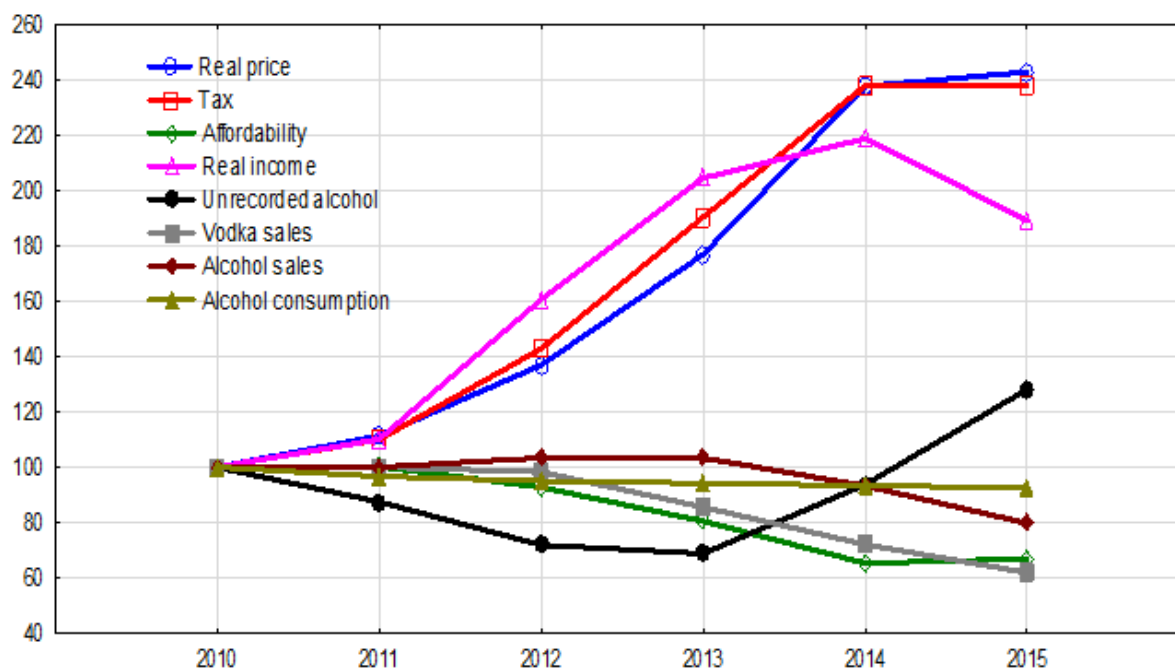


Figure 1: Indices of real price, tax, affordability and per capita vodka sales, real disposable income, total alcohol consumption, total alcohol sales and unrecorded alcohol consumption in Russia (2010-100%).

A Pearson's correlation analysis suggests an inverse relationship between unrecorded alcohol consumption and total alcohol sales per capita, as well as vodka sales per capita (Table 1). The relationship between unrecorded alcohol consumption and the affordability of vodka was also negative, but statistically nonsignificant. The level of unrecorded alcohol consumption also positively related to the excise tax rates on vodka and the real price of vodka. There were no

association between unrecorded alcohol consumption and real disposable income.

Discussion

The results of this study indicate that the recent excise tax and pricing policies in Russia made legal alcohol more expensive. The negative outcome of new policy initiatives in Russia was that the rising

price of legal alcohol generated a demand for unrecorded alcohol. The inverse relationship between unrecorded alcohol and the affordability of legal alcohol does not rule out the possibility that other factors also influenced the consumption of unrecorded alcohol.

Independent variable	Unrecorded alcohol	
	r	p
Real price	0.44	0.061
Tax	0.36	0.073
Affordability	-0.41	0.065
Real income	-0.03	0.856
Vodka sales	-0.62	0.049
Alcohol sales	-0.92	0.000
Alcohol consumption	-0.14	0.561

Table 1: Pearson's correlation analysis.

In 2015, the Russian economy plunged into a recession under the impact of Western sanctions and a decline in oil prices [4]. It is likely; therefore, that shift to unrecorded alcohol has accelerated due to ongoing economic recession, because low-income population lacks the funds to pay for the legal alcohol as real incomes have decreased. Research from Russia has indicated that low-income groups of the population and heavy drinkers in Russia are likeliest to consume unrecorded alcohol, and this effect is especially evident during the economic crisis [8]. It is, however, unclear how much of the increase in unrecorded alcohol consumption in Russia was driven by alcohol policy measures and how much was an effect of the economic downturn. As the pricing policy substantially decreased the affordability of legal alcoholic beverages as did the ongoing economic crisis, it is reasonable to assume that these two variables strengthened the effects of each other. It might be the case; however, a significant reduction in real dispensable incomes appears to have been a major driver of dramatic increase in the unrecorded alcohol consumption in 2015.

Thus, despite recent policy initiatives to reduce alcohol-related burden, this study has highlighted that unrecorded alcohol drinking remains a significant problem in Russia. The results of this study suggest that several factors, including rising price of legal alcohol and

the ongoing economic crisis underpin a switch to unrecorded alcohol consumption in Russia over the last years. It seems that consumption of unrecorded alcohol undermines alcohol policy measures adopted in Russia over the last decade to reduce the harmful drinking. These findings emphasize the urgency of implementing a comprehensive alcohol policy, which needs to address the consumption of alcohol from illicit sources. Alcohol policy response should include rigorous control of production and distribution of alcohol surrogates, law enforcement measures against samogon producers and counterfeiters, and public awareness campaign to inform the general public of the potential harm associated with drinking these products.

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