# DOES ALCOHOL CONSUMPTION PREDICT (IN)STABILITY OF EARNINGS? EMPIRICAL EVIDENCE FROM RUSSIA

*Feruza Askarova*[1]

**ABSTRACT:** *The aim of this study is to explore the link between alcohol consumption and the (in)stability of earnings in Russia. Using annual data from the Russian Longitudinal and Monitoring Survey (RLMS) covering the years 1995–2018, we find that alcohol intake is significantly and positively associated with instability of earnings. This result remains robust even when we conduct a series of robustness tests.*

**KEYWORDS:** *alcohol consumption, earnings, Russia*

## INTRODUCTION

According to the World Health Organization, more than 3 billion people consume alcohol at least once per year (WHO 2018). Moreover, per capita alcohol intake increased from 5.5 liters in 2005 to 6.4 liters in 2016. For example, the proportion of current drinkers is 32.2% in Africa, 54.1% in the Americas, 59.9% in Europe, and 33.1% in South-East Asia (WHO 2018). As a result, alcohol was the cause of nearly 3 million lives lost and 132.6 million disability-adjusted life years (DALYs) in 2016. Correspondingly, an increasing number of research studies have been published in the field of social science on the topic of the potential effect of alcohol intake on labor-market outcomes such as earnings (Lye–Hirschberg 2004; Barrett 2002). In this study, we extend research on the alcohol-earning nexus by investigating the link between alcohol intake and stability of earnings in Russia.

1 *Feruza Askarova* works at Tashkent State University of Economics, Uzbekistan; email address: askarova.f1@gmail.com.

We expect to identify a significant relationship between alcohol consumption and (in)stability of earnings in Russia for a number of reasons. First, a disproportionate consumption of alcohol is associated with a plethora of *health problems*. There is evidence that alcohol abuse is linked to cancer risks (Connor 2017), liver disease (Askgaard et al. 2018), coronary heart disease (Bardach et al. 2017), obesity (Schröder et al. 2007), cognitive impairment (Siddiquee et al. 2020), and high blood pressure (Santana et al. 2018), among other issues. Indeed, Razvodovsky (2014), using data from the State Statistics Committee of Russia for the period 1970–2005, shows that "a 1-liter increase in overall alcohol consumption would result in a 7.0% increase in the male liver cirrhosis mortality rate and a 6.2% increase in the female mortality rate" (Razvodovsky 2014: 1). A number of studies further find that alcohol consumption is a significant predictor of breast cancer (Ellison et al. 2001), intentional injury (Carpenter 2007), suicidal behavior (Murphy–Wetzel 1990), and that "overall 4% of the global burden of disease is attributable to alcohol" (Room et al. 2005: 519). One of the potential explanations for the alcohol and health nexus could be "social withdrawal [and the] breakdown of social bonds, and social marginalization, which are common outcomes of untreated alcohol abuse and dependence" (Pompili et al. 2010: 1392).

Second, a positive association between alcohol consumption and *absenteeism* suggests an analogous positive correlation between alcohol and job insecurity. Those who consume alcohol are found to be at higher risk of unemployment (Lee et al. 1990) and absenteeism from work. McFarlin and Fals-Stewart (2002), using data from a sample of 280 participants, report that alcohol consumption doubles the likelihood of being absent from the work the following day. A number of studies further find that alcohol intake is a significant antecedent of sickness-related absence in Sweden (Upmark et al. 1999), Norway (Norström–Moan 2009), Finland (Johansson et al. 2009) and Australia (Roche et al. 2016). Moreover, Pidd and colleagues (2006) find that in Australia the societal cost of absenteeism caused by alcohol is $0.44 billion and more than 2.6 million workdays are lost per year as a result of the alcohol intake of the population.

Moreover, we may anticipate that individuals who consume alcohol are more likely to have higher levels of job insecurity because they are less *productive* at work. For example, Łyszczarz (2019) further attempted to assess the link between alcohol consumption and production losses at the macroeconomic level. Using data for 28 EU Member States for the year 2016, the study finds that the total productivity loss caused by alcohol intake in the EU is approximately 32 billion euro.

In addition, alcohol intake is one of the factors affecting *job performance***,** as suggested by research. In a meta-analysis of 132 organizations by Thørrisen

and colleagues (2019), 77% indicated that higher levels of alcohol intake were associated with impaired work performance. In a similar vein, Aas and colleagues (2017), using data from 14 Norwegian private and public companies, found that binge drinking was a significant predictor of diminished job performance even after controlling for personal characteristics. Indeed, alcohol consumption creates obstacles to undertaking day-to-day activity and is associated with mobility-related issues (Saarni et al. 2007).

The aim of this study is to assess the link between alcohol consumption and the stability of earnings in Russia. Russia is considered a spirit-drinking country, as it is one of the top ten countries for the average per capita level of alcohol consumption: 11.5 liters (alcohol.org).[2] At the same time, according to national statistics alcohol consumption decreased from 18 liters per capita in 2011 to 9.3 liters in 2018. Therefore, this study aims to contribute to the growing research on the labor market consequences of alcohol consumption. Using annual data from the RLMS survey for the years 1995–2018 covering 22 waves, we find that overall alcohol intake has a significant positive relationship with instability of earnings, measured by a standard deviation of logged monthly income. This result remains robust even when we control for a rich set of personal and job-related factors.

## DATA AND METHODS

### *Data*

Data for this research was extracted from the Russian Longitudinal Monitoring Survey (RLMS). The RLMS is a nationally representative survey designed to monitor the effects of Russian reforms on the health and economic welfare of households and individuals in the Russian Federation. The project was run jointly by the Carolina Population Center at the University of North Carolina at Chapel Hill and Demoscope in Russia. The RLMS survey instruments were designed by an interdisciplinary group of Russian and American social science and biomedical researchers with extensive experience in survey research.[3] The multivariate distribution of the sample in the survey according to sex, age, and urban-rural location compared quite well with the corresponding multivariate distribution identified by the 1989 census.

2 https://www.alcohol.org/guides/global-drinking-demographics/

3 For a description of the sampling, refer to https://www.cpc.unc.edu/projects/rlms-hse/project/sampling .

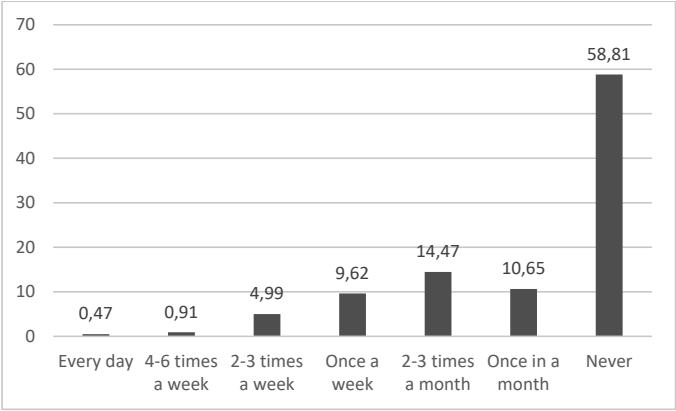
## *Dependent variable: Stability of earnings*

Data on wages were collected using the question: "How much money did you receive in the last 30 days from your primary job after taxes?" To create a measure of stability of earnings we used the standard deviation of monthly wages across individuals averaged for the period 1995–2018. This variable implies that the higher the standard deviation, the more unstable the earnings of the respondent.

## *Independent variable: Alcohol consumption*

In our study, alcohol consumption was originally measured on an ordinal scale and was inquired into using the following question "How often have you consumed alcoholic beverages in the last 30 days?" Answers ranged from 0 ("Never") to 6 ("Every day"). This variable was converted into an interval scale by approximating days of alcohol intake per year and afterwards log-transforming the result. Figure 1 suggests that nearly 58.8% of respondents did not partake of any alcohol. The data covers the period 1995–2018 and was averaged for each individual.

***Figure 1.*** *Alcohol consumption in Russia, 1995–2018 – percentage of respondents*



## *Individual-level covariates*

Individual-level covariates include the respondent's age, income, job experience, number of children, gender, place of residence, marital status, education, occupation industry, official employment and self-reported health status. In our sample, nearly 58% of respondents were female and 61.6% were married. Just over two-thirds (68.5%) were living in an urban area and 23.9% did not have any children.

## *Method*

In order to estimate the link between alcohol consumption and stability of earnings we estimated the following econometric model:

$$sdW_i = \alpha_0 + \alpha_1 ALC_i + \beta' DEM_i + \gamma' JOB_i + \varepsilon i, \qquad (1)$$

where *sdW* is our measure of stability of wages, *ALC* is the frequency of alcohol consumption, *DEM* is the vector of individual socio-demographic characteristics, *JOB* is a vector for job-related control variables, and ε is an error term.

In this study, we will estimate Equation (1) using the OLS regression estimator. All time-invariant control variables were averaged over the period 1995–2018. Table 1 provides descriptive statistics for our main variables of interest. The average mean for the standard deviation of earnings is 2.69, and this parameter ranges from 0 to 177.92.

***Table 1.*** *Descriptive statistics*

| Variable | Description | N | % |
|---|---|---|---|
| Alcohol intake | "How often have you consumed alcoholic beverages in the last 30 days?" | | |
| | Every day | 68 | 0.47 |
| | 4–6 times a week | 133 | 0.91 |
| | 2–3 times a week | 726 | 4.99 |
| | Once a week | 1399 | 9.62 |
| | 2–3 times a month | 2103 | 14.47 |
| | Once in a month | 1548 | 10.65 |
| | Never | 8550 | 58.81 |
| Gender | Respondent's gender | | |
| | Male | 6095 | 41.92 |
| | Female | 8443 | 58.08 |

*Continued on next page.*

| Variable | Description | N | % |
|---|---|---|---|
| Marital status | Respondent's marital status | | |
| | Single, widowed or divorced | 5571 | 38.36 |
| | Married or living together as married | 8953 | 61.64 |
| Children | A dummy variable if respondent has children | | |
| | 1 if respondent has children | 11059 | 76.10 |
| | 0 (zero) otherwise | 3374 | 23.90 |
| Urbanization | Respondent's place of residence | | |
| | Rural area | 4580 | 31.50 |
| | Urban area | 9958 | 68.50 |
| Education | Education level of the respondent | | |
| | Respondent has university degree | 4075 | 28.06 |
| | Respondent does not have university degree | 10449 | 71.94 |
| Health status | Respondent's health evaluation | | |
| | Bad | 2012 | 13.91 |
| | Average | 7470 | 51.63 |
| | Good | 4987 | 34.47 |
| Official | Respondent's employment status | | |
| | Officially employed | 6711 | 92.98 |
| | Unofficially employed | 507 | 7.02 |

## RESULTS

The main results are reported in Table 2, Model 1 reports regression only between the stability of earnings and alcohol consumption. As anticipated, we find that more intense alcohol consumption is positively correlated with earnings instability. Specifically, a 1% increase in alcohol consumption is associated with a 0.113% rise in the standard deviation of monthly earnings.

In Model 2, we add a vector for personal characteristics: age, gender, health, and others. We find that there is an inverted U-shaped association between age and earnings instability, similar to the one documented for other labor-market indicators (Sturman 2003). We also find that being female is associated with a lower level of earnings instability. Education and having children are positively correlated with the dependent variable.

In Model 3, we add a set of job-related variables: namely, public job, experience, working hours, and being officially employed. We document that working in a government-owned enterprise is associated with stability of earnings, while workload is positively correlated with the standard deviation of monthly earnings. Alcohol consumption is again associated with the instability of earnings. Finally, in Model 4 we re-estimate our baseline

model using a robust regression (*rreg*) estimator. As the alcohol consumption and earnings relationship may be also driven by presence of influential (outlier) observations in our sample, *rreg* re-estimates the parameters of the model by adjusting the estimates based on the size of the residuals. Again, the link between alcohol intake and our dependent variable is unaffected. Quantitatively, when alcohol consumption increases by 1%, the standard deviation of monthly wages increases by 0.054%. Overall, the results in Table 2 suggest that alcohol consumption is a significant predictor of the instability of monthly earnings.

***Table 2.*** *Main results*

| Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| Alcohol intake | 0.113 | 0.085 | 0.085 | 0.054 |
| | (13.10)*** | (9.32)*** | (8.64)*** | (7.44)*** |
| Age | | 0.032 | 0.041 | 0.050 |
| | | (3.53)*** | (4.30)*** | (8.24)*** |
| Age squared | | –0.023 | –0.035 | –0.063 |
| | | (2.18)** | (3.11)*** | (9.42)*** |
| Female | | –0.179 | –0.121 | –0.123 |
| | | (6.17)*** | (3.86)*** | (5.43)*** |
| Married | | –0.035 | –0.041 | –0.001 |
| | | (1.14) | (1.26) | (0.05) |
| Education | | 0.196 | 0.224 | 0.228 |
| | | (6.98)*** | (7.47)*** | (9.77)*** |
| Children | | 0.116 | 0.099 | 0.117 |
| | | (3.34)*** | (2.64)*** | (4.12)*** |
| Health | | 0.029 | 0.045 | 0.026 |
| | | (1.25) | (1.81)* | (1.48) |
| Urbanization | | 0.078 | 0.084 | 0.042 |
| | | (1.60) | (1.63) | (1.11) |
| Experience | | | –0.017 | –0.005 |
| | | | (3.53)*** | (1.75)* |
| Experience squared | | | 0.065 | 0.020 |
| | | | (4.42)*** | (2.35)** |
| Workload | | | 0.009 | 0.009 |
| | | | (7.27)*** | (11.01)*** |
| Government job | | | –0.075 | –0.075 |
| | | | (2.59)*** | (3.60)*** |
| Official | | | 0.132 | 0.083 |
| | | | (2.36)** | (2.16)** |
| Constant | –0.092 | –1.027 | –1.587 | –1.456 |
| | (0.62) | (4.48)*** | (6.38)*** | (7.06)*** |
| $R^2$ | 0.13 | 0.15 | 0.17 | 0.27 |
| N | 7,258 | 7,216 | 6,080 | 6,080 |

*Note: We included year, industry, and region dummies across all specifications. * p<0.1; ** p<0.05; *** p<0.01.*

## ROBUSTNESS TESTS

We checked the robustness of the relationship between alcohol consumption and stability of earnings in a number of ways. In Table 3 we re-estimated our baseline model by accounting for the potential impact of unobserved job-related factors. In Model 1 we removed self-employed respondents from our sample as their supply of labor may be driven by other aspects not captured in our regression. Apart from this, we also removed respondents that receive income from a second job (Model 2) and those who reported to working less than 20 hours per week. Finally, we removed respondents from Moscow city as the wages in the capital of Russia are significantly higher than in other regions. The results show that strongest effect of alcohol on instability of earnings is among those living outside of the capital of Russia. One potential explanation is that this region is associated with the highest wages in Russia, and the economy of the capital is stable in terms of job prospects compared to other regions and cities. Therefore, our main results may have been affected by such influential observations. In all models, alcohol intake has a significant relationship with the instability of wages.

***Table 3.*** *Sub-samples*

| Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| Alcohol intake | 0.085 | 0.088 | 0.085 | 0.089 |
| | (8.54)*** | (8.75)*** | (9.10)*** | (8.44)*** |
| Age | 0.039 | 0.040 | 0.034 | 0.042 |
| | (4.13)*** | (4.10)*** | (3.82)*** | (4.11)*** |
| Age squared | –0.033 | –0.034 | –0.026 | –0.035 |
| | (2.95)*** | (2.93)*** | (2.48)** | (2.89)*** |
| Female | –0.109 | –0.120 | –0.157 | –0.137 |
| | (3.43)*** | (3.75)*** | (5.24)*** | (4.08)*** |
| Married | –0.043 | –0.039 | –0.029 | –0.044 |
| | (1.31) | (1.17) | (0.95) | (1.24) |
| Education | 0.222 | 0.232 | 0.207 | 0.218 |
| | (7.37)*** | (7.59)*** | (7.10)*** | (6.86)*** |
| Children | 0.092 | 0.097 | 0.111 | 0.118 |
| | (2.48)** | (2.54)** | (3.20)*** | (2.96)*** |
| Health | 0.042 | 0.047 | 0.051 | 0.037 |
| | (1.70)* | (1.85)* | (2.17)** | (1.44) |
| Experience | –0.018 | –0.016 | –0.013 | –0.019 |
| | (3.70)*** | (3.31)*** | (2.67)*** | (3.73)*** |
| Experience squared | 0.067 | 0.065 | 0.047 | 0.072 |
| | (4.51)*** | (4.30)*** | (3.33)*** | (4.60)*** |

*Continued on next page.*

| Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| Workload | 0.008 | 0.009 | 0.008 | 0.009 |
| | (6.97)*** | (6.87)*** | (7.04)*** | (6.97)*** |
| Government job | –0.059 | –0.078 | –0.052 | –0.063 |
| | (2.04)** | (2.63)*** | (1.91)* | (2.03)** |
| Official | 0.135 | 0.150 | 0.108 | 0.145 |
| | (2.39)** | (2.64)*** | (2.10)** | (2.49)** |
| Urbanization | 0.081 | 0.091 | 0.094 | 0.088 |
| | (1.56) | (1.76)* | (2.08)** | (1.69)* |
| Constant | –1.512 | –1.591 | –0.973 | –1.618 |
| | (6.07)*** | (6.26)*** | (2.24)** | (6.17)*** |
| $R^2$ | 0.17 | 0.17 | 0.17 | 0.17 |
| N | 5,940 | 5,885 | 7,070 | 5,594 |
| Removed respondents | Self-employed | Has second job | Works below 20 hours/week | Lives in Moscow City |

*Note: We included year, industry, and region dummies across all specifications. * p<0.1; ** p<0.05; *** p<0.01.*

On the other hand, one may argue that the results-earnings function estimated with the OLS regression might be biased due to the problem of missing observations. In our sample, almost 50% of respondents refused to report their wage level, therefore ignoring this issue may generate sample selection bias. To address this issue, we rely on one of the general approaches in labor economics: use of the Heckman selection model (Hamilton–Hamilton 1997). This model predicts the level of wage stability for those who refuse to report their wage level, whereby the estimated level of wage stability is derived from available data and non-wage characteristics of respondents. In Table 4, the model treats missing values by assigning zeros (Heckman–MaCurdy 1981; Maddala 1983). Again, the results in Table 4 are very similar to the baseline results in Table 2. For example, a 1% increase in alcohol intake is associated with a 0.1% increase in the instability of earnings.

***Table 4.*** *Two-step Heckman selection model*

| Variables | Heckman's model (when missing values are zero) |
|---|---|
| Alcohol consumption | 0.104 |
| | (10.48)*** |
| Age | 0.031 |
| | (2.23)** |
| Age squared | –0.023 |
| | (1.44) |
| Female | –0.163 |
| | (5.58)*** |
| Married | –0.058 |
| | (1.71)* |

*Continued on next page.*

| Variables | Heckman's model (when missing values are zero) |
|---|---|
| Number of children | 0.359 |
| | (12.83)*** |
| Urban | 0.082 |
| | (2.05)** |
| Higher education | 0.038 |
| | (1.51) |
| Health | –0.019 |
| | (4.45)*** |
| Experience | 0.076 |
| | (6.41)*** |
| Experience squared | 0.007 |
| | (6.27)*** |
| Working hours | –0.071 |
| | (2.48)** |
| Government ownership | 0.192 |
| | (3.51)*** |
| Official | –1.904 |
| | (6.13)*** |
| Constant | –2.864*** |
| | (0.525) |
| N | 10,813 |

*Note: We included year, industry, and region dummies across all specifications. * p<0.1; ** p<0.05; *** p<0.01.*

Finally, in Table 5 we test whether alcohol consumption is moderated by some of the channels discussed earlier in this study: health and absenteeism. In Model 1 we removed respondents that experienced any health problems in the 30 days prior to the survey. In Model 2 we removed respondents that had any disabilities, and in Model 3 respondents that were hospitalized within three months prior to the survey were excluded from analysis. The coefficient for alcohol consumption is positive and significant at the 1% level, suggesting that alcohol consumption has a direct positive association with instability of earnings. In Model 4, we tested whether the effect of alcohol on earnings is driven by job-related aspects – namely, absenteeism. Therefore, we again removed respondents that reported any absenteeism from their job in the past 12 months. Again, the coefficient for alcohol intake is positive and very significant.

***Table 5.*** *Robustness test: transmission channels*

| Variables | Model 1 | Model 2 | Model 3 | Model 4 |
|---|---|---|---|---|
| Alcohol intake | 0.087 | 0.085 | 0.086 | 0.084 |
| | (8.82)*** | (8.64)*** | (8.67)*** | (8.59)*** |
| Constant | –1.600 | –1.555 | –1.503 | –1.562 |
| | (6.32)*** | (6.21)*** | (6.03)*** | (6.26)*** |
| $R^2$ | 0.18 | 0.18 | 0.18 | 0.18 |
| N | *6,028* | *6,062* | *6,051* | *6,077* |
| Removed respondents | Experienced health problems in past 30 days | Have disability | Was taken to a hospital in past 3 months | Was absent at work in past year |

*Note: We included year, industry, and region dummies across all specifications; control variables are included, but not reported to save the space. * p<0.1; ** p<0.05; *** p<0.01.*

At the same time, the problem of reverse causality may influence our main results. For example, individuals with less stable earnings may be likely to consume more alcohol over time. Baktash and colleagues (2022), using data from Germany, finds that changes in salary such as performance-related pay are a significant positive predictor of alcohol consumption even after controlling for other variables. Therefore, to partially resolve the problem of reverse causality, we replaced present alcohol consumption frequency with alcohol intake averaged over the period 1995–2008. We next regressed this on the earnings over the period 2008–2018. Again, the results suggest that earlier-period alcohol consumption is positively associated with the instability of earnings (see Table 6).

***Table 6.*** *Robustness test: causality*

| Variables | Model 1 | Model 2 |
|---|---|---|
| Alcohol intake, period 1 | 0.122 | 0.125 |
| | (7.19)*** | (6.48)*** |
| Age | | 0.107 |
| | | (7.36)*** |
| Age squared | | –0.104 |
| | | (5.78)*** |
| Female | | –0.128 |
| | | (2.32)** |
| Married | | 0.034 |
| | | (0.63) |
| Education | | 0.180 |
| | | (3.04)*** |
| Children | | 0.076 |
| | | (1.22) |

*Continued on next page.*

| Variables | Model 1 | Model 2 |
|---|---|---|
| Health | | –0.073 |
| | | (1.69)* |
| Urbanization | | 0.057 |
| | | (3.93)*** |
| Experience | | –0.071 |
| | | (2.78)*** |
| Experience squared | | 0.003 |
| | | (1.54) |
| Workload | | –0.174 |
| | | (3.49)*** |
| Government job | | –0.080 |
| | | (0.87) |
| Official | | 0.189 |
| | | (2.05)** |
| Constant | –0.368 | –3.803 |
| | (1.24) | (9.52)*** |
| $R^2$ | 0.07 | 0.14 |
| N | 6,137 | 5,183 |

*Note: All regressions include occupation- and region-fixed effects; * p<0.1; ** p<0.05; *** p<0.01.*

# CONCLUSION

The consequences of alcohol consumption have significant ramifications for society. Alcohol intake has been linked to suicide (Borges et al. 2017), divorce (Keenan et al. 2013), crime (Gyimah-Brempong 2001), health problems (Connor 2017), and labor market outcomes (Böckerman et al. 2017).

Although studies (Zarkin et al. 1998; French–Zarkin 1995; Bray 2005; Peters 2004; Lee 2003) offer valuable observations on the link between alcohol consumption and wages, they have not considered the role that alcohol intake plays in the stability of earnings at the individual level.

This study contributes to ongoing international multidisciplinary research into all the impacts of the effects of alcohol on society, documenting a significant link positive link between alcohol consumption and stability of earnings in Russia. Our results show that overall alcohol consumption significantly increases the volatility of average annual monthly earnings in Russia across individuals, even after controlling for individual and job-related characteristics.

Turning to the policy implications of our research findings, we suggest that policymakers in developing countries that are interested in reducing the instability of earnings should pay attention to establishing programs that

reduce alcohol consumption within the population. A decrease in alcohol intake will have positive implications not only for earnings but also for health and life satisfaction. There are several ways that governments may reduce the consumption of alcohol. For example, ensuring inclusive access to medical services via improving the availability, openness, and cost of medical care services for low-income individuals. In addition, the government could organize communities that hinder the trading of alcohol to and consumption of alcohol by under-age drinkers. Finally, public awareness programs could be set up, along with minimum prices for alcohol-containing products.

This study has a number of limitations. First, our study offers associational evidence between alcohol consumption and instability of earnings. Due to the nature of the data, in this study we were not able to use some of the potential instruments suggested by the research, such as family drinking history or the monetary cost of drinking (French–Popovici 2011). On the other hand, we attempted to partially resolve the problem of omitted variable bias by including a rich set of covariates and fixed effects (time, industry, and region). Indeed, a number of studies show that alcohol has causal effects on labor market outcomes. For example, Bamberger and colleagues (2018), using data for university students, showed that alcohol consumption during university years has significant negative effects on employment prospects. Second, the RLMS survey does not offer any data regarding employment productivity. Therefore, we were not able to test whether hampered productivity due to alcohol consumption mediates the relationship between alcohol and earnings.

Future studies should explore the role that alcohol intake may play in predicting other labor market outcomes in Russia such as job satisfaction, promotion, or quitting. In addition, it would be interesting to compare the link between alcohol and wages for other former socialist countries such as Belarus, Ukraine, or countries in Central Asia.

## REFERENCES

Aas, R. W. – L. Haveraaen – H. Sagvaag – M. M. Thørrisen (2017) The influence of alcohol consumption on sickness presenteeism and impaired daily activities. The WIRUS screening study. *PLoS One*, Vol. 12, No. 10., e0186503, DOI: https://doi.org/10.1371/journal.pone.0186503

Askgaard, G. – J. S. Tolstrup – D. A. Leon (2018) A measure of alcohol consumption in late adolescence associated with liver disease after 39 years

of follow-up is insufficient to guide alcohol safe limits. *Journal of Hepatology*, Vol. 69, No. 1., pp. 251–252, DOI: https://doi.org/10.1016/j.jhep.2018.02.036

Baktash, M. B. – J. S. Heywood – U. Jirjahn (2022) Performance pay and alcohol use in Germany. *Industrial Relations: A Journal of Economy and Society*. Vol. 61, No. 4., pp. 353–383.

Bamberger, P. A. – J. Koopmann – M. Wang – M. Larimer – I. Nahum-Shani et al. (2018) Does college alcohol consumption impact employment upon graduation? Findings from a prospective study. *Journal of Applied Psychology*, Vol. 103, No. 1., pp. 111–121, DOI: https://doi.org/10.1037%2Fapl0000244

Bardach, A. E. – J. E. Caporale – A. L. Rubinstein – G. Danaei (2017) Impact of level and patterns of alcohol drinking on coronary heart disease and stroke burden in Argentina. *PloS One*, Vol. 12, No. 3., e0173704, DOI: https://doi.org/10.1371/journal.pone.0173704

Barrett, G. F. (2002) The effect of alcohol consumption on earnings. *Economic Record*, Vol. 78, No. 240., pp. 79–96.

Blume, S. B. (1997) Women and Alcohol: Issues in Social Policy. In: Wilsnack, R. W. – S. C. Wilsnack (eds.): *Gender and Alcohol: Individual and Social Perspectives*, pp. 462–489, New Brunswick (NJ, US), Rutgers Center of Alcohol Studies

Böckerman, P. – A. Hyytinen – T. Maczulskij (2017) Alcohol consumption and long-term labor market outcomes. *Health Economics*, Vol. 26, No. 3., pp. 275–291, DOI: 10.1002/hec.3290

Borges, G. – C. L. Bagge – C. J. Cherpitel – K. R. Conner – R. Orozco et al. (2017) A meta-analysis of acute use of alcohol and the risk of suicide attempt. *Psychological Medicine*, Vol. 47, No. 5., pp. 949–957, DOI: https://doi.org/10.1017/s0033291716002841

Bray, J. W. (2005) Alcohol use, human capital, and wages. *Journal of Labor Economics*, Vol. 23, No. 2., pp. 279–312.

Carpenter, C. (2007) Heavy alcohol use and crime: Evidence from underage drunk-driving laws. *The Journal of Law and Economics*, Vol. 50, No. 3., pp. 539–557, DOI: 10.1086/519809

Connor, J. (2017) Alcohol consumption as a cause of cancer. *Addiction*, Vol. 112, No. 2., pp. 222–228, DOI: 10.1111/add.13477

Ellison, R. C. – Y. Zhang – C. E. McLennan – K. J. Rothman (2001) Exploring the relation of alcohol consumption to risk of breast cancer. *American Journal of Epidemiology*, Vol. 154, No. 8., pp. 740–747, DOI: 10.1093/aje/154.8.740

French, M. T. – G. A. Zarkin (1995) Is moderate alcohol use related to wages? Evidence from four worksites. *Journal of Health Economics*, Vol. 14, No. 3., pp. 319–344, DOI: 10.1016/0167-6296(95)90921-r

French, M. T. – I. Popovici (2011) That instrument is lousy! In search of agreement when using instrumental variables estimation in substance use research. *Health Economics*, Vol. 20, No. 2., pp. 127–146, DOI: 10.1002/hec.1572

Gyimah-Brempong, K. (2001) Alcohol availability and crime: Evidence from census tract data. *Southern Economic Journal*, Vol. 68, No. 1., pp. 2–21, DOI: https://doi.org/10.2307/1061508

Hamilton, V. – B. H. Hamilton (1997) Alcohol and earnings: Does drinking yield a wage premium? *Canadian Journal of Economics*, Vol. 30, No. 1., pp. 135–151.

Heckman J. – T. MaCurdy (1981) New Methods for Estimating Labor Supply Functions: A Survey. NORC Discussion Paper 80-5. In: Ehrenberg, R. (ed.): *Research in Labor Economics.* Vol. 4, pp. 65–102., Greenwich (US), JAI Press

Johansson, E. – P. Böckerman – A. Uutela (2009) Alcohol consumption and sickness absence: Evidence from microdata. *The European Journal of Public Health*, Vol. 19, No. 1., pp. 19–22, DOI: https://doi.org/10.1093/eurpub/ckn116

Keenan, K. – M. G. Kenward – E. Grundy – D. A. Leon (2013) Longitudinal prediction of divorce in Russia: The role of individual and couple drinking patterns. *Alcohol and Alcoholism*, Vol. 48, No. 6., pp. 737–742, DOI: 10.1093/alcalc/agt068

Lee, Y. L. (2003) Wage effects of drinking in Australia. *Australian Economic Review*, Vol. 36, No. 3., pp. 265–282, DOI: 10.1111/1467-8462.00286

Lee, A. J. – I. K. Crombie – W. C. Smith – H. Tunstall-Pedoe (1990) Alcohol consumption and unemployment among men: The Scottish Heart Health Study. *British Journal of Addiction*, Vol. 85, No. 9., pp. 1165–1170, DOI: 10.1111/j.1360-0443.1990.tb03441.x

Lye, J. N. – J. Hirschberg (2004) Alcohol consumption, smoking and wages. *Applied Economics*, Vol. 36, No. 16., pp. 1807–1817, DOI: 10.1080/00036840410001710645

Łyszczarz, B. (2019) Production Losses Associated with Alcohol-Attributable Mortality in the European Union. *International Journal of Environmental Research and Public Health*, Vol. 16, No. 19., p. 3536., DOI: https://doi.org/10.3390/ijerph16193536

Maddala G. (1983) *Limited-dependent and Qualitative Variables in Econometrics*. Cambridge: Cambridge University Press

McFarlin, S. K. – W. Fals-Stewart (2002) Workplace absenteeism and alcohol use: A sequential analysis. Psychology of Addictive Behaviors, Vol. 16, No. 1., pp. 17–21, DOI: https://psycnet.apa.org/doi/10.1037/0893-164X.16.1.17

Murphy, G. E. – R. D. Wetzel (1990) The lifetime risk of suicide in alcoholism. *Archives of General Psychiatry*, Vol. 47, No. 4., pp. 383–392, DOI: https://doi.org/10.1001/archpsyc.1990.01810160083012

Norström, T. – I. S. Moan (2009) Per capita alcohol consumption and sickness absence in Norway. *The European Journal of Public Health*, Vol. 19, No. 4., pp. 383–388, DOI: https://doi.org/10.1093/eurpub/ckp044

Peters, B. L. (2004) Is there a wage bonus from drinking? Unobserved heterogeneity examined. *Applied Economics*, Vol. 36, No. 20., pp. 2299–2315, DOI: https://doi.org/10.1080/0003684042000280526

Pidd, K. J. – J. G. Berry – A. M. Roche – J. E. Harrison (2006) Estimating the cost of alcohol-related absenteeism in the Australian workforce: The importance of consumption patterns. *Medical Journal of Australia*, Vol. 185, No. 11., pp. 637–641, DOI: 10.5694/j.1326-5377.2006.tb00738.x

Pompili, M. – G. Serafini – M. Innamorati – G. Dominici – S. Ferracuti et al. (2010) Suicidal behavior and alcohol abuse. *International Journal of Environmental Research and Public Health*, Vol. 7, No. 4., pp. 1392–1431, DOI: 10.3390/ijerph7041392

Razvodovsky, Y. E. (2014) Alcohol consumption and liver cirrhosis mortality in Russia. *Journal Alcohol Drug Depend*, Vol. 2, No. 2., 1000152, DOI: 10.4172/2329-6488.1000152

Robbins, C. A. – S. S. Martin (1993) Gender, styles of deviance, and drinking problems. *Journal of Health and Social Behavior*, Vol. 34, No. 4., pp. 302–321, DOI: https://doi.org/10.2307/2137369

Roche, A. – K. Pidd – V. Kostadinov (2016) Alcohol- and drug-related absenteeism: A costly problem. *Australian and New Zealand Journal of Public Health*, Vol. 40, No. 3., pp. 236–238, DOI: 10.1111/1753-6405.12414

Room, R. – T. Babor – J. Rehm (2005) Alcohol and public health. *Lancet*, Vol. 365, No. 9458., pp. 519–530, DOI: https://doi.org/10.1016/S0140-6736(05)17870-2

Saarni, S. I. – J. Suvisaari – H. Sintonen – S. Pirkola – S. Koskinen et al. (2007) Impact of psychiatric disorders on health-related quality of life: general population survey. *The British Journal of Psychiatry*, Vol. 190., pp. 326–332, DOI: 10.1192/bjp.bp.106.025106

Santana, N. M. – J.G. Mill – G. Velasquez-Melendez – A.D. Moreira – S.M. Barreto et al. (2018) Consumption of alcohol and blood pressure: Results of the ELSA-Brasil study. *PloS One*, Vol. 13, No. 1., pp. e0190239, DOI: 10.1371/journal.pone.0190239

Schröder, H. – J. A. Morales-Molina – S. Bermejo – D. Barral – E. S. Mándoli et al. (2007) Relationship of abdominal obesity with alcohol consumption at population scale. *European Journal of Nutrition*, Vol. 46, No. 7., pp. 369–376, DOI: 10.1007/s00394-007-0674-7

Siddiquee, A. T. – A. Kadota – A. Fujiyoshi – N. Miyagawa – Y. Saito et al. (2020) Alcohol consumption and cognitive function in elderly Japanese men. *Alcohol*, Vol. 85., pp. 145–152, DOI: 10.1016/j.alcohol.2020.01.001

Sturman, M. C. (2003) Searching for the inverted U-shaped relationship between time and performance: Meta-analyses of the experience/performance, tenure/performance, and age/performance relationships. *Journal of Management*, Vol. 29, No. 5., pp. 609–640, DOI: https://doi.org/10.1016/S0149-2063_03_00028-X

Thørrisen M. M – T. Bonsaksen – N. Hashemi – I. Kjeken – W. van Mechelen et al. (2019) Association between alcohol consumption and impaired work performance (presenteeism): A systematic review. *BMJ Open,* Vol. 9, No. 7., e029184, DOI: 10.1136/bmjopen-2019-029184

Upmark, M. – J. Möller – A. Romelsjö (1999) Longitudinal, population-based study of self reported alcohol habits, high levels of sickness absence, and disability pensions. *Journal of Epidemiology & Community Health*, Vol. 53, No. 4., pp. 223–229.

WHO (2018) *Global Status Report on Alcohol and Health 2018*. Geneva (CH), World Health Organization, Licence: CC BY-NC-SA 3.0 IGO

Zarkin, G. A. – M. T. French – T. Mroz – J. W. Bray (1998) Alcohol use and wages: New results from the National Household Survey on Drug Abuse. *Journal of Health Economics*, Vol. 17, No. 1., pp. 53–68, DOI: 10.1016/s0167-6296(97)00023-4