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

Betsy Brainerd, Brandeis University

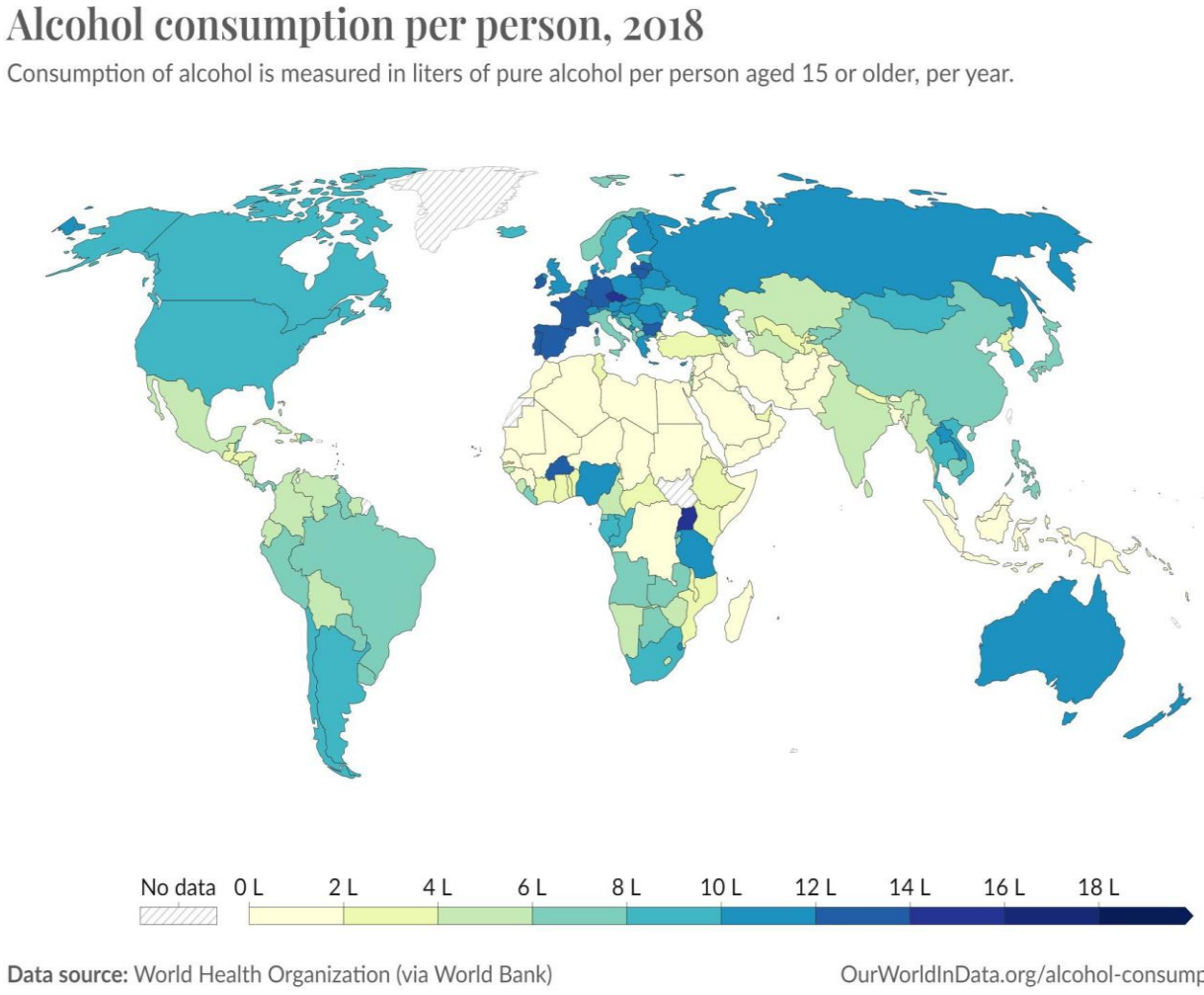
Olga Malkova, University of California, Irvine



“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

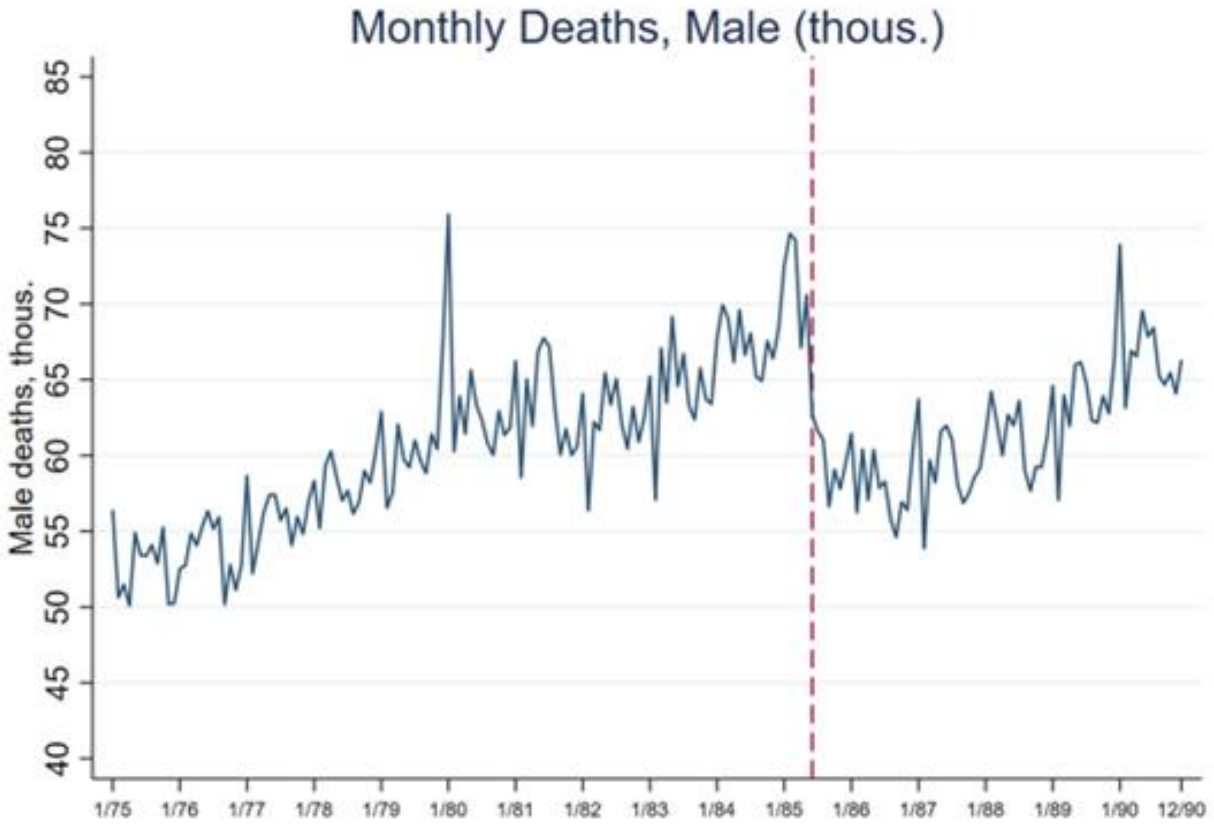
- Adult mortality: none by age and limited by gender and cause
  - Soviet anti-alcohol campaign (Bhattacharya et al. 2013, Keung and Yakovlev 2021)
  - US Prohibition (Law and Marks 2020, Livingston 2016, Owens 2011)
  - South Africa (Barron et al. 2022)

- 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



Vertical dashed line: June 1985

Alcohol Consumption and Planning Horizons

Ambiguous predictions

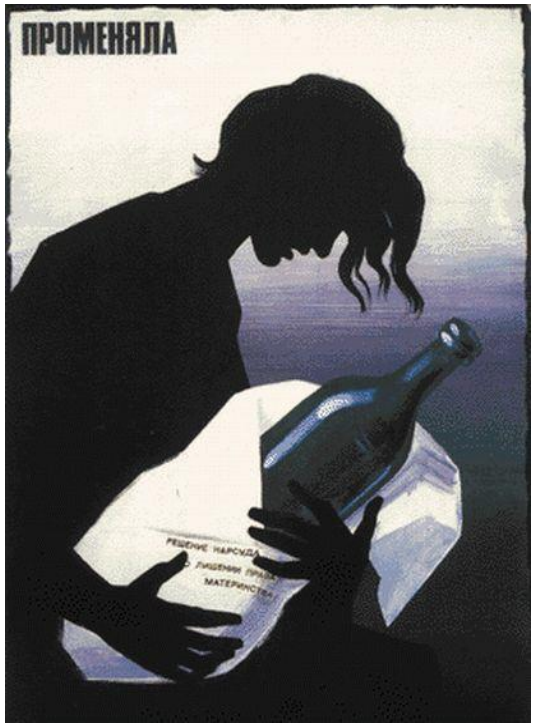
- Divorces
  - fall if the quality of marriages increases/domestic violence declines
  - rise if the pool of ‘marriageable’ partners grows/domestic violence rises as drinking moves to the home
- Marriages
  - fall if risky sexual behavior declines resulting in less shotgun weddings
  - rise if attractiveness on the marriage market improves
- Fertility
  - falls if unplanned conceptions fall
  - rises if miscarriages fall and conceptions rise due to quality of marriages/household income rises



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



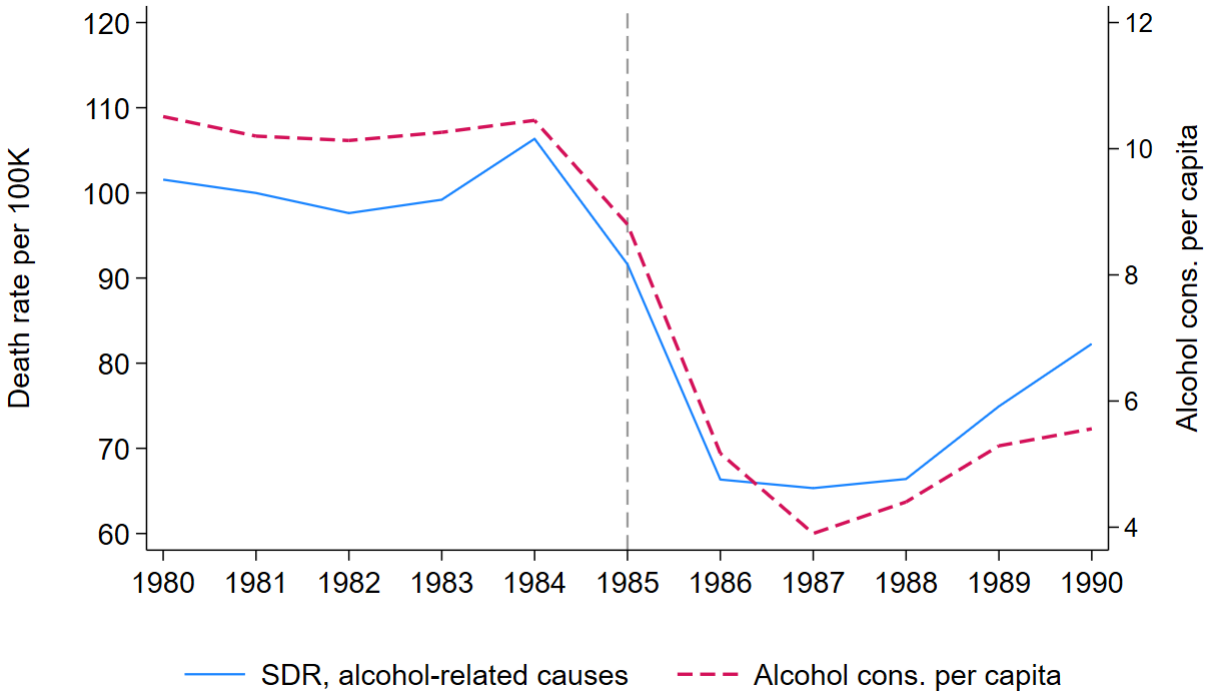
Exchanged.

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)
  - *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)
- More precisely measured than alcohol consumption
  - Closely reflects the level of excessive alcohol consumption
- We show empirically
  - regions with higher SDR experience larger declines in alcohol consumption



Difference-in-Differences with a Continuous Treatment

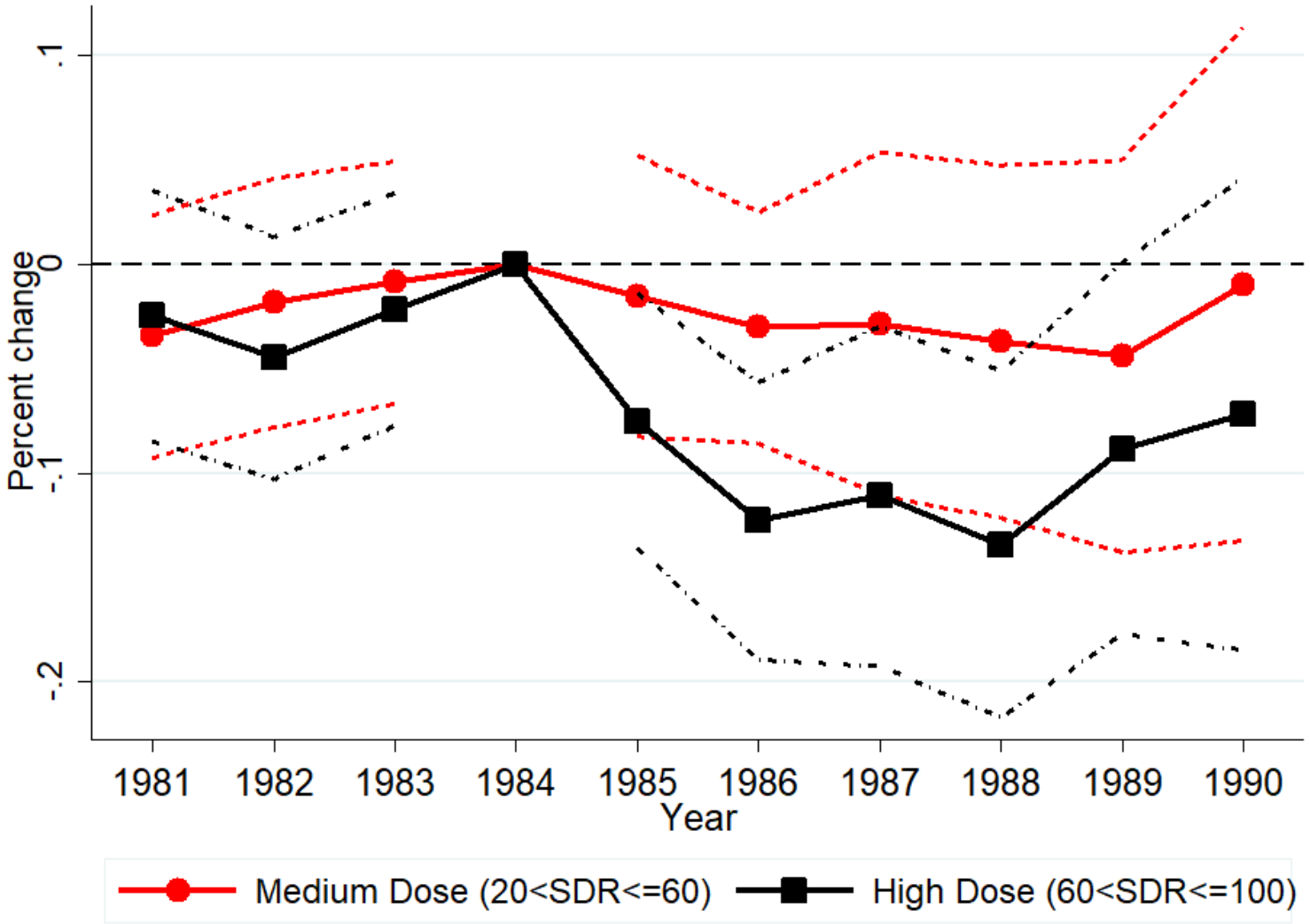
"Binarized" DiD estimator: aggregation across treatment doses

- Callaway, Goodman-Bacon and Sant'Anna (2024)
- $M_{o,y} = \alpha + \sum_{k=81}^{n} \theta_k D_o 1(y = k) + \sum_{k=n+2}^{90} \pi_k D_o 1(y = k) + \delta_o + \gamma_y + X_{o,y} + \epsilon_{o,y}$
  - $M_{o,y}$: 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.
  - δ_o oblast fixed effects, γ_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 π
  - $ATT_{High} - ATT_{Low}$: (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)

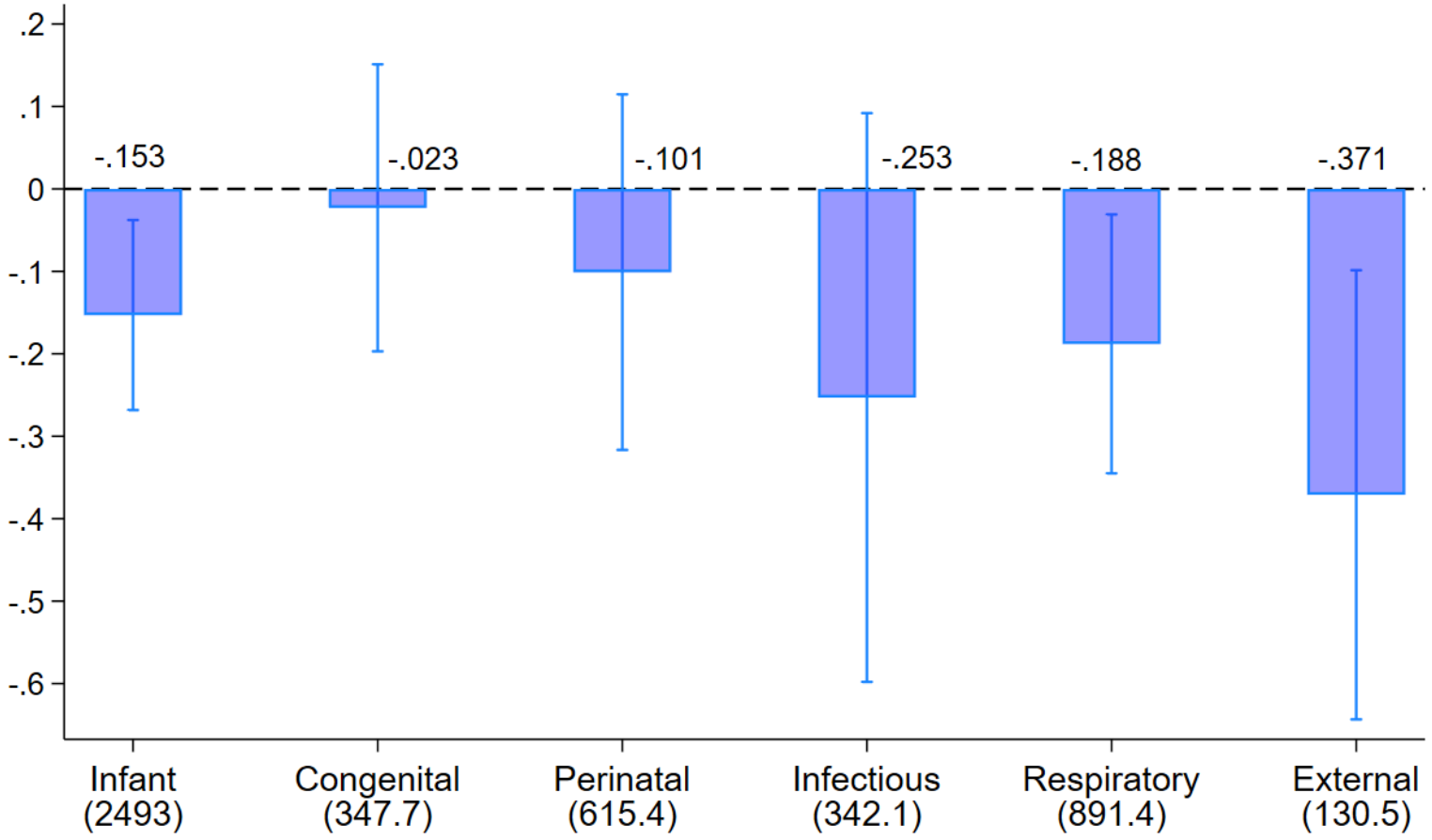
- total alcohol (official+samogon) declines by at least 9 to 18%

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: $ATT_{Medium}=ATT_{Low}$

Infant Deaths per 100K Population: by Cause

"*High Dose*" Regions vs. "*Low Dose*" Regions



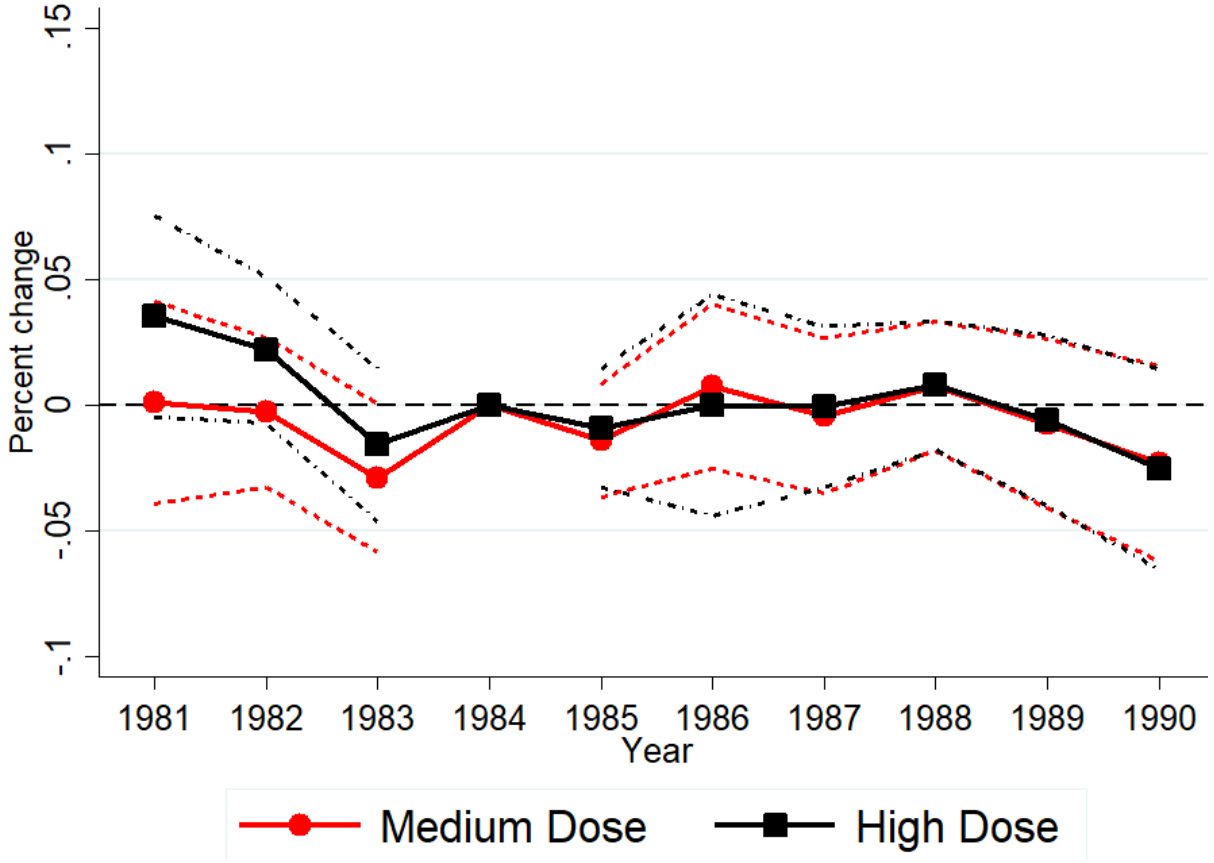
Data: 1978/79 and 1988.

- 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

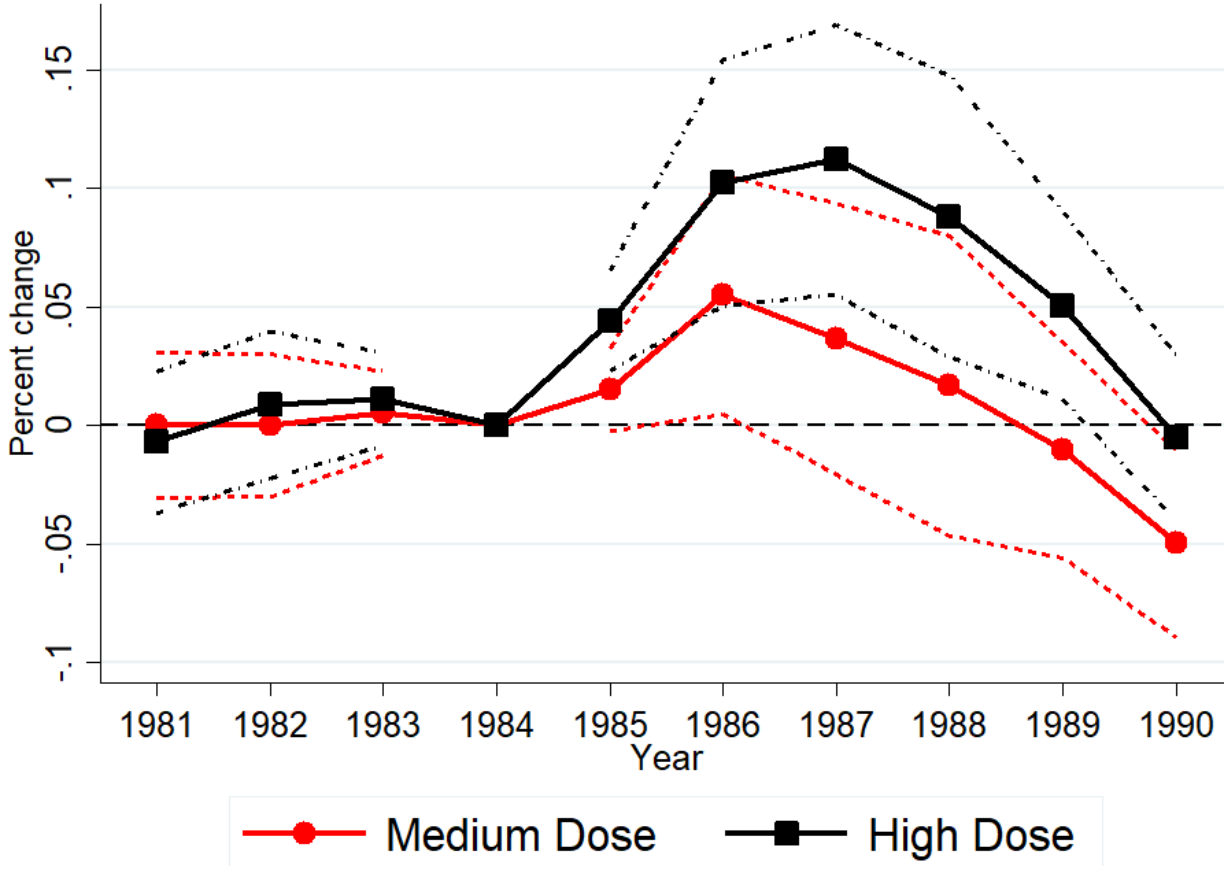
Divorce Rate Rises Immediately after the Campaign

Marriages/Divorces per 1,000 population

Crude Marriage Rate



Crude Divorce Rate

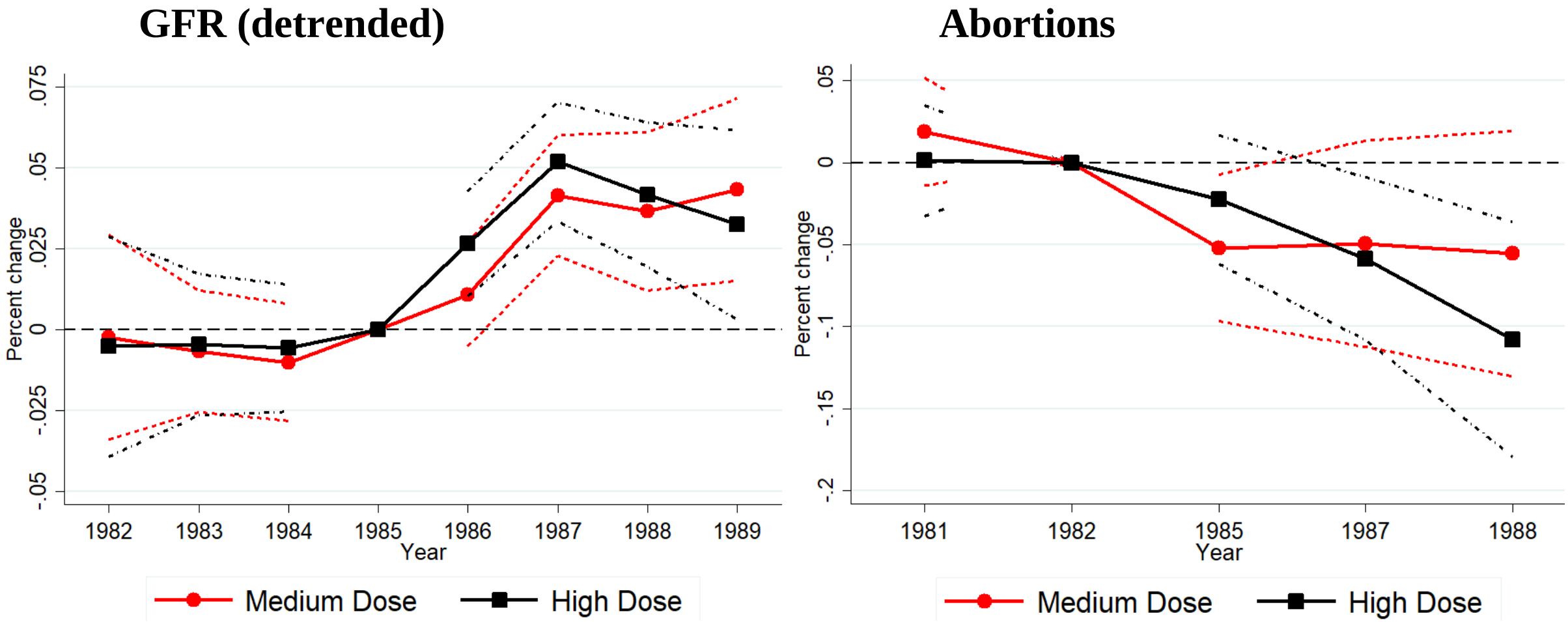


"I sobered up, and I got to thinkin' girl you ain't much fun since I quit drinkin'"

Toby Keith song lyrics

GFR Rises Immediately after the Campaign and Abortions Fall

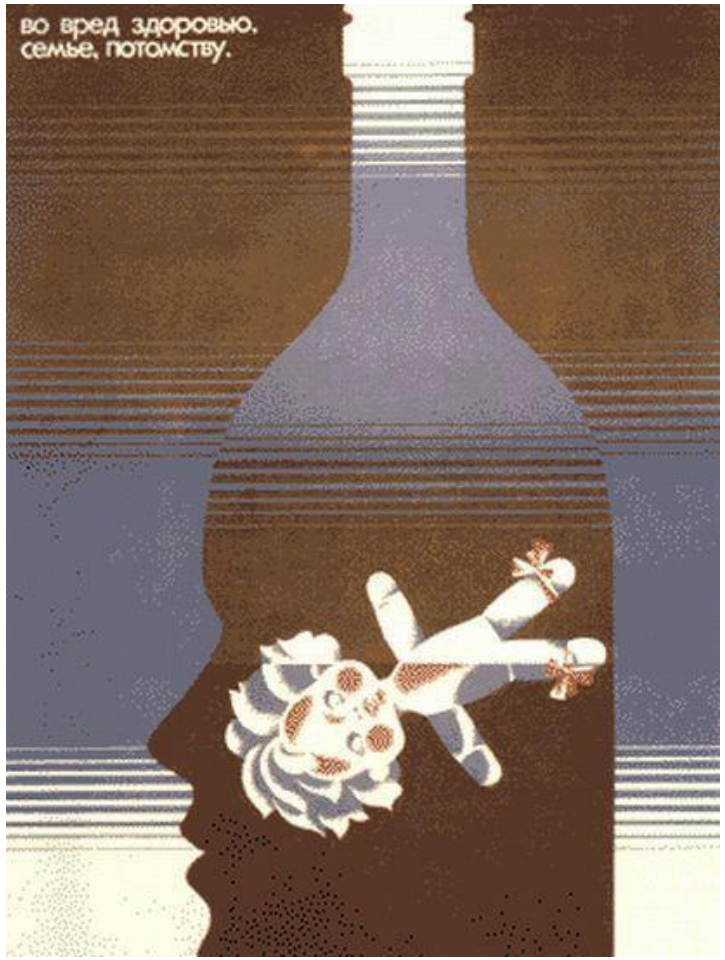
Births/Abortions per 1,000 women of childbearing age



- 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 a societal level decline in alcohol on marriages, divorces and fertility
- Sharp falls in infant mortality underscore the importance of female alcohol consumption in infant health outcomes



Harming your health, family and children