

Examples of Discontinuities

Econometrics @ SSE, Fall 2023

Jaakko Meriläinen

Discontinuities in age

The Effect of Alcohol Consumption on Mortality: Regression Discontinuity Evidence from the Minimum Drinking Age

Christopher Carpenter

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AMERICAN ECONOMIC JOURNAL: APPLIED ECONOMICS
VOL. 1, NO. 1, JANUARY 2009
(pp. 164-82)

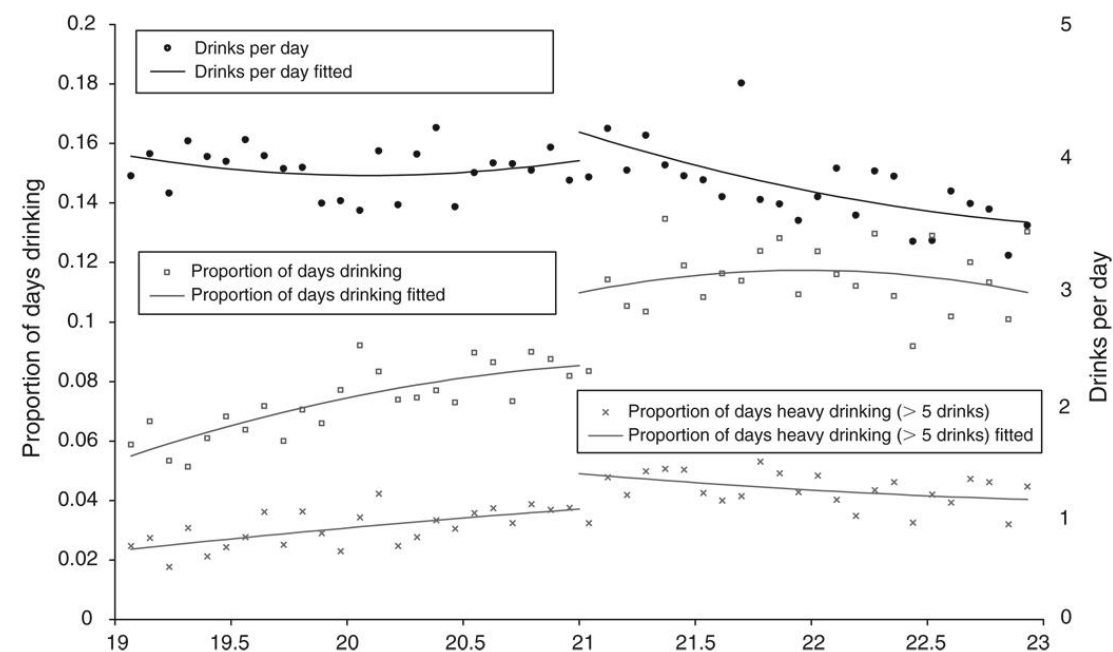
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Abstract

We estimate the effect of alcohol consumption on mortality using the minimum drinking age in a regression discontinuity design. We find large and immediate increases in drinking at age 21, including a 21 percent increase in recent drinking days. We also find a discrete 9 percent increase in the mortality rate at age 21, primarily due to motor vehicle accidents, alcohol-related deaths, and suicides. We estimate a 10 percent increase in the number of drinking days for young adults results in a 4.3 percent increase in mortality. Our results suggest policies that reduce drinking among young adults can have substantial public health benefits. (JEL I12, I18)



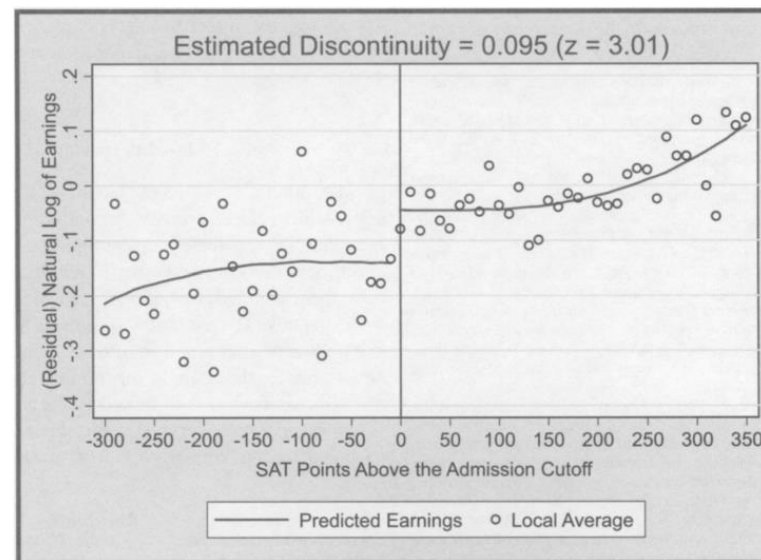
Discontinuities in test scores

THE EFFECT OF ATTENDING THE FLAGSHIP STATE UNIVERSITY ON EARNINGS: A DISCONTINUITY-BASED APPROACH

Mark Hoekstra*

Abstract—This paper examines the effect of attending the flagship state university on the earnings of 28 to 33 year olds by combining confidential admissions records from a large state university with earnings data collected through the state's unemployment insurance program. To distinguish the effect of attending the flagship state university from the effects of confounding factors correlated with the university's admission decision or the applicant's enrollment decision, I exploit a large discontinuity in the probability of enrollment at the admission cutoff. The results indicate that attending the most selective state university causes earnings to be approximately 20% higher for white men.

FIGURE 2.—NATURAL LOG OF ANNUAL EARNINGS FOR WHITE MEN TEN TO FIFTEEN YEARS AFTER HIGH SCHOOL GRADUATION (FIT WITH A CUBIC POLYNOMIAL OF ADJUSTED SAT SCORE)



Discontinuities in population size

Econometrica, Vol. 82, No. 3 (May, 2014), 961–993

DEMOCRACY, REDISTRIBUTION, AND POLITICAL PARTICIPATION: EVIDENCE FROM SWEDEN 1919–1938

BY BJÖRN TYREFORS HINNERICH AND PER PETTERSSON-LIDBOM¹

In this paper, we compare how two different types of political regimes—direct versus representative democracy—redistribute income toward the relatively poor segments of society after the introduction of universal and equal suffrage. Swedish local governments are used as a testing ground since this setting offers a number of attractive features for a credible impact evaluation. Most importantly, we exploit the existence of a population threshold, which partly determined a local government's choice of democracy to implement a regression-discontinuity design. The results indicate that direct democracies spend 40–60 percent less on public welfare. Our interpretation is that direct democracy may be more prone to elite capture than representative democracy since the elite's potential to exercise de facto power is likely to be greater in direct democracy after democratization.

KEYWORDS: Elite capture, direct democracy, redistribution, regression discontinuity design.

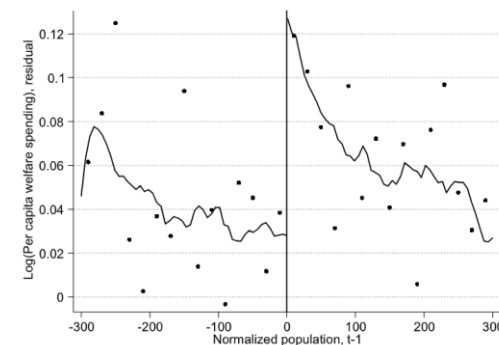


FIGURE 1.—Reduced-form relationship using population in year $t - 1$ as the forcing variable. The dependent variable is the residual from a regression of per capita welfare spending on 21 covariates. Plotted points are conditional means with a binwidth of 20. The solid line is the predicted values of a local linear smoother with a rectangular kernel and a bandwidth of 60.

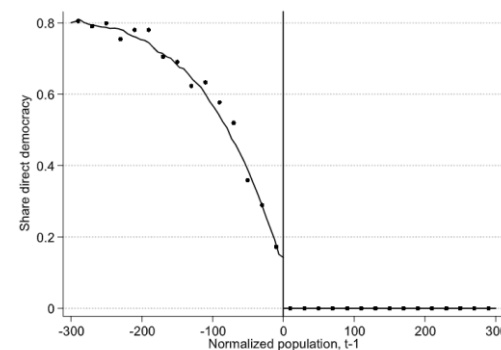


FIGURE 2.—First-stage relationship using population in year $t - 1$ as the forcing variable. The dependent variable is an indicator variable for having direct democracy. Plotted points are conditional means with a binwidth of 20. The solid line is the predicted values of a local linear smoother with a rectangular kernel and a bandwidth of 60.

Discontinuities in election results



Journal of Development Economics

Volume 122, September 2016, Pages 28–45



What happens when a woman wins an election? Evidence from close races in Brazil

*

Fernanda Brollo^a, Ugo Troiano^b

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<https://doi.org/10.1016/j.jdeveco.2016.04.003>

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Abstract

We analyze close elections between male and female mayoral candidates in Brazilian municipalities to provide novel evidence on the role of women as policymakers. Using an objective measure of corruption based on random government audits, we find that female mayors are less likely to engage in corruption compared to male mayors. We also find that female mayors hire fewer temporary public employees than male mayors during the electoral year and tend to attract less campaign contributions when running for reelection. Moreover, our results show that female mayors have a lower reelection probability than male mayors. We interpret our findings as suggesting that male incumbents are more likely to engage in strategic behavior and this improves their electoral performance. Other explanations receive less support from the data.

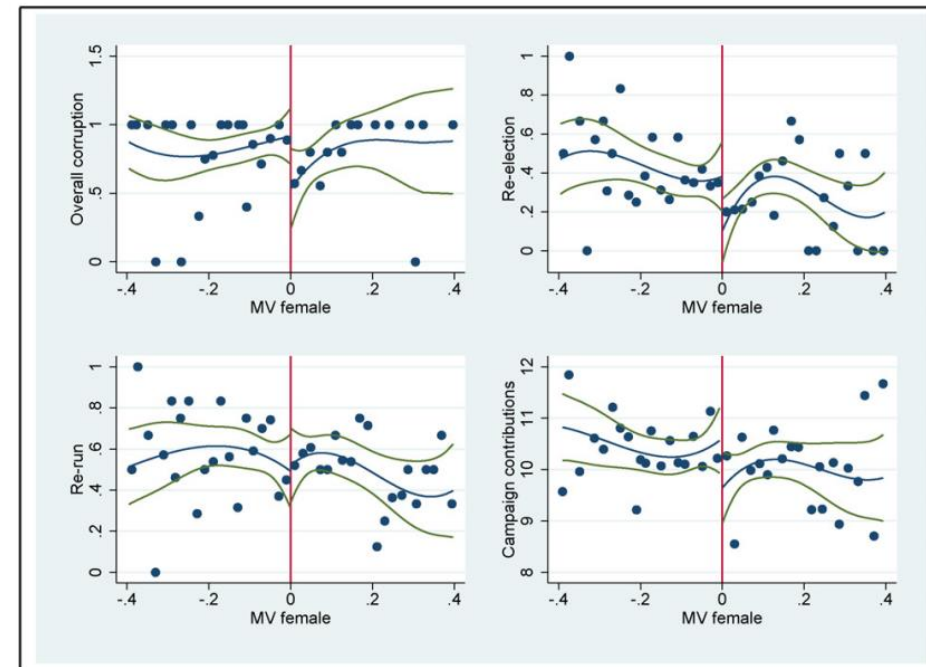


Fig. 5. The effects of gender on corruption, electoral outcomes and campaign contributions. Notes. The blue line is a split third-order polynomial in Margin of Victory of the female candidate in the municipality i and mandate t , fitted separately on each side of the margin of victory (MV female) thresholds at zero. $MV_{it} > 0$ when the winner candidate in the municipality i and mandate t is female, $MV_{it} < 0$ when the winner candidate in the municipality i and mandate t is male. The green lines are the 95% confidence interval of the polynomial. Scatter points are averaged over 2% intervals. This sample considers races in 2000 and 2004 municipal elections. See Table 7 for the definition of the variables.

Discontinuities in geography

The Economic Journal, 126 (February), 40–74. Doi: 10.1111/eoj.12220 © 2014 Royal Economic Society. Published by John Wiley & Sons, 9600 Garsington Road, Oxford OX4 2DQ, UK and 350 Main Street, Malden, MA 02148, USA.

THE EMPIRE IS DEAD, LONG LIVE THE EMPIRE! LONG-RUN PERSISTENCE OF TRUST AND CORRUPTION IN THE BUREAUCRACY*

Sascha O. Becker, Katrin Boeckh, Christa Hainz and Ludger Woessmann

We hypothesise that the Habsburg Empire with its well-respected administration increased citizens' trust in local public services. In several Eastern European countries, communities on both sides of the long-gone Habsburg border have shared common formal institutions for a century now. We use a border specification and a two-dimensional geographic regression discontinuity design to identify from individuals living within a restricted band around the former border. We find that historical Habsburg affiliation increases current trust and reduces corruption in courts and police. Falsification tests of spuriously moved borders, geographic and pre-existing differences and interpersonal trust corroborate a genuine Habsburg effect.



Fig. 1. *The Habsburg Empire in Eastern Europe and the LiTS Locations*

Notes. Habsburg border in maximum expansion, Habsburg border in 1900, borders of countries today and location of the observations in the LiTS 2006 dataset contained in the border sample and in the 17-country sample. Former Habsburg territories that are no longer part of Habsburg in 1900: 1 Silesia (1526–1742); 2 West Galicia (1795–1809); 3a Kingdom of Serbia and 3b Banat of Craiova (1718–39).

Discontinuities in time

American Political Science Review (2023) 117, 3, 1151–1157

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Letter

Do Violent Protests Affect Expressions of Party Identity? Evidence from the Capitol Insurrection

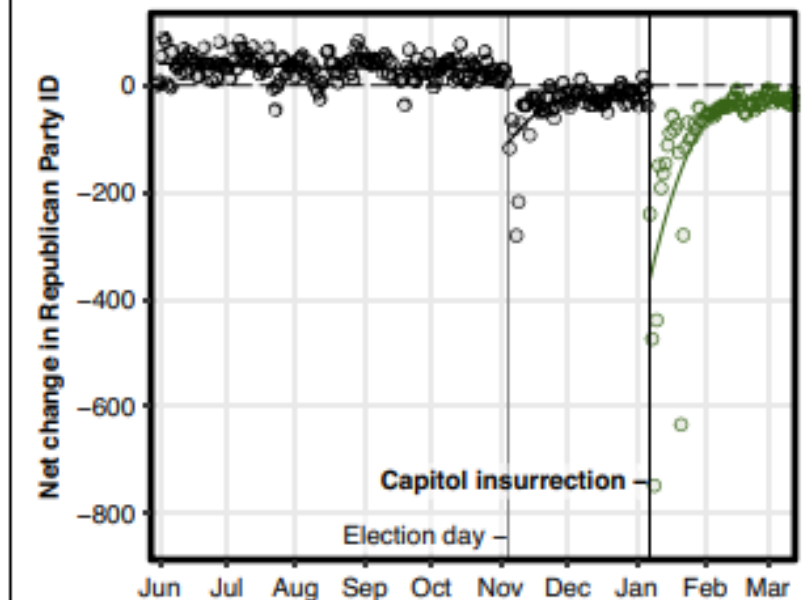
GREGORY EADY *University of Copenhagen, Denmark*

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PETER THISTED DINESEN *University College London, United Kingdom, and University of Copenhagen, Denmark*

The insurrection at the United States Capitol on January 6, 2021, was the most dramatic contemporary manifestation of deep political polarization in the United States. Recent research shows that violent protests shape political behavior and attachments, but several questions remain unanswered. Using day-level panel data from a large sample of US social media users to track changes in the identities expressed in their Twitter biographies, we show that the Capitol insurrection caused a large-scale decrease in outward expressions of identification with the Republican Party and Donald Trump, with no indication of reidentification in the weeks that followed. This finding suggests that there are limits to party loyalty: a violent attack on democratic institutions sets boundaries on partisanship, even among avowed partisans. Furthermore, the finding that political violence can deflect copartisans carries the potential positive democratic implication that those who encourage or associate themselves with such violence pay a political cost.

FIGURE 1. Daily Net Change in Republican Party Identification from June 2020 to March 2021



Note: Values below zero indicate a net decrease in users with Republican identity terms compared with the previous day. LOESS regression included for reference.



And many other types of discontinuities...