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Contribution of alcohol consumption to the gender gap in life expectancy: evidence from Russia

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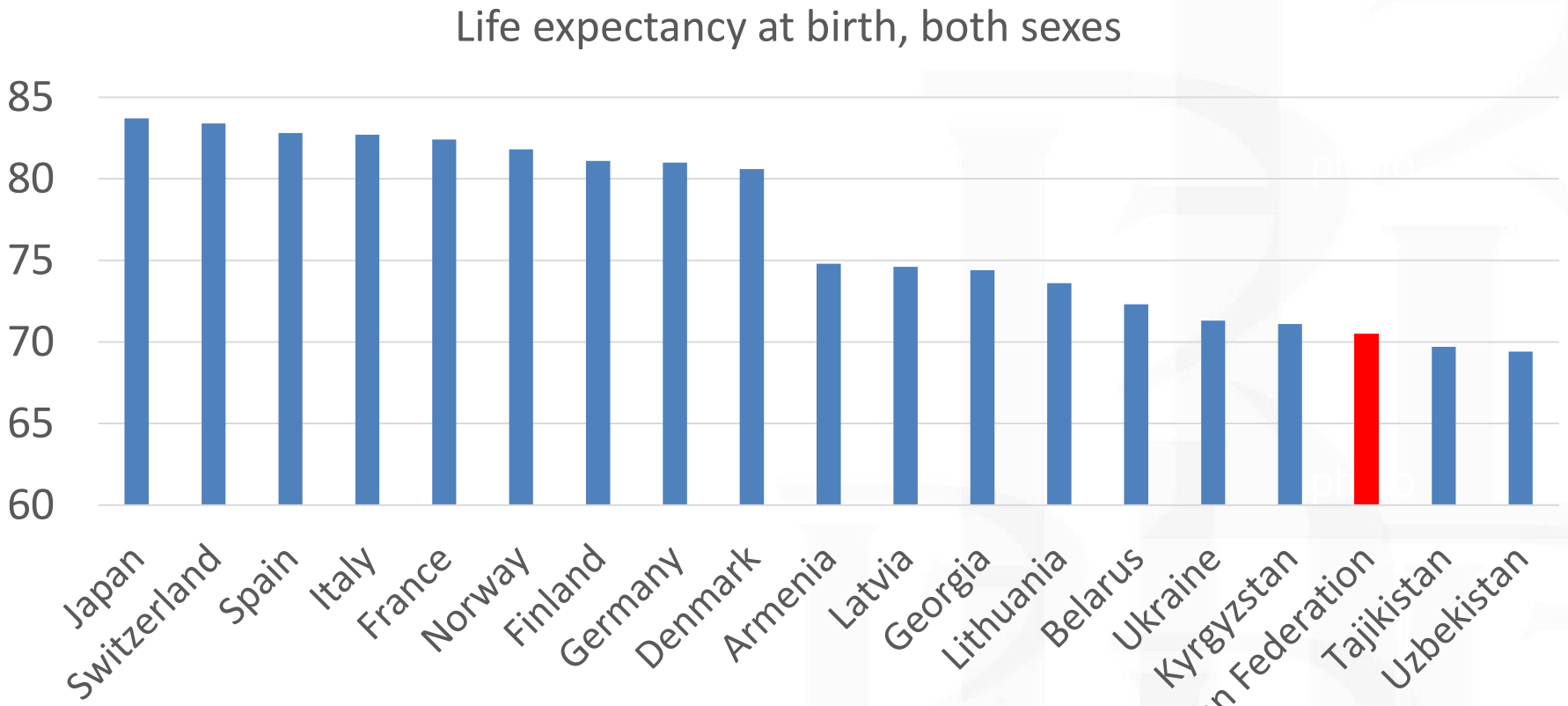
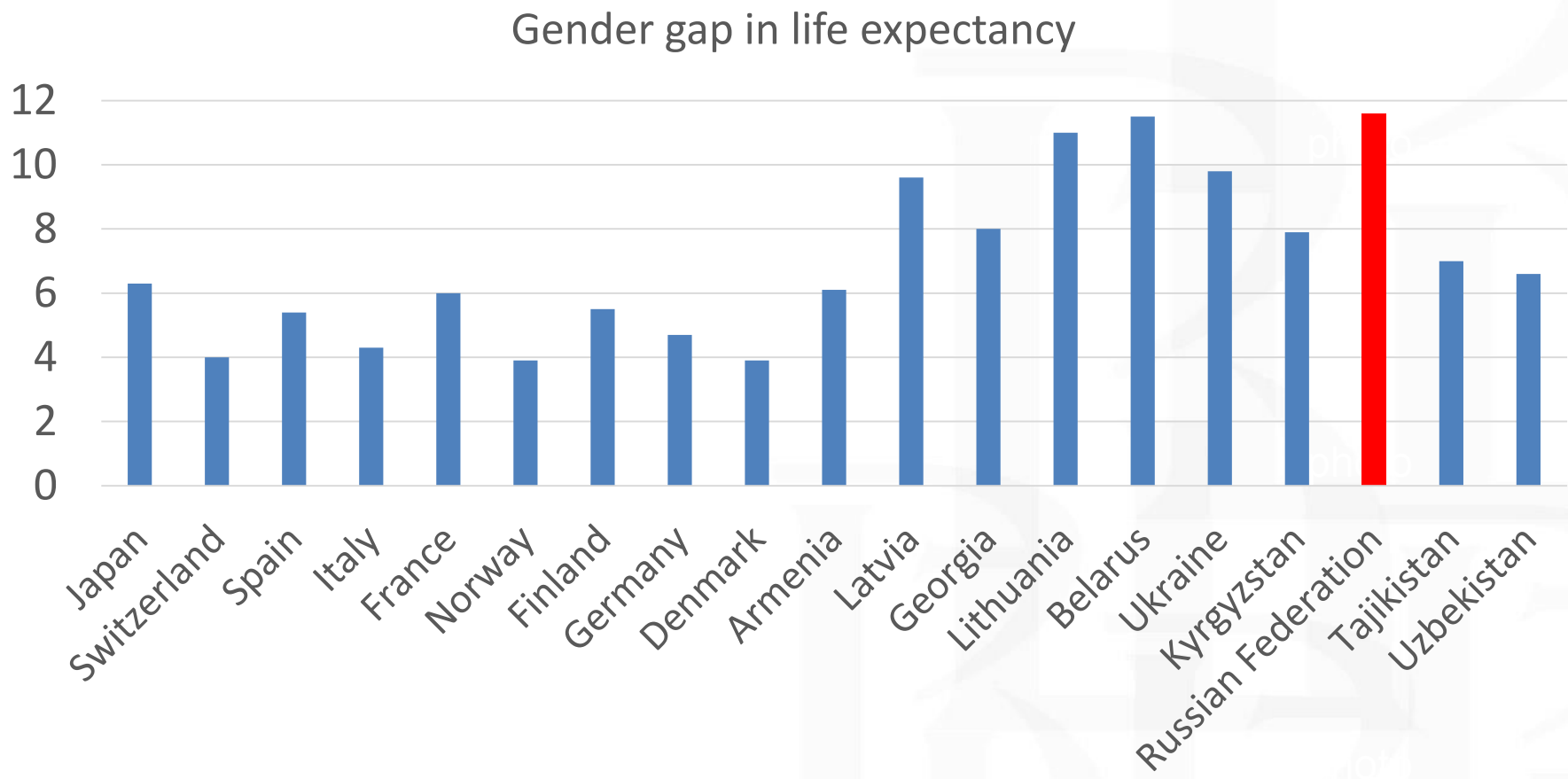
This paper is an output of a research project implemented as part of the Basic Research Program at the National Research University Higher School of Economics (HSE)

Life expectancy at birth in Russia and other countries



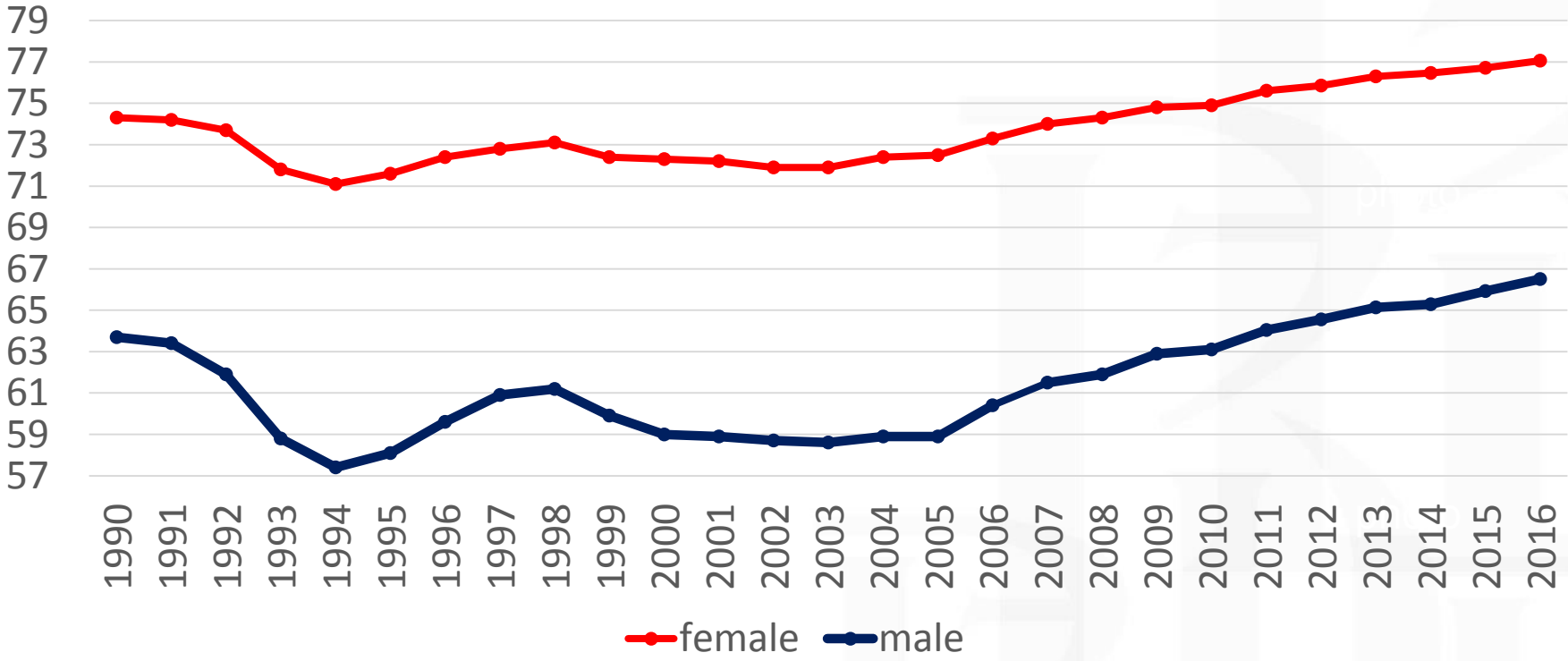
World Health Organization, 2015

Gender gap in life expectancy at birth



World Health Organization, 2015

Life expectancy at birth in Russia



Maximum gender gap was approximately **13,5** years during 2000 to 2005. After that, the gap has started to decrease to a value of **10,5** years by 2016.

Data source is the Federal State Statistics Service of Russia

Determinants of gender gap in life expectancy

Factors determining gender gap in life expectancy are still the subject to discussion.

Biological differences between men and women (Van Oyen et al., 2010).

Socio-economic factors: income, unemployment, inequality, fertility rate, mortality coefficients, etc. (Clark & Peck, 2012).

Behavioral factors: primarily smoking and **alcohol consumption** (Flandorfer & Fliegenschnee, 2011).

Research question

Hypothesis: ***alcohol consumption increases gender gap in life expectancy***

Alcohol abuse is a serious problem in Russia	
World Health Organization provide the value of 15,1 for the total per capita consumption in liters of pure alcohol in Russia	Half of the total volume of alcohol consumption is devoted to spirits

Alcohol consumption is considered through:

1. Alcohol sales in a region in liters of absolute alcohol (it is registered alcohol consumption)
2. Consumption of sugar in a region (it enables us to catch the consumption of homemade alcohol, since its production requires sugar)

Observations on **77 Russian regions except North-Caucasian Republics from 1999 to 2015.** Data source is the Federal State Statistics Service of Russia.

Controls are socio-economic factors:

- ✓ Average per capita income *(Jusrut & Kalipeni, 2012; Rochelle et al., 2015; etc.)*
- ✓ Unemployment rate *(Van Oyen et al., 2010; etc.)*
- ✓ Gini coefficient *(Clark & Peck, 2012; Rochelle et al., 2015; etc.)*

We expect that growth in economic well-being and reduction of income inequality contribute to reducing gender gap in life expectancy.

Controls are socio-economic factors:

✓ Mortality from external causes and mortality from respiratory diseases *(Clark & Peck, 2012; Yang et al., 2012)*

We suppose that these causes of death are largely related to alcohol abuse and smoking. We expect that these mortality coefficients contribute to increasing gender gap in life expectancy. Unhealthy lifestyle would primarily reduce life expectancy of men.

Panel model with fixed effects

$$Ln(ratio_{it}) = \alpha + \beta_1 ln(alc_{it}) + \beta_2 ln(sugar_{it}) + \beta_3 ln(income_{it}) + \beta_4 ln(unempl_{it}) + \beta_5 ln(Gini_{it}) + \beta_6 ln(death_ext_{it}) + \beta_7 ln(death_breath_{it}) + \alpha_i + \varepsilon_{it}$$

ln(ratio) – natural log of the ratio of female to male life expectancy at birth;

(alc) – alcohol sales in a region (liters of absolute alcohol per capita);

(sugar) – consumption of sugar in a region (kg per person);

(*income*) – per capita average monthly income (in prices of 1999);

(unempl) – unemployment rate;

(*gini*) – Gini coefficient;

(*death_ext*) – death from external causes (per 100000 people);

(*death_breath*) – death from respiratory diseases (per 100000 people).

VARIABLES	ln(ratio)
ln(alc)	**0.00589*****
	(0.0012)
ln(sugar)	**0.01313*****
	(0.00279)
ln(income)	**-0.00657*****
	(0.00147)
ln(unempl)	**-0.0008*****
	(0.0001)
ln(gini)	0.00695
	(0.0057)
ln(death_ext)	**0.07308*****
	(0.00167)
ln(death_breath)	**0.00653*****
	(0.00163)
Constant	**-0.21955*****
	(0.02271)
Observations	1380
R-squared	0.845
Number of regions	77
Standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1	

Conclusions

+ **Alcohol consumption**

  Most likely, alcohol consumption reduces life expectancy especially for men as they are more inclined to follow unhealthy lifestyle.

+ **Mortality from respiratory diseases and mortality from external causes**

  Men die from these diseases more often than women do. This points to the male population as the most vulnerable category.

Implications for anti-alcohol policy in Russia

Importance of restrictive measures of alcohol policy!

It is unacceptable to weaken current anti-alcohol measures, namely:

- reduction of the established minimum price for vodka,
- reduction of excise taxes on strong alcohol,
- ban on online alcohol trading on the Internet,
- time limits of alcohol sales at both federal and regional levels.

Otherwise, we expect reduction of life expectancy at birth, primarily, of men

Thank you for your attention!

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