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POLITICAL PARTIES AND ECONOMIC OUTCOMES. A REVIEW

LOUIS-PHILIPPE BELAND¹

Abstract

This paper presents a review of the impact of the political parties of US governors on key economic outcomes. It presents the impact of Democratic versus Republican governors on pollution, spending, policies, and labor market outcomes, using a regression discontinuity design (RDD). It shows a lower level of pollution under Democratic governors and an increase in the share of spending on education and health. It also shows that blacks, immigrants, and other minorities have better labor-market outcomes relative to white natives under Democratic governors.

Introduction

Governors are in charge of the executive branch of their state. Governors propose and administer the budget, recommend legislation, sign laws, establish policies, and appoint department heads. Governors have considerable control over policies as they can veto bills coming from the state legislature. In some states, the governor has partial or absolute power to commute or pardon criminal sentences and has additional roles, such as commander-in-chief of the National Guard. In addition, governors may exercise line item veto power on bills that involve taxing or spending, giving them the right to reject part of a bill passed by the legislature – this tool is available in all but seven states. In sum, they have a high degree of autonomy in the governance of their state.

This paper presents a review of the impact of the political parties of governors on key economic outcomes. It presents the impact of Democratic versus Republican governors on labor market outcomes, pollution, spending,

and policies. It uses a regression discontinuity design (RDD) to determine the causal impact of political parties on outcomes of interest. The results show that party affiliation matters for economic outcomes. It shows a lower level of pollution under Democratic governors and an increase in the share of spending on education and health. It also shows that blacks, immigrants, and other minorities have better labor-market outcomes than white natives under Democratic governors.

The first section presents a review of the literature related to this topic, the next section discusses the RDD methodology, and the following section presents the data, descriptive statistics, and graphical evidence. The subsequent section is devoted to results, while the last section offers some conclusions.

Literature

There is a growing body of literature on the impact of political parties (Democratic versus Republican) on economic outcomes at the US state level. Besley and Case (1995) find that Democratic governors had an impact on income taxes, workers' compensation benefits, and spending from 1950 – 1986. In a follow-up paper, they show that the unified effect of a Democratic governor and Democrats controlling both the upper and lower houses of the legislature (united government) has a positive and significant impact on total spending, family assistance, workers' compensation, and taxes (Besley and Case 2003). Leigh (2008) investigates the gubernatorial partisan impact on numerous policy settings, economic, and social outcomes during the period 1941 – 2001. He finds a slightly higher minimum wage, lower post-tax inequality, and a lower unemployment rate under Democratic governors. Beland (2015) and Beland and Unel (2015a), using RDD, find that minorities such as blacks and immigrants have better labor-market outcomes under Democratic than under Republican governors. Beland and Boucher (2015) find that pollution is lower under Democratic governors, while Beland and Oloomi (2015) find that the share of spending in educa-



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tion and health sectors are higher under Democratic governors.² This paper presents a review of this evidence.

RD methodology

To evaluate the causal impact of political parties of governors (Democrats versus Republicans) on economic and policy outcomes, we use a regression discontinuity design (RDD), following Lee (2001, 2008). The RDD allows for the removal of endogeneity concerns arising from factors such as voter characteristics, quality of candidates, resources available for campaigns, and other unmeasured characteristics of states and candidates that could bias estimates. Similar methodology is employed in several papers. We estimate the following parametric RDD approach as our main specification:

$$Y_{st} = \beta_0 + \beta_1 Dem_{st} + f(MV_{st}) + X_{st} + \phi_s + \psi_t + \varepsilon_{st} \quad (1)$$

Y_{st} represents the outcome of interest in state s and year t . β_1 shows the effect of a Democratic governor on the share of state spending in the above sectors. Dem_{st} takes value of one if the winner of the election at state s and year t is a Democrat and zero if the winner is a Republican. MV_{st} represents the margin of victory of the elected governor at the most recent election. Margin of victory is the difference between the vote shares of the winner and the second-place candidate. Values are positive when a Democrat wins the election and negative when a Republican wins. The cutoff point for the RDD is zero. We estimate the party affiliation impact of the governor on economic outcomes controlling for the margin of victory, using a second order polynomial: $f(MV_{st})$.³ ϕ_s and ψ_t are state and year fixed effects. Standard errors are clustered at the state level to account for potential serial correlation within a state over time. X_{st} represents time-varying controls regarding states' demographic and political characteristics.

For labor market outcomes, we have individual-level data and estimate the following equation:

$$Y_{ist} = \beta_0 + \beta_1 Dem_{st} + \beta_{DC} Dem_{st} * C_{ist} + \beta_C C_{ist} + f(MV_{st}) + X_{st} + Z_{ist} + \phi_s + \psi_t + \varepsilon_{ist} \quad (2)$$

$C_{ist} = [Black_{ist} \ Other_{ist} \ Imig_{ist}]$ is a vector of variables that characterizes each individual's race or immigration status. *Black* equals one if the individual is black, and *Other* equals one if the individual is neither white nor black. *Imig* equals one if the individual is an immigrant. Z_{ist} represents individual characteristics such as marital status, gender, education, and age.

Data, descriptive statistics and graphical evidence

Data

Election data come from two main sources. Prior to 1990, data come from ICPSR 7757 (1995) files called *Candidate and Constituency Statistics of Elections in the United States*. Post-1990 data come from the Atlas of US Presidential Elections (2015). Variables taken from these sources are the political party of the winner (Democrat versus Republican) and the margin of victory.

Data on state spending come from State Government Finances data from the US Census Bureau. This data presents a comprehensive annual summary of state government expenditure. As outcome variables we use the share of state government spending on education, health/hospitals, public safety, social welfare, and agglomerate all others. Data are available from 1960–2012.

Data on pollution are from the US EPA AirData from 1980–2013. Yearly average concentrations in a given state for five major pollutants are considered: CO, Ozone, NO₂, Particulates, and SO₂. These five pollutants are targeted by the EPA for their negative impact on health and on the environment. Ozone and Particulates are particularly damaging for health and can lead to respiratory problems, especially for people with asthma. NO₂ contributes to the formation of Ozone and Particulates. SO₂ contributes to the formation of Particulates. Concentration levels represent averages across the states' monitoring stations.

Labor market data come from the March Current Population Survey (CPS) by Flood et al. (2015). Outcome variables are earnings, being employed, total hours worked, and weeks worked. CPS provides a large sample size of workers and

² Other studies at the US gubernatorial level study the impact of political parties on unionized workers (Beland and Unel 2015b) or on entrepreneurship (Beland, Eren and Unel 2015). There are other studies investigating the partisan impact at other levels of government in the US and in other countries. By example, Ferreira and Gyourko (2009) find no significant party affiliation impact of the mayor on the size of city government, spending, and the crime rate. Lee, Moretti and Butler (2004), using an RD design, find that party affiliation has a large impact on a legislator's voting behavior. Pettersson-Lidbom (2008) finds a positive party effect of left-wing government on spending and tax using Swedish local government data.

³ Results are similar if a 1st or 3rd degree polynomial or local-linear RDD are used. RDD has strong internal validity for closed elections. However, the validity of the RDD estimates for non-contested election is not clear (see Lee and Lemieux 2014).

Table 1

Descriptive statistics			
Panel A			
Years in Office	1960–2013	1980–2013	1993–2013
All governors included	2,343	1,666	1,027
Democratic governor	1,269	849	466
Republican governor	1,074	817	561
Percentage Democratic governor	54%	51%	45%
Panel B			
	Margin of victory	Margin of victory	Margin of victory
1980–2013 Elections	5%	10%	15%
All governors	359	708	931
Democratic governor	169	347	453
Republican governor	190	361	478
Note: Margin of victory is the difference between the percentage of vote cast for the winner and the candidate who finished second. Small values of margin of victory are representative of close elections. This table shows the balance of the number of Democratic and Republican governors at different values of margin of victory and by years.			
Source: ICPSR 7757 (1995), Atlas of US Presidential Elections (2011).			

has many individual characteristics such as age, education, race, and marital status. We use data from 1994–2014, which represents the income years 1993–2013. Years are dictated by the availability of the immigrant variable.⁴

Data on policies are from the University of Kentucky Center for Poverty Research (UKCPR) (2015) and Leigh (2008) data. Four key policies are studied in this paper: state minimum wage, state earned income tax credits (EITCs) rate, workers' compensation benefits and top corporate tax rate. State minimum wage measures the minimum wage in the state, as several states opt to have a higher minimum wage than the federal one. The State EITC is a refundable tax credit primarily for individuals and couples with children; the aim of the policy is to increase employment. Workers' compensation benefit is a state-mandated insurance program that provides compensation to employees who suffer job-related injuries and illnesses. The top corporate tax is the maximum corporate tax rate for business in the state. Data are from 1980–2013.

Descriptive statistics

Panel A of Table 1 shows the number of years governed by either a Republican or Democratic governor, and the number of elections where either a Democratic or Republican governor was elected. From 1980–2013, there are 1,666 years in office, which includes 849 years (51 percent) governed by Democrats. Panel B of Table 1 shows the number of elected governors by margin of victory (five percent, ten percent and fifteen percent). It provides evidence that the number of Democratic and Republican governors is similar for close elections. There are 708 years in office at the margin of victory of ten percent, 347 (49 percent) of which are governed by Democrats.

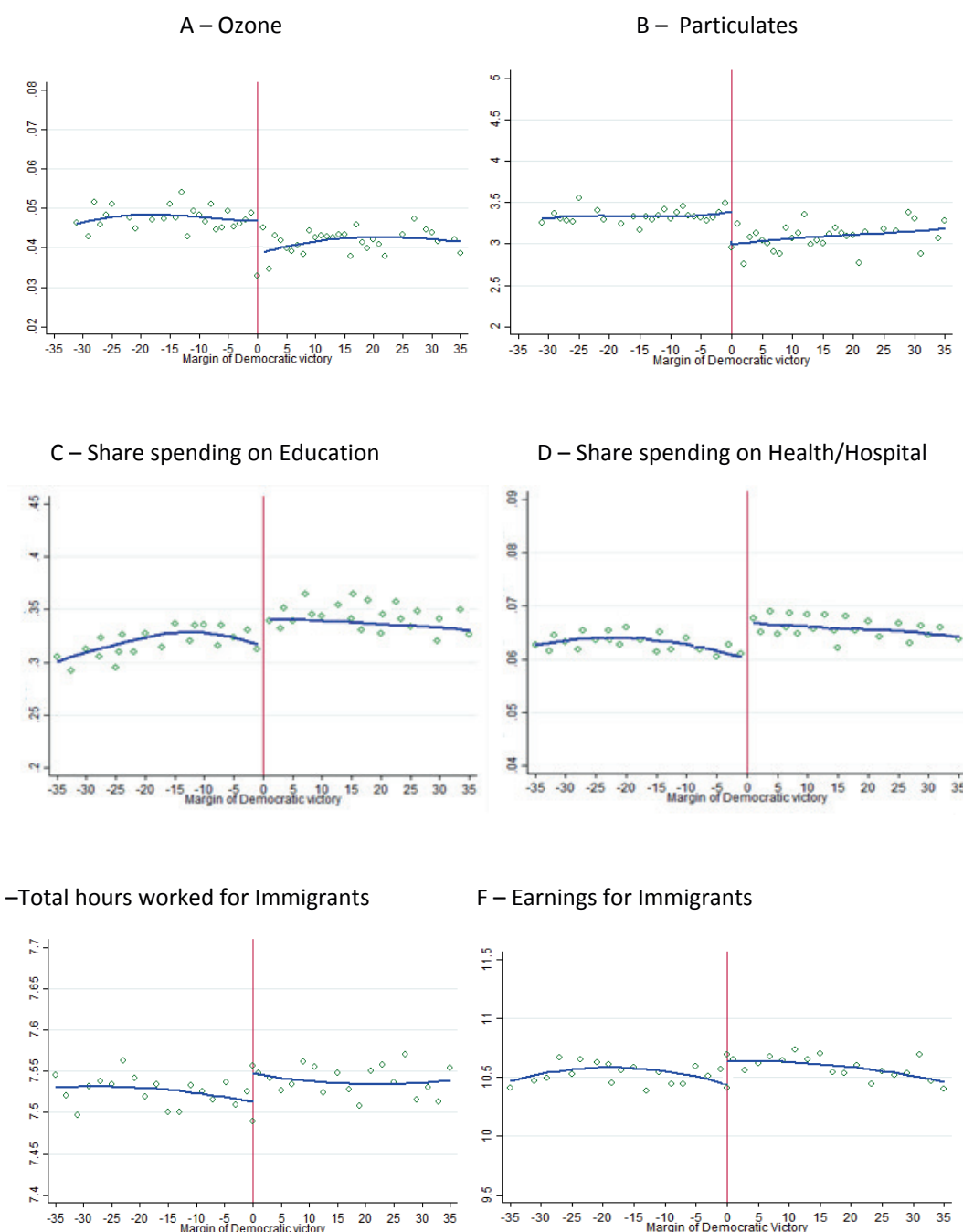
Graphical evidence

Figure 1 presents the regression discontinuity graphs for the following outcomes: hours worked and earnings for immigrants, spending on education and health, and air quality level for Ozone and Particulates. The discontinuities in the graphs are at zero percent of the margin of victory. Values are positive when a Democratic governor is in power and negative for a Republican. Each dot in these graphs represents the average of the

⁴ Results are similar for blacks and others if years 1977–2013 are used.

Figure 1

Regression discontinuity graphs



Source: The authors.

outcome variable at state s and year t , grouped by margin of victory intervals. The solid line shows the fitted values. Figure 1 shows a higher share of state government expenditure on education and health/hospitals when Democratic governors are in office. It also shows an increase in total hours and earnings for immigrants and a decrease in pollution (represented by Ozone and Particulates) under Democratic governors.⁵

⁵ For brevity, we include only a sample of RDD graphs. Graphs for all outcomes are available upon request.

Results

Pollution

Table 2 presents RDD estimates for outcome variables: concentrations of CO, Ozone, NO₂, Particulates, and SO₂. Table 2 reports only the coefficient of interest: β_1 , which captures the causal impact of the Democratic governor. Table 2 shows that under a Democratic governor, the realized level of pollution is lower for Ozone

Table 2

Impact of party affiliation on pollution

Variable	CO (1)	NO2 (2)	Ozone (3)	Particulates (4)	SO2 (5)
Democrat	-0.0394	-0.1254**	-0.0025***	-0.0715**	-0.1020
	(0.0249)	(0.0621)	(0.0007)	(0.0283)	(0.0632)

Notes: All regressions include state fixed effects and time effects. State average concentrations for each year: CO2 (ppm), NO2 (ppb), Ozone (ppm), Particulates (ug/m3), SO2 (ppb). Numbers in parentheses are standard errors based on clustering data at state level; ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

Source: Airdata (EPA). Data are from 1980–2013.

Table 3

Impact of party affiliation on spending

Variable	Education (1)	Health/Hospitals (2)	Public Safety (3)	Social Welfare (4)	Other (5)	Total Spending (6)
Democrat	0.0235**	0.0488**	0.0384*	-0.0177	-0.0233**	-0.0014
	(0.0093)	(0.0241)	(0.0193)	(0.0225)	(0.0096)	(0.0038)

Notes: All regressions include state fixed effects, time effects. Outcome variables are the share of spending on education, health and hospitals, public safety, social welfare and other sectors. Numbers in parentheses are standard errors based on clustering data at state level; ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

Source: US Census Bureau. Data are from 1960–2013.

(-0.3 percent), NO2 (-12.5 percent) and Particulates (-7.2 percent). The coefficients for CO and SO2 are negative, but not significant. This is an important finding because of the well-documented link between air pollution and health (Greenstone 2004; Chay and Greenstone 2005; Dominici et al. 2014). The impact of partisan allegiance of governors (Democrats vs Republicans) on air quality can arise from several channels: more stringent air quality standards, better monitoring or stronger enforcement programs.⁶

Spending

Table 3 presents the impact of party affiliation of governors (Democrats versus Republicans) on spending allocations. We consider the following sectors: education, health/hospitals, public safety, social welfare and agglomerate the other sectors.⁷ Table 3 also presents the impact of party affiliation on total spending. Table 3 reports the coefficient for β_j : the causal impact of the Democratic governor on the outcome of interest.

Table 3 shows that under Democratic governors, the share of spending on education (+2.4 percent), health and hospitals (+4.9 percent) and public safety (+3.8 percent) is higher; while the share of spending on the other sectors (-2.3 percent) is lower. The results suggest that some money is shifted from the other sectors to the education, health/hospitals, and public safety sectors under Democratic governors. This is a key issue, as the literature documents the benefits of higher funding for education and health (Barro 1991; Cellini, Ferreira and Rothstein 2010; Martin et al. 2012; Gupta, Verhoef and Tionson 2002).

Table 3 also presents results for total expenditure in the state as an outcome. It investigates whether total government expenditure also depends on party affiliation. Column 6 of Table 3 shows that party affiliation has no impact on total expenditure, only on the allocation of funds. Table 3 shows that Democrats allocate a higher share of the state budget towards sectors that are key to their electorate.⁸

Policies

Table 4 studies the impact of the party affiliation of governors on four key policies: state minimum wage,

⁶ The impact of Democratic governors on the realized level of pollution happens mostly below EPA standards (i.e. EPA standard recommendation for air quality are respected for both Republican and Democratic administrations). For an in-depth analysis, see Beland and Boucher (2015).

⁷ Other sectors group the following: highway, natural resources, parks and recreation, interest on general debt, and governmental administration. They are grouped under *other sectors* for brevity.

⁸ For an in-depth analysis, see Beland and Oloomi (2015).

Table 4

Impact of party affiliation on policies				
Variable	State minimum wage (1)	State EITC (2)	Worker compensation (3)	Corporate tax (4)
Democrat	0.0654* (0.0387)	0.0820 (0.5582)	0.1094 (0.0859)	0.0510 (0.1757)

Notes: All regressions include state fixed effects and time effects. Numbers in parentheses are standard errors based on clustering data at state level; ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

Source: UKCPR (2015) and Leigh (2008). Data are from 1980 – 2013.

Table 5

Impact of party affiliation on labor markets				
Variable	Employed (1)	Total weeks (2)	Total hours (3)	Annual income (4)
Democrat	0.0017 (0.0020)	0.0011 (0.0021)	0.0039 (0.0043)	0.0047 (0.0063)
Imig × Democrat	0.0145*** (0.0035)	0.0152*** (0.0048)	0.0138* (0.0081)	0.0367*** (0.0120)
Black × Democrat	0.0184*** (0.0033)	0.0252*** (0.0055)	0.0229** (0.0089)	0.0270** (0.0132)
Other × Democrat	0.0114** (0.0049)	0.0175** (0.0065)	0.0212** (0.0090)	0.0128 (0.0138)
Imig	0.0055 (0.0035)	0.0032 (0.0022)	0.0042 (0.0054)	-0.1947*** (0.0181)
Black	-0.0405*** (0.0022)	-0.0232*** (0.0040)	-0.0092* (0.0054)	-0.0412*** (0.0148)
Other	-0.0077* (0.0039)	-0.0141** (0.0056)	-0.0187*** (0.0056)	-0.0724*** (0.0239)

Notes: All regressions include state fixed effects, time effects, and other control variables specified in equation (2). All dependent variables but “Employed” are in logs. Numbers in parentheses are standard errors based on clustering data at state level; ***, **, and * represent statistical significance at the 1%, 5%, and 10% level, respectively.

Source: CPS March samples from IPUMS for the survey years 1994 – 2014.

state-earned income tax credits (EITCs) rate, workers’ compensation benefits and top corporate tax rate. Table 4 shows that under Democratic governors, the minimum wage is slightly higher than under Republican governors. Table 4 shows that there is no significant difference between Democrats and Republicans for the other three policies.

Labor markets

Table 5 presents the impact of the party affiliation of governors (Democratic versus Republican) on labor market outcomes. The following labor market outcomes are considered: being employed, total weeks worked, total

hours, and annual income. All outcomes, except being employed, had a logarithm transformation and are conditional on working. The analysis is separated by type of workers: white, black, immigrant, and other minorities. Table 5 shows the labor impact of political parties on black, other minority, and immigrants relative to white natives. The interaction terms *Imig×Dem*, *Black×Dem*, *Other×Dem* measure the effect of Democratic governors on immigrants, blacks, and other minorities, respectively, relative to white natives. The variable Democrat will measure the impact of the Democratic governor in power on white natives.

Table 5, column (1) shows the RDD estimates for the outcome being employed. It shows that immigrants

(+1.5 percent), blacks (+1.8 percent) and other minorities (+1.1 percent) are more likely to be employed under Democratic governors relative to white natives. It also shows that the political party in power has no significant impact on the likelihood of a white native being employed.

Columns (2) and (3) are devoted to total weeks worked and total hours worked respectively. Columns (2) and (3) show that under Democratic governors, immigrants (+1.5 percent and +1.4 percent), blacks (+2.5 percent and +2.3 percent), and other minorities (+1.8 percent and +2.1 percent) work more weeks and more total hours relative to white natives. Democratic governors have no significant impact on white native total weeks and total hours worked. Column (4) presents the RDD estimates for annual income. It shows that immigrants (+3.7 percent) and blacks (+2.7 percent) have significantly higher annual income under Democratic governors relative to white natives. There is no significant impact on white natives.⁹

These results are important given the labor market gap between immigrants, blacks, and others relative to white natives. Table 5 also shows the mean impact of being black, immigrant, and other minorities relative to whites on labor market outcomes. Table 5 shows that this gap is considerably smaller under Democratic governors. This is particularly meaningful given that immigrants, blacks and others tend to vote for Democratic Party candidates; and this leads to better labor market outcomes for those groups under Democratic governors.¹⁰

Conclusion

In this paper, we present a review of the causal impact of Democratic governors on several outcomes, using a regression discontinuity design. This review suggests that Democratic governors and Republican governors differ on several accounts. It shows that under Democratic governors, the level of pollution is lower and there is higher spending on health and education. This paper

also presents evidence that the labor market outcomes of blacks, other minorities, and immigrants are better under Democratic governors relative to white natives.

References

- Barro, R. J. (1991), "Economic Growth in a Cross-Section of Countries", *Quarterly Journal of Economics* 106, 407–44.
- Beland, L.-P. (2015), "Political Parties and Labor Market Outcomes: Evidence from US States", *American Economic Journal: Applied Economics* 7 (4), 198–220.
- Beland, L.-P. and S. Oloomi (2015), "Party Affiliation and Public Spending", *LSU Working Paper*.
- Beland, L.-P. and B. Unel (2015a), "The Impact of Party Affiliation of U.S. Governors on Immigrants' Labor-Market Outcomes", *LSU Working Paper*.
- Beland, L.-P. and B. Unel (2015b), "Democrats and Unions", *LSU Working Paper*.
- Beland, L.-P., O. Eren and B. Unel (2015), "Politics and Entrepreneurial Activity in the U.S.", *LSU Working Paper*.
- Beland, L.-P. and V. Boucher (2015), "Polluting Politics", *Economics Letters* 137, 176–81.
- Besley, T. and A. Case (1995), "Does Electoral Accountability Affect Economic Policy Choices? Evidence from Gubernatorial Term Limits", *Quarterly Journal of Economics* 110 (3), 769–98.
- Besley, T. and A. Case (2003), "Political Institutions and Policy Choices: Evidence from the United States", *Journal of Economic Literature* 41 (1), 7–73.
- Cellini, S. R., F. Ferreira, and J. Rothstein (2010), "The Value of School Facility Investments: Evidence from a Dynamic Regression Discontinuity Design", *Quarterly Journal of Economics* 125 (1), 215–61.
- Chay, K. Y. and M. Greenstone (2005), "Does Air Quality Matter? Evidence from the Housing Market", *Journal of Political Economy* 113 (2), 376–424.
- Dominici, F., M. Greenstone and C. R. Sunstein (2014), "Particulate Matter Matters", *Science* 344 (6181), 257.
- Ferreira, F. and J. Gyourko (2009), "Do Political Parties Matter? Evidence from US Cities", *Quarterly Journal of Economics* 124 (1), 399–422.
- Flood, S., M. King, S. Ruggles and J. R. Warren (2015), Integrated Public Use Microdata Series, Current Population Survey (CPS): Version 4.0. [Machine-readable database], University of Minnesota, MN.
- Greenstone, M. (2004), "Did the Clean Air Act Cause the Remarkable Decline in Sulfur Dioxide Concentrations?", *Journal of Environmental Economics and Management* 47 (3), 583–611.
- Gupta, S., M. Verhoeven and E. R. Tiongson (2002), "The Effectiveness of Government Spending on Education and Health Care in Developing and Transition Economies", *European Journal of Political Economy* 18 (4), 717–37.
- Inter-University Consortium for Political and Social Research (1994), Candidate and Constituency Statistics of Elections in the United States. 1788–1990. ICPSR07757-v5, Ann Arbor, MI, <http://doi.org/10.3886/ICPSR07757.v5> (accessed 10 January 2016).
- Lee, D. S. (2001), "The Electoral Advantage to Incumbency and Voters' Valuation of Politicians' Experience: A Regression Discontinuity Analysis of Elections to the US House", *National Bureau of Economic Research Working Paper* no. 8441.
- Lee, D. S. (2008), "Randomized Experiments from Non-Random Selection in US House Elections", *Journal of Econometrics* 142 (2), 675–97.

⁹ For an in-depth analysis, see Beland (2015) and Beland and Unel (2015).

¹⁰ We implemented several robustness checks. The results are similar if a 1st or 3rd degree polynomial or local-linear RDD are used. The results are similar if only united governments were considered (when both governors and legislatures are from the same party). Other key tests were performed: McCrary test (2008) and Placebo RDD, using outcome one year before the election. These two results give confidence in the applicability of RDD. Results omitted for brevity are available upon request. One potential threat to the RDD validity arises if workers change state, according to which political party wins the election. We find no evidence of such a tendency for close elections.

Lee, D. S. and T. Lemieux (2014), “Regression Discontinuity Designs in the Social Sciences”, in H. Best and C. Wolf, eds., *SAGE Handbook of Regression Analysis and Causal Inference*, SAGE Publications, London, 301–26.

Lee, D. S., E. Moretti and M. J. Butler (2004), “Do Voters Affect or Elect Policies? Evidence from the U. S. House”, *Quarterly Journal of Economics* 119 (3), 807–59.

Leigh, A. (2008), “Estimating the Impact of Gubernatorial Partisanship on Policy Settings and Economic Outcomes: A Regression Discontinuity Approach”, *European Journal of Political Economy* 24 (1), 256–68.

Leip, D. (2015), Leip’s Atlas of U.S. Presidential Elections, <http://uselectionatlas.org>.

Martin, A. B., D. Lassman, B. Washington, A. Catlin and National Health Expenditure Accounts Team (2012), “Growth in US Health Spending Remained Slow in 2010; Health Share of Gross Domestic Product was Unchanged from 2009”, *Health Affairs* 31 (1), 208–19.

McCrary, J. (2008), “Manipulation of the Running Variable in the Regression Discontinuity Design: A Density Test”, *Journal of Econometrics* 142 (2), 698–714.

Pettersson-Lidbom, P. (2008), “Do Parties Matter for Economic Outcomes? A Regression-Discontinuity Approach”, *Journal of the European Economic Association* 6 (5), 1037–56.

University of Kentucky Center for Poverty Research (2015), UKCPR National Welfare Data. 1980–2014, Gatton College of Business & Economics, University of Kentucky, Lexington, KY, <http://www.uk-cpr.org/data> (accessed 10 January 2016).

US Environmental Protection Agency (2016), Air Quality System Data Mart [internet database], <https://www.epa.gov/airdata> (accessed 10 January 2016).