

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

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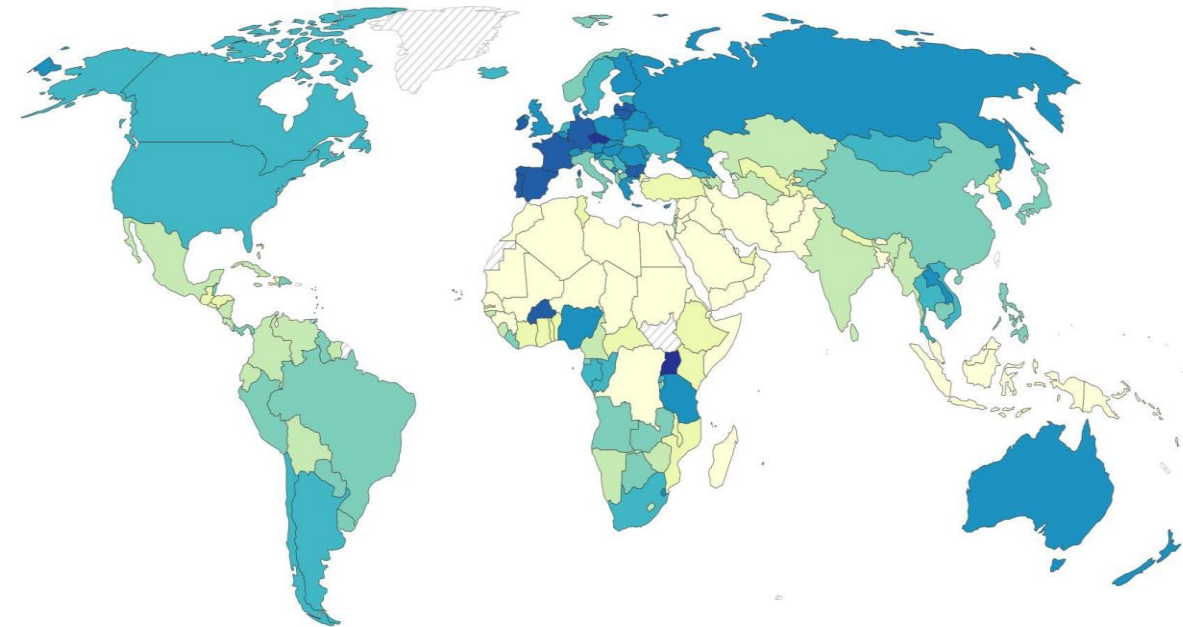
“Either, or” with the bottle labeled “Vodka”

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

Alcohol consumption per person, 2018

Consumption of alcohol is measured in liters of pure alcohol per person aged 15 or older, per year.



Data source: World Health Organization (via World Bank)

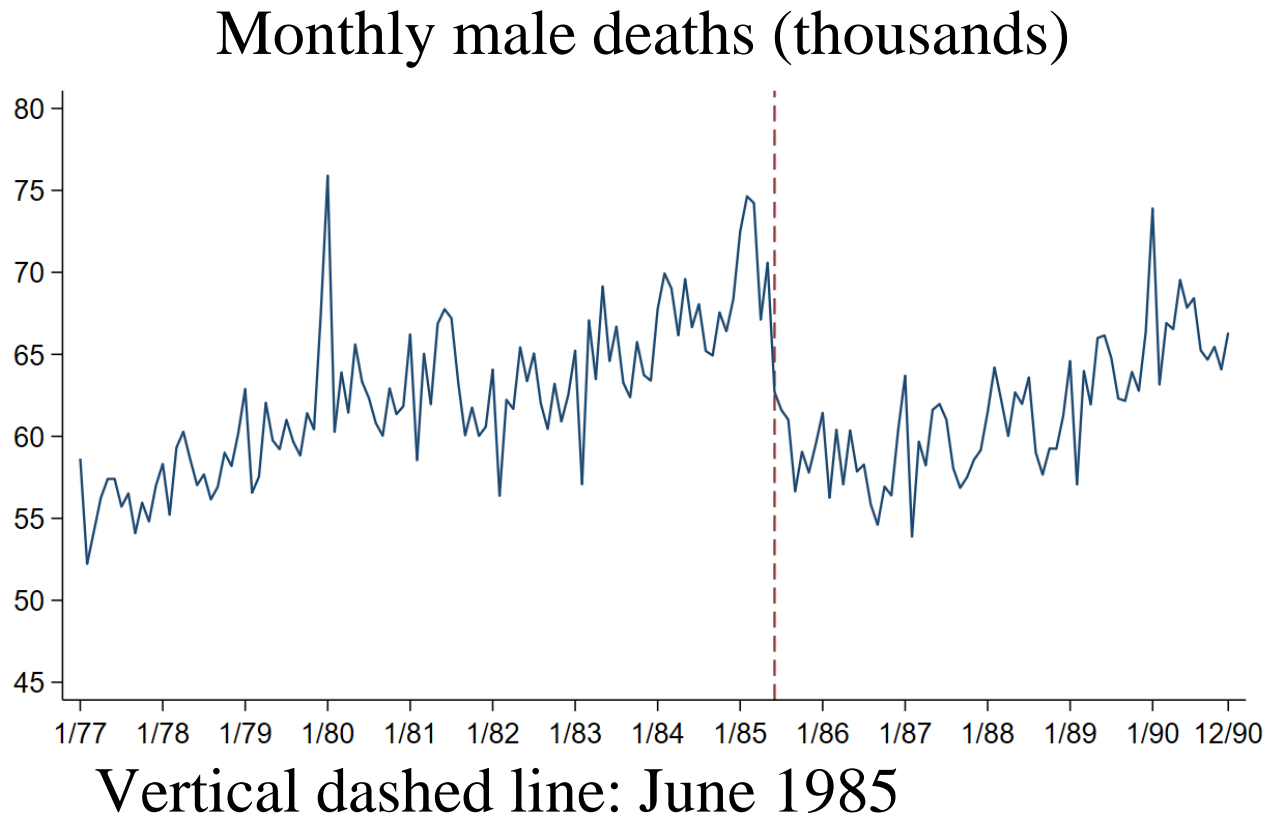
OurWorldInData.org/alcohol-consumption

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



Alcohol Consumption and Planning Horizons

Ambiguous predictions

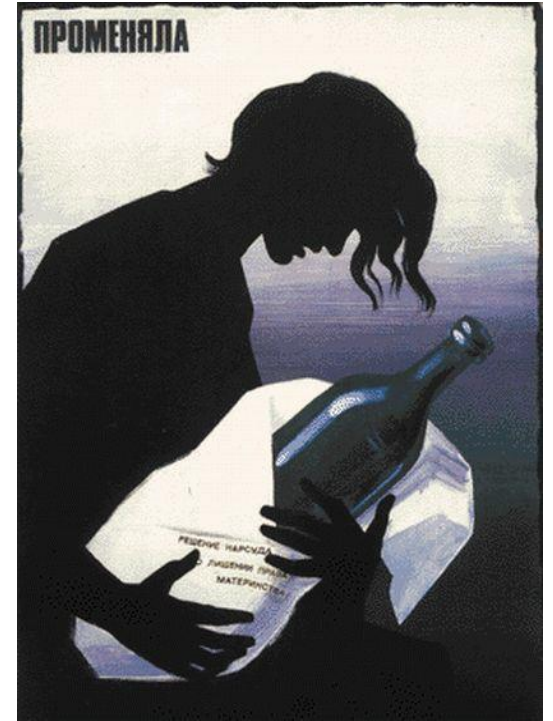
- Divorces
 - fall if marriage quality rises/domestic violence falls
 - rise if the pool of ‘marriageable’ partners grows/domestic violence rises as drinking moves to the home/mismatch of alcohol preferences within the couple
- Marriages
 - fall if less shotgun weddings
 - rise if attractiveness improves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



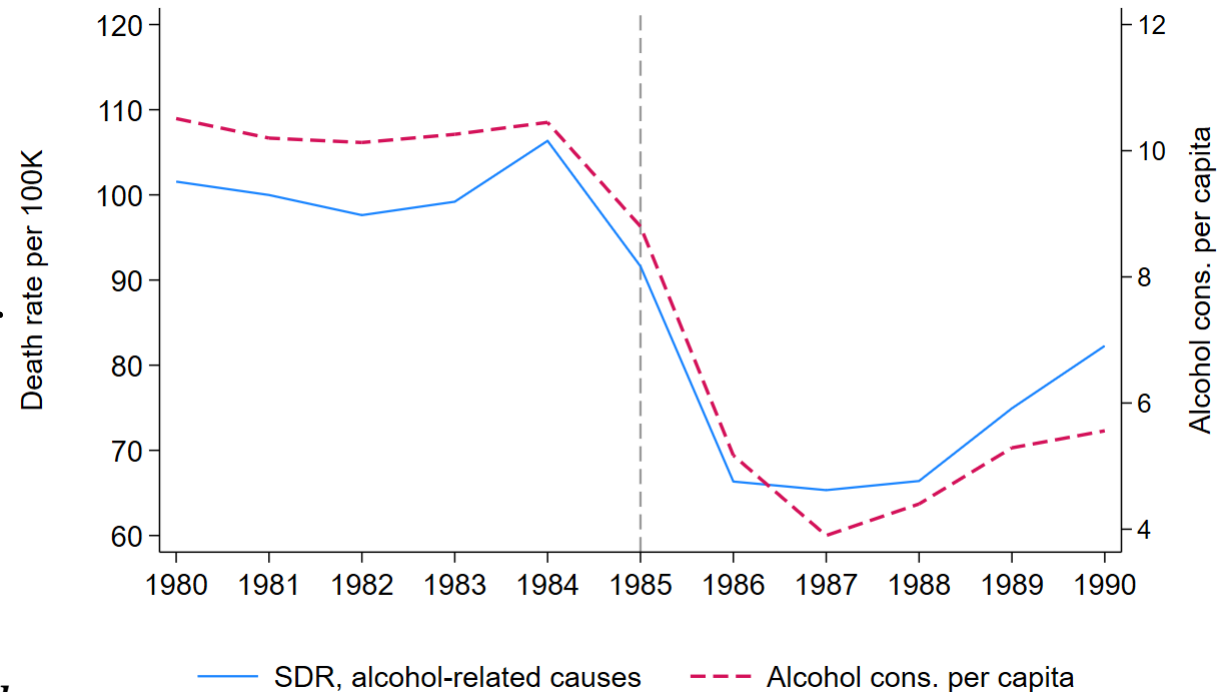
Exchanged.

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)
 - 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)*



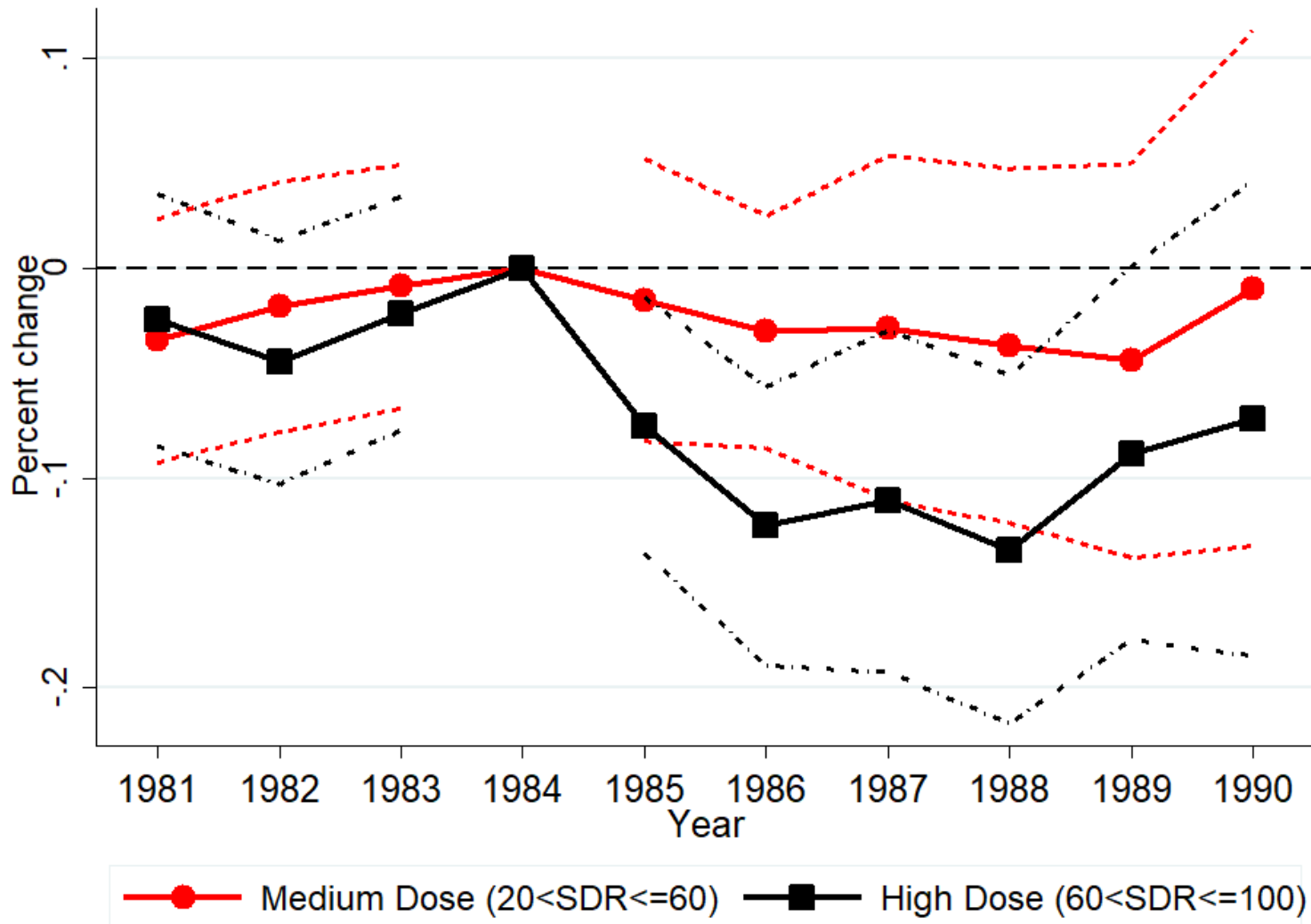
Difference-in-Differences with a Continuous Treatment

“Binarized” DiD estimator: aggregation across treatment doses

- Callaway, Goodman-Bacon and Sant’Anna (2024)
- $$M_{o,y} = \alpha + \sum_{k=81}^n \theta_k D_o 1(y = k) + \sum_{k=n+2}^{90} \pi_k D_o 1(y = k) + \delta_o + \gamma_y + X_{o,y} + \epsilon_{o,y}$$
 - $M_{o,y}$: 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 (“*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

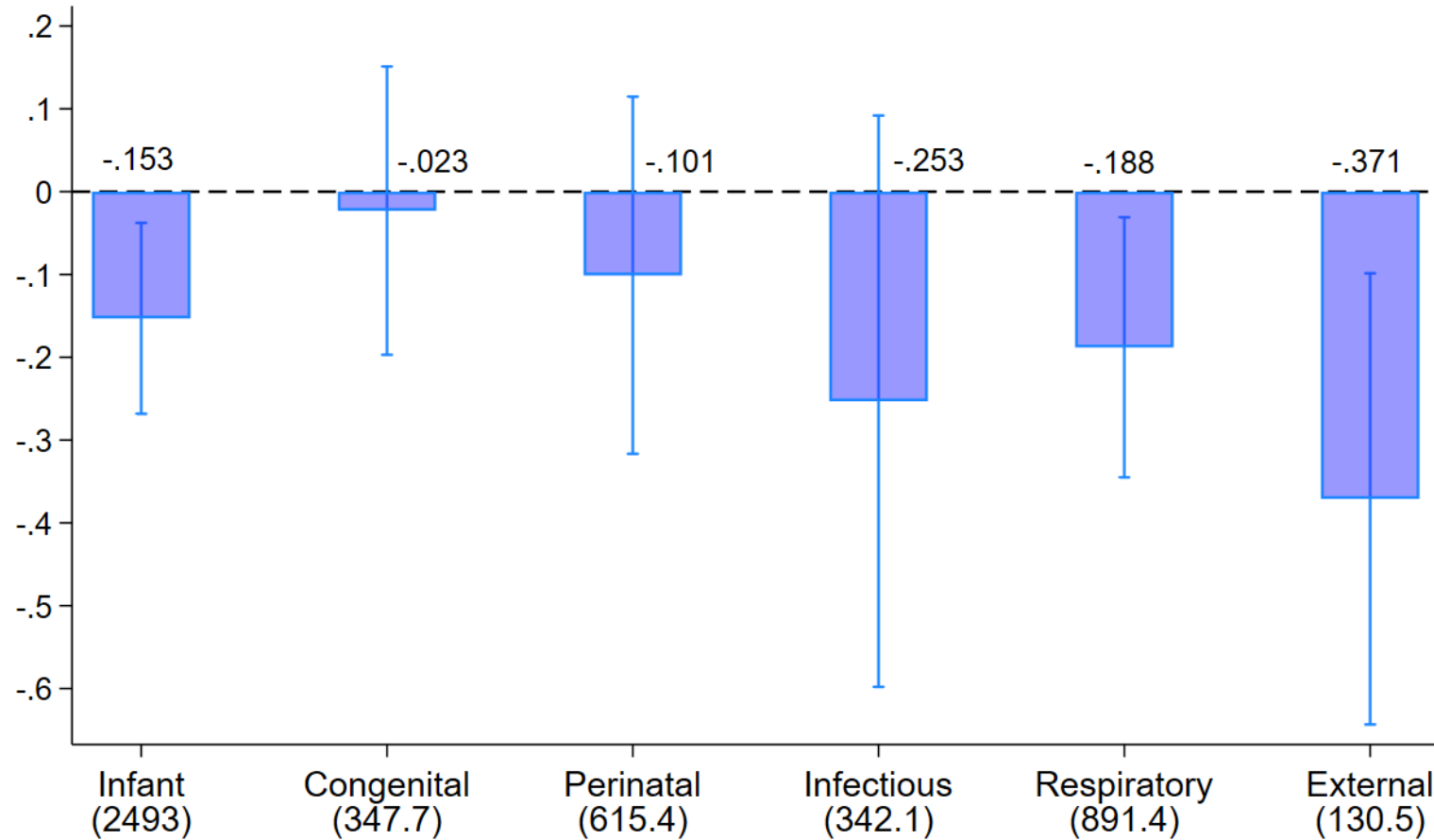
- total alcohol declines by at least 5 to 9%

Effects in “*medium dose*” regions may be present if:

$$ATT_{\text{Medium}} = ATT_{\text{Low}}$$

Infant Deaths per 100K Population: by Cause

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



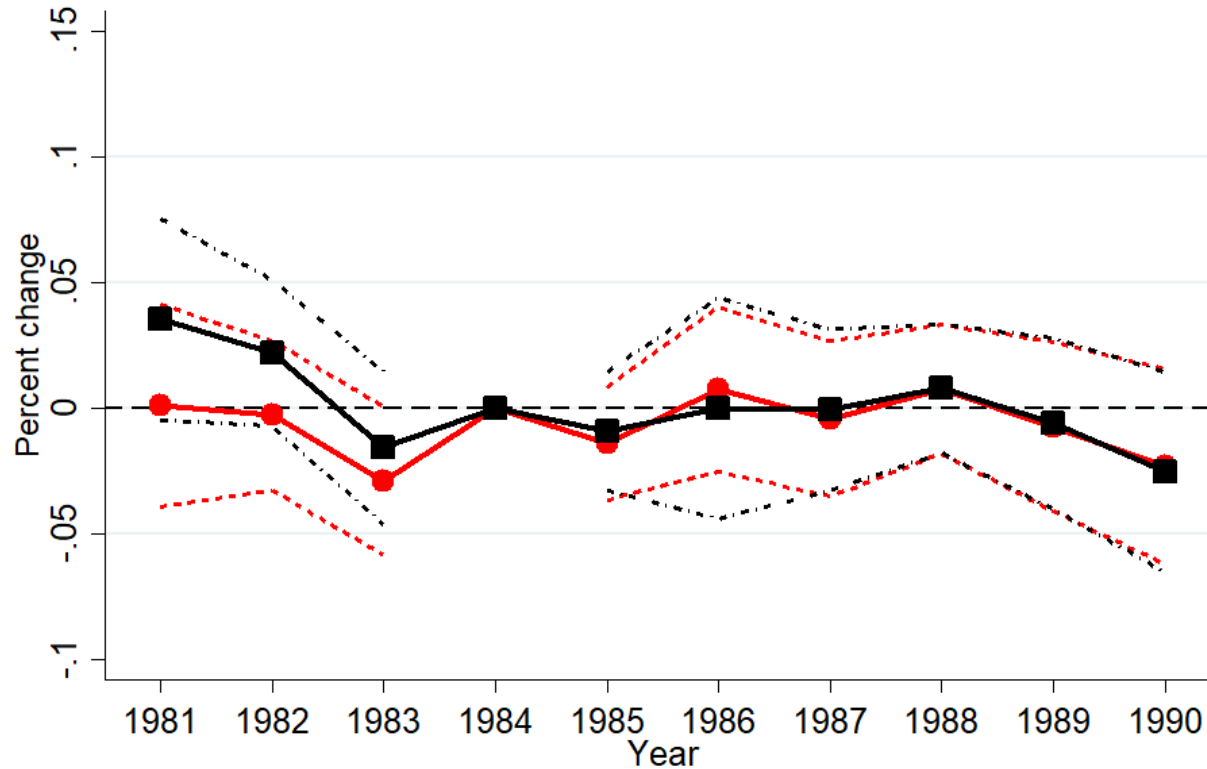
Data: 1978/79 and 1988.

- 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

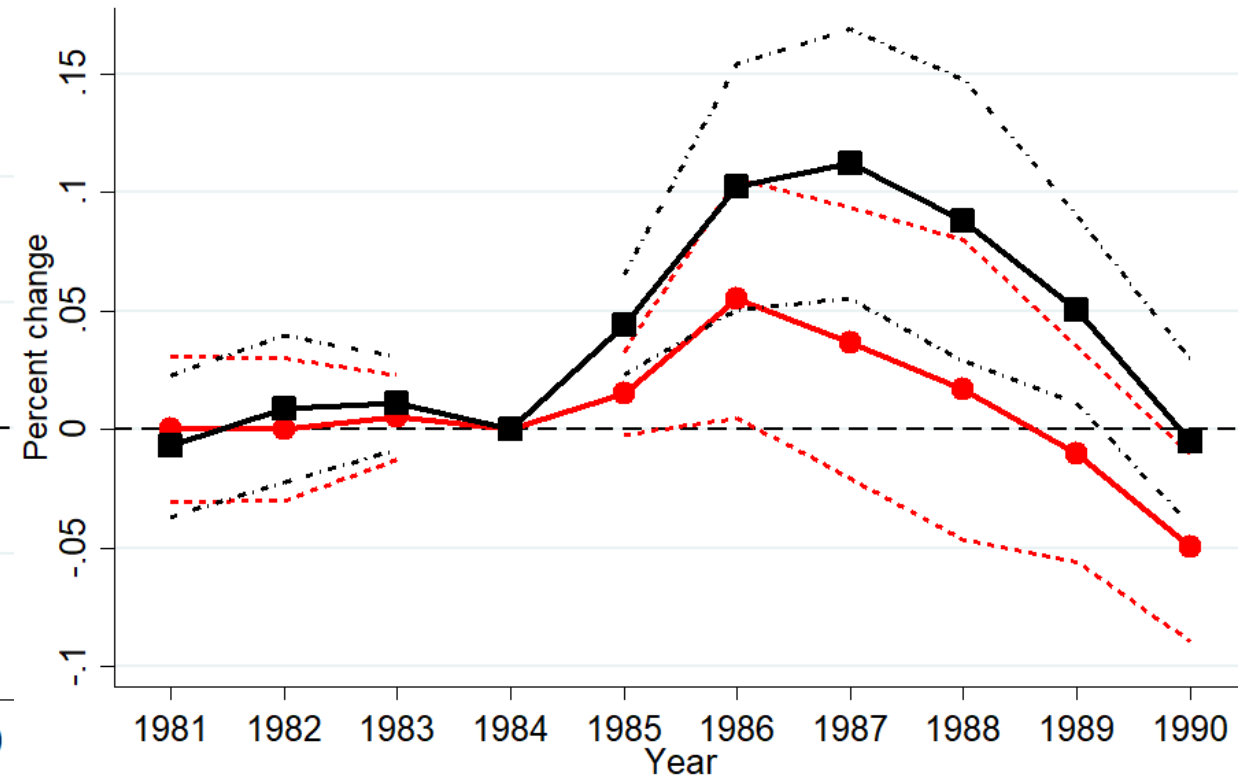
Divorce Rate Rises Immediately after the Campaign

Marriages/Divorces per 1,000 population

Crude Marriage Rate



Crude Divorce Rate



—●— Medium Dose —■— High Dose

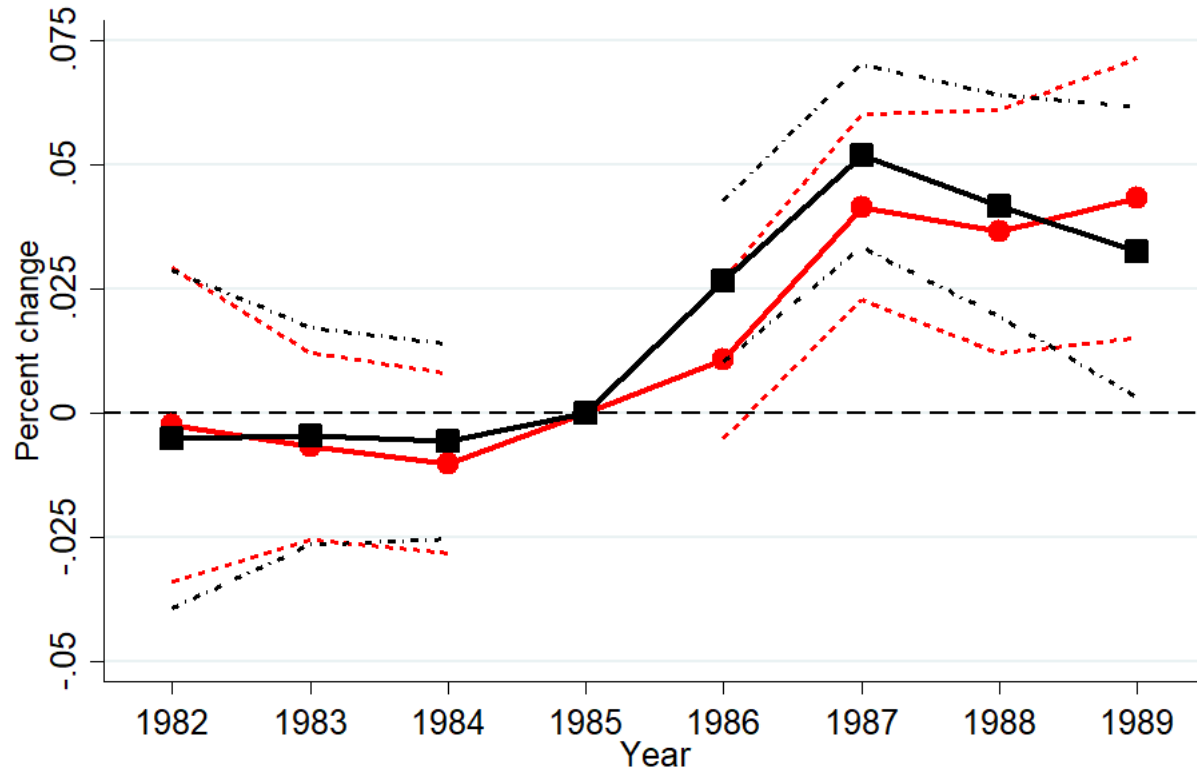
—●— Medium Dose —■— High Dose

“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

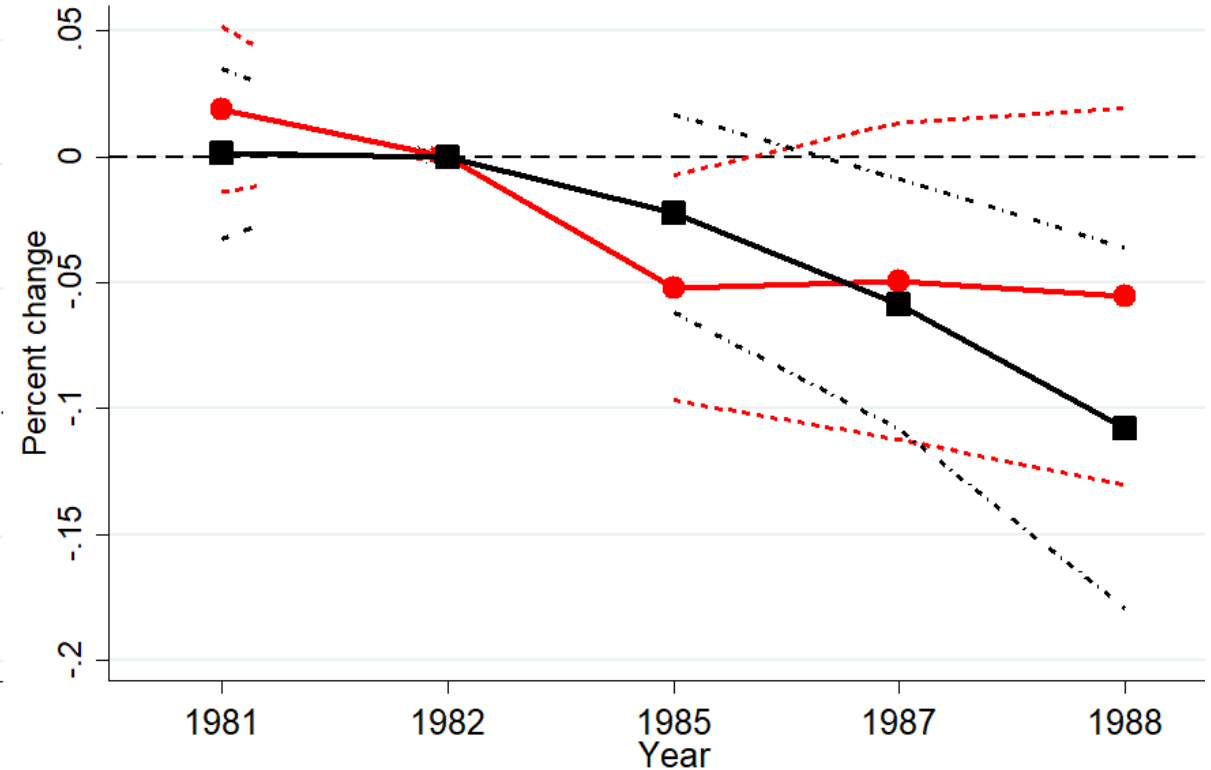
Births/Abortions per 1,000 women of childbearing age

General Fertility Rate



—●— Medium Dose —■— High Dose

Abortions



—●— Medium Dose —■— High Dose

- 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