Alcohol in the Family: How an Anti-Alcohol Campaign Transformed Marriage and Childbearing

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“Either, or” with the bottle labeled “Vodka”
High Levels of Alcohol Consumption

- Alcohol responsible for 5.6% of worldwide deaths in 2016
- Shrinking gender gap in alcohol consumption in North America and Europe
  - Rising female alcohol consumption and binge-drinking
- Most countries implement policies to discourage the use of alcohol
We Know Little about *Prolonged* and *Societal* Declines in Alcohol Consumption

- **Adult mortality:** none by age and limited by gender and cause
  - Soviet anti-alcohol campaign (Bhattacharya et al. 2013, Keung and Yakovlev 2021)
  - US Prohibition (Law and Marks 2020, Livingston 2016, Owens 2011)
  - South Africa (Barron et al. 2022)

- **Infant mortality:** none by gender or cause
  - US Prohibition (Jacks et al. 2021, Law and Marks 2020)

- **Marriage, divorce and fertility:** none at the societal level
  - US Minimum Legal Drinking Age for teenage fertility (Dee 2001, Cintina 2015)
  - Stronger beer availability if under age 21 in Sweden for future fertility of teenage moms (Nilsson 2017)
We Study an Unexpected Anti-alcohol Campaign in Soviet Russia (enforced from June 1, 1985)

• Unique reform: societal decline in drinking
• State monopoly on alcohol production: immediate and sustained decline in production and consumption
• Many restrictions on sale of alcohol and a substantial rise in prices
• Financial penalties for public drunkenness
• Lasted until at least 1990
• High rates of male and female alcohol consumption
  • Common to drink while pregnant

Monthly male deaths (thousands)

Vertical dashed line: June 1985
Alcohol Consumption and Planning Horizons

Ambiguous predictions

- Divorces
  - fall if marriage quality rises/domestic violence falls
  - rise if the pool of ‘marriageable’ partners grows/domestic violence rises as drinking moves to the home/mismatch of alcohol preferences within the couple

- Marriages
  - fall if less shotgun weddings
  - rise if attractiveness improves

- Fertility
  - falls if unplanned conceptions fall
  - rises if miscarriages fall and conceptions rise due to a rise in quality of marriages/household income

Postage stamp of the USSR in 1985, “Sobriety is the norm of life.”
The Campaign Resulted in Immediate and Sustained Effects

- **Crude death rates** (not in this presentation)
  - Declined through 1990: among men and women
  - Most ages (15-84) and most causes (alcohol-related, infectious, respiratory, heart, homicide, drowning, motor vehicle, suicide)
  - Declines in maternal mortality due to abortions

- **Infant mortality rates**
  - Decline through 1989: boys and girls but larger for boys
  - No changes in stillbirths, perinatal and congenital mortality
  - Declines in respiratory diseases and external causes

- **Crude marriage rates**
  - No change

- **Crude divorce rates**
  - Increase through 1989

- **General Fertility rates**
  - Increase through 1989: first and higher parity births
  - Abortions fell
We Assemble a Novel Regional Dataset

• Panel of oblast-level data for the Russian republic of the USSR (1981-1990)
  • Russian State Archive of the Economy
  • census data: 1979, 1989 and 2010
  • nonpublic data from the Russian federal State Statistics Service
  • Russian Fertility and Mortality database of the Centre of Demographic Research of the New Economic School
• Vital statistics data are high quality (Brainerd and Cutler 2005)
Variation in Pre-Campaign Exposure to Alcohol

- Age standardized death rate (SDR) from alcohol-related causes (1979)
  - More precisely measured than alcohol consumption

- We show empirically
  - regions with higher SDR experience larger declines in alcohol consumption

- Aggregate across treatment doses
  - High dose regions: \(60^{th} \leq SDR \leq 100^{th}\)
  - Medium dose regions: \(20^{th} \leq SDR \leq 60^{th}\)
  - Low dose regions: \(SDR \leq 20^{th}\) (controls)
Difference-in-Differences with a Continuous Treatment

“Binarized” DiD estimator: aggregation across treatment doses

- Callaway, Goodman-Bacon and Sant’Anna (2024)
- \( M_{o,y} = \alpha + \sum_{k=1}^{n} \theta_k D_o 1(y = k) + \sum_{k=n+2}^{90} \pi_k D_o 1(y = k) + \delta_o + \gamma_y + X_{o,y} + \epsilon_{o,y} \)
  - \( M_{o,y} \): outcome at the oblast, \( o \), and year, \( y \), level
  - \( D_o=1 \) if medium dose or high dose regions, \( D_o=0 \) if low dose regions.
  - \( \delta_o \) oblast fixed effects, \( \gamma_y \) year fixed effects, \( 1(y = k) \) dummy for year \( k \)
  - \( X_{o,y} \): annual doctors per capita and hospital beds per capital
  - \( n \) is 1983, except for GFR \( n \) is 1984

- Interpretation of \( \pi \) (“high dose” vs. “low dose” regions regression)
  - \( ATT_{High} - ATT_{Low} \): (effect of the campaign in “high” regions relative to no campaign)-(effect of the campaign in “low” regions relative to no campaign)
  - Lower bound of \( ATT_{High} \) if \( ATT_{Low} \) is nonzero and the same direction as \( ATT_{High} \)

- Assumption
  - Parallel pre-trends in “high dose”/“medium dose” and “low dose” regions
IMR Drops Immediately after the Campaign in “High” Regions

Infant deaths per 1,000 live births

IMR drops in “high dose” regions by at least 9% (1985)
- total alcohol (official+samogon) declines by at least 9 to 18%

No stat. sign. effects in “medium dose” regions
- total alcohol declines by at least 5 to 9%
- Effects in “medium dose” regions may be present if: $\text{ATT}_{\text{Medium}} = \text{ATT}_{\text{Low}}$
Infant Deaths per 100K Population: by Cause

“High Dose” Regions vs. “Low Dose” Regions

- **Perinatal**
  - last few weeks of pregnancy and first week after birth
- **Congenital**
  - due to congenital anomalies at birth (at any point during the first year)
- **External causes**
  - accidental inhalation/ingestion with obstruction to the respiratory tract
  - other accidents

Divorce Rate Rises Immediately after the Campaign
Marriages/Divorces per 1,000 population

Crude Marriage Rate

Crude Divorce Rate

“\textit{I sobered up, and I got to thinkin’ girl you ain’t much fun since I quit drinkin’}”
Toby Keith song lyrics
GFR Rises Immediately after the Campaign and Abortions Fall
Births/Abortions per 1,000 women of childbearing age

- GFR rises by at least 5% in “high dose” regions (1987).
- Abortions fall by at least 5% in “high dose” regions (1987).
Alcohol Consumption Changes Planning Horizons

• One of the largest sustained reductions in society-wide alcohol consumption in recent history

• First causal evidence of the effect of a societal decline in alcohol on marriages, divorces and childbearing

• Sharp falls in infant mortality underscore the importance of female alcohol consumption in infant health outcomes

Harming your health, family and children