

PHS2000B RDD Lab - Rapid Paper Discussions

With many RDD studies, the set-up and results are very intuitive and visual. By perusing the abstract and the figures you can quickly get a sense of what the researchers are trying to do.

Step 1 - Click on your assigned group to be taken to the relevant page

Step 2- Read the abstract of the paper and look at the figures. Then answer the questions on your page.

Step 3- Share out when we reconvene!

[Group 1](#): Association of Prenatal Care Services, Maternal Morbidity, and Perinatal Mortality With the Advanced Maternal Age Cutoff of 35 Years (United States)

[Group 2](#): Regression Discontinuity in Epidemiology (ART CD4 count example) (South Africa)

[Group 3](#): The Effect of Alcohol Consumption on Mortality: Regression Discontinuity Evidence from the Minimum Drinking Age (United States)

[Group 4](#): Estimating Marginal Returns to Medical Care: Evidence from At-risk Newborns (United States)

[Group 5](#): Effects of Nutrition Promotion on Child Growth in El Alto, Bolivia: Results from a Geographical Discontinuity Design (Bolivia)

[Group 6](#): The infant health effects of starting universal child benefits in pregnancy: Evidence from England and Wales (England and Wales)

[Group 7](#): Effects of Union Certification on Workplace-Safety Enforcement: Regression-Discontinuity Evidence (United States)

[Group 8](#): Relative Age in School and Suicide among Young Individuals in Japan: A Regression Discontinuity Approach (Japan)

[Group 9](#): The effect of parental education on child health: Quasi-experimental evidence from a reduction in the length of primary schooling in Egypt (Egypt)

[Group 10](#): Mortality effects of containing moral hazard: Evidence from disability insurance reform (Netherlands)

Group 1

Paper: [Association of Prenatal Care Services, Maternal Morbidity, and Perinatal Mortality With the Advanced Maternal Age Cutoff of 35 Years](#)

What is the running variable?

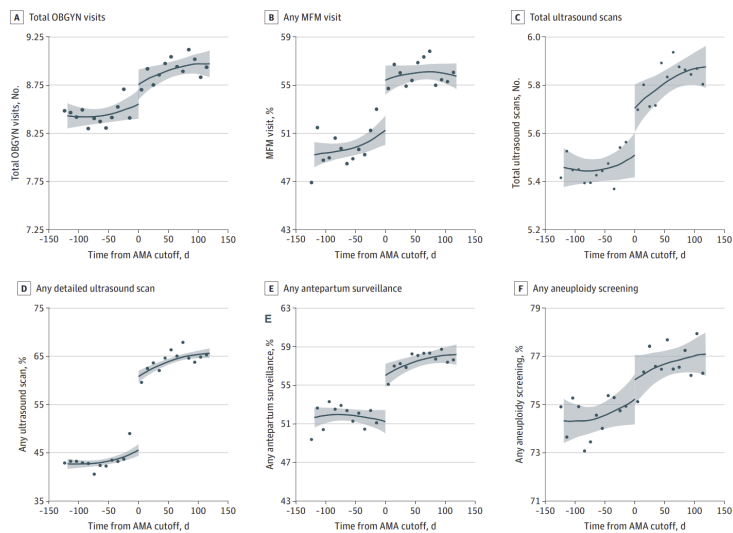
- Time in days centered at 35-year advanced maternal age (AMA) cutoff.

What is the threshold?

- The 35-year AMA cutoff.

Paste the key figure(s) from the paper below

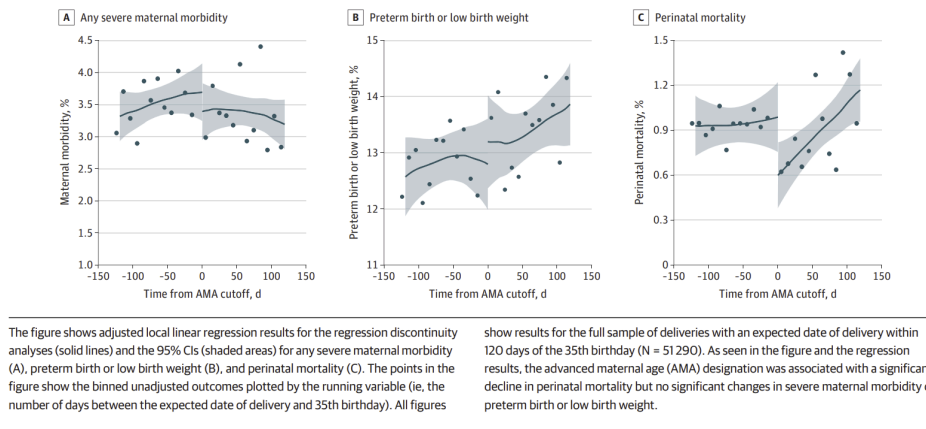
Figure 1. Prenatal Care Services by Weeks Relative to Age 35 Years on Expected Date of Delivery



The figure shows adjusted local linear regression results for the regression discontinuity analyses (solid lines) and the 95% CIs (shaded areas) for total obstetrician-gynecologist (OBGYN) visits (A), any maternal-fetal medicine (MFM) visit (B), total ultrasound scans (C), any detailed ultrasound scan (D), any antepartum surveillance (E), and any aneuploidy screening (F). The points in the figure show the binned unadjusted outcomes plotted by the running variable (ie, the number of days between the expected

date of delivery and 35th birthday). All panels show results for the full sample of deliveries with an expected date of delivery within 120 days of the 35th birthday (N = 51 290). As seen in the figure and the regression results, the advanced maternal age (AMA) designation was associated with significant increases in any MFM visits, total ultrasound scans, any detailed ultrasound scan, and any antepartum fetal surveillance but no significant changes in total OBGYN visits or aneuploidy screening.

Figure 2. Maternal and Newborn Outcomes by Weeks Relative to Age 35 Years on Expected Date of Delivery



What kind of effect are they estimating?

- This is a fuzzy RDD context. However, the investigators estimate the equivalent of a ITT. This is because they are not interested in a specific “treatment”/“exposure” that kicks in at the threshold, but rather how the threshold effects a wide range of care services as well as maternal and child health. Trying to estimate the effect of a single treatment on mortality for example, would be challenging because the authors shows that the threshold is associated with various treatments.

Do you have any concerns about the RDD assumptions?

-

Group 2

Paper: [Regression Discontinuity Designs in Epidemiology](#)

This paper is an intro to RDD in epidemiology (so a good paper to read!). But it also has an example analysis. The questions below relate to that

What is the running variable?

the clinical measurement of CD4 counts (cells/ μ L of blood), which are used to determine eligibility for ART.

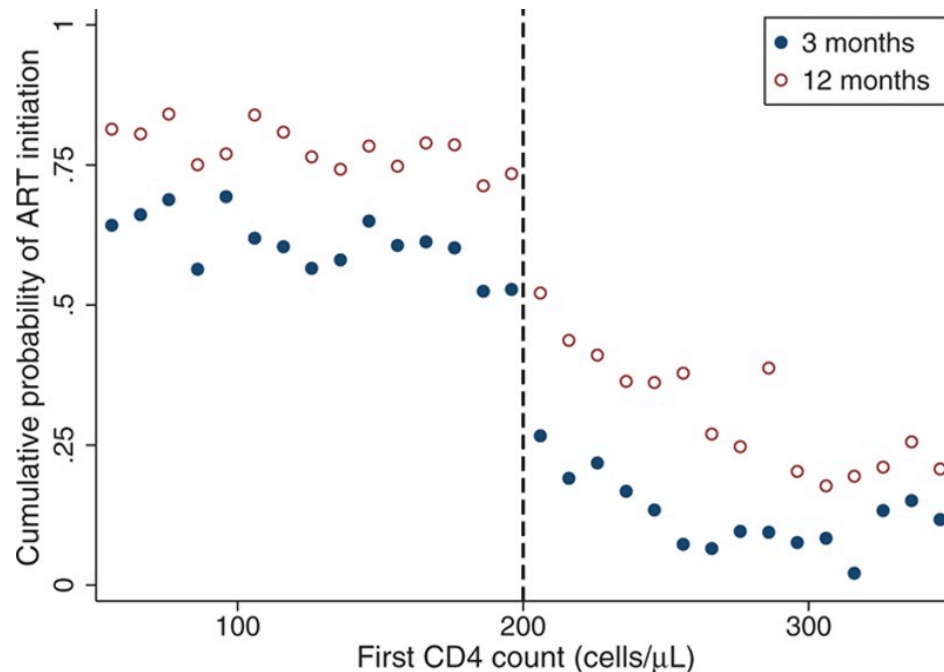
What is the threshold?

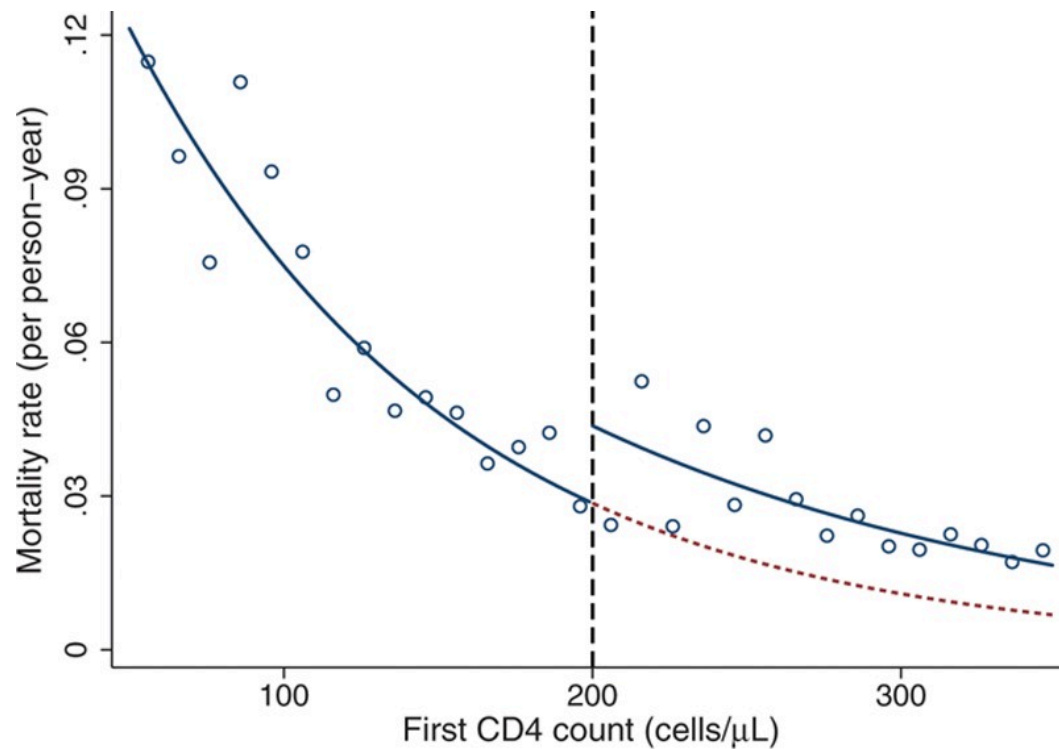
200 cells/microliter

Is it a sharp or fuzzy RDD?

Fuzzy

Paste the key figure(s) from the paper below, related to this analysis





What kind of effect(s) are they estimating?

They estimate the ITT (the effect of the threshold on mortality), as well as the CACE of ART on mortality by using an IV approach

Do you have any concerns about the RDD assumptions?

If the threshold is associated with other care provision besides just ART, we would violate the exclusion restriction assumption, and our estimate for the effect of ART on mortality among compliers at the threshold would be biased.

Group 3

Paper: [The Effect of Alcohol Consumption on Mortality: Regression Discontinuity Evidence from the Minimum Drinking Age](#)

This is an econ paper so on the longer side. Mainly read the abstract and look at the figures.

What is the running variable?

Age :)

What is the threshold?

21

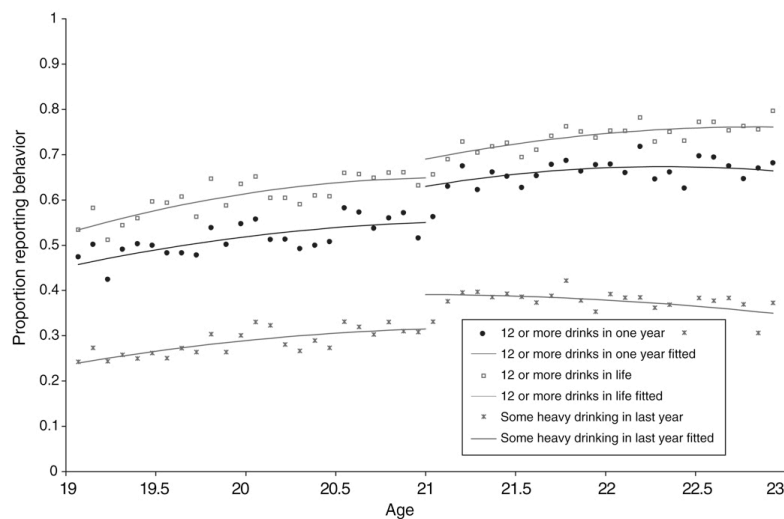
What is the exposure and the outcome?

Outcome - mortality

Exposure- alcohol consumptions

Paste two illustrative figures of the study here

Looking at exposure using two measures



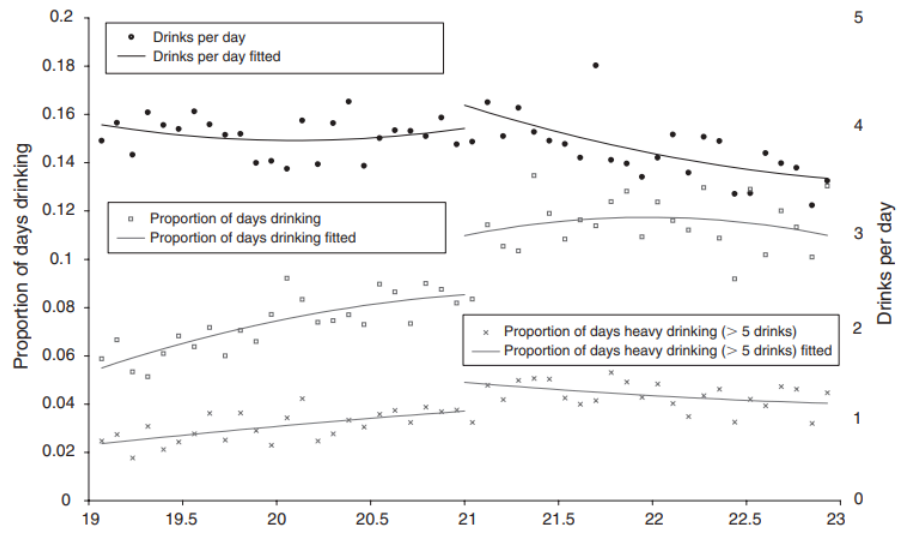


FIGURE 2. AGE PROFILE OF DRINKING INTENSITY

Looking at different outcomes:

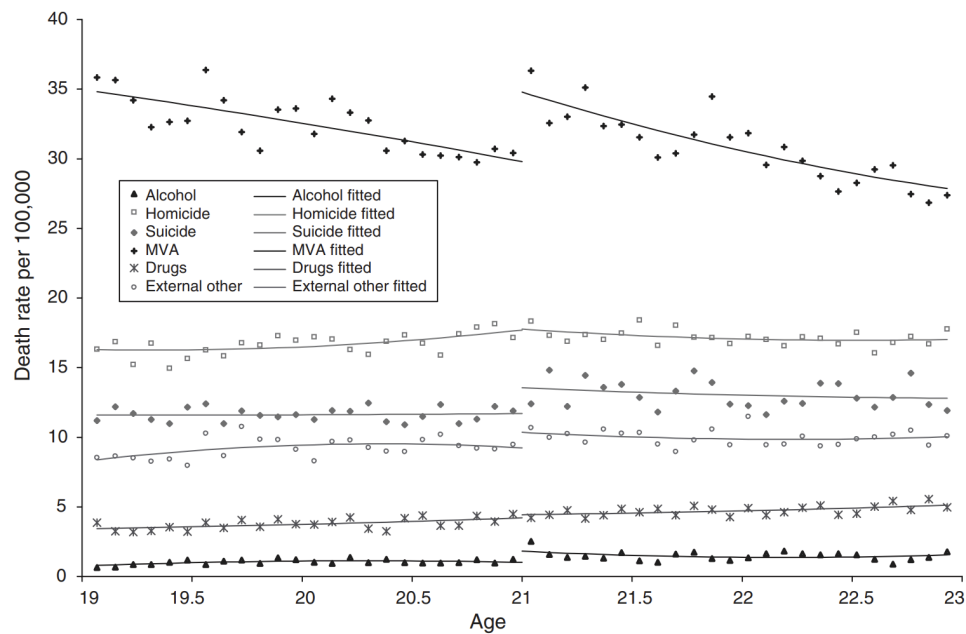


FIGURE 4. AGE PROFILES FOR DEATH RATES BY EXTERNAL CAUSE

This figure is quite illustrative because it seems to suggest discontinuity only in MVA, but not as much from other causes, which would be our hypothesis.

What kind of effects do they estimate?

CACE (but maybe the exclusion restriction assumption is questionable?)

Group 4

Paper: [Estimating Marginal Returns to Medical Care: Evidence from At-risk Newborns](#)

This is an econ paper so on the longer side. Mainly read the abstract and look at the figures.

What is the running variable?

Birth weight

What is the threshold?

VLBW - 1500 g

Gestational age - 37 wks

What is the exposure and the outcome?

Exposure: medical expenditure

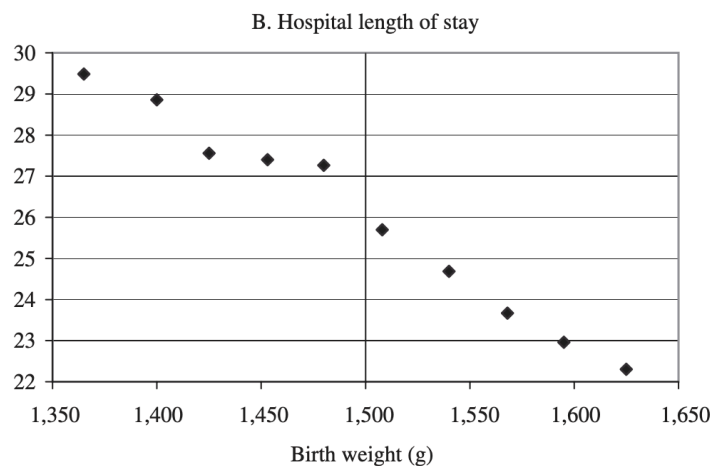
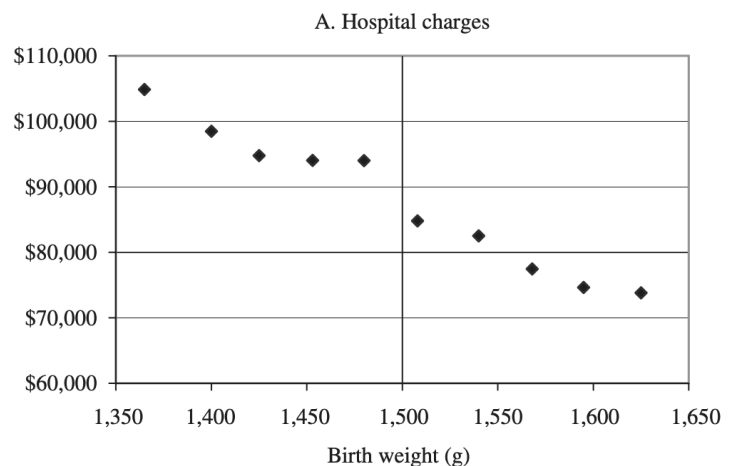
Outcome: health outcomes

What kind of effects did they estimate? Any thoughts about these?

Both ITT and CACE. Note that in econ IV language, ITT is equivalent to reduced form, and CACE is equivalent to second stage.

For CACE, treatment is medical expenditure, but there are likely other ways threshold can affect the outcome, so assumptions are questionable.

Paste two illustrative figures of the study here



Group 5

Paper:

[Effects of Nutrition Promotion on Child Growth in El Alto, Bolivia: Results from a Geographical Discontinuity Design \(Bolivia\)](#)

What is the running variable?

The running variable from the boundary of a program intervention area (this is a geographic RDD). This is an interesting approach because we are able to assess the impact of a policy intervention in the absence of an experimental design (e.g. cRCT).

What is the threshold? Do you think it is arbitrary

The threshold is the geographic boundary of the intervention. Its arbitrariness would depend on how the program areas were developed during the design process

What is the exposure and the outcome?

Exposure was enrollment in a program that involved household visits and community meetings to increase “caregivers’ awareness and encouraging recommended feeding, health, and hygiene practices”

Outcome was height-and health- related knowledge, height and BMI

What kind of effects did they estimate? Any thoughts about these?

ITT. They do not use a IV 2SLS approach

Paste illustrative figures of the study here that you found told the story of the paper

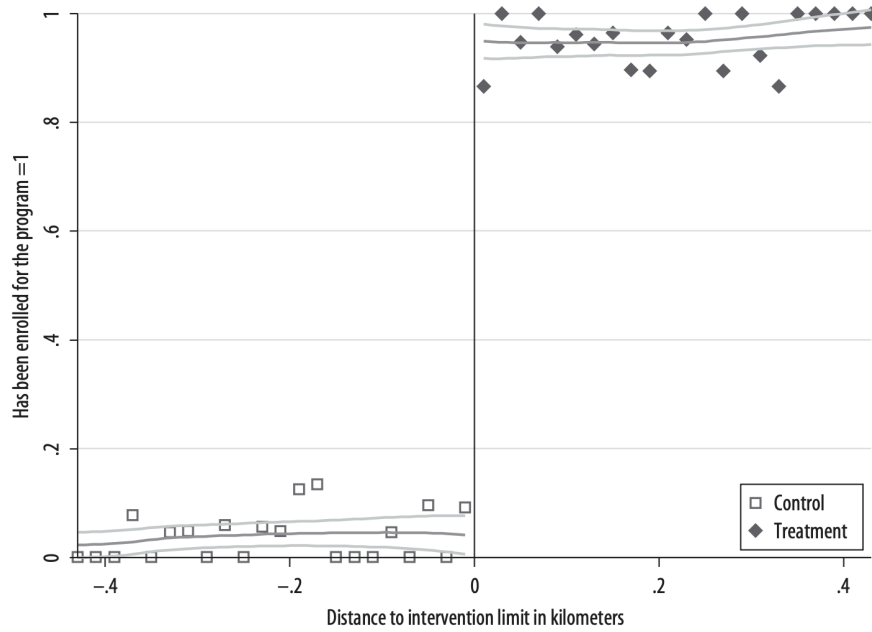
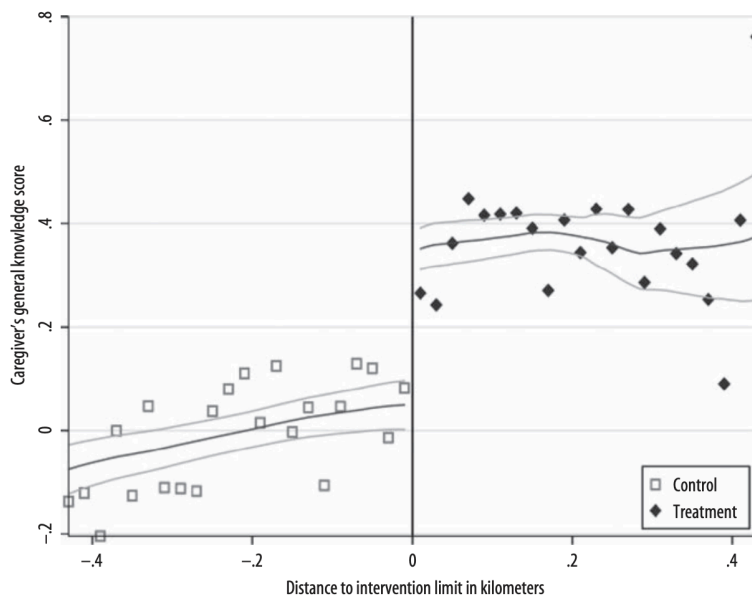
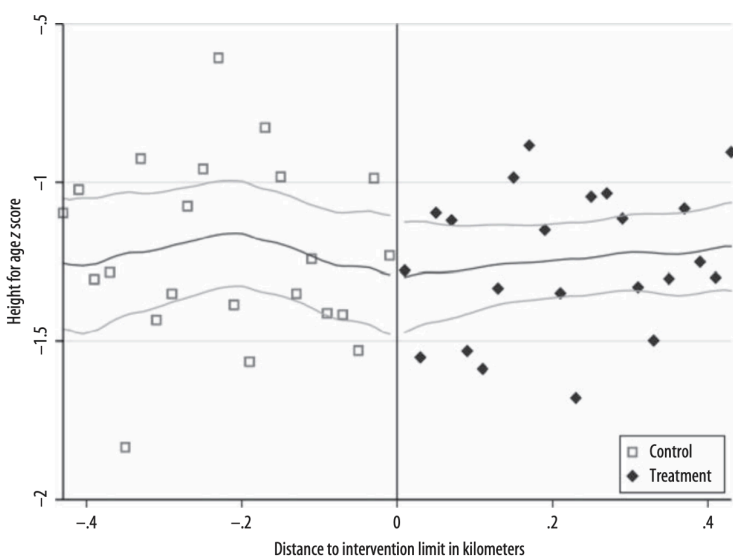


FIGURE 5 . Scatterplot of Caregiver's Global Knowledge Score on Nutrition and Health^a



a. Scatterplot of global knowledge z scores. The program's geographical boundary is centered at zero. Each bin represents the mean value of 2 percent of observations. The control group (squares) is to the left of zero and treatment group (diamonds) to the right of zero.

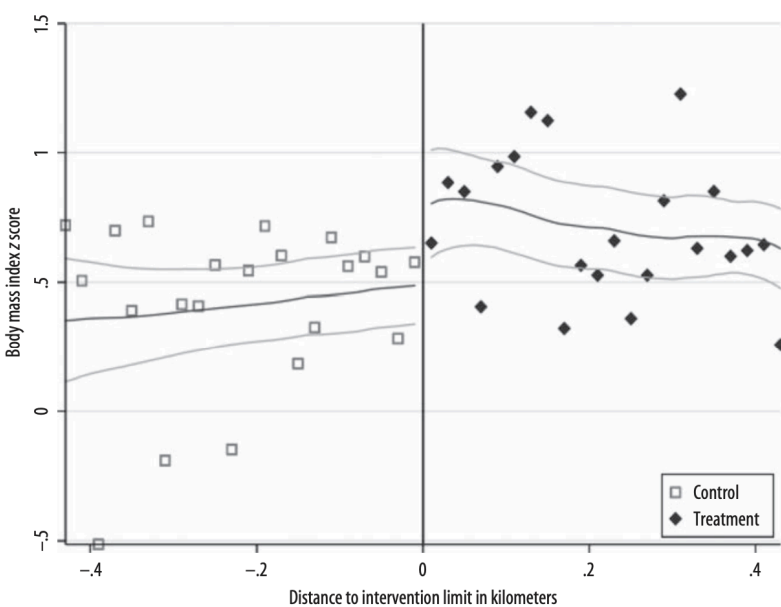
FIGURE 7 . Scatterplot of Children's Height-for-Age z Score^a



a. Scatterplot of height-for-age z scores. The program's geographical boundary is centered at zero. Each bin represents the mean value of 2 percent of observations. The control group (squares) is to the left of zero and treatment group (diamonds) to the right of zero.

Lack of evidence of impact on height for age

FIGURE 8 . Scatterplot of Children's Body Mass Index z Score^a



a. Scatterplot of body mass index z scores. The program's geographical boundary is centered at zero. Each bin represents the mean value of 2 percent of observations. The control group (squares) is to the left of zero and treatment group (diamonds) to the right of zero.

Evidence of increase in BMI

Group 6

Paper: [The infant health effects of starting universal child benefits in pregnancy: Evidence from England and Wales](#)

What is the running variable?

Expected date of birth

What is the threshold?

6 April 2009. Mothers with expected DoB of this date were eligible for cash transfer

What is the exposure and the outcome?

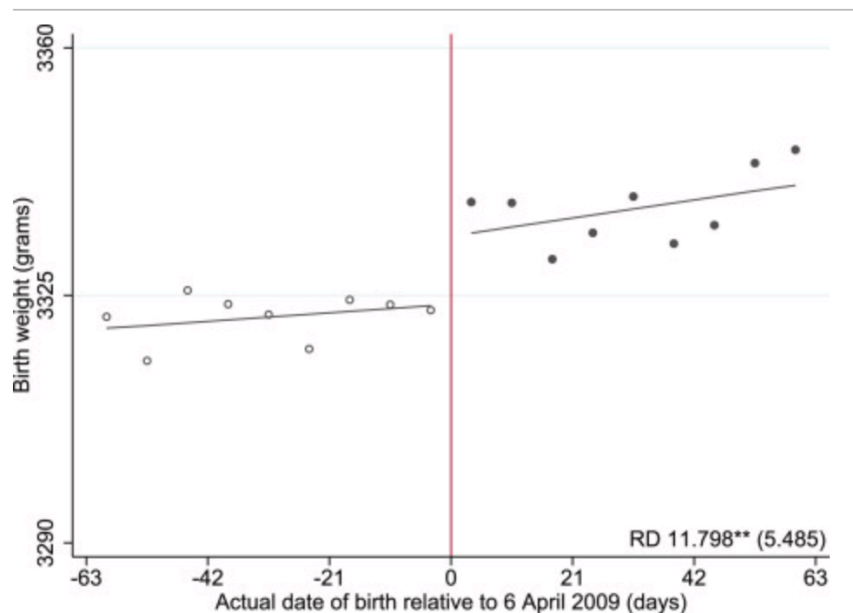
Exposure is the threshold itself (interest in ITT), and outcomes include birth weight and premature birth

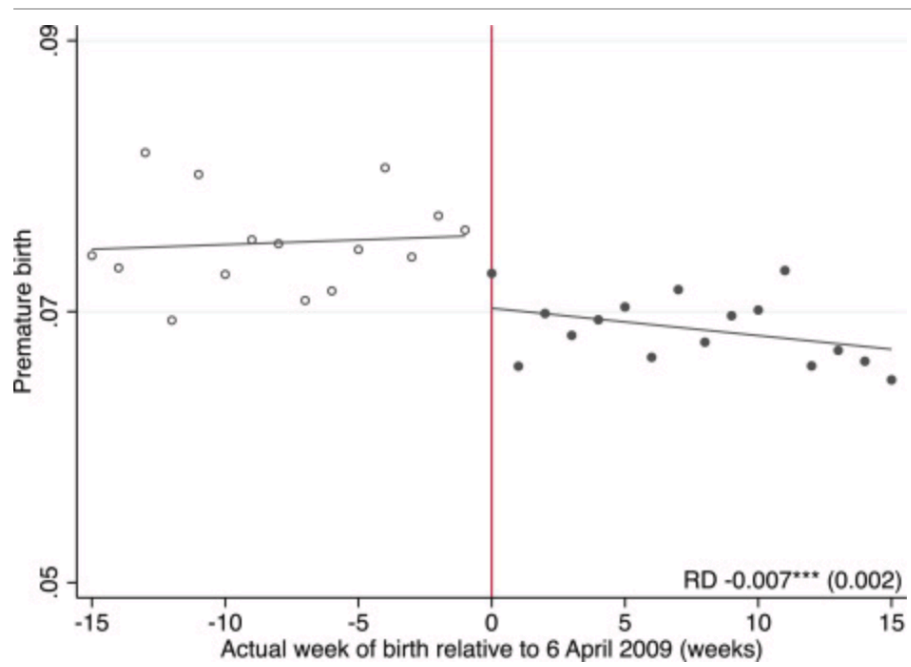
What kind of effects did they estimate?

ITT

Interesting note: Placebo tests were just running the RDD analysis with 6 April as the cutoff but in years other than 2009.

Paste illustrative figures of the study here that you found told the story of the paper





Group 7

Paper: [Effects of Union Certification on Workplace-Safety Enforcement: Regression-Discontinuity Evidence](#)

What is the running variable?

Union vote share

What is the threshold?

50% (i.e. did unionization succeed)

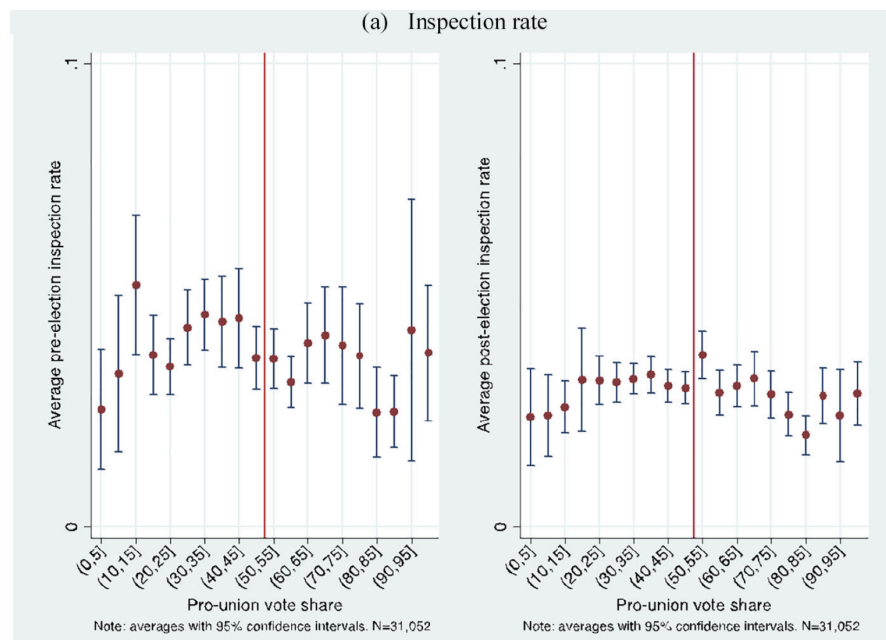
What is the exposure and the outcome?

Sharp RDD, so the exposure is just whether the workplace is unionized. The outcomes include OSHA inspections, violations cited, and penalties assessed.

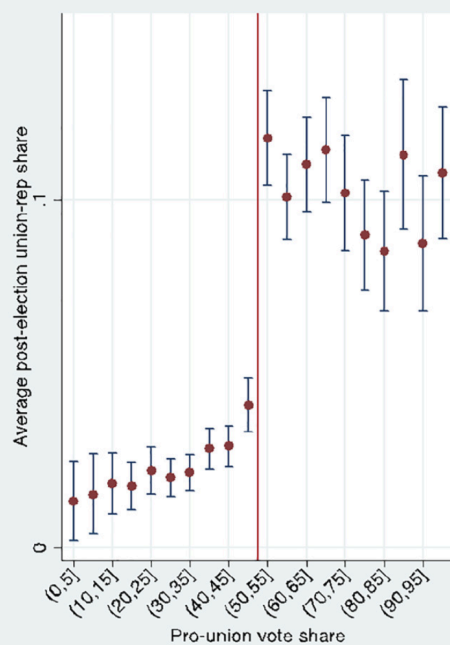
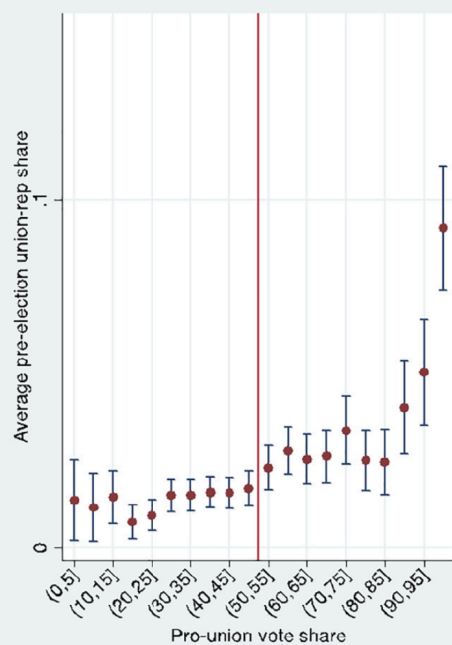
What kind of effects did they estimate?

Sharp RDD, so only ACE

Paste illustrative figures of the study here that you found told the story of the paper



(b) Union-representative share



Group 8

Paper: [Relative Age in School and Suicide among Young Individuals in Japan: A Regression Discontinuity Approach](#)

What is the running variable?

- Birthdate in calendar time

What is the threshold?

- Timing of birth around school entry cutoff date (April 2)

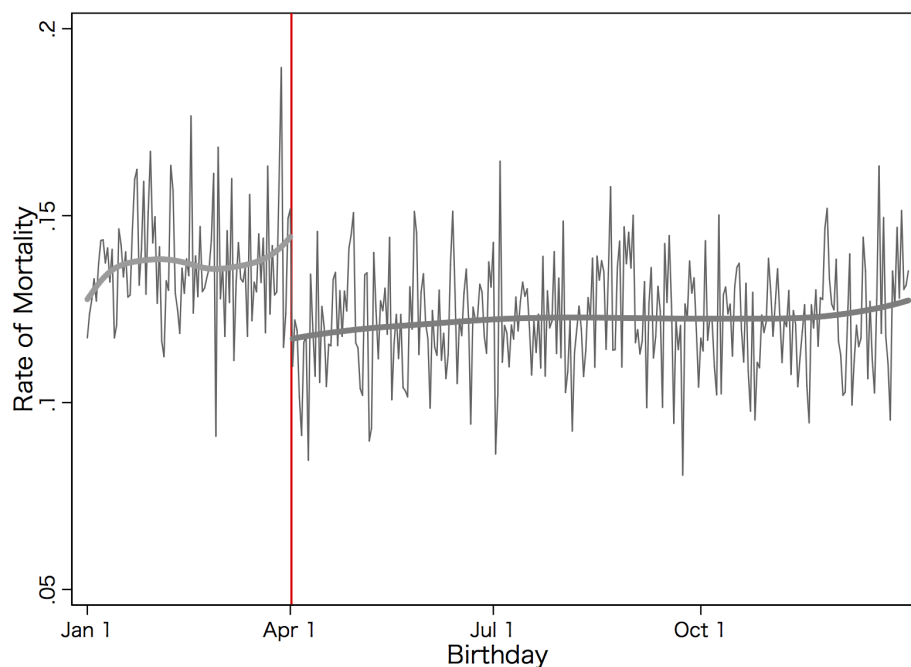
What is the exposure and the outcome?

- Exposure: relative age in a given grade/cohort, assessed via comparing being born right before vs. right after cut-off
- Outcome: mortality rates due to suicide

What kind of effects did they estimate?

- ITT

Paste illustrative figures of the study here that you found told the story of the paper



Group 9

Paper: [The effect of parental education on child health: Quasi-experimental evidence from a reduction in the length of primary schooling in Egypt](#)

What is the running variable?

Time since policy change

What is the threshold?

Time of policy change

What is the exposure and the outcome?

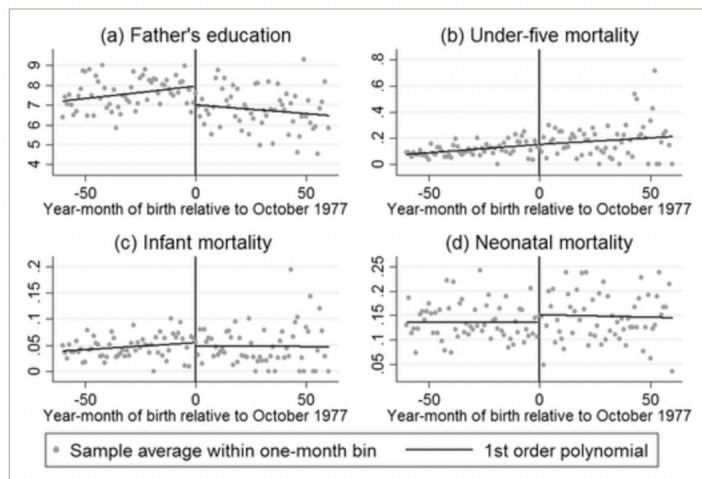
Exposure = parental education (maternal & paternal)

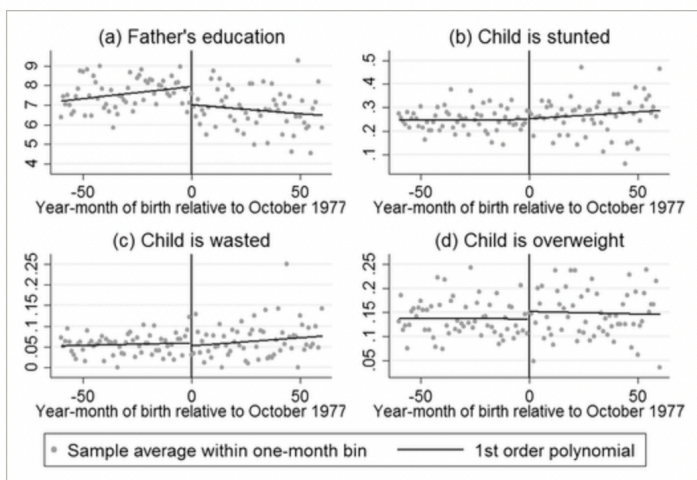
Outcome = child health (nutrition status & child mortality)

What kind of effects did they estimate?

Reduced form effects (this is the same as ITT)

Paste illustrative figures of the study here that you found told the story of the paper





Group 10

Paper: [Mortality effects of containing moral hazard: Evidence from disability insurance reform](#)

What is the running variable?

Age

What is the threshold?

45 years at August 1, 1993. Those below the threshold were exposed to stringent testing to re-assess eligibility for disability insurance

What is the exposure and the outcome?

Exposure was to stringent testing for disability insurance to re-assess eligibility.

What kind of effects did they estimate (they do a lot of analyses and sub-analyses, so just look for the main analyses)?

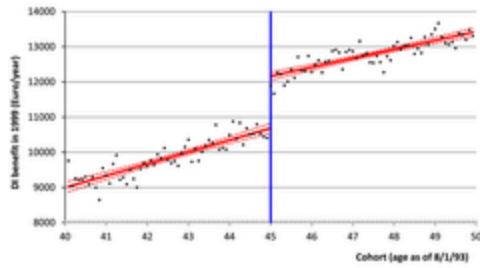
ITT (called reduced form). First stage (effect of threshold on the exposure). CACE

Paste illustrative figures of the study here that you found told the story of the paper

I. Effect of DI reform on annual DI benefit amounts received (in 1999, in Euros)

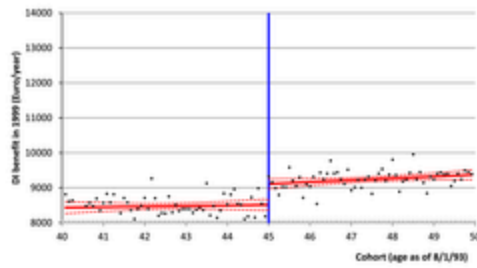
(a) Males

Estimate of the discontinuity:
-1549.04 (91.92)



(b) Females

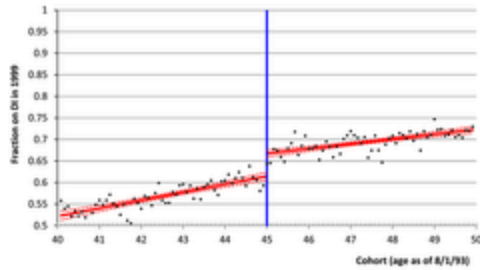
Estimate of the discontinuity:
-606.625 (110.00)



II. Effect of DI reform on participation in DI in 1999

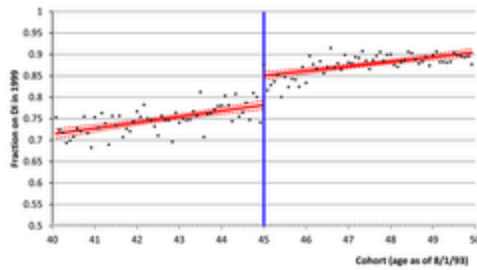
(a) Males

Estimate of the discontinuity:
-0.056 (0.006)



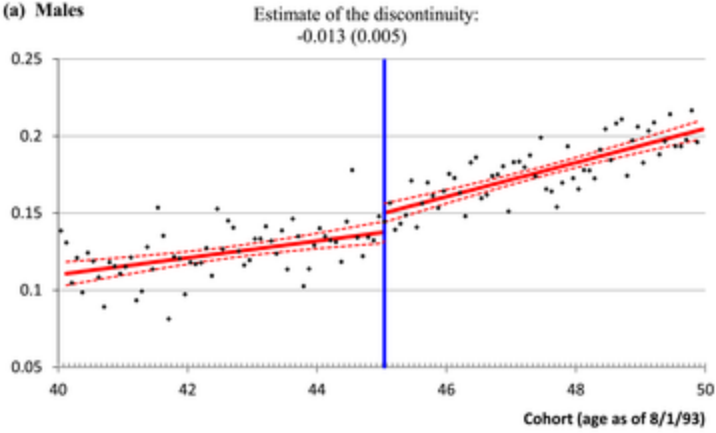
(b) Females

Estimate of the discontinuity:
-0.069 (0.007)

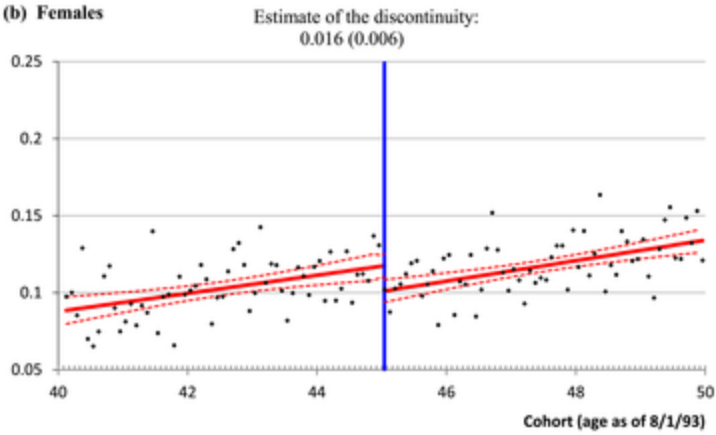


Note: The horizontal axis shows age of the DI claimant as of 8/1/93. Dashed lines represent the 95% confidence intervals. Regression estimates come from RD reduced-form regressions with the following controls: a dummy for being subject to the strict re-examinations (treatment), its interaction with [age-45], and age in months as of 8/1/93. Outcomes are studied in 1999 as this is the first year in which all re-examinations were finished.

(a) Males



(b) Females



Note: The horizontal axis shows age of the DI claimant as of 8/1/93. Dashed lines represent the 95% confidence intervals. Regression estimates come from RD reduced-form regressions with the following controls: a dummy for being subject to the strict re-examinations (treatment), its interaction with [age-45], and age in months as of 8/1/93. Similar graphs with quadratic age controls (not presented here) show a similar pattern, although the male effect drops in significance.